Navy_CLEAN_PFAS_FOIA_request_covers.indd

NAVFAC
Naval Facilities Engineering Command

# Groundwater Sample Results, Level 4 Laboratory Report, Electronic Data Deliverable, Data Validation Report, and the Sample Location Report, SDG B833226

*Naval Air Station Cecil Field*
*Jacksonville, Florida*

July 2019

APPROVED FOR PUBLIC RELEASE; DISTRIBUTION UNLIMITED

N60200_009758
NAS CECIL FIELD, FL
SSIC 5000-33c

# LABORATORY DATA PACKAGE B833226 NAS CECIL FIELD FL

03/13/2018

MAXXAM ANALYTICAL LABORATORIES

Approved for public release: distribution unlimited.

Prepared for: Earth Toxics Inc

Project: JM10 CECIL

# Analytical Data Package
## (Level IV)

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

Maxxam Job #: B833226

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



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

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

Review Performed By:

Project Manager

Maxxam
A Bureau Veritas Group Company

Stephanie Pollen
2018.03.13 10:16:56 -04'00'

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# Glossary of Terms

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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



# 1.0 Project Narrative

Maxxam Analytics International
6740 Campobello Rd.
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**Maxxam Job: B833226 - Analysis**

Sample Analysis

Samples were initially pre-screened and estimated concentrations were obtained so that appropriate sample volumes could be extracted on QC batches 5410178 (2018/02/23-24) and 5412188 (2018/02/27). Due to high concentrations, the following sample was analyzed for Perfluorohexanesulfonate (PFHxS) and Perfluorooctanesulfonate (PFOS) using reduced sample extraction volumes. Detection limits were adjusted accordingly.

Reduced sample volumes were also extracted for the following samples:

GBV350 *CEF-S3-TW01-0218*
GBV354 *CEF-S3-TW02-0209*

This was due to the discolored and turbid appearances of the sample matrices, which would likely have resulted in clogging of the solid phase extraction (SPE) cartridges if the full sample volumes had been extracted. Detection limits were adjusted accordingly.

Data Qualifiers

**U** – Analyte was not detected and is reported as less than the LOD or as defined by the customer. The LOD has been adjusted for any dilution or concentration of the sample.

**J** – The reported result is an estimated value (e.g., matrix interference was observed, or the analyte was detected at a concentration outside the calibration range).

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

**PROJECT NARRATIVE**

**Maxxam Analytics**
**Client Project #: JM10 CECIL**

**Client: Earth Toxics Inc**
**Client Project: JM10 CECIL**

**I. SAMPLE RECEIPT/ANALYSIS**

a) Sample Listing

| Maxxam ID | Client Sample ID | Date Sampled | Date Received | Date Prepped | Date Run | Initial Calibration |
|---|---|---|---|---|---|---|
| **PFOS and PFOA in water by SPE/LCMS** | | | | | | |
| GBV345 | EB-CEF-MFS-020818-17 | 2018/02/08 | 2018/02/13 | 2018/02/22 | 2018/02/24 | 2018/02/23-24 |
| GBV346 | EB-CEF-MFS-020818-18 | 2018/02/08 | 2018/02/13 | 2018/02/22 | 2018/02/24 | 2018/02/23-24 |
| GBV347 | EB-CEF-MFS-020818-19 | 2018/02/08 | 2018/02/13 | 2018/02/22 | 2018/02/24 | 2018/02/23-24 |
| GBV348 | FB-CEF-MFS-020818-12 | 2018/02/08 | 2018/02/13 | 2018/02/22 | 2018/02/24 | 2018/02/23-24 |
| GBV349 | CEF-1820-TW02-0218 | 2018/02/08 | 2018/02/13 | 2018/02/22 | 2018/02/24 | 2018/02/23-24 |
| GBV350 | CEF-S3-TW01-0218 | 2018/02/09 | 2018/02/13 | 2018/02/23 | 2018/02/27 | 2018/02/27 |
| GBV351 | FB-CEF-S3-020918-13 | 2018/02/09 | 2018/02/13 | 2018/02/23 | 2018/02/27 | 2018/02/27 |
| GBV352 | CEF-MFS-TW01-0218 | 2018/02/09 | 2018/02/13 | 2018/02/23 | 2018/02/27 | 2018/02/27 |
| GBV353 | CEF-MFS-TW02-0218 | 2018/02/09 | 2018/02/13 | 2018/02/23 | 2018/02/27 | 2018/02/27 |
| GBV354 | CEF-S3-TW02-0209 | 2018/02/09 | 2018/02/13 | 2018/02/23 | 2018/02/27 | 2018/02/27 |

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

b) Shipping Problems: none encountered

c) Documentation Problems: none encountered

**II. SAMPLE PREP:**

No problems encountered

**III. SAMPLE ANALYSIS:**

See also comments within the appropriate Certificate of Analysis

a) Hold Times: all within recommended hold times

b) Instrument Calibration: all within control limits

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

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

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

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

Steph Fallon

Project Manager- Site Assessment and Remediation/ Ultra Trace

2018/03/13
Date




# 2. Sample Management Records

Maxxam Analytics International
6740 Campobello Rd
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# 2.1 Sample Custody

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Tetra Tech, Inc. AIR CHAIN OF CUSTODY | NUMBER No. 3187 | PAGE 1 OF 1

| | | | |
|---|---|---|---|
| PROJECT NO: JM10 | FACILITY: Cecil | PROJECT MANAGER: Megan Ved | PHONE NUMBER: |
| LABORATORY NAME AND CONTACT: S. Pollen / Maxxam | | | |
| SAMPLERS (SIGNATURE): [signature] | | FIELD OPERATIONS LEADER: David Siefken | PHONE NUMBER: 904.334.7260 |
| ADDRESS: 6740 Campabello Rd | | | |
| CARRIER/WAYBILL NUMBER: Fed EX 8115-9773-0063 | | | CITY, STATE: Mississauga, Ontario, CA |

STANDARD TAT ☒
RUSH TAT ☐
☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

CONTAINER TYPE PLASTIC (P) or GLASS (G): P
PRESERVATIVE USED: –

| DATE YEAR 2018 | TIME | SAMPLE ID | LOCATION ID | TOP DEPTH (FT) | BOTTOM DEPTH (FT) | MATRIX (GW, SO, SW, SD, QC, ETC.) | COLLECTION METHOD GRAB (G) COMP (C) | No. OF CONTAINERS | TYPE OF ANALYSIS: PFAS | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|
| 2/8 | 0920 | EB-CEF-MFS-020818-17 | | | | QC | | 2 | X | Cool 4° C |
| 2/8 | 0925 | EB-CEF-MFS-020818-18 | | | | | | 2 | X | |
| 2/8 | 0930 | EB-CEF-MFS-020818-19 | | | | | | 2 | X | |
| 2/8 | 0940 | FB-CEF-MFS-020818-12 | | | | | | 2 | X | |
| 2/8 | 1630 | CEF-1820-TW02-0218 | | | | GW | | 2 | X | |
| 2/9 | 1125 | CEF-S3-TW01-0218 | | | | GW | | 2 | X | |
| 2/9 | 1200 | FB-CEF-S3-020918-13 | | | | QC | | 2 | X | |
| 2/9 | 1105 | CEF-MFS-TW01-0218 | | | | GW | | 2 | X | |
| 2/9 | 1538 | CEF-MFS-TW02-0218 | | | | GW | | 2 | X | |
| 2/9 | 1350 | CEF-S3-TW02-0209 | | | | GW | | 2 | X | |

13-Feb-18 14:10
Gemarie Balatico
B833226
TSP ENV-1389

| | | | | | |
|---|---|---|---|---|---|
| 1. RELINQUISHED BY: [signature] | DATE: 2-12-18 | TIME: 1600 | 1. RECEIVED BY: Tanvir Bird TANVIRSFN44 | DATE: 2018/02/13 | TIME: 14:10 |
| 2. RELINQUISHED BY | DATE | TIME | 2. RECEIVED BY | DATE | TIME |
| 3. RELINQUISHED BY | DATE | TIME | 3. RECEIVED BY | DATE | TIME |

COMMENTS: 4.3/5.1/3.3

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY) custody seal intact 4/02R
FORM NO. TINUS-001

HCH 4/7036



# 3. Analytical Results

Maxxam Analytics International
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# 3.1 Summary Report

Maxxam Analytics International
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Maxxam
A Bureau Veritas Group Company

Your Project #: JM10 CECIL
Your C.O.C. #: 3187

**Attention: Rick Carr**

Earth Toxics Inc
PO Box 3382
Logan, UT
USA 84321

**Report Date: 2018/02/28**
Report #: R5024901
Version: 1 - Final

# CERTIFICATE OF ANALYSIS

**MAXXAM JOB #: B833226**
**Received: 2018/02/13, 14:10**

Sample Matrix: Water
# Samples Received: 10

| Analyses | Quantity | Date Extracted | Date Analyzed | Laboratory Method | Reference |
|---|---|---|---|---|---|
| PFOS and PFOA in water by SPE/LCMS (1) | 5 | 2018/02/22 | 2018/02/24 | CAM SOP-00894 | EPA 537 m |
| PFOS and PFOA in water by SPE/LCMS (1) | 5 | 2018/02/23 | 2018/02/27 | CAM SOP-00894 | EPA 537 m |

**Remarks:**

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

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

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

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested.
This Certificate shall not be reproduced except in full, without the written approval of the laboratory.
Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding ( lt in the apparent difference.
(1) Per- and polyfluoroalkyl substances (PFAS) id n the certificate of analysis represent the extracted internal standard.

Encryption Key Steph Pollen

Please direct all questions regarding this Certific Project Manager.
Stephanie Pollen, Project Manager
Email: SPollen@maxxam.ca
Phone# (905) 817-5700

==========

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

Total Cover Pages : 1

Maxxam Job #: B833226
Report Date: 2018/02/28

Earth Toxics Inc
Client Project #: JM10 CECIL

## RESULTS OF ANALYSES OF WATER

| Maxxam ID | | GBV345 | GBV346 | GBV347 | | | | |
|---|---|---|---|---|---|---|---|---|
| Sampling Date | | 2018/02/08 09:20 | 2018/02/08 09:25 | 2018/02/08 09:30 | | | | |
| COC Number | | 3187 | 3187 | 3187 | | | | |
| | UNITS | EB-CEF-MFS-020818-17 | EB-CEF-MFS-020818-18 | EB-CEF-MFS-020818-19 | DL | LOD | LOQ | QC Batch |
| **Miscellaneous Parameters** | | | | | | | | |
| EtFOSAA | ng/L | 10 U | 10 U | 10 U | 3.3 | 10 | 20 | 5410178 |
| MeFOSAA | ng/L | 10 U | 10 U | 10 U | 2.9 | 10 | 20 | 5410178 |
| Perfluorobutane Sulfonate (PFBS) | ng/L | 15 U | 15 U | 15 U | 5.4 | 15 | 20 | 5410178 |
| Perfluoroheptanoic Acid (PFHpA) | ng/L | 15 U | 15 U | 15 U | 7.4 | 15 | 20 | 5410178 |
| Perfluorohexanoic Acid (PFHxA) | ng/L | 10 U | 10 U | 10 U | 3.5 | 10 | 20 | 5410178 |
| Perfluorohexane Sulfonate (PFHxS) | ng/L | 15 U | 15 U | 15 U | 5.6 | 15 | 20 | 5410178 |
| Perfluorononanoic Acid (PFNA) | ng/L | 18 U | 18 U | 18 U | 8.7 | 18 | 20 | 5410178 |
| Perfluorotetradecanoic Acid | ng/L | 10 U | 10 U | 10 U | 2.7 | 10 | 20 | 5410178 |
| Perfluorotridecanoic Acid | ng/L | 10 U | 10 U | 10 U | 3.8 | 10 | 20 | 5410178 |
| Perfluoroundecanoic Acid (PFUnA) | ng/L | 10 U | 10 U | 10 U | 2.5 | 10 | 20 | 5410178 |
| Perfluorodecanoic Acid (PFDA) | ng/L | 15 U | 15 U | 15 U | 6.1 | 15 | 20 | 5410178 |
| Perfluorododecanoic Acid (PFDoA) | ng/L | 10 U | 10 U | 10 U | 5.0 | 10 | 20 | 5410178 |
| Perfluoro-n-Octanoic Acid (PFOA) | ng/L | 10 U | 10 U | 10 U | 3.3 | 10 | 20 | 5410178 |
| Perfluorooctane Sulfonate (PFOS) | ng/L | 15 U | 21 | 15 U | 6.0 | 15 | 20 | 5410178 |
| **Surrogate Recovery (%)** | | | | | | | | |
| 13C2-Perfluorodecanoic acid | % | 99 | 87 | 91 | | | | 5410178 |
| 13C2-Perfluorododecanoic acid | % | 87 | 79 | 76 | | | | 5410178 |
| 13C2-Perfluorohexanoic acid | % | 105 | 95 | 97 | | | | 5410178 |
| 13C2-perfluorotetradecanoic acid | % | 87 | 74 | 76 | | | | 5410178 |
| 13C2-Perfluoroundecanoic acid | % | 94 | 89 | 82 | | | | 5410178 |
| 13C4-Perfluorobutanoic acid | % | 107 | 89 | 88 | | | | 5410178 |
| 13C4-Perfluoroheptanoic acid | % | 107 | 91 | 95 | | | | 5410178 |
| 13C4-Perfluorooctanesulfonate | % | 108 | 91 | 83 | | | | 5410178 |
| 13C4-Perfluorooctanoic acid | % | 114 | 97 | 92 | | | | 5410178 |
| 13C5-Perfluorononanoic acid | % | 113 | 94 | 88 | | | | 5410178 |
| 18O2-Perfluorohexanesulfonate | % | 103 | 95 | 96 | | | | 5410178 |
| D3-MeFOSAA | % | 90 | 80 | 74 | | | | 5410178 |
| D5-EtFOSAA | % | 91 | 78 | 71 | | | | 5410178 |

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



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Maxxam Analytics

Maxxam Job #: B833226
Report Date: 2018/02/28

Earth Toxics Inc
Client Project #: JM10 CECIL

## RESULTS OF ANALYSES OF WATER

| Maxxam ID | | GBV348 | | | | GBV349 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Sampling Date | | 2018/02/08 09:40 | | | | 2018/02/08 16:30 | | | | |
| COC Number | | 3187 | | | | 3187 | | | | |
| | UNITS | FB-CEF-MFS-020818-12 | DL | LOD | LOQ | CEF-1820-TW02-0218 | DL | LOD | LOQ | QC Batch |
| **Miscellaneous Parameters** | | | | | | | | | | |
| EtFOSAA | ng/L | 10 U | 3.3 | 10 | 20 | 10 U | 3.3 | 10 | 20 | 5410178 |
| MeFOSAA | ng/L | 10 U | 2.9 | 10 | 20 | 10 U | 2.9 | 10 | 20 | 5410178 |
| Perfluorobutane Sulfonate (PFBS) | ng/L | 15 U | 5.4 | 15 | 20 | 31 | 5.4 | 15 | 20 | 5410178 |
| Perfluoroheptanoic Acid (PFHpA) | ng/L | 15 U | 7.4 | 15 | 20 | 80 | 7.4 | 15 | 20 | 5410178 |
| Perfluorohexanoic Acid (PFHxA) | ng/L | 10 U | 3.5 | 10 | 20 | 190 | 3.5 | 10 | 20 | 5410178 |
| Perfluorohexane Sulfonate (PFHxS) | ng/L | 15 U | 5.6 | 15 | 20 | 1200 (1) | 56 | 150 | 200 | 5410178 |
| Perfluorononanoic Acid (PFNA) | ng/L | 18 U | 8.7 | 18 | 20 | 20 J | 8.7 | 18 | 20 | 5410178 |
| Perfluorotetradecanoic Acid | ng/L | 10 U | 2.7 | 10 | 20 | 10 U | 2.7 | 10 | 20 | 5410178 |
| Perfluorotridecanoic Acid | ng/L | 10 U | 3.8 | 10 | 20 | 10 U | 3.8 | 10 | 20 | 5410178 |
| Perfluoroundecanoic Acid (PFUnA) | ng/L | 10 U | 2.5 | 10 | 20 | 10 U | 2.5 | 10 | 20 | 5410178 |
| Perfluorodecanoic Acid (PFDA) | ng/L | 15 U | 6.1 | 15 | 20 | 15 U | 6.1 | 15 | 20 | 5410178 |
| Perfluorododecanoic Acid (PFDoA) | ng/L | 10 U | 5.0 | 10 | 20 | 10 U | 5.0 | 10 | 20 | 5410178 |
| Perfluoro-n-Octanoic Acid (PFOA) | ng/L | 10 U | 3.3 | 10 | 20 | 67 | 3.3 | 10 | 20 | 5410178 |
| Perfluorooctane Sulfonate (PFOS) | ng/L | 15 U | 6.0 | 15 | 20 | 2400 (1) | 60 | 150 | 200 | 5410178 |
| **Surrogate Recovery (%)** | | | | | | | | | | |
| 13C2-Perfluorodecanoic acid | % | 85 | | | | 83 | | | | 5410178 |
| 13C2-Perfluorododecanoic acid | % | 76 | | | | 84 | | | | 5410178 |
| 13C2-Perfluorohexanoic acid | % | 91 | | | | 84 | | | | 5410178 |
| 13C2-perfluorotetradecanoic acid | % | 69 | | | | 83 | | | | 5410178 |
| 13C2-Perfluoroundecanoic acid | % | 84 | | | | 79 | | | | 5410178 |
| 13C4-Perfluorobutanoic acid | % | 84 | | | | 81 | | | | 5410178 |
| 13C4-Perfluoroheptanoic acid | % | 89 | | | | 85 | | | | 5410178 |
| 13C4-Perfluorooctanesulfonate | % | 87 | | | | 73 | | | | 5410178 |
| 13C4-Perfluorooctanoic acid | % | 93 | | | | 89 | | | | 5410178 |
| 13C5-Perfluorononanoic acid | % | 89 | | | | 89 | | | | 5410178 |
| 18O2-Perfluorohexanesulfonate | % | 89 | | | | 83 | | | | 5410178 |
| D3-MeFOSAA | % | 76 | | | | 83 | | | | 5410178 |
| D5-EtFOSAA | % | 76 | | | | 81 | | | | 5410178 |

DL = Detection Limit
LOD = Limit of Detection
LOQ = Limit of Quantitation
QC Batch = Quality Control Batch
N/A = Not Applicable
(1) Due to high concentration of the target analyte, a reduced sample volume was extracted and analyzed. Detection limit was adjusted accordingly (10x).

Maxxam Job #: B833226
Report Date: 2018/02/28

Earth Toxics Inc
Client Project #: JM10 CECIL

## RESULTS OF ANALYSES OF WATER

| Maxxam ID | | GBV350 | | | | GBV351 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Sampling Date | | 2018/02/09 11:25 | | | | 2018/02/09 12:00 | | | | |
| COC Number | | 3187 | | | | 3187 | | | | |
| | UNITS | CEF-S3-TW01-0218 | DL | LOD | LOQ | FB-CEF-S3-020918-13 | DL | LOD | LOQ | QC Batch |
| **Miscellaneous Parameters** | | | | | | | | | | |
| EtFOSAA | ng/L | 100 U | 33 | 100 | 200 | 10 U | 3.3 | 10 | 20 | 5412188 |
| MeFOSAA | ng/L | 100 U | 29 | 100 | 200 | 10 U | 2.9 | 10 | 20 | 5412188 |
| Perfluorobutane Sulfonate (PFBS) | ng/L | 150 U | 54 | 150 | 200 | 15 U | 5.4 | 15 | 20 | 5412188 |
| Perfluoroheptanoic Acid (PFHpA) | ng/L | 150 U | 74 | 150 | 200 | 15 U | 7.4 | 15 | 20 | 5412188 |
| Perfluorohexanoic Acid (PFHxA) | ng/L | 100 U | 35 | 100 | 200 | 10 U | 3.5 | 10 | 20 | 5412188 |
| Perfluorohexane Sulfonate (PFHxS) | ng/L | 150 U | 56 | 150 | 200 | 15 U | 5.6 | 15 | 20 | 5412188 |
| Perfluorononanoic Acid (PFNA) | ng/L | 180 U | 87 | 180 | 200 | 18 U | 8.7 | 18 | 20 | 5412188 |
| Perfluorotetradecanoic Acid | ng/L | 100 U | 27 | 100 | 200 | 10 U | 2.7 | 10 | 20 | 5412188 |
| Perfluorotridecanoic Acid | ng/L | 100 U | 38 | 100 | 200 | 10 U | 3.8 | 10 | 20 | 5412188 |
| Perfluoroundecanoic Acid (PFUnA) | ng/L | 100 U | 25 | 100 | 200 | 10 U | 2.5 | 10 | 20 | 5412188 |
| Perfluorodecanoic Acid (PFDA) | ng/L | 150 U | 61 | 150 | 200 | 15 U | 6.1 | 15 | 20 | 5412188 |
| Perfluorododecanoic Acid (PFDoA) | ng/L | 100 U | 50 | 100 | 200 | 10 U | 5.0 | 10 | 20 | 5412188 |
| Perfluoro-n-Octanoic Acid (PFOA) | ng/L | 100 U | 33 | 100 | 200 | 10 U | 3.3 | 10 | 20 | 5412188 |
| Perfluorooctane Sulfonate (PFOS) | ng/L | 150 U | 60 | 150 | 200 | 15 U | 6.0 | 15 | 20 | 5412188 |
| **Surrogate Recovery (%)** | | | | | | | | | | |
| 13C2-Perfluorodecanoic acid | % | 96 | | | | 111 | | | | 5412188 |
| 13C2-Perfluorododecanoic acid | % | 98 | | | | 98 | | | | 5412188 |
| 13C2-Perfluorohexanoic acid | % | 106 | | | | 116 | | | | 5412188 |
| 13C2-perfluorotetradecanoic acid | % | 74 | | | | 97 | | | | 5412188 |
| 13C2-Perfluoroundecanoic acid | % | 91 | | | | 106 | | | | 5412188 |
| 13C4-Perfluorobutanoic acid | % | 112 | | | | 108 | | | | 5412188 |
| 13C4-Perfluoroheptanoic acid | % | 105 | | | | 112 | | | | 5412188 |
| 13C4-Perfluorooctanesulfonate | % | 108 | | | | 119 | | | | 5412188 |
| 13C4-Perfluorooctanoic acid | % | 106 | | | | 111 | | | | 5412188 |
| 13C5-Perfluorononanoic acid | % | 106 | | | | 116 | | | | 5412188 |
| 18O2-Perfluorohexanesulfonate | % | 104 | | | | 110 | | | | 5412188 |
| D3-MeFOSAA | % | 92 | | | | 94 | | | | 5412188 |
| D5-EtFOSAA | % | 89 | | | | 89 | | | | 5412188 |

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



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

Maxxam Job #: B833226
Report Date: 2018/02/28

Earth Toxics Inc
Client Project #: JM10 CECIL

## RESULTS OF ANALYSES OF WATER

| Maxxam ID | | GBV352 | GBV353 | | | | |
|---|---|---|---|---|---|---|---|
| Sampling Date | | 2018/02/09 11:05 | 2018/02/09 15:38 | | | | |
| COC Number | | 3187 | 3187 | | | | |
| | UNITS | CEF-MFS-TW01-0218 | CEF-MFS-TW02-0218 | DL | LOD | LOQ | QC Batch |
| **Miscellaneous Parameters** | | | | | | | |
| EtFOSAA | ng/L | 10 U | 10 U | 3.3 | 10 | 20 | 5412188 |
| MeFOSAA | ng/L | 10 U | 10 U | 2.9 | 10 | 20 | 5412188 |
| Perfluorobutane Sulfonate (PFBS) | ng/L | 11 J | 15 U | 5.4 | 15 | 20 | 5412188 |
| Perfluoroheptanoic Acid (PFHpA) | ng/L | 330 | 52 | 7.4 | 15 | 20 | 5412188 |
| Perfluorohexanoic Acid (PFHxA) | ng/L | 310 | 64 | 3.5 | 10 | 20 | 5412188 |
| Perfluorohexane Sulfonate (PFHxS) | ng/L | 710 | 8.1 J | 5.6 | 15 | 20 | 5412188 |
| Perfluorononanoic Acid (PFNA) | ng/L | 63 | 18 U | 8.7 | 18 | 20 | 5412188 |
| Perfluorotetradecanoic Acid | ng/L | 10 U | 10 U | 2.7 | 10 | 20 | 5412188 |
| Perfluorotridecanoic Acid | ng/L | 10 U | 10 U | 3.8 | 10 | 20 | 5412188 |
| Perfluoroundecanoic Acid (PFUnA) | ng/L | 10 U | 2.9 J | 2.5 | 10 | 20 | 5412188 |
| Perfluorodecanoic Acid (PFDA) | ng/L | 7.0 J | 15 U | 6.1 | 15 | 20 | 5412188 |
| Perfluorododecanoic Acid (PFDoA) | ng/L | 10 U | 10 U | 5.0 | 10 | 20 | 5412188 |
| Perfluoro-n-Octanoic Acid (PFOA) | ng/L | 210 | 14 J | 3.3 | 10 | 20 | 5412188 |
| Perfluorooctane Sulfonate (PFOS) | ng/L | 810 | 24 | 6.0 | 15 | 20 | 5412188 |
| **Surrogate Recovery (%)** | | | | | | | |
| 13C2-Perfluorodecanoic acid | % | 98 | 103 | | | | 5412188 |
| 13C2-Perfluorododecanoic acid | % | 98 | 95 | | | | 5412188 |
| 13C2-Perfluorohexanoic acid | % | 107 | 112 | | | | 5412188 |
| 13C2-perfluorotetradecanoic acid | % | 84 | 85 | | | | 5412188 |
| 13C2-Perfluoroundecanoic acid | % | 101 | 106 | | | | 5412188 |
| 13C4-Perfluorobutanoic acid | % | 105 | 105 | | | | 5412188 |
| 13C4-Perfluoroheptanoic acid | % | 103 | 111 | | | | 5412188 |
| 13C4-Perfluorooctanesulfonate | % | 112 | 111 | | | | 5412188 |
| 13C4-Perfluorooctanoic acid | % | 106 | 109 | | | | 5412188 |
| 13C5-Perfluorononanoic acid | % | 105 | 109 | | | | 5412188 |
| 18O2-Perfluorohexanesulfonate | % | 104 | 116 | | | | 5412188 |
| D3-MeFOSAA | % | 96 | 92 | | | | 5412188 |
| D5-EtFOSAA | % | 93 | 92 | | | | 5412188 |

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Maxxam Analytics

## RESULTS OF ANALYSES OF WATER

| Maxxam ID | | GBV354 | | | | |
|---|---|---|---|---|---|---|
| Sampling Date | | 2018/02/09 13:50 | | | | |
| COC Number | | 3187 | | | | |
| | UNITS | CEF-S3-TW02-0209 | DL | LOD | LOQ | QC Batch |
| **Miscellaneous Parameters** | | | | | | |
| EtFOSAA | ng/L | 100 U | 33 | 100 | 200 | 5412188 |
| MeFOSAA | ng/L | 100 U | 29 | 100 | 200 | 5412188 |
| Perfluorobutane Sulfonate (PFBS) | ng/L | 150 U | 54 | 150 | 200 | 5412188 |
| Perfluoroheptanoic Acid (PFHpA) | ng/L | 150 U | 74 | 150 | 200 | 5412188 |
| Perfluorohexanoic Acid (PFHxA) | ng/L | 100 U | 35 | 100 | 200 | 5412188 |
| Perfluorohexane Sulfonate (PFHxS) | ng/L | 150 U | 56 | 150 | 200 | 5412188 |
| Perfluorononanoic Acid (PFNA) | ng/L | 180 U | 87 | 180 | 200 | 5412188 |
| Perfluorotetradecanoic Acid | ng/L | 100 U | 27 | 100 | 200 | 5412188 |
| Perfluorotridecanoic Acid | ng/L | 100 U | 38 | 100 | 200 | 5412188 |
| Perfluoroundecanoic Acid (PFUnA) | ng/L | 100 U | 25 | 100 | 200 | 5412188 |
| Perfluorodecanoic Acid (PFDA) | ng/L | 150 U | 61 | 150 | 200 | 5412188 |
| Perfluorododecanoic Acid (PFDoA) | ng/L | 100 U | 50 | 100 | 200 | 5412188 |
| Perfluoro-n-Octanoic Acid (PFOA) | ng/L | 100 U | 33 | 100 | 200 | 5412188 |
| Perfluorooctane Sulfonate (PFOS) | ng/L | 150 U | 60 | 150 | 200 | 5412188 |
| **Surrogate Recovery (%)** | | | | | | |
| 13C2-Perfluorodecanoic acid | % | 90 | | | | 5412188 |
| 13C2-Perfluorododecanoic acid | % | 86 | | | | 5412188 |
| 13C2-Perfluorohexanoic acid | % | 115 | | | | 5412188 |
| 13C2-perfluorotetradecanoic acid | % | 68 | | | | 5412188 |
| 13C2-Perfluoroundecanoic acid | % | 95 | | | | 5412188 |
| 13C4-Perfluorobutanoic acid | % | 106 | | | | 5412188 |
| 13C4-Perfluoroheptanoic acid | % | 107 | | | | 5412188 |
| 13C4-Perfluorooctanesulfonate | % | 106 | | | | 5412188 |
| 13C4-Perfluorooctanoic acid | % | 99 | | | | 5412188 |
| 13C5-Perfluorononanoic acid | % | 102 | | | | 5412188 |
| 18O2-Perfluorohexanesulfonate | % | 101 | | | | 5412188 |
| D3-MeFOSAA | % | 89 | | | | 5412188 |
| D5-EtFOSAA | % | 86 | | | | 5412188 |

DL = Detection Limit
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Maxxam Job #: B833226
Report Date: 2018/02/28

Earth Toxics Inc
Client Project #: JM10 CECIL

## TEST SUMMARY

**Maxxam ID:** GBV345 **Collected:** 2018/02/08
**Sample ID:** EB-CEF-MFS-020818-17 **Shipped:**
**Matrix:** Water **Received:** 2018/02/13

| Test Description | Instrumentation | Batch | Extracted | Date Analyzed | Analyst |
|---|---|---|---|---|---|
| PFOS and PFOA in water by SPE/LCMS | LCMS | 5410178 | 2018/02/22 | 2018/02/24 | Kenneth Chu |

**Maxxam ID:** GBV346 **Collected:** 2018/02/08
**Sample ID:** EB-CEF-MFS-020818-18 **Shipped:**
**Matrix:** Water **Received:** 2018/02/13

| Test Description | Instrumentation | Batch | Extracted | Date Analyzed | Analyst |
|---|---|---|---|---|---|
| PFOS and PFOA in water by SPE/LCMS | LCMS | 5410178 | 2018/02/22 | 2018/02/24 | Kenneth Chu |

**Maxxam ID:** GBV347 **Collected:** 2018/02/08
**Sample ID:** EB-CEF-MFS-020818-19 **Shipped:**
**Matrix:** Water **Received:** 2018/02/13

| Test Description | Instrumentation | Batch | Extracted | Date Analyzed | Analyst |
|---|---|---|---|---|---|
| PFOS and PFOA in water by SPE/LCMS | LCMS | 5410178 | 2018/02/22 | 2018/02/24 | Kenneth Chu |

**Maxxam ID:** GBV348 **Collected:** 2018/02/08
**Sample ID:** FB-CEF-MFS-020818-12 **Shipped:**
**Matrix:** Water **Received:** 2018/02/13

| Test Description | Instrumentation | Batch | Extracted | Date Analyzed | Analyst |
|---|---|---|---|---|---|
| PFOS and PFOA in water by SPE/LCMS | LCMS | 5410178 | 2018/02/22 | 2018/02/24 | Kenneth Chu |

**Maxxam ID:** GBV349 **Collected:** 2018/02/08
**Sample ID:** CEF-1820-TW02-0218 **Shipped:**
**Matrix:** Water **Received:** 2018/02/13

| Test Description | Instrumentation | Batch | Extracted | Date Analyzed | Analyst |
|---|---|---|---|---|---|
| PFOS and PFOA in water by SPE/LCMS | LCMS | 5410178 | 2018/02/22 | 2018/02/24 | Kenneth Chu |

**Maxxam ID:** GBV350 **Collected:** 2018/02/09
**Sample ID:** CEF-S3-TW01-0218 **Shipped:**
**Matrix:** Water **Received:** 2018/02/13

| Test Description | Instrumentation | Batch | Extracted | Date Analyzed | Analyst |
|---|---|---|---|---|---|
| PFOS and PFOA in water by SPE/LCMS | LCMS | 5412188 | 2018/02/23 | 2018/02/27 | Kenneth Chu |

**Maxxam ID:** GBV351 **Collected:** 2018/02/09
**Sample ID:** FB-CEF-S3-020918-13 **Shipped:**
**Matrix:** Water **Received:** 2018/02/13

| Test Description | Instrumentation | Batch | Extracted | Date Analyzed | Analyst |
|---|---|---|---|---|---|
| PFOS and PFOA in water by SPE/LCMS | LCMS | 5412188 | 2018/02/23 | 2018/02/27 | Kenneth Chu |

Maxxam Job #: B833226
Report Date: 2018/02/28

Earth Toxics Inc
Client Project #: JM10 CECIL

## TEST SUMMARY

**Maxxam ID:** GBV352
**Sample ID:** CEF-MFS-TW01-0218
**Matrix:** Water

**Collected:** 2018/02/09
**Shipped:**
**Received:** 2018/02/13

| Test Description | Instrumentation | Batch | Extracted | Date Analyzed | Analyst |
|---|---|---|---|---|---|
| PFOS and PFOA in water by SPE/LCMS | LCMS | 5412188 | 2018/02/23 | 2018/02/27 | Kenneth Chu |

**Maxxam ID:** GBV353
**Sample ID:** CEF-MFS-TW02-0218
**Matrix:** Water

**Collected:** 2018/02/09
**Shipped:**
**Received:** 2018/02/13

| Test Description | Instrumentation | Batch | Extracted | Date Analyzed | Analyst |
|---|---|---|---|---|---|
| PFOS and PFOA in water by SPE/LCMS | LCMS | 5412188 | 2018/02/23 | 2018/02/27 | Kenneth Chu |

**Maxxam ID:** GBV354
**Sample ID:** CEF-S3-TW02-0209
**Matrix:** Water

**Collected:** 2018/02/09
**Shipped:**
**Received:** 2018/02/13

| Test Description | Instrumentation | Batch | Extracted | Date Analyzed | Analyst |
|---|---|---|---|---|---|
| PFOS and PFOA in water by SPE/LCMS | LCMS | 5412188 | 2018/02/23 | 2018/02/27 | Kenneth Chu |

## GENERAL COMMENTS

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

| | |
|---|---|
| Package 1 | 4.2°C |

Results reported in ng/L as per client request.

Sample GBV350 [CEF-S3-TW01-0218] : Due to sample matrix, a reduced sample volume was extracted. Detection limits were adjusted accordingly.

Sample GBV354 [CEF-S3-TW02-0209] : Due to sample matrix, a reduced sample volume was extracted. Detection limits were adjusted accordingly.

**Results relate only to the items tested.**



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## QUALITY ASSURANCE REPORT

| QA/QC Batch | Init | QC Type | Parameter | Date Analyzed | Value | % Recovery | UNITS | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 5410178 | KC1 | Spiked Blank | 13C2-Perfluorodecanoic acid | 2018/02/24 | | 112 | % | 50 - 150 |
| | | | 13C2-Perfluorododecanoic acid | 2018/02/24 | | 93 | % | 50 - 150 |
| | | | 13C2-Perfluorohexanoic acid | 2018/02/24 | | 107 | % | 50 - 150 |
| | | | 13C2-perfluorotetradecanoic acid | 2018/02/24 | | 96 | % | 50 - 150 |
| | | | 13C2-Perfluoroundecanoic acid | 2018/02/24 | | 97 | % | 50 - 150 |
| | | | 13C4-Perfluorobutanoic acid | 2018/02/24 | | 104 | % | 50 - 150 |
| | | | 13C4-Perfluoroheptanoic acid | 2018/02/24 | | 101 | % | 50 - 150 |
| | | | 13C4-Perfluorooctanesulfonate | 2018/02/24 | | 113 | % | 50 - 150 |
| | | | 13C4-Perfluorooctanoic acid | 2018/02/24 | | 109 | % | 50 - 150 |
| | | | 13C5-Perfluorononanoic acid | 2018/02/24 | | 110 | % | 50 - 150 |
| | | | 18O2-Perfluorohexanesulfonate | 2018/02/24 | | 98 | % | 50 - 150 |
| | | | D3-MeFOSAA | 2018/02/24 | | 89 | % | 50 - 150 |
| | | | D5-EtFOSAA | 2018/02/24 | | 90 | % | 50 - 150 |
| | | | EtFOSAA | 2018/02/24 | | 98 | % | 73 - 128 |
| | | | MeFOSAA | 2018/02/24 | | 98 | % | 77 - 127 |
| | | | Perfluorobutane Sulfonate (PFBS) | 2018/02/24 | | 115 | % | 65 - 135 |
| | | | Perfluoroheptanoic Acid (PFHpA) | 2018/02/24 | | 105 | % | 73 - 129 |
| | | | Perfluorohexanoic Acid (PFHxA) | 2018/02/24 | | 102 | % | 74 - 129 |
| | | | Perfluorohexane Sulfonate (PFHxS) | 2018/02/24 | | 114 | % | 67 - 132 |
| | | | Perfluorononanoic Acid (PFNA) | 2018/02/24 | | 103 | % | 72 - 131 |
| | | | Perfluorotetradecanoic Acid | 2018/02/24 | | 102 | % | 70 - 134 |
| | | | Perfluorotridecanoic Acid | 2018/02/24 | | 103 | % | 67 - 143 |
| | | | Perfluoroundecanoic Acid (PFUnA) | 2018/02/24 | | 101 | % | 71 - 133 |
| | | | Perfluorodecanoic Acid (PFDA) | 2018/02/24 | | 97 | % | 71 - 133 |
| | | | Perfluorododecanoic Acid (PFDoA) | 2018/02/24 | | 104 | % | 71 - 131 |
| | | | Perfluoro-n-Octanoic Acid (PFOA) | 2018/02/24 | | 101 | % | 71 - 130 |
| | | | Perfluorooctane Sulfonate (PFOS) | 2018/02/24 | | 93 | % | 72 - 131 |
| 5410178 | KC1 | Spiked Blank DUP | 13C2-Perfluorodecanoic acid | 2018/02/24 | | 91 | % | 50 - 150 |
| | | | 13C2-Perfluorododecanoic acid | 2018/02/24 | | 90 | % | 50 - 150 |
| | | | 13C2-Perfluorohexanoic acid | 2018/02/24 | | 98 | % | 50 - 150 |
| | | | 13C2-perfluorotetradecanoic acid | 2018/02/24 | | 89 | % | 50 - 150 |
| | | | 13C2-Perfluoroundecanoic acid | 2018/02/24 | | 91 | % | 50 - 150 |
| | | | 13C4-Perfluorobutanoic acid | 2018/02/24 | | 94 | % | 50 - 150 |
| | | | 13C4-Perfluoroheptanoic acid | 2018/02/24 | | 95 | % | 50 - 150 |
| | | | 13C4-Perfluorooctanesulfonate | 2018/02/24 | | 95 | % | 50 - 150 |
| | | | 13C4-Perfluorooctanoic acid | 2018/02/24 | | 100 | % | 50 - 150 |
| | | | 13C5-Perfluorononanoic acid | 2018/02/24 | | 101 | % | 50 - 150 |
| | | | 18O2-Perfluorohexanesulfonate | 2018/02/24 | | 93 | % | 50 - 150 |
| | | | D3-MeFOSAA | 2018/02/24 | | 87 | % | 50 - 150 |
| | | | D5-EtFOSAA | 2018/02/24 | | 87 | % | 50 - 150 |
| | | | EtFOSAA | 2018/02/24 | | 97 | % | 73 - 128 |
| | | | MeFOSAA | 2018/02/24 | | 99 | % | 77 - 127 |
| | | | Perfluorobutane Sulfonate (PFBS) | 2018/02/24 | | 111 | % | 65 - 135 |
| | | | Perfluoroheptanoic Acid (PFHpA) | 2018/02/24 | | 102 | % | 73 - 129 |
| | | | Perfluorohexanoic Acid (PFHxA) | 2018/02/24 | | 101 | % | 74 - 129 |
| | | | Perfluorohexane Sulfonate (PFHxS) | 2018/02/24 | | 102 | % | 67 - 132 |
| | | | Perfluorononanoic Acid (PFNA) | 2018/02/24 | | 101 | % | 72 - 131 |
| | | | Perfluorotetradecanoic Acid | 2018/02/24 | | 98 | % | 70 - 134 |
| | | | Perfluorotridecanoic Acid | 2018/02/24 | | 98 | % | 67 - 143 |
| | | | Perfluoroundecanoic Acid (PFUnA) | 2018/02/24 | | 102 | % | 71 - 133 |
| | | | Perfluorodecanoic Acid (PFDA) | 2018/02/24 | | 106 | % | 71 - 133 |
| | | | Perfluorododecanoic Acid (PFDoA) | 2018/02/24 | | 99 | % | 71 - 131 |
| | | | Perfluoro-n-Octanoic Acid (PFOA) | 2018/02/24 | | 96 | % | 71 - 130 |
| | | | Perfluorooctane Sulfonate (PFOS) | 2018/02/24 | | 95 | % | 72 - 131 |
| 5410178 | KC1 | RPD | EtFOSAA | 2018/02/24 | 0.72 | | % | 30 |


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## QUALITY ASSURANCE REPORT(CONT'D)

| QA/QC Batch | Init | QC Type | Parameter | Date Analyzed | Value | % Recovery | UNITS | QC Limits |
|---|---|---|---|---|---|---|---|---|
| | | | MeFOSAA | 2018/02/24 | 1.3 | | % | 30 |
| | | | Perfluorobutane Sulfonate (PFBS) | 2018/02/24 | 3.8 | | % | 30 |
| | | | Perfluoroheptanoic Acid (PFHpA) | 2018/02/24 | 3.5 | | % | 30 |
| | | | Perfluorohexanoic Acid (PFHxA) | 2018/02/24 | 0.74 | | % | 30 |
| | | | Perfluorohexane Sulfonate (PFHxS) | 2018/02/24 | 11 | | % | 30 |
| | | | Perfluorononanoic Acid (PFNA) | 2018/02/24 | 2.8 | | % | 30 |
| | | | Perfluorotetradecanoic Acid | 2018/02/24 | 3.6 | | % | 30 |
| | | | Perfluorotridecanoic Acid | 2018/02/24 | 4.7 | | % | 30 |
| | | | Perfluoroundecanoic Acid (PFUnA) | 2018/02/24 | 1.3 | | % | 30 |
| | | | Perfluorodecanoic Acid (PFDA) | 2018/02/24 | 9.2 | | % | 30 |
| | | | Perfluorododecanoic Acid (PFDoA) | 2018/02/24 | 5.4 | | % | 30 |
| | | | Perfluoro-n-Octanoic Acid (PFOA) | 2018/02/24 | 5.5 | | % | 30 |
| | | | Perfluorooctane Sulfonate (PFOS) | 2018/02/24 | 2.4 | | % | 30 |
| 5410178 | KC1 | Method Blank | 13C2-Perfluorodecanoic acid | 2018/02/24 | | 98 | % | 50 - 150 |
| | | | 13C2-Perfluorododecanoic acid | 2018/02/24 | | 92 | % | 50 - 150 |
| | | | 13C2-Perfluorohexanoic acid | 2018/02/24 | | 103 | % | 50 - 150 |
| | | | 13C2-perfluorotetradecanoic acid | 2018/02/24 | | 85 | % | 50 - 150 |
| | | | 13C2-Perfluoroundecanoic acid | 2018/02/24 | | 93 | % | 50 - 150 |
| | | | 13C4-Perfluorobutanoic acid | 2018/02/24 | | 99 | % | 50 - 150 |
| | | | 13C4-Perfluoroheptanoic acid | 2018/02/24 | | 96 | % | 50 - 150 |
| | | | 13C4-Perfluorooctanesulfonate | 2018/02/24 | | 101 | % | 50 - 150 |
| | | | 13C4-Perfluorooctanoic acid | 2018/02/24 | | 97 | % | 50 - 150 |
| | | | 13C5-Perfluorononanoic acid | 2018/02/24 | | 104 | % | 50 - 150 |
| | | | 18O2-Perfluorohexanesulfonate | 2018/02/24 | | 101 | % | 50 - 150 |
| | | | D3-MeFOSAA | 2018/02/24 | | 86 | % | 50 - 150 |
| | | | D5-EtFOSAA | 2018/02/24 | | 81 | % | 50 - 150 |
| | | | EtFOSAA | 2018/02/24 | 10 U, LOD=10 | | ng/L | |
| | | | MeFOSAA | 2018/02/24 | 10 U, LOD=10 | | ng/L | |
| | | | Perfluorobutane Sulfonate (PFBS) | 2018/02/24 | 15 U, LOD=15 | | ng/L | |
| | | | Perfluoroheptanoic Acid (PFHpA) | 2018/02/24 | 15 U, LOD=15 | | ng/L | |
| | | | Perfluorohexanoic Acid (PFHxA) | 2018/02/24 | 10 U, LOD=10 | | ng/L | |
| | | | Perfluorohexane Sulfonate (PFHxS) | 2018/02/24 | 15 U, LOD=15 | | ng/L | |
| | | | Perfluorononanoic Acid (PFNA) | 2018/02/24 | 18 U, LOD=18 | | ng/L | |
| | | | Perfluorotetradecanoic Acid | 2018/02/24 | 10 U, LOD=10 | | ng/L | |
| | | | Perfluorotridecanoic Acid | 2018/02/24 | 10 U, LOD=10 | | ng/L | |
| | | | Perfluoroundecanoic Acid (PFUnA) | 2018/02/24 | 10 U, LOD=10 | | ng/L | |
| | | | Perfluorodecanoic Acid (PFDA) | 2018/02/24 | 15 U, LOD=15 | | ng/L | |
| | | | Perfluorododecanoic Acid (PFDoA) | 2018/02/24 | 10 U, LOD=10 | | ng/L | |
| | | | Perfluoro-n-Octanoic Acid (PFOA) | 2018/02/24 | 10 U, LOD=10 | | ng/L | |
| | | | Perfluorooctane Sulfonate (PFOS) | 2018/02/24 | 15 U, LOD=15 | | ng/L | |
| 5412188 | KC1 | Spiked Blank | 13C2-Perfluorodecanoic acid | 2018/02/27 | | 105 | % | 50 - 150 |


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## QUALITY ASSURANCE REPORT(CONT'D)

| QA/QC Batch | Init | QC Type | Parameter | Date Analyzed | Value | % Recovery | UNITS | QC Limits |
|---|---|---|---|---|---|---|---|---|
| | | | 13C2-Perfluorododecanoic acid | 2018/02/27 | | 102 | % | 50 - 150 |
| | | | 13C2-Perfluorohexanoic acid | 2018/02/27 | | 110 | % | 50 - 150 |
| | | | 13C2-perfluorotetradecanoic acid | 2018/02/27 | | 91 | % | 50 - 150 |
| | | | 13C2-Perfluoroundecanoic acid | 2018/02/27 | | 108 | % | 50 - 150 |
| | | | 13C4-Perfluorobutanoic acid | 2018/02/27 | | 101 | % | 50 - 150 |
| | | | 13C4-Perfluoroheptanoic acid | 2018/02/27 | | 105 | % | 50 - 150 |
| | | | 13C4-Perfluorooctanesulfonate | 2018/02/27 | | 109 | % | 50 - 150 |
| | | | 13C4-Perfluorooctanoic acid | 2018/02/27 | | 104 | % | 50 - 150 |
| | | | 13C5-Perfluorononanoic acid | 2018/02/27 | | 109 | % | 50 - 150 |
| | | | 18O2-Perfluorohexanesulfonate | 2018/02/27 | | 102 | % | 50 - 150 |
| | | | D3-MeFOSAA | 2018/02/27 | | 92 | % | 50 - 150 |
| | | | D5-EtFOSAA | 2018/02/27 | | 89 | % | 50 - 150 |
| | | | EtFOSAA | 2018/02/27 | | 95 | % | 73 - 128 |
| | | | MeFOSAA | 2018/02/27 | | 94 | % | 77 - 127 |
| | | | Perfluorobutane Sulfonate (PFBS) | 2018/02/27 | | 102 | % | 65 - 135 |
| | | | Perfluoroheptanoic Acid (PFHpA) | 2018/02/27 | | 95 | % | 73 - 129 |
| | | | Perfluorohexanoic Acid (PFHxA) | 2018/02/27 | | 93 | % | 74 - 129 |
| | | | Perfluorohexane Sulfonate (PFHxS) | 2018/02/27 | | 106 | % | 67 - 132 |
| | | | Perfluorononanoic Acid (PFNA) | 2018/02/27 | | 93 | % | 72 - 131 |
| | | | Perfluorotetradecanoic Acid | 2018/02/27 | | 101 | % | 70 - 134 |
| | | | Perfluorotridecanoic Acid | 2018/02/27 | | 103 | % | 67 - 143 |
| | | | Perfluoroundecanoic Acid (PFUnA) | 2018/02/27 | | 97 | % | 71 - 133 |
| | | | Perfluorodecanoic Acid (PFDA) | 2018/02/27 | | 105 | % | 71 - 133 |
| | | | Perfluorododecanoic Acid (PFDoA) | 2018/02/27 | | 94 | % | 71 - 131 |
| | | | Perfluoro-n-Octanoic Acid (PFOA) | 2018/02/27 | | 101 | % | 71 - 130 |
| | | | Perfluorooctane Sulfonate (PFOS) | 2018/02/27 | | 86 | % | 72 - 131 |
| 5412188 | KC1 | Spiked Blank DUP | 13C2-Perfluorodecanoic acid | 2018/02/27 | | 108 | % | 50 - 150 |
| | | | 13C2-Perfluorododecanoic acid | 2018/02/27 | | 105 | % | 50 - 150 |
| | | | 13C2-Perfluorohexanoic acid | 2018/02/27 | | 115 | % | 50 - 150 |
| | | | 13C2-perfluorotetradecanoic acid | 2018/02/27 | | 95 | % | 50 - 150 |
| | | | 13C2-Perfluoroundecanoic acid | 2018/02/27 | | 113 | % | 50 - 150 |
| | | | 13C4-Perfluorobutanoic acid | 2018/02/27 | | 115 | % | 50 - 150 |
| | | | 13C4-Perfluoroheptanoic acid | 2018/02/27 | | 112 | % | 50 - 150 |
| | | | 13C4-Perfluorooctanesulfonate | 2018/02/27 | | 114 | % | 50 - 150 |
| | | | 13C4-Perfluorooctanoic acid | 2018/02/27 | | 107 | % | 50 - 150 |
| | | | 13C5-Perfluorononanoic acid | 2018/02/27 | | 110 | % | 50 - 150 |
| | | | 18O2-Perfluorohexanesulfonate | 2018/02/27 | | 111 | % | 50 - 150 |
| | | | D3-MeFOSAA | 2018/02/27 | | 95 | % | 50 - 150 |
| | | | D5-EtFOSAA | 2018/02/27 | | 92 | % | 50 - 150 |
| | | | EtFOSAA | 2018/02/27 | | 94 | % | 73 - 128 |
| | | | MeFOSAA | 2018/02/27 | | 91 | % | 77 - 127 |
| | | | Perfluorobutane Sulfonate (PFBS) | 2018/02/27 | | 110 | % | 65 - 135 |
| | | | Perfluoroheptanoic Acid (PFHpA) | 2018/02/27 | | 88 | % | 73 - 129 |
| | | | Perfluorohexanoic Acid (PFHxA) | 2018/02/27 | | 91 | % | 74 - 129 |
| | | | Perfluorohexane Sulfonate (PFHxS) | 2018/02/27 | | 100 | % | 67 - 132 |
| | | | Perfluorononanoic Acid (PFNA) | 2018/02/27 | | 92 | % | 72 - 131 |
| | | | Perfluorotetradecanoic Acid | 2018/02/27 | | 98 | % | 70 - 134 |
| | | | Perfluorotridecanoic Acid | 2018/02/27 | | 102 | % | 67 - 143 |
| | | | Perfluoroundecanoic Acid (PFUnA) | 2018/02/27 | | 94 | % | 71 - 133 |
| | | | Perfluorodecanoic Acid (PFDA) | 2018/02/27 | | 98 | % | 71 - 133 |
| | | | Perfluorododecanoic Acid (PFDoA) | 2018/02/27 | | 97 | % | 71 - 131 |
| | | | Perfluoro-n-Octanoic Acid (PFOA) | 2018/02/27 | | 100 | % | 71 - 130 |
| | | | Perfluorooctane Sulfonate (PFOS) | 2018/02/27 | | 89 | % | 72 - 131 |
| 5412188 | KC1 | RPD | EtFOSAA | 2018/02/27 | 1.1 | | % | 30 |
| | | | MeFOSAA | 2018/02/27 | 2.8 | | % | 30 |


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## QUALITY ASSURANCE REPORT(CONT'D)

| QA/QC Batch | Init | QC Type | Parameter | Date Analyzed | Value | % Recovery | UNITS | QC Limits |
|---|---|---|---|---|---|---|---|---|
| | | | Perfluorobutane Sulfonate (PFBS) | 2018/02/27 | 7.4 | | % | 30 |
| | | | Perfluoroheptanoic Acid (PFHpA) | 2018/02/27 | 7.8 | | % | 30 |
| | | | Perfluorohexanoic Acid (PFHxA) | 2018/02/27 | 1.6 | | % | 30 |
| | | | Perfluorohexane Sulfonate (PFHxS) | 2018/02/27 | 6.2 | | % | 30 |
| | | | Perfluorononanoic Acid (PFNA) | 2018/02/27 | 0.95 | | % | 30 |
| | | | Perfluorotetradecanoic Acid | 2018/02/27 | 3.0 | | % | 30 |
| | | | Perfluorotridecanoic Acid | 2018/02/27 | 0.53 | | % | 30 |
| | | | Perfluoroundecanoic Acid (PFUnA) | 2018/02/27 | 3.1 | | % | 30 |
| | | | Perfluorodecanoic Acid (PFDA) | 2018/02/27 | 6.3 | | % | 30 |
| | | | Perfluorododecanoic Acid (PFDoA) | 2018/02/27 | 2.8 | | % | 30 |
| | | | Perfluoro-n-Octanoic Acid (PFOA) | 2018/02/27 | 0.64 | | % | 30 |
| | | | Perfluorooctane Sulfonate (PFOS) | 2018/02/27 | 2.6 | | % | 30 |
| 5412188 | KC1 | Method Blank | 13C2-Perfluorodecanoic acid | 2018/02/27 | | 108 | % | 50 - 150 |
| | | | 13C2-Perfluorododecanoic acid | 2018/02/27 | | 104 | % | 50 - 150 |
| | | | 13C2-Perfluorohexanoic acid | 2018/02/27 | | 110 | % | 50 - 150 |
| | | | 13C2-perfluorotetradecanoic acid | 2018/02/27 | | 98 | % | 50 - 150 |
| | | | 13C2-Perfluoroundecanoic acid | 2018/02/27 | | 108 | % | 50 - 150 |
| | | | 13C4-Perfluorobutanoic acid | 2018/02/27 | | 106 | % | 50 - 150 |
| | | | 13C4-Perfluoroheptanoic acid | 2018/02/27 | | 107 | % | 50 - 150 |
| | | | 13C4-Perfluorooctanesulfonate | 2018/02/27 | | 97 | % | 50 - 150 |
| | | | 13C4-Perfluorooctanoic acid | 2018/02/27 | | 104 | % | 50 - 150 |
| | | | 13C5-Perfluorononanoic acid | 2018/02/27 | | 106 | % | 50 - 150 |
| | | | 18O2-Perfluorohexanesulfonate | 2018/02/27 | | 108 | % | 50 - 150 |
| | | | D3-MeFOSAA | 2018/02/27 | | 89 | % | 50 - 150 |
| | | | D5-EtFOSAA | 2018/02/27 | | 93 | % | 50 - 150 |
| | | | EtFOSAA | 2018/02/27 | 10 U, LOD=10 | | ng/L | |
| | | | MeFOSAA | 2018/02/27 | 10 U, LOD=10 | | ng/L | |
| | | | Perfluorobutane Sulfonate (PFBS) | 2018/02/27 | 15 U, LOD=15 | | ng/L | |
| | | | Perfluoroheptanoic Acid (PFHpA) | 2018/02/27 | 15 U, LOD=15 | | ng/L | |
| | | | Perfluorohexanoic Acid (PFHxA) | 2018/02/27 | 10 U, LOD=10 | | ng/L | |
| | | | Perfluorohexane Sulfonate (PFHxS) | 2018/02/27 | 15 U, LOD=15 | | ng/L | |
| | | | Perfluorononanoic Acid (PFNA) | 2018/02/27 | 18 U, LOD=18 | | ng/L | |
| | | | Perfluorotetradecanoic Acid | 2018/02/27 | 10 U, LOD=10 | | ng/L | |
| | | | Perfluorotridecanoic Acid | 2018/02/27 | 10 U, LOD=10 | | ng/L | |
| | | | Perfluoroundecanoic Acid (PFUnA) | 2018/02/27 | 10 U, LOD=10 | | ng/L | |
| | | | Perfluorodecanoic Acid (PFDA) | 2018/02/27 | 15 U, LOD=15 | | ng/L | |
| | | | Perfluorododecanoic Acid (PFDoA) | 2018/02/27 | 10 U, LOD=10 | | ng/L | |
| | | | Perfluoro-n-Octanoic Acid (PFOA) | 2018/02/27 | 10 U, LOD=10 | | ng/L | |


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## QUALITY ASSURANCE REPORT(CONT'D)

| QA/QC Batch | Init | QC Type | Parameter | Date Analyzed | Value | % Recovery | UNITS | QC Limits |
|---|---|---|---|---|---|---|---|---|
| | | | Perfluorooctane Sulfonate (PFOS) | 2018/02/27 | 15 U, LOD=15 | | ng/L | |

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

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

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

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


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Maxxam Job #: B833226
Report Date: 2018/02/28

Earth Toxics Inc
Client Project #: JM10 CECIL

## VALIDATION SIGNATURE PAGE

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

Adam Robinson, Supervisor, LC/MS/MS

Sin Chii Chia, Scientific Services

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

# METHOD 537 Modified

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

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



# 3.2 Sample Chromatograms

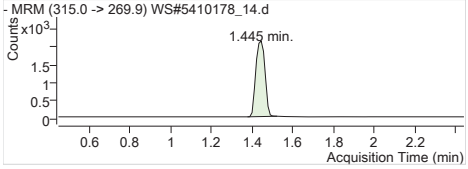
Maxxam Analytics International
6740 Campobello Rd
Mississauga, Ontario, Canada
L5N 2L8
1-800-668-0639
www.maxxamanalytics.com

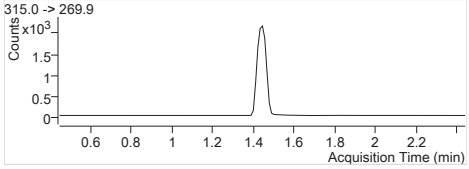
| | |
|---|---|
| **Batch Path** | T:\lcms4\PFC\20180223\WS#5410178\QuantResults\PFC_Water_Low_180223_WS#5410178_EToxics |

| | | | |
|---|---|---|---|
| **Sample Name** | **5410178:GBV345-01** | **Instrument** | LCMS04 |
| **Data File** | WS#5410178_14.d | **Operator** | |
| **Sample Type** | Sample | **Dilution** | 0.024 |
| **Acq. Method** | PFC_Water_Low.m | **Position** | P1-B4 |
| **Acq. Date** | 2018/02/23 5:38:43 PM | **Injection Volume** | Per Method |
| **Sample Annotation** | - | | |

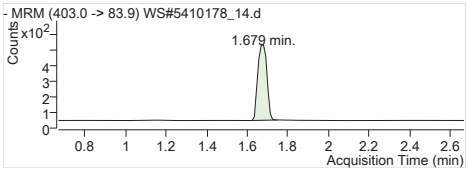
| ISTD Compounds | Response | RT | Target conc. | | |
|---|---|---|---|---|---|
| MPFHxA | 6650 | 1.44 | 1 µg/L | | |
| MPFHxS | 1509 | 1.68 | 1 µg/L | | |
| MPFHpA | 8477 | 1.70 | 1 µg/L | | |
| MPFOA | 8885 | 1.88 | 1 µg/L | | |
| MPFOS | 1855 | 1.97 | 1 µg/L | | |
| MPFNA | 8630 | 2.02 | 1 µg/L | | |
| MPFDA | 6589 | 2.14 | 1 µg/L | | |
| MPFUnA | 7984 | 2.23 | 1 µg/L | | |
| MPFDoA | 9417 | 2.32 | 1 µg/L | | |
| MPFTeDA | 9795 | 2.47 | 1 µg/L | | |
| 13C6-PFHxA IS | 21332 | 1.44 | 1 µg/L | | |
| 13C9-PFDA IS | 27416 | 2.13 | 1 µg/L | | |

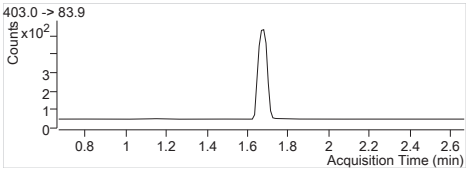
| Compound | Response | RT | Target Conc. | Calc. Conc. | Accuracy |
|---|---|---|---|---|---|
| PFBS 1 | | | - | ND | - |
| PFHxA 1 | | | - | ND | - |
| PFHxS 1 | | | - | ND | - |
| PFHpA 1 | | | - | ND | - |
| PFOA 1 | | | - | ND | - |
| PFOS 1 | | | - | ND | - |
| PFNA 1 | | | - | ND | - |
| PFDA 1 | | | - | ND | - |
| PFUnA 1 | | | - | ND | - |
| PFDoA 1 | | | - | ND | - |
| PFTrDA 1 | | | - | ND | - |
| PFTeDA 1 | | | - | ND | - |
| 13C2-PFHxA | 6650 | 1.44 | - | 105.38 µg/L | - |
| 18O2-PFHxS | 1509 | 1.68 | - | 102.56 µg/L | - |
| 13C4-PFHpA | 8477 | 1.70 | - | 107.28 µg/L | - |
| 13C4-PFOA | 8885 | 1.88 | - | 113.57 µg/L | - |
| 13C4-PFOS | 1855 | 1.97 | - | 108.26 µg/L | - |
| 13C5-PFNA | 8630 | 2.02 | - | 113.46 µg/L | - |
| 13C2-PFDA | 6550 | 2.14 | - | 99.13 µg/L | - |
| 13C2-PFUnA | 7984 | 2.23 | - | 93.52 µg/L | - |
| 13C2-PFDoA | 9417 | 2.32 | - | 87.01 µg/L | - |
| 13C2-PFTeDA | 9980 | 2.47 | - | 87.39 µg/L | - |
| 13C6-PFHxA | 21332 | 1.44 | - | 2.27 µg/L | - |
| 13C9-PFDA | 27416 | 2.13 | - | 2.42 µg/L | - |



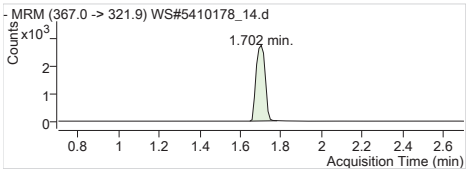



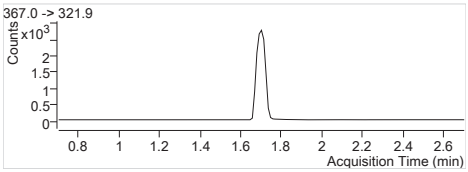

| | |
|---|---|
| **MPFHxA** | Internal Standard |
| RT (Exp. RT): | 1.445 (1.445) |
| Concentration: | 1 µg/L |
| Sample type: | Sample |



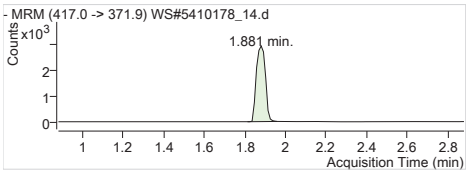



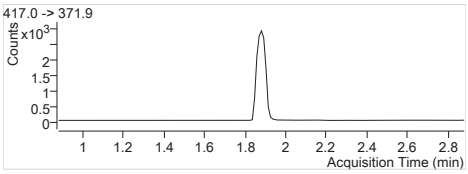

**MPFHxS** Internal Standard
RT (Exp. RT): 1.679 (1.668)
Concentration: 1 µg/L
Sample type: Sample



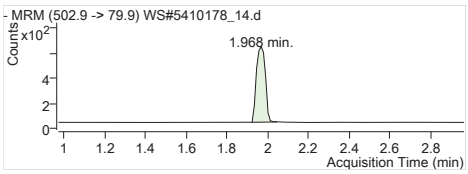



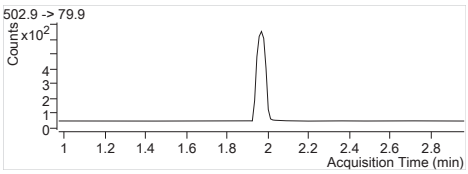

**MPFHpA** Internal Standard
RT (Exp. RT): 1.702 (1.702)
Concentration: 1 µg/L
Sample type: Sample



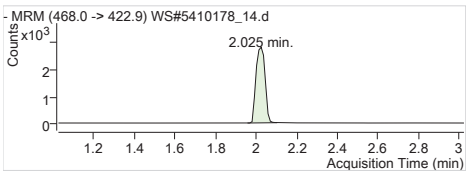



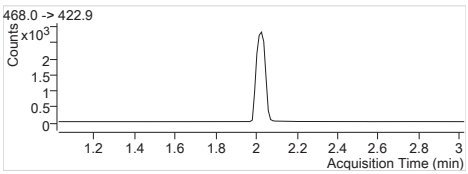

**MPFOA** Internal Standard
RT (Exp. RT): 1.881 (1.881)
Concentration: 1 µg/L
Sample type: Sample



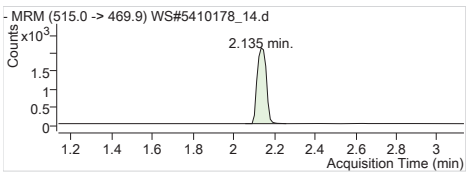



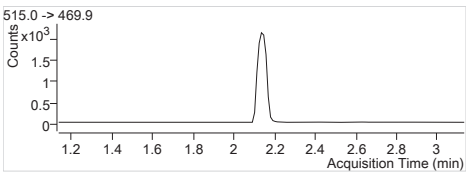

**MPFOS** Internal Standard
RT (Exp. RT): 1.968 (1.968)
Concentration: 1 µg/L
Sample type: Sample



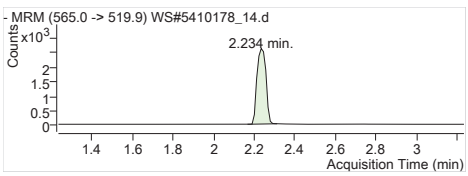



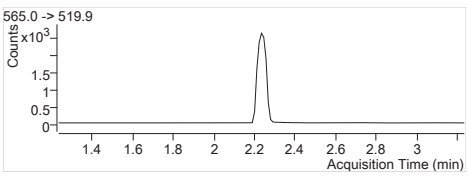

**MPFNA** Internal Standard
RT (Exp. RT): 2.025 (2.025)
Concentration: 1 µg/L
Sample type: Sample



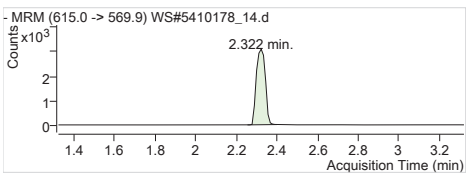



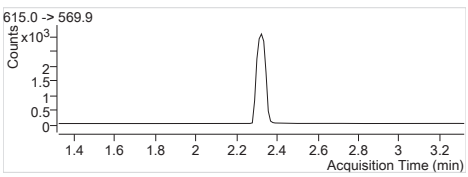

**MPFDA** Internal Standard
RT (Exp. RT): 2.135 (2.135)
Concentration: 1 µg/L
Sample type: Sample



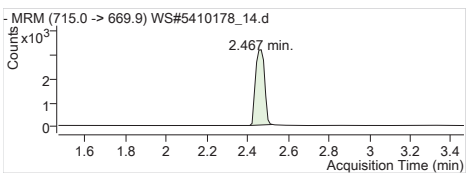



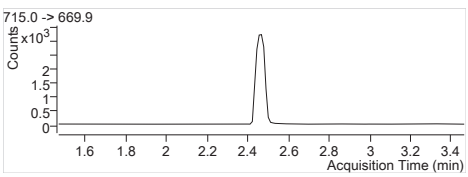

**MPFUnA** Internal Standard
RT (Exp. RT): 2.234 (2.234)
Concentration: 1 µg/L
Sample type: Sample



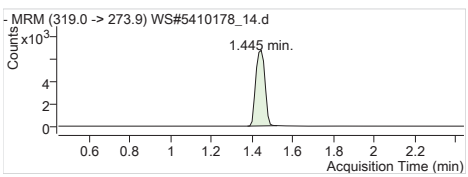



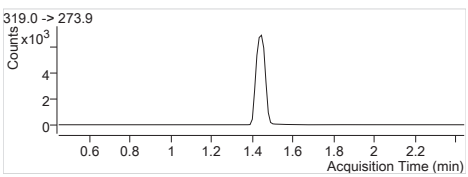

**MPFDoA** Internal Standard
RT (Exp. RT): 2.322 (2.322)
Concentration: 1 µg/L
Sample type: Sample



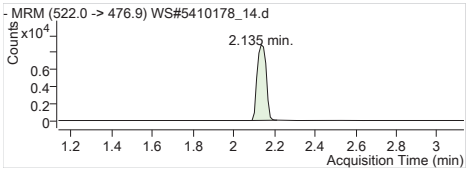



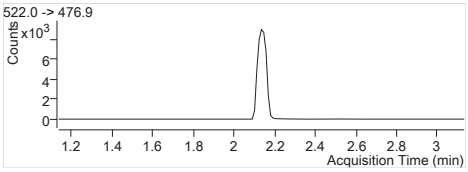

**MPFTeDA** Internal Standard
RT (Exp. RT): 2.467 (2.467)
Concentration: 1 µg/L
Sample type: Sample



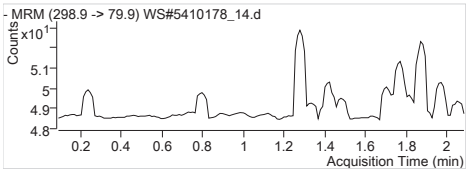



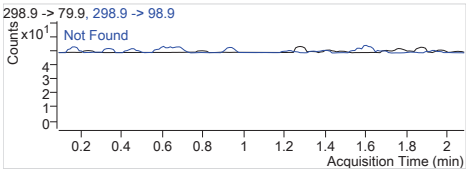

**13C6-PFHxA IS** Internal Standard
RT (Exp. RT): 1.445 (1.445)
Concentration: 1 µg/L
Sample type: Sample



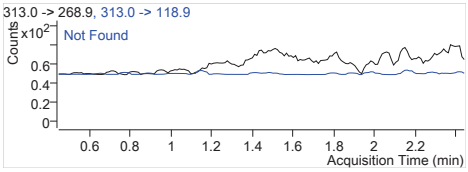

**13C9-PFDA IS** Internal Standard
RT (Exp. RT): 2.135 (2.135)
Concentration: 1 µg/L
Sample type: Sample



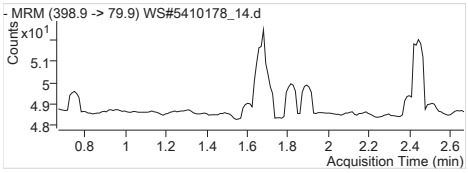



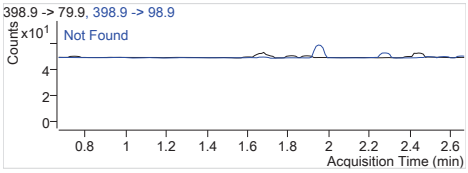

**PFBS 1** 298.9 -> 79.9
RT (Exp. RT): 0.000 (1.087)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



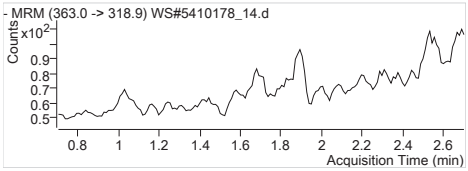



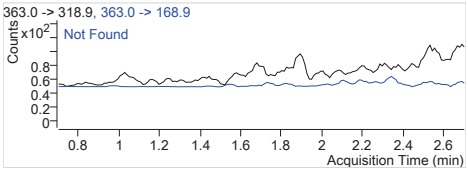

**PFHxA 1** 313.0 -> 268.9
RT (Exp. RT): 0.000 (1.445)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



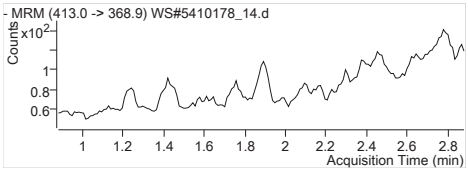



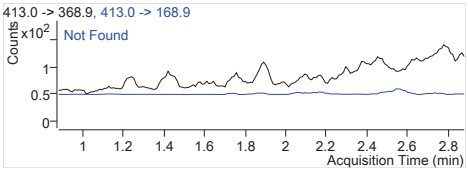

**PFHxS 1** 398.9 -> 79.9
RT (Exp. RT): 0.000 (1.668)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



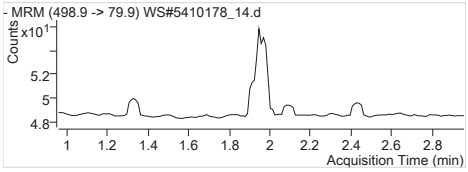



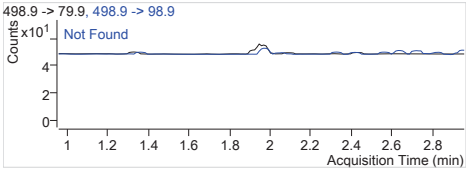

**PFHpA 1** 363.0 -> 318.9
RT (Exp. RT): 0.000 (1.702)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



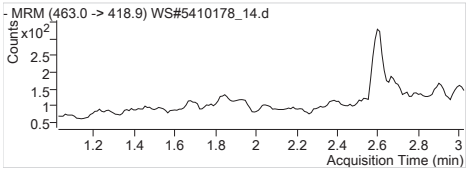



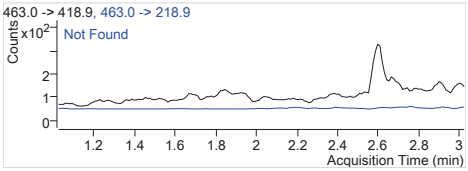

**PFOA 1** 413.0 -> 368.9
RT (Exp. RT): 0.000 (1.881)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



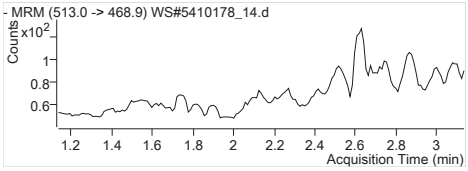



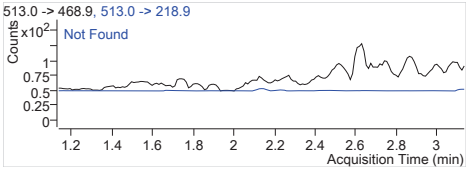

**PFOS 1** 498.9 -> 79.9
RT (Exp. RT): 0.000 (1.957)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



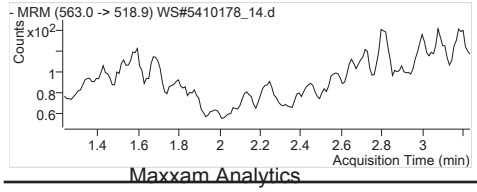



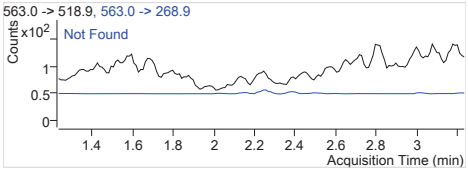

**PFNA 1** 463.0 -> 418.9
RT (Exp. RT): 0.000 (2.025)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



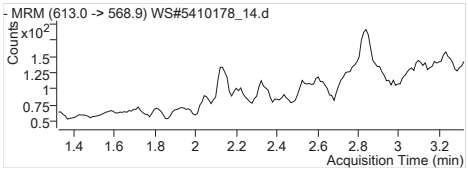



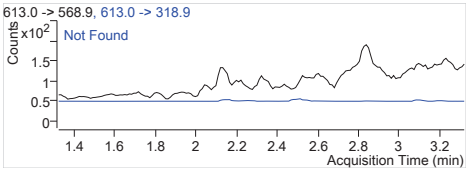

**PFDA 1** 513.0 -> 468.9
RT (Exp. RT): 0.000 (2.135)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



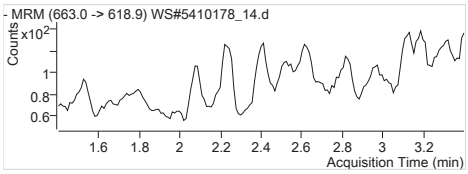



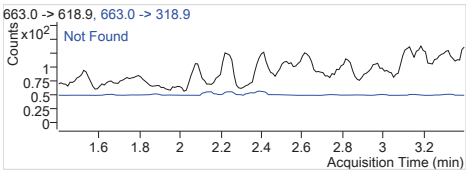

**PFUnA 1** 563.0 -> 518.9
RT (Exp. RT): 0.000 (2.234)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



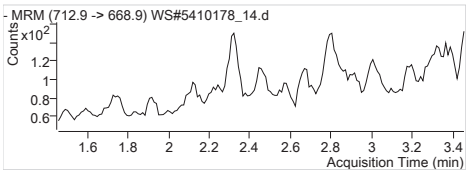



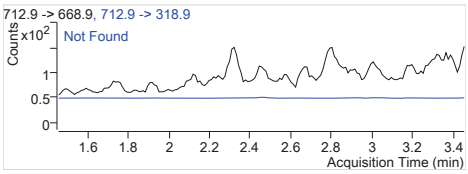

**PFDoA 1** 613.0 -> 568.9
RT (Exp. RT): 0.000 (2.323)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



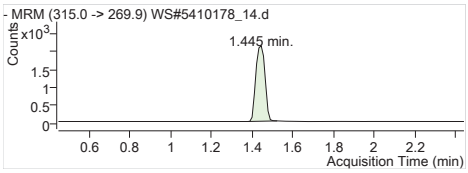



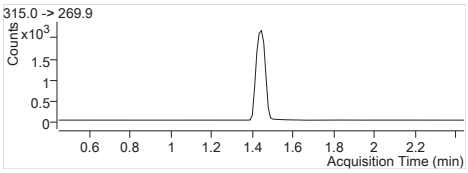

**PFTrDA 1** 663.0 -> 618.9
RT (Exp. RT): 0.000 (2.400)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



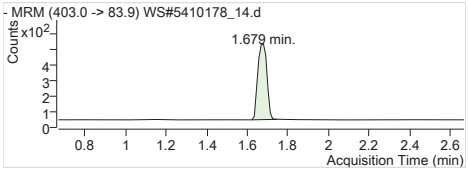



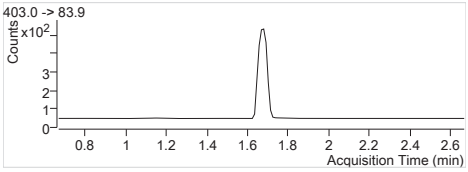

**PFTeDA 1** 712.9 -> 668.9
RT (Exp. RT): 0.000 (2.456)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



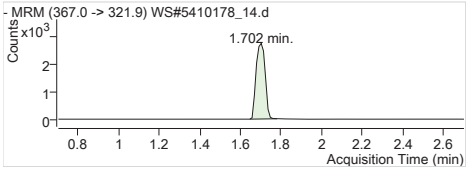



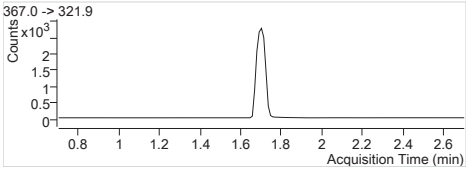

**13C2-PFHxA** 315.0 -> 269.9
RT (Exp. RT): 1.445 (1.445)
Calc. conc. 105.38 µg/L
Area ratio: 0.31174
Sample type: Sample



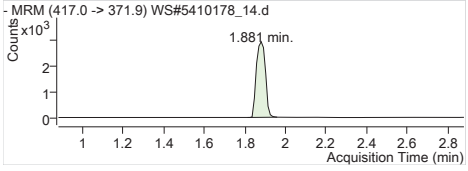



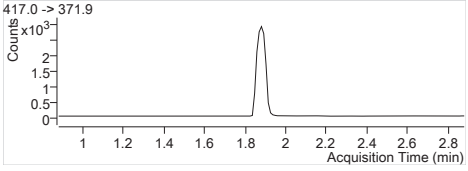

**18O2-PFHxS** 403.0 -> 83.9
RT (Exp. RT): 1.679 (1.668)
Calc. conc. 102.56 µg/L
Area ratio: 0.07074
Sample type: Sample



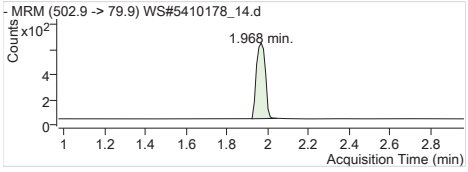



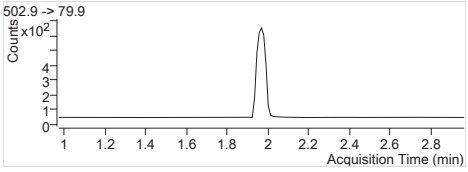

**13C4-PFHpA** 367.0 -> 321.9
RT (Exp. RT): 1.702 (1.702)
Calc. conc. 107.28 µg/L
Area ratio: 0.39738
Sample type: Sample



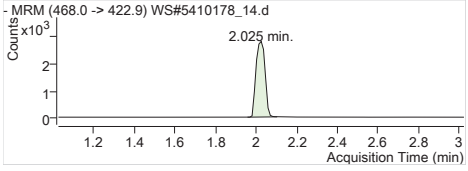



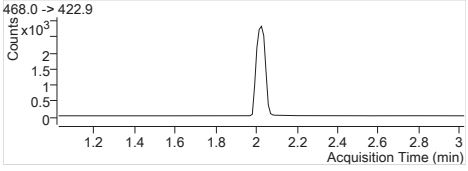

**13C4-PFOA** 417.0 -> 371.9
RT (Exp. RT): 1.881 (1.881)
Calc. conc. 113.57 µg/L
Area ratio: 0.41651
Sample type: Sample



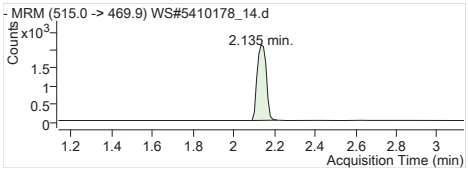



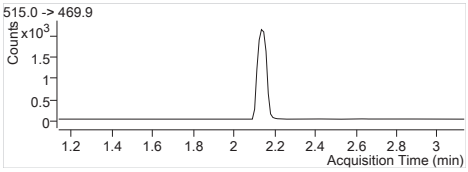

**13C4-PFOS** 502.9 -> 79.9
RT (Exp. RT): 1.968 (1.968)
Calc. conc. 108.26 µg/L
Area ratio: 0.08696
Sample type: Sample



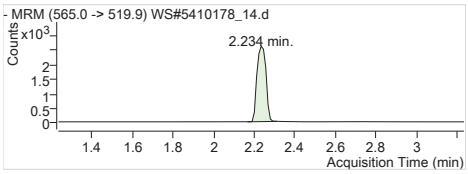



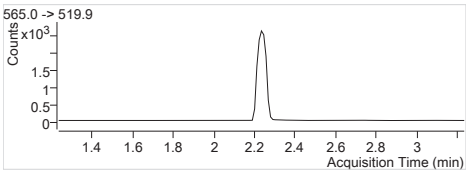

**13C5-PFNA** 468.0 -> 422.9
RT (Exp. RT): 2.025 (2.025)
Calc. conc. 113.46 µg/L
Area ratio: 0.40456
Sample type: Sample



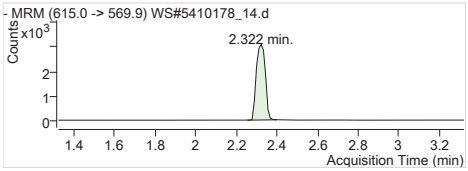



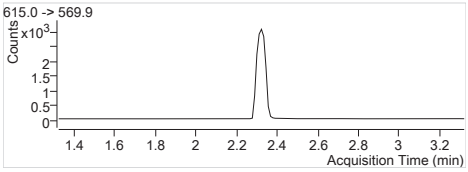

**13C2-PFDA** 515.0 -> 469.9
RT (Exp. RT): 2.135 (2.135)
Calc. conc. 99.13 µg/L
Area ratio: 0.23891
Sample type: Sample



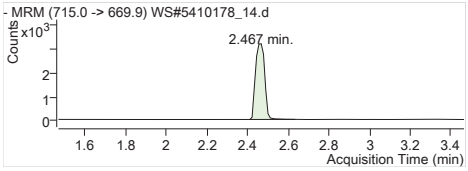



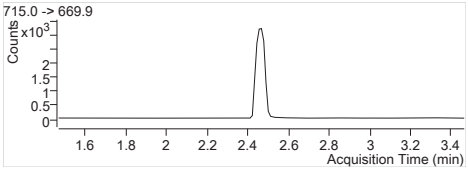

**13C2-PFUnA** 565.0 -> 519.9
RT (Exp. RT): 2.234 (2.234)
Calc. conc. 93.52 µg/L
Area ratio: 0.29122
Sample type: Sample



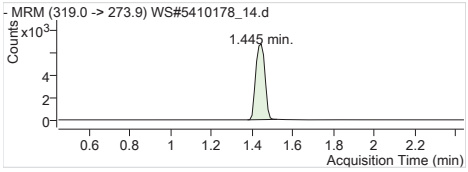



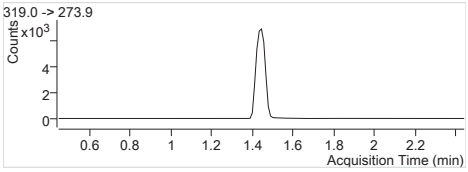

**13C2-PFDoA** 615.0 -> 569.9
RT (Exp. RT): 2.322 (2.322)
Calc. conc. 87.01 µg/L
Area ratio: 0.34349
Sample type: Sample



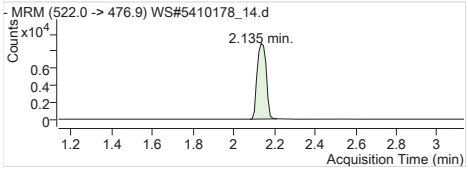



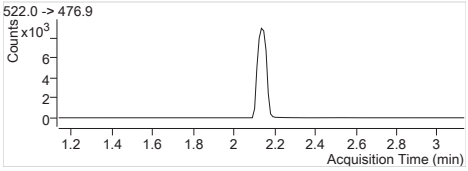

**13C2-PFTeDA** 715.0 -> 669.9
RT (Exp. RT): 2.467 (2.467)
Calc. conc. 87.39 µg/L
Area ratio: 0.36402
Sample type: Sample




**13C6-PFHxA** 319.0 -> 273.9
RT (Exp. RT): 1.445 (1.445)
Calc. conc. 2.27 µg/L
Area ratio: 0
Sample type: Sample



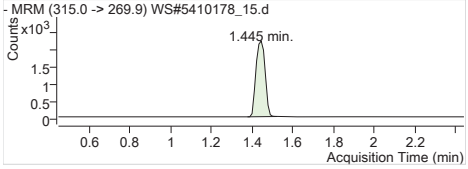

**13C9-PFDA** 522.0 -> 476.9
RT (Exp. RT): 2.135 (2.135)
Calc. conc. 2.42 µg/L
Area ratio: 0
Sample type: Sample

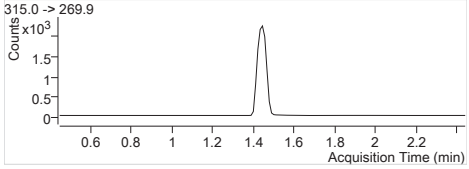
**Batch Path** T:\lcms4\PFC\20180223\WS#5410178\QuantResults\PFC_Water_Low_180223_WS#5410178_EToxics

| | | | |
|---|---|---|---|
| **Sample Name** | **5410178:GBV346-01** | **Instrument** | LCMS04 |
| **Data File** | WS#5410178_15.d | **Operator** | |
| **Sample Type** | Sample | **Dilution** | 0.024 |
| **Acq. Method** | PFC_Water_Low.m | **Position** | P1-B5 |
| **Acq. Date** | 2018/02/23 5:43:39 PM | **Injection Volume** | Per Method |
| **Sample Annotation** | - | | |

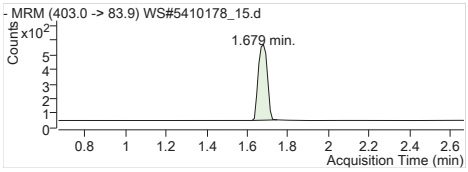
| ISTD Compounds | Response | RT | Target conc. | | |
|---|---|---|---|---|---|
| MPFHxA | 6958 | 1.44 | 1 µg/L | | |
| MPFHxS | 1612 | 1.68 | 1 µg/L | | |
| MPFHpA | 8345 | 1.70 | 1 µg/L | | |
| MPFOA | 8813 | 1.88 | 1 µg/L | | |
| MPFOS | 1804 | 1.97 | 1 µg/L | | |
| MPFNA | 8327 | 2.02 | 1 µg/L | | |
| MPFDA | 6329 | 2.14 | 1 µg/L | | |
| MPFUnA | 8308 | 2.23 | 1 µg/L | | |
| MPFDoA | 9308 | 2.32 | 1 µg/L | | |
| MPFTeDA | 9154 | 2.46 | 1 µg/L | | |
| 13C6-PFHxA IS | 24667 | 1.44 | 1 µg/L | | |
| 13C9-PFDA IS | 29817 | 2.13 | 1 µg/L | | |

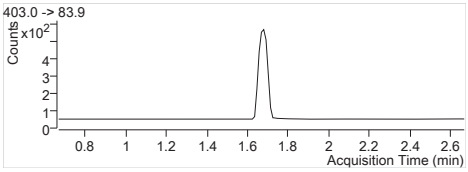
| Compound | Response | RT | Target Conc. | Calc. Conc. | Accuracy |
|---|---|---|---|---|---|
| PFBS 1 | | | - | ND | - |
| PFHxA 1 | | | - | ND | - |
| PFHxS 1 | | | - | ND | - |
| PFHpA 1 | | | - | ND | - |
| PFOA 1 | | | - | ND | - |
| PFOS 1 | 474 | 1.96 | - | 0.02 µg/L | - |
| PFNA 1 | | | - | ND | - |
| PFDA 1 | | | - | ND | - |
| PFUnA 1 | | | - | ND | - |
| PFDoA 1 | | | - | ND | - |
| PFTrDA 1 | | | - | ND | - |
| PFTeDA 1 | | | - | ND | - |
| 13C2-PFHxA | 6958 | 1.44 | - | 95.35 µg/L | - |
| 18O2-PFHxS | 1612 | 1.68 | - | 94.74 µg/L | - |
| 13C4-PFHpA | 8345 | 1.70 | - | 91.33 µg/L | - |
| 13C4-PFOA | 8813 | 1.88 | - | 97.42 µg/L | - |
| 13C4-PFOS | 1804 | 1.97 | - | 91.05 µg/L | - |
| 13C5-PFNA | 8296 | 2.02 | - | 94.32 µg/L | - |
| 13C2-PFDA | 6244 | 2.14 | - | 86.89 µg/L | - |
| 13C2-PFUnA | 8308 | 2.23 | - | 89.48 µg/L | - |
| 13C2-PFDoA | 9308 | 2.32 | - | 79.08 µg/L | - |
| 13C2-PFTeDA | 9235 | 2.46 | - | 74.35 µg/L | - |
| 13C6-PFHxA | 24667 | 1.44 | - | 2.62 µg/L | - |
| 13C9-PFDA | 29817 | 2.13 | - | 2.64 µg/L | - |



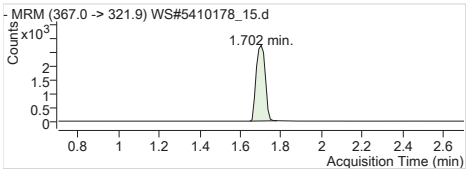



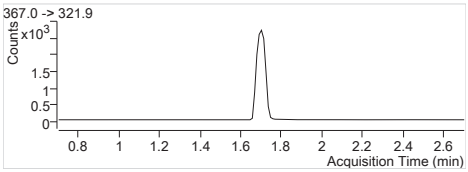

| | |
|---|---|
| **MPFHxA** | Internal Standard |
| RT (Exp. RT): | 1.445 (1.445) |
| Concentration: | 1 µg/L |
| Sample type: | Sample |



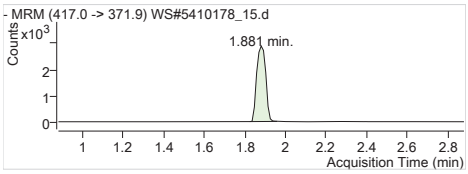



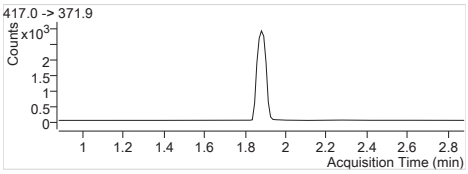

**MPFHxS** Internal Standard
RT (Exp. RT): 1.679 (1.668)
Concentration: 1 µg/L
Sample type: Sample



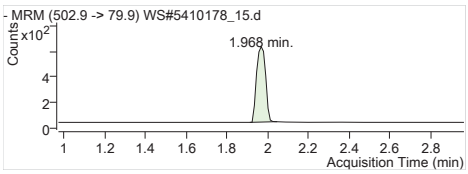



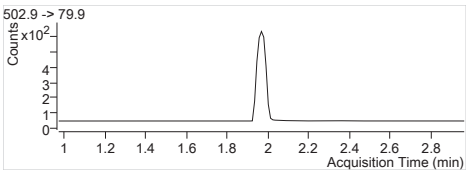

**MPFHpA** Internal Standard
RT (Exp. RT): 1.702 (1.702)
Concentration: 1 µg/L
Sample type: Sample



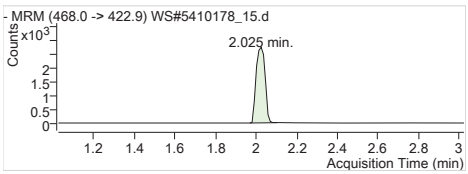



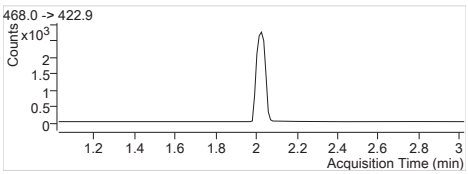

**MPFOA** Internal Standard
RT (Exp. RT): 1.881 (1.881)
Concentration: 1 µg/L
Sample type: Sample



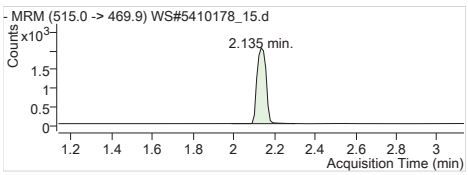



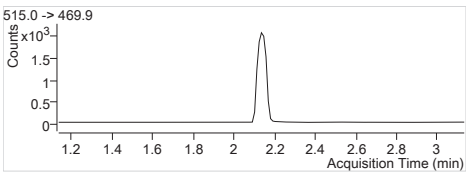

**MPFOS** Internal Standard
RT (Exp. RT): 1.968 (1.968)
Concentration: 1 µg/L
Sample type: Sample



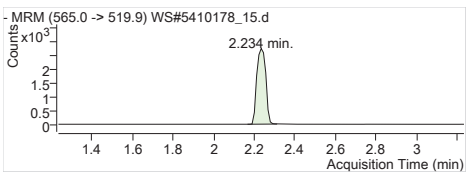



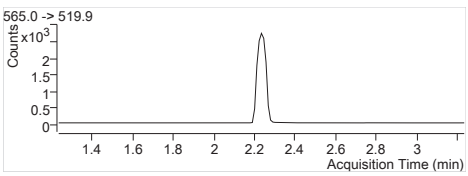

**MPFNA** Internal Standard
RT (Exp. RT): 2.025 (2.025)
Concentration: 1 µg/L
Sample type: Sample



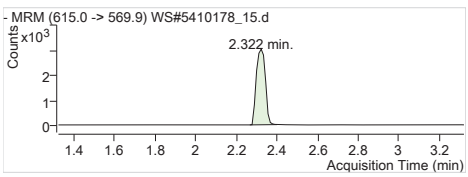



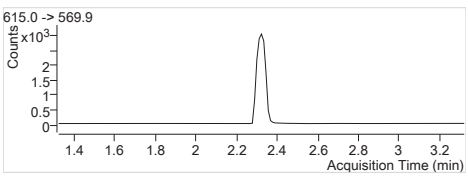

**MPFDA** Internal Standard
RT (Exp. RT): 2.135 (2.135)
Concentration: 1 µg/L
Sample type: Sample



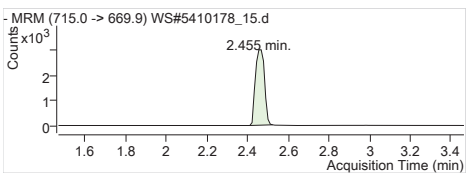



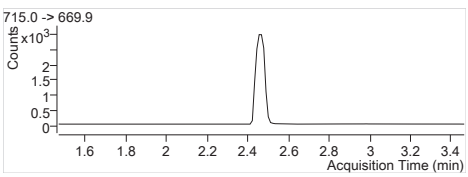

**MPFUnA** Internal Standard
RT (Exp. RT): 2.234 (2.234)
Concentration: 1 µg/L
Sample type: Sample



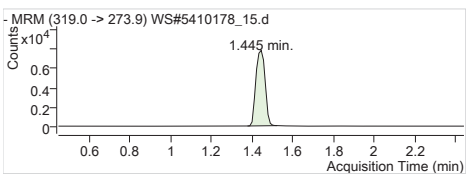



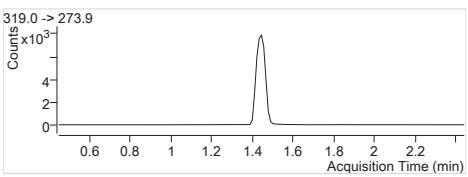

**MPFDoA** Internal Standard
RT (Exp. RT): 2.322 (2.322)
Concentration: 1 µg/L
Sample type: Sample



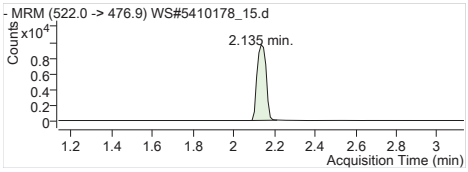



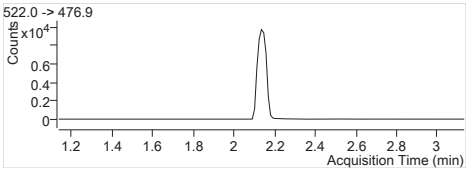

**MPFTeDA** Internal Standard
RT (Exp. RT): 2.455 (2.467)
Concentration: 1 µg/L
Sample type: Sample



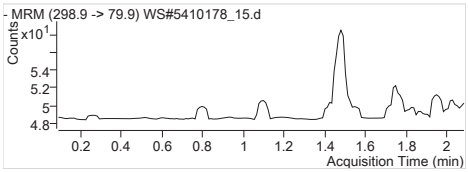



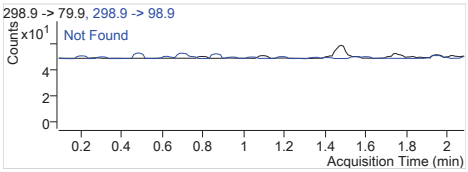

**13C6-PFHxA IS** Internal Standard
RT (Exp. RT): 1.445 (1.445)
Concentration: 1 µg/L
Sample type: Sample



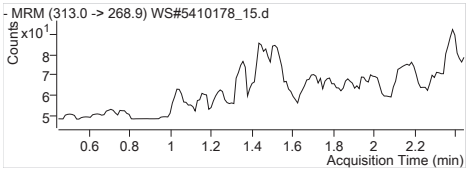



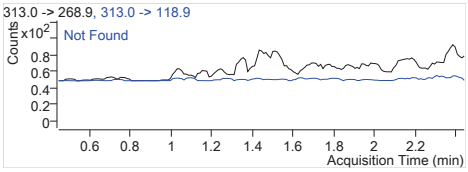

**13C9-PFDA IS** Internal Standard
RT (Exp. RT): 2.135 (2.135)
Concentration: 1 µg/L
Sample type: Sample



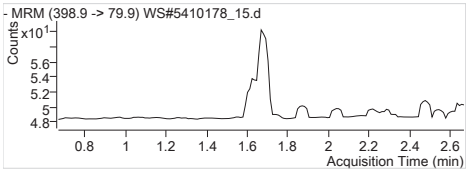



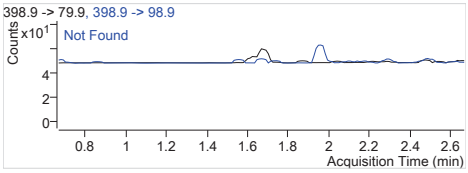

**PFBS 1** 298.9 -> 79.9
RT (Exp. RT): 0.000 (1.087)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



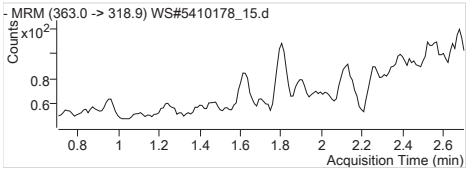



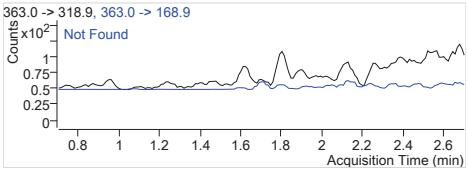

**PFHxA 1** 313.0 -> 268.9
RT (Exp. RT): 0.000 (1.445)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



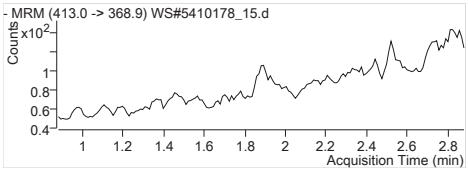



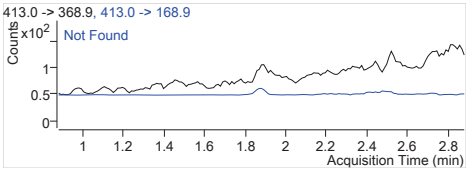

**PFHxS 1** 398.9 -> 79.9
RT (Exp. RT): 0.000 (1.668)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



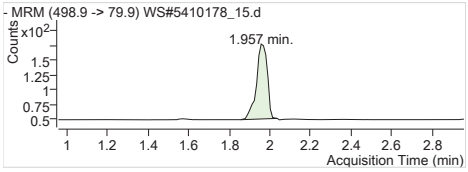



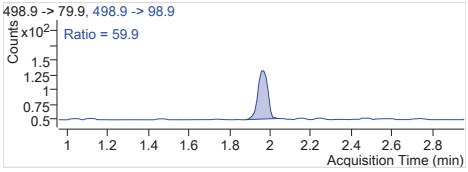

**PFHpA 1** 363.0 -> 318.9
RT (Exp. RT): 0.000 (1.702)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



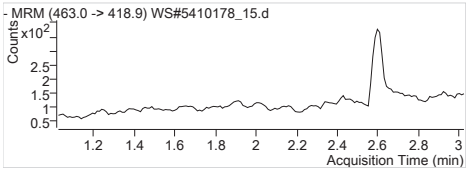



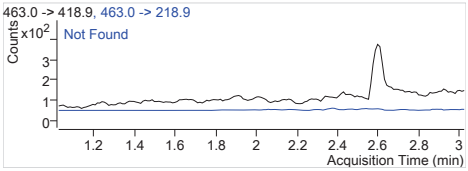

**PFOA 1** 413.0 -> 368.9
RT (Exp. RT): 0.000 (1.881)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



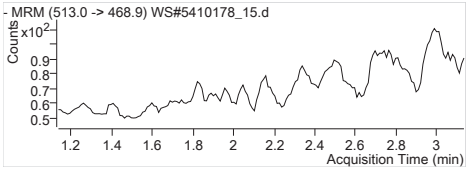



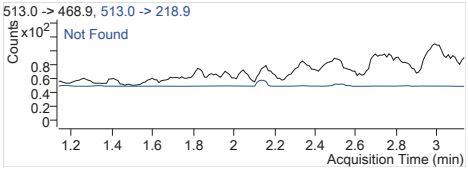

**PFOS 1** 498.9 -> 79.9
RT (Exp. RT): 1.957 (1.957)
Calc. conc. 0.02 µg/L
Area ratio: 0.26275
Sample type: Sample



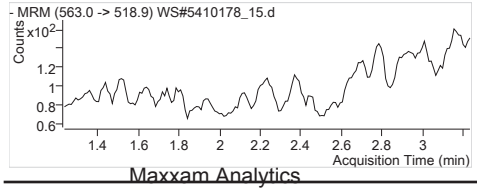



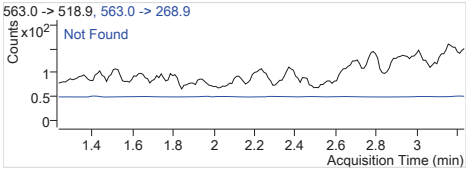

**PFNA 1** 463.0 -> 418.9
RT (Exp. RT): 0.000 (2.025)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



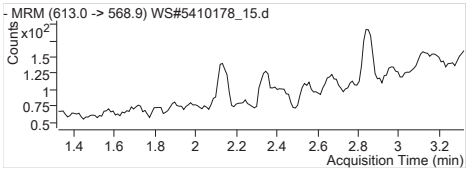



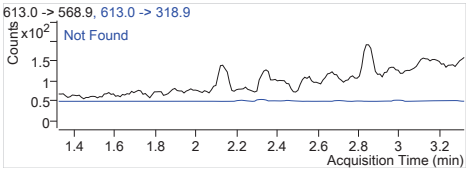

**PFDA 1** 513.0 -> 468.9
RT (Exp. RT): 0.000 (2.135)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



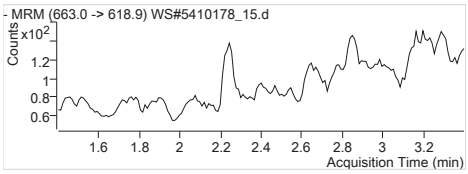



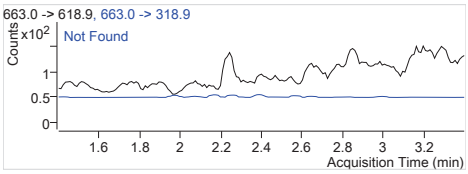

**PFUnA 1** 563.0 -> 518.9
RT (Exp. RT): 0.000 (2.234)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



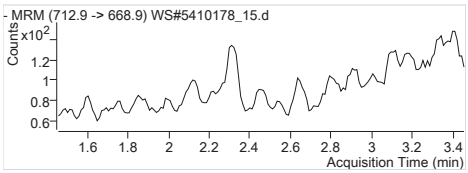



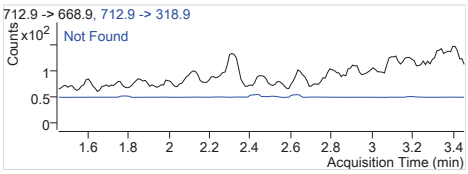

**PFDoA 1** 613.0 -> 568.9
RT (Exp. RT): 0.000 (2.323)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



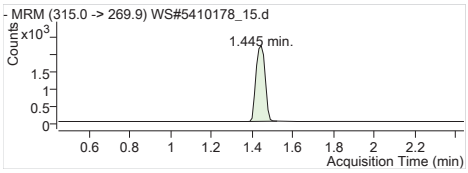



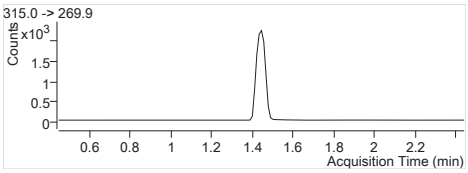

**PFTrDA 1** 663.0 -> 618.9
RT (Exp. RT): 0.000 (2.400)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



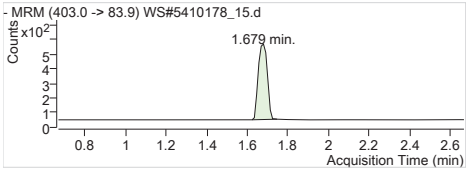



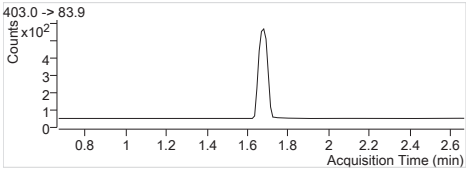

**PFTeDA 1** 712.9 -> 668.9
RT (Exp. RT): 0.000 (2.456)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



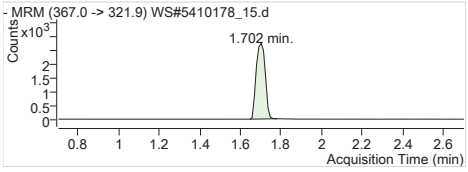



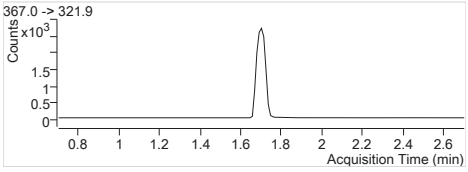

**13C2-PFHxA** 315.0 -> 269.9
RT (Exp. RT): 1.445 (1.445)
Calc. conc. 95.35 µg/L
Area ratio: 0.28208
Sample type: Sample



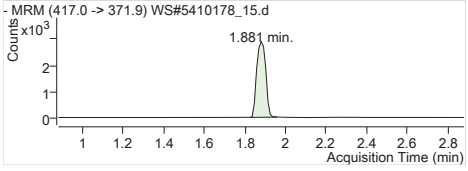



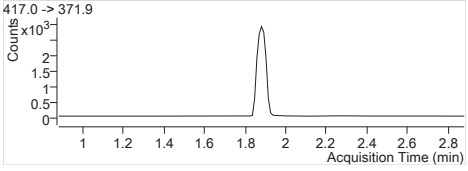

**18O2-PFHxS** 403.0 -> 83.9
RT (Exp. RT): 1.679 (1.668)
Calc. conc. 94.74 µg/L
Area ratio: 0.06535
Sample type: Sample



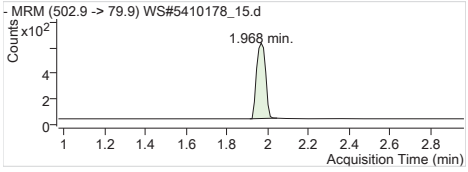



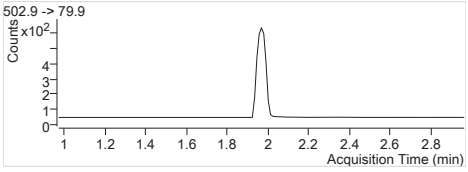

**13C4-PFHpA** 367.0 -> 321.9
RT (Exp. RT): 1.702 (1.702)
Calc. conc. 91.33 µg/L
Area ratio: 0.33831
Sample type: Sample



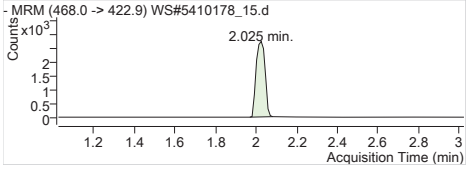



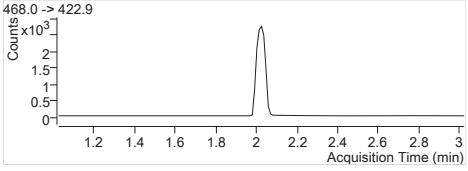

**13C4-PFOA** 417.0 -> 371.9
RT (Exp. RT): 1.881 (1.881)
Calc. conc. 97.42 µg/L
Area ratio: 0.35728
Sample type: Sample



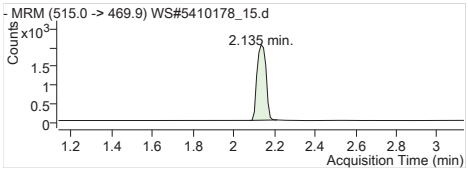



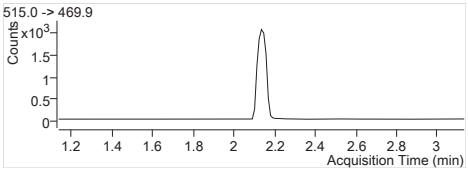

**13C4-PFOS** 502.9 -> 79.9
RT (Exp. RT): 1.968 (1.968)
Calc. conc. 91.05 µg/L
Area ratio: 0.07313
Sample type: Sample



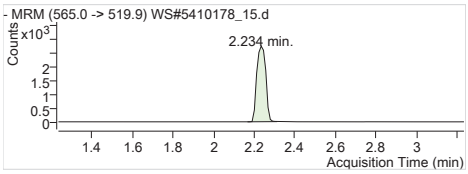



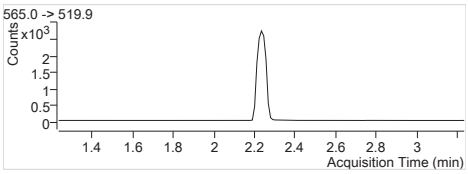

**13C5-PFNA** 468.0 -> 422.9
RT (Exp. RT): 2.025 (2.025)
Calc. conc. 94.32 µg/L
Area ratio: 0.33632
Sample type: Sample



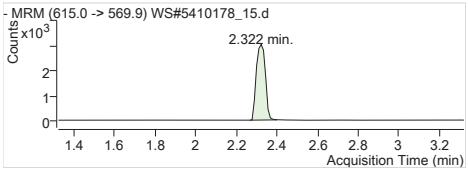



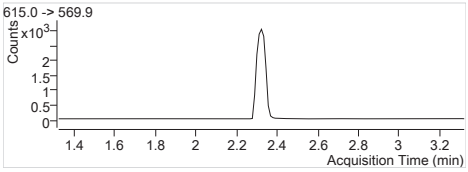

**13C2-PFDA** 515.0 -> 469.9
RT (Exp. RT): 2.135 (2.135)
Calc. conc. 86.89 µg/L
Area ratio: 0.20941
Sample type: Sample



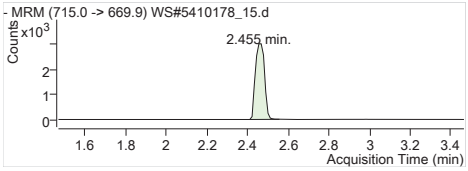



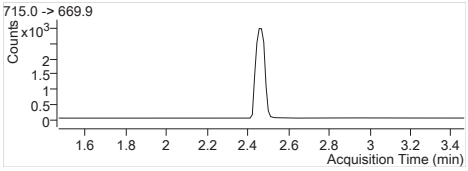

**13C2-PFUnA** 565.0 -> 519.9
RT (Exp. RT): 2.234 (2.234)
Calc. conc. 89.48 µg/L
Area ratio: 0.27863
Sample type: Sample



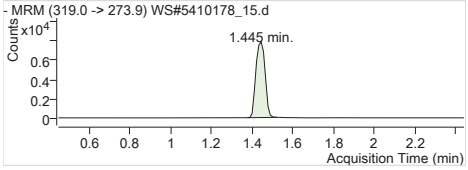



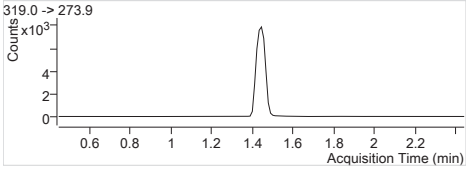

**13C2-PFDoA** 615.0 -> 569.9
RT (Exp. RT): 2.322 (2.322)
Calc. conc. 79.08 µg/L
Area ratio: 0.31217
Sample type: Sample



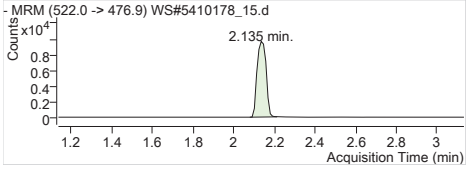



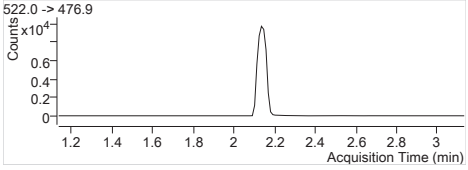

**13C2-PFTeDA** 715.0 -> 669.9
RT (Exp. RT): 2.455 (2.467)
Calc. conc. 74.35 µg/L
Area ratio: 0.30972
Sample type: Sample




**13C6-PFHxA** 319.0 -> 273.9
RT (Exp. RT): 1.445 (1.445)
Calc. conc. 2.62 µg/L
Area ratio: 0
Sample type: Sample



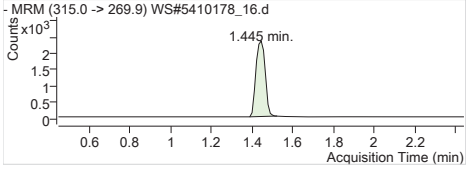

**13C9-PFDA** 522.0 -> 476.9
RT (Exp. RT): 2.135 (2.135)
Calc. conc. 2.64 µg/L
Area ratio: 0
Sample type: Sample

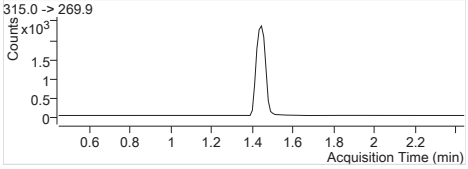
| | |
|---|---|
| **Batch Path** | T:\lcms4\PFC\20180223\WS#5410178\QuantResults\PFC_Water_Low_180223_WS#5410178_EToxics |

| | | | |
|---|---|---|---|
| **Sample Name** | **5410178:GBV347-01** | **Instrument** | LCMS04 |
| **Data File** | WS#5410178_16.d | **Operator** | |
| **Sample Type** | Sample | **Dilution** | 0.024 |
| **Acq. Method** | PFC_Water_Low.m | **Position** | P1-B6 |
| **Acq. Date** | 2018/02/23 5:48:35 PM | **Injection Volume** | Per Method |
| **Sample Annotation** | - | | |

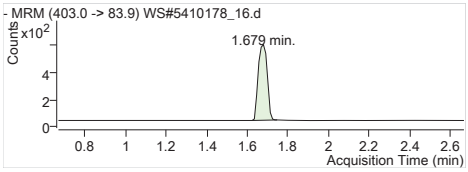
| ISTD Compounds | Response | RT | Target conc. | | |
|---|---|---|---|---|---|
| MPFHxA | 7362 | 1.44 | 1 µg/L | | |
| MPFHxS | 1699 | 1.68 | 1 µg/L | | |
| MPFHpA | 9045 | 1.70 | 1 µg/L | | |
| MPFOA | 8656 | 1.88 | 1 µg/L | | |
| MPFOS | 1717 | 1.97 | 1 µg/L | | |
| MPFNA | 8091 | 2.02 | 1 µg/L | | |
| MPFDA | 7192 | 2.14 | 1 µg/L | | |
| MPFUnA | 8319 | 2.23 | 1 µg/L | | |
| MPFDoA | 9793 | 2.32 | 1 µg/L | | |
| MPFTeDA | 10212 | 2.47 | 1 µg/L | | |
| 13C6-PFHxA IS | 25740 | 1.44 | 1 µg/L | | |
| 13C9-PFDA IS | 32643 | 2.13 | 1 µg/L | | |

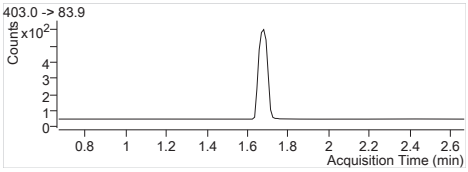
| Compound | Response | RT | Target Conc. | Calc. Conc. | Accuracy |
|---|---|---|---|---|---|
| PFBS 1 | | | - | ND | - |
| PFHxA 1 | | | - | ND | - |
| PFHxS 1 | | | - | ND | - |
| PFHpA 1 | | | - | ND | - |
| PFOA 1 | | | - | ND | - |
| PFOS 1 | | | - | ND | - |
| PFNA 1 | | | - | ND | - |
| PFDA 1 | | | - | ND | - |
| PFUnA 1 | | | - | ND | - |
| PFDoA 1 | | | - | ND | - |
| PFTrDA 1 | | | - | ND | - |
| PFTeDA 1 | | | - | ND | - |
| 13C2-PFHxA | 7362 | 1.44 | - | 96.68 µg/L | - |
| 18O2-PFHxS | 1699 | 1.68 | - | 95.70 µg/L | - |
| 13C4-PFHpA | 9045 | 1.70 | - | 94.86 µg/L | - |
| 13C4-PFOA | 8656 | 1.88 | - | 91.69 µg/L | - |
| 13C4-PFOS | 1717 | 1.97 | - | 83.04 µg/L | - |
| 13C5-PFNA | 8059 | 2.02 | - | 87.81 µg/L | - |
| 13C2-PFDA | 7137 | 2.14 | - | 90.72 µg/L | - |
| 13C2-PFUnA | 8319 | 2.23 | - | 81.84 µg/L | - |
| 13C2-PFDoA | 9793 | 2.32 | - | 76.00 µg/L | - |
| 13C2-PFTeDA | 10390 | 2.47 | - | 76.41 µg/L | - |
| 13C6-PFHxA | 25740 | 1.44 | - | 2.74 µg/L | - |
| 13C9-PFDA | 32643 | 2.13 | - | 2.89 µg/L | - |



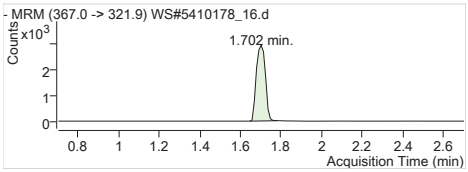



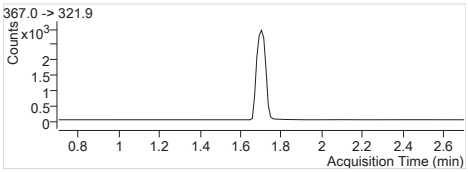

| | |
|---|---|
| **MPFHxA** | Internal Standard |
| RT (Exp. RT): | 1.445 (1.445) |
| Concentration: | 1 µg/L |
| Sample type: | Sample |



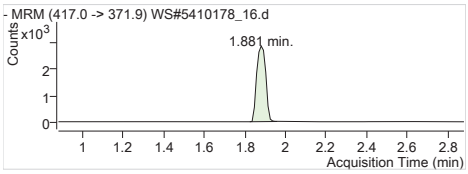



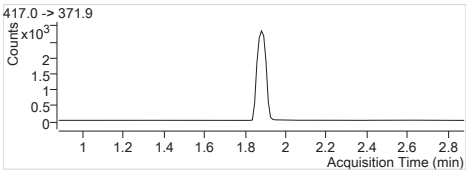

**MPFHxS** Internal Standard
RT (Exp. RT): 1.679 (1.668)
Concentration: 1 µg/L
Sample type: Sample



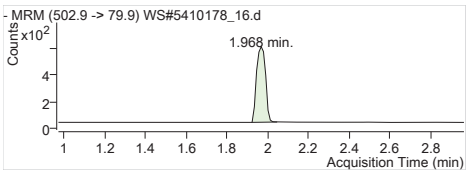



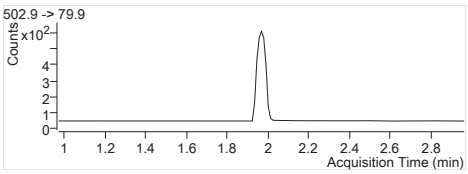

**MPFHpA** Internal Standard
RT (Exp. RT): 1.702 (1.702)
Concentration: 1 µg/L
Sample type: Sample



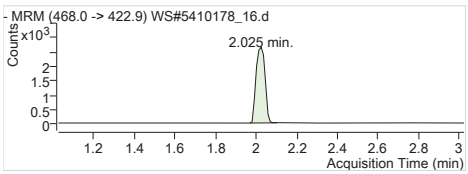



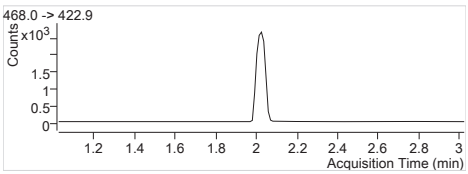

**MPFOA** Internal Standard
RT (Exp. RT): 1.881 (1.881)
Concentration: 1 µg/L
Sample type: Sample



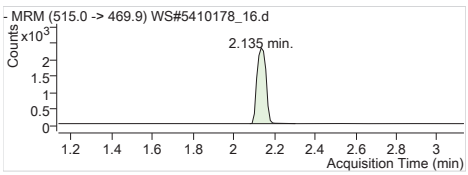



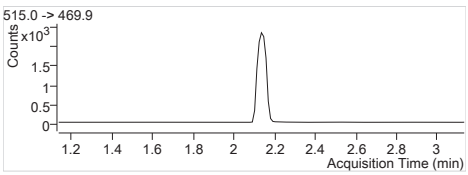

**MPFOS** Internal Standard
RT (Exp. RT): 1.968 (1.968)
Concentration: 1 µg/L
Sample type: Sample



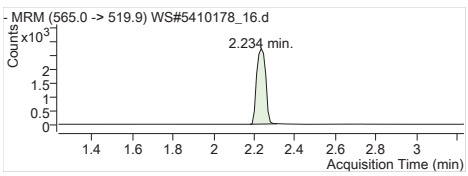



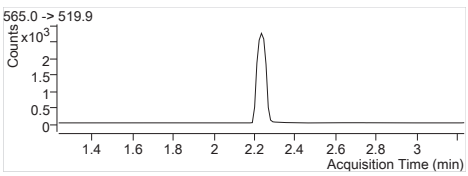

**MPFNA** Internal Standard
RT (Exp. RT): 2.025 (2.025)
Concentration: 1 µg/L
Sample type: Sample



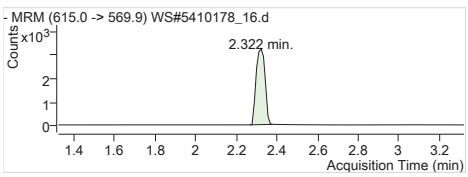



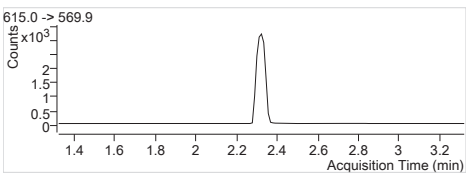

**MPFDA** Internal Standard
RT (Exp. RT): 2.135 (2.135)
Concentration: 1 µg/L
Sample type: Sample



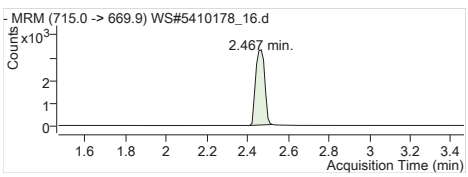



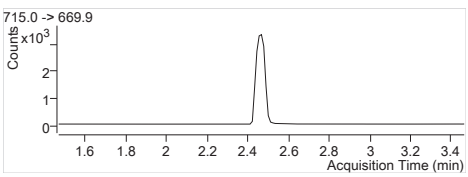

**MPFUnA** Internal Standard
RT (Exp. RT): 2.234 (2.234)
Concentration: 1 µg/L
Sample type: Sample



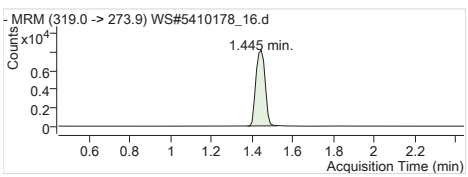



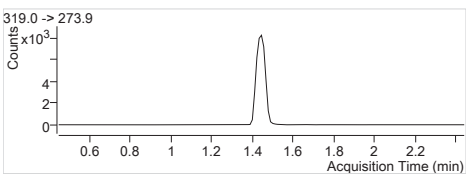

**MPFDoA** Internal Standard
RT (Exp. RT): 2.322 (2.322)
Concentration: 1 µg/L
Sample type: Sample



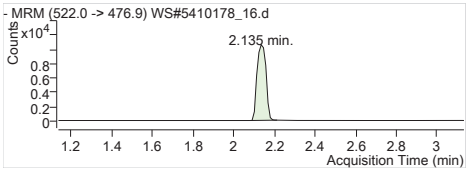



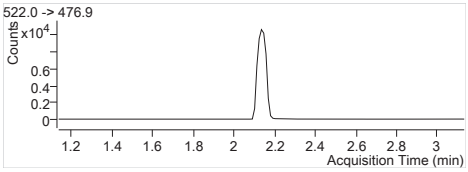

**MPFTeDA** Internal Standard
RT (Exp. RT): 2.467 (2.467)
Concentration: 1 µg/L
Sample type: Sample



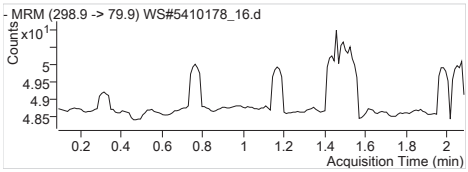



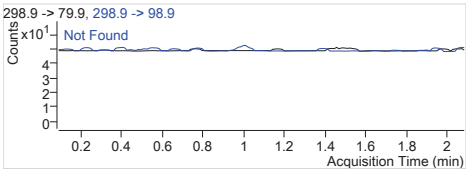

**13C6-PFHxA IS** Internal Standard
RT (Exp. RT): 1.445 (1.445)
Concentration: 1 µg/L
Sample type: Sample



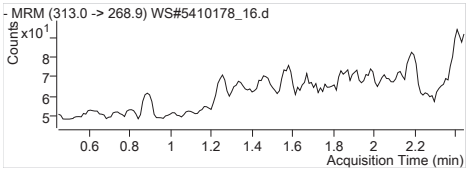



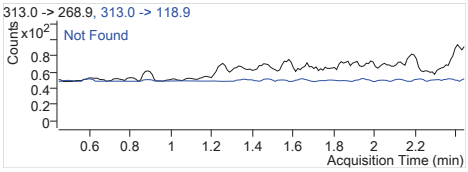

**13C9-PFDA IS** Internal Standard
RT (Exp. RT): 2.135 (2.135)
Concentration: 1 µg/L
Sample type: Sample



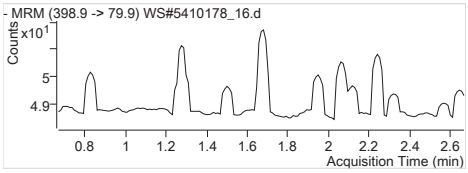



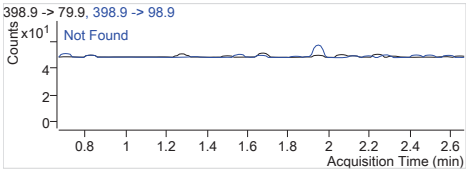

**PFBS 1** 298.9 -> 79.9
RT (Exp. RT): 0.000 (1.087)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



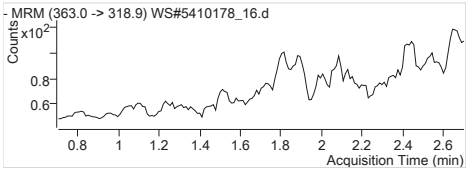



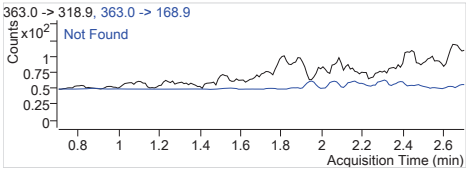

**PFHxA 1** 313.0 -> 268.9
RT (Exp. RT): 0.000 (1.445)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



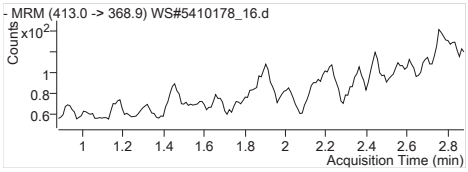



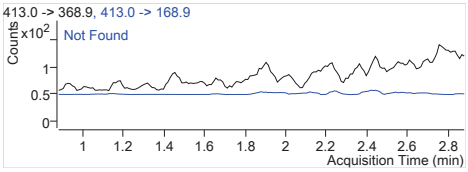

**PFHxS 1** 398.9 -> 79.9
RT (Exp. RT): 0.000 (1.668)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



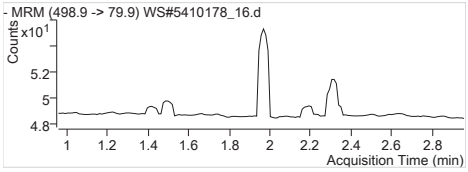



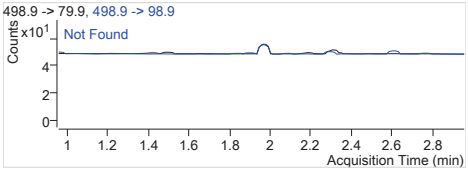

**PFHpA 1** 363.0 -> 318.9
RT (Exp. RT): 0.000 (1.702)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



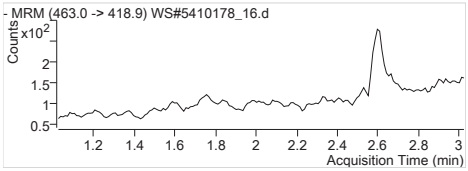



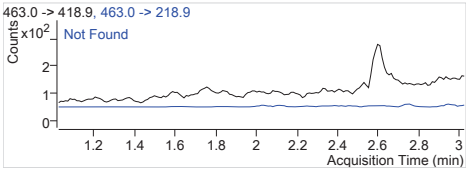

**PFOA 1** 413.0 -> 368.9
RT (Exp. RT): 0.000 (1.881)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



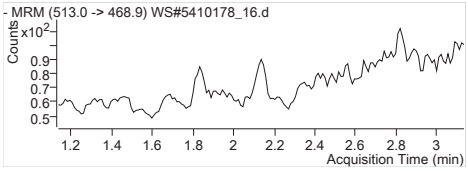



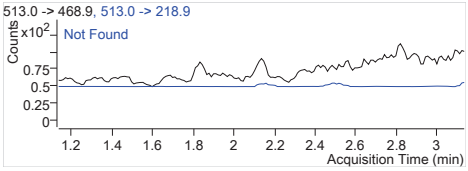

**PFOS 1** 498.9 -> 79.9
RT (Exp. RT): 0.000 (1.957)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



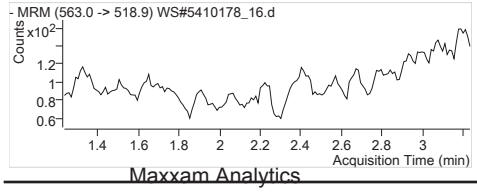



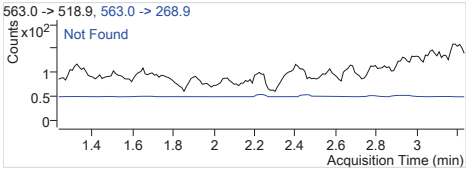

**PFNA 1** 463.0 -> 418.9
RT (Exp. RT): 0.000 (2.025)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



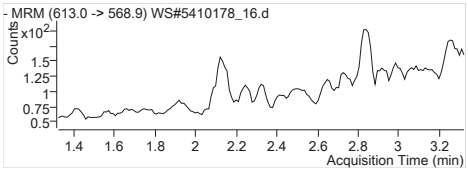



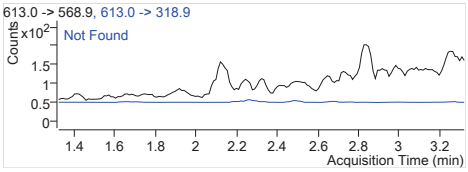

**PFDA 1** 513.0 -> 468.9
RT (Exp. RT): 0.000 (2.135)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



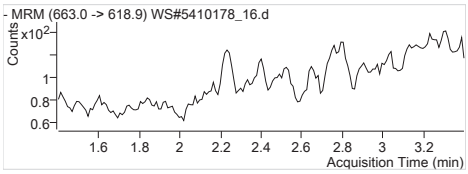



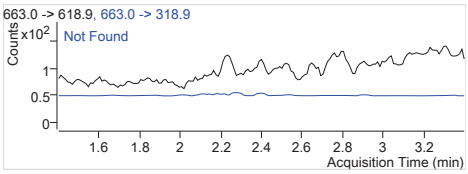

**PFUnA 1** 563.0 -> 518.9
RT (Exp. RT): 0.000 (2.234)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



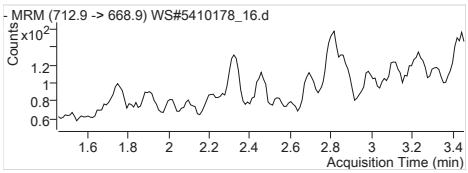



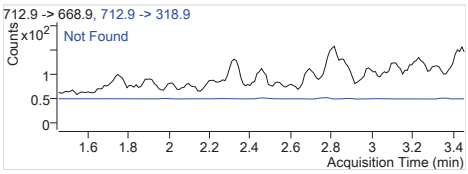

**PFDoA 1** 613.0 -> 568.9
RT (Exp. RT): 0.000 (2.323)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



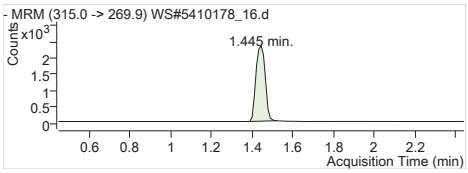



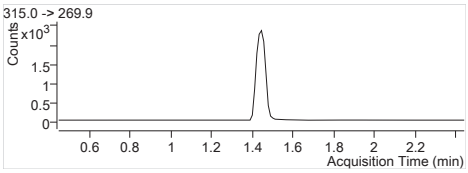

**PFTrDA 1** 663.0 -> 618.9
RT (Exp. RT): 0.000 (2.400)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



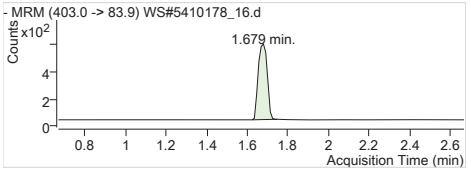



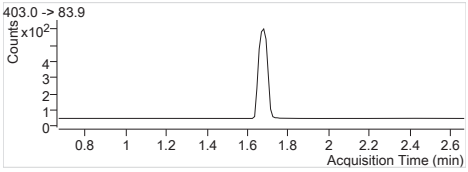

**PFTeDA 1** 712.9 -> 668.9
RT (Exp. RT): 0.000 (2.456)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



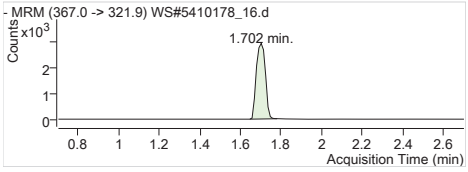



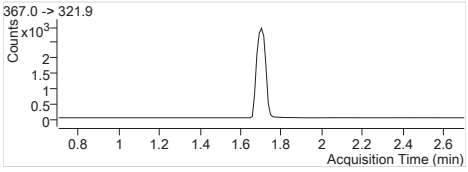

**13C2-PFHxA** 315.0 -> 269.9
RT (Exp. RT): 1.445 (1.445)
Calc. conc. 96.68 µg/L
Area ratio: 0.28601
Sample type: Sample



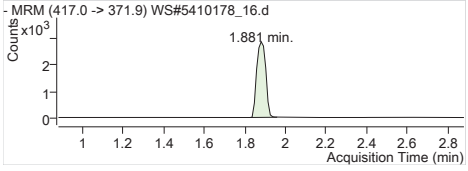



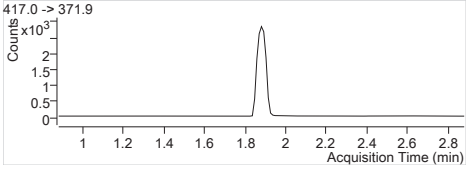

**18O2-PFHxS** 403.0 -> 83.9
RT (Exp. RT): 1.679 (1.668)
Calc. conc. 95.70 µg/L
Area ratio: 0.06601
Sample type: Sample



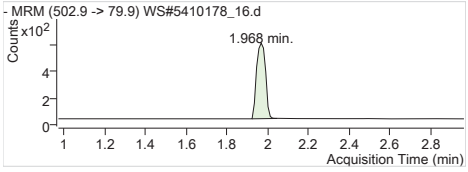



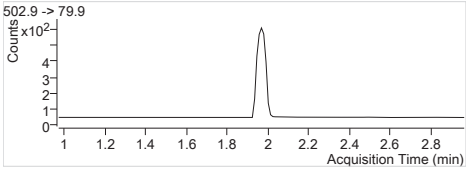

**13C4-PFHpA** 367.0 -> 321.9
RT (Exp. RT): 1.702 (1.702)
Calc. conc. 94.86 µg/L
Area ratio: 0.35140
Sample type: Sample



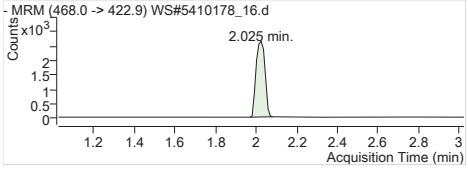



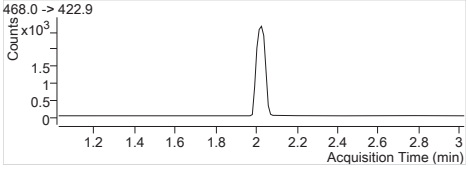

**13C4-PFOA** 417.0 -> 371.9
RT (Exp. RT): 1.881 (1.881)
Calc. conc. 91.69 µg/L
Area ratio: 0.33629
Sample type: Sample



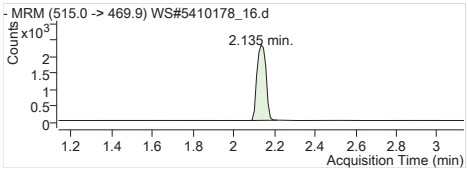



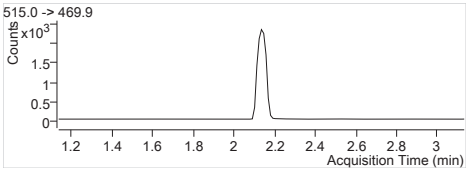

**13C4-PFOS** 502.9 -> 79.9
RT (Exp. RT): 1.968 (1.968)
Calc. conc. 83.04 µg/L
Area ratio: 0.06671
Sample type: Sample



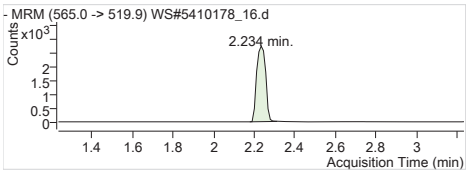



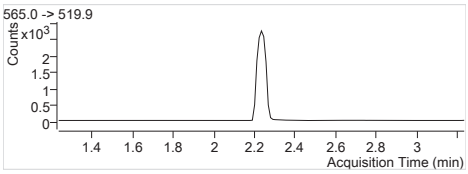

**13C5-PFNA** 468.0 -> 422.9
RT (Exp. RT): 2.025 (2.025)
Calc. conc. 87.81 µg/L
Area ratio: 0.31309
Sample type: Sample



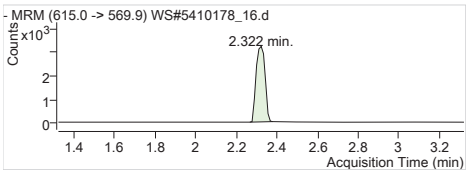



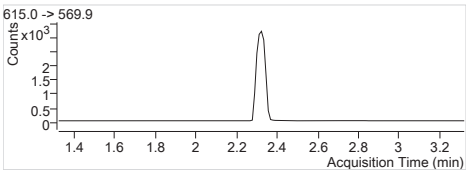

**13C2-PFDA** 515.0 -> 469.9
RT (Exp. RT): 2.135 (2.135)
Calc. conc. 90.72 µg/L
Area ratio: 0.21864
Sample type: Sample



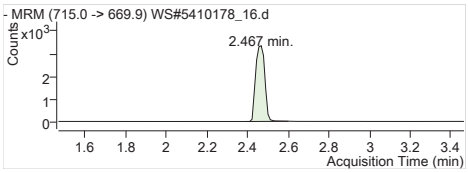



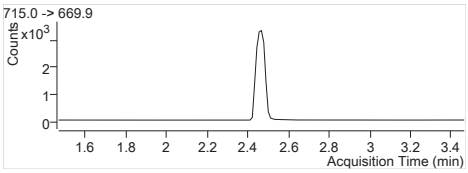

**13C2-PFUnA** 565.0 -> 519.9
RT (Exp. RT): 2.234 (2.234)
Calc. conc. 81.84 µg/L
Area ratio: 0.25485
Sample type: Sample



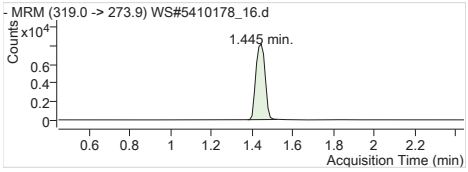



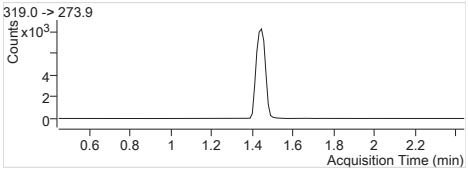

**13C2-PFDoA** 615.0 -> 569.9
RT (Exp. RT): 2.322 (2.322)
Calc. conc. 76.00 µg/L
Area ratio: 0.30000
Sample type: Sample



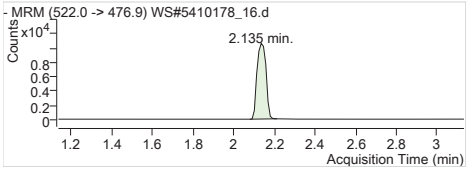



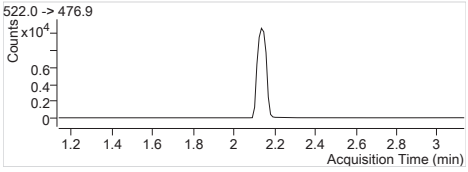

**13C2-PFTeDA** 715.0 -> 669.9
RT (Exp. RT): 2.467 (2.467)
Calc. conc. 76.41 µg/L
Area ratio: 0.31829
Sample type: Sample




**13C6-PFHxA** 319.0 -> 273.9
RT (Exp. RT): 1.445 (1.445)
Calc. conc. 2.74 µg/L
Area ratio: 0
Sample type: Sample



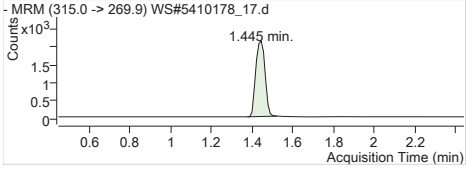

**13C9-PFDA** 522.0 -> 476.9
RT (Exp. RT): 2.135 (2.135)
Calc. conc. 2.89 µg/L
Area ratio: 0
Sample type: Sample

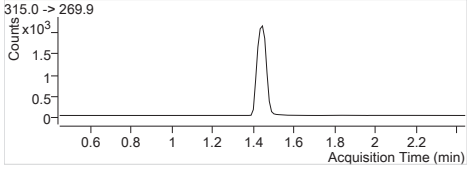
**Batch Path** T:\lcms4\PFC\20180223\WS#5410178\QuantResults\PFC_Water_Low_180223_WS#5410178_EToxics

| | | | |
|---|---|---|---|
| **Sample Name** | **5410178:GBV348-01** | **Instrument** | LCMS04 |
| **Data File** | WS#5410178_17.d | **Operator** | |
| **Sample Type** | Sample | **Dilution** | 0.024 |
| **Acq. Method** | PFC_Water_Low.m | **Position** | P1-B7 |
| **Acq. Date** | 2018/02/23 5:53:31 PM | **Injection Volume** | Per Method |
| **Sample Annotation** | - | | |

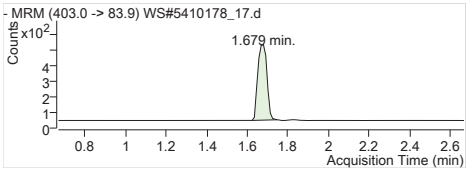
| ISTD Compounds | Response | RT | Target conc. | | |
|---|---|---|---|---|---|
| MPFHxA | 6703 | 1.44 | 1 µg/L | | |
| MPFHxS | 1536 | 1.68 | 1 µg/L | | |
| MPFHpA | 8224 | 1.70 | 1 µg/L | | |
| MPFOA | 8477 | 1.88 | 1 µg/L | | |
| MPFOS | 1743 | 1.97 | 1 µg/L | | |
| MPFNA | 7967 | 2.02 | 1 µg/L | | |
| MPFDA | 6186 | 2.14 | 1 µg/L | | |
| MPFUnA | 7831 | 2.23 | 1 µg/L | | |
| MPFDoA | 9052 | 2.32 | 1 µg/L | | |
| MPFTeDA | 8556 | 2.47 | 1 µg/L | | |
| 13C6-PFHxA IS | 24967 | 1.44 | 1 µg/L | | |
| 13C9-PFDA IS | 30015 | 2.13 | 1 µg/L | | |

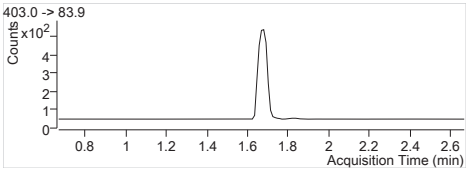
| Compound | Response | RT | Target Conc. | Calc. Conc. | Accuracy |
|---|---|---|---|---|---|
| PFBS 1 | | | - | ND | - |
| PFHxA 1 | | | - | ND | - |
| PFHxS 1 | | | - | ND | - |
| PFHpA 1 | | | - | ND | - |
| PFOA 1 | | | - | ND | - |
| PFOS 1 | | | - | ND | - |
| PFNA 1 | | | - | ND | - |
| PFDA 1 | | | - | ND | - |
| PFUnA 1 | | | - | ND | - |
| PFDoA 1 | | | - | ND | - |
| PFTrDA 1 | | | - | ND | - |
| PFTeDA 1 | | | - | ND | - |
| 13C2-PFHxA | 6703 | 1.44 | - | 90.75 µg/L | - |
| 18O2-PFHxS | 1536 | 1.68 | - | 89.19 µg/L | - |
| 13C4-PFHpA | 8224 | 1.70 | - | 88.92 µg/L | - |
| 13C4-PFOA | 8477 | 1.88 | - | 92.58 µg/L | - |
| 13C4-PFOS | 1743 | 1.97 | - | 86.91 µg/L | - |
| 13C5-PFNA | 7966 | 2.02 | - | 89.48 µg/L | - |
| 13C2-PFDA | 6139 | 2.14 | - | 84.87 µg/L | - |
| 13C2-PFUnA | 7831 | 2.23 | - | 83.79 µg/L | - |
| 13C2-PFDoA | 9052 | 2.32 | - | 76.40 µg/L | - |
| 13C2-PFTeDA | 8634 | 2.47 | - | 69.06 µg/L | - |
| 13C6-PFHxA | 24967 | 1.44 | - | 2.66 µg/L | - |
| 13C9-PFDA | 30015 | 2.13 | - | 2.65 µg/L | - |



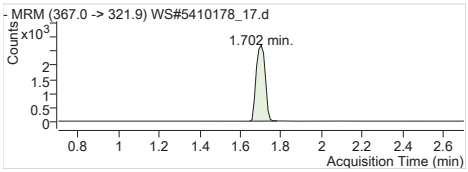



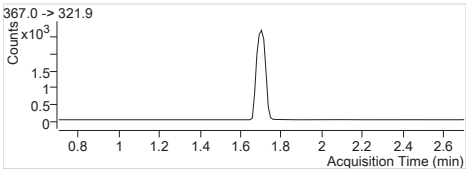

| | |
|---|---|
| **MPFHxA** | Internal Standard |
| RT (Exp. RT): | 1.445 (1.445) |
| Concentration: | 1 µg/L |
| Sample type: | Sample |



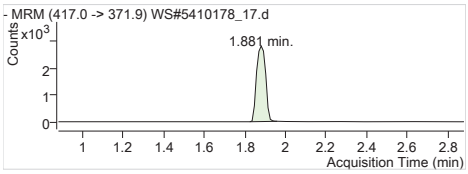



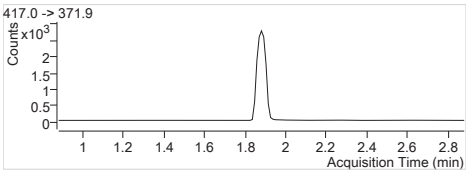

**MPFHxS** Internal Standard
RT (Exp. RT): 1.679 (1.668)
Concentration: 1 µg/L
Sample type: Sample



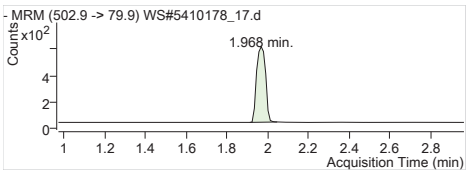



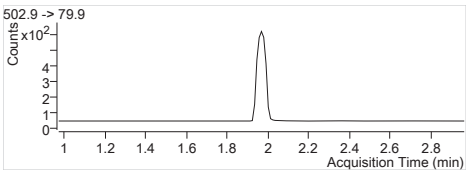

**MPFHpA** Internal Standard
RT (Exp. RT): 1.702 (1.702)
Concentration: 1 µg/L
Sample type: Sample



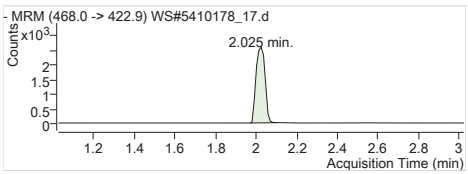



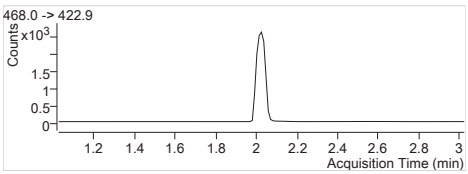

**MPFOA** Internal Standard
RT (Exp. RT): 1.881 (1.881)
Concentration: 1 µg/L
Sample type: Sample



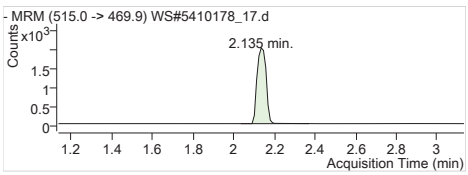



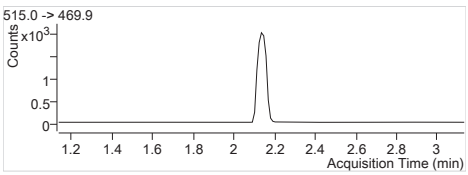

**MPFOS** Internal Standard
RT (Exp. RT): 1.968 (1.968)
Concentration: 1 µg/L
Sample type: Sample



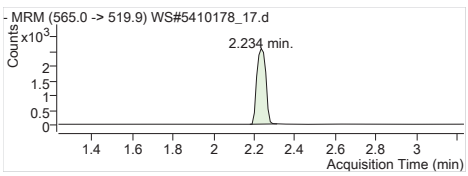



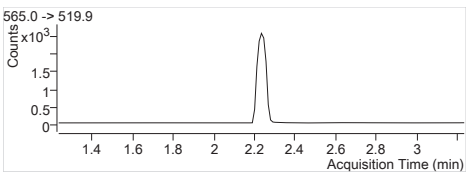

**MPFNA** Internal Standard
RT (Exp. RT): 2.025 (2.025)
Concentration: 1 µg/L
Sample type: Sample



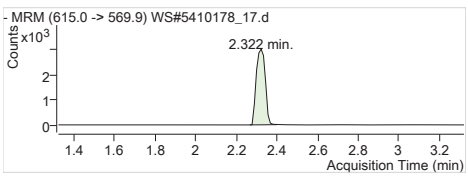



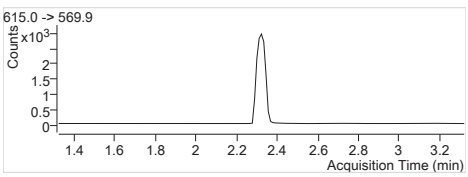

**MPFDA** Internal Standard
RT (Exp. RT): 2.135 (2.135)
Concentration: 1 µg/L
Sample type: Sample



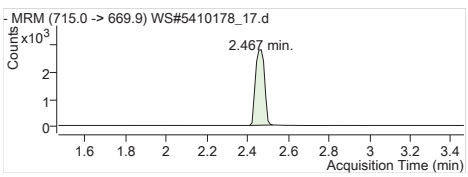



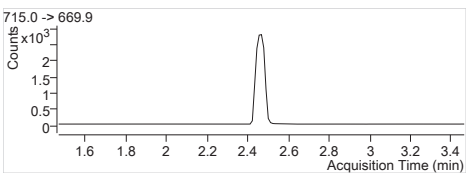

**MPFUnA** Internal Standard
RT (Exp. RT): 2.234 (2.234)
Concentration: 1 µg/L
Sample type: Sample



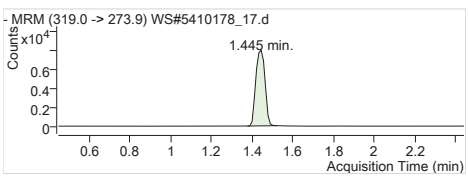



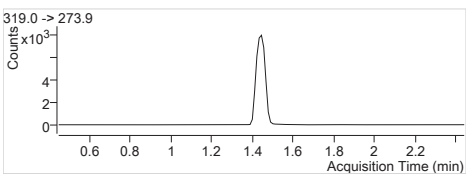

**MPFDoA** Internal Standard
RT (Exp. RT): 2.322 (2.322)
Concentration: 1 µg/L
Sample type: Sample



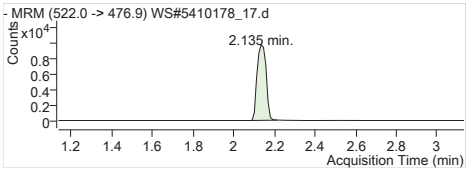



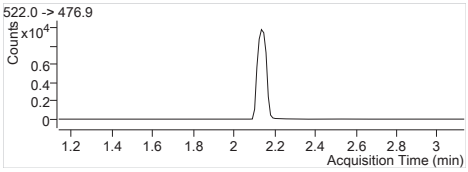

**MPFTeDA** Internal Standard
RT (Exp. RT): 2.467 (2.467)
Concentration: 1 µg/L
Sample type: Sample



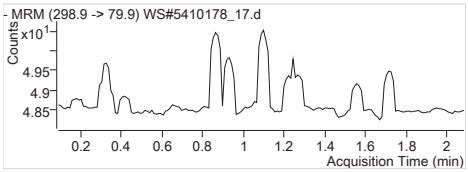



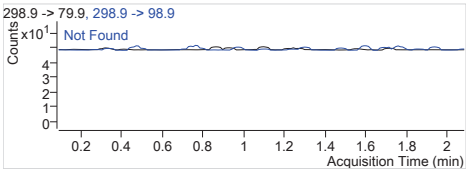

**13C6-PFHxA IS** Internal Standard
RT (Exp. RT): 1.445 (1.445)
Concentration: 1 µg/L
Sample type: Sample



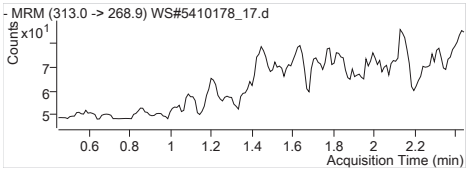



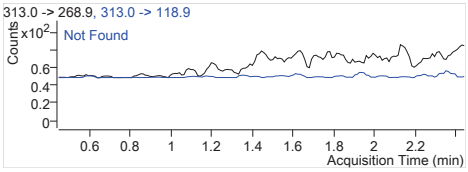

**13C9-PFDA IS** Internal Standard
RT (Exp. RT): 2.135 (2.135)
Concentration: 1 µg/L
Sample type: Sample



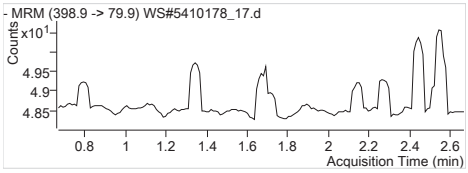



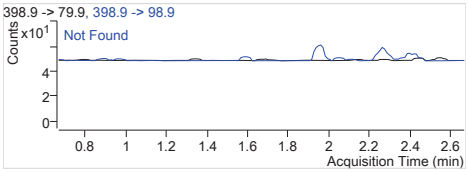

**PFBS 1** 298.9 -> 79.9
RT (Exp. RT): 0.000 (1.087)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



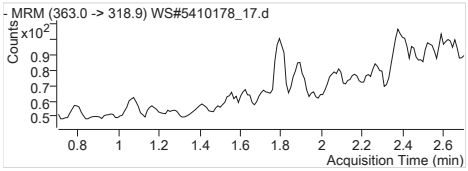



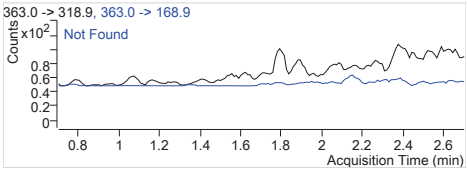

**PFHxA 1** 313.0 -> 268.9
RT (Exp. RT): 0.000 (1.445)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



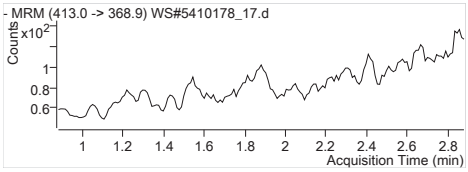



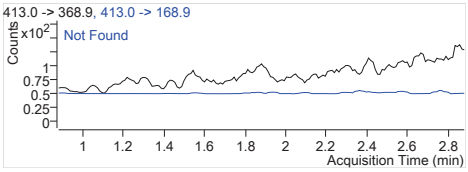

**PFHxS 1** 398.9 -> 79.9
RT (Exp. RT): 0.000 (1.668)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



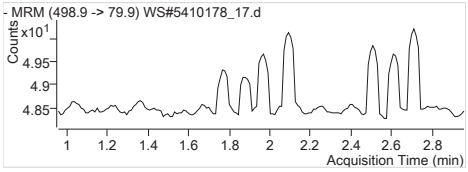



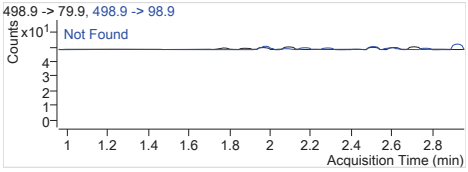

**PFHpA 1** 363.0 -> 318.9
RT (Exp. RT): 0.000 (1.702)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



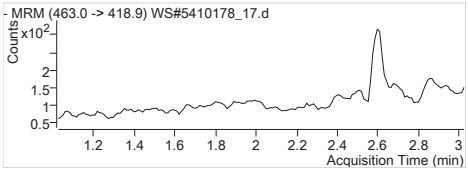



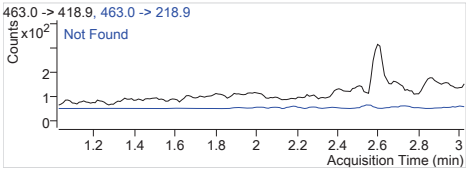

**PFOA 1** 413.0 -> 368.9
RT (Exp. RT): 0.000 (1.881)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



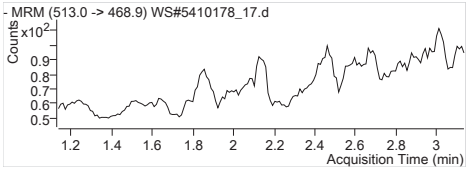



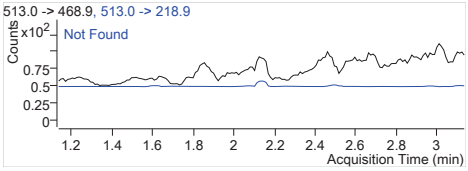

**PFOS 1** 498.9 -> 79.9
RT (Exp. RT): 0.000 (1.957)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



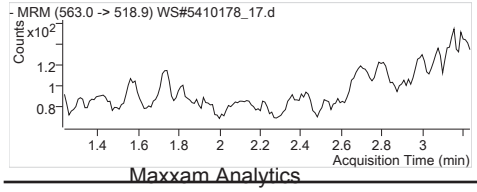



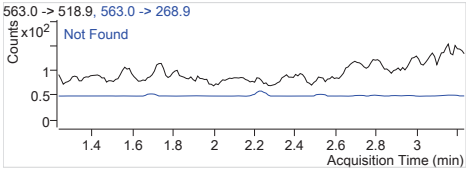

**PFNA 1** 463.0 -> 418.9
RT (Exp. RT): 0.000 (2.025)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



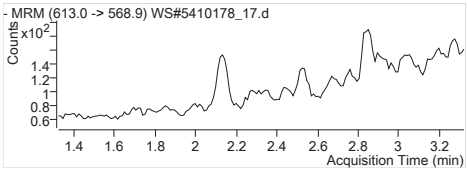



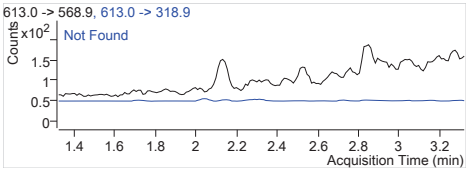

**PFDA 1** 513.0 -> 468.9
RT (Exp. RT): 0.000 (2.135)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



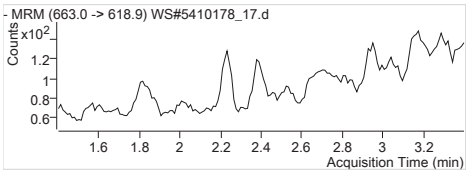



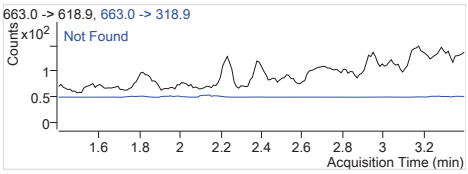

**PFUnA 1** 563.0 -> 518.9
RT (Exp. RT): 0.000 (2.234)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



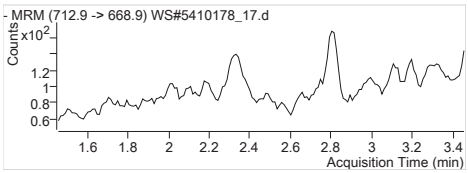



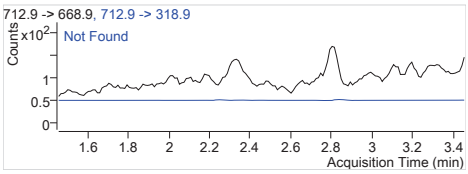

**PFDoA 1** 613.0 -> 568.9
RT (Exp. RT): 0.000 (2.323)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



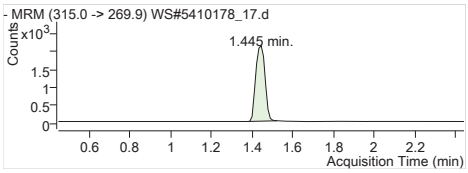



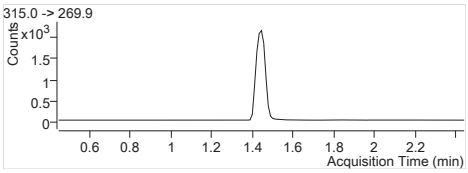

**PFTrDA 1** 663.0 -> 618.9
RT (Exp. RT): 0.000 (2.400)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



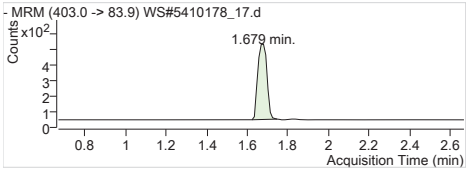



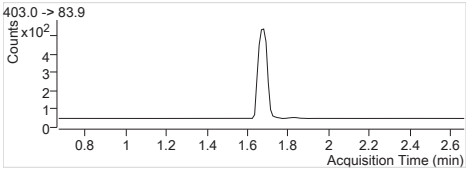

**PFTeDA 1** 712.9 -> 668.9
RT (Exp. RT): 0.000 (2.456)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



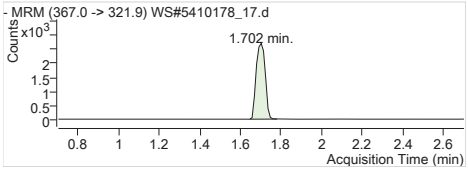



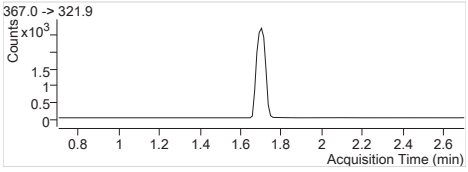

**13C2-PFHxA** 315.0 -> 269.9
RT (Exp. RT): 1.445 (1.445)
Calc. conc. 90.75 µg/L
Area ratio: 0.26847
Sample type: Sample



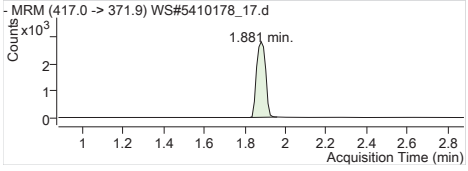



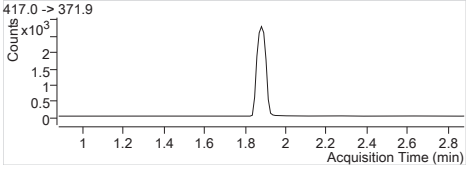

**18O2-PFHxS** 403.0 -> 83.9
RT (Exp. RT): 1.679 (1.668)
Calc. conc. 89.19 µg/L
Area ratio: 0.06152
Sample type: Sample



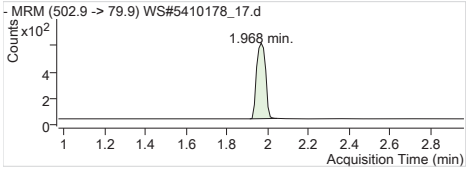



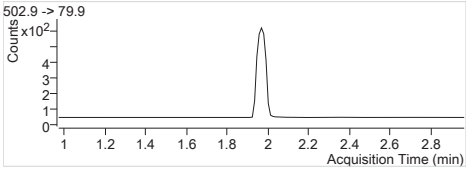

**13C4-PFHpA** 367.0 -> 321.9
RT (Exp. RT): 1.702 (1.702)
Calc. conc. 88.92 µg/L
Area ratio: 0.32939
Sample type: Sample



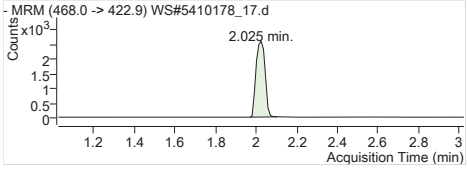



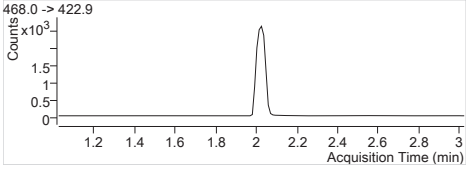

**13C4-PFOA** 417.0 -> 371.9
RT (Exp. RT): 1.881 (1.881)
Calc. conc. 92.58 µg/L
Area ratio: 0.33953
Sample type: Sample



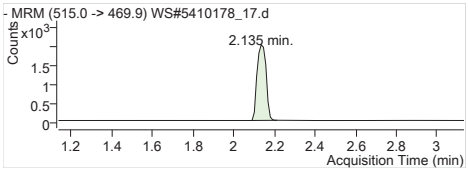



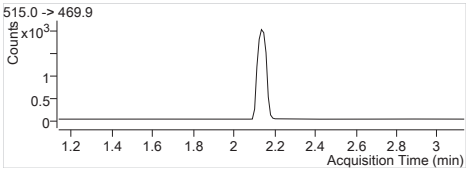

**13C4-PFOS** 502.9 -> 79.9
RT (Exp. RT): 1.968 (1.968)
Calc. conc. 86.91 µg/L
Area ratio: 0.06981
Sample type: Sample



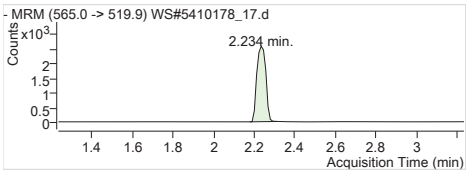



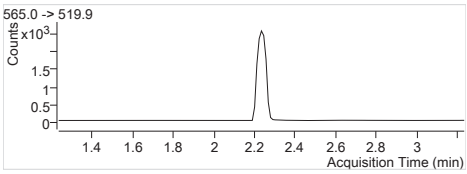

**13C5-PFNA** 468.0 -> 422.9
RT (Exp. RT): 2.025 (2.025)
Calc. conc. 89.48 µg/L
Area ratio: 0.31906
Sample type: Sample



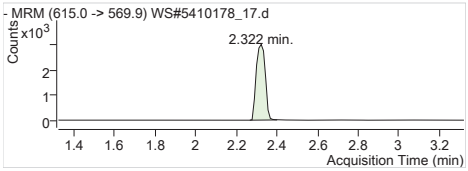



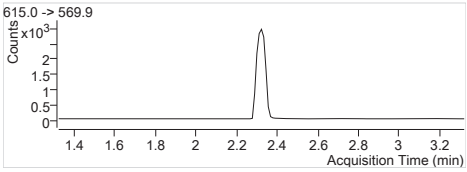

**13C2-PFDA** 515.0 -> 469.9
RT (Exp. RT): 2.135 (2.135)
Calc. conc. 84.87 µg/L
Area ratio: 0.20453
Sample type: Sample



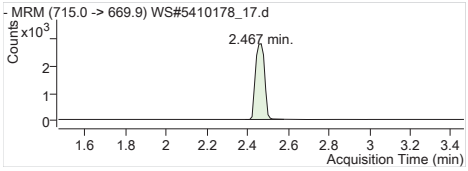



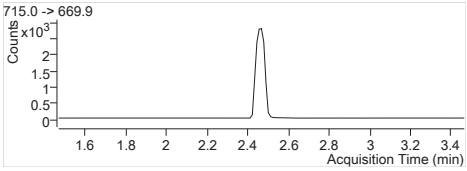

**13C2-PFUnA** 565.0 -> 519.9
RT (Exp. RT): 2.234 (2.234)
Calc. conc. 83.79 µg/L
Area ratio: 0.26090
Sample type: Sample



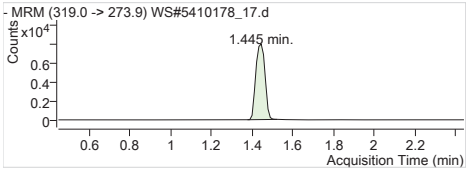



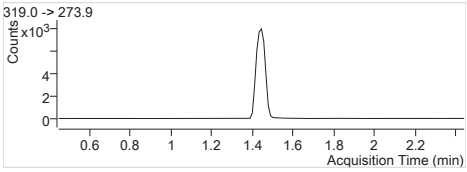

**13C2-PFDoA** 615.0 -> 569.9
RT (Exp. RT): 2.322 (2.322)
Calc. conc. 76.40 µg/L
Area ratio: 0.30158
Sample type: Sample



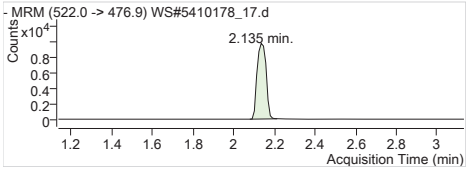



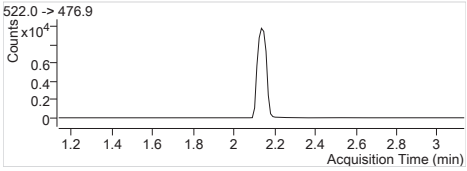

**13C2-PFTeDA** 715.0 -> 669.9
RT (Exp. RT): 2.467 (2.467)
Calc. conc. 69.06 µg/L
Area ratio: 0.28766
Sample type: Sample




**13C6-PFHxA** 319.0 -> 273.9
RT (Exp. RT): 1.445 (1.445)
Calc. conc. 2.66 µg/L
Area ratio: 0
Sample type: Sample



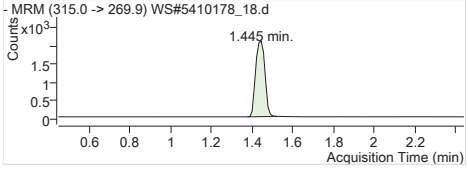

**13C9-PFDA** 522.0 -> 476.9
RT (Exp. RT): 2.135 (2.135)
Calc. conc. 2.65 µg/L
Area ratio: 0
Sample type: Sample

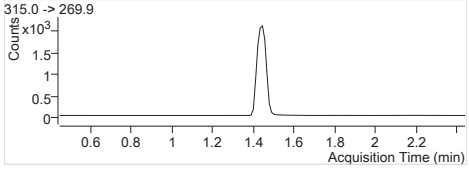
| | |
|---|---|
| **Batch Path** | T:\lcms4\PFC\20180223\WS#5410178\QuantResults\PFC_Water_Low_180223_WS#5410178_EToxics |

| | | | |
|---|---|---|---|
| **Sample Name** | **5410178:GBV349-01:10x** | **Instrument** | LCMS04 |
| **Data File** | WS#5410178_18.d | **Operator** | |
| **Sample Type** | Sample | **Dilution** | 0.24 |
| **Acq. Method** | PFC_Water_Low.m | **Position** | P1-B8 |
| **Acq. Date** | 2018/02/23 5:58:27 PM | **Injection Volume** | Per Method |
| **Sample Annotation** | Reported for PFHxS and PFOS only. | | |

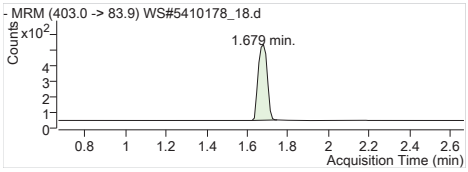
| ISTD Compounds | Response | RT | Target conc. | | |
|---|---|---|---|---|---|
| MPFHxA | 6614 | 1.44 | 1 µg/L | | |
| MPFHxS | 1493 | 1.68 | 1 µg/L | | |
| MPFHpA | 8043 | 1.70 | 1 µg/L | | |
| MPFOA | 8637 | 1.88 | 1 µg/L | | |
| MPFOS | 1523 | 1.97 | 1 µg/L | | |
| MPFNA | 8448 | 2.02 | 1 µg/L | | |
| MPFDA | 6330 | 2.14 | 1 µg/L | | |
| MPFUnA | 7792 | 2.23 | 1 µg/L | | |
| MPFDoA | 10680 | 2.32 | 1 µg/L | | |
| MPFTeDA | 11136 | 2.46 | 1 µg/L | | |
| 13C6-PFHxA IS | 26150 | 1.44 | 1 µg/L | | |
| 13C9-PFDA IS | 32520 | 2.13 | 1 µg/L | | |

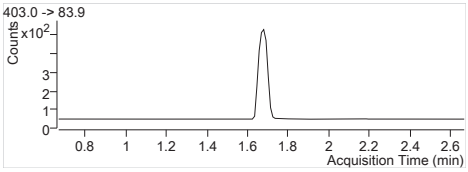
| Compound | Response | RT | Target Conc. | Calc. Conc. | Accuracy |
|---|---|---|---|---|---|
| PFBS 1 | | | - | ND | - |
| PFHxA 1 | 2041 | 1.45 | - | 0.21 µg/L | - |
| PFHxS 1 | 3493 | 1.68 | - | 1.25 µg/L | - |
| PFHpA 1 | 1084 | 1.70 | - | 0.14 µg/L | - |
| PFOA 1 | 1225 | 1.88 | - | 0.12 µg/L | - |
| PFOS 1 | 5951 | 1.96 | - | 2.45 µg/L | - |
| PFNA 1 | | | - | ND | - |
| PFDA 1 | | | - | ND | - |
| PFUnA 1 | | | - | ND | - |
| PFDoA 1 | | | - | ND | - |
| PFTrDA 1 | | | - | ND | - |
| PFTeDA 1 | | | - | ND | - |
| 13C2-PFHxA | 6614 | 1.44 | - | 85.50 µg/L | - |
| 18O2-PFHxS | 1493 | 1.68 | - | 82.77 µg/L | - |
| 13C4-PFHpA | 8043 | 1.70 | - | 83.03 µg/L | - |
| 13C4-PFOA | 8637 | 1.88 | - | 90.06 µg/L | - |
| 13C4-PFOS | 1523 | 1.97 | - | 72.50 µg/L | - |
| 13C5-PFNA | 8449 | 2.02 | - | 90.61 µg/L | - |
| 13C2-PFDA | 6275 | 2.14 | - | 80.07 µg/L | - |
| 13C2-PFUnA | 7792 | 2.23 | - | 76.95 µg/L | - |
| 13C2-PFDoA | 10680 | 2.32 | - | 83.19 µg/L | - |
| 13C2-PFTeDA | 11234 | 2.46 | - | 82.93 µg/L | - |
| 13C6-PFHxA | 26150 | 1.44 | - | 27.81 µg/L | - |
| 13C9-PFDA | 32520 | 2.13 | - | 28.75 µg/L | - |



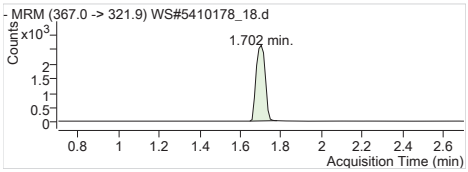



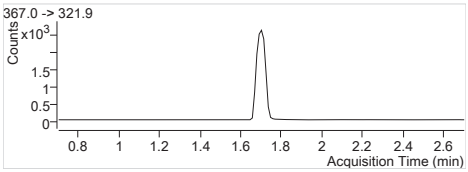

| | |
|---|---|
| **MPFHxA** | Internal Standard |
| RT (Exp. RT): | 1.445 (1.445) |
| Concentration: | 1 µg/L |
| Sample type: | Sample |



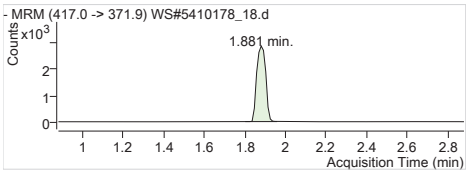



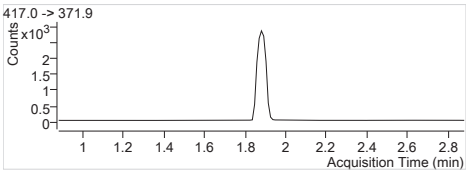

**MPFHxS** Internal Standard
RT (Exp. RT): 1.679 (1.668)
Concentration: 1 µg/L
Sample type: Sample



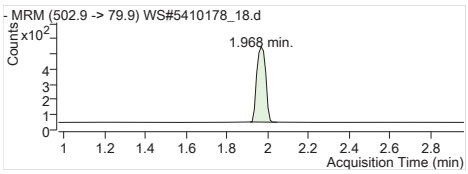



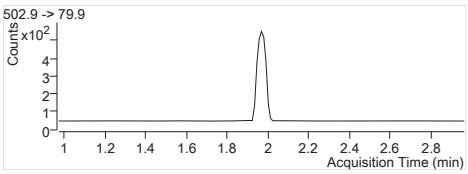

**MPFHpA** Internal Standard
RT (Exp. RT): 1.702 (1.702)
Concentration: 1 µg/L
Sample type: Sample



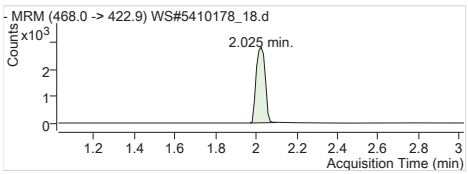



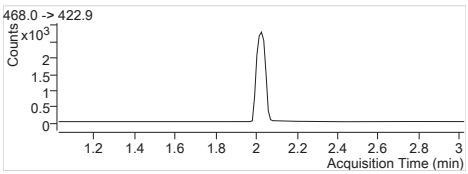

**MPFOA** Internal Standard
RT (Exp. RT): 1.881 (1.881)
Concentration: 1 µg/L
Sample type: Sample



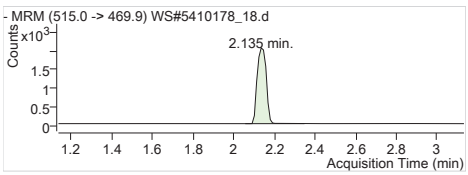



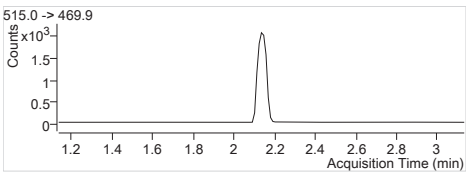

**MPFOS** Internal Standard
RT (Exp. RT): 1.968 (1.968)
Concentration: 1 µg/L
Sample type: Sample



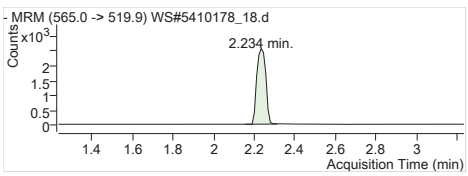



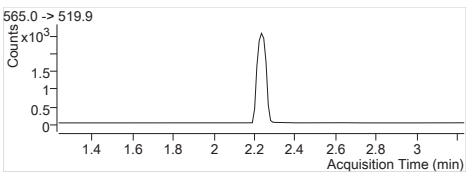

**MPFNA** Internal Standard
RT (Exp. RT): 2.025 (2.025)
Concentration: 1 µg/L
Sample type: Sample



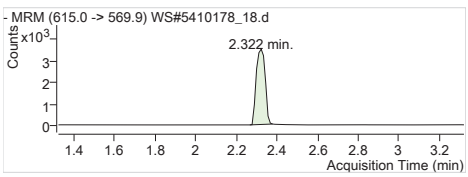



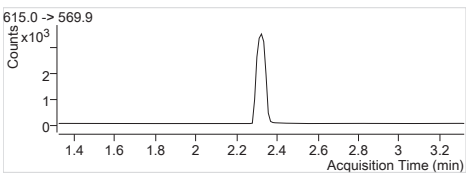

**MPFDA** Internal Standard
RT (Exp. RT): 2.135 (2.135)
Concentration: 1 µg/L
Sample type: Sample



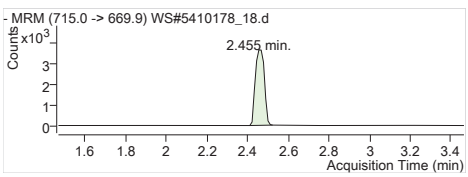



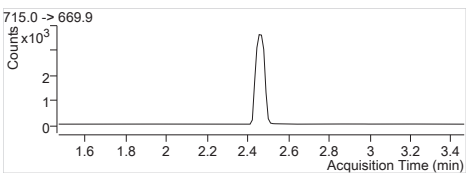

**MPFUnA** Internal Standard
RT (Exp. RT): 2.234 (2.234)
Concentration: 1 µg/L
Sample type: Sample



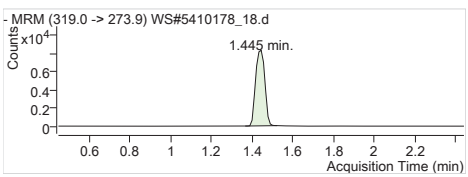



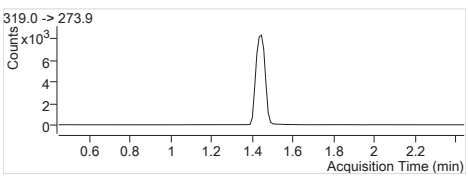

**MPFDoA** Internal Standard
RT (Exp. RT): 2.322 (2.322)
Concentration: 1 µg/L
Sample type: Sample



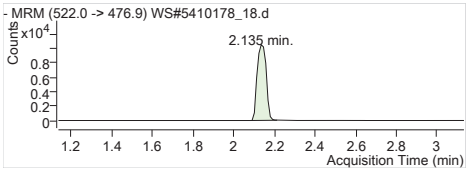



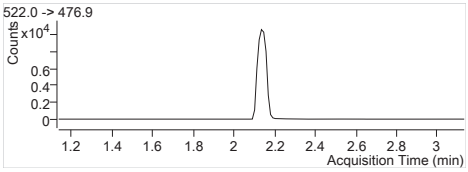

**MPFTeDA** Internal Standard
RT (Exp. RT): 2.455 (2.467)
Concentration: 1 µg/L
Sample type: Sample



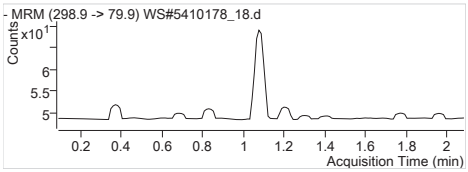



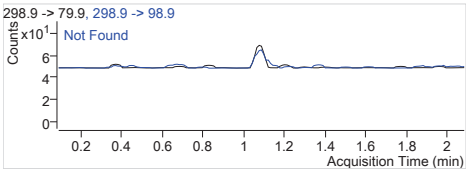

**13C6-PFHxA IS** Internal Standard
RT (Exp. RT): 1.445 (1.445)
Concentration: 1 µg/L
Sample type: Sample



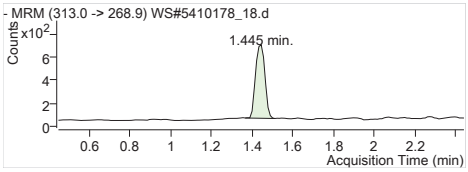



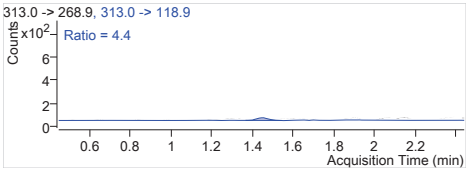

**13C9-PFDA IS** Internal Standard
RT (Exp. RT): 2.135 (2.135)
Concentration: 1 µg/L
Sample type: Sample



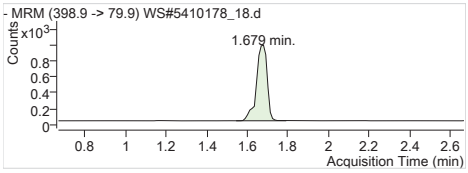



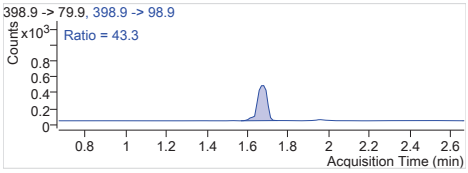

**PFBS 1** 298.9 -> 79.9
RT (Exp. RT): 0.000 (1.087)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



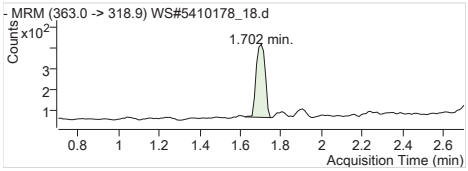



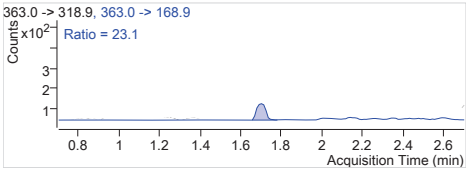

**PFHxA 1** 313.0 -> 268.9
RT (Exp. RT): 1.445 (1.445)
Calc. conc. 0.21 µg/L
Area ratio: 0.30859
Sample type: Sample



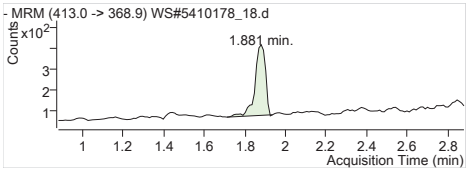



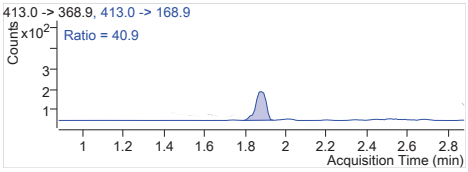

**PFHxS 1** 398.9 -> 79.9
RT (Exp. RT): 1.679 (1.668)
Calc. conc. 1.25 µg/L
Area ratio: 2.33958
Sample type: Sample



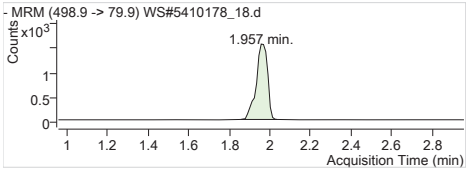



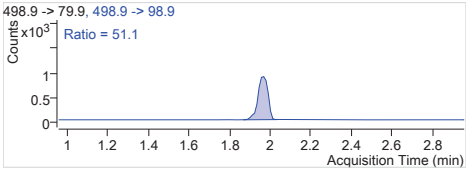

**PFHpA 1** 363.0 -> 318.9
RT (Exp. RT): 1.702 (1.702)
Calc. conc. 0.14 µg/L
Area ratio: 0.13478
Sample type: Sample



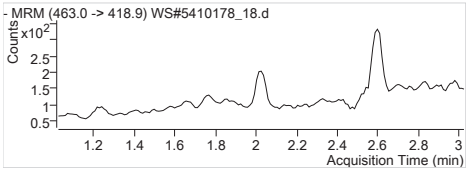



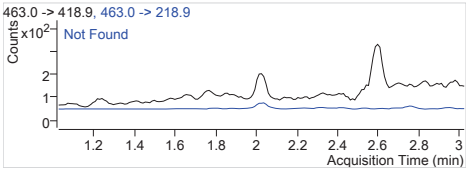

**PFOA 1** 413.0 -> 368.9
RT (Exp. RT): 1.881 (1.881)
Calc. conc. 0.12 µg/L
Area ratio: 0.14183
Sample type: Sample



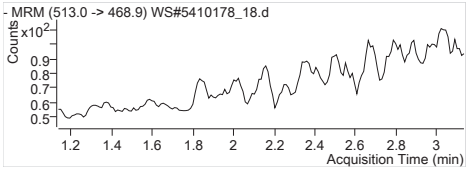



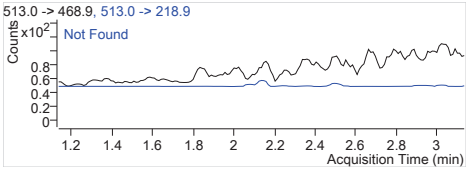

**PFOS 1** 498.9 -> 79.9
RT (Exp. RT): 1.957 (1.957)
Calc. conc. 2.45 µg/L
Area ratio: 3.90742
Sample type: Sample



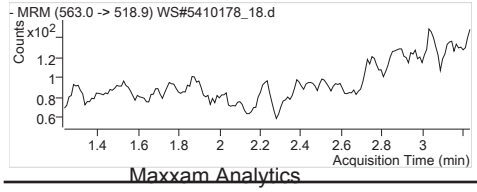



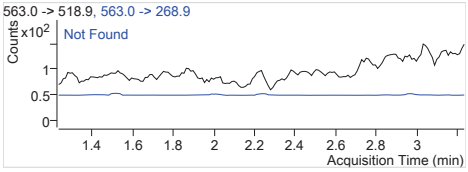

**PFNA 1** 463.0 -> 418.9
RT (Exp. RT): 0.000 (2.025)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



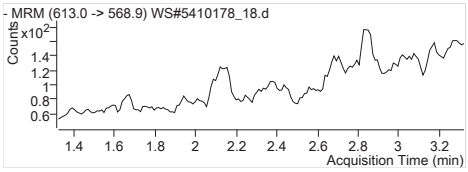



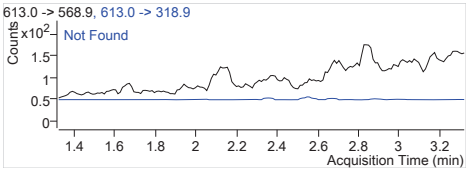

**PFDA 1** 513.0 -> 468.9
RT (Exp. RT): 0.000 (2.135)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



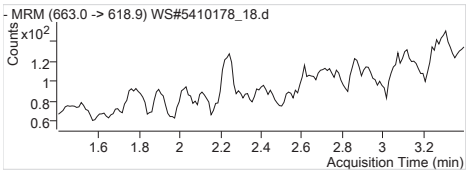



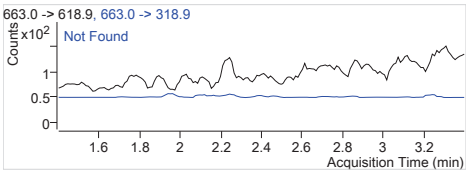

**PFUnA 1** 563.0 -> 518.9
RT (Exp. RT): 0.000 (2.234)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



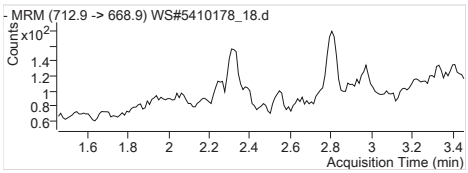



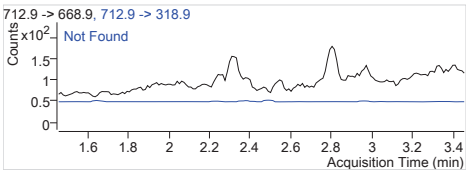

**PFDoA 1** 613.0 -> 568.9
RT (Exp. RT): 0.000 (2.323)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



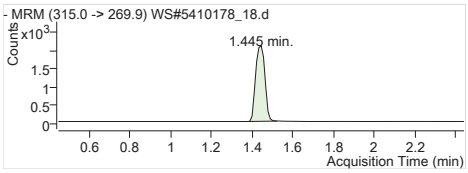



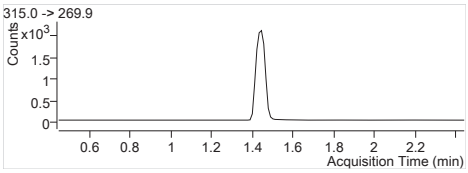

**PFTrDA 1** 663.0 -> 618.9
RT (Exp. RT): 0.000 (2.400)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



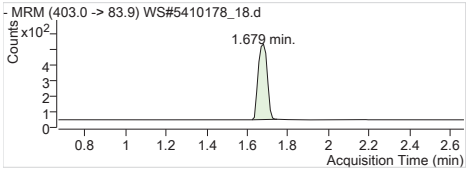



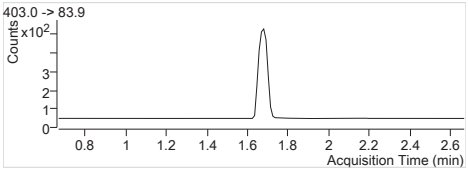

**PFTeDA 1** 712.9 -> 668.9
RT (Exp. RT): 0.000 (2.456)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



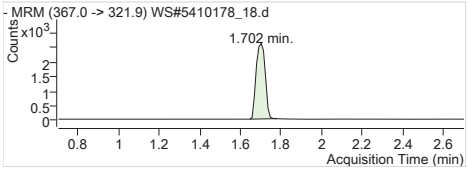



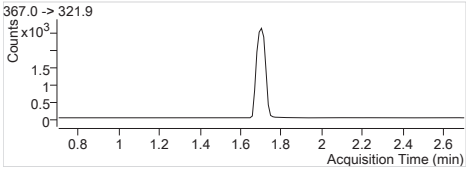

**13C2-PFHxA** 315.0 -> 269.9
RT (Exp. RT): 1.445 (1.445)
Calc. conc. 85.50 µg/L
Area ratio: 0.25293
Sample type: Sample



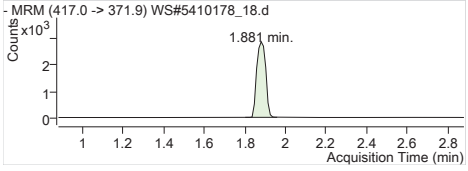



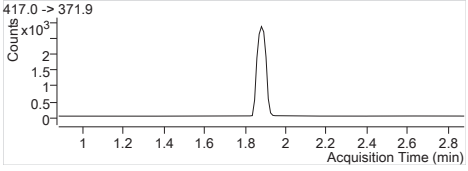

**18O2-PFHxS** 403.0 -> 83.9
RT (Exp. RT): 1.679 (1.668)
Calc. conc. 82.77 µg/L
Area ratio: 0.05709
Sample type: Sample



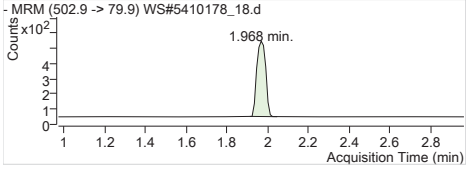



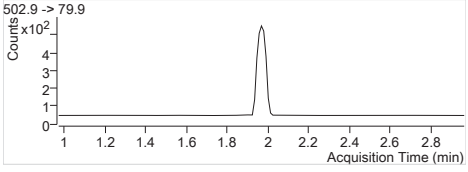

**13C4-PFHpA** 367.0 -> 321.9
RT (Exp. RT): 1.702 (1.702)
Calc. conc. 83.03 µg/L
Area ratio: 0.30757
Sample type: Sample



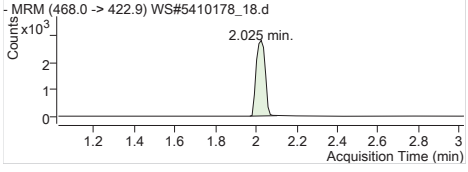



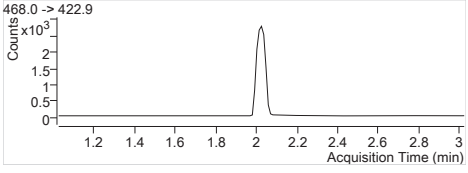

**13C4-PFOA** 417.0 -> 371.9
RT (Exp. RT): 1.881 (1.881)
Calc. conc. 90.06 µg/L
Area ratio: 0.33029
Sample type: Sample



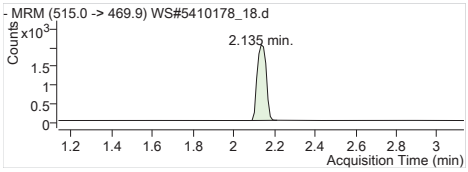



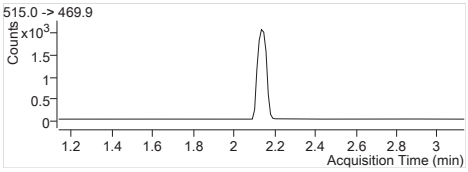

**13C4-PFOS** 502.9 -> 79.9
RT (Exp. RT): 1.968 (1.968)
Calc. conc. 72.50 µg/L
Area ratio: 0.05824
Sample type: Sample



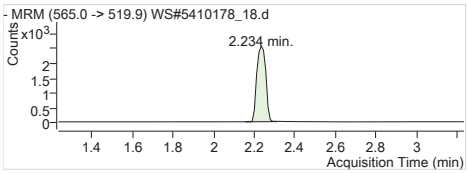



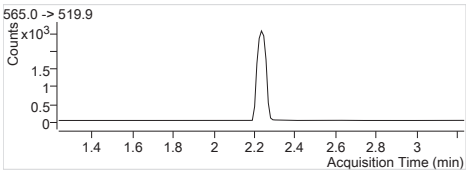

**13C5-PFNA** 468.0 -> 422.9
RT (Exp. RT): 2.025 (2.025)
Calc. conc. 90.61 µg/L
Area ratio: 0.32310
Sample type: Sample



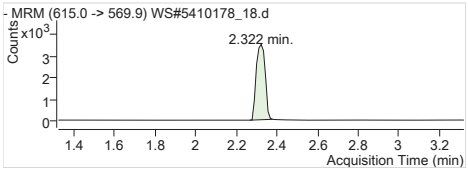



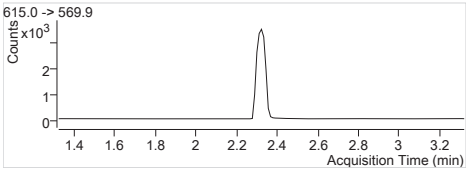

**13C2-PFDA** 515.0 -> 469.9
RT (Exp. RT): 2.135 (2.135)
Calc. conc. 80.07 µg/L
Area ratio: 0.19296
Sample type: Sample



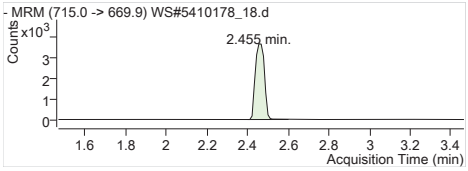



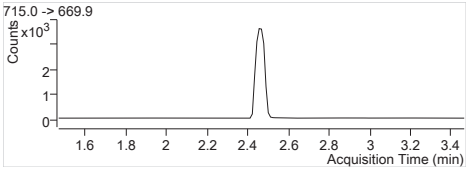

**13C2-PFUnA** 565.0 -> 519.9
RT (Exp. RT): 2.234 (2.234)
Calc. conc. 76.95 µg/L
Area ratio: 0.23961
Sample type: Sample



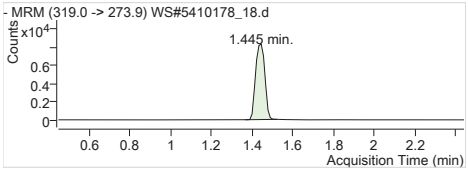



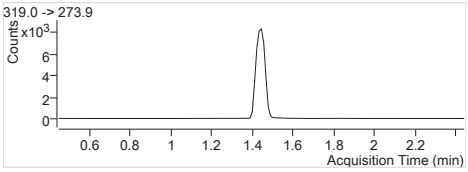

**13C2-PFDoA** 615.0 -> 569.9
RT (Exp. RT): 2.322 (2.322)
Calc. conc. 83.19 µg/L
Area ratio: 0.32841
Sample type: Sample



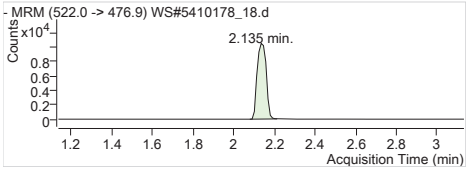



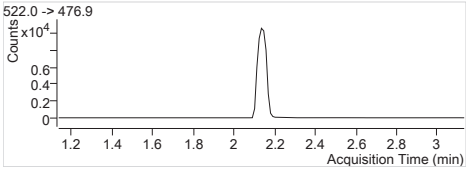

**13C2-PFTeDA** 715.0 -> 669.9
RT (Exp. RT): 2.455 (2.467)
Calc. conc. 82.93 µg/L
Area ratio: 0.34545
Sample type: Sample




**13C6-PFHxA** 319.0 -> 273.9
RT (Exp. RT): 1.445 (1.445)
Calc. conc. 27.81 µg/L
Area ratio: 0
Sample type: Sample



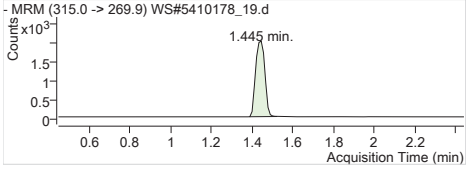

**13C9-PFDA** 522.0 -> 476.9
RT (Exp. RT): 2.135 (2.135)
Calc. conc. 28.75 µg/L
Area ratio: 0
Sample type: Sample

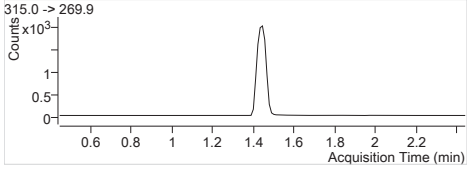
| | |
|---|---|
| **Batch Path** | T:\lcms4\PFC\20180223\WS#5410178\QuantResults\PFC_Water_Low_180223_WS#5410178_EToxics |

| | | | |
|---|---|---|---|
| **Sample Name** | **5410178:GBV349-01** | **Instrument** | LCMS04 |
| **Data File** | WS#5410178_19.d | **Operator** | |
| **Sample Type** | Sample | **Dilution** | 0.024 |
| **Acq. Method** | PFC_Water_Low.m | **Position** | P1-B9 |
| **Acq. Date** | 2018/02/23 6:03:23 PM | **Injection Volume** | Per Method |
| **Sample Annotation** | Reported for all except PFHxS and PFOS. | | |

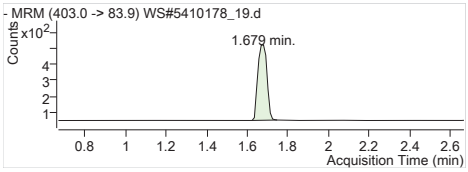
| ISTD Compounds | Response | RT | Target conc. | | |
|---|---|---|---|---|---|
| MPFHxA | 6314 | 1.44 | 1 µg/L | | |
| MPFHxS | 1486 | 1.68 | 1 µg/L | | |
| MPFHpA | 7931 | 1.70 | 1 µg/L | | |
| MPFOA | 8294 | 1.88 | 1 µg/L | | |
| MPFOS | 1674 | 1.97 | 1 µg/L | | |
| MPFNA | 7998 | 2.02 | 1 µg/L | | |
| MPFDA | 6153 | 2.14 | 1 µg/L | | |
| MPFUnA | 7448 | 2.23 | 1 µg/L | | |
| MPFDoA | 10020 | 2.32 | 1 µg/L | | |
| MPFTeDA | 10223 | 2.46 | 1 µg/L | | |
| 13C6-PFHxA IS | 25290 | 1.44 | 1 µg/L | | |
| 13C9-PFDA IS | 30125 | 2.13 | 1 µg/L | | |

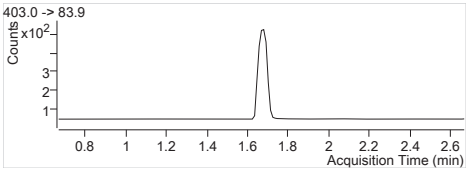
| Compound | Response | RT | Target Conc. | Calc. Conc. | Accuracy |
|---|---|---|---|---|---|
| PFBS 1 | 722 | 1.09 | - | 0.03 µg/L | - |
| PFHxA 1 | 19484 | 1.45 | - | 0.19 µg/L | - |
| PFHxS 1 | 30192 | 1.68 | - | 1.04 µg/L | - |
| PFHpA 1 | 10198 | 1.70 | - | 0.08 µg/L | - |
| PFOA 1 | 9945 | 1.88 | - | 0.07 µg/L | - |
| PFOS 1 | 55456 | 1.97 | - | 2.03 µg/L | - |
| PFNA 1 | 2120 | 2.03 | - | 0.02 µg/L | - |
| PFDA 1 | | | - | ND | - |
| PFUnA 1 | | | - | ND | - |
| PFDoA 1 | | | - | ND | - |
| PFTrDA 1 | | | - | ND | - |
| PFTeDA 1 | | | - | ND | - |
| 13C2-PFHxA | 6314 | 1.44 | - | 84.39 µg/L | - |
| 18O2-PFHxS | 1486 | 1.68 | - | 85.19 µg/L | - |
| 13C4-PFHpA | 7931 | 1.70 | - | 84.66 µg/L | - |
| 13C4-PFOA | 8294 | 1.88 | - | 89.42 µg/L | - |
| 13C4-PFOS | 1674 | 1.97 | - | 82.40 µg/L | - |
| 13C5-PFNA | 7999 | 2.02 | - | 88.70 µg/L | - |
| 13C2-PFDA | 6040 | 2.14 | - | 83.19 µg/L | - |
| 13C2-PFUnA | 7448 | 2.23 | - | 79.40 µg/L | - |
| 13C2-PFDoA | 10020 | 2.32 | - | 84.26 µg/L | - |
| 13C2-PFTeDA | 10362 | 2.46 | - | 82.58 µg/L | - |
| 13C6-PFHxA | 25290 | 1.44 | - | 2.69 µg/L | - |
| 13C9-PFDA | 30125 | 2.13 | - | 2.66 µg/L | - |



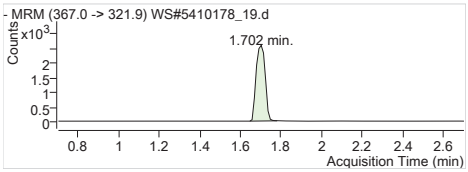



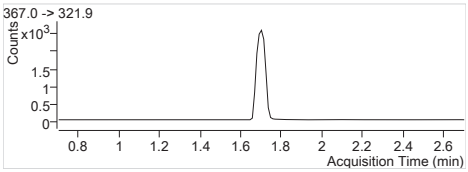

| | |
|---|---|
| **MPFHxA** | Internal Standard |
| RT (Exp. RT): | 1.445 (1.445) |
| Concentration: | 1 µg/L |
| Sample type: | Sample |



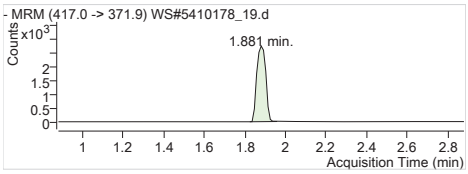



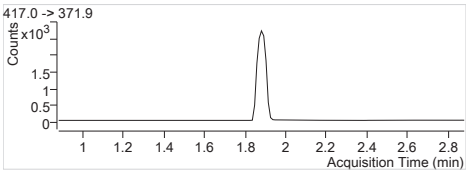

**MPFHxS** Internal Standard
RT (Exp. RT): 1.679 (1.668)
Concentration: 1 µg/L
Sample type: Sample



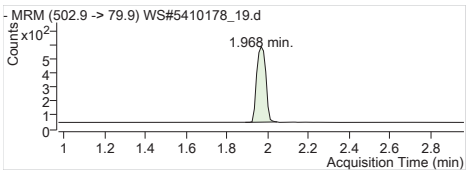



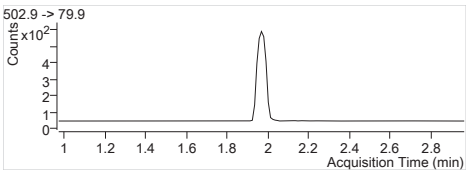

**MPFHpA** Internal Standard
RT (Exp. RT): 1.702 (1.702)
Concentration: 1 µg/L
Sample type: Sample



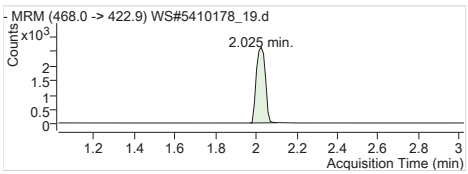



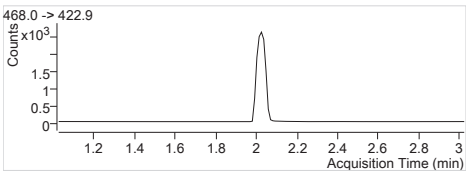

**MPFOA** Internal Standard
RT (Exp. RT): 1.881 (1.881)
Concentration: 1 µg/L
Sample type: Sample



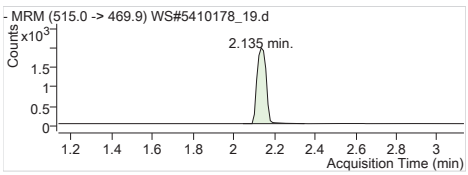



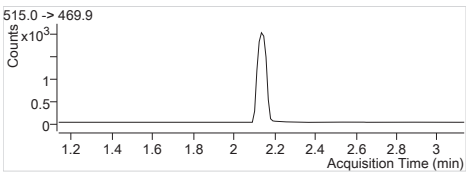

**MPFOS** Internal Standard
RT (Exp. RT): 1.968 (1.968)
Concentration: 1 µg/L
Sample type: Sample



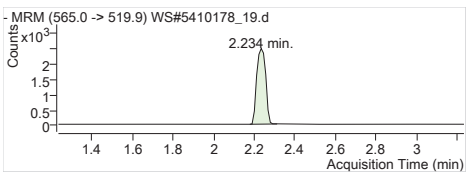



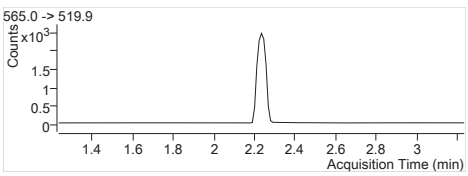

**MPFNA** Internal Standard
RT (Exp. RT): 2.025 (2.025)
Concentration: 1 µg/L
Sample type: Sample



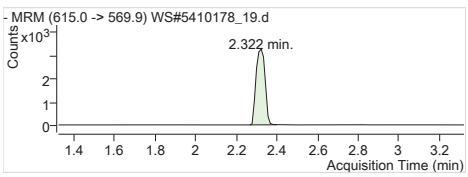



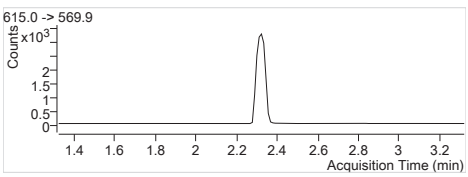

**MPFDA** Internal Standard
RT (Exp. RT): 2.135 (2.135)
Concentration: 1 µg/L
Sample type: Sample



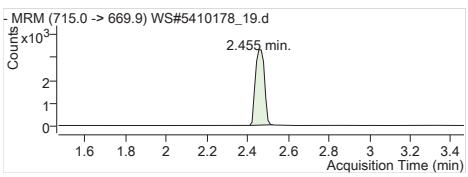



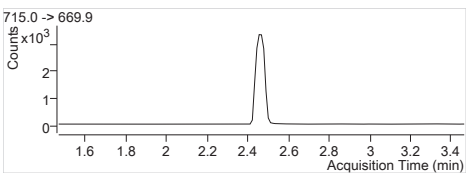

**MPFUnA** Internal Standard
RT (Exp. RT): 2.234 (2.234)
Concentration: 1 µg/L
Sample type: Sample



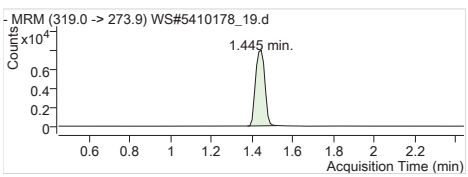



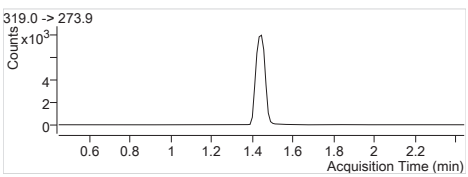

**MPFDoA** Internal Standard
RT (Exp. RT): 2.322 (2.322)
Concentration: 1 µg/L
Sample type: Sample



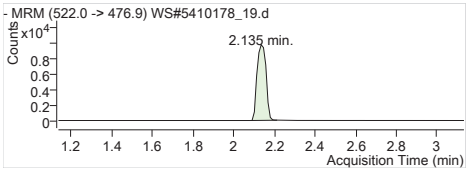



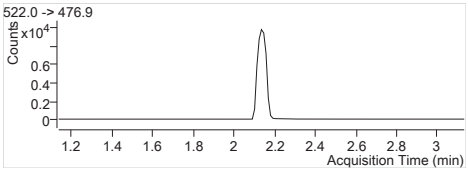

**MPFTeDA** Internal Standard
RT (Exp. RT): 2.455 (2.467)
Concentration: 1 µg/L
Sample type: Sample



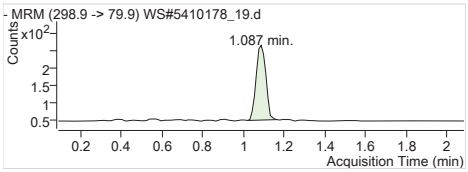



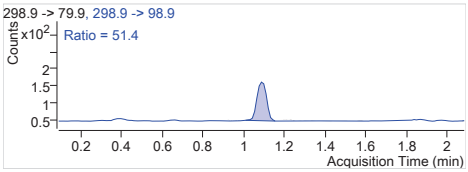

**13C6-PFHxA IS** Internal Standard
RT (Exp. RT): 1.445 (1.445)
Concentration: 1 µg/L
Sample type: Sample



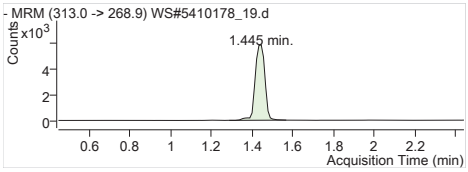



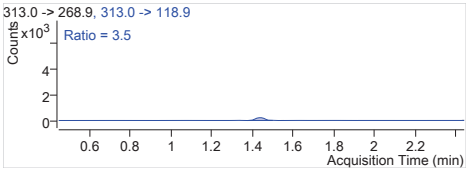

**13C9-PFDA IS** Internal Standard
RT (Exp. RT): 2.135 (2.135)
Concentration: 1 µg/L
Sample type: Sample



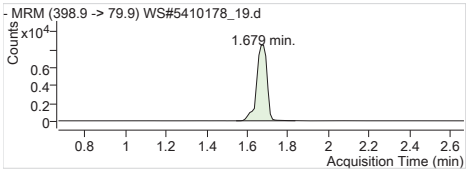



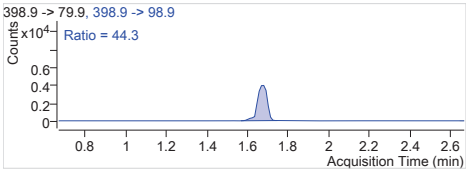

**PFBS 1** 298.9 -> 79.9
RT (Exp. RT): 1.087 (1.087)
Calc. conc. 0.03 µg/L
Area ratio: 0.48587
Sample type: Sample



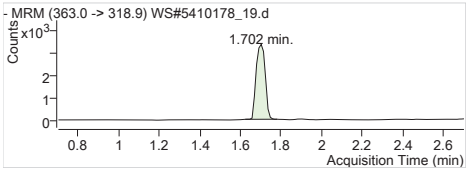



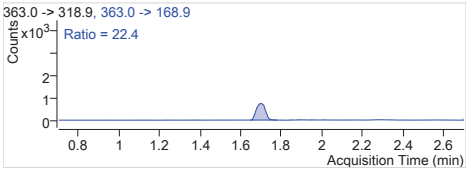

**PFHxA 1** 313.0 -> 268.9
RT (Exp. RT): 1.445 (1.445)
Calc. conc. 0.19 µg/L
Area ratio: 3.08584
Sample type: Sample



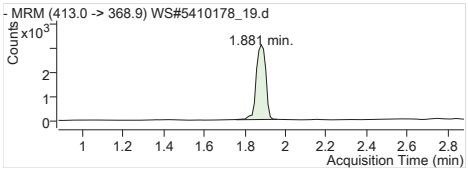



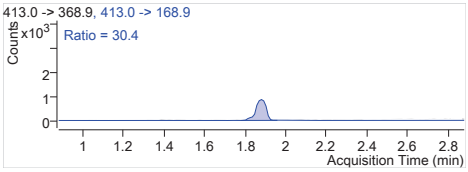

**PFHxS 1** 398.9 -> 79.9
RT (Exp. RT): 1.679 (1.668)
Calc. conc. 1.04 µg/L
Area ratio: 20.31763
Sample type: Sample



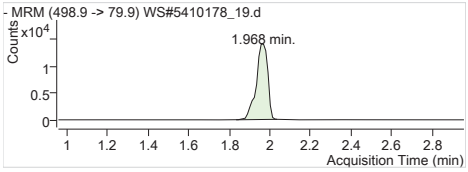



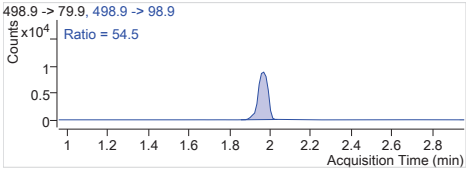

**PFHpA 1** 363.0 -> 318.9
RT (Exp. RT): 1.702 (1.702)
Calc. conc. 0.08 µg/L
Area ratio: 1.28584
Sample type: Sample



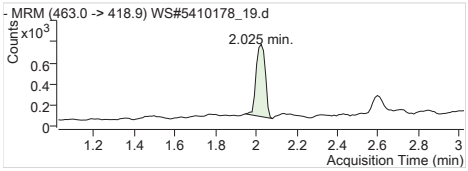



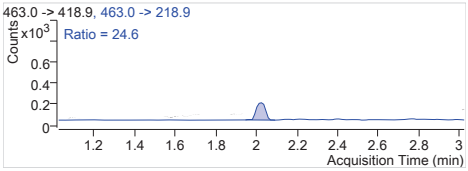

**PFOA 1** 413.0 -> 368.9
RT (Exp. RT): 1.881 (1.881)
Calc. conc. 0.07 µg/L
Area ratio: 1.19906
Sample type: Sample



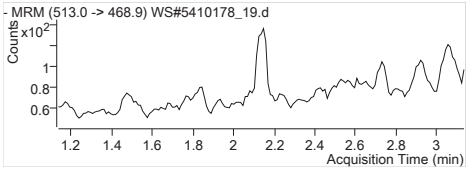



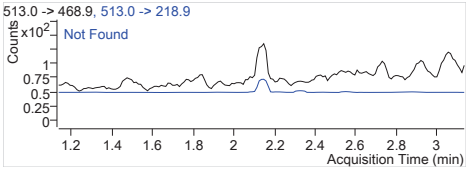

**PFOS 1** 498.9 -> 79.9
RT (Exp. RT): 1.968 (1.957)
Calc. conc. 2.03 µg/L
Area ratio: 33.12784
Sample type: Sample



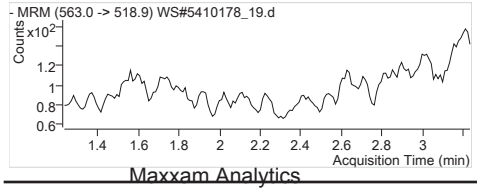



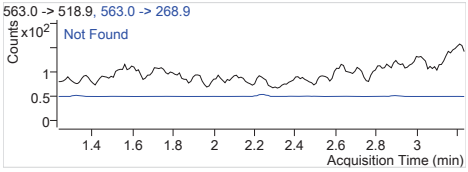

**PFNA 1** 463.0 -> 418.9
RT (Exp. RT): 2.025 (2.025)
Calc. conc. 0.02 µg/L
Area ratio: 0.26507
Sample type: Sample



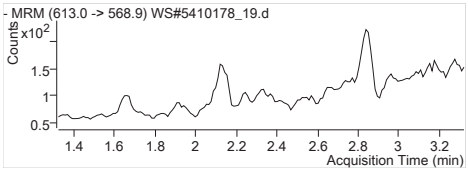



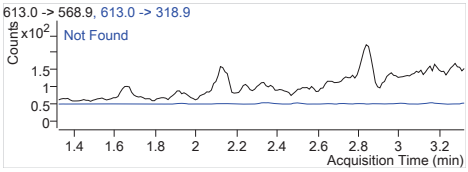

**PFDA 1** 513.0 -> 468.9
RT (Exp. RT): 0.000 (2.135)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



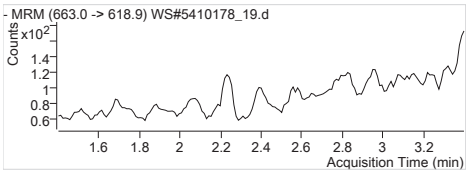



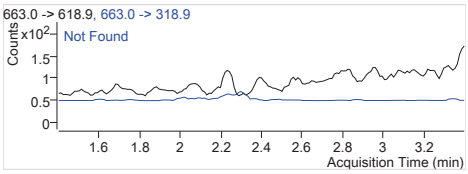

**PFUnA 1** 563.0 -> 518.9
RT (Exp. RT): 0.000 (2.234)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



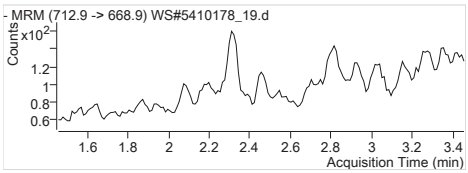



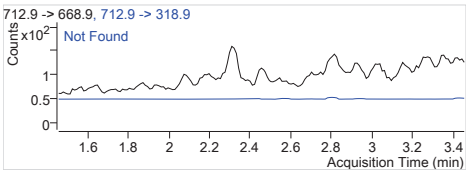

**PFDoA 1** 613.0 -> 568.9
RT (Exp. RT): 0.000 (2.323)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



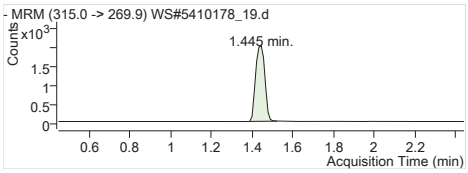



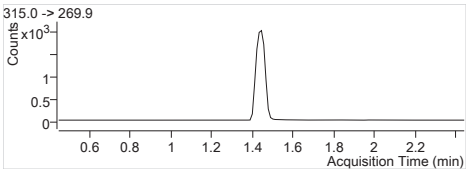

**PFTrDA 1** 663.0 -> 618.9
RT (Exp. RT): 0.000 (2.400)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



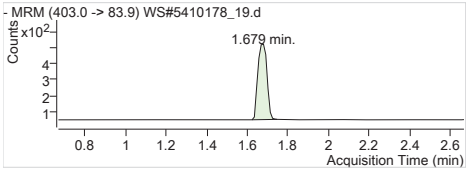



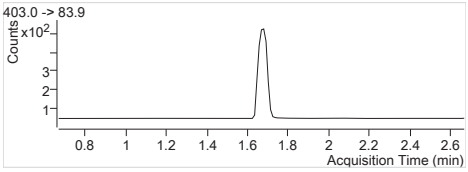

**PFTeDA 1** 712.9 -> 668.9
RT (Exp. RT): 0.000 (2.456)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



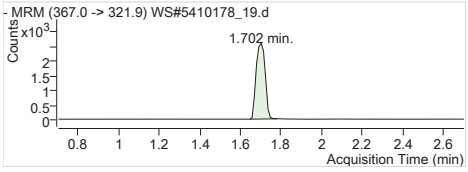



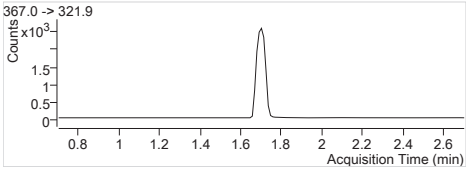

**13C2-PFHxA** 315.0 -> 269.9
RT (Exp. RT): 1.445 (1.445)
Calc. conc. 84.39 µg/L
Area ratio: 0.24966
Sample type: Sample



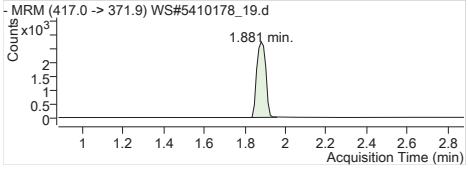



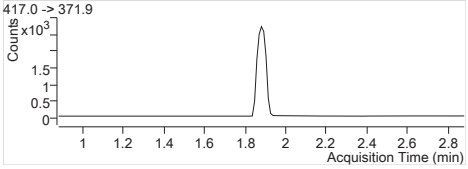

**18O2-PFHxS** 403.0 -> 83.9
RT (Exp. RT): 1.679 (1.668)
Calc. conc. 85.19 µg/L
Area ratio: 0.05876
Sample type: Sample



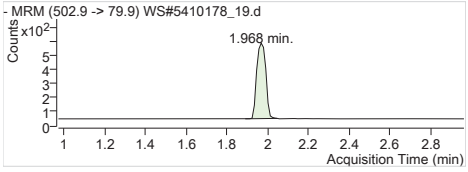



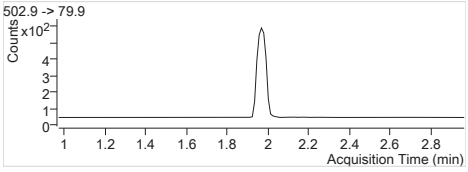

**13C4-PFHpA** 367.0 -> 321.9
RT (Exp. RT): 1.702 (1.702)
Calc. conc. 84.66 µg/L
Area ratio: 0.31360
Sample type: Sample



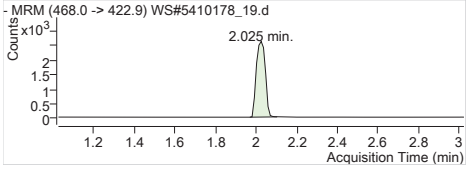



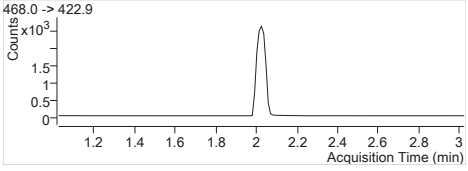

**13C4-PFOA** 417.0 -> 371.9
RT (Exp. RT): 1.881 (1.881)
Calc. conc. 89.42 µg/L
Area ratio: 0.32796
Sample type: Sample



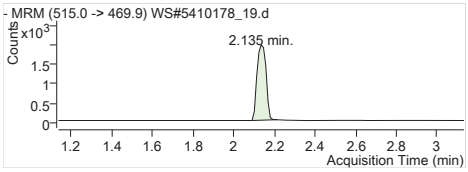



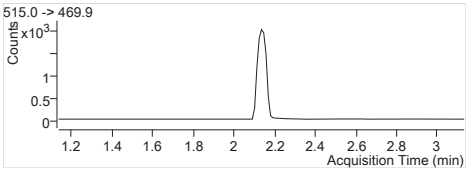

**13C4-PFOS** 502.9 -> 79.9
RT (Exp. RT): 1.968 (1.968)
Calc. conc. 82.40 µg/L
Area ratio: 0.06619
Sample type: Sample



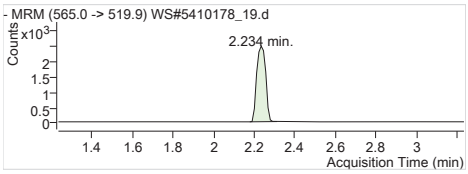



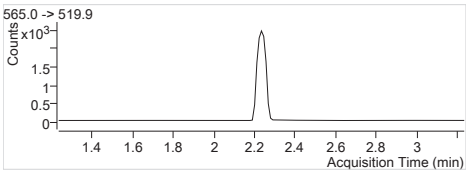

**13C5-PFNA** 468.0 -> 422.9
RT (Exp. RT): 2.025 (2.025)
Calc. conc. 88.70 µg/L
Area ratio: 0.31629
Sample type: Sample



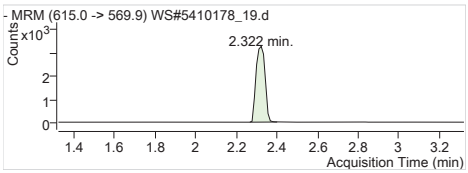



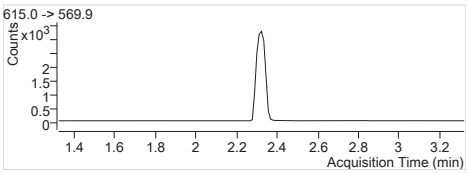

**13C2-PFDA** 515.0 -> 469.9
RT (Exp. RT): 2.135 (2.135)
Calc. conc. 83.19 µg/L
Area ratio: 0.20050
Sample type: Sample



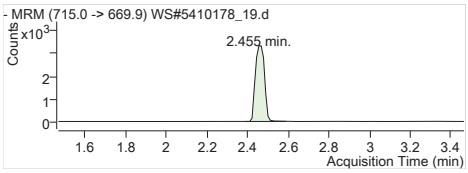



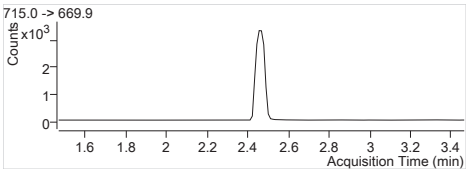

**13C2-PFUnA** 565.0 -> 519.9
RT (Exp. RT): 2.234 (2.234)
Calc. conc. 79.40 µg/L
Area ratio: 0.24724
Sample type: Sample



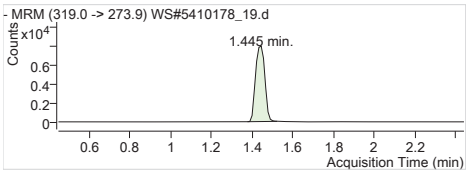



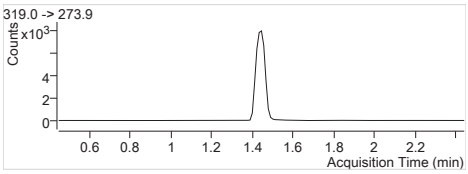

**13C2-PFDoA** 615.0 -> 569.9
RT (Exp. RT): 2.322 (2.322)
Calc. conc. 84.26 µg/L
Area ratio: 0.33261
Sample type: Sample



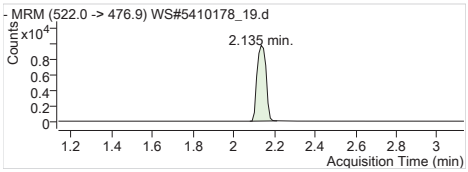



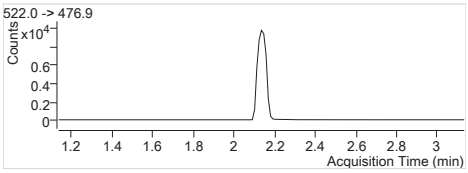

**13C2-PFTeDA** 715.0 -> 669.9
RT (Exp. RT): 2.455 (2.467)
Calc. conc. 82.58 µg/L
Area ratio: 0.34397
Sample type: Sample




**13C6-PFHxA** 319.0 -> 273.9
RT (Exp. RT): 1.445 (1.445)
Calc. conc. 2.69 µg/L
Area ratio: 0
Sample type: Sample



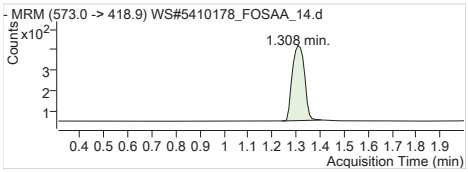

**13C9-PFDA** 522.0 -> 476.9
RT (Exp. RT): 2.135 (2.135)
Calc. conc. 2.66 µg/L
Area ratio: 0
Sample type: Sample

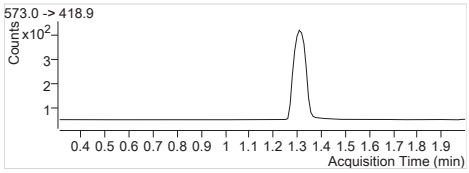
| | |
|---|---|
| **Batch Path** | T:\lcms4\PFC\20180223\WS#5410178_FOSAA\QuantResults\PFC_Water_Low_180223_WS#5410178_FOSAA_ETOxics |

| | | | |
|---|---|---|---|
| **Sample Name** | **5410178:GBV345-01** | **Instrument** | LCMS04 |
| **Data File** | WS#5410178_FOSAA_14.d | **Operator** | |
| **Sample Type** | Sample | **Dilution** | 0.024 |
| **Acq. Method** | PFC_Water_Low_FOSAA.m | **Position** | P1-B4 |
| **Acq. Date** | 2018/02/24 3:39:48 AM | **Injection Volume** | Per Method |
| **Sample Annotation** | - | | |

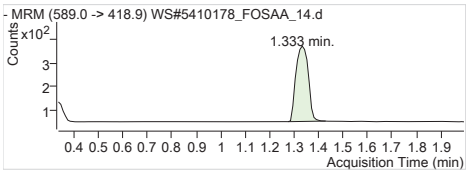
| ISTD Compounds | Response | RT | Target conc. | | |
|---|---|---|---|---|---|
| D3-MeFOSAA IS | 1308 | 1.31 | 1 µg/L | | |
| D5-EtFOSAA IS | 1135 | 1.33 | 1 µg/L | | |
| 13C9-PFDA IS | 21398 | 0.90 | 1 µg/L | | |

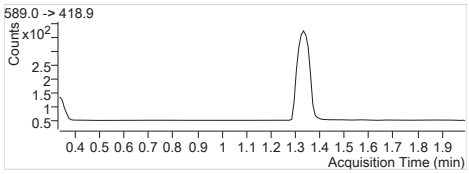
| Compound | Response | RT | Target Conc. | Calc. Conc. | Accuracy |
|---|---|---|---|---|---|
| MeFOSAA 1 | | | - | ND | - |
| EtFOSAA 1 | | | - | ND | - |
| D3-MeFOSAA | 1338 | 1.31 | - | 90.42 µg/L | - |
| D5-EtFOSAA | 1142 | 1.33 | - | 90.63 µg/L | - |
| 13C9-PFDA | 20951 | 0.90 | - | 2.50 µg/L | - |



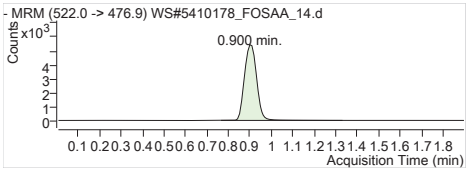



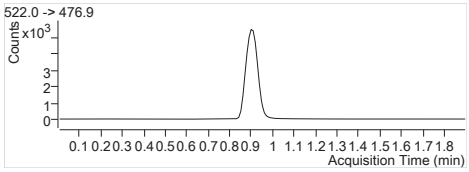

**D3-MeFOSAA IS** Internal Standard
RT (Exp. RT): 1.308 (1.308)
Concentration: 1 µg/L
Sample type: Sample



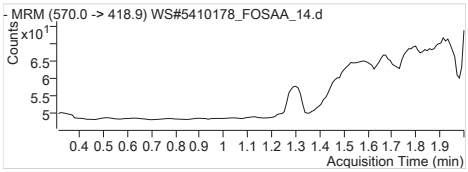



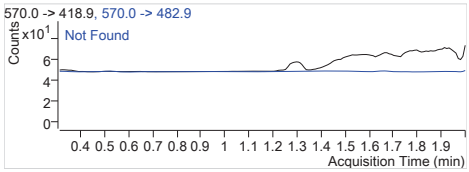

**D5-EtFOSAA IS** Internal Standard
RT (Exp. RT): 1.333 (1.333)
Concentration: 1 µg/L
Sample type: Sample



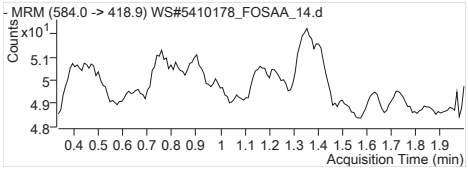



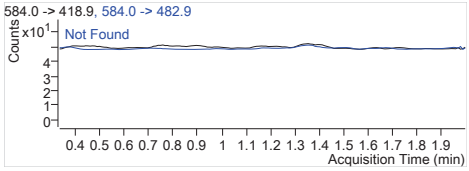

**13C9-PFDA IS** Internal Standard
RT (Exp. RT): 0.900 (0.900)
Concentration: 1 µg/L
Sample type: Sample



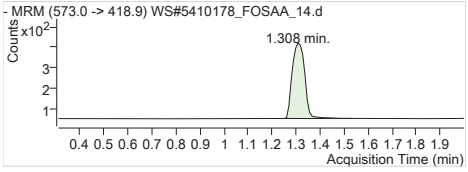



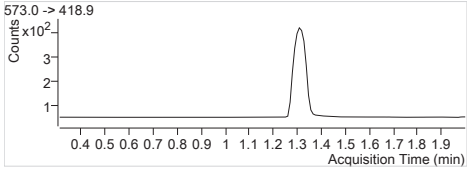

**MeFOSAA 1** 570.0 -> 418.9
RT (Exp. RT): 0.000 (1.310)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



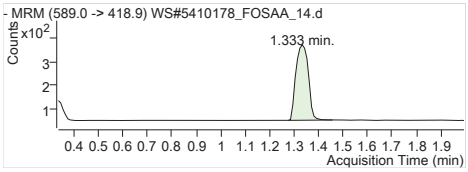



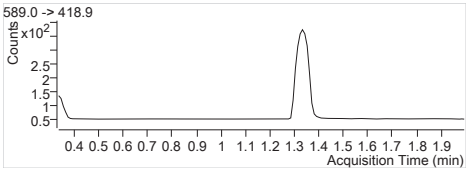

**EtFOSAA 1** 584.0 -> 418.9
RT (Exp. RT): 0.000 (1.334)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



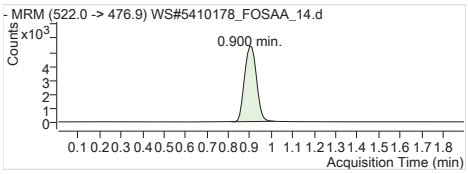



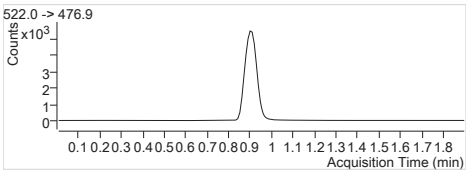

**D3-MeFOSAA** 573.0 -> 418.9
RT (Exp. RT): 1.308 (1.308)
Calc. conc. 90.42 µg/L
Area ratio: 0.06253
Sample type: Sample




| | |
|---|---|
| **D5-EtFOSAA** | 589.0 -> 418.9 |
| RT (Exp. RT): | 1.333 (1.333) |
| Calc. conc. | 90.63 µg/L |
| Area ratio: | 0.05337 |
| Sample type: | Sample |



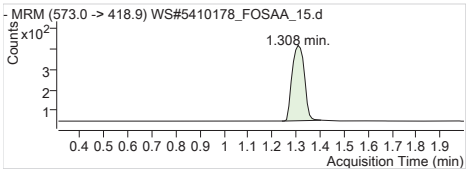

| | |
|---|---|
| **13C9-PFDA** | 522.0 -> 476.9 |
| RT (Exp. RT): | 0.900 (0.900) |
| Calc. conc. | 2.50 µg/L |
| Area ratio: | 0 |
| Sample type: | Sample |

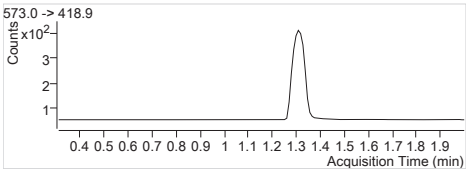
| | |
|---|---|
| **Batch Path** | T:\lcms4\PFC\20180223\WS#5410178_FOSAA\QuantResults\PFC_Water_Low_180223_WS#5410178_FOSAA_ETOxics |

| | | | |
|---|---|---|---|
| **Sample Name** | **5410178:GBV346-01** | **Instrument** | LCMS04 |
| **Data File** | WS#5410178_FOSAA_15.d | **Operator** | |
| **Sample Type** | Sample | **Dilution** | 0.024 |
| **Acq. Method** | PFC_Water_Low_FOSAA.m | **Position** | P1-B5 |
| **Acq. Date** | 2018/02/24 3:42:13 AM | **Injection Volume** | Per Method |
| **Sample Annotation** | - | | |

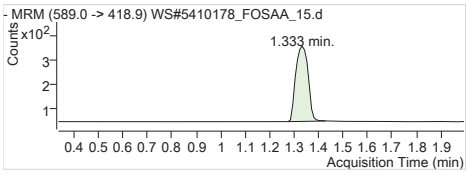
| ISTD Compounds | Response | RT | Target conc. | | |
|---|---|---|---|---|---|
| D3-MeFOSAA IS | 1298 | 1.31 | 1 µg/L | | |
| D5-EtFOSAA IS | 1083 | 1.33 | 1 µg/L | | |
| 13C9-PFDA IS | 23716 | 0.90 | 1 µg/L | | |

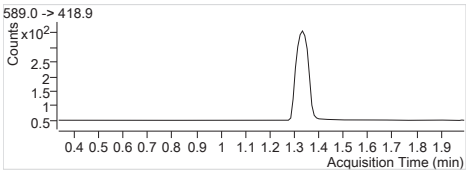
| Compound | Response | RT | Target Conc. | Calc. Conc. | Accuracy |
|---|---|---|---|---|---|
| MeFOSAA 1 | | | - | ND | - |
| EtFOSAA 1 | | | - | ND | - |
| D3-MeFOSAA | 1316 | 1.31 | - | 80.24 µg/L | - |
| D5-EtFOSAA | 1085 | 1.33 | - | 77.69 µg/L | - |
| 13C9-PFDA | 23739 | 0.90 | - | 2.84 µg/L | - |



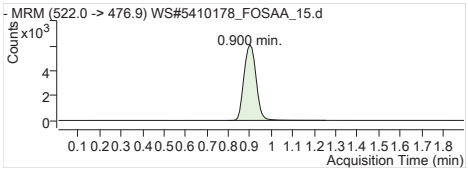



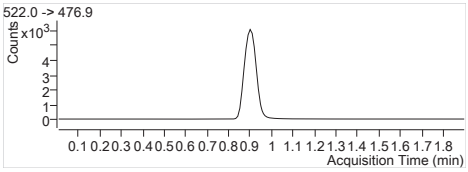

**D3-MeFOSAA IS** Internal Standard
RT (Exp. RT): 1.308 (1.308)
Concentration: 1 µg/L
Sample type: Sample



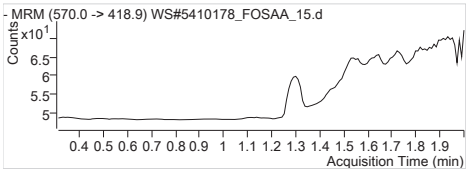



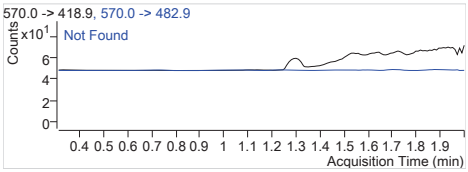

**D5-EtFOSAA IS** Internal Standard
RT (Exp. RT): 1.333 (1.333)
Concentration: 1 µg/L
Sample type: Sample



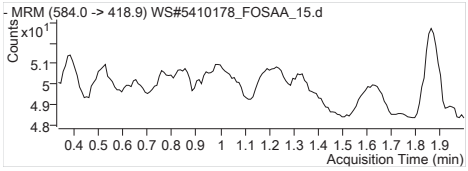



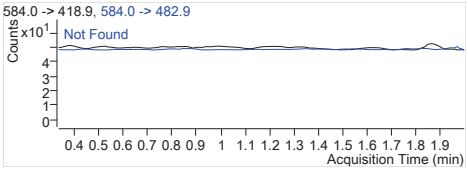

**13C9-PFDA IS** Internal Standard
RT (Exp. RT): 0.900 (0.900)
Concentration: 1 µg/L
Sample type: Sample



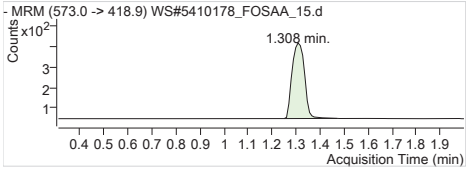



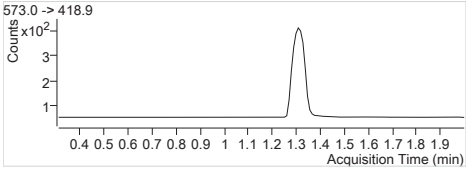

**MeFOSAA 1** 570.0 -> 418.9
RT (Exp. RT): 0.000 (1.310)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



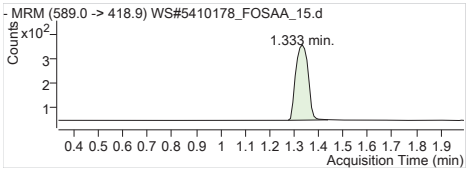



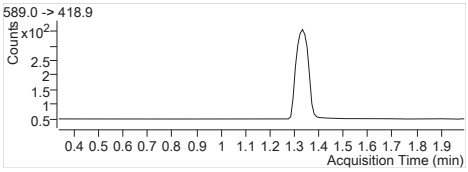

**EtFOSAA 1** 584.0 -> 418.9
RT (Exp. RT): 0.000 (1.334)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



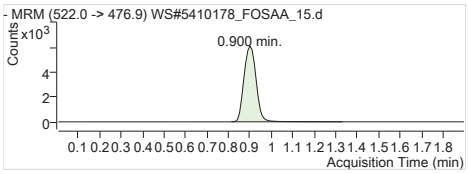



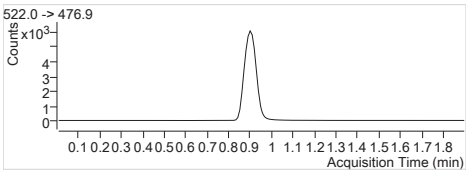

**D3-MeFOSAA** 573.0 -> 418.9
RT (Exp. RT): 1.308 (1.308)
Calc. conc. 80.24 µg/L
Area ratio: 0.05549
Sample type: Sample




| | |
|---|---|
| **D5-EtFOSAA** | 589.0 -> 418.9 |
| RT (Exp. RT): | 1.333 (1.333) |
| Calc. conc. | 77.69 µg/L |
| Area ratio: | 0.04575 |
| Sample type: | Sample |



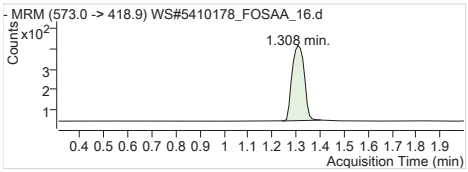

| | |
|---|---|
| **13C9-PFDA** | 522.0 -> 476.9 |
| RT (Exp. RT): | 0.900 (0.900) |
| Calc. conc. | 2.84 µg/L |
| Area ratio: | 0 |
| Sample type: | Sample |

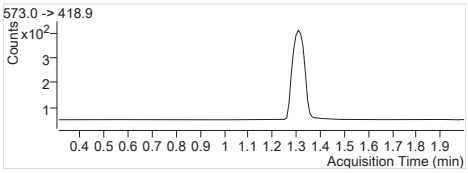
| | |
|---|---|
| **Batch Path** | T:\lcms4\PFC\20180223\WS#5410178_FOSAA\QuantResults\PFC_Water_Low_180223_WS#5410178_FOSAA_ETOxics |

| | | | |
|---|---|---|---|
| **Sample Name** | **5410178:GBV347-01** | **Instrument** | LCMS04 |
| **Data File** | WS#5410178_FOSAA_16.d | **Operator** | |
| **Sample Type** | Sample | **Dilution** | 0.024 |
| **Acq. Method** | PFC_Water_Low_FOSAA.m | **Position** | P1-B6 |
| **Acq. Date** | 2018/02/24 3:44:39 AM | **Injection Volume** | Per Method |
| **Sample Annotation** | - | | |

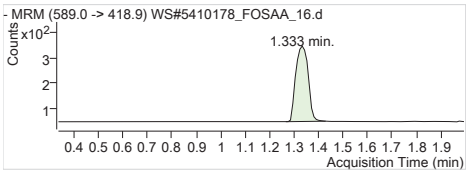
| ISTD Compounds | Response | RT | Target conc. | | |
|---|---|---|---|---|---|
| D3-MeFOSAA IS | 1282 | 1.31 | 1 µg/L | | |
| D5-EtFOSAA IS | 1055 | 1.33 | 1 µg/L | | |
| 13C9-PFDA IS | 25302 | 0.90 | 1 µg/L | | |

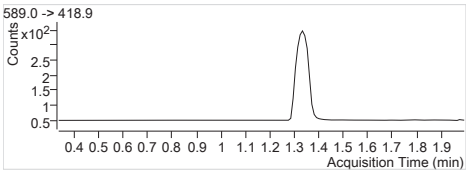
| Compound | Response | RT | Target Conc. | Calc. Conc. | Accuracy |
|---|---|---|---|---|---|
| MeFOSAA 1 | | | - | ND | - |
| EtFOSAA 1 | | | - | ND | - |
| D3-MeFOSAA | 1298 | 1.31 | - | 74.18 µg/L | - |
| D5-EtFOSAA | 1060 | 1.33 | - | 71.14 µg/L | - |
| 13C9-PFDA | 25287 | 0.90 | - | 3.02 µg/L | - |



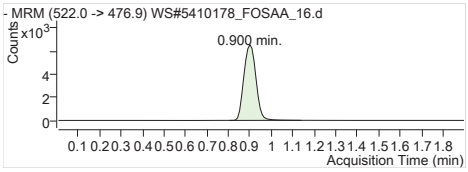



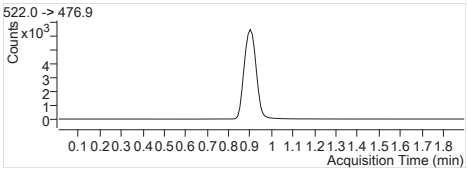

**D3-MeFOSAA IS** Internal Standard
RT (Exp. RT): 1.308 (1.308)
Concentration: 1 µg/L
Sample type: Sample



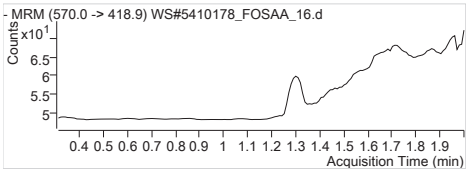



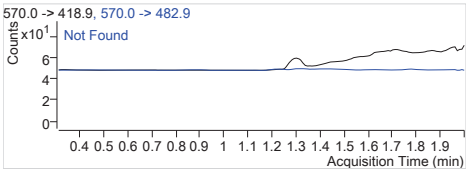

**D5-EtFOSAA IS** Internal Standard
RT (Exp. RT): 1.333 (1.333)
Concentration: 1 µg/L
Sample type: Sample



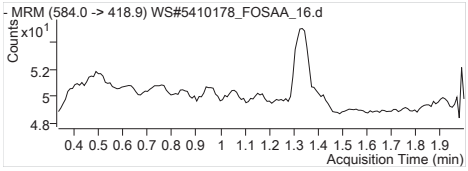



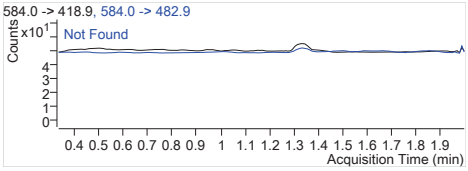

**13C9-PFDA IS** Internal Standard
RT (Exp. RT): 0.900 (0.900)
Concentration: 1 µg/L
Sample type: Sample



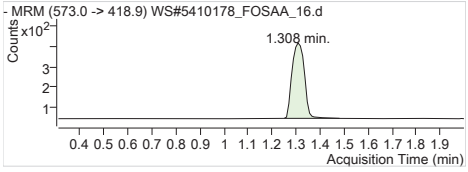



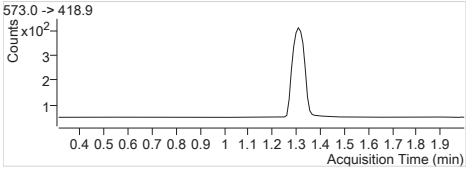

**MeFOSAA 1** 570.0 -> 418.9
RT (Exp. RT): 0.000 (1.310)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



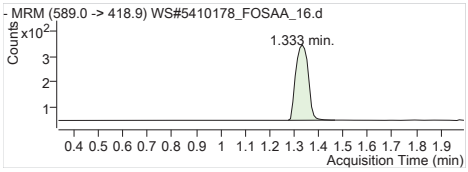



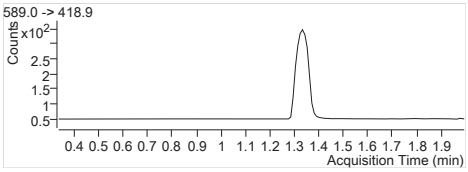

**EtFOSAA 1** 584.0 -> 418.9
RT (Exp. RT): 0.000 (1.334)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



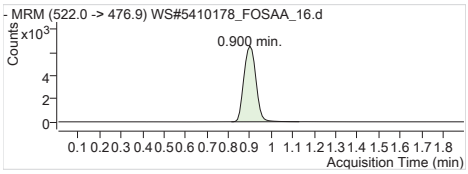



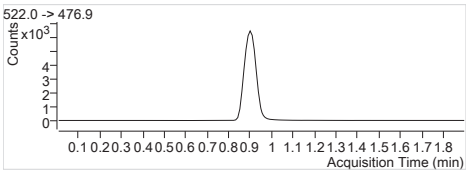

**D3-MeFOSAA** 573.0 -> 418.9
RT (Exp. RT): 1.308 (1.308)
Calc. conc. 74.18 µg/L
Area ratio: 0.05130
Sample type: Sample




| | |
|---|---|
| **D5-EtFOSAA** | 589.0 -> 418.9 |
| RT (Exp. RT): | 1.333 (1.333) |
| Calc. conc. | 71.14 µg/L |
| Area ratio: | 0.04189 |
| Sample type: | Sample |



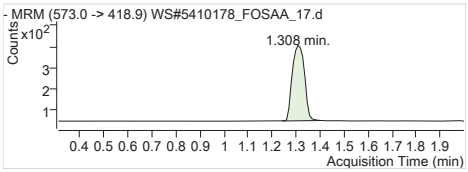

| | |
|---|---|
| **13C9-PFDA** | 522.0 -> 476.9 |
| RT (Exp. RT): | 0.900 (0.900) |
| Calc. conc. | 3.02 µg/L |
| Area ratio: | 0 |
| Sample type: | Sample |

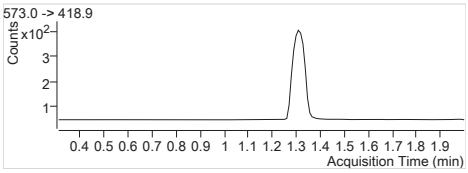
| | |
|---|---|
| **Batch Path** | T:\lcms4\PFC\20180223\WS#5410178_FOSAA\QuantResults\PFC_Water_Low_180223_WS#5410178_FOSAA_ETOxics |

| | | | |
|---|---|---|---|
| **Sample Name** | **5410178:GBV348-01** | **Instrument** | LCMS04 |
| **Data File** | WS#5410178_FOSAA_17.d | **Operator** | |
| **Sample Type** | Sample | **Dilution** | 0.024 |
| **Acq. Method** | PFC_Water_Low_FOSAA.m | **Position** | P1-B7 |
| **Acq. Date** | 2018/02/24 3:47:04 AM | **Injection Volume** | Per Method |
| **Sample Annotation** | - | | |

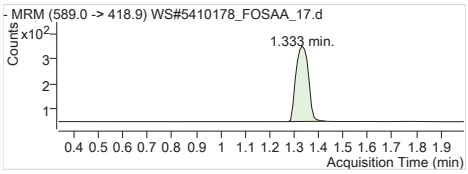
| ISTD Compounds | Response | RT | Target conc. | | |
|---|---|---|---|---|---|
| D3-MeFOSAA IS | 1261 | 1.31 | 1 µg/L | | |
| D5-EtFOSAA IS | 1066 | 1.33 | 1 µg/L | | |
| 13C9-PFDA IS | 24025 | 0.91 | 1 µg/L | | |

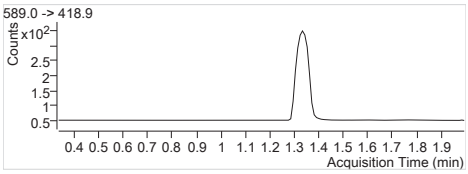
| Compound | Response | RT | Target Conc. | Calc. Conc. | Accuracy |
|---|---|---|---|---|---|
| MeFOSAA 1 | | | - | ND | - |
| EtFOSAA 1 | | | - | ND | - |
| D3-MeFOSAA | 1261 | 1.31 | - | 75.90 µg/L | - |
| D5-EtFOSAA | 1075 | 1.33 | - | 75.98 µg/L | - |
| 13C9-PFDA | 23633 | 0.91 | - | 2.82 µg/L | - |



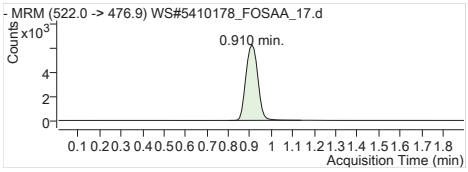



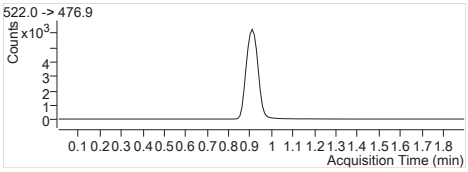

**D3-MeFOSAA IS** Internal Standard
RT (Exp. RT): 1.308 (1.308)
Concentration: 1 µg/L
Sample type: Sample



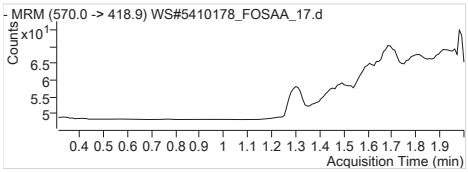



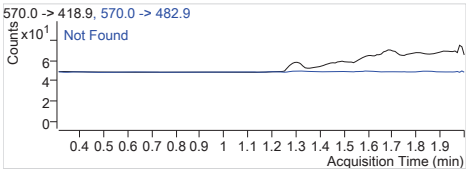

**D5-EtFOSAA IS** Internal Standard
RT (Exp. RT): 1.333 (1.333)
Concentration: 1 µg/L
Sample type: Sample



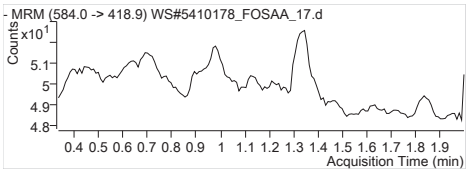



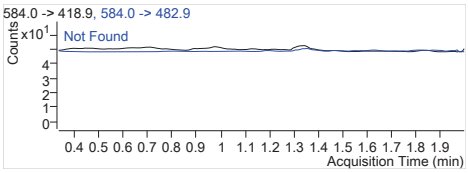

**13C9-PFDA IS** Internal Standard
RT (Exp. RT): 0.910 (0.900)
Concentration: 1 µg/L
Sample type: Sample



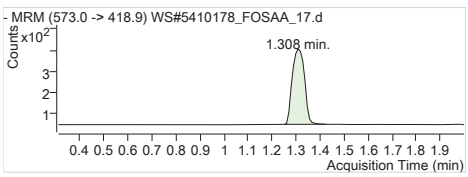



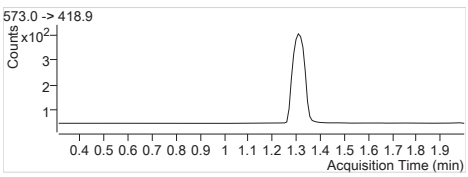

**MeFOSAA 1** 570.0 -> 418.9
RT (Exp. RT): 0.000 (1.310)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



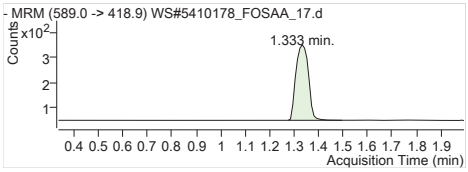



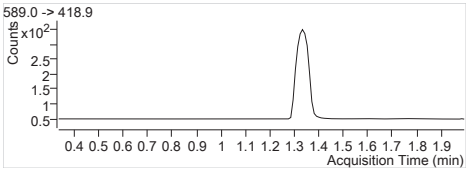

**EtFOSAA 1** 584.0 -> 418.9
RT (Exp. RT): 0.000 (1.334)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



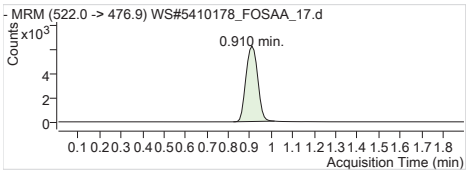



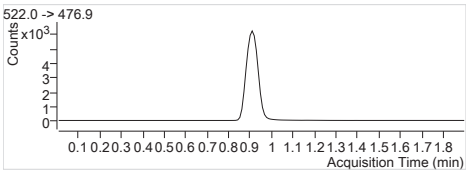

**D3-MeFOSAA** 573.0 -> 418.9
RT (Exp. RT): 1.308 (1.308)
Calc. conc. 75.90 µg/L
Area ratio: 0.05249
Sample type: Sample




| | |
|---|---|
| **D5-EtFOSAA** | 589.0 -> 418.9 |
| RT (Exp. RT): | 1.333 (1.333) |
| Calc. conc. | 75.98 µg/L |
| Area ratio: | 0.04475 |
| Sample type: | Sample |



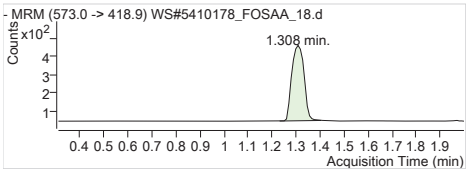

| | |
|---|---|
| **13C9-PFDA** | 522.0 -> 476.9 |
| RT (Exp. RT): | 0.910 (0.900) |
| Calc. conc. | 2.82 µg/L |
| Area ratio: | 0 |
| Sample type: | Sample |

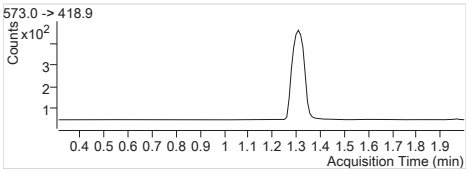
| | |
|---|---|
| **Batch Path** | T:\lcms4\PFC\20180223\WS#5410178_FOSAA\QuantResults\PFC_Water_Low_180223_WS#5410178_FOSAA_ETOxics |

| | | | |
|---|---|---|---|
| **Sample Name** | **5410178:GBV349-01:10x** | **Instrument** | LCMS04 |
| **Data File** | WS#5410178_FOSAA_18.d | **Operator** | |
| **Sample Type** | Sample | **Dilution** | 0.24 |
| **Acq. Method** | PFC_Water_Low_FOSAA.m | **Position** | P1-B8 |
| **Acq. Date** | 2018/02/24 3:49:29 AM | **Injection Volume** | Per Method |
| **Sample Annotation** | Not used. | | |

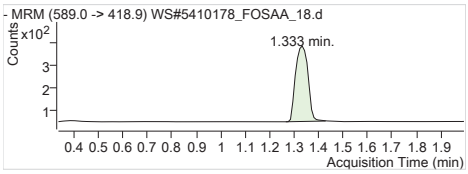
| ISTD Compounds | Response | RT | Target conc. | | |
|---|---|---|---|---|---|
| D3-MeFOSAA IS | 1448 | 1.31 | 1 µg/L | | |
| D5-EtFOSAA IS | 1189 | 1.33 | 1 µg/L | | |
| 13C9-PFDA IS | 25288 | 0.88 | 1 µg/L | | |

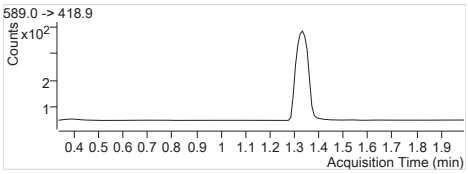
| Compound | Response | RT | Target Conc. | Calc. Conc. | Accuracy |
|---|---|---|---|---|---|
| MeFOSAA 1 | | | - | ND | - |
| EtFOSAA 1 | | | - | ND | - |
| D3-MeFOSAA | 1451 | 1.31 | - | 82.97 µg/L | - |
| D5-EtFOSAA | 1203 | 1.33 | - | 80.78 µg/L | - |
| 13C9-PFDA | 25292 | 0.88 | - | 30.22 µg/L | - |



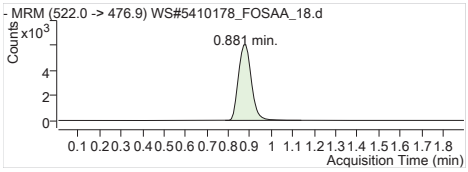



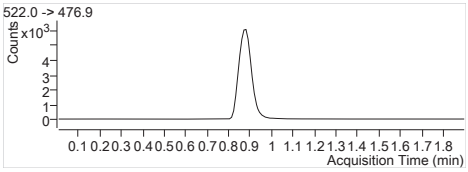

**D3-MeFOSAA IS** Internal Standard
RT (Exp. RT): 1.308 (1.308)
Concentration: 1 µg/L
Sample type: Sample



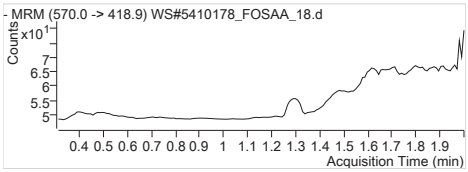



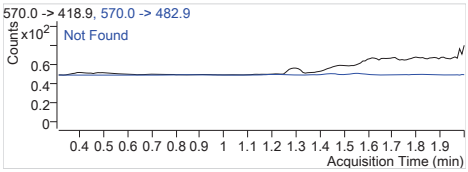

**D5-EtFOSAA IS** Internal Standard
RT (Exp. RT): 1.333 (1.333)
Concentration: 1 µg/L
Sample type: Sample



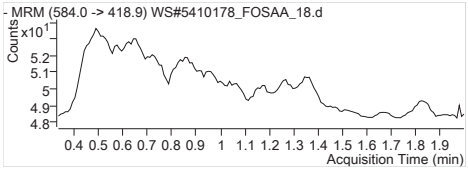



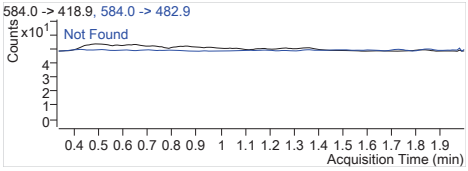

**13C9-PFDA IS** Internal Standard
RT (Exp. RT): 0.881 (0.900)
Concentration: 1 µg/L
Sample type: Sample



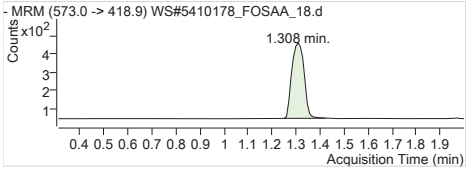



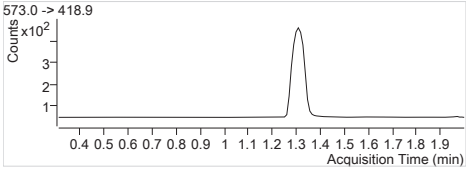

**MeFOSAA 1** 570.0 -> 418.9
RT (Exp. RT): 0.000 (1.310)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



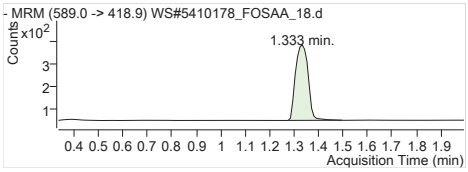



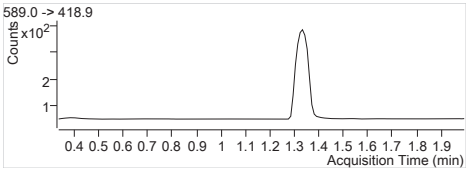

**EtFOSAA 1** 584.0 -> 418.9
RT (Exp. RT): 0.000 (1.334)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



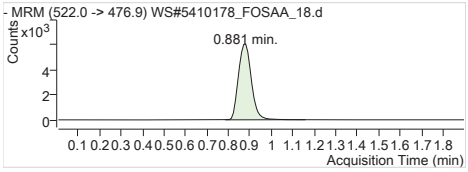



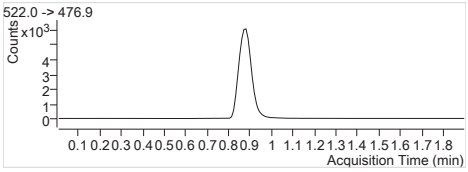

**D3-MeFOSAA** 573.0 -> 418.9
RT (Exp. RT): 1.308 (1.308)
Calc. conc. 82.97 µg/L
Area ratio: 0.05738
Sample type: Sample




| | |
|---|---|
| **D5-EtFOSAA** | 589.0 -> 418.9 |
| RT (Exp. RT): | 1.333 (1.333) |
| Calc. conc. | 80.78 µg/L |
| Area ratio: | 0.04757 |
| Sample type: | Sample |



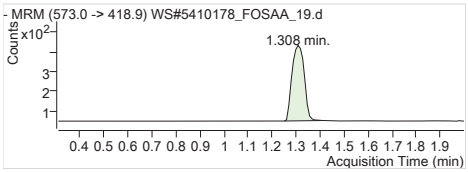

| | |
|---|---|
| **13C9-PFDA** | 522.0 -> 476.9 |
| RT (Exp. RT): | 0.881 (0.900) |
| Calc. conc. | 30.22 µg/L |
| Area ratio: | 0 |
| Sample type: | Sample |

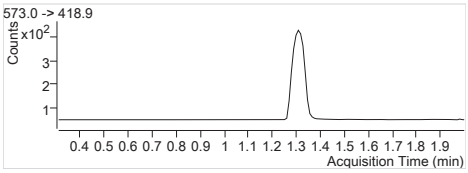
| | |
|---|---|
| **Batch Path** | T:\lcms4\PFC\20180223\WS#5410178_FOSAA\QuantResults\PFC_Water_Low_180223_WS#5410178_FOSAA_ETOxics |

| | | | |
|---|---|---|---|
| **Sample Name** | **5410178:GBV349-01** | **Instrument** | LCMS04 |
| **Data File** | WS#5410178_FOSAA_19.d | **Operator** | |
| **Sample Type** | Sample | **Dilution** | 0.024 |
| **Acq. Method** | PFC_Water_Low_FOSAA.m | **Position** | P1-B9 |
| **Acq. Date** | 2018/02/24 3:51:54 AM | **Injection Volume** | Per Method |
| **Sample Annotation** | Reported for all. | | |

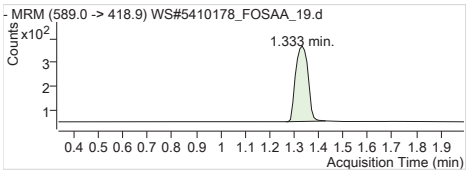
| ISTD Compounds | Response | RT | Target conc. | | |
|---|---|---|---|---|---|
| D3-MeFOSAA IS | 1353 | 1.31 | 1 µg/L | | |
| D5-EtFOSAA IS | 1127 | 1.33 | 1 µg/L | | |
| 13C9-PFDA IS | 23821 | 0.90 | 1 µg/L | | |

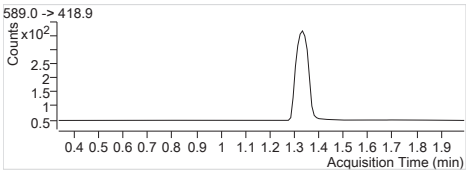
| Compound | Response | RT | Target Conc. | Calc. Conc. | Accuracy |
|---|---|---|---|---|---|
| MeFOSAA 1 | | | - | ND | - |
| EtFOSAA 1 | | | - | ND | - |
| D3-MeFOSAA | 1366 | 1.31 | - | 82.92 µg/L | - |
| D5-EtFOSAA | 1141 | 1.33 | - | 81.34 µg/L | - |
| 13C9-PFDA | 23778 | 0.90 | - | 2.84 µg/L | - |



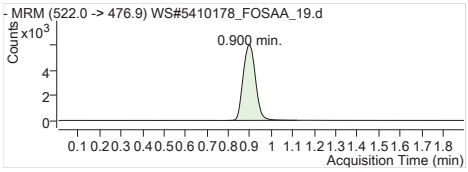



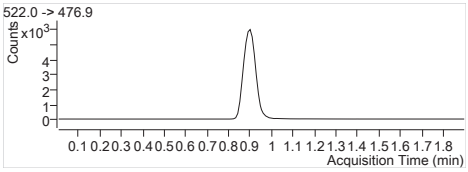

**D3-MeFOSAA IS** Internal Standard
RT (Exp. RT): 1.308 (1.308)
Concentration: 1 µg/L
Sample type: Sample



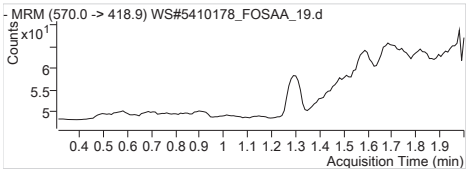



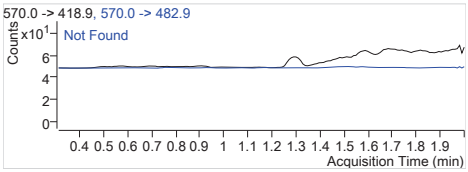

**D5-EtFOSAA IS** Internal Standard
RT (Exp. RT): 1.333 (1.333)
Concentration: 1 µg/L
Sample type: Sample



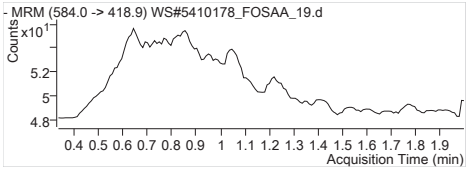



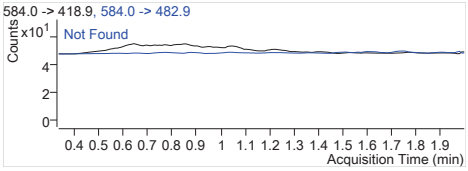

**13C9-PFDA IS** Internal Standard
RT (Exp. RT): 0.900 (0.900)
Concentration: 1 µg/L
Sample type: Sample



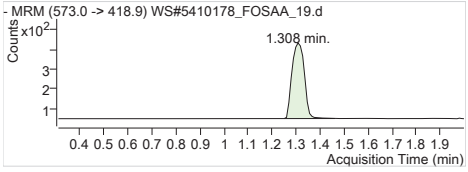



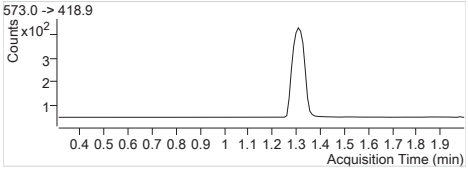

**MeFOSAA 1** 570.0 -> 418.9
RT (Exp. RT): 0.000 (1.310)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



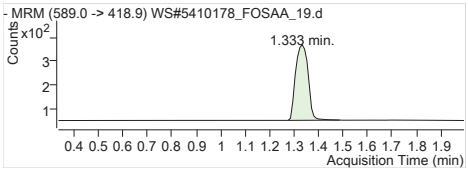



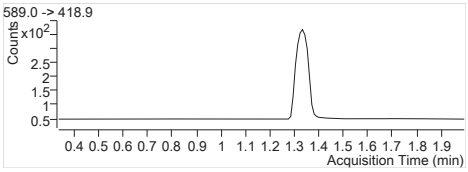

**EtFOSAA 1** 584.0 -> 418.9
RT (Exp. RT): 0.000 (1.334)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



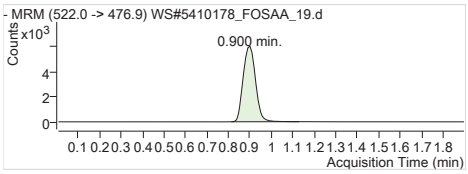



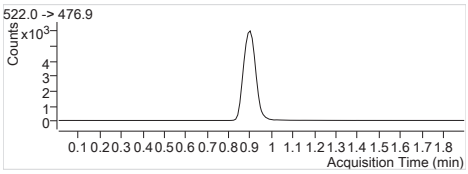

**D3-MeFOSAA** 573.0 -> 418.9
RT (Exp. RT): 1.308 (1.308)
Calc. conc. 82.92 µg/L
Area ratio: 0.05734
Sample type: Sample




| | |
|---|---|
| **D5-EtFOSAA** | 589.0 -> 418.9 |
| RT (Exp. RT): | 1.333 (1.333) |
| Calc. conc. | 81.34 µg/L |
| Area ratio: | 0.04790 |
| Sample type: | Sample |



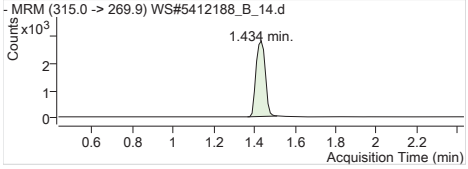

| | |
|---|---|
| **13C9-PFDA** | 522.0 -> 476.9 |
| RT (Exp. RT): | 0.900 (0.900) |
| Calc. conc. | 2.84 µg/L |
| Area ratio: | 0 |
| Sample type: | Sample |

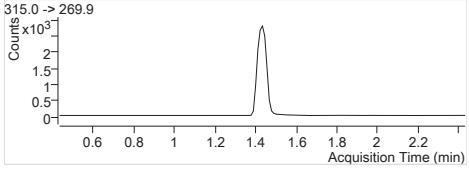
| | |
|---|---|
| **Batch Path** | T:\lcms4\PFC\20180226\WS#5412188_B\QuantResults\PFC_Water_Low_180227_WS#5412188_B_EToxics |

| | | | |
|---|---|---|---|
| **Sample Name** | **5412188:GBV350-01:10x** | **Instrument** | LCMS04 |
| **Data File** | WS#5412188_B_14.d | **Operator** | |
| **Sample Type** | Sample | **Dilution** | 0.24 |
| **Acq. Method** | PFC_Water_Low.m | **Position** | P1-D3 |
| **Acq. Date** | 2018/02/27 2:16:56 PM | **Injection Volume** | Per Method |
| **Sample Annotation** | - | | |

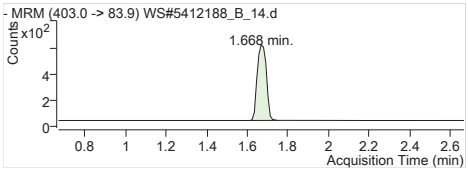
| ISTD Compounds | Response | RT | Target conc. | | |
|---|---|---|---|---|---|
| MPFHxA | 8736 | 1.43 | 1 µg/L | | |
| MPFHxS | 1793 | 1.67 | 1 µg/L | | |
| MPFHpA | 10037 | 1.69 | 1 µg/L | | |
| MPFOA | 10466 | 1.87 | 1 µg/L | | |
| MPFOS | 2167 | 1.97 | 1 µg/L | | |
| MPFNA | 10123 | 2.01 | 1 µg/L | | |
| MPFDA | 8885 | 2.14 | 1 µg/L | | |
| MPFUnA | 9706 | 2.23 | 1 µg/L | | |
| MPFDoA | 13172 | 2.31 | 1 µg/L | | |
| MPFTeDA | 10843 | 2.46 | 1 µg/L | | |
| 13C6-PFHxA IS | 33310 | 1.43 | 1 µg/L | | |
| 13C9-PFDA IS | 41490 | 2.13 | 1 µg/L | | |

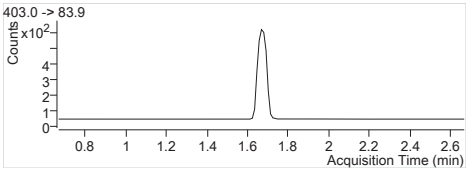
| Compound | Response | RT | Target Conc. | Calc. Conc. | Accuracy |
|---|---|---|---|---|---|
| PFBS 1 | | | - | ND | - |
| PFHxA 1 | | | - | ND | - |
| PFHxS 1 | | | - | ND | - |
| PFHpA 1 | | | - | ND | - |
| PFOA 1 | | | - | ND | - |
| PFOS 1 | | | - | ND | - |
| PFNA 1 | | | - | ND | - |
| PFDA 1 | | | - | ND | - |
| PFUnA 1 | | | - | ND | - |
| PFDoA 1 | | | - | ND | - |
| PFTrDA 1 | | | - | ND | - |
| PFTeDA 1 | | | - | ND | - |
| 13C2-PFHxA | 8736 | 1.43 | - | 105.51 µg/L | - |
| 18O2-PFHxS | 1793 | 1.67 | - | 103.65 µg/L | - |
| 13C4-PFHpA | 10037 | 1.69 | - | 104.66 µg/L | - |
| 13C4-PFOA | 10466 | 1.87 | - | 105.80 µg/L | - |
| 13C4-PFOS | 2167 | 1.97 | - | 108.20 µg/L | - |
| 13C5-PFNA | 10124 | 2.01 | - | 105.66 µg/L | - |
| 13C2-PFDA | 8778 | 2.14 | - | 96.06 µg/L | - |
| 13C2-PFUnA | 9706 | 2.23 | - | 91.34 µg/L | - |
| 13C2-PFDoA | 13172 | 2.31 | - | 97.84 µg/L | - |
| 13C2-PFTeDA | 10903 | 2.46 | - | 73.67 µg/L | - |
| 13C6-PFHxA | 33310 | 1.43 | - | 25.52 µg/L | - |
| 13C9-PFDA | 41490 | 2.13 | - | 26.72 µg/L | - |



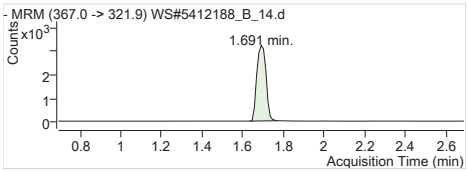



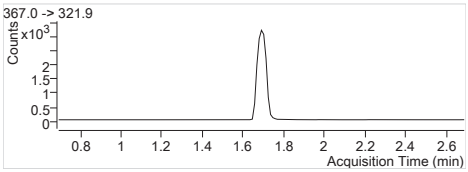

| | |
|---|---|
| **MPFHxA** | Internal Standard |
| RT (Exp. RT): | 1.434 (1.434) |
| Concentration: | 1 µg/L |
| Sample type: | Sample |



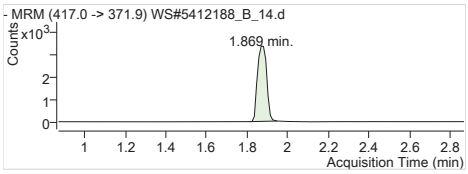



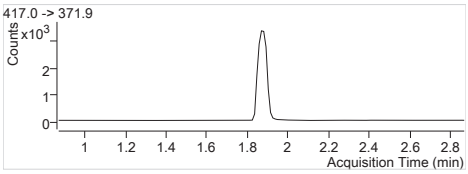

**MPFHxS** Internal Standard
RT (Exp. RT): 1.668 (1.668)
Concentration: 1 µg/L
Sample type: Sample



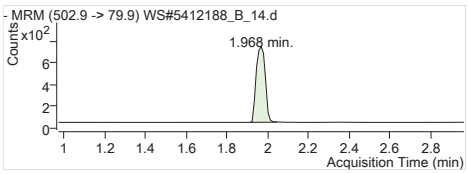



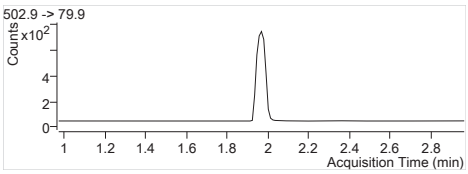

**MPFHpA** Internal Standard
RT (Exp. RT): 1.691 (1.691)
Concentration: 1 µg/L
Sample type: Sample



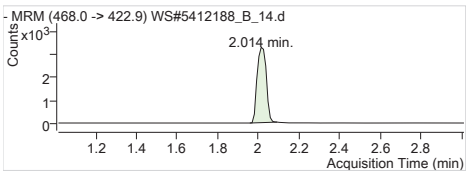



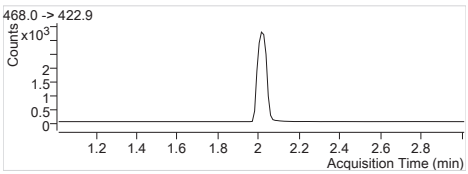

**MPFOA** Internal Standard
RT (Exp. RT): 1.869 (1.869)
Concentration: 1 µg/L
Sample type: Sample



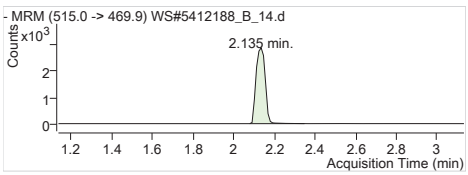



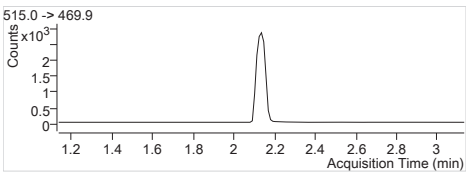

**MPFOS** Internal Standard
RT (Exp. RT): 1.968 (1.968)
Concentration: 1 µg/L
Sample type: Sample



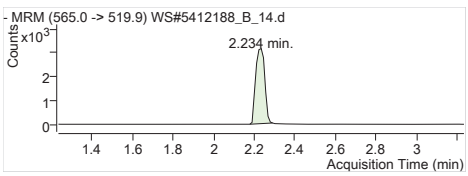



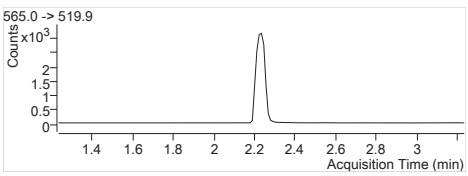

**MPFNA** Internal Standard
RT (Exp. RT): 2.014 (2.014)
Concentration: 1 µg/L
Sample type: Sample



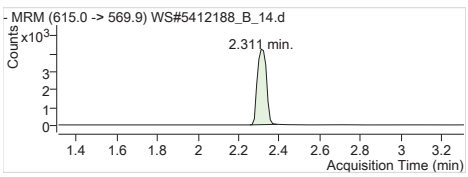



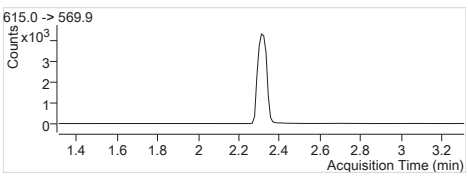

**MPFDA** Internal Standard
RT (Exp. RT): 2.135 (2.135)
Concentration: 1 µg/L
Sample type: Sample



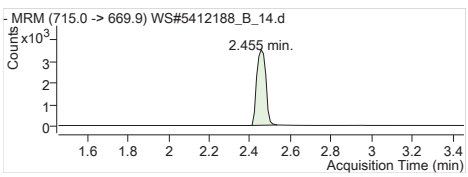



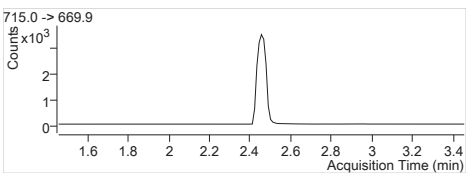

**MPFUnA** Internal Standard
RT (Exp. RT): 2.234 (2.234)
Concentration: 1 µg/L
Sample type: Sample



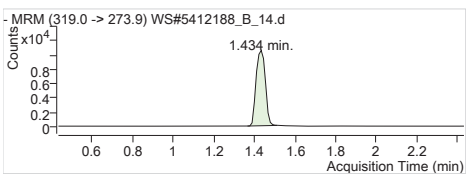



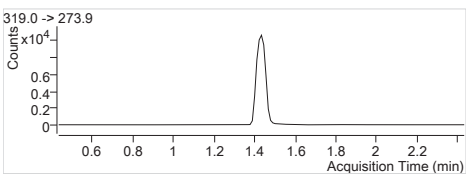

**MPFDoA** Internal Standard
RT (Exp. RT): 2.311 (2.311)
Concentration: 1 µg/L
Sample type: Sample



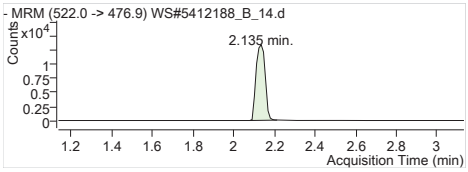



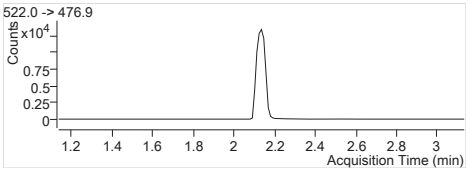

**MPFTeDA** Internal Standard
RT (Exp. RT): 2.455 (2.455)
Concentration: 1 µg/L
Sample type: Sample



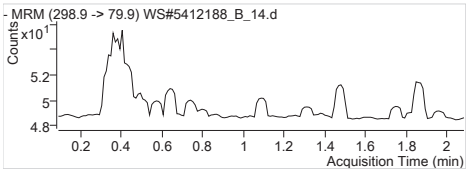



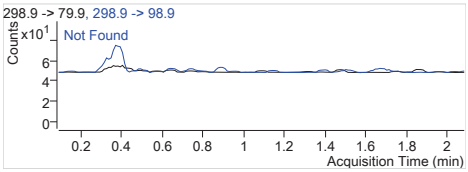

**13C6-PFHxA IS** Internal Standard
RT (Exp. RT): 1.434 (1.434)
Concentration: 1 µg/L
Sample type: Sample



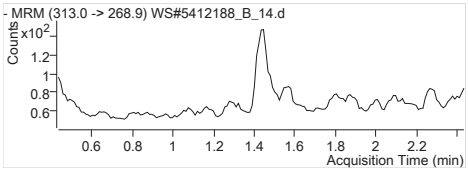



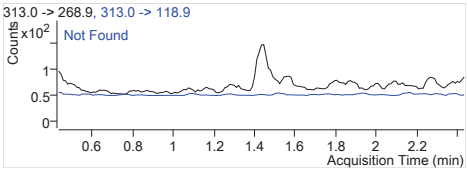

**13C9-PFDA IS** Internal Standard
RT (Exp. RT): 2.135 (2.135)
Concentration: 1 µg/L
Sample type: Sample



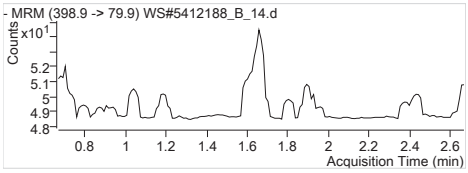



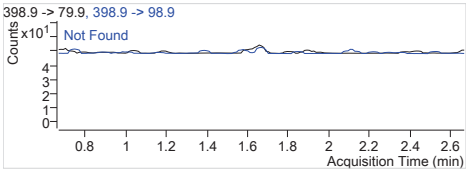

**PFBS 1** 298.9 -> 79.9
RT (Exp. RT): 0.000 (1.087)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



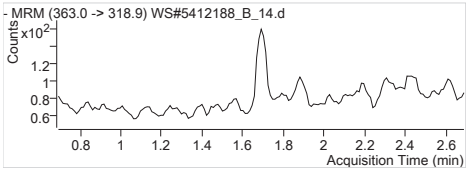



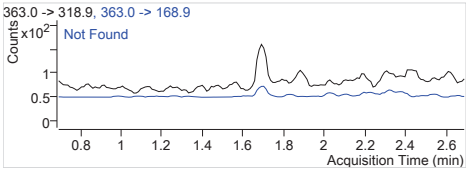

**PFHxA 1** 313.0 -> 268.9
RT (Exp. RT): 0.000 (1.434)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



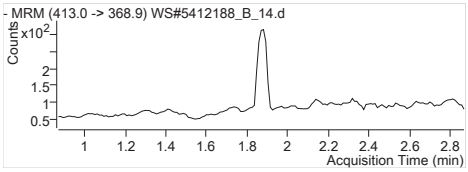



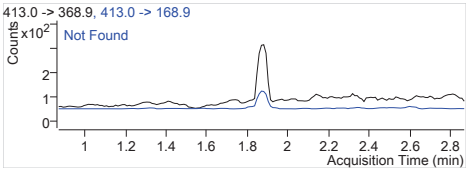

**PFHxS 1** 398.9 -> 79.9
RT (Exp. RT): 0.000 (1.668)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



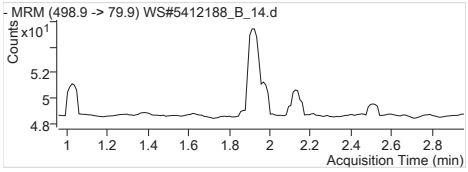



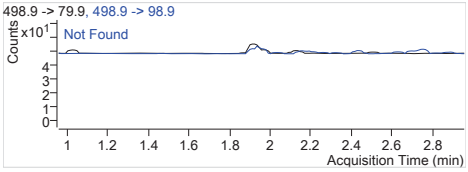

**PFHpA 1** 363.0 -> 318.9
RT (Exp. RT): 0.000 (1.691)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



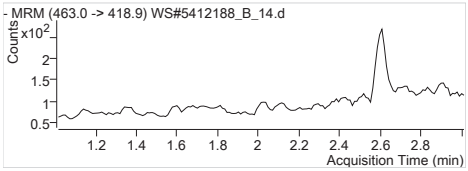



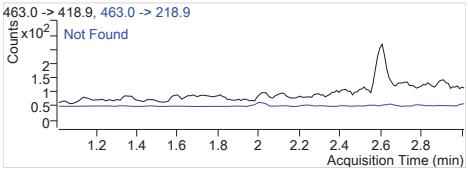

**PFOA 1** 413.0 -> 368.9
RT (Exp. RT): 0.000 (1.869)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



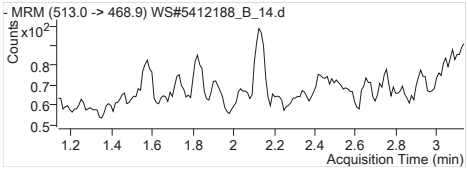



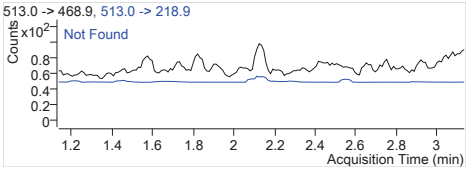

**PFOS 1** 498.9 -> 79.9
RT (Exp. RT): 0.000 (1.957)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



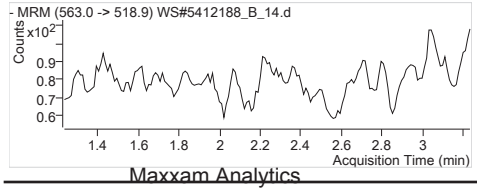



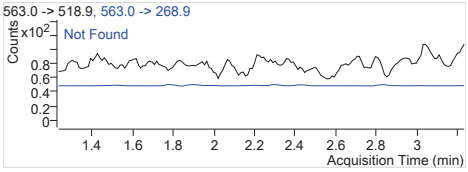

**PFNA 1** 463.0 -> 418.9
RT (Exp. RT): 0.000 (2.014)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



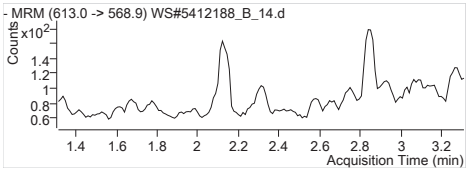



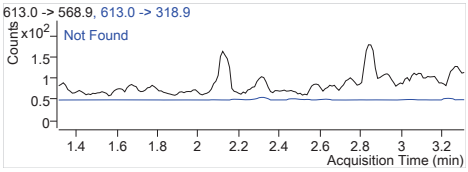

**PFDA 1** 513.0 -> 468.9
RT (Exp. RT): 0.000 (2.135)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



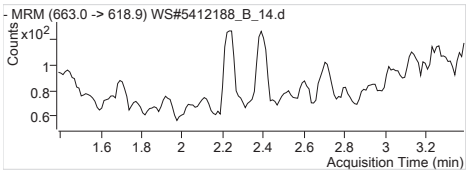



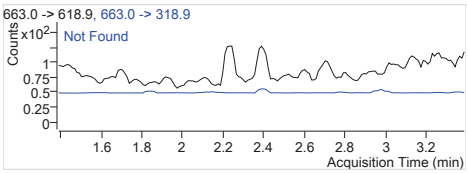

**PFUnA 1** 563.0 -> 518.9
RT (Exp. RT): 0.000 (2.234)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



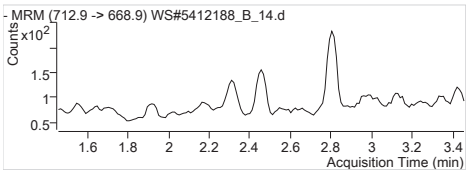



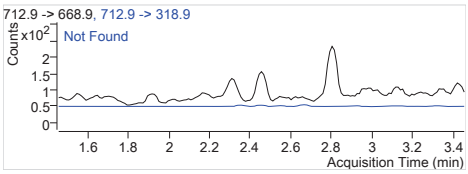

**PFDoA 1** 613.0 -> 568.9
RT (Exp. RT): 0.000 (2.311)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



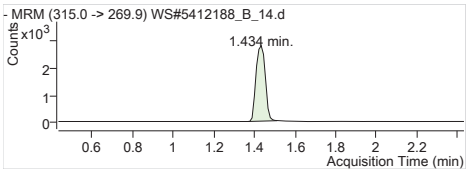



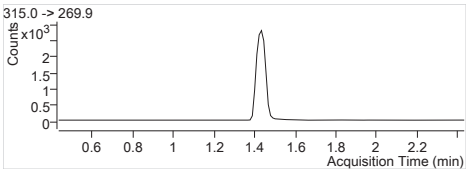

**PFTrDA 1** 663.0 -> 618.9
RT (Exp. RT): 0.000 (2.389)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



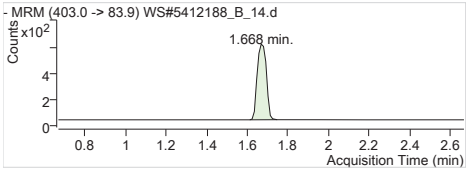



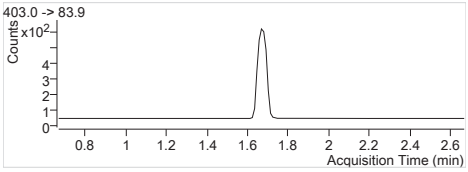

**PFTeDA 1** 712.9 -> 668.9
RT (Exp. RT): 0.000 (2.456)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



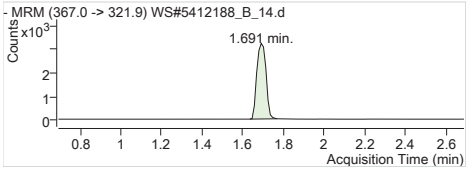



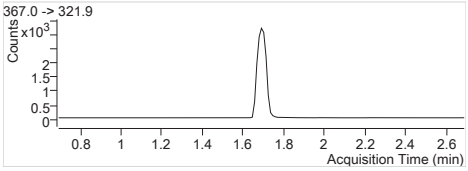

**13C2-PFHxA** 315.0 -> 269.9
RT (Exp. RT): 1.434 (1.434)
Calc. conc. 105.51 µg/L
Area ratio: 0.26226
Sample type: Sample



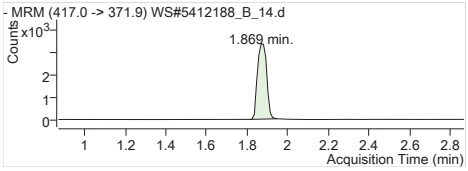



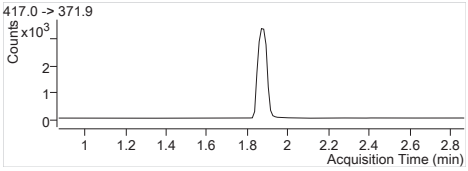

**18O2-PFHxS** 403.0 -> 83.9
RT (Exp. RT): 1.668 (1.668)
Calc. conc. 103.65 µg/L
Area ratio: 0.05383
Sample type: Sample



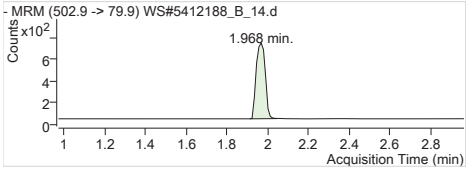



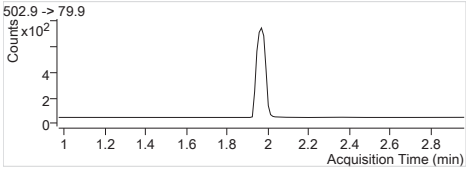

**13C4-PFHpA** 367.0 -> 321.9
RT (Exp. RT): 1.691 (1.691)
Calc. conc. 104.66 µg/L
Area ratio: 0.30132
Sample type: Sample



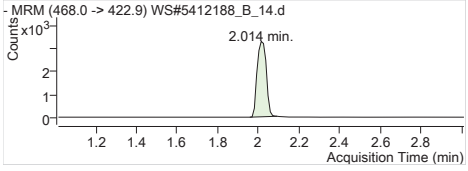



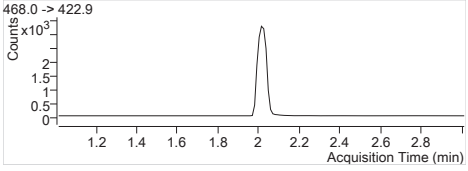

**13C4-PFOA** 417.0 -> 371.9
RT (Exp. RT): 1.869 (1.869)
Calc. conc. 105.80 µg/L
Area ratio: 0.31420
Sample type: Sample



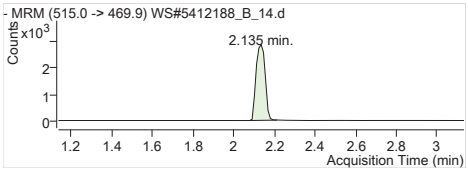



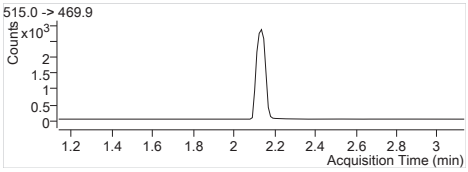

**13C4-PFOS** 502.9 -> 79.9
RT (Exp. RT): 1.968 (1.968)
Calc. conc. 108.20 µg/L
Area ratio: 0.06506
Sample type: Sample



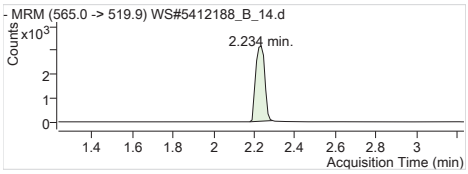



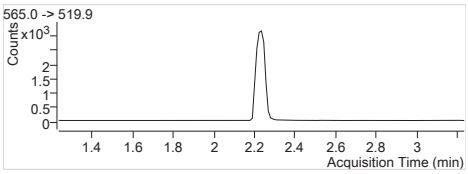

**13C5-PFNA** 468.0 -> 422.9
RT (Exp. RT): 2.014 (2.014)
Calc. conc. 105.66 µg/L
Area ratio: 0.30393
Sample type: Sample



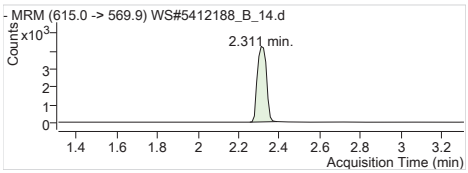



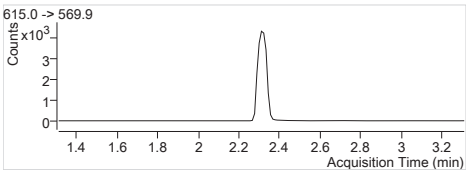

**13C2-PFDA** 515.0 -> 469.9
RT (Exp. RT): 2.135 (2.135)
Calc. conc. 96.06 µg/L
Area ratio: 0.21157
Sample type: Sample



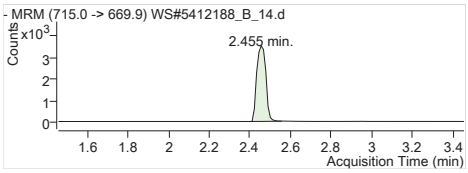



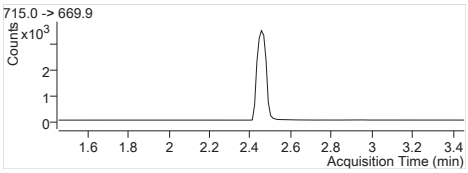

**13C2-PFUnA** 565.0 -> 519.9
RT (Exp. RT): 2.234 (2.234)
Calc. conc. 91.34 µg/L
Area ratio: 0.23394
Sample type: Sample



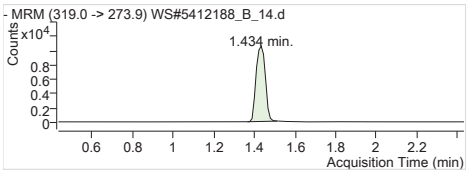



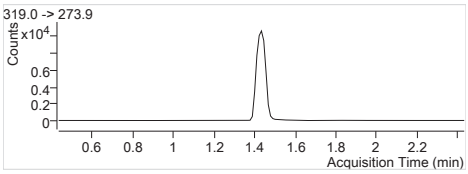

**13C2-PFDoA** 615.0 -> 569.9
RT (Exp. RT): 2.311 (2.311)
Calc. conc. 97.84 µg/L
Area ratio: 0.31747
Sample type: Sample



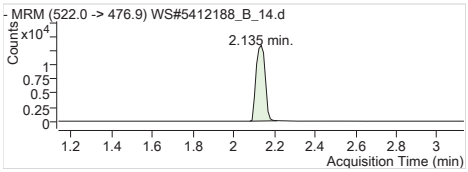



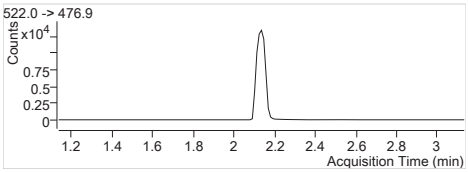

**13C2-PFTeDA** 715.0 -> 669.9
RT (Exp. RT): 2.455 (2.455)
Calc. conc. 73.67 µg/L
Area ratio: 0.26279
Sample type: Sample




**13C6-PFHxA** 319.0 -> 273.9
RT (Exp. RT): 1.434 (1.434)
Calc. conc. 25.52 µg/L
Area ratio: 0
Sample type: Sample



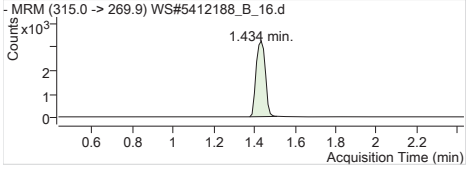

**13C9-PFDA** 522.0 -> 476.9
RT (Exp. RT): 2.135 (2.135)
Calc. conc. 26.72 µg/L
Area ratio: 0
Sample type: Sample

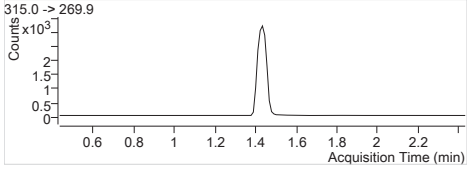
**Batch Path** T:\lcms4\PFC\20180226\WS#5412188_B\QuantResults\PFC_Water_Low_180227_WS#5412188_B_EToxics

| | | | |
|---|---|---|---|
| **Sample Name** | **5412188:GBV351-01** | **Instrument** | LCMS04 |
| **Data File** | WS#5412188_B_16.d | **Operator** | |
| **Sample Type** | Sample | **Dilution** | 0.024 |
| **Acq. Method** | PFC_Water_Low.m | **Position** | P1-D4 |
| **Acq. Date** | 2018/02/27 2:26:48 PM | **Injection Volume** | Per Method |
| **Sample Annotation** | - | | |

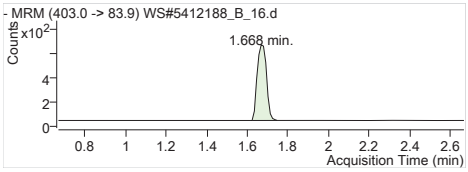
| ISTD Compounds | Response | RT | Target conc. | | |
|---|---|---|---|---|---|
| MPFHxA | 10061 | 1.43 | 1 µg/L | | |
| MPFHxS | 1984 | 1.67 | 1 µg/L | | |
| MPFHpA | 11200 | 1.69 | 1 µg/L | | |
| MPFOA | 11480 | 1.87 | 1 µg/L | | |
| MPFOS | 2489 | 1.97 | 1 µg/L | | |
| MPFNA | 11597 | 2.01 | 1 µg/L | | |
| MPFDA | 9970 | 2.14 | 1 µg/L | | |
| MPFUnA | 10820 | 2.23 | 1 µg/L | | |
| MPFDoA | 12676 | 2.31 | 1 µg/L | | |
| MPFTeDA | 13680 | 2.46 | 1 µg/L | | |
| 13C6-PFHxA IS | 34821 | 1.43 | 1 µg/L | | |
| 13C9-PFDA IS | 39875 | 2.13 | 1 µg/L | | |

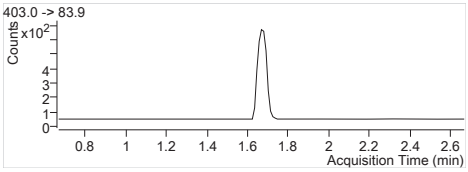
| Compound | Response | RT | Target Conc. | Calc. Conc. | Accuracy |
|---|---|---|---|---|---|
| PFBS 1 | | | - | ND | - |
| PFHxA 1 | | | - | ND | - |
| PFHxS 1 | | | - | ND | - |
| PFHpA 1 | | | - | ND | - |
| PFOA 1 | | | - | ND | - |
| PFOS 1 | | | - | ND | - |
| PFNA 1 | | | - | ND | - |
| PFDA 1 | | | - | ND | - |
| PFUnA 1 | | | - | ND | - |
| PFDoA 1 | | | - | ND | - |
| PFTrDA 1 | | | - | ND | - |
| PFTeDA 1 | | | - | ND | - |
| 13C2-PFHxA | 10061 | 1.43 | - | 116.24 µg/L | - |
| 18O2-PFHxS | 1984 | 1.67 | - | 109.72 µg/L | - |
| 13C4-PFHpA | 11200 | 1.69 | - | 111.72 µg/L | - |
| 13C4-PFOA | 11480 | 1.87 | - | 111.01 µg/L | - |
| 13C4-PFOS | 2489 | 1.97 | - | 118.88 µg/L | - |
| 13C5-PFNA | 11596 | 2.01 | - | 115.77 µg/L | - |
| 13C2-PFDA | 9770 | 2.14 | - | 111.25 µg/L | - |
| 13C2-PFUnA | 10820 | 2.23 | - | 105.94 µg/L | - |
| 13C2-PFDoA | 12676 | 2.31 | - | 97.97 µg/L | - |
| 13C2-PFTeDA | 13759 | 2.46 | - | 96.73 µg/L | - |
| 13C6-PFHxA | 34821 | 1.43 | - | 2.67 µg/L | - |
| 13C9-PFDA | 39875 | 2.13 | - | 2.57 µg/L | - |



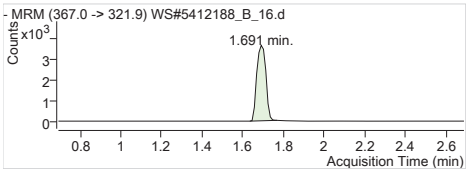



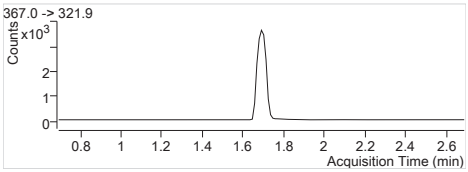

**MPFHxA** Internal Standard
RT (Exp. RT): 1.434 (1.434)
Concentration: 1 µg/L
Sample type: Sample



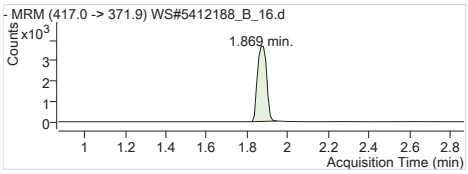



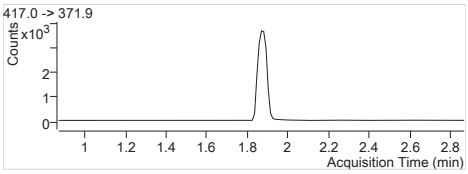

**MPFHxS** Internal Standard
RT (Exp. RT): 1.668 (1.668)
Concentration: 1 µg/L
Sample type: Sample



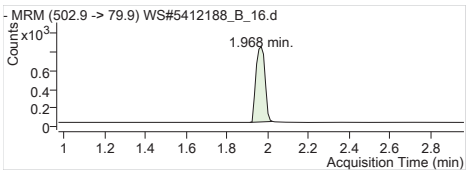



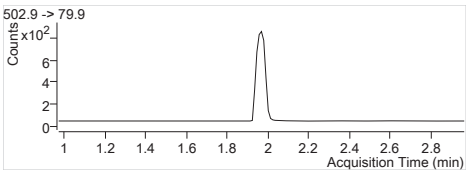

**MPFHpA** Internal Standard
RT (Exp. RT): 1.691 (1.691)
Concentration: 1 µg/L
Sample type: Sample



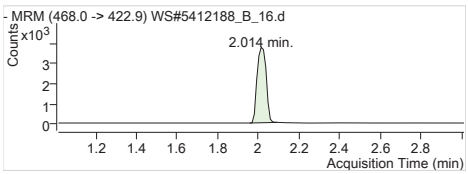



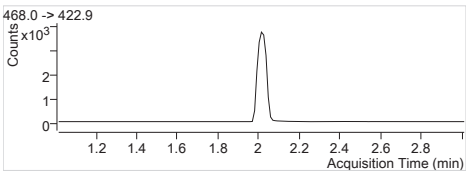

**MPFOA** Internal Standard
RT (Exp. RT): 1.869 (1.869)
Concentration: 1 µg/L
Sample type: Sample



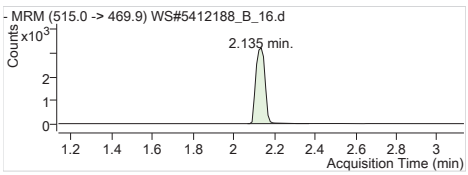



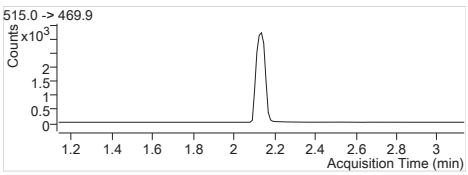

**MPFOS** Internal Standard
RT (Exp. RT): 1.968 (1.968)
Concentration: 1 µg/L
Sample type: Sample



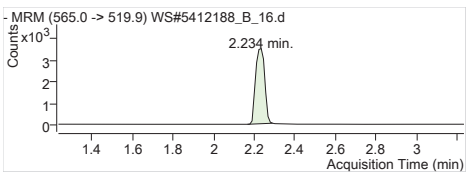



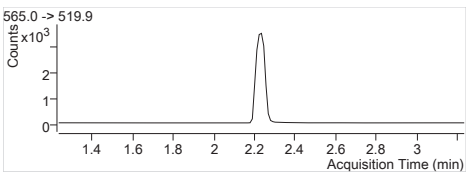

**MPFNA** Internal Standard
RT (Exp. RT): 2.014 (2.014)
Concentration: 1 µg/L
Sample type: Sample



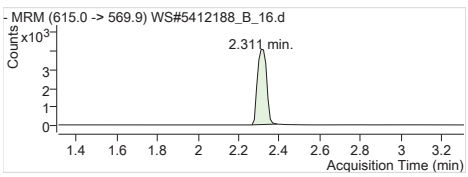



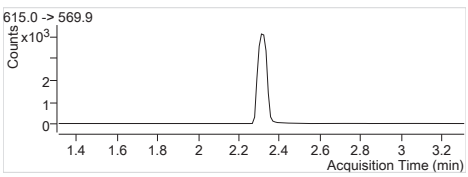

**MPFDA** Internal Standard
RT (Exp. RT): 2.135 (2.135)
Concentration: 1 µg/L
Sample type: Sample



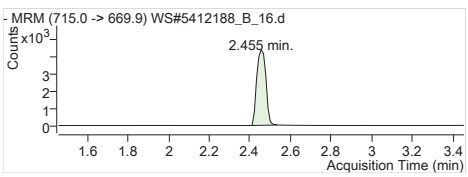



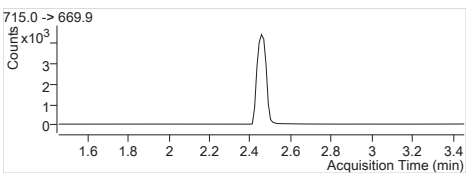

**MPFUnA** Internal Standard
RT (Exp. RT): 2.234 (2.234)
Concentration: 1 µg/L
Sample type: Sample



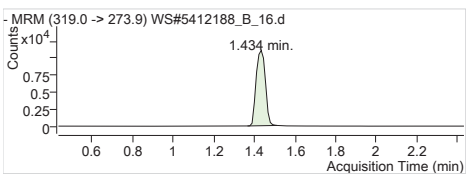



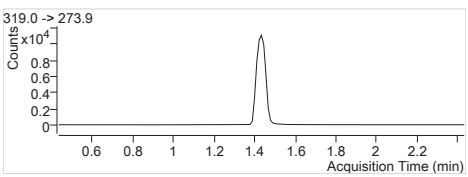

**MPFDoA** Internal Standard
RT (Exp. RT): 2.311 (2.311)
Concentration: 1 µg/L
Sample type: Sample



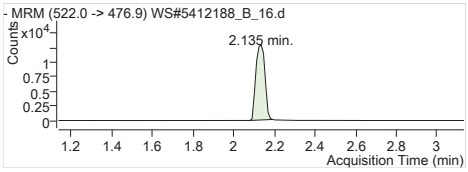



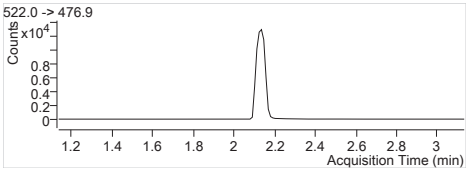

**MPFTeDA** Internal Standard
RT (Exp. RT): 2.455 (2.455)
Concentration: 1 µg/L
Sample type: Sample



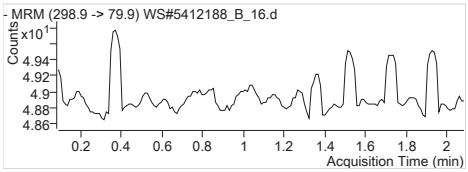



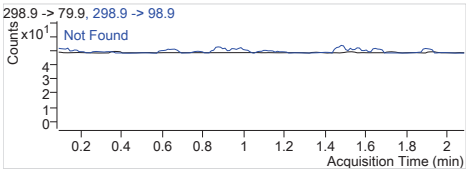

**13C6-PFHxA IS** Internal Standard
RT (Exp. RT): 1.434 (1.434)
Concentration: 1 µg/L
Sample type: Sample



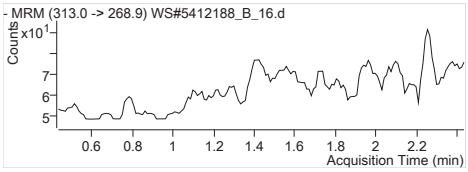



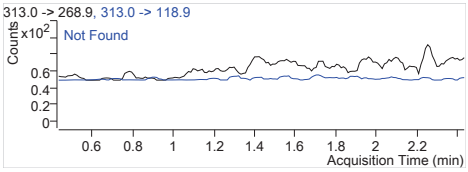

**13C9-PFDA IS** Internal Standard
RT (Exp. RT): 2.135 (2.135)
Concentration: 1 µg/L
Sample type: Sample



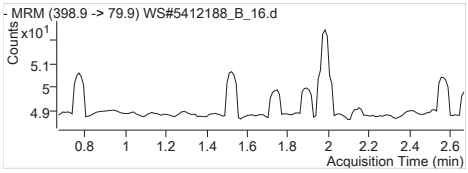



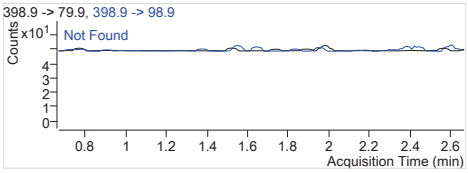

**PFBS 1** 298.9 -> 79.9
RT (Exp. RT): 0.000 (1.087)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



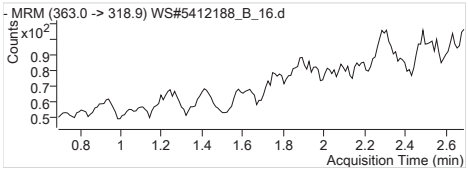



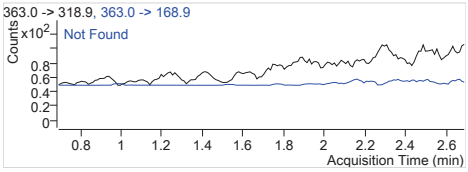

**PFHxA 1** 313.0 -> 268.9
RT (Exp. RT): 0.000 (1.434)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



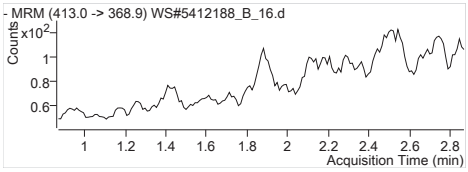



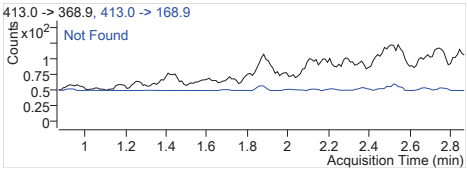

**PFHxS 1** 398.9 -> 79.9
RT (Exp. RT): 0.000 (1.668)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



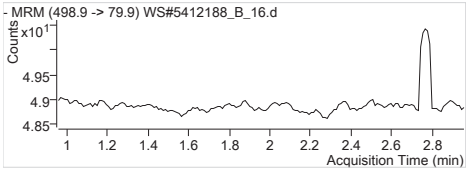



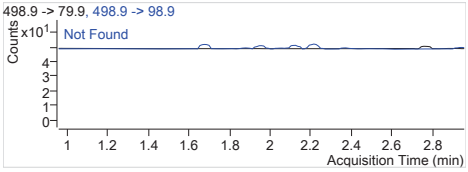

**PFHpA 1** 363.0 -> 318.9
RT (Exp. RT): 0.000 (1.691)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



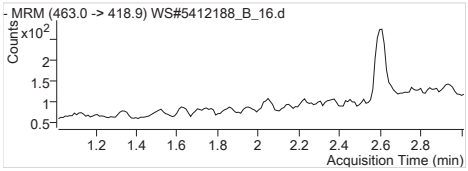



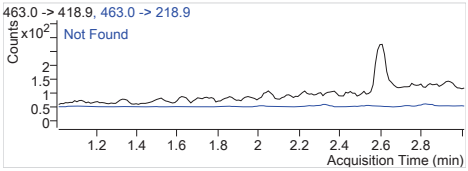

**PFOA 1** 413.0 -> 368.9
RT (Exp. RT): 0.000 (1.869)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



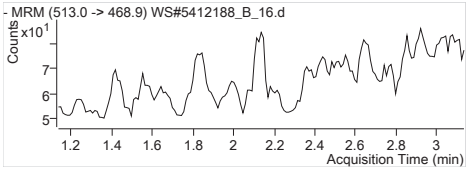



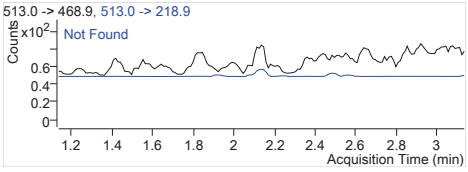

**PFOS 1** 498.9 -> 79.9
RT (Exp. RT): 0.000 (1.957)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



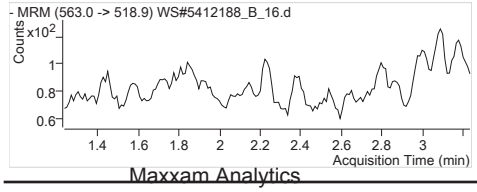



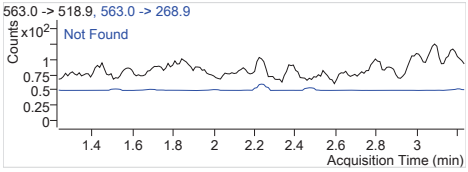

**PFNA 1** 463.0 -> 418.9
RT (Exp. RT): 0.000 (2.014)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



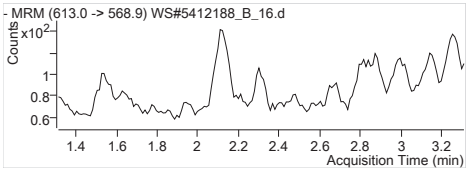



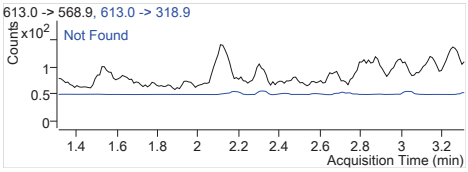

**PFDA 1** 513.0 -> 468.9
RT (Exp. RT): 0.000 (2.135)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



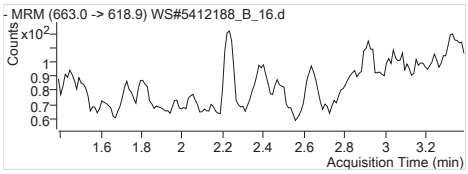



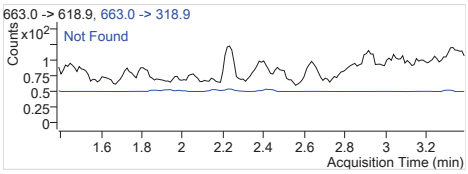

**PFUnA 1** 563.0 -> 518.9
RT (Exp. RT): 0.000 (2.234)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



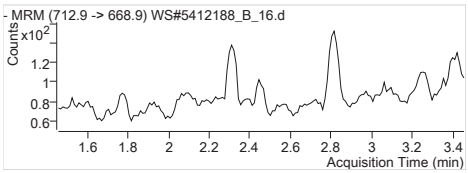



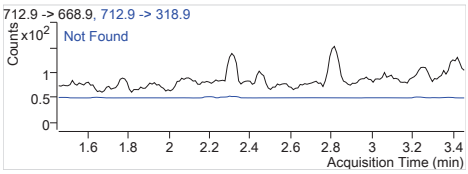

| | |
|---|---|
| **PFDoA 1** | 613.0 -> 568.9 |
| RT (Exp. RT): | 0.000 (2.311) |
| Calc. conc. | N.D. |
| Area ratio: | 0 |
| Sample type: | Sample |



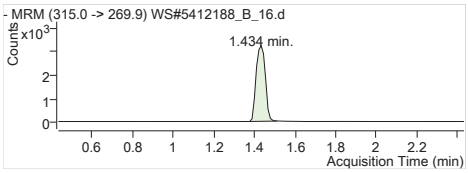



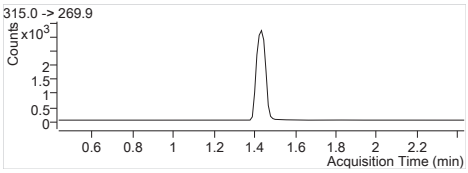

| | |
|---|---|
| **PFTrDA 1** | 663.0 -> 618.9 |
| RT (Exp. RT): | 0.000 (2.389) |
| Calc. conc. | N.D. |
| Area ratio: | 0 |
| Sample type: | Sample |



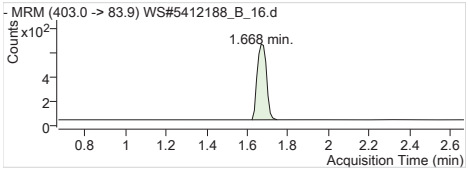



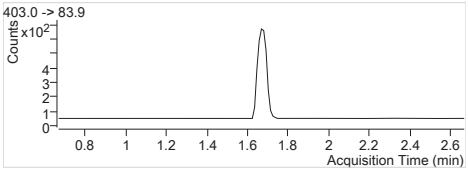

| | |
|---|---|
| **PFTeDA 1** | 712.9 -> 668.9 |
| RT (Exp. RT): | 0.000 (2.456) |
| Calc. conc. | N.D. |
| Area ratio: | 0 |
| Sample type: | Sample |



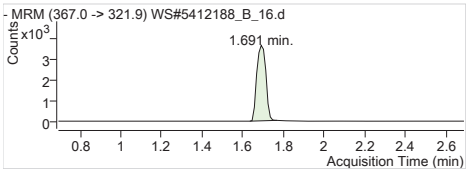



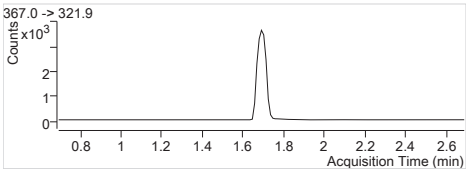

| | |
|---|---|
| **13C2-PFHxA** | 315.0 -> 269.9 |
| RT (Exp. RT): | 1.434 (1.434) |
| Calc. conc. | 116.24 µg/L |
| Area ratio: | 0.28893 |
| Sample type: | Sample |



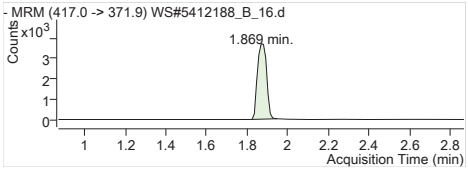



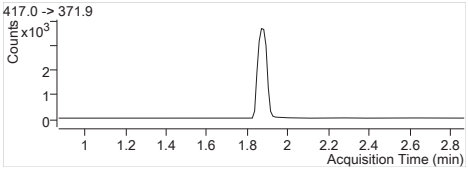

| | |
|---|---|
| **18O2-PFHxS** | 403.0 -> 83.9 |
| RT (Exp. RT): | 1.668 (1.668) |
| Calc. conc. | 109.72 µg/L |
| Area ratio: | 0.05698 |
| Sample type: | Sample |



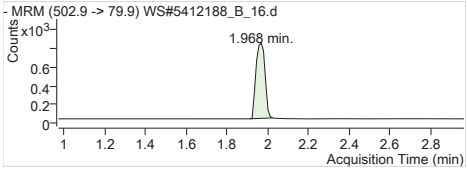



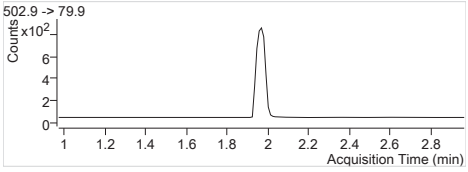

| | |
|---|---|
| **13C4-PFHpA** | 367.0 -> 321.9 |
| RT (Exp. RT): | 1.691 (1.691) |
| Calc. conc. | 111.72 µg/L |
| Area ratio: | 0.32164 |
| Sample type: | Sample |



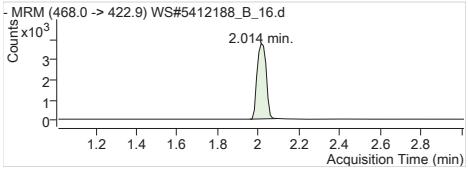



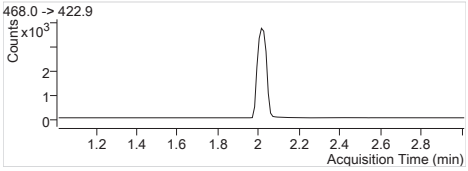

| | |
|---|---|
| **13C4-PFOA** | 417.0 -> 371.9 |
| RT (Exp. RT): | 1.869 (1.869) |
| Calc. conc. | 111.01 µg/L |
| Area ratio: | 0.32969 |
| Sample type: | Sample |



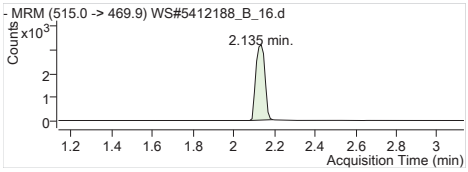



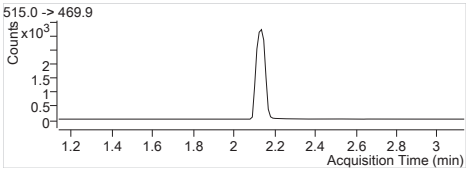

| | |
|---|---|
| **13C4-PFOS** | 502.9 -> 79.9 |
| RT (Exp. RT): | 1.968 (1.968) |
| Calc. conc. | 118.88 µg/L |
| Area ratio: | 0.07148 |
| Sample type: | Sample |



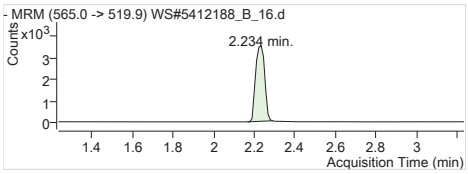



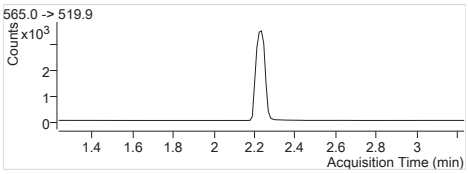

| | |
|---|---|
| **13C5-PFNA** | 468.0 -> 422.9 |
| RT (Exp. RT): | 2.014 (2.014) |
| Calc. conc. | 115.77 µg/L |
| Area ratio: | 0.33302 |
| Sample type: | Sample |



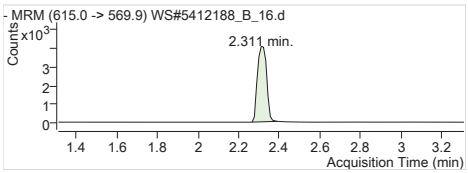



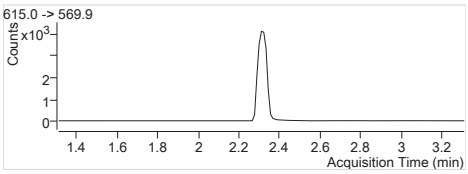

**13C2-PFDA** 515.0 -> 469.9
RT (Exp. RT): 2.135 (2.135)
Calc. conc. 111.25 µg/L
Area ratio: 0.24502
Sample type: Sample



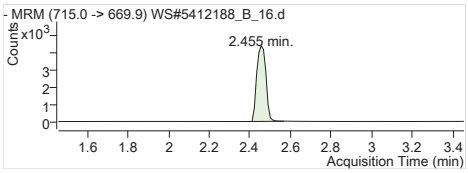



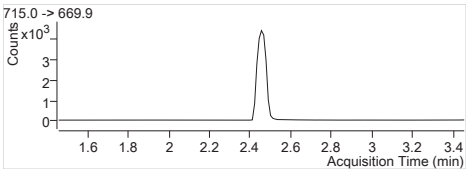

**13C2-PFUnA** 565.0 -> 519.9
RT (Exp. RT): 2.234 (2.234)
Calc. conc. 105.94 µg/L
Area ratio: 0.27135
Sample type: Sample



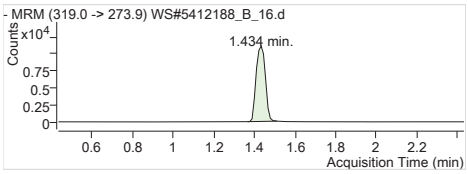



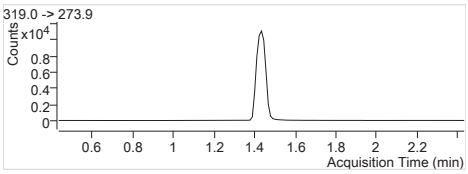

**13C2-PFDoA** 615.0 -> 569.9
RT (Exp. RT): 2.311 (2.311)
Calc. conc. 97.97 µg/L
Area ratio: 0.31789
Sample type: Sample



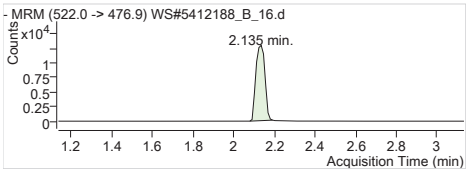



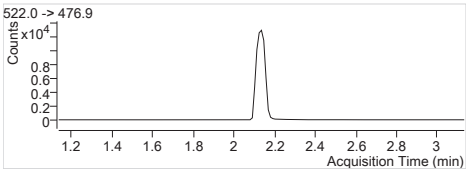

**13C2-PFTeDA** 715.0 -> 669.9
RT (Exp. RT): 2.455 (2.455)
Calc. conc. 96.73 µg/L
Area ratio: 0.34505
Sample type: Sample




**13C6-PFHxA** 319.0 -> 273.9
RT (Exp. RT): 1.434 (1.434)
Calc. conc. 2.67 µg/L
Area ratio: 0
Sample type: Sample



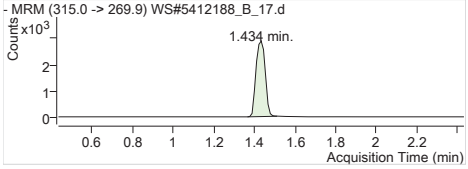

**13C9-PFDA** 522.0 -> 476.9
RT (Exp. RT): 2.135 (2.135)
Calc. conc. 2.57 µg/L
Area ratio: 0
Sample type: Sample

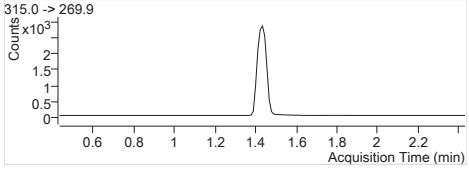
| | |
|---|---|
| **Batch Path** | T:\lcms4\PFC\20180226\WS#5412188_B\QuantResults\PFC_Water_Low_180227_WS#5412188_B_EToxics |

| | | | |
|---|---|---|---|
| **Sample Name** | **5412188:GBV352-01:10x** | **Instrument** | LCMS04 |
| **Data File** | WS#5412188_B_17.d | **Operator** | |
| **Sample Type** | Sample | **Dilution** | 0.24 |
| **Acq. Method** | PFC_Water_Low.m | **Position** | P1-D5 |
| **Acq. Date** | 2018/02/27 2:31:44 PM | **Injection Volume** | Per Method |
| **Sample Annotation** | Not used | | |

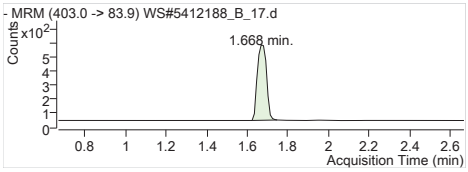
| ISTD Compounds | Response | RT | Target conc. | | |
|---|---|---|---|---|---|
| MPFHxA | 8952 | 1.43 | 1 µg/L | | |
| MPFHxS | 1686 | 1.67 | 1 µg/L | | |
| MPFHpA | 9771 | 1.69 | 1 µg/L | | |
| MPFOA | 10841 | 1.87 | 1 µg/L | | |
| MPFOS | 2100 | 1.97 | 1 µg/L | | |
| MPFNA | 9912 | 2.01 | 1 µg/L | | |
| MPFDA | 8571 | 2.14 | 1 µg/L | | |
| MPFUnA | 9709 | 2.23 | 1 µg/L | | |
| MPFDoA | 11972 | 2.31 | 1 µg/L | | |
| MPFTeDA | 13535 | 2.46 | 1 µg/L | | |
| 13C6-PFHxA IS | 33872 | 1.43 | 1 µg/L | | |
| 13C9-PFDA IS | 39496 | 2.13 | 1 µg/L | | |

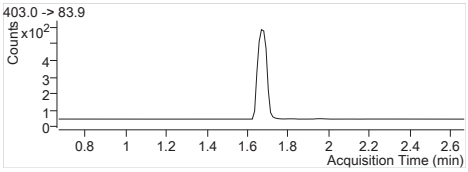
| Compound | Response | RT | Target Conc. | Calc. Conc. | Accuracy |
|---|---|---|---|---|---|
| PFBS 1 | | | - | ND | - |
| PFHxA 1 | 5920 | 1.43 | - | 0.36 µg/L | - |
| PFHxS 1 | 2744 | 1.67 | - | 0.84 µg/L | - |
| PFHpA 1 | 7318 | 1.69 | - | 0.39 µg/L | - |
| PFOA 1 | 5156 | 1.87 | - | 0.22 µg/L | - |
| PFOS 1 | 3541 | 1.96 | - | 1.01 µg/L | - |
| PFNA 1 | 1170 | 2.01 | - | 0.06 µg/L | - |
| PFDA 1 | | | - | ND | - |
| PFUnA 1 | | | - | ND | - |
| PFDoA 1 | | | - | ND | - |
| PFTrDA 1 | | | - | ND | - |
| PFTeDA 1 | | | - | ND | - |
| 13C2-PFHxA | 8952 | 1.43 | - | 106.32 µg/L | - |
| 18O2-PFHxS | 1686 | 1.67 | - | 95.85 µg/L | - |
| 13C4-PFHpA | 9771 | 1.69 | - | 100.19 µg/L | - |
| 13C4-PFOA | 10841 | 1.87 | - | 107.77 µg/L | - |
| 13C4-PFOS | 2100 | 1.97 | - | 103.11 µg/L | - |
| 13C5-PFNA | 9913 | 2.01 | - | 101.74 µg/L | - |
| 13C2-PFDA | 8450 | 2.14 | - | 97.14 µg/L | - |
| 13C2-PFUnA | 9709 | 2.23 | - | 95.98 µg/L | - |
| 13C2-PFDoA | 11972 | 2.31 | - | 93.41 µg/L | - |
| 13C2-PFTeDA | 13704 | 2.46 | - | 97.27 µg/L | - |
| 13C6-PFHxA | 33872 | 1.43 | - | 25.95 µg/L | - |
| 13C9-PFDA | 39496 | 2.13 | - | 25.44 µg/L | - |



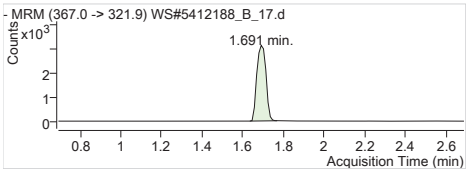



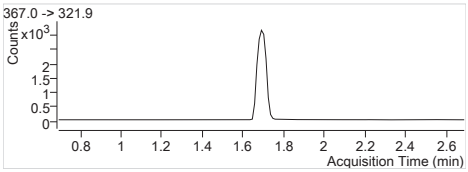

| | |
|---|---|
| **MPFHxA** | Internal Standard |
| RT (Exp. RT): | 1.434 (1.434) |
| Concentration: | 1 µg/L |
| Sample type: | Sample |



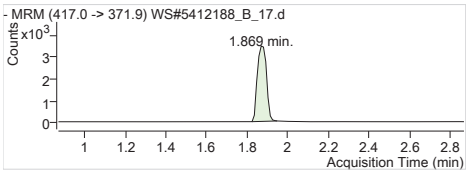



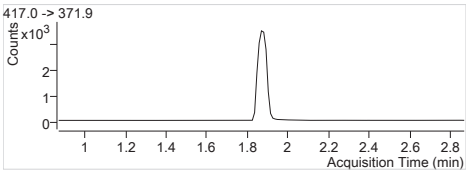

**MPFHxS** Internal Standard
RT (Exp. RT): 1.668 (1.668)
Concentration: 1 µg/L
Sample type: Sample



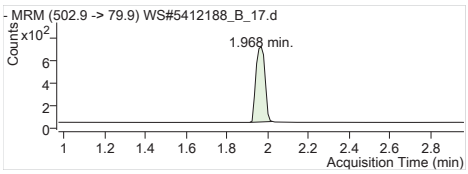



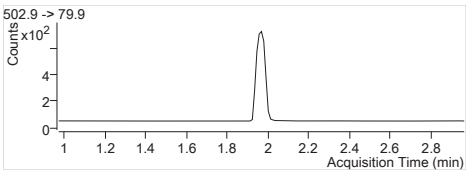

**MPFHpA** Internal Standard
RT (Exp. RT): 1.691 (1.691)
Concentration: 1 µg/L
Sample type: Sample



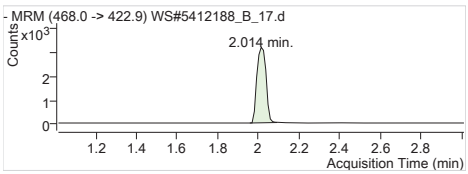



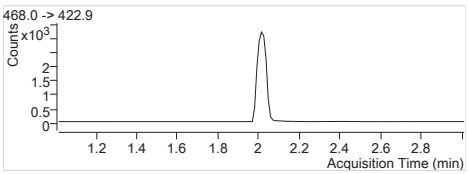

**MPFOA** Internal Standard
RT (Exp. RT): 1.869 (1.869)
Concentration: 1 µg/L
Sample type: Sample



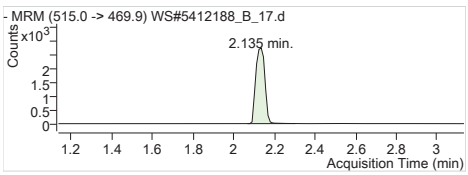



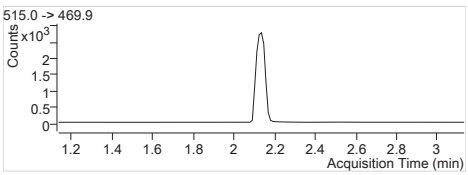

**MPFOS** Internal Standard
RT (Exp. RT): 1.968 (1.968)
Concentration: 1 µg/L
Sample type: Sample



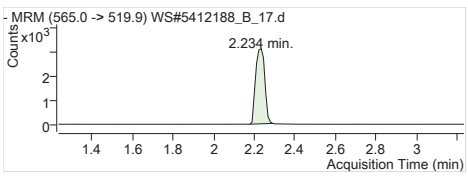



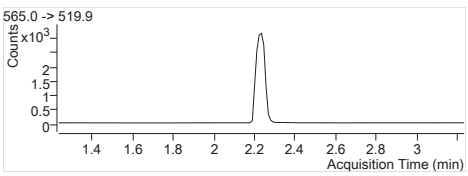

**MPFNA** Internal Standard
RT (Exp. RT): 2.014 (2.014)
Concentration: 1 µg/L
Sample type: Sample



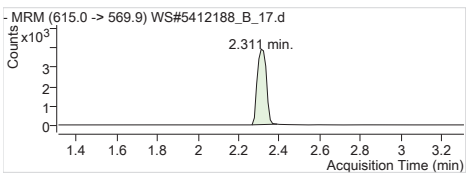



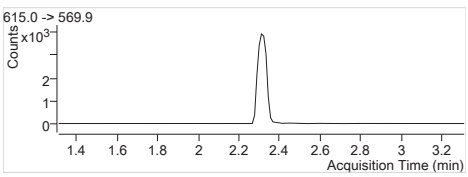

**MPFDA** Internal Standard
RT (Exp. RT): 2.135 (2.135)
Concentration: 1 µg/L
Sample type: Sample



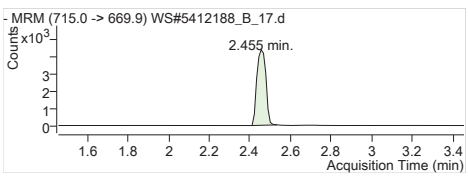



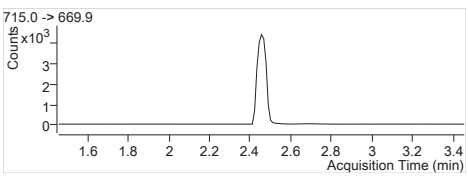

**MPFUnA** Internal Standard
RT (Exp. RT): 2.234 (2.234)
Concentration: 1 µg/L
Sample type: Sample



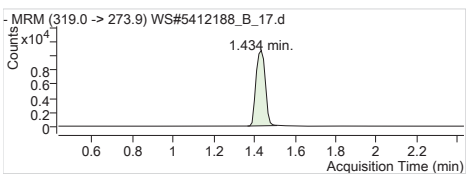



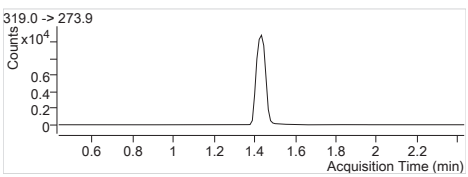

**MPFDoA** Internal Standard
RT (Exp. RT): 2.311 (2.311)
Concentration: 1 µg/L
Sample type: Sample



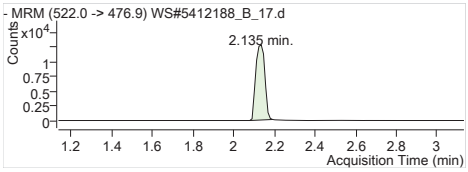



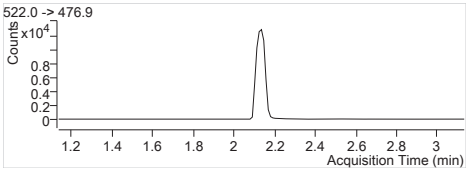

**MPFTeDA** Internal Standard
RT (Exp. RT): 2.455 (2.455)
Concentration: 1 µg/L
Sample type: Sample



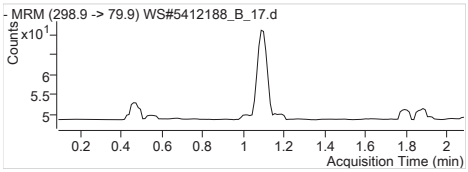



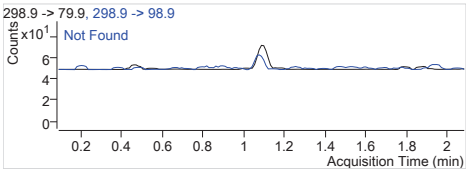

**13C6-PFHxA IS** Internal Standard
RT (Exp. RT): 1.434 (1.434)
Concentration: 1 µg/L
Sample type: Sample



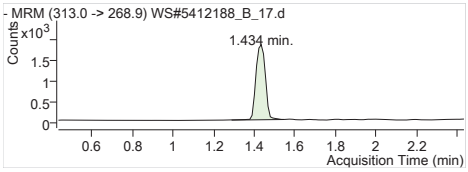



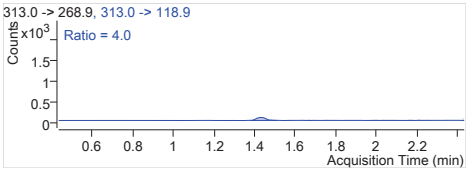

**13C9-PFDA IS** Internal Standard
RT (Exp. RT): 2.135 (2.135)
Concentration: 1 µg/L
Sample type: Sample



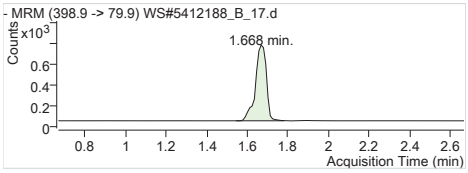



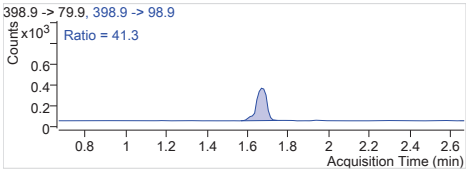

**PFBS 1** 298.9 -> 79.9
RT (Exp. RT): 0.000 (1.087)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



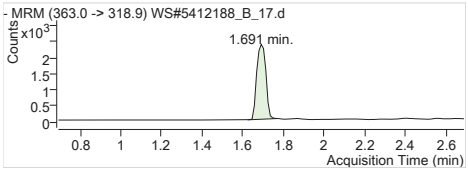



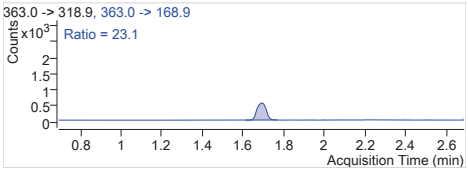

**PFHxA 1** 313.0 -> 268.9
RT (Exp. RT): 1.434 (1.434)
Calc. conc. 0.36 µg/L
Area ratio: 0.66130
Sample type: Sample



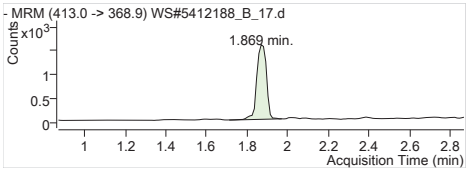



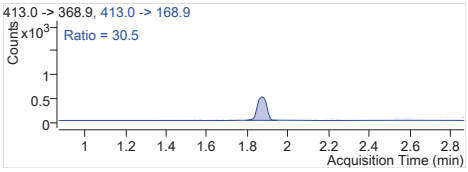

**PFHxS 1** 398.9 -> 79.9
RT (Exp. RT): 1.668 (1.668)
Calc. conc. 0.84 µg/L
Area ratio: 1.62752
Sample type: Sample



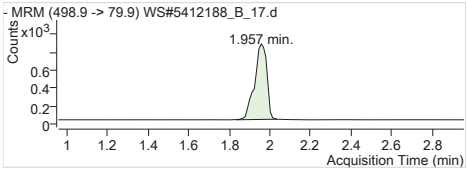



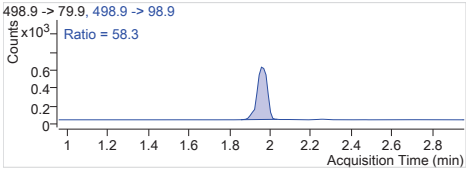

**PFHpA 1** 363.0 -> 318.9
RT (Exp. RT): 1.691 (1.691)
Calc. conc. 0.39 µg/L
Area ratio: 0.74895
Sample type: Sample



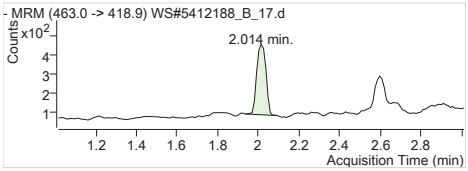



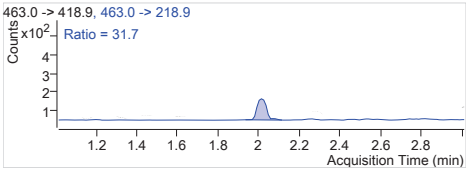

**PFOA 1** 413.0 -> 368.9
RT (Exp. RT): 1.869 (1.869)
Calc. conc. 0.22 µg/L
Area ratio: 0.47560
Sample type: Sample



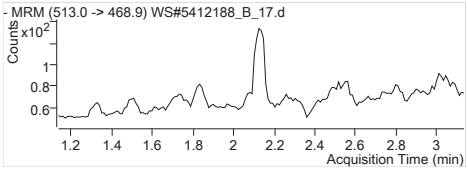



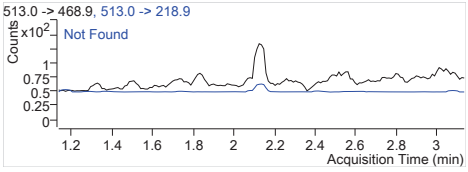

**PFOS 1** 498.9 -> 79.9
RT (Exp. RT): 1.957 (1.957)
Calc. conc. 1.01 µg/L
Area ratio: 1.68619
Sample type: Sample



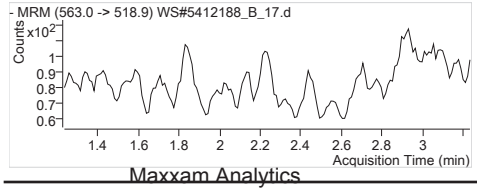



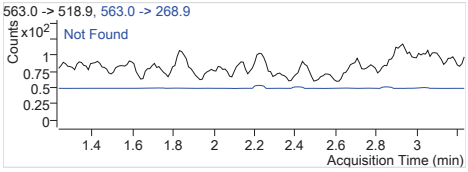

**PFNA 1** 463.0 -> 418.9
RT (Exp. RT): 2.014 (2.014)
Calc. conc. 0.06 µg/L
Area ratio: 0.11804
Sample type: Sample



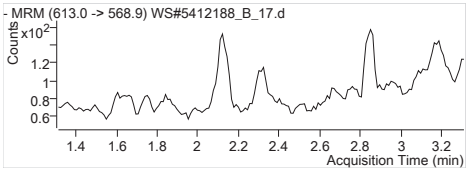



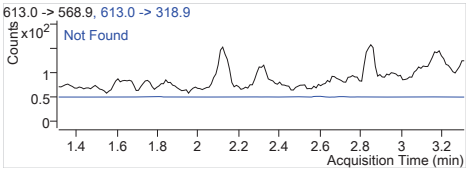

**PFDA 1** 513.0 -> 468.9
RT (Exp. RT): 0.000 (2.135)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



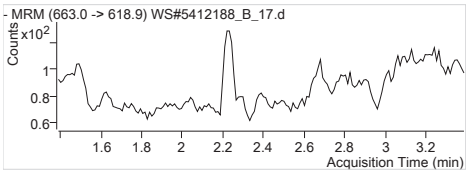



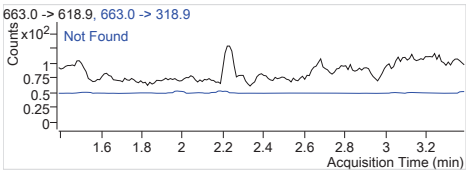

**PFUnA 1** 563.0 -> 518.9
RT (Exp. RT): 0.000 (2.234)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



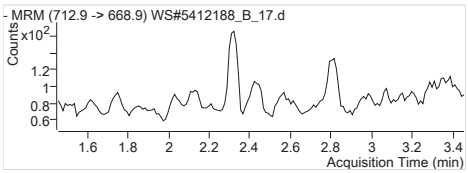



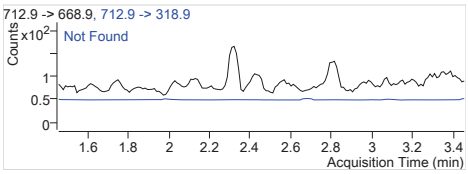

| | |
|---|---|
| **PFDoA 1** | 613.0 -> 568.9 |
| RT (Exp. RT): | 0.000 (2.311) |
| Calc. conc. | N.D. |
| Area ratio: | 0 |
| Sample type: | Sample |



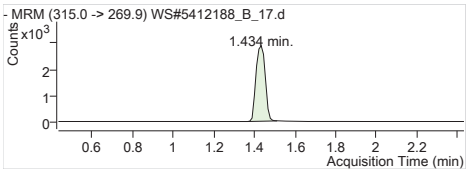



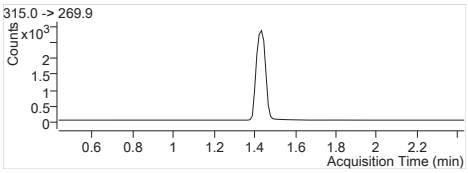

| | |
|---|---|
| **PFTrDA 1** | 663.0 -> 618.9 |
| RT (Exp. RT): | 0.000 (2.389) |
| Calc. conc. | N.D. |
| Area ratio: | 0 |
| Sample type: | Sample |



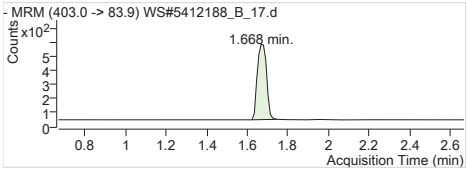



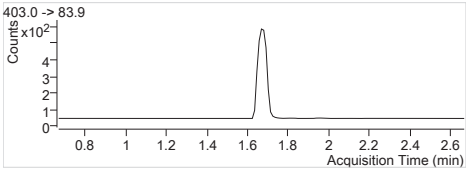

| | |
|---|---|
| **PFTeDA 1** | 712.9 -> 668.9 |
| RT (Exp. RT): | 0.000 (2.456) |
| Calc. conc. | N.D. |
| Area ratio: | 0 |
| Sample type: | Sample |



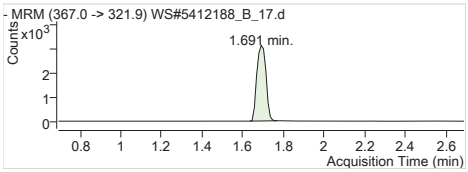



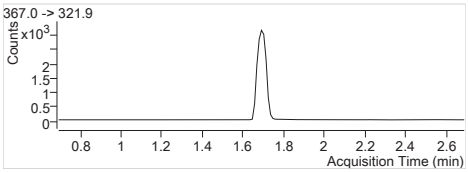

| | |
|---|---|
| **13C2-PFHxA** | 315.0 -> 269.9 |
| RT (Exp. RT): | 1.434 (1.434) |
| Calc. conc. | 106.32 µg/L |
| Area ratio: | 0.26429 |
| Sample type: | Sample |



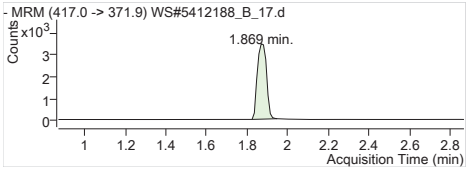



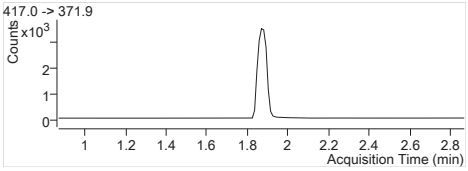

| | |
|---|---|
| **18O2-PFHxS** | 403.0 -> 83.9 |
| RT (Exp. RT): | 1.668 (1.668) |
| Calc. conc. | 95.85 µg/L |
| Area ratio: | 0.04978 |
| Sample type: | Sample |



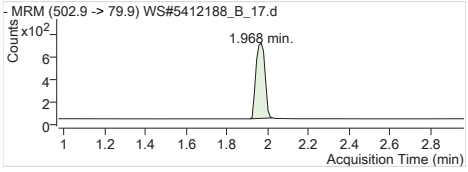



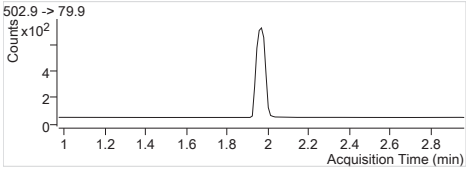

| | |
|---|---|
| **13C4-PFHpA** | 367.0 -> 321.9 |
| RT (Exp. RT): | 1.691 (1.691) |
| Calc. conc. | 100.19 µg/L |
| Area ratio: | 0.28847 |
| Sample type: | Sample |



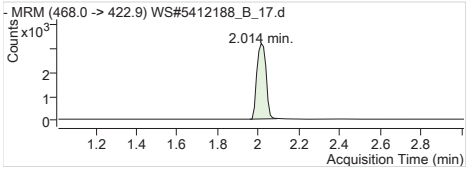



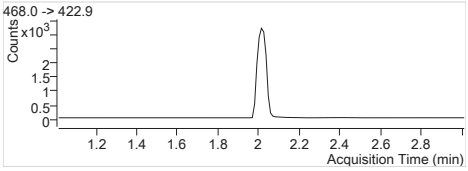

| | |
|---|---|
| **13C4-PFOA** | 417.0 -> 371.9 |
| RT (Exp. RT): | 1.869 (1.869) |
| Calc. conc. | 107.77 µg/L |
| Area ratio: | 0.32006 |
| Sample type: | Sample |



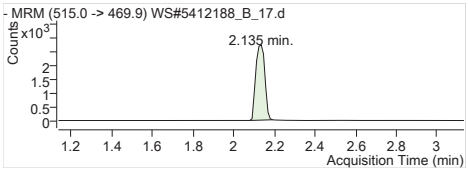



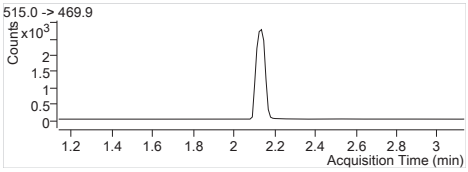

| | |
|---|---|
| **13C4-PFOS** | 502.9 -> 79.9 |
| RT (Exp. RT): | 1.968 (1.968) |
| Calc. conc. | 103.11 µg/L |
| Area ratio: | 0.06200 |
| Sample type: | Sample |



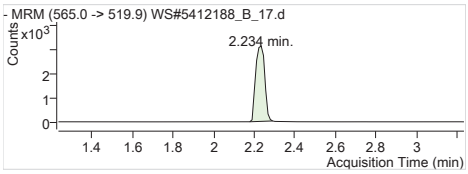



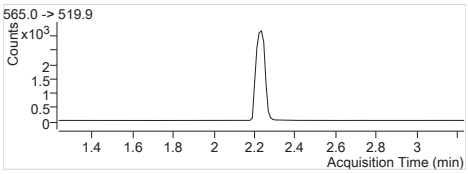

| | |
|---|---|
| **13C5-PFNA** | 468.0 -> 422.9 |
| RT (Exp. RT): | 2.014 (2.014) |
| Calc. conc. | 101.74 µg/L |
| Area ratio: | 0.29266 |
| Sample type: | Sample |



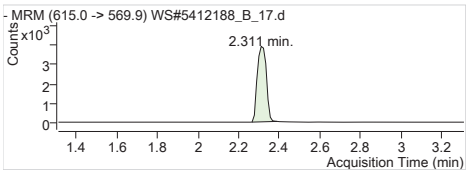



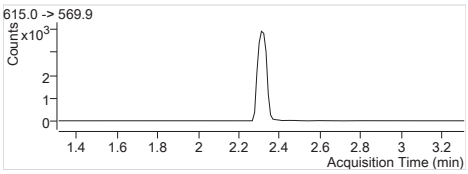

**13C2-PFDA** 515.0 -> 469.9
RT (Exp. RT): 2.135 (2.135)
Calc. conc. 97.14 µg/L
Area ratio: 0.21395
Sample type: Sample



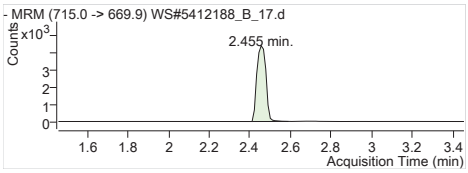



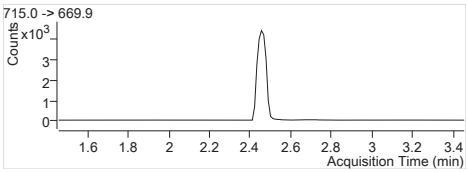

**13C2-PFUnA** 565.0 -> 519.9
RT (Exp. RT): 2.234 (2.234)
Calc. conc. 95.98 µg/L
Area ratio: 0.24582
Sample type: Sample



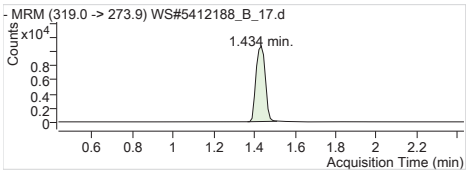



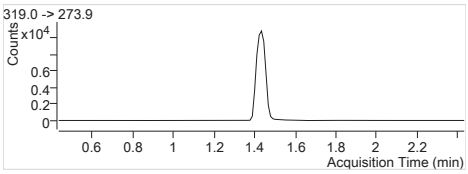

**13C2-PFDoA** 615.0 -> 569.9
RT (Exp. RT): 2.311 (2.311)
Calc. conc. 93.41 µg/L
Area ratio: 0.30312
Sample type: Sample



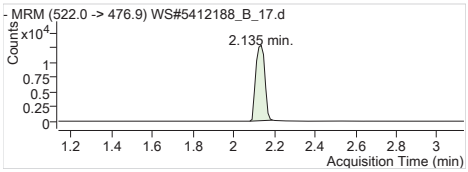



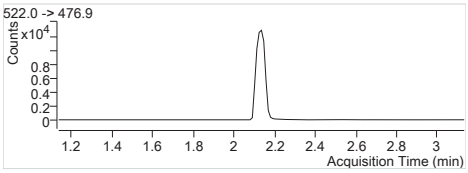

**13C2-PFTeDA** 715.0 -> 669.9
RT (Exp. RT): 2.455 (2.455)
Calc. conc. 97.27 µg/L
Area ratio: 0.34697
Sample type: Sample




**13C6-PFHxA** 319.0 -> 273.9
RT (Exp. RT): 1.434 (1.434)
Calc. conc. 25.95 µg/L
Area ratio: 0
Sample type: Sample



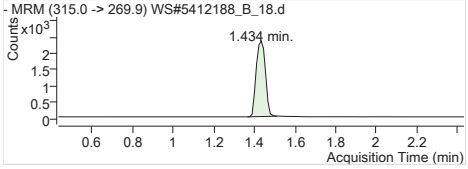

**13C9-PFDA** 522.0 -> 476.9
RT (Exp. RT): 2.135 (2.135)
Calc. conc. 25.44 µg/L
Area ratio: 0
Sample type: Sample

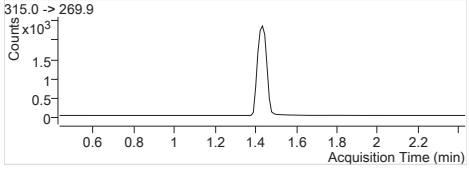
| | |
|---|---|
| **Batch Path** | T:\lcms4\PFC\20180226\WS#5412188_B\QuantResults\PFC_Water_Low_180227_WS#5412188_B_EToxics |

| | | | |
|---|---|---|---|
| **Sample Name** | **5412188:GBV352-01** | **Instrument** | LCMS04 |
| **Data File** | WS#5412188_B_18.d | **Operator** | |
| **Sample Type** | Sample | **Dilution** | 0.024 |
| **Acq. Method** | PFC_Water_Low.m | **Position** | P1-D6 |
| **Acq. Date** | 2018/02/27 2:36:40 PM | **Injection Volume** | Per Method |
| **Sample Annotation** | - | | |

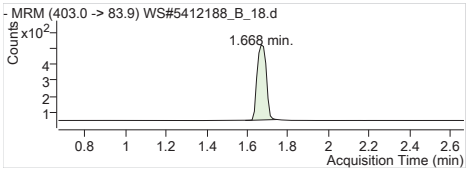
| ISTD Compounds | Response | RT | Target conc. | | |
|---|---|---|---|---|---|
| MPFHxA | 7311 | 1.43 | 1 µg/L | | |
| MPFHxS | 1482 | 1.67 | 1 µg/L | | |
| MPFHpA | 8196 | 1.69 | 1 µg/L | | |
| MPFOA | 8643 | 1.87 | 1 µg/L | | |
| MPFOS | 1856 | 1.97 | 1 µg/L | | |
| MPFNA | 8326 | 2.01 | 1 µg/L | | |
| MPFDA | 7388 | 2.14 | 1 µg/L | | |
| MPFUnA | 8643 | 2.23 | 1 µg/L | | |
| MPFDoA | 10590 | 2.31 | 1 µg/L | | |
| MPFTeDA | 9882 | 2.46 | 1 µg/L | | |
| 13C6-PFHxA IS | 27565 | 1.43 | 1 µg/L | | |
| 13C9-PFDA IS | 33315 | 2.13 | 1 µg/L | | |

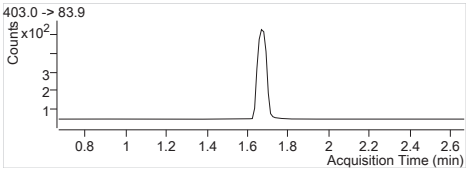
| Compound | Response | RT | Target Conc. | Calc. Conc. | Accuracy |
|---|---|---|---|---|---|
| PFBS 1 | 431 | 1.09 | - | 0.01 µg/L | - |
| PFHxA 1 | 39002 | 1.43 | - | 0.31 µg/L | - |
| PFHxS 1 | 19456 | 1.67 | - | 0.71 µg/L | - |
| PFHpA 1 | 50747 | 1.69 | - | 0.33 µg/L | - |
| PFOA 1 | 34561 | 1.87 | - | 0.21 µg/L | - |
| PFOS 1 | 26045 | 1.96 | - | 0.81 µg/L | - |
| PFNA 1 | 9460 | 2.01 | - | 0.06 µg/L | - |
| PFDA 1 | 1473 | 2.14 | - | 0.01 µg/L | - |
| PFUnA 1 | | | - | ND | - |
| PFDoA 1 | | | - | ND | - |
| PFTrDA 1 | | | - | ND | - |
| PFTeDA 1 | | | - | ND | - |
| 13C2-PFHxA | 7311 | 1.43 | - | 106.70 µg/L | - |
| 18O2-PFHxS | 1482 | 1.67 | - | 103.53 µg/L | - |
| 13C4-PFHpA | 8196 | 1.69 | - | 103.27 µg/L | - |
| 13C4-PFOA | 8643 | 1.87 | - | 105.58 µg/L | - |
| 13C4-PFOS | 1856 | 1.97 | - | 111.98 µg/L | - |
| 13C5-PFNA | 8327 | 2.01 | - | 105.02 µg/L | - |
| 13C2-PFDA | 7202 | 2.14 | - | 98.15 µg/L | - |
| 13C2-PFUnA | 8643 | 2.23 | - | 101.29 µg/L | - |
| 13C2-PFDoA | 10590 | 2.31 | - | 97.96 µg/L | - |
| 13C2-PFTeDA | 10010 | 2.46 | - | 84.23 µg/L | - |
| 13C6-PFHxA | 27565 | 1.43 | - | 2.11 µg/L | - |
| 13C9-PFDA | 33315 | 2.13 | - | 2.15 µg/L | - |



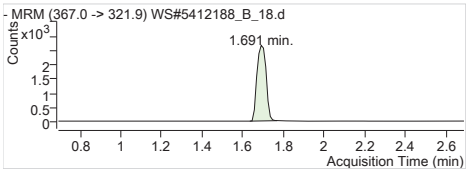



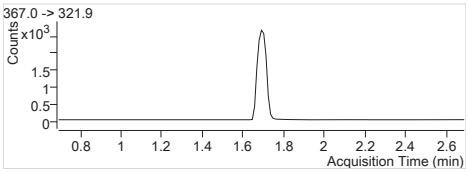

| | |
|---|---|
| **MPFHxA** | Internal Standard |
| RT (Exp. RT): | 1.434 (1.434) |
| Concentration: | 1 µg/L |
| Sample type: | Sample |



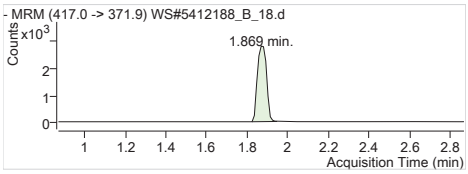



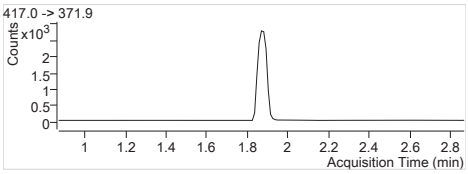

**MPFHxS** Internal Standard
RT (Exp. RT): 1.668 (1.668)
Concentration: 1 µg/L
Sample type: Sample



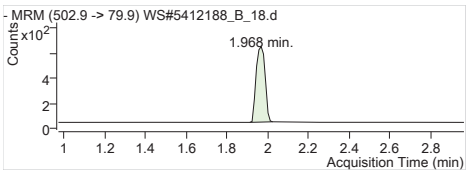



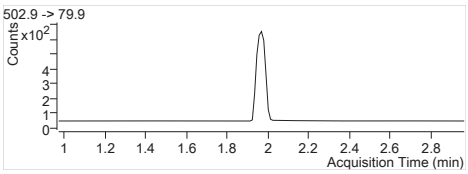

**MPFHpA** Internal Standard
RT (Exp. RT): 1.691 (1.691)
Concentration: 1 µg/L
Sample type: Sample



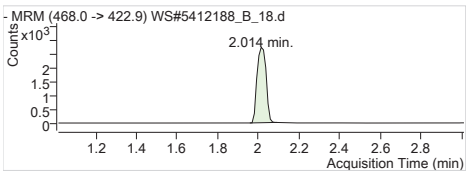



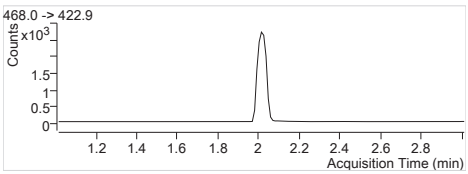

**MPFOA** Internal Standard
RT (Exp. RT): 1.869 (1.869)
Concentration: 1 µg/L
Sample type: Sample



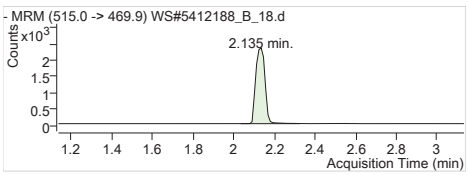



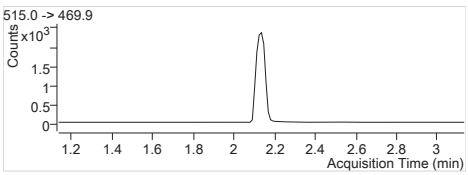

**MPFOS** Internal Standard
RT (Exp. RT): 1.968 (1.968)
Concentration: 1 µg/L
Sample type: Sample



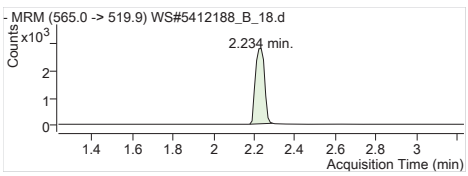



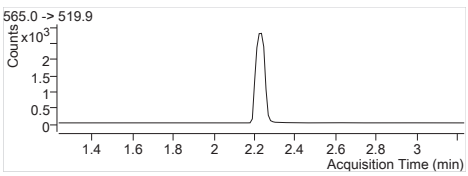

**MPFNA** Internal Standard
RT (Exp. RT): 2.014 (2.014)
Concentration: 1 µg/L
Sample type: Sample



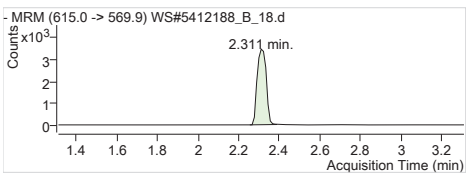



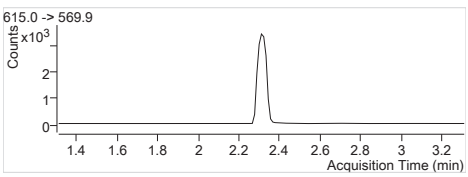

**MPFDA** Internal Standard
RT (Exp. RT): 2.135 (2.135)
Concentration: 1 µg/L
Sample type: Sample



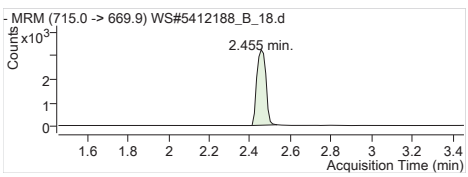



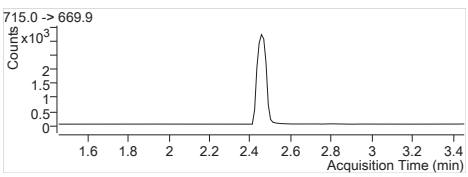

**MPFUnA** Internal Standard
RT (Exp. RT): 2.234 (2.234)
Concentration: 1 µg/L
Sample type: Sample



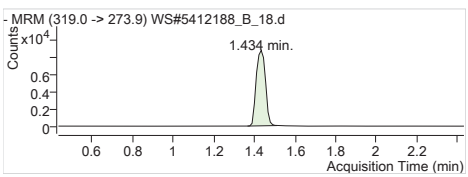



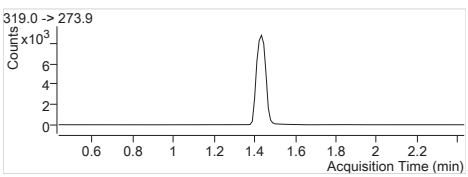

**MPFDoA** Internal Standard
RT (Exp. RT): 2.311 (2.311)
Concentration: 1 µg/L
Sample type: Sample



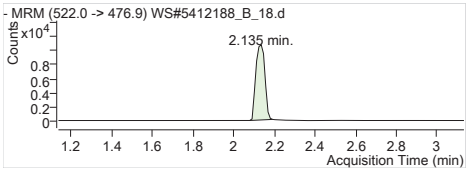



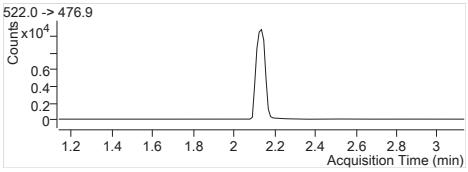

**MPFTeDA** Internal Standard
RT (Exp. RT): 2.455 (2.455)
Concentration: 1 µg/L
Sample type: Sample



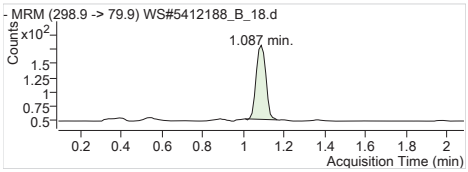



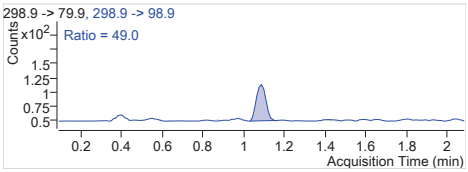

**13C6-PFHxA IS** Internal Standard
RT (Exp. RT): 1.434 (1.434)
Concentration: 1 µg/L
Sample type: Sample



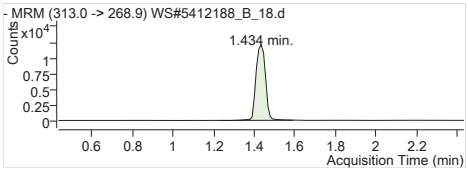



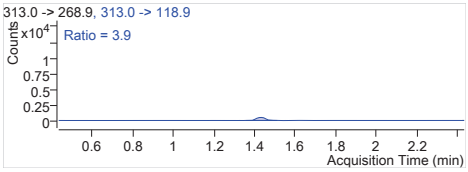

**13C9-PFDA IS** Internal Standard
RT (Exp. RT): 2.135 (2.135)
Concentration: 1 µg/L
Sample type: Sample



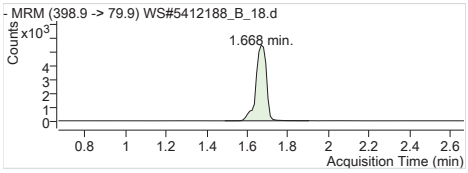



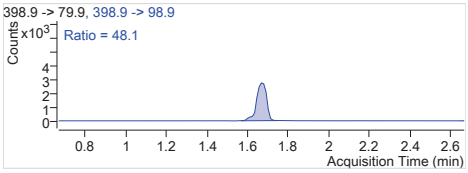

**PFBS 1** 298.9 -> 79.9
RT (Exp. RT): 1.087 (1.087)
Calc. conc. 0.01 µg/L
Area ratio: 0.29082
Sample type: Sample



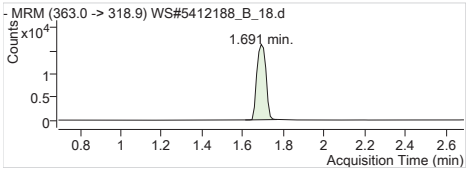



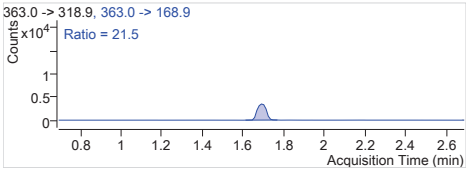

**PFHxA 1** 313.0 -> 268.9
RT (Exp. RT): 1.434 (1.434)
Calc. conc. 0.31 µg/L
Area ratio: 5.33470
Sample type: Sample



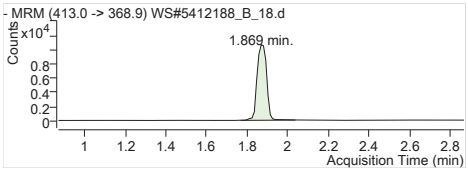



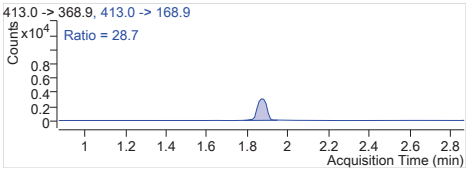

**PFHxS 1** 398.9 -> 79.9
RT (Exp. RT): 1.668 (1.668)
Calc. conc. 0.71 µg/L
Area ratio: 13.12821
Sample type: Sample



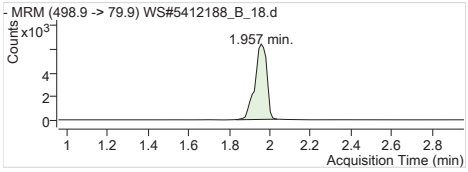



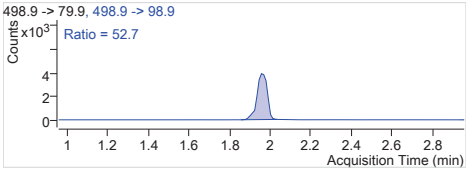

**PFHpA 1** 363.0 -> 318.9
RT (Exp. RT): 1.691 (1.691)
Calc. conc. 0.33 µg/L
Area ratio: 6.19168
Sample type: Sample



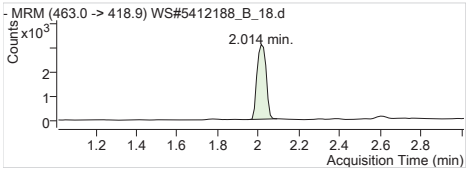



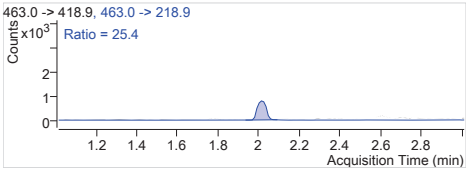

**PFOA 1** 413.0 -> 368.9
RT (Exp. RT): 1.869 (1.869)
Calc. conc. 0.21 µg/L
Area ratio: 3.99873
Sample type: Sample



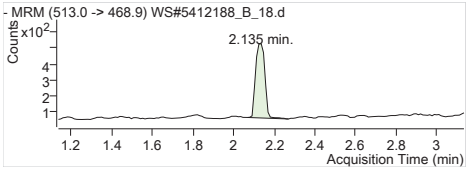



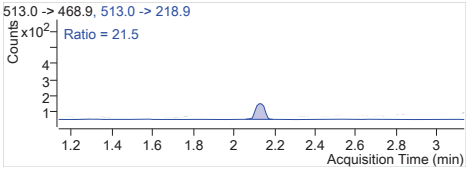

**PFOS 1** 498.9 -> 79.9
RT (Exp. RT): 1.957 (1.957)
Calc. conc. 0.81 µg/L
Area ratio: 14.03287
Sample type: Sample



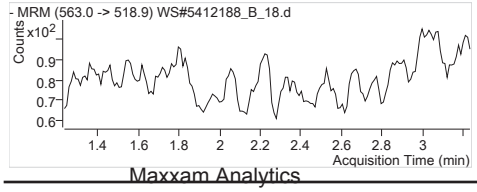



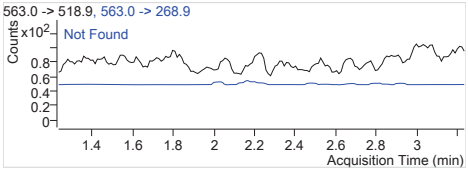

**PFNA 1** 463.0 -> 418.9
RT (Exp. RT): 2.014 (2.014)
Calc. conc. 0.06 µg/L
Area ratio: 1.13620
Sample type: Sample



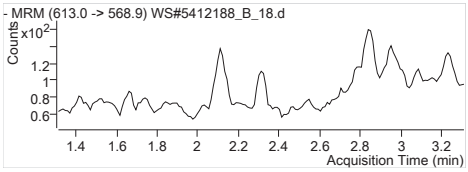



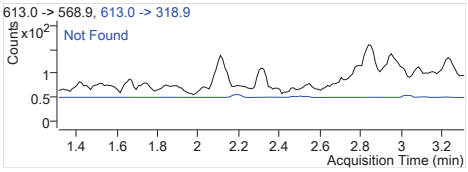

**PFDA 1** 513.0 -> 468.9
RT (Exp. RT): 2.135 (2.135)
Calc. conc. 0.01 µg/L
Area ratio: 0.19938
Sample type: Sample



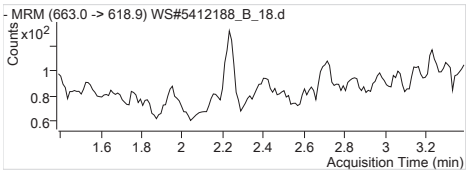



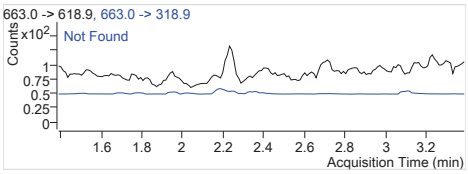

**PFUnA 1** 563.0 -> 518.9
RT (Exp. RT): 0.000 (2.234)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



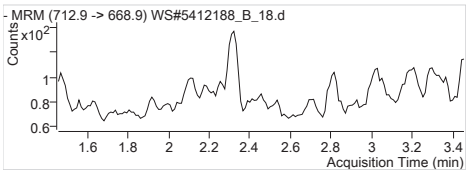



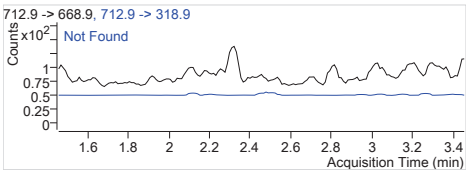

| | |
|---|---|
| **PFDoA 1** | 613.0 -> 568.9 |
| RT (Exp. RT): | 0.000 (2.311) |
| Calc. conc. | N.D. |
| Area ratio: | 0 |
| Sample type: | Sample |



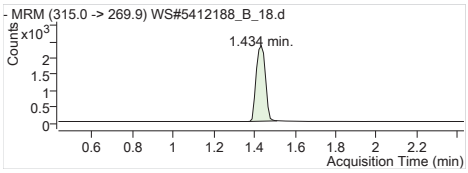



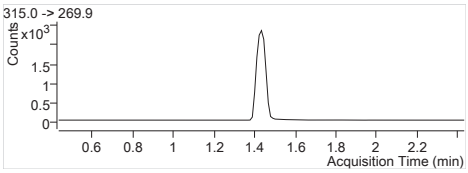

| | |
|---|---|
| **PFTrDA 1** | 663.0 -> 618.9 |
| RT (Exp. RT): | 0.000 (2.389) |
| Calc. conc. | N.D. |
| Area ratio: | 0 |
| Sample type: | Sample |



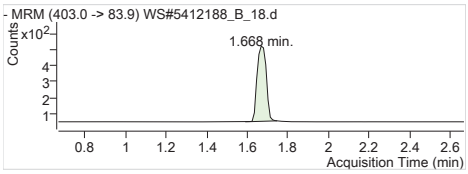



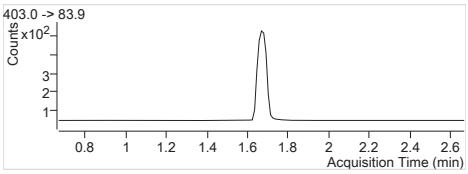

| | |
|---|---|
| **PFTeDA 1** | 712.9 -> 668.9 |
| RT (Exp. RT): | 0.000 (2.456) |
| Calc. conc. | N.D. |
| Area ratio: | 0 |
| Sample type: | Sample |



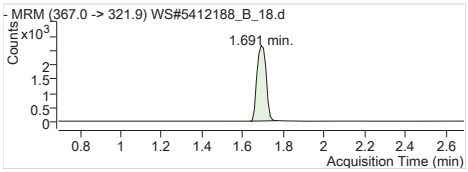



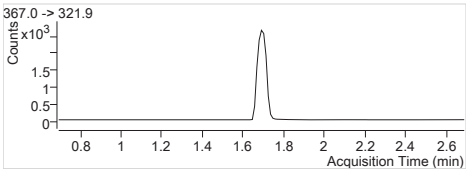

| | |
|---|---|
| **13C2-PFHxA** | 315.0 -> 269.9 |
| RT (Exp. RT): | 1.434 (1.434) |
| Calc. conc. | 106.70 µg/L |
| Area ratio: | 0.26523 |
| Sample type: | Sample |



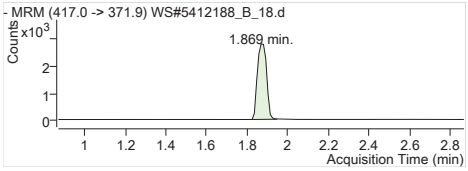



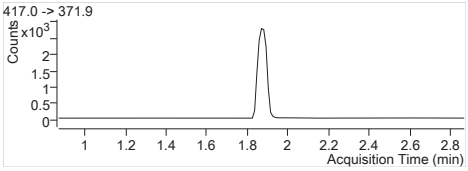

| | |
|---|---|
| **18O2-PFHxS** | 403.0 -> 83.9 |
| RT (Exp. RT): | 1.668 (1.668) |
| Calc. conc. | 103.53 µg/L |
| Area ratio: | 0.05376 |
| Sample type: | Sample |



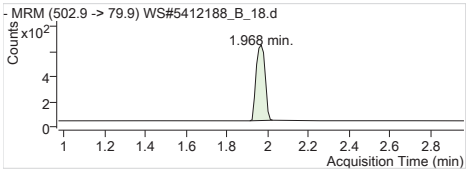



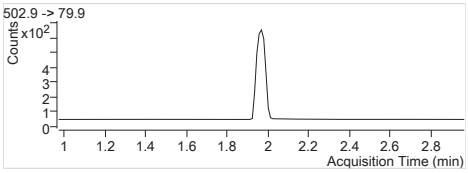

| | |
|---|---|
| **13C4-PFHpA** | 367.0 -> 321.9 |
| RT (Exp. RT): | 1.691 (1.691) |
| Calc. conc. | 103.27 µg/L |
| Area ratio: | 0.29733 |
| Sample type: | Sample |



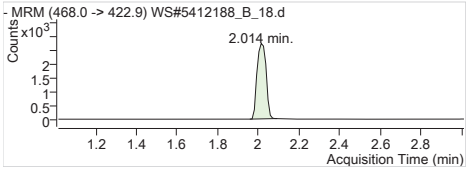



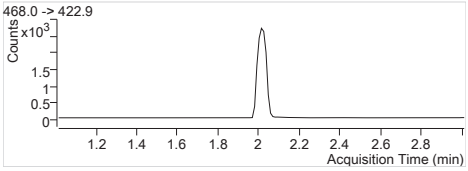

| | |
|---|---|
| **13C4-PFOA** | 417.0 -> 371.9 |
| RT (Exp. RT): | 1.869 (1.869) |
| Calc. conc. | 105.58 µg/L |
| Area ratio: | 0.31355 |
| Sample type: | Sample |



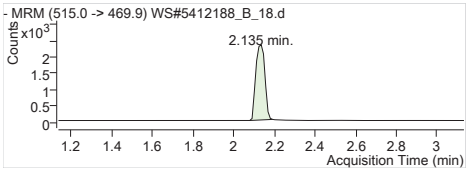



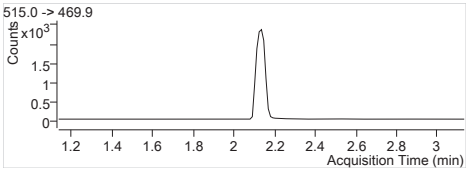

| | |
|---|---|
| **13C4-PFOS** | 502.9 -> 79.9 |
| RT (Exp. RT): | 1.968 (1.968) |
| Calc. conc. | 111.98 µg/L |
| Area ratio: | 0.06733 |
| Sample type: | Sample |



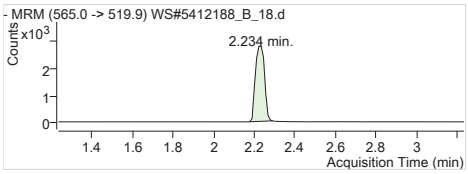



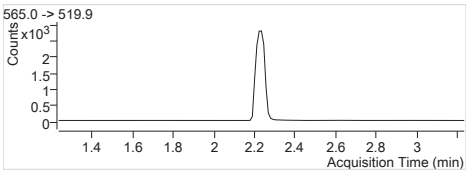

| | |
|---|---|
| **13C5-PFNA** | 468.0 -> 422.9 |
| RT (Exp. RT): | 2.014 (2.014) |
| Calc. conc. | 105.02 µg/L |
| Area ratio: | 0.30209 |
| Sample type: | Sample |



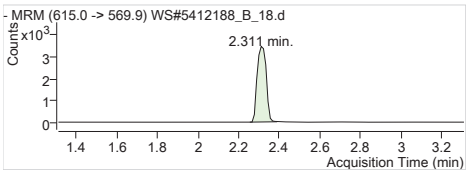



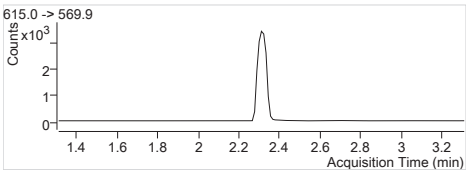

**13C2-PFDA** 515.0 -> 469.9
RT (Exp. RT): 2.135 (2.135)
Calc. conc. 98.15 µg/L
Area ratio: 0.21618
Sample type: Sample



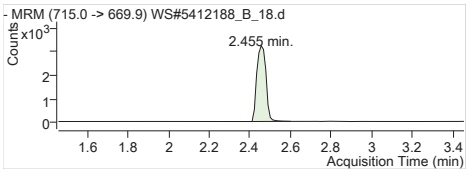



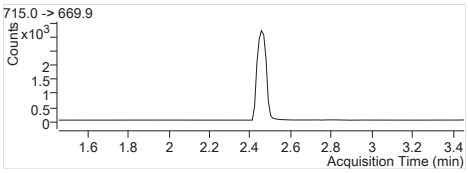

**13C2-PFUnA** 565.0 -> 519.9
RT (Exp. RT): 2.234 (2.234)
Calc. conc. 101.29 µg/L
Area ratio: 0.25943
Sample type: Sample



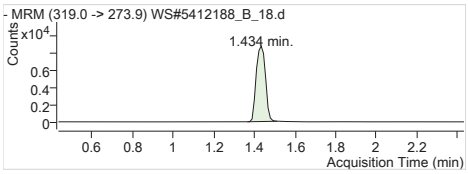



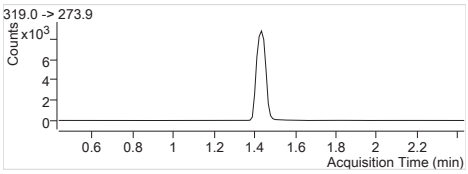

**13C2-PFDoA** 615.0 -> 569.9
RT (Exp. RT): 2.311 (2.311)
Calc. conc. 97.96 µg/L
Area ratio: 0.31787
Sample type: Sample



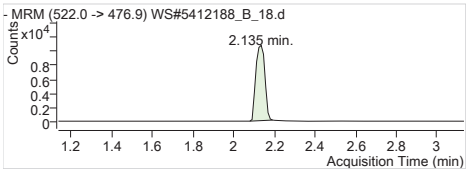



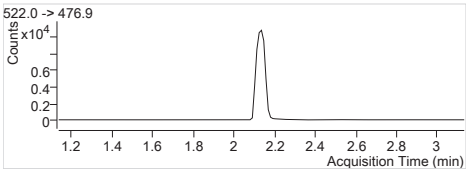

**13C2-PFTeDA** 715.0 -> 669.9
RT (Exp. RT): 2.455 (2.455)
Calc. conc. 84.23 µg/L
Area ratio: 0.30047
Sample type: Sample




**13C6-PFHxA** 319.0 -> 273.9
RT (Exp. RT): 1.434 (1.434)
Calc. conc. 2.11 µg/L
Area ratio: 0
Sample type: Sample



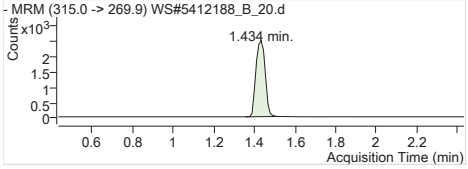

**13C9-PFDA** 522.0 -> 476.9
RT (Exp. RT): 2.135 (2.135)
Calc. conc. 2.15 µg/L
Area ratio: 0
Sample type: Sample

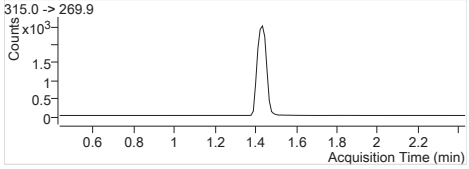
| | |
|---|---|
| **Batch Path** | T:\lcms4\PFC\20180226\WS#5412188_B\QuantResults\PFC_Water_Low_180227_WS#5412188_B_EToxics |

| | | | |
|---|---|---|---|
| **Sample Name** | **5412188:GBV353-01** | **Instrument** | LCMS04 |
| **Data File** | WS#5412188_B_20.d | **Operator** | |
| **Sample Type** | Sample | **Dilution** | 0.024 |
| **Acq. Method** | PFC_Water_Low.m | **Position** | P1-D7 |
| **Acq. Date** | 2018/02/27 2:46:32 PM | **Injection Volume** | Per Method |
| **Sample Annotation** | - | | |

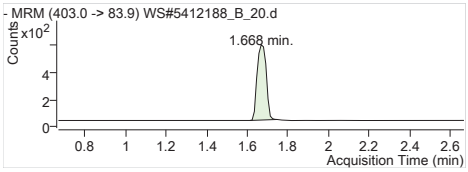
| ISTD Compounds | Response | RT | Target conc. | | |
|---|---|---|---|---|---|
| MPFHxA | 7841 | 1.43 | 1 µg/L | | |
| MPFHxS | 1706 | 1.67 | 1 µg/L | | |
| MPFHpA | 9024 | 1.69 | 1 µg/L | | |
| MPFOA | 9155 | 1.87 | 1 µg/L | | |
| MPFOS | 1876 | 1.97 | 1 µg/L | | |
| MPFNA | 8858 | 2.01 | 1 µg/L | | |
| MPFDA | 7718 | 2.14 | 1 µg/L | | |
| MPFUnA | 9031 | 2.23 | 1 µg/L | | |
| MPFDoA | 10321 | 2.31 | 1 µg/L | | |
| MPFTeDA | 9902 | 2.46 | 1 µg/L | | |
| 13C6-PFHxA IS | 28213 | 1.43 | 1 µg/L | | |
| 13C9-PFDA IS | 33355 | 2.13 | 1 µg/L | | |

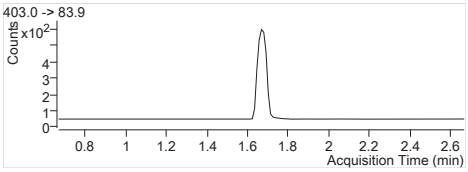
| Compound | Response | RT | Target Conc. | Calc. Conc. | Accuracy |
|---|---|---|---|---|---|
| PFBS 1 | | | - | ND | - |
| PFHxA 1 | 9017 | 1.43 | - | 0.06 µg/L | - |
| PFHxS 1 | 374 | 1.67 | - | 0.01 µg/L | - |
| PFHpA 1 | 9095 | 1.69 | - | 0.05 µg/L | - |
| PFOA 1 | 2987 | 1.87 | - | 0.01 µg/L | - |
| PFOS 1 | 656 | 1.97 | - | 0.02 µg/L | - |
| PFNA 1 | 918 | 2.01 | - | 0.01 µg/L | - |
| PFDA 1 | 1188 | 2.14 | - | 0.00 µg/L | - |
| PFUnA 1 | 776 | 2.23 | - | 0.00 µg/L | - |
| PFDoA 1 | | | - | ND | - |
| PFTrDA 1 | | | - | ND | - |
| PFTeDA 1 | | | - | ND | - |
| 13C2-PFHxA | 7841 | 1.43 | - | 111.81 µg/L | - |
| 18O2-PFHxS | 1706 | 1.67 | - | 116.44 µg/L | - |
| 13C4-PFHpA | 9024 | 1.69 | - | 111.09 µg/L | - |
| 13C4-PFOA | 9155 | 1.87 | - | 109.26 µg/L | - |
| 13C4-PFOS | 1876 | 1.97 | - | 110.59 µg/L | - |
| 13C5-PFNA | 8858 | 2.01 | - | 109.15 µg/L | - |
| 13C2-PFDA | 7566 | 2.14 | - | 102.99 µg/L | - |
| 13C2-PFUnA | 9031 | 2.23 | - | 105.71 µg/L | - |
| 13C2-PFDoA | 10321 | 2.31 | - | 95.36 µg/L | - |
| 13C2-PFTeDA | 10060 | 2.46 | - | 84.55 µg/L | - |
| 13C6-PFHxA | 28213 | 1.43 | - | 2.16 µg/L | - |
| 13C9-PFDA | 33355 | 2.13 | - | 2.15 µg/L | - |



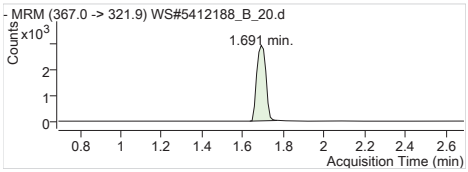



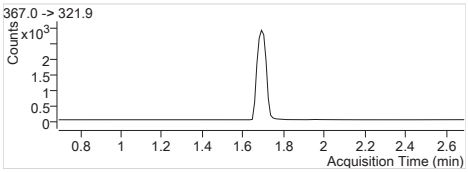

| | |
|---|---|
| **MPFHxA** | Internal Standard |
| RT (Exp. RT): | 1.434 (1.434) |
| Concentration: | 1 µg/L |
| Sample type: | Sample |



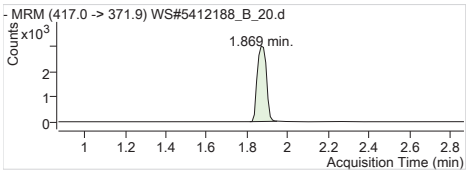



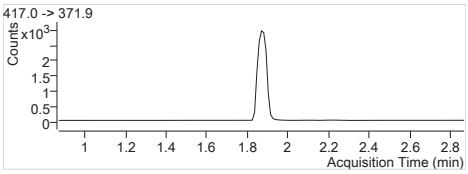

**MPFHxS** Internal Standard
RT (Exp. RT): 1.668 (1.668)
Concentration: 1 µg/L
Sample type: Sample



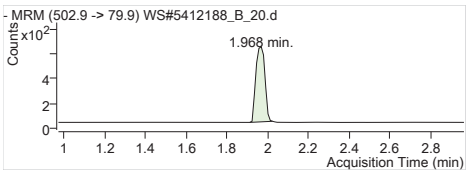



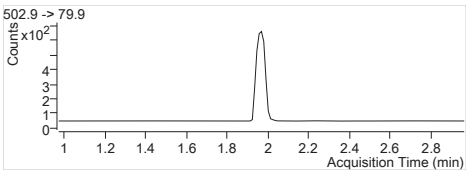

**MPFHpA** Internal Standard
RT (Exp. RT): 1.691 (1.691)
Concentration: 1 µg/L
Sample type: Sample



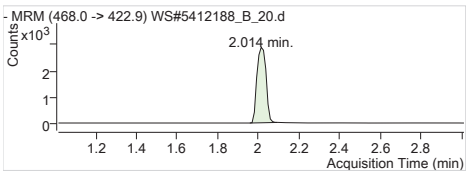



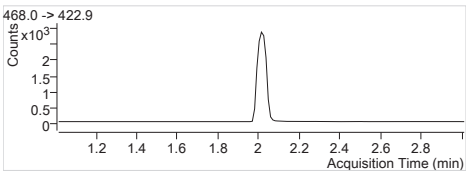

**MPFOA** Internal Standard
RT (Exp. RT): 1.869 (1.869)
Concentration: 1 µg/L
Sample type: Sample



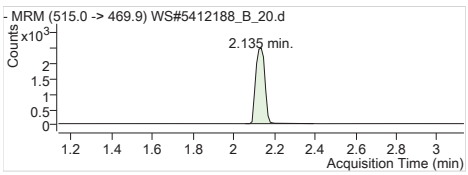



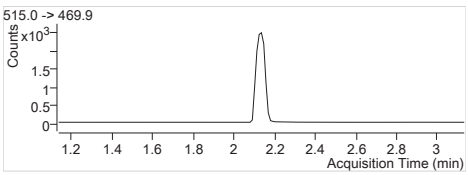

**MPFOS** Internal Standard
RT (Exp. RT): 1.968 (1.968)
Concentration: 1 µg/L
Sample type: Sample



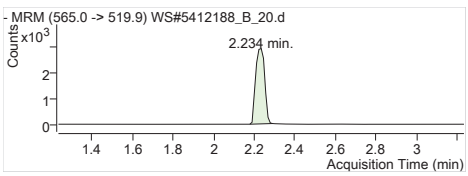



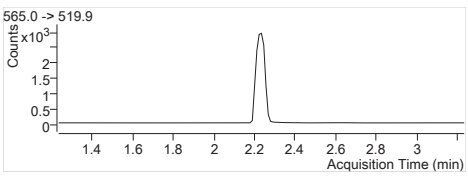

**MPFNA** Internal Standard
RT (Exp. RT): 2.014 (2.014)
Concentration: 1 µg/L
Sample type: Sample



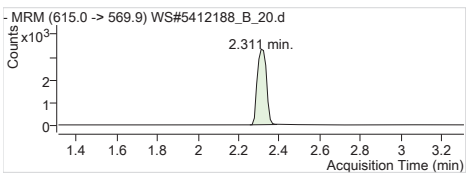



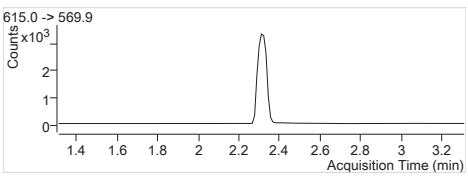

**MPFDA** Internal Standard
RT (Exp. RT): 2.135 (2.135)
Concentration: 1 µg/L
Sample type: Sample



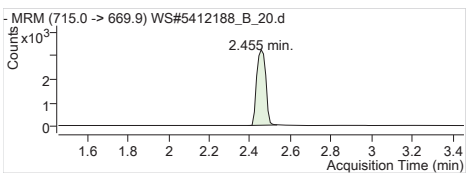



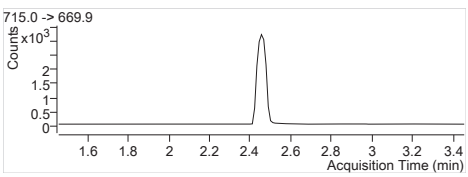

**MPFUnA** Internal Standard
RT (Exp. RT): 2.234 (2.234)
Concentration: 1 µg/L
Sample type: Sample



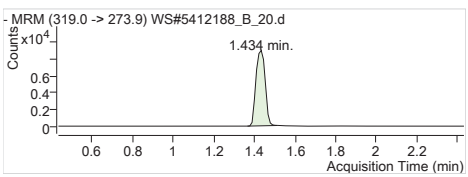



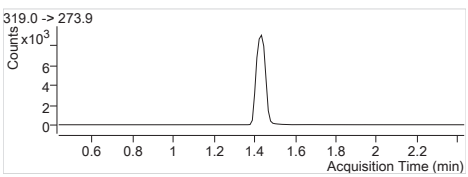

**MPFDoA** Internal Standard
RT (Exp. RT): 2.311 (2.311)
Concentration: 1 µg/L
Sample type: Sample



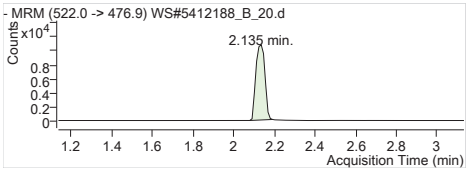



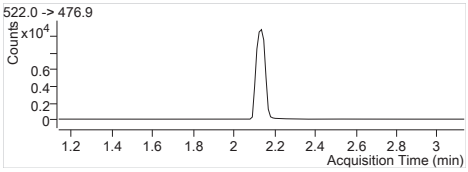

**MPFTeDA** Internal Standard
RT (Exp. RT): 2.455 (2.455)
Concentration: 1 µg/L
Sample type: Sample



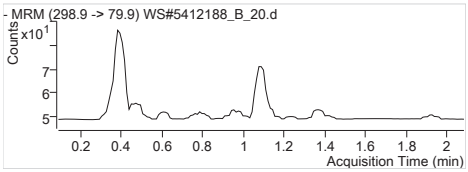



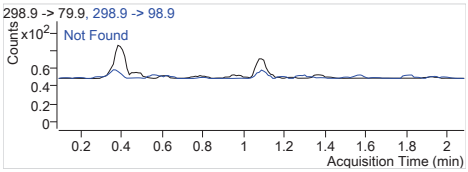

**13C6-PFHxA IS** Internal Standard
RT (Exp. RT): 1.434 (1.434)
Concentration: 1 µg/L
Sample type: Sample



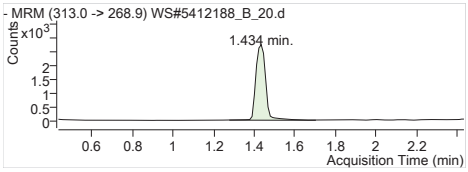



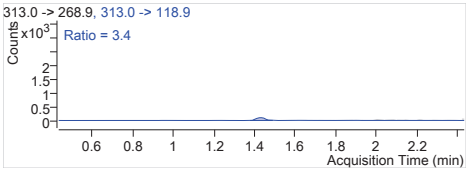

**13C9-PFDA IS** Internal Standard
RT (Exp. RT): 2.135 (2.135)
Concentration: 1 µg/L
Sample type: Sample



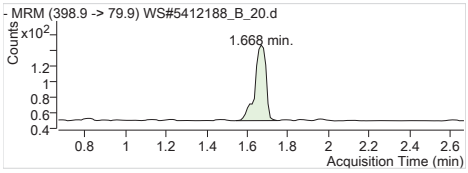



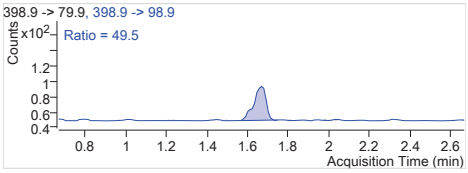

**PFBS 1** 298.9 -> 79.9
RT (Exp. RT): 0.000 (1.087)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



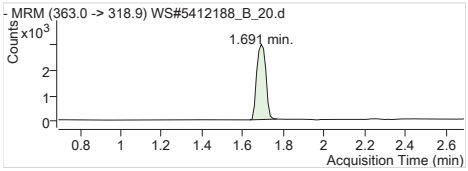



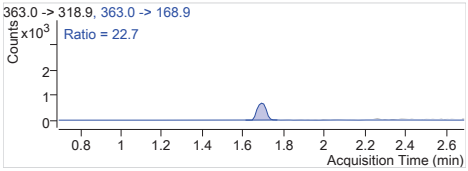

**PFHxA 1** 313.0 -> 268.9
RT (Exp. RT): 1.434 (1.434)
Calc. conc. 0.06 µg/L
Area ratio: 1.14998
Sample type: Sample



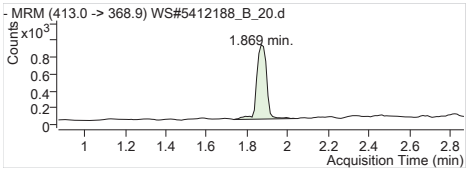



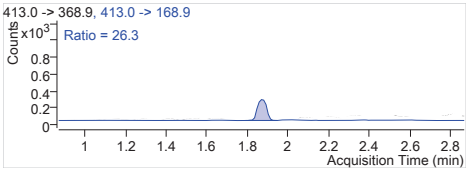

**PFHxS 1** 398.9 -> 79.9
RT (Exp. RT): 1.668 (1.668)
Calc. conc. 0.01 µg/L
Area ratio: 0.21923
Sample type: Sample



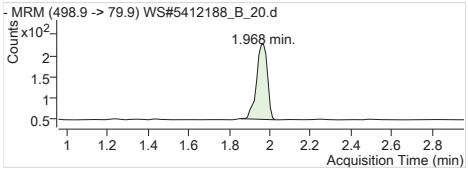



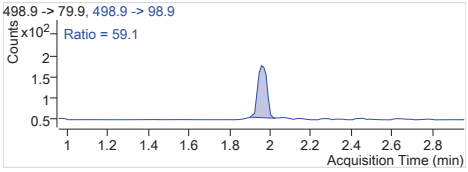

**PFHpA 1** 363.0 -> 318.9
RT (Exp. RT): 1.691 (1.691)
Calc. conc. 0.05 µg/L
Area ratio: 1.00787
Sample type: Sample



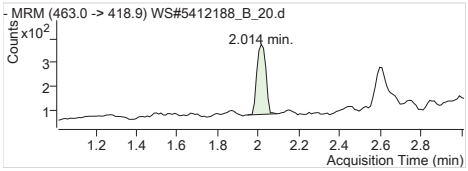



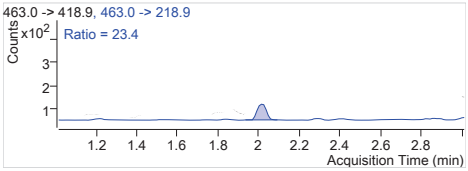

**PFOA 1** 413.0 -> 368.9
RT (Exp. RT): 1.869 (1.869)
Calc. conc. 0.01 µg/L
Area ratio: 0.32627
Sample type: Sample



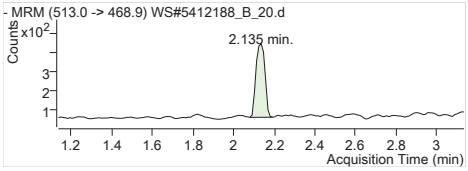



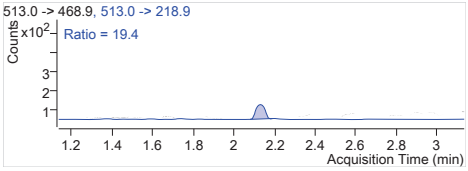

**PFOS 1** 498.9 -> 79.9
RT (Exp. RT): 1.968 (1.957)
Calc. conc. 0.02 µg/L
Area ratio: 0.34968
Sample type: Sample



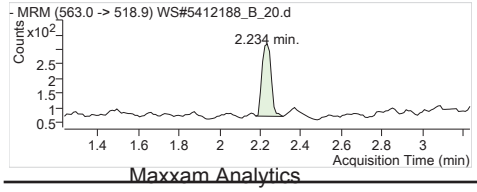



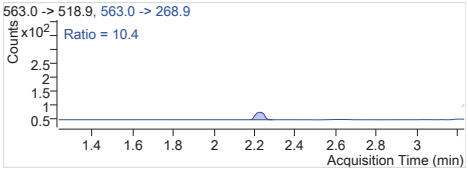

**PFNA 1** 463.0 -> 418.9
RT (Exp. RT): 2.014 (2.014)
Calc. conc. 0.01 µg/L
Area ratio: 0.10364
Sample type: Sample



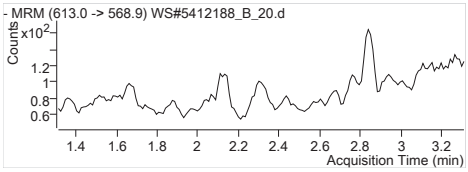



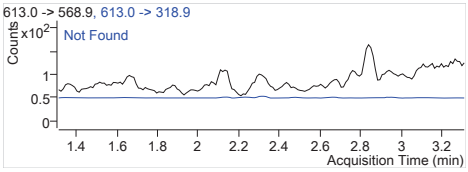

**PFDA 1** 513.0 -> 468.9
RT (Exp. RT): 2.135 (2.135)
Calc. conc. 0.00 µg/L
Area ratio: 0.15393
Sample type: Sample



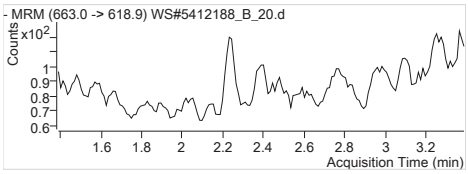



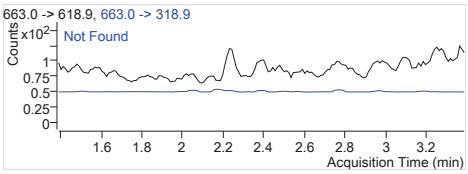

**PFUnA 1** 563.0 -> 518.9
RT (Exp. RT): 2.234 (2.234)
Calc. conc. 0.00 µg/L
Area ratio: 0.08593
Sample type: Sample



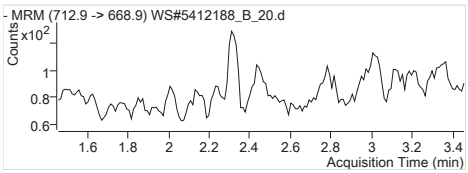



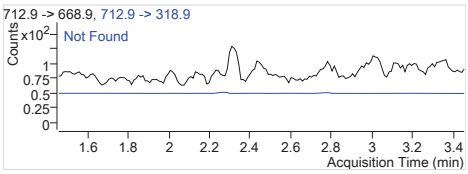

| | |
|---|---|
| **PFDoA 1** | 613.0 -> 568.9 |
| RT (Exp. RT): | 0.000 (2.311) |
| Calc. conc. | N.D. |
| Area ratio: | 0 |
| Sample type: | Sample |



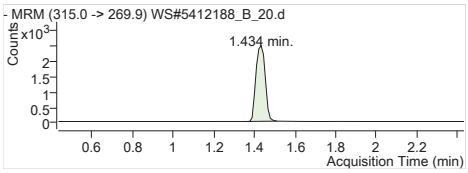



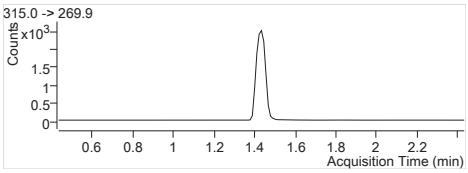

| | |
|---|---|
| **PFTrDA 1** | 663.0 -> 618.9 |
| RT (Exp. RT): | 0.000 (2.389) |
| Calc. conc. | N.D. |
| Area ratio: | 0 |
| Sample type: | Sample |



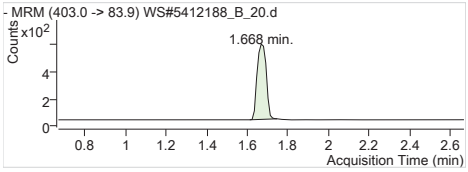



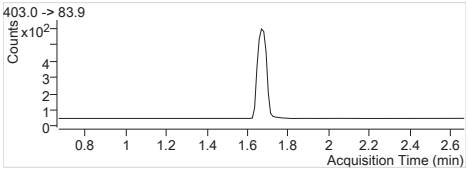

| | |
|---|---|
| **PFTeDA 1** | 712.9 -> 668.9 |
| RT (Exp. RT): | 0.000 (2.456) |
| Calc. conc. | N.D. |
| Area ratio: | 0 |
| Sample type: | Sample |



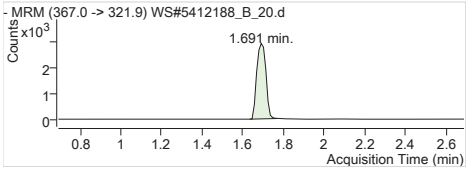



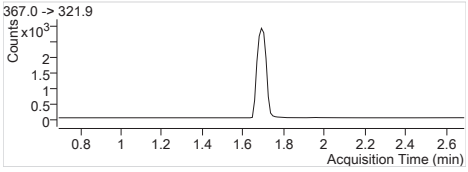

| | |
|---|---|
| **13C2-PFHxA** | 315.0 -> 269.9 |
| RT (Exp. RT): | 1.434 (1.434) |
| Calc. conc. | 111.81 µg/L |
| Area ratio: | 0.27792 |
| Sample type: | Sample |



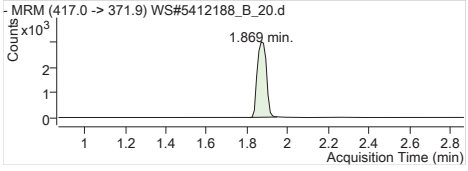



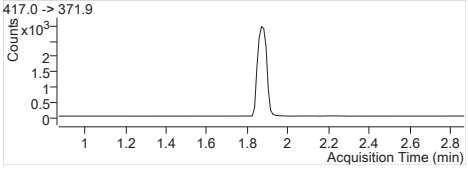

| | |
|---|---|
| **18O2-PFHxS** | 403.0 -> 83.9 |
| RT (Exp. RT): | 1.668 (1.668) |
| Calc. conc. | 116.44 µg/L |
| Area ratio: | 0.06047 |
| Sample type: | Sample |



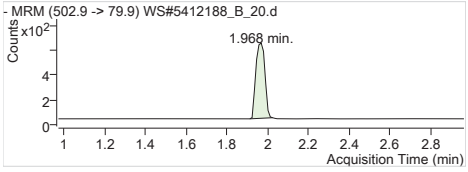



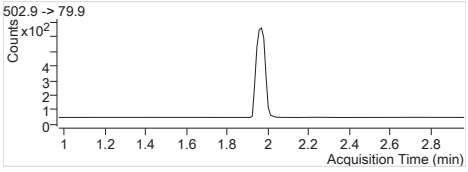

| | |
|---|---|
| **13C4-PFHpA** | 367.0 -> 321.9 |
| RT (Exp. RT): | 1.691 (1.691) |
| Calc. conc. | 111.09 µg/L |
| Area ratio: | 0.31985 |
| Sample type: | Sample |



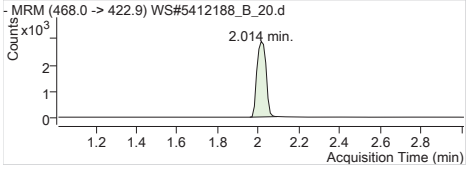



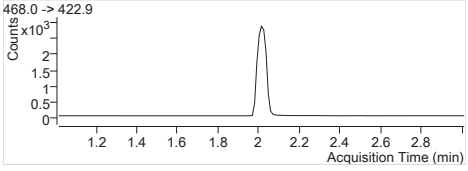

| | |
|---|---|
| **13C4-PFOA** | 417.0 -> 371.9 |
| RT (Exp. RT): | 1.869 (1.869) |
| Calc. conc. | 109.26 µg/L |
| Area ratio: | 0.32450 |
| Sample type: | Sample |



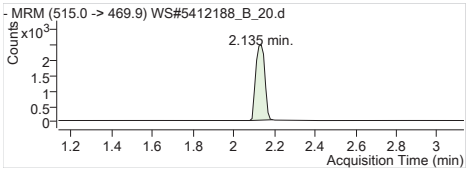



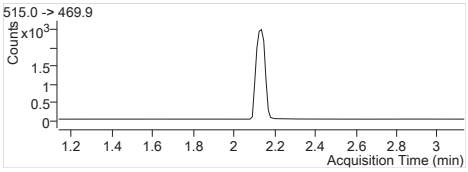

| | |
|---|---|
| **13C4-PFOS** | 502.9 -> 79.9 |
| RT (Exp. RT): | 1.968 (1.968) |
| Calc. conc. | 110.59 µg/L |
| Area ratio: | 0.06649 |
| Sample type: | Sample |



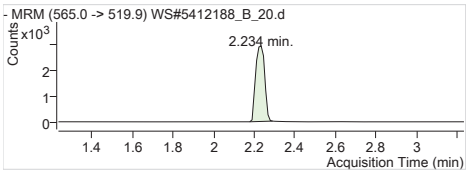



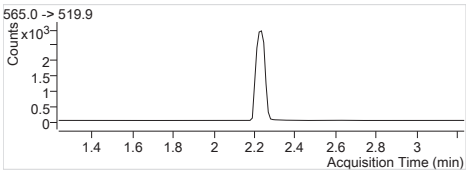

| | |
|---|---|
| **13C5-PFNA** | 468.0 -> 422.9 |
| RT (Exp. RT): | 2.014 (2.014) |
| Calc. conc. | 109.15 µg/L |
| Area ratio: | 0.31397 |
| Sample type: | Sample |



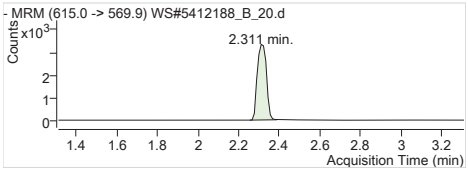



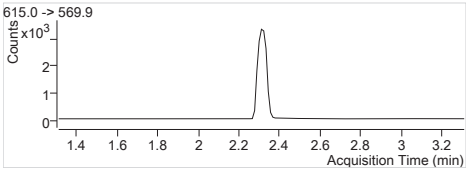

**13C2-PFDA** 515.0 -> 469.9
RT (Exp. RT): 2.135 (2.135)
Calc. conc. 102.99 µg/L
Area ratio: 0.22683
Sample type: Sample



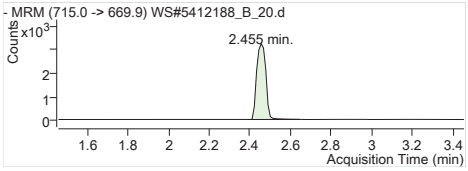



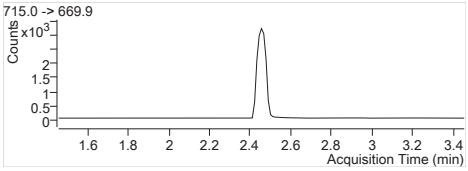

**13C2-PFUnA** 565.0 -> 519.9
RT (Exp. RT): 2.234 (2.234)
Calc. conc. 105.71 µg/L
Area ratio: 0.27075
Sample type: Sample



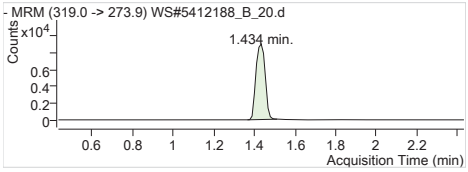



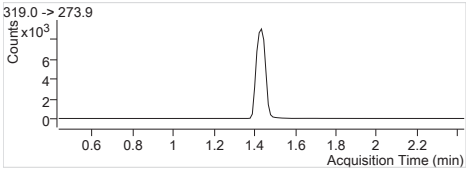

**13C2-PFDoA** 615.0 -> 569.9
RT (Exp. RT): 2.311 (2.311)
Calc. conc. 95.36 µg/L
Area ratio: 0.30943
Sample type: Sample



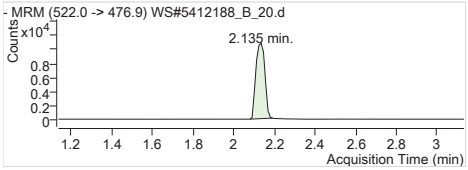



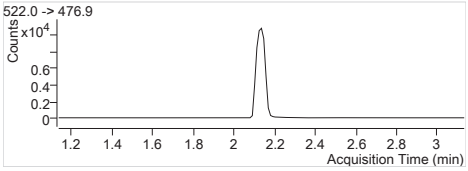

**13C2-PFTeDA** 715.0 -> 669.9
RT (Exp. RT): 2.455 (2.455)
Calc. conc. 84.55 µg/L
Area ratio: 0.30160
Sample type: Sample




**13C6-PFHxA** 319.0 -> 273.9
RT (Exp. RT): 1.434 (1.434)
Calc. conc. 2.16 µg/L
Area ratio: 0
Sample type: Sample



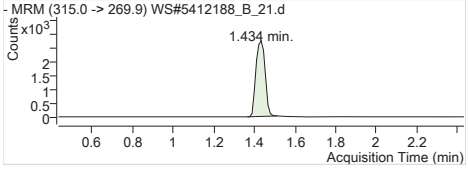

**13C9-PFDA** 522.0 -> 476.9
RT (Exp. RT): 2.135 (2.135)
Calc. conc. 2.15 µg/L
Area ratio: 0
Sample type: Sample

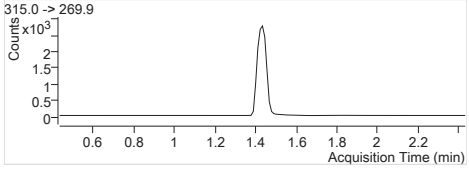
| | |
|---|---|
| **Batch Path** | T:\lcms4\PFC\20180226\WS#5412188_B\QuantResults\PFC_Water_Low_180227_WS#5412188_B_EToxics |

| | | | |
|---|---|---|---|
| **Sample Name** | **5412188:GBV354-01:10x** | **Instrument** | LCMS04 |
| **Data File** | WS#5412188_B_21.d | **Operator** | |
| **Sample Type** | Sample | **Dilution** | 0.24 |
| **Acq. Method** | PFC_Water_Low.m | **Position** | P1-D8 |
| **Acq. Date** | 2018/02/27 2:51:28 PM | **Injection Volume** | Per Method |
| **Sample Annotation** | - | | |

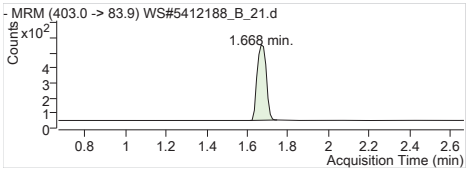
| ISTD Compounds | Response | RT | Target conc. | | |
|---|---|---|---|---|---|
| MPFHxA | 8592 | 1.43 | 1 µg/L | | |
| MPFHxS | 1586 | 1.67 | 1 µg/L | | |
| MPFHpA | 9292 | 1.69 | 1 µg/L | | |
| MPFOA | 8886 | 1.87 | 1 µg/L | | |
| MPFOS | 1918 | 1.97 | 1 µg/L | | |
| MPFNA | 8836 | 2.01 | 1 µg/L | | |
| MPFDA | 7330 | 2.14 | 1 µg/L | | |
| MPFUnA | 8856 | 2.23 | 1 µg/L | | |
| MPFDoA | 10133 | 2.31 | 1 µg/L | | |
| MPFTeDA | 8692 | 2.46 | 1 µg/L | | |
| 13C6-PFHxA IS | 30186 | 1.43 | 1 µg/L | | |
| 13C9-PFDA IS | 36409 | 2.13 | 1 µg/L | | |

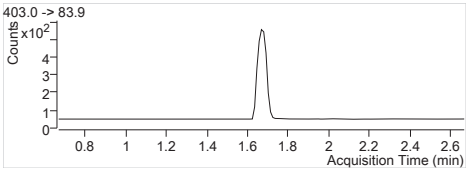
| Compound | Response | RT | Target Conc. | Calc. Conc. | Accuracy |
|---|---|---|---|---|---|
| PFBS 1 | | | - | ND | - |
| PFHxA 1 | | | - | ND | - |
| PFHxS 1 | | | - | ND | - |
| PFHpA 1 | | | - | ND | - |
| PFOA 1 | | | - | ND | - |
| PFOS 1 | | | - | ND | - |
| PFNA 1 | | | - | ND | - |
| PFDA 1 | | | - | ND | - |
| PFUnA 1 | | | - | ND | - |
| PFDoA 1 | | | - | ND | - |
| PFTrDA 1 | | | - | ND | - |
| PFTeDA 1 | | | - | ND | - |
| 13C2-PFHxA | 8592 | 1.43 | - | 114.51 µg/L | - |
| 18O2-PFHxS | 1586 | 1.67 | - | 101.18 µg/L | - |
| 13C4-PFHpA | 9292 | 1.69 | - | 106.92 µg/L | - |
| 13C4-PFOA | 8886 | 1.87 | - | 99.12 µg/L | - |
| 13C4-PFOS | 1918 | 1.97 | - | 105.68 µg/L | - |
| 13C5-PFNA | 8835 | 2.01 | - | 101.75 µg/L | - |
| 13C2-PFDA | 7219 | 2.14 | - | 90.02 µg/L | - |
| 13C2-PFUnA | 8856 | 2.23 | - | 94.97 µg/L | - |
| 13C2-PFDoA | 10133 | 2.31 | - | 85.77 µg/L | - |
| 13C2-PFTeDA | 8881 | 2.46 | - | 68.38 µg/L | - |
| 13C6-PFHxA | 30186 | 1.43 | - | 23.12 µg/L | - |
| 13C9-PFDA | 36409 | 2.13 | - | 23.45 µg/L | - |



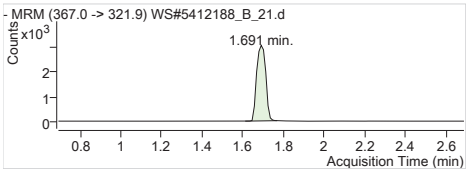



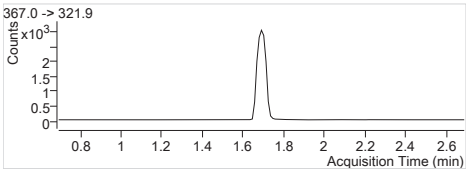

| | |
|---|---|
| **MPFHxA** | Internal Standard |
| RT (Exp. RT): | 1.434 (1.434) |
| Concentration: | 1 µg/L |
| Sample type: | Sample |



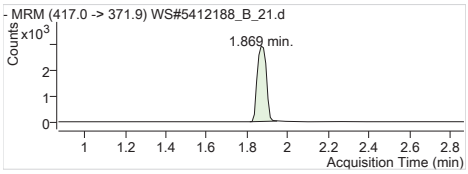



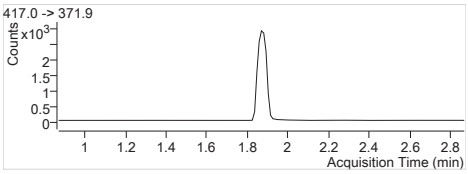

**MPFHxS** Internal Standard
RT (Exp. RT): 1.668 (1.668)
Concentration: 1 µg/L
Sample type: Sample



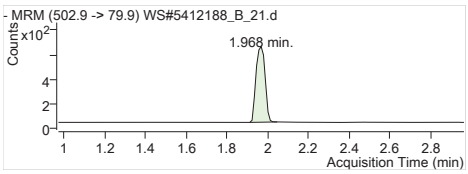



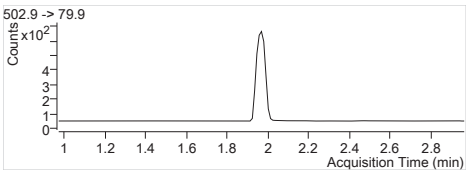

**MPFHpA** Internal Standard
RT (Exp. RT): 1.691 (1.691)
Concentration: 1 µg/L
Sample type: Sample



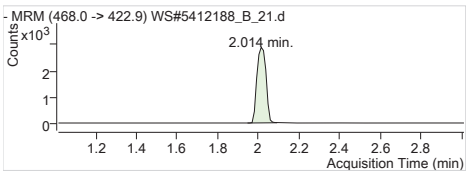



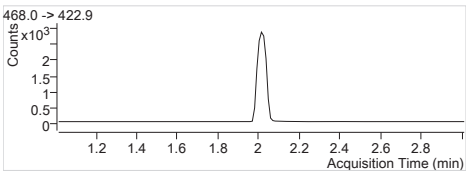

**MPFOA** Internal Standard
RT (Exp. RT): 1.869 (1.869)
Concentration: 1 µg/L
Sample type: Sample



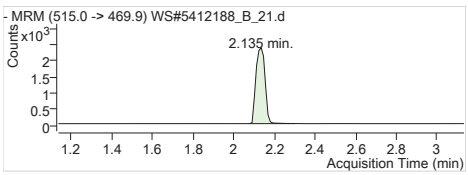



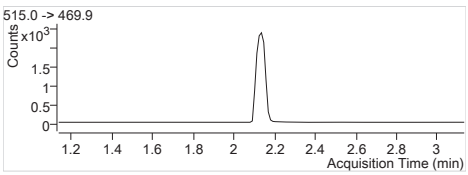

**MPFOS** Internal Standard
RT (Exp. RT): 1.968 (1.968)
Concentration: 1 µg/L
Sample type: Sample



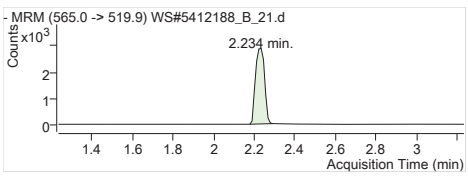



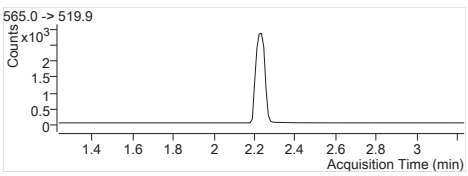

**MPFNA** Internal Standard
RT (Exp. RT): 2.014 (2.014)
Concentration: 1 µg/L
Sample type: Sample



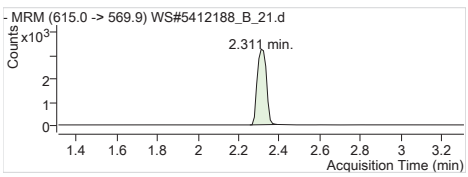



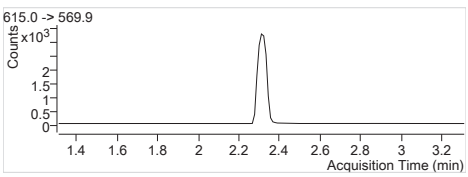

**MPFDA** Internal Standard
RT (Exp. RT): 2.135 (2.135)
Concentration: 1 µg/L
Sample type: Sample



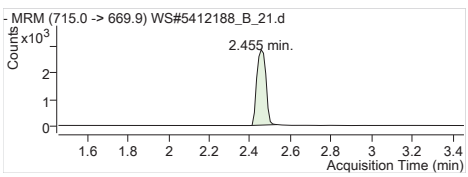



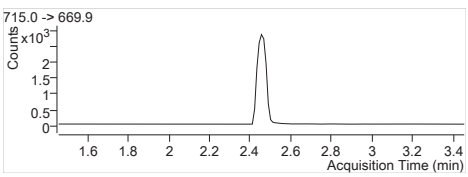

**MPFUnA** Internal Standard
RT (Exp. RT): 2.234 (2.234)
Concentration: 1 µg/L
Sample type: Sample



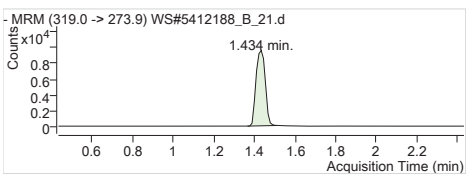



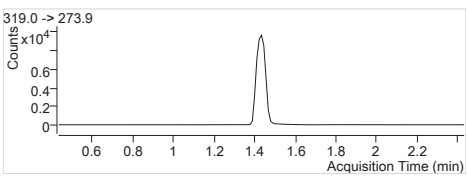

**MPFDoA** Internal Standard
RT (Exp. RT): 2.311 (2.311)
Concentration: 1 µg/L
Sample type: Sample



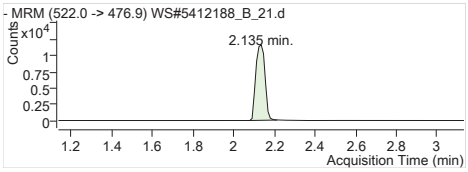



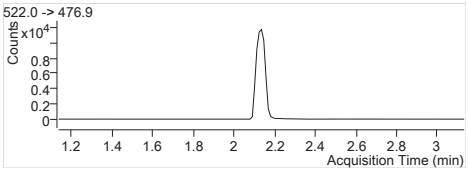

**MPFTeDA** Internal Standard
RT (Exp. RT): 2.455 (2.455)
Concentration: 1 µg/L
Sample type: Sample



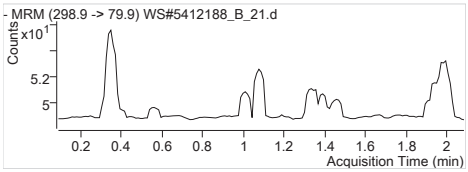



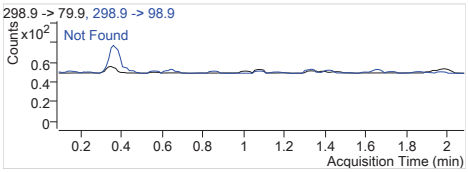

**13C6-PFHxA IS** Internal Standard
RT (Exp. RT): 1.434 (1.434)
Concentration: 1 µg/L
Sample type: Sample



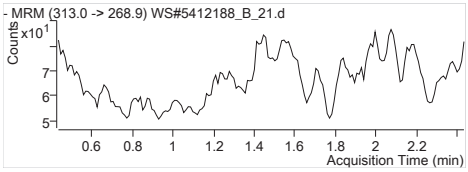



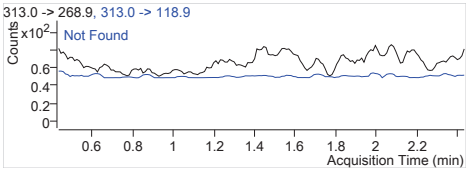

**13C9-PFDA IS** Internal Standard
RT (Exp. RT): 2.135 (2.135)
Concentration: 1 µg/L
Sample type: Sample



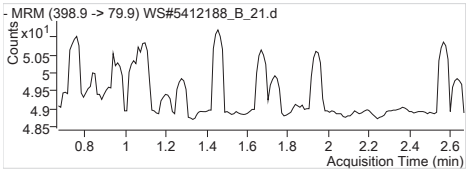



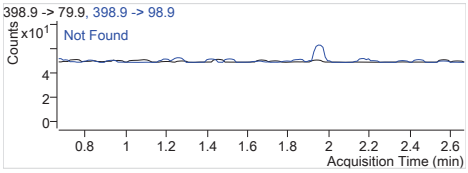

**PFBS 1** 298.9 -> 79.9
RT (Exp. RT): 0.000 (1.087)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



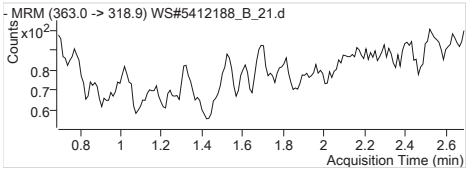



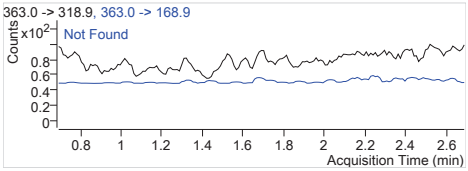

**PFHxA 1** 313.0 -> 268.9
RT (Exp. RT): 0.000 (1.434)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



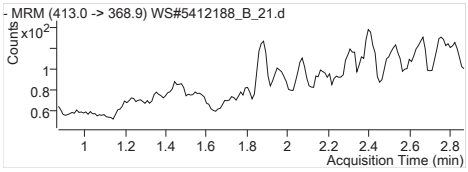



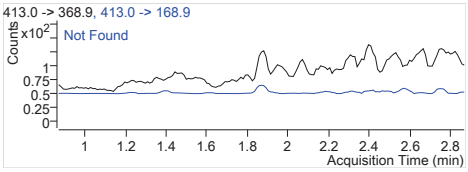

**PFHxS 1** 398.9 -> 79.9
RT (Exp. RT): 0.000 (1.668)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



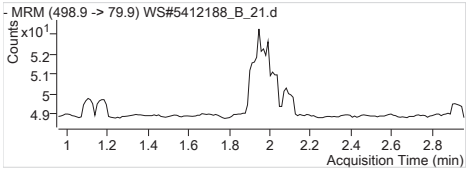



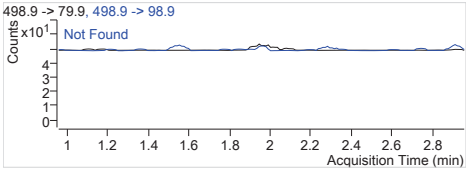

**PFHpA 1** 363.0 -> 318.9
RT (Exp. RT): 0.000 (1.691)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



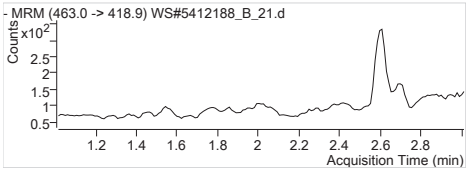



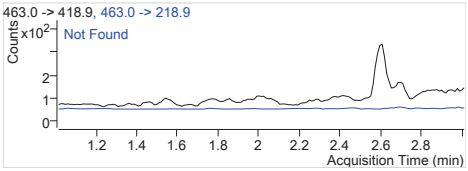

**PFOA 1** 413.0 -> 368.9
RT (Exp. RT): 0.000 (1.869)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



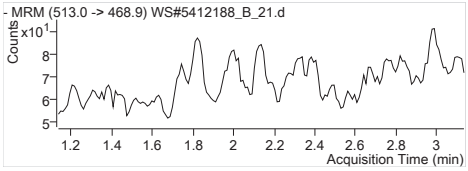



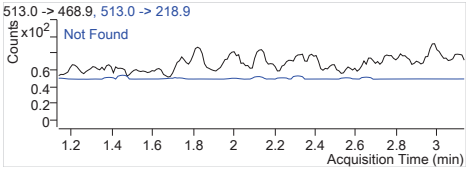

**PFOS 1** 498.9 -> 79.9
RT (Exp. RT): 0.000 (1.957)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



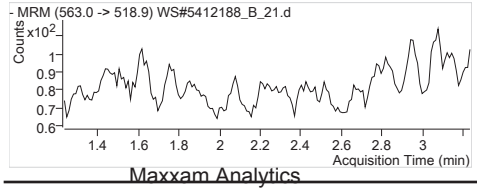



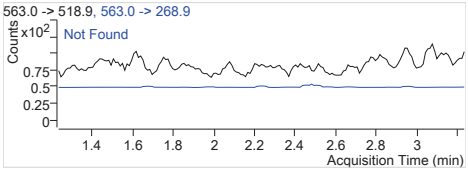

**PFNA 1** 463.0 -> 418.9
RT (Exp. RT): 0.000 (2.014)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



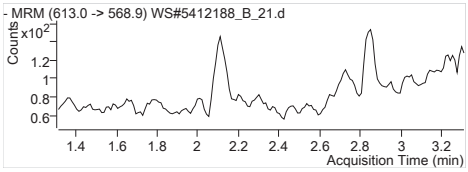



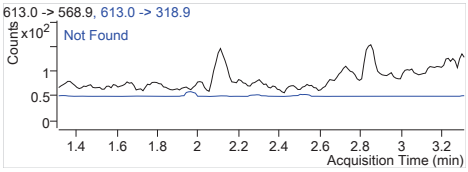

**PFDA 1** 513.0 -> 468.9
RT (Exp. RT): 0.000 (2.135)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



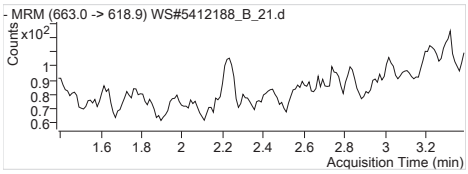



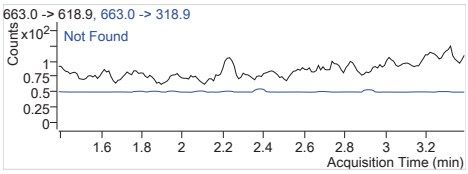

**PFUnA 1** 563.0 -> 518.9
RT (Exp. RT): 0.000 (2.234)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



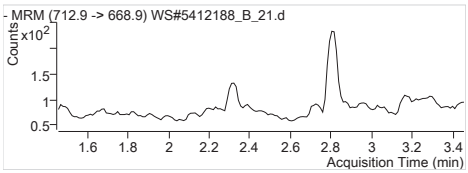



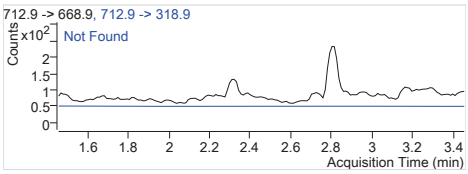

**PFDoA 1** 613.0 -> 568.9
RT (Exp. RT): 0.000 (2.311)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



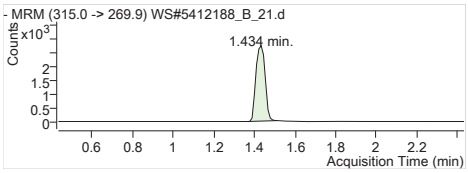



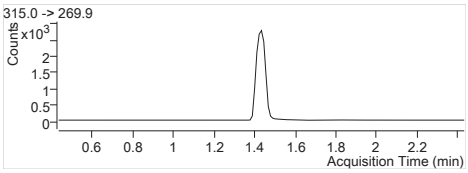

**PFTrDA 1** 663.0 -> 618.9
RT (Exp. RT): 0.000 (2.389)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



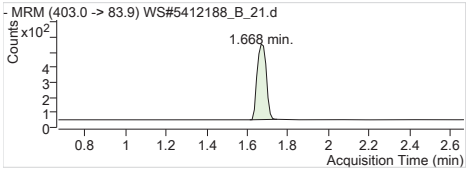



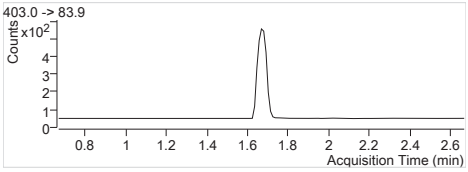

**PFTeDA 1** 712.9 -> 668.9
RT (Exp. RT): 0.000 (2.456)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



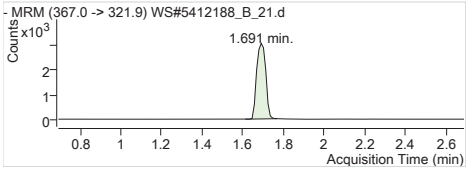



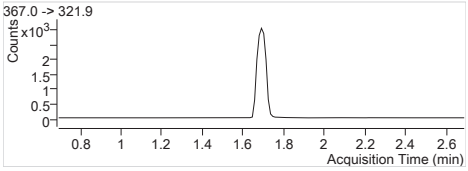

**13C2-PFHxA** 315.0 -> 269.9
RT (Exp. RT): 1.434 (1.434)
Calc. conc. 114.51 µg/L
Area ratio: 0.28464
Sample type: Sample



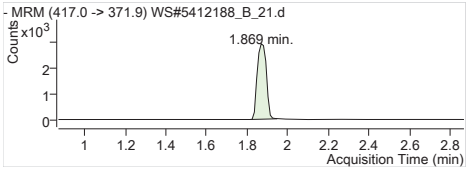



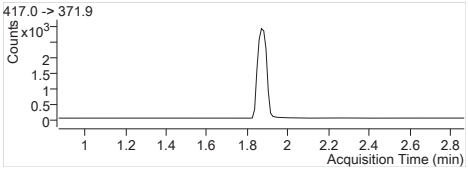

**18O2-PFHxS** 403.0 -> 83.9
RT (Exp. RT): 1.668 (1.668)
Calc. conc. 101.18 µg/L
Area ratio: 0.05254
Sample type: Sample



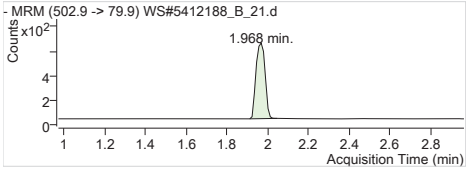



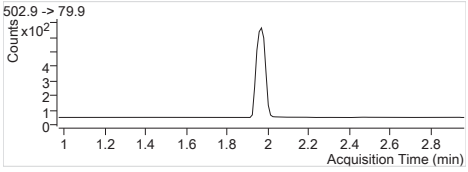

**13C4-PFHpA** 367.0 -> 321.9
RT (Exp. RT): 1.691 (1.691)
Calc. conc. 106.92 µg/L
Area ratio: 0.30782
Sample type: Sample



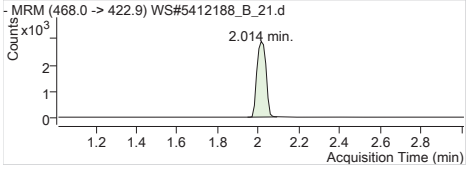



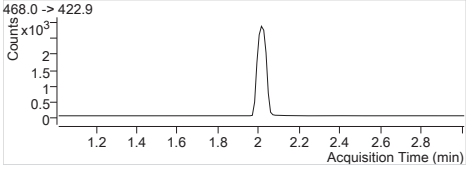

**13C4-PFOA** 417.0 -> 371.9
RT (Exp. RT): 1.869 (1.869)
Calc. conc. 99.12 µg/L
Area ratio: 0.29437
Sample type: Sample



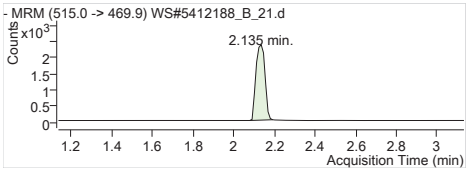



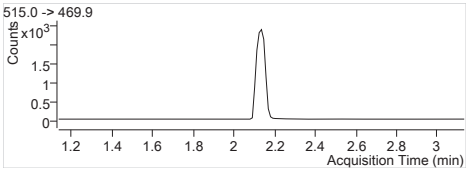

**13C4-PFOS** 502.9 -> 79.9
RT (Exp. RT): 1.968 (1.968)
Calc. conc. 105.68 µg/L
Area ratio: 0.06354
Sample type: Sample



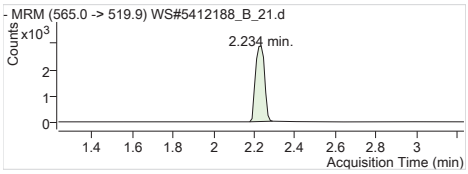



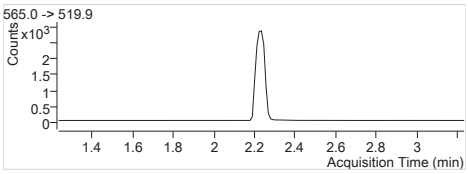

**13C5-PFNA** 468.0 -> 422.9
RT (Exp. RT): 2.014 (2.014)
Calc. conc. 101.75 µg/L
Area ratio: 0.29269
Sample type: Sample



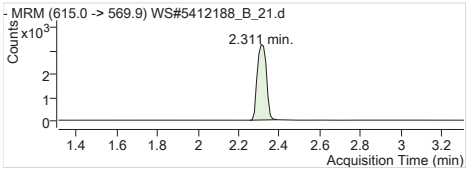



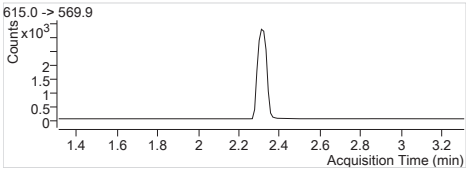

**13C2-PFDA** 515.0 -> 469.9
RT (Exp. RT): 2.135 (2.135)
Calc. conc. 90.02 µg/L
Area ratio: 0.19828
Sample type: Sample



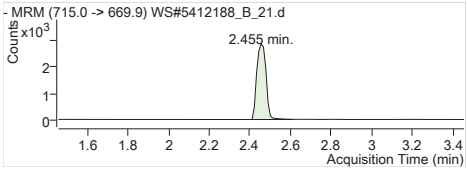



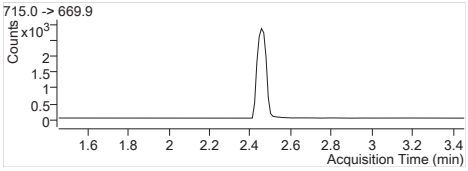

**13C2-PFUnA** 565.0 -> 519.9
RT (Exp. RT): 2.234 (2.234)
Calc. conc. 94.97 µg/L
Area ratio: 0.24324
Sample type: Sample



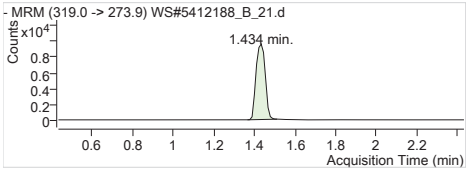



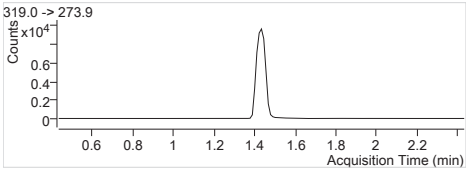

**13C2-PFDoA** 615.0 -> 569.9
RT (Exp. RT): 2.311 (2.311)
Calc. conc. 85.77 µg/L
Area ratio: 0.27831
Sample type: Sample



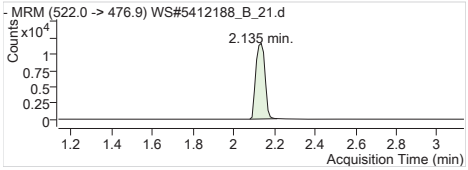



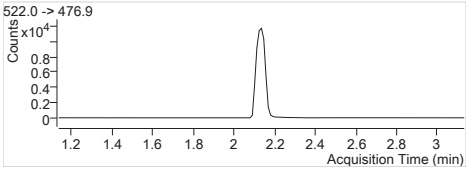

**13C2-PFTeDA** 715.0 -> 669.9
RT (Exp. RT): 2.455 (2.455)
Calc. conc. 68.38 µg/L
Area ratio: 0.24392
Sample type: Sample




**13C6-PFHxA** 319.0 -> 273.9
RT (Exp. RT): 1.434 (1.434)
Calc. conc. 23.12 µg/L
Area ratio: 0
Sample type: Sample



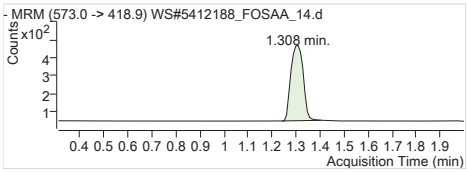

**13C9-PFDA** 522.0 -> 476.9
RT (Exp. RT): 2.135 (2.135)
Calc. conc. 23.45 µg/L
Area ratio: 0
Sample type: Sample

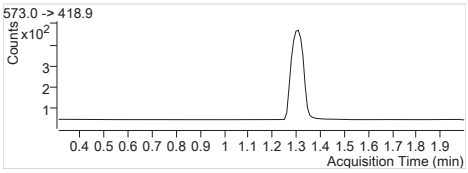
| | |
|---|---|
| **Batch Path** | T:\lcms4\PFC\20180226\WS#5412188_FOSAA\QuantResults\PFC_Water_Low_180226_WS#5412188_FOSAA_ETOxics |

| | | | |
|---|---|---|---|
| **Sample Name** | **5412188:GBV350-01:10x** | **Instrument** | LCMS04 |
| **Data File** | WS#5412188_FOSAA_14.d | **Operator** | |
| **Sample Type** | Sample | **Dilution** | 0.24 |
| **Acq. Method** | PFC_Water_Low_FOSAA.m | **Position** | P1-D3 |
| **Acq. Date** | 2018/02/27 5:08:27 AM | **Injection Volume** | Per Method |
| **Sample Annotation** | - | | |

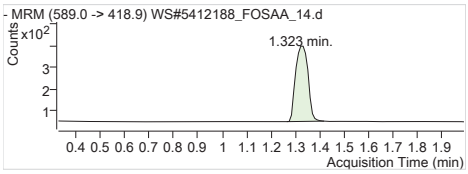
| ISTD Compounds | Response | RT | Target conc. | | |
|---|---|---|---|---|---|
| D3-MeFOSAA IS | 1492 | 1.31 | 1 µg/L | | |
| D5-EtFOSAA IS | 1246 | 1.32 | 1 µg/L | | |
| 13C9-PFDA IS | 27037 | 0.89 | 1 µg/L | | |

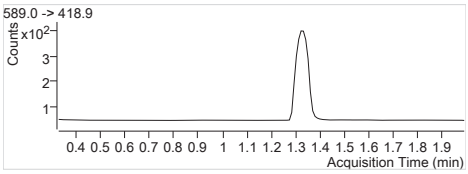
| Compound | Response | RT | Target Conc. | Calc. Conc. | Accuracy |
|---|---|---|---|---|---|
| MeFOSAA 1 | | | - | ND | - |
| EtFOSAA 1 | | | - | ND | - |
| D3-MeFOSAA | 1508 | 1.31 | - | 91.70 µg/L | - |
| D5-EtFOSAA | 1253 | 1.32 | - | 89.48 µg/L | - |
| 13C9-PFDA | 26493 | 0.89 | - | 25.01 µg/L | - |



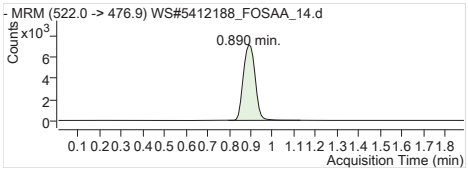



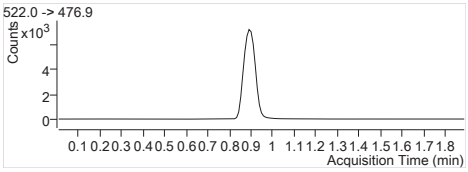

**D3-MeFOSAA IS** Internal Standard
RT (Exp. RT): 1.308 (1.308)
Concentration: 1 µg/L
Sample type: Sample



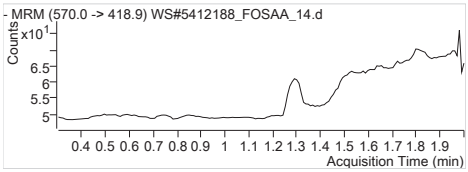



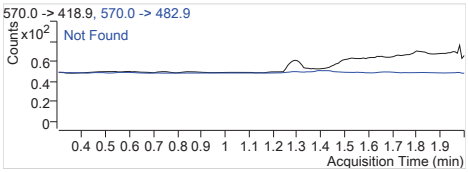

**D5-EtFOSAA IS** Internal Standard
RT (Exp. RT): 1.323 (1.323)
Concentration: 1 µg/L
Sample type: Sample



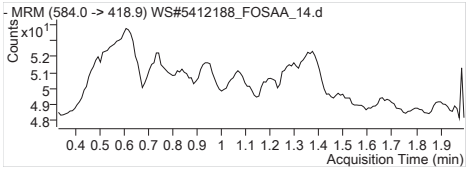



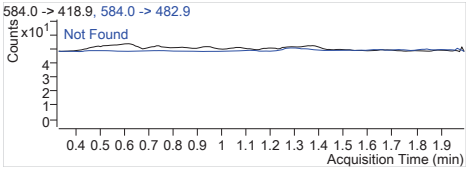

**13C9-PFDA IS** Internal Standard
RT (Exp. RT): 0.890 (0.890)
Concentration: 1 µg/L
Sample type: Sample



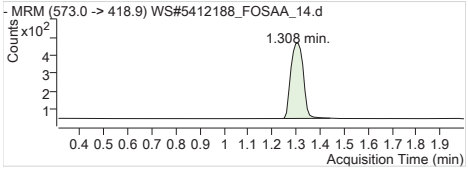



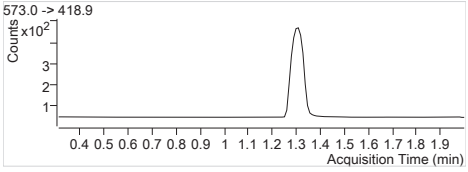

**MeFOSAA 1** 570.0 -> 418.9
RT (Exp. RT): 0.000 (1.300)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



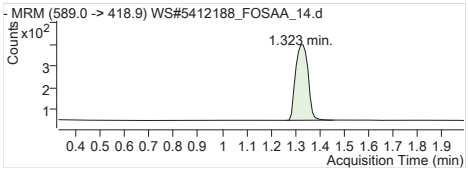



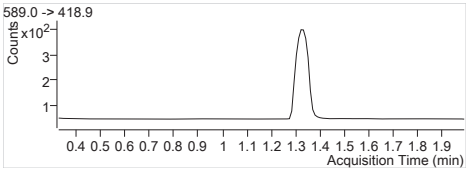

**EtFOSAA 1** 584.0 -> 418.9
RT (Exp. RT): 0.000 (1.325)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



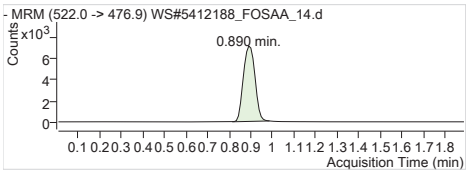



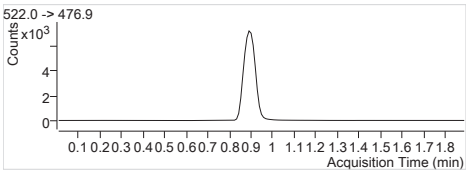

**D3-MeFOSAA** 573.0 -> 418.9
RT (Exp. RT): 1.308 (1.308)
Calc. conc. 91.70 µg/L
Area ratio: 0.05578
Sample type: Sample




| | |
|---|---|
| **D5-EtFOSAA** | 589.0 -> 418.9 |
| RT (Exp. RT): | 1.323 (1.323) |
| Calc. conc. | 89.48 µg/L |
| Area ratio: | 0.04634 |
| Sample type: | Sample |



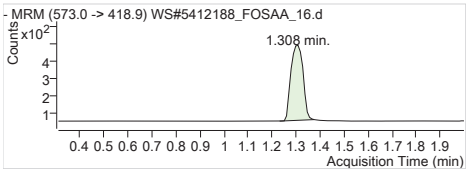

| | |
|---|---|
| **13C9-PFDA** | 522.0 -> 476.9 |
| RT (Exp. RT): | 0.890 (0.890) |
| Calc. conc. | 25.01 µg/L |
| Area ratio: | 0 |
| Sample type: | Sample |

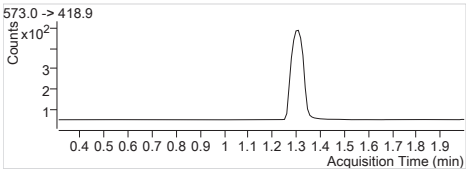
| | |
|---|---|
| **Batch Path** | T:\lcms4\PFC\20180226\WS#5412188_FOSAA\QuantResults\PFC_Water_Low_180226_WS#5412188_FOSAA_ETOxics |

| | | | |
|---|---|---|---|
| **Sample Name** | **5412188:GBV351-01** | **Instrument** | LCMS04 |
| **Data File** | WS#5412188_FOSAA_16.d | **Operator** | |
| **Sample Type** | Sample | **Dilution** | 0.024 |
| **Acq. Method** | PFC_Water_Low_FOSAA.m | **Position** | P1-D4 |
| **Acq. Date** | 2018/02/27 5:13:17 AM | **Injection Volume** | Per Method |
| **Sample Annotation** | - | | |

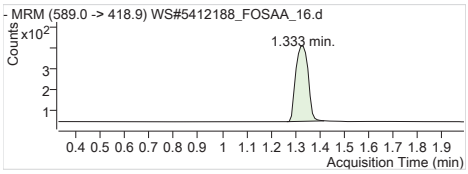
| ISTD Compounds | Response | RT | Target conc. | | |
|---|---|---|---|---|---|
| D3-MeFOSAA IS | 1543 | 1.31 | 1 µg/L | | |
| D5-EtFOSAA IS | 1273 | 1.33 | 1 µg/L | | |
| 13C9-PFDA IS | 27818 | 0.90 | 1 µg/L | | |

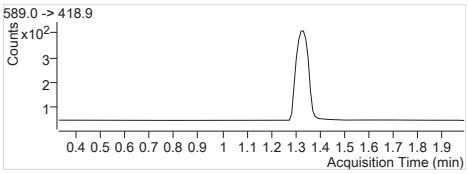
| Compound | Response | RT | Target Conc. | Calc. Conc. | Accuracy |
|---|---|---|---|---|---|
| MeFOSAA 1 | | | - | ND | - |
| EtFOSAA 1 | | | - | ND | - |
| D3-MeFOSAA | 1594 | 1.31 | - | 94.21 µg/L | - |
| D5-EtFOSAA | 1280 | 1.33 | - | 88.84 µg/L | - |
| 13C9-PFDA | 27020 | 0.90 | - | 2.55 µg/L | - |



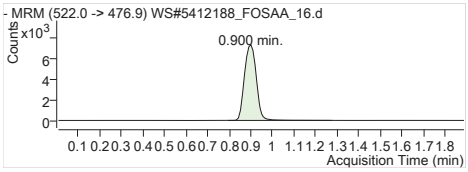



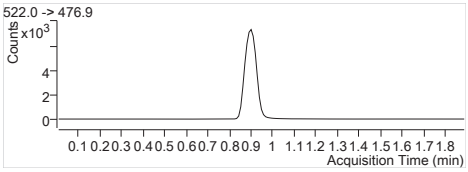

**D3-MeFOSAA IS** Internal Standard
RT (Exp. RT): 1.308 (1.308)
Concentration: 1 µg/L
Sample type: Sample



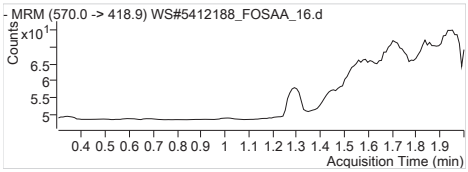



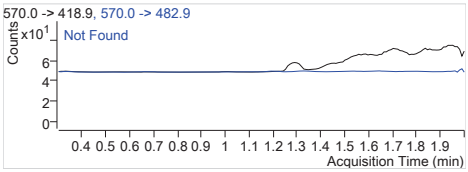

**D5-EtFOSAA IS** Internal Standard
RT (Exp. RT): 1.333 (1.323)
Concentration: 1 µg/L
Sample type: Sample



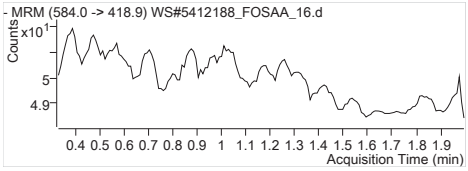



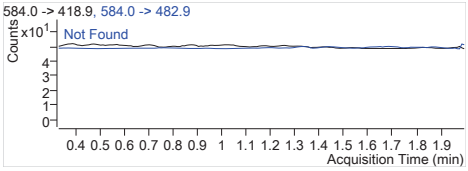

**13C9-PFDA IS** Internal Standard
RT (Exp. RT): 0.900 (0.890)
Concentration: 1 µg/L
Sample type: Sample



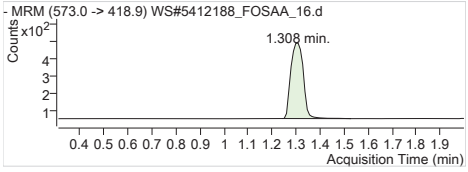



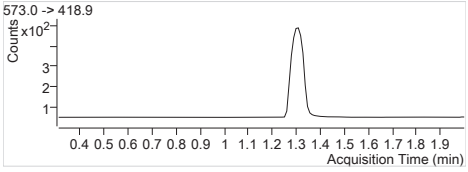

**MeFOSAA 1** 570.0 -> 418.9
RT (Exp. RT): 0.000 (1.300)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



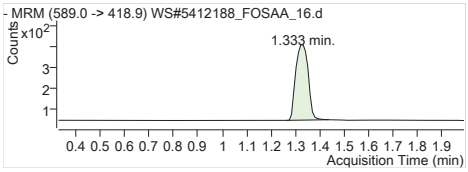



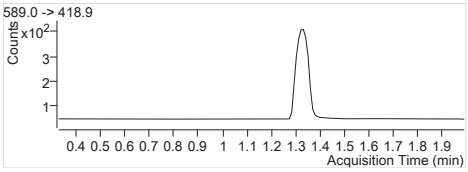

**EtFOSAA 1** 584.0 -> 418.9
RT (Exp. RT): 0.000 (1.325)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



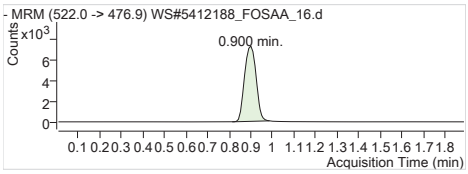



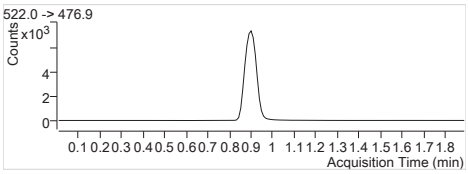

**D3-MeFOSAA** 573.0 -> 418.9
RT (Exp. RT): 1.308 (1.308)
Calc. conc. 94.21 µg/L
Area ratio: 0.05730
Sample type: Sample




| | |
|---|---|
| **D5-EtFOSAA** | 589.0 -> 418.9 |
| RT (Exp. RT): | 1.333 (1.323) |
| Calc. conc. | 88.84 µg/L |
| Area ratio: | 0.04601 |
| Sample type: | Sample |



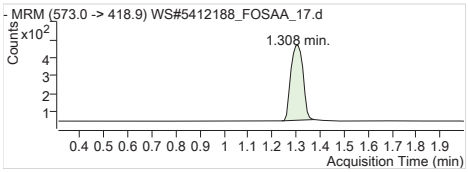

| | |
|---|---|
| **13C9-PFDA** | 522.0 -> 476.9 |
| RT (Exp. RT): | 0.900 (0.890) |
| Calc. conc. | 2.55 µg/L |
| Area ratio: | 0 |
| Sample type: | Sample |

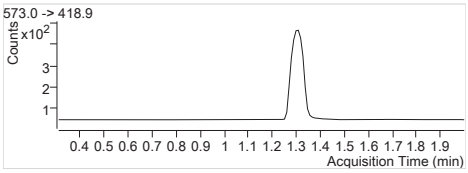
| | |
|---|---|
| **Batch Path** | T:\lcms4\PFC\20180226\WS#5412188_FOSAA\QuantResults\PFC_Water_Low_180226_WS#5412188_FOSAA_ETOxics |

| | | | |
|---|---|---|---|
| **Sample Name** | **5412188:GBV352-01:10x** | **Instrument** | LCMS04 |
| **Data File** | WS#5412188_FOSAA_17.d | **Operator** | |
| **Sample Type** | Sample | **Dilution** | 0.24 |
| **Acq. Method** | PFC_Water_Low_FOSAA.m | **Position** | P1-D5 |
| **Acq. Date** | 2018/02/27 5:15:42 AM | **Injection Volume** | Per Method |
| **Sample Annotation** | Not used | | |

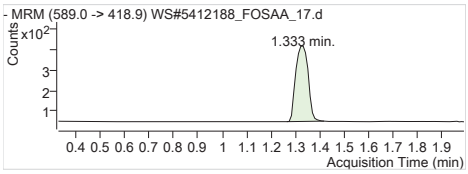
| ISTD Compounds | Response | RT | Target conc. | | |
|---|---|---|---|---|---|
| D3-MeFOSAA IS | 1471 | 1.31 | 1 µg/L | | |
| D5-EtFOSAA IS | 1312 | 1.33 | 1 µg/L | | |
| 13C9-PFDA IS | 26015 | 0.89 | 1 µg/L | | |

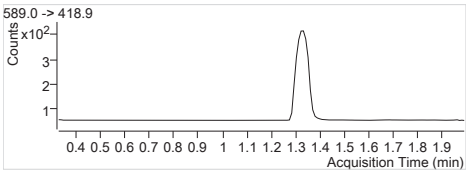
| Compound | Response | RT | Target Conc. | Calc. Conc. | Accuracy |
|---|---|---|---|---|---|
| MeFOSAA 1 | | | - | ND | - |
| EtFOSAA 1 | | | - | ND | - |
| D3-MeFOSAA | 1515 | 1.31 | - | 95.75 µg/L | - |
| D5-EtFOSAA | 1322 | 1.33 | - | 98.12 µg/L | - |
| 13C9-PFDA | 25493 | 0.89 | - | 24.06 µg/L | - |



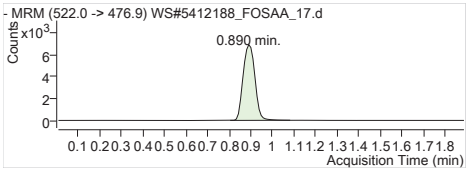



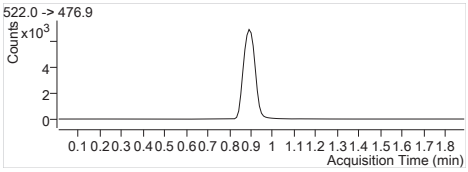

**D3-MeFOSAA IS** Internal Standard
RT (Exp. RT): 1.308 (1.308)
Concentration: 1 µg/L
Sample type: Sample



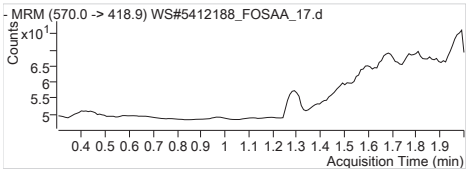



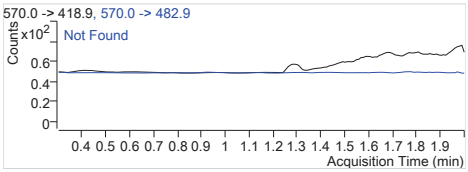

**D5-EtFOSAA IS** Internal Standard
RT (Exp. RT): 1.333 (1.323)
Concentration: 1 µg/L
Sample type: Sample



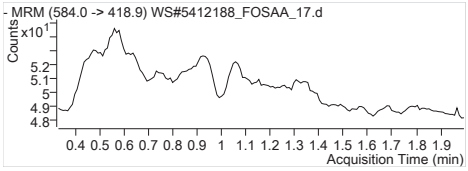



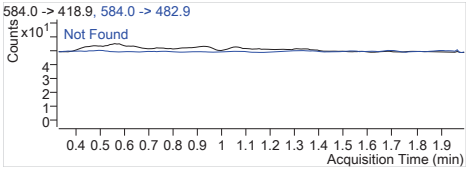

**13C9-PFDA IS** Internal Standard
RT (Exp. RT): 0.890 (0.890)
Concentration: 1 µg/L
Sample type: Sample



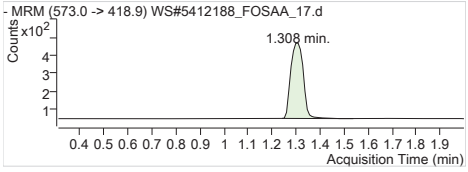



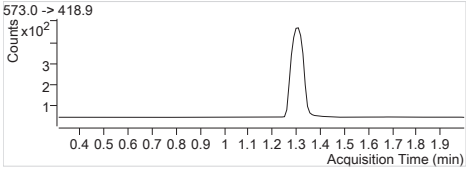

**MeFOSAA 1** 570.0 -> 418.9
RT (Exp. RT): 0.000 (1.300)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



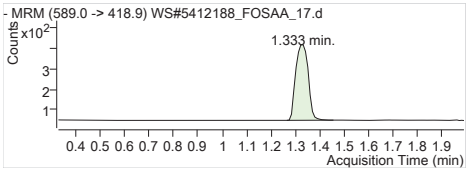



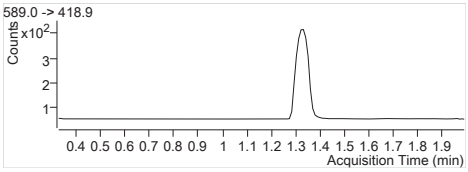

**EtFOSAA 1** 584.0 -> 418.9
RT (Exp. RT): 0.000 (1.325)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



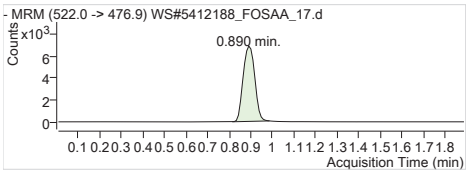



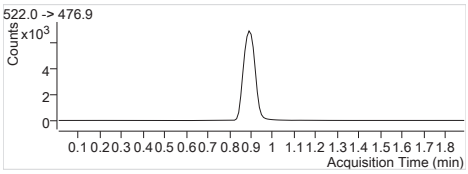

**D3-MeFOSAA** 573.0 -> 418.9
RT (Exp. RT): 1.308 (1.308)
Calc. conc. 95.75 µg/L
Area ratio: 0.05824
Sample type: Sample




| | |
|---|---|
| **D5-EtFOSAA** | 589.0 -> 418.9 |
| RT (Exp. RT): | 1.333 (1.323) |
| Calc. conc. | 98.12 µg/L |
| Area ratio: | 0.05082 |
| Sample type: | Sample |



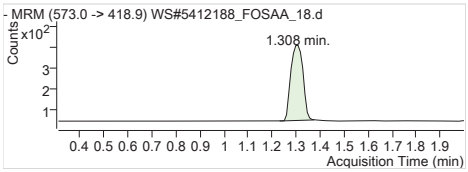

| | |
|---|---|
| **13C9-PFDA** | 522.0 -> 476.9 |
| RT (Exp. RT): | 0.890 (0.890) |
| Calc. conc. | 24.06 µg/L |
| Area ratio: | 0 |
| Sample type: | Sample |

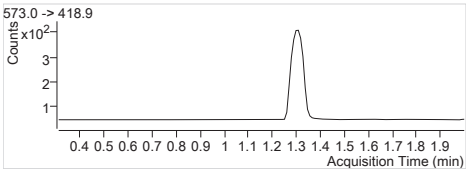
| | |
|---|---|
| **Batch Path** | T:\lcms4\PFC\20180226\WS#5412188_FOSAA\QuantResults\PFC_Water_Low_180226_WS#5412188_FOSAA_ETOxics |

| | | | |
|---|---|---|---|
| **Sample Name** | **5412188:GBV352-01** | **Instrument** | LCMS04 |
| **Data File** | WS#5412188_FOSAA_18.d | **Operator** | |
| **Sample Type** | Sample | **Dilution** | 0.024 |
| **Acq. Method** | PFC_Water_Low_FOSAA.m | **Position** | P1-D6 |
| **Acq. Date** | 2018/02/27 5:18:07 AM | **Injection Volume** | Per Method |
| **Sample Annotation** | - | | |

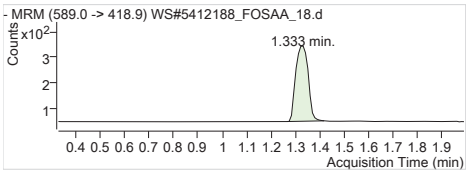
| ISTD Compounds | Response | RT | Target conc. | | |
|---|---|---|---|---|---|
| D3-MeFOSAA IS | 1264 | 1.31 | 1 µg/L | | |
| D5-EtFOSAA IS | 1050 | 1.33 | 1 µg/L | | |
| 13C9-PFDA IS | 22038 | 0.88 | 1 µg/L | | |

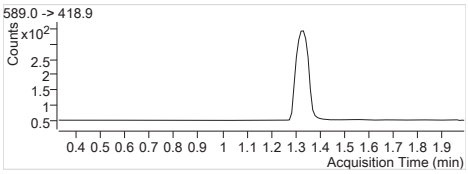
| Compound | Response | RT | Target Conc. | Calc. Conc. | Accuracy |
|---|---|---|---|---|---|
| MeFOSAA 1 | | | - | ND | - |
| EtFOSAA 1 | | | - | ND | - |
| D3-MeFOSAA | 1286 | 1.31 | - | 95.94 µg/L | - |
| D5-EtFOSAA | 1060 | 1.33 | - | 92.87 µg/L | - |
| 13C9-PFDA | 21738 | 0.88 | - | 2.05 µg/L | - |



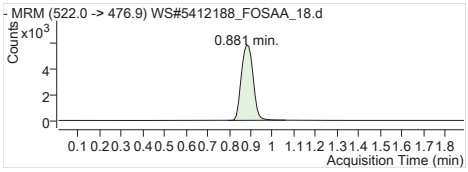



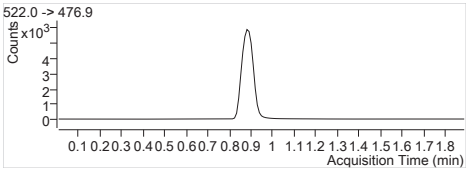

**D3-MeFOSAA IS** Internal Standard
RT (Exp. RT): 1.308 (1.308)
Concentration: 1 µg/L
Sample type: Sample



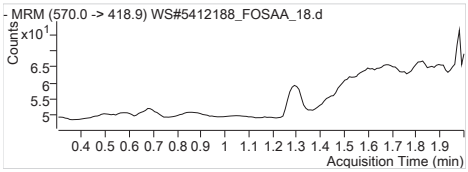



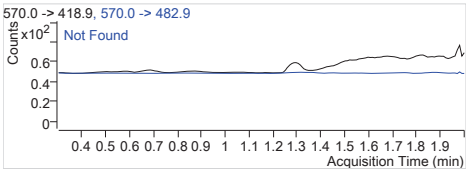

**D5-EtFOSAA IS** Internal Standard
RT (Exp. RT): 1.333 (1.323)
Concentration: 1 µg/L
Sample type: Sample



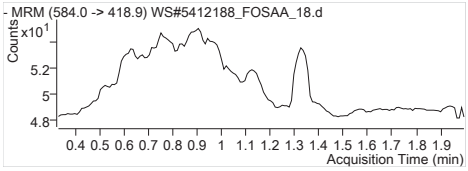



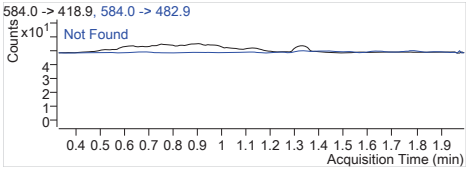

**13C9-PFDA IS** Internal Standard
RT (Exp. RT): 0.881 (0.890)
Concentration: 1 µg/L
Sample type: Sample



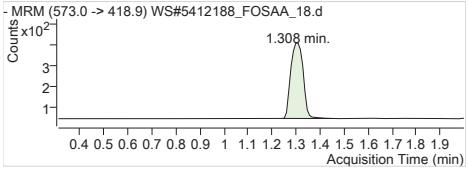



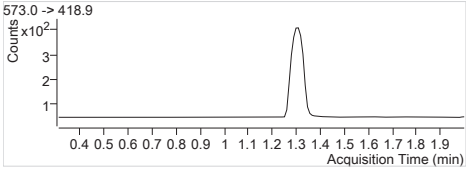

**MeFOSAA 1** 570.0 -> 418.9
RT (Exp. RT): 0.000 (1.300)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



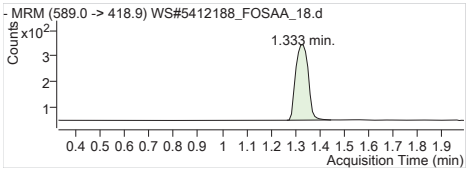



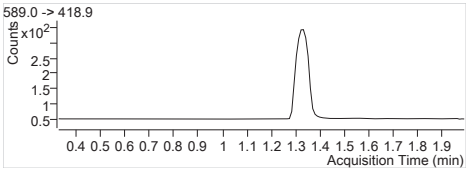

**EtFOSAA 1** 584.0 -> 418.9
RT (Exp. RT): 0.000 (1.325)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



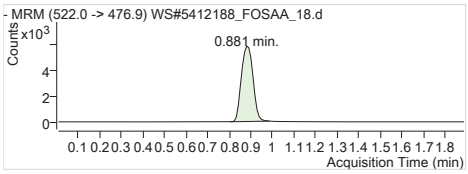



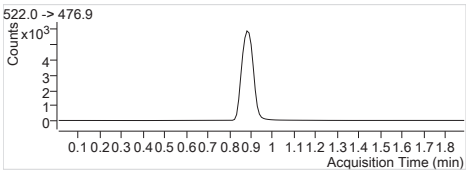

**D3-MeFOSAA** 573.0 -> 418.9
RT (Exp. RT): 1.308 (1.308)
Calc. conc. 95.94 µg/L
Area ratio: 0.05835
Sample type: Sample




| | |
|---|---|
| **D5-EtFOSAA** | 589.0 -> 418.9 |
| RT (Exp. RT): | 1.333 (1.323) |
| Calc. conc. | 92.87 µg/L |
| Area ratio: | 0.04810 |
| Sample type: | Sample |



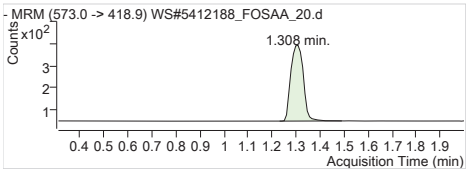

| | |
|---|---|
| **13C9-PFDA** | 522.0 -> 476.9 |
| RT (Exp. RT): | 0.881 (0.890) |
| Calc. conc. | 2.05 µg/L |
| Area ratio: | 0 |
| Sample type: | Sample |

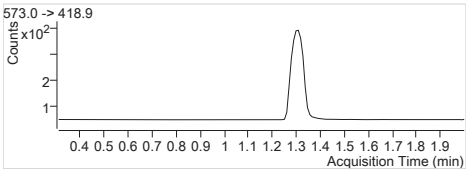
| | |
|---|---|
| **Batch Path** | T:\lcms4\PFC\20180226\WS#5412188_FOSAA\QuantResults\PFC_Water_Low_180226_WS#5412188_FOSAA_ETOxics |

| | | | |
|---|---|---|---|
| **Sample Name** | **5412188:GBV353-01** | **Instrument** | LCMS04 |
| **Data File** | WS#5412188_FOSAA_20.d | **Operator** | |
| **Sample Type** | Sample | **Dilution** | 0.024 |
| **Acq. Method** | PFC_Water_Low_FOSAA.m | **Position** | P1-D7 |
| **Acq. Date** | 2018/02/27 5:22:58 AM | **Injection Volume** | Per Method |
| **Sample Annotation** | - | | |

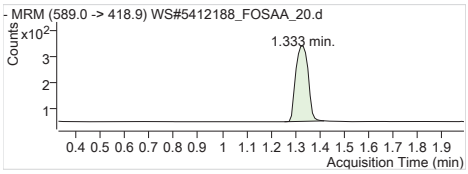
| ISTD Compounds | Response | RT | Target conc. | | |
|---|---|---|---|---|---|
| D3-MeFOSAA IS | 1249 | 1.31 | 1 µg/L | | |
| D5-EtFOSAA IS | 1048 | 1.33 | 1 µg/L | | |
| 13C9-PFDA IS | 22339 | 0.89 | 1 µg/L | | |

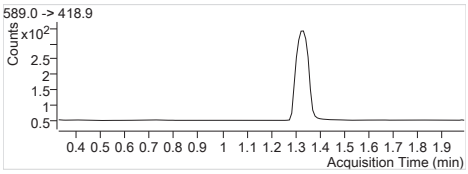
| Compound | Response | RT | Target Conc. | Calc. Conc. | Accuracy |
|---|---|---|---|---|---|
| MeFOSAA 1 | | | - | ND | - |
| EtFOSAA 1 | | | - | ND | - |
| D3-MeFOSAA | 1245 | 1.31 | - | 91.63 µg/L | - |
| D5-EtFOSAA | 1068 | 1.33 | - | 92.31 µg/L | - |
| 13C9-PFDA | 21903 | 0.89 | - | 2.07 µg/L | - |



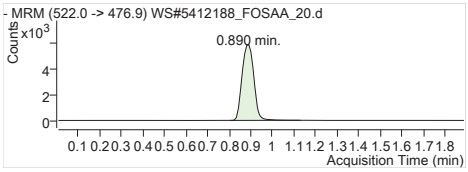



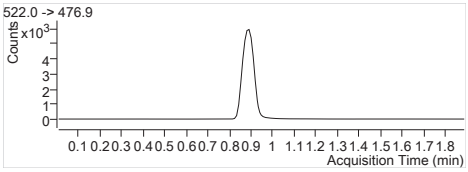

**D3-MeFOSAA IS** Internal Standard
RT (Exp. RT): 1.308 (1.308)
Concentration: 1 µg/L
Sample type: Sample



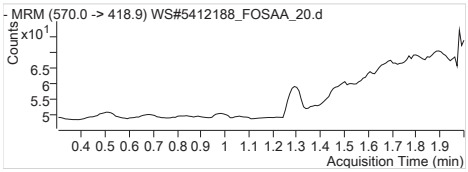



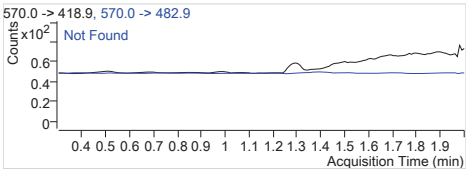

**D5-EtFOSAA IS** Internal Standard
RT (Exp. RT): 1.333 (1.323)
Concentration: 1 µg/L
Sample type: Sample



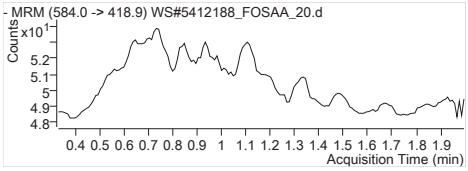



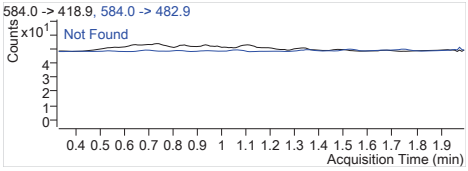

**13C9-PFDA IS** Internal Standard
RT (Exp. RT): 0.890 (0.890)
Concentration: 1 µg/L
Sample type: Sample



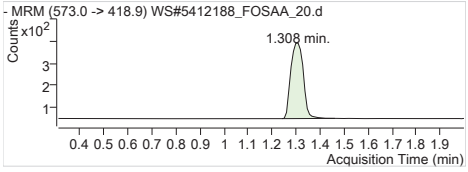



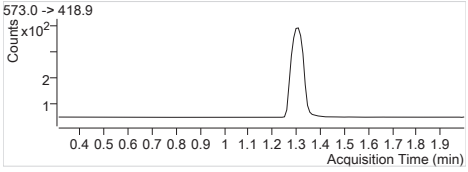

**MeFOSAA 1** 570.0 -> 418.9
RT (Exp. RT): 0.000 (1.300)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



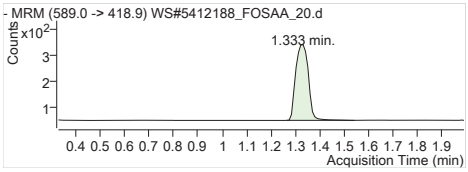



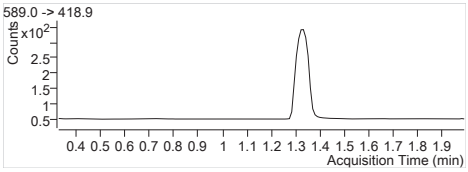

**EtFOSAA 1** 584.0 -> 418.9
RT (Exp. RT): 0.000 (1.325)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



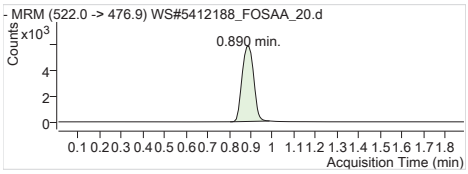



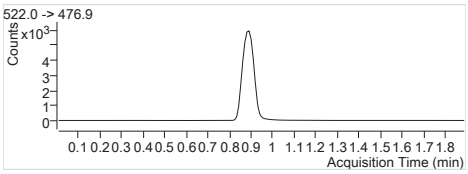

**D3-MeFOSAA** 573.0 -> 418.9
RT (Exp. RT): 1.308 (1.308)
Calc. conc. 91.63 µg/L
Area ratio: 0.05573
Sample type: Sample




| | |
|---|---|
| **D5-EtFOSAA** | 589.0 -> 418.9 |
| RT (Exp. RT): | 1.333 (1.323) |
| Calc. conc. | 92.31 µg/L |
| Area ratio: | 0.04781 |
| Sample type: | Sample |



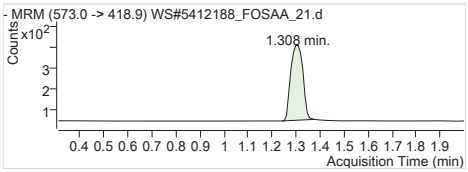

| | |
|---|---|
| **13C9-PFDA** | 522.0 -> 476.9 |
| RT (Exp. RT): | 0.890 (0.890) |
| Calc. conc. | 2.07 µg/L |
| Area ratio: | 0 |
| Sample type: | Sample |

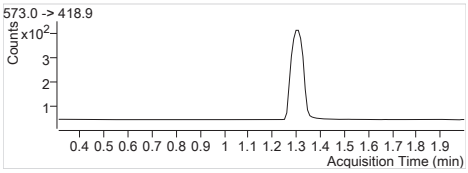
| | |
|---|---|
| **Batch Path** | T:\lcms4\PFC\20180226\WS#5412188_FOSAA\QuantResults\PFC_Water_Low_180226_WS#5412188_FOSAA_ETOxics |

| | | | |
|---|---|---|---|
| **Sample Name** | **5412188:GBV354-01:10x** | **Instrument** | LCMS04 |
| **Data File** | WS#5412188_FOSAA_21.d | **Operator** | |
| **Sample Type** | Sample | **Dilution** | 0.24 |
| **Acq. Method** | PFC_Water_Low_FOSAA.m | **Position** | P1-D8 |
| **Acq. Date** | 2018/02/27 5:25:23 AM | **Injection Volume** | Per Method |
| **Sample Annotation** | - | | |

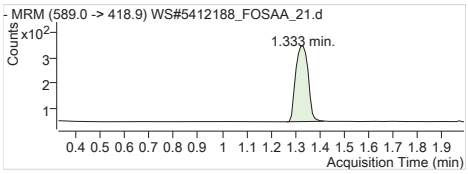
| ISTD Compounds | Response | RT | Target conc. | | |
|---|---|---|---|---|---|
| D3-MeFOSAA IS | 1264 | 1.31 | 1 µg/L | | |
| D5-EtFOSAA IS | 1064 | 1.33 | 1 µg/L | | |
| 13C9-PFDA IS | 24019 | 0.89 | 1 µg/L | | |

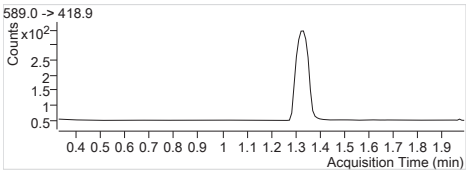
| Compound | Response | RT | Target Conc. | Calc. Conc. | Accuracy |
|---|---|---|---|---|---|
| MeFOSAA 1 | | | - | ND | - |
| EtFOSAA 1 | | | - | ND | - |
| D3-MeFOSAA | 1303 | 1.31 | - | 89.19 µg/L | - |
| D5-EtFOSAA | 1064 | 1.33 | - | 85.53 µg/L | - |
| 13C9-PFDA | 23598 | 0.89 | - | 22.27 µg/L | - |



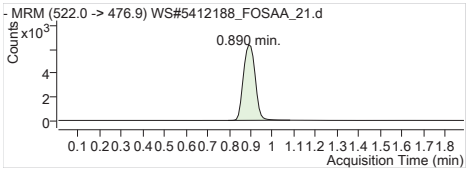



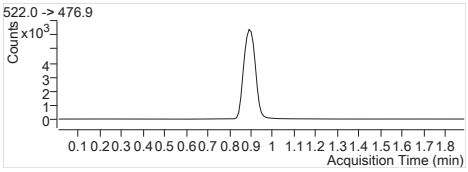

**D3-MeFOSAA IS** Internal Standard
RT (Exp. RT): 1.308 (1.308)
Concentration: 1 µg/L
Sample type: Sample



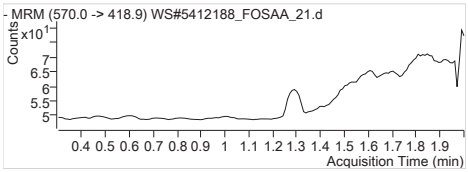



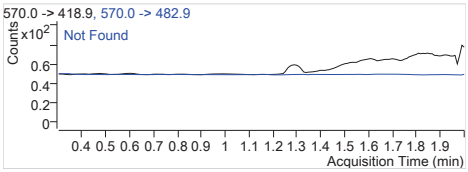

**D5-EtFOSAA IS** Internal Standard
RT (Exp. RT): 1.333 (1.323)
Concentration: 1 µg/L
Sample type: Sample



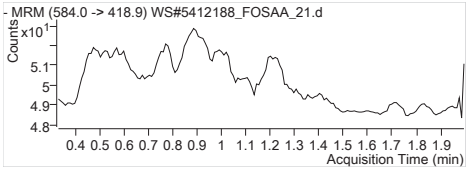



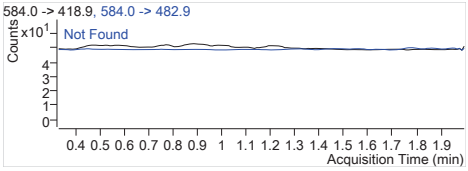

**13C9-PFDA IS** Internal Standard
RT (Exp. RT): 0.890 (0.890)
Concentration: 1 µg/L
Sample type: Sample



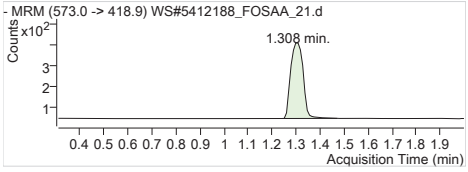



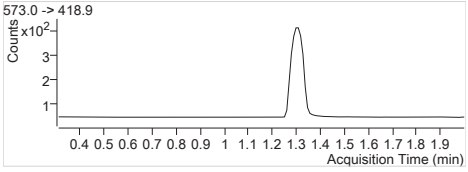

**MeFOSAA 1** 570.0 -> 418.9
RT (Exp. RT): 0.000 (1.300)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



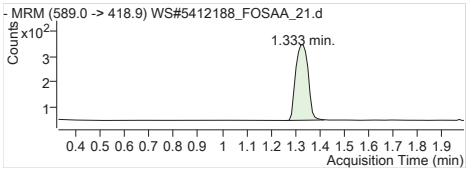



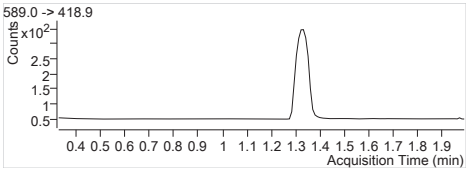

**EtFOSAA 1** 584.0 -> 418.9
RT (Exp. RT): 0.000 (1.325)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



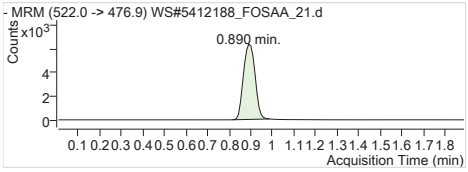



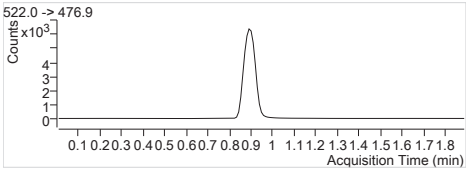

**D3-MeFOSAA** 573.0 -> 418.9
RT (Exp. RT): 1.308 (1.308)
Calc. conc. 89.19 µg/L
Area ratio: 0.05425
Sample type: Sample




| | |
|---|---|
| **D5-EtFOSAA** | 589.0 -> 418.9 |
| RT (Exp. RT): | 1.333 (1.323) |
| Calc. conc. | 85.53 µg/L |
| Area ratio: | 0.04430 |
| Sample type: | Sample |




| | |
|---|---|
| **13C9-PFDA** | 522.0 -> 476.9 |
| RT (Exp. RT): | 0.890 (0.890) |
| Calc. conc. | 22.27 µg/L |
| Area ratio: | 0 |
| Sample type: | Sample |



# 4. QA/QC Data

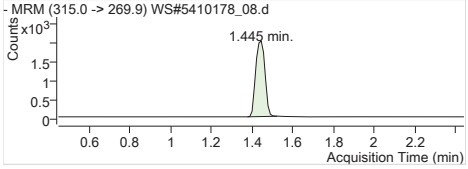
Maxxam Analytics International
6740 Campobello Rd
Mississauga, Ontario, Canada
L5N 2L8
1-800-668-0639
www.maxxamanalytics.com

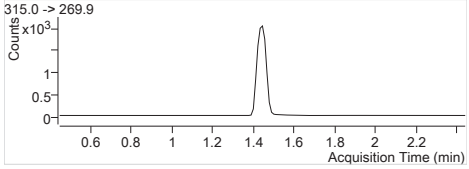
**Batch Path** T:\lcms4\PFC\20180223\WS#5410178\QuantResults\PFC_Water_Low_180223_WS#5410178_EToxics

| | | | |
|---|---|---|---|
| **Sample Name** | **IB** | **Instrument** | LCMS04 |
| **Data File** | WS#5410178_08.d | **Operator** | |
| **Sample Type** | Sample | **Dilution** | 0.024 |
| **Acq. Method** | PFC_Water_Low.m | **Position** | P1-A8 |
| **Acq. Date** | 2018/02/23 5:09:08 PM | **Injection Volume** | Per Method |
| **Sample Annotation** | - | | |

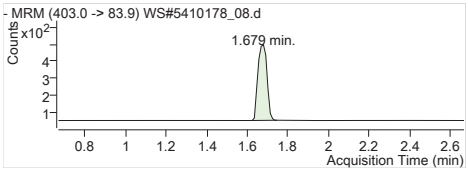
| ISTD Compounds | Response | RT | Target conc. | | |
|---|---|---|---|---|---|
| MPFHxA | 6352 | 1.44 | 1 µg/L | | |
| MPFHxS | 1394 | 1.68 | 1 µg/L | | |
| MPFHpA | 7679 | 1.70 | 1 µg/L | | |
| MPFOA | 8016 | 1.88 | 1 µg/L | | |
| MPFOS | 1848 | 1.97 | 1 µg/L | | |
| MPFNA | 7785 | 2.02 | 1 µg/L | | |
| MPFDA | 6208 | 2.14 | 1 µg/L | | |
| MPFUnA | 8019 | 2.23 | 1 µg/L | | |
| MPFDoA | 10712 | 2.32 | 1 µg/L | | |
| MPFTeDA | 11169 | 2.47 | 1 µg/L | | |
| 13C6-PFHxA IS | 23454 | 1.44 | 1 µg/L | | |
| 13C9-PFDA IS | 29125 | 2.13 | 1 µg/L | | |

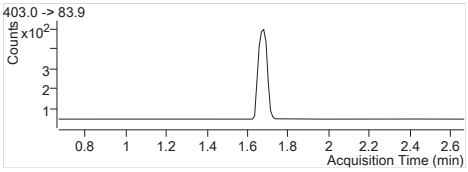
| Compound | Response | RT | Target Conc. | Calc. Conc. | Accuracy |
|---|---|---|---|---|---|
| PFBS 1 | | | - | ND | - |
| PFHxA 1 | | | - | ND | - |
| PFHxS 1 | | | - | ND | - |
| PFHpA 1 | | | - | ND | - |
| PFOA 1 | | | - | ND | - |
| PFOS 1 | | | - | ND | - |
| PFNA 1 | | | - | ND | - |
| PFDA 1 | | | - | ND | - |
| PFUnA 1 | | | - | ND | - |
| PFDoA 1 | | | - | ND | - |
| PFTrDA 1 | | | - | ND | - |
| PFTeDA 1 | | | - | ND | - |
| 13C2-PFHxA | 6352 | 1.44 | - | 91.55 µg/L | - |
| 18O2-PFHxS | 1394 | 1.68 | - | 86.17 µg/L | - |
| 13C4-PFHpA | 7679 | 1.70 | - | 88.39 µg/L | - |
| 13C4-PFOA | 8016 | 1.88 | - | 93.19 µg/L | - |
| 13C4-PFOS | 1848 | 1.97 | - | 98.09 µg/L | - |
| 13C5-PFNA | 7783 | 2.02 | - | 93.06 µg/L | - |
| 13C2-PFDA | 6146 | 2.14 | - | 87.56 µg/L | - |
| 13C2-PFUnA | 8019 | 2.23 | - | 88.42 µg/L | - |
| 13C2-PFDoA | 10712 | 2.32 | - | 93.17 µg/L | - |
| 13C2-PFTeDA | 11472 | 2.47 | - | 94.56 µg/L | - |
| 13C6-PFHxA | 23454 | 1.44 | - | 2.49 µg/L | - |
| 13C9-PFDA | 29125 | 2.13 | - | 2.58 µg/L | - |



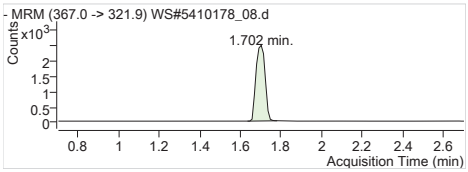



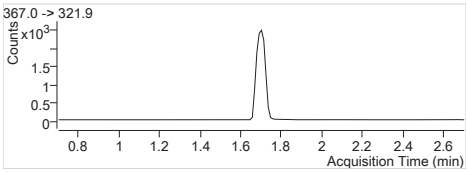

**MPFHxA** Internal Standard
RT (Exp. RT): 1.445 (1.445)
Concentration: 1 µg/L
Sample type: Sample



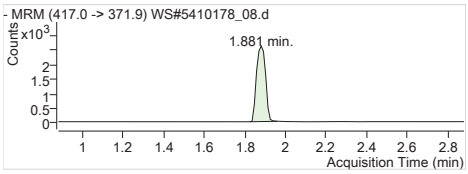



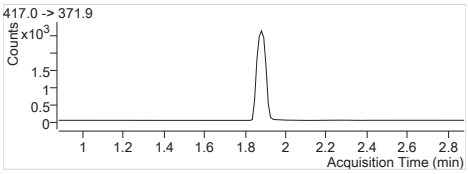

**MPFHxS** Internal Standard
RT (Exp. RT): 1.679 (1.668)
Concentration: 1 µg/L
Sample type: Sample



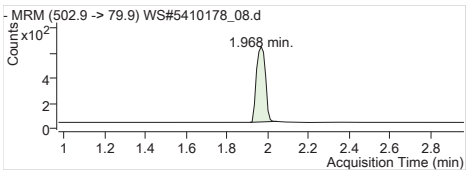



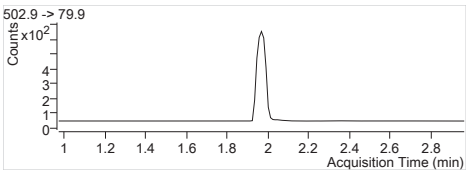

**MPFHpA** Internal Standard
RT (Exp. RT): 1.702 (1.702)
Concentration: 1 µg/L
Sample type: Sample



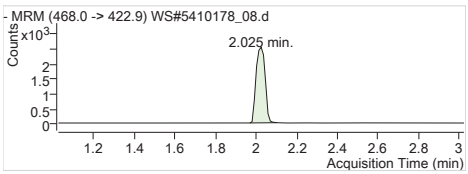



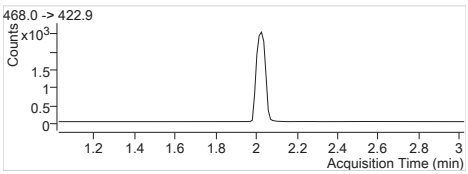

**MPFOA** Internal Standard
RT (Exp. RT): 1.881 (1.881)
Concentration: 1 µg/L
Sample type: Sample



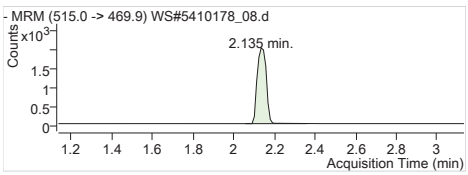



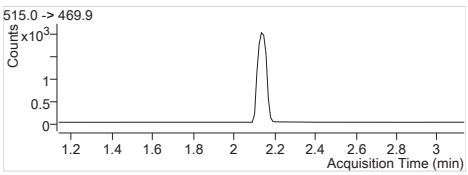

**MPFOS** Internal Standard
RT (Exp. RT): 1.968 (1.968)
Concentration: 1 µg/L
Sample type: Sample



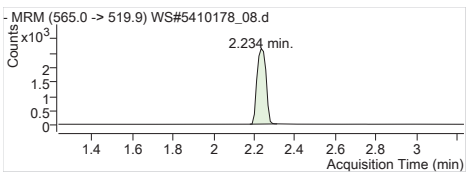



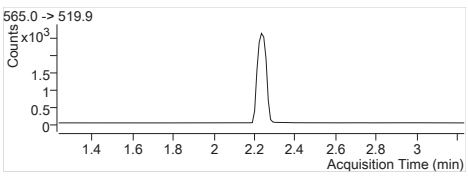

**MPFNA** Internal Standard
RT (Exp. RT): 2.025 (2.025)
Concentration: 1 µg/L
Sample type: Sample



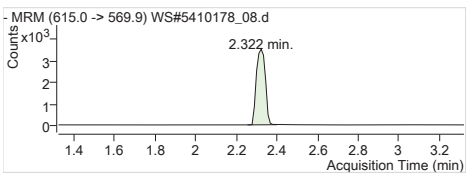



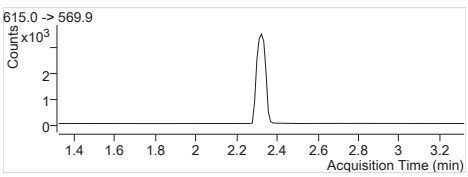

**MPFDA** Internal Standard
RT (Exp. RT): 2.135 (2.135)
Concentration: 1 µg/L
Sample type: Sample



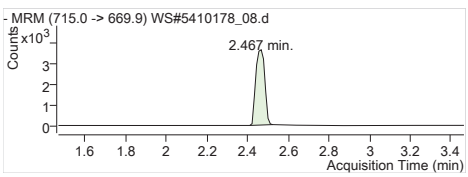



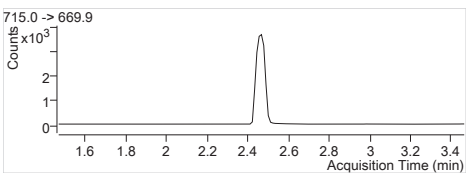

**MPFUnA** Internal Standard
RT (Exp. RT): 2.234 (2.234)
Concentration: 1 µg/L
Sample type: Sample



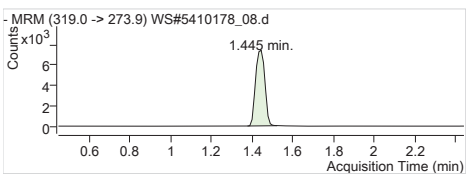



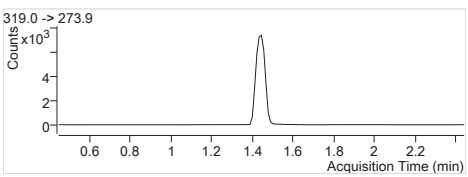

**MPFDoA** Internal Standard
RT (Exp. RT): 2.322 (2.322)
Concentration: 1 µg/L
Sample type: Sample



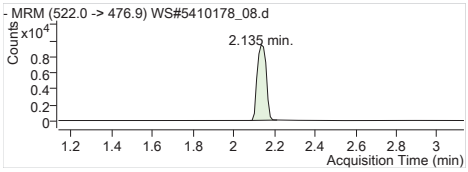



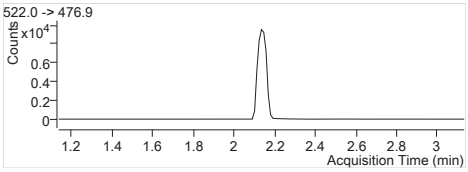

**MPFTeDA** Internal Standard
RT (Exp. RT): 2.467 (2.467)
Concentration: 1 µg/L
Sample type: Sample



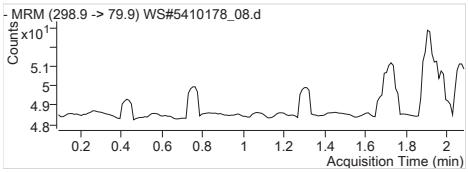



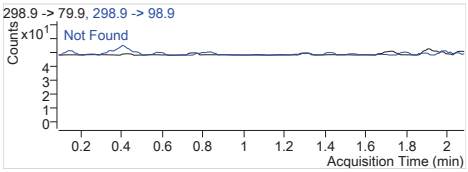

**13C6-PFHxA IS** Internal Standard
RT (Exp. RT): 1.445 (1.445)
Concentration: 1 µg/L
Sample type: Sample



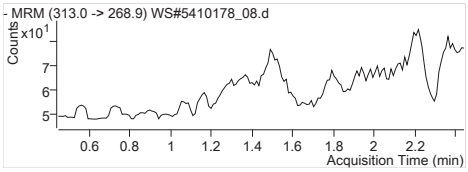



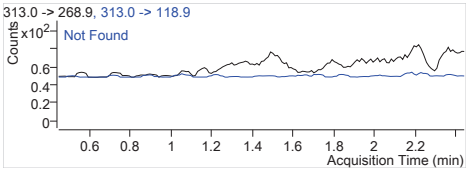

**13C9-PFDA IS** Internal Standard
RT (Exp. RT): 2.135 (2.135)
Concentration: 1 µg/L
Sample type: Sample



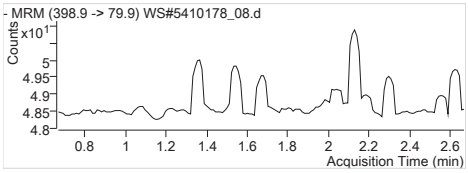



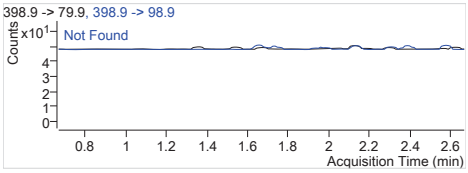

**PFBS 1** 298.9 -> 79.9
RT (Exp. RT): 0.000 (1.087)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



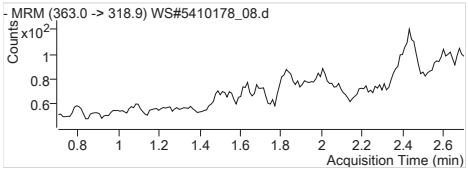



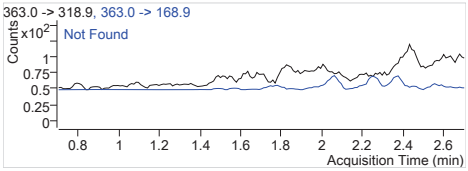

**PFHxA 1** 313.0 -> 268.9
RT (Exp. RT): 0.000 (1.445)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



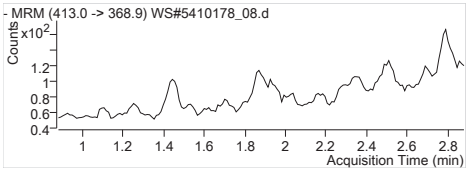



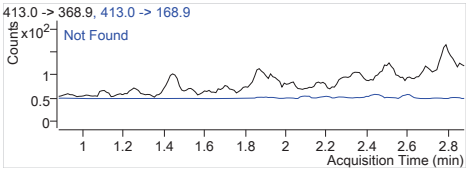

**PFHxS 1** 398.9 -> 79.9
RT (Exp. RT): 0.000 (1.668)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



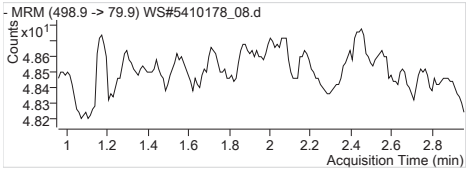



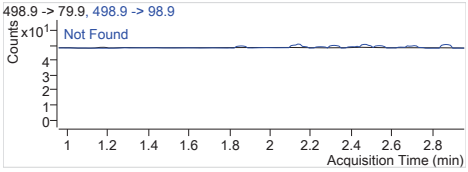

**PFHpA 1** 363.0 -> 318.9
RT (Exp. RT): 0.000 (1.702)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



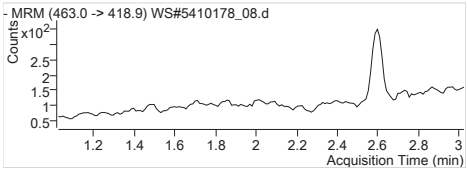



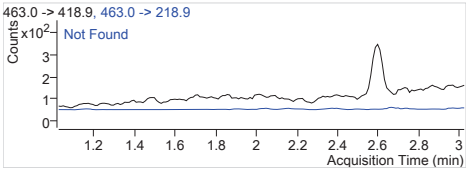

**PFOA 1** 413.0 -> 368.9
RT (Exp. RT): 0.000 (1.881)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



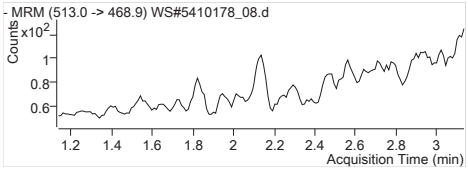



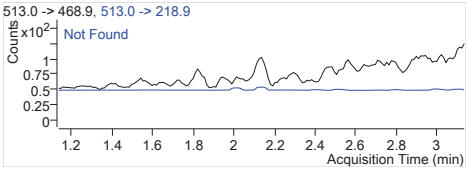

**PFOS 1** 498.9 -> 79.9
RT (Exp. RT): 0.000 (1.957)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



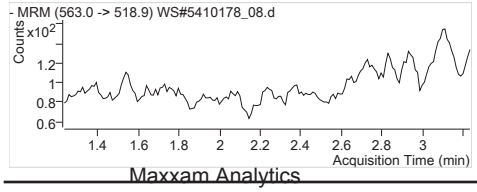



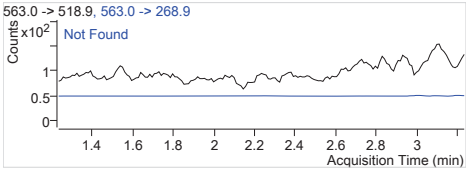

**PFNA 1** 463.0 -> 418.9
RT (Exp. RT): 0.000 (2.025)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



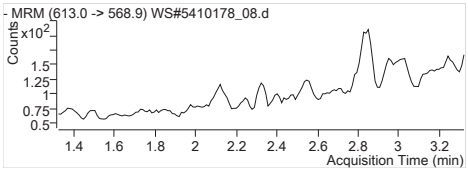



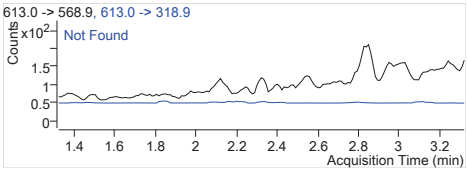

**PFDA 1** 513.0 -> 468.9
RT (Exp. RT): 0.000 (2.135)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



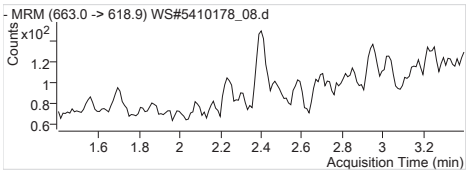



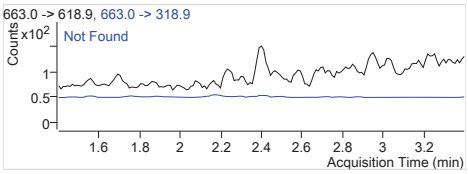

**PFUnA 1** 563.0 -> 518.9
RT (Exp. RT): 0.000 (2.234)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



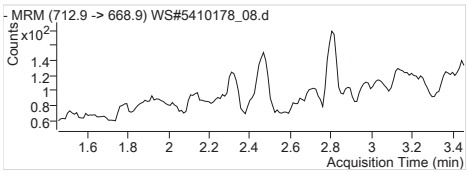



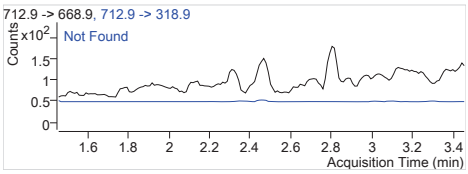

**PFDoA 1** 613.0 -> 568.9
RT (Exp. RT): 0.000 (2.323)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



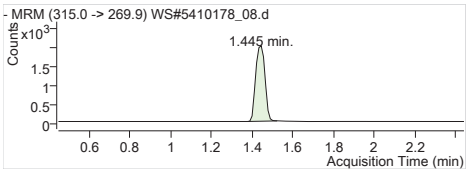



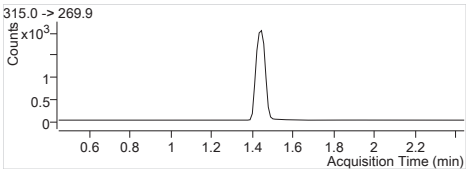

**PFTrDA 1** 663.0 -> 618.9
RT (Exp. RT): 0.000 (2.400)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



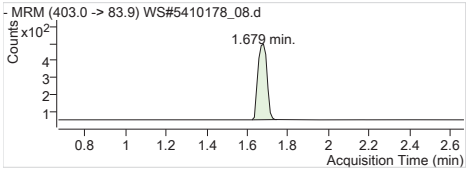



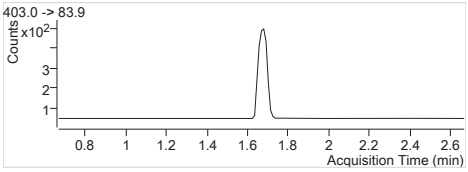

**PFTeDA 1** 712.9 -> 668.9
RT (Exp. RT): 0.000 (2.456)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



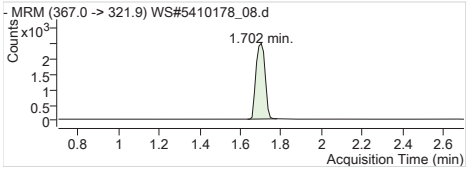



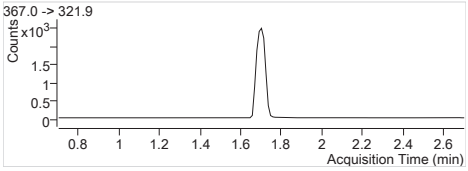

**13C2-PFHxA** 315.0 -> 269.9
RT (Exp. RT): 1.445 (1.445)
Calc. conc. 91.55 µg/L
Area ratio: 0.27083
Sample type: Sample



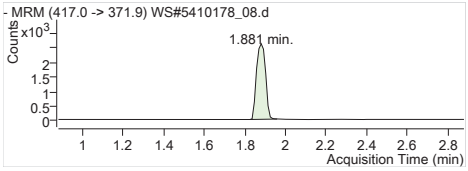



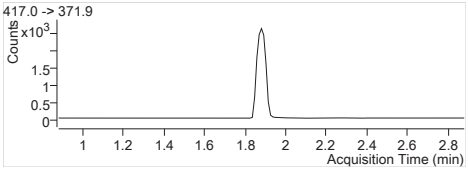

**18O2-PFHxS** 403.0 -> 83.9
RT (Exp. RT): 1.679 (1.668)
Calc. conc. 86.17 µg/L
Area ratio: 0.05944
Sample type: Sample



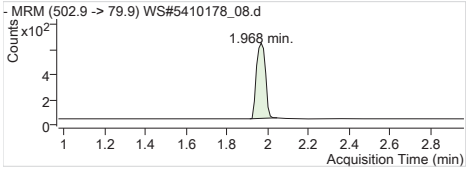



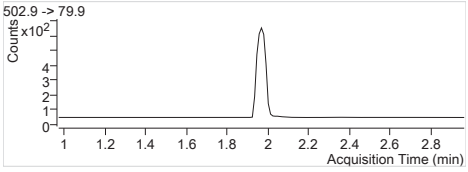

**13C4-PFHpA** 367.0 -> 321.9
RT (Exp. RT): 1.702 (1.702)
Calc. conc. 88.39 µg/L
Area ratio: 0.32741
Sample type: Sample



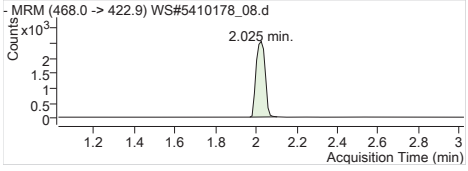



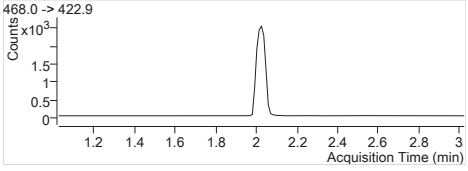

**13C4-PFOA** 417.0 -> 371.9
RT (Exp. RT): 1.881 (1.881)
Calc. conc. 93.19 µg/L
Area ratio: 0.34178
Sample type: Sample



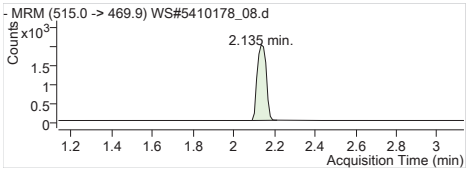



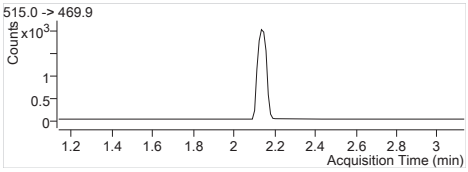

**13C4-PFOS** 502.9 -> 79.9
RT (Exp. RT): 1.968 (1.968)
Calc. conc. 98.09 µg/L
Area ratio: 0.07879
Sample type: Sample



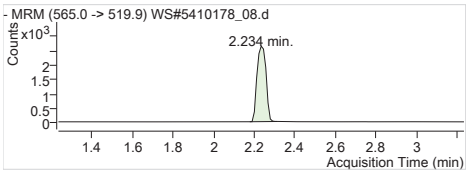



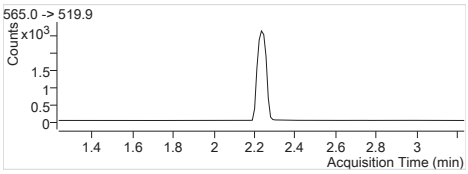

**13C5-PFNA** 468.0 -> 422.9
RT (Exp. RT): 2.025 (2.025)
Calc. conc. 93.06 µg/L
Area ratio: 0.33184
Sample type: Sample



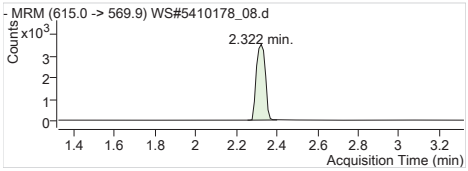



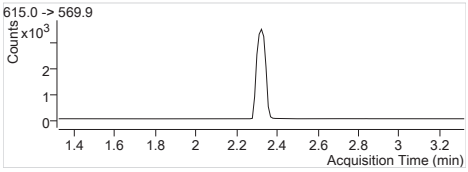

**13C2-PFDA** 515.0 -> 469.9
RT (Exp. RT): 2.135 (2.135)
Calc. conc. 87.56 µg/L
Area ratio: 0.21102
Sample type: Sample



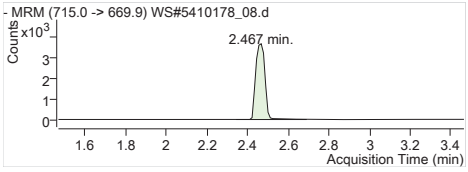



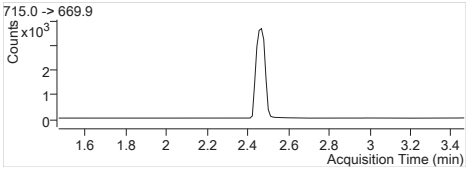

**13C2-PFUnA** 565.0 -> 519.9
RT (Exp. RT): 2.234 (2.234)
Calc. conc. 88.42 µg/L
Area ratio: 0.27533
Sample type: Sample



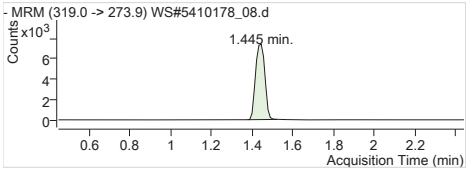



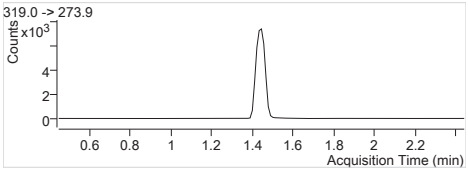

**13C2-PFDoA** 615.0 -> 569.9
RT (Exp. RT): 2.322 (2.322)
Calc. conc. 93.17 µg/L
Area ratio: 0.36779
Sample type: Sample



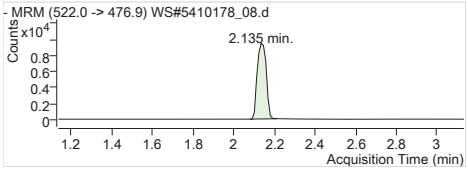



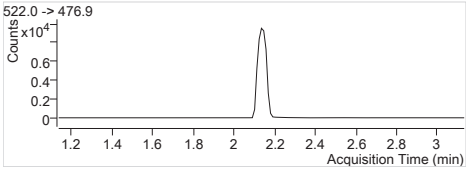

**13C2-PFTeDA** 715.0 -> 669.9
RT (Exp. RT): 2.467 (2.467)
Calc. conc. 94.56 µg/L
Area ratio: 0.39389
Sample type: Sample




**13C6-PFHxA** 319.0 -> 273.9
RT (Exp. RT): 1.445 (1.445)
Calc. conc. 2.49 µg/L
Area ratio: 0
Sample type: Sample



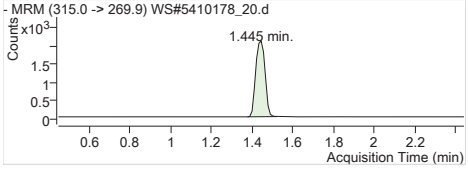

**13C9-PFDA** 522.0 -> 476.9
RT (Exp. RT): 2.135 (2.135)
Calc. conc. 2.58 µg/L
Area ratio: 0
Sample type: Sample

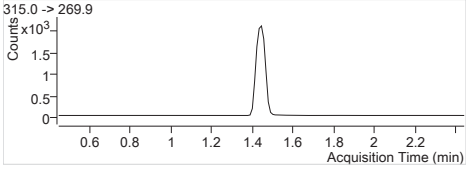
**Batch Path** T:\lcms4\PFC\20180223\WS#5410178\QuantResults\PFC_Water_Low_180223_WS#5410178_EToxics

| | | | |
|---|---|---|---|
| **Sample Name** | **IB** | **Instrument** | LCMS04 |
| **Data File** | WS#5410178_20.d | **Operator** | |
| **Sample Type** | Sample | **Dilution** | 0.024 |
| **Acq. Method** | PFC_Water_Low.m | **Position** | P1-A8 |
| **Acq. Date** | 2018/02/23 6:08:19 PM | **Injection Volume** | Per Method |
| **Sample Annotation** | - | | |

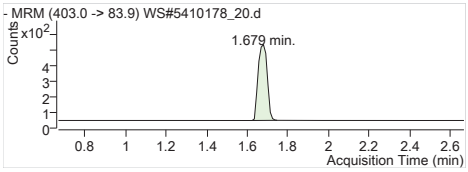
| ISTD Compounds | Response | RT | Target conc. | | |
|---|---|---|---|---|---|
| MPFHxA | 6643 | 1.44 | 1 µg/L | | |
| MPFHxS | 1518 | 1.68 | 1 µg/L | | |
| MPFHpA | 8123 | 1.70 | 1 µg/L | | |
| MPFOA | 8410 | 1.88 | 1 µg/L | | |
| MPFOS | 1689 | 1.97 | 1 µg/L | | |
| MPFNA | 7576 | 2.02 | 1 µg/L | | |
| MPFDA | 6503 | 2.14 | 1 µg/L | | |
| MPFUnA | 7978 | 2.23 | 1 µg/L | | |
| MPFDoA | 10475 | 2.32 | 1 µg/L | | |
| MPFTeDA | 10676 | 2.47 | 1 µg/L | | |
| 13C6-PFHxA IS | 23749 | 1.44 | 1 µg/L | | |
| 13C9-PFDA IS | 29605 | 2.13 | 1 µg/L | | |

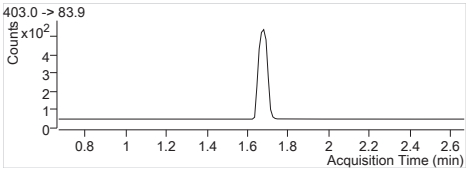
| Compound | Response | RT | Target Conc. | Calc. Conc. | Accuracy |
|---|---|---|---|---|---|
| PFBS 1 | | | - | ND | - |
| PFHxA 1 | | | - | ND | - |
| PFHxS 1 | | | - | ND | - |
| PFHpA 1 | | | - | ND | - |
| PFOA 1 | | | - | ND | - |
| PFOS 1 | | | - | ND | - |
| PFNA 1 | | | - | ND | - |
| PFDA 1 | | | - | ND | - |
| PFUnA 1 | | | - | ND | - |
| PFDoA 1 | | | - | ND | - |
| PFTrDA 1 | | | - | ND | - |
| PFTeDA 1 | | | - | ND | - |
| 13C2-PFHxA | 6643 | 1.44 | - | 94.55 µg/L | - |
| 18O2-PFHxS | 1518 | 1.68 | - | 92.67 µg/L | - |
| 13C4-PFHpA | 8123 | 1.70 | - | 92.33 µg/L | - |
| 13C4-PFOA | 8410 | 1.88 | - | 96.56 µg/L | - |
| 13C4-PFOS | 1689 | 1.97 | - | 88.54 µg/L | - |
| 13C5-PFNA | 7576 | 2.02 | - | 89.46 µg/L | - |
| 13C2-PFDA | 6438 | 2.14 | - | 90.23 µg/L | - |
| 13C2-PFUnA | 7978 | 2.23 | - | 86.54 µg/L | - |
| 13C2-PFDoA | 10475 | 2.32 | - | 89.63 µg/L | - |
| 13C2-PFTeDA | 10892 | 2.47 | - | 88.32 µg/L | - |
| 13C6-PFHxA | 23749 | 1.44 | - | 2.53 µg/L | - |
| 13C9-PFDA | 29605 | 2.13 | - | 2.62 µg/L | - |



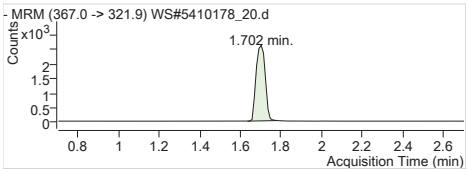



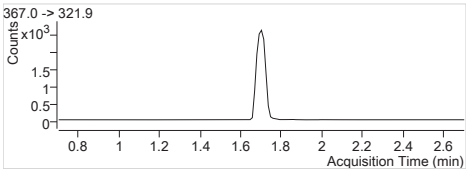

**MPFHxA** Internal Standard
RT (Exp. RT): 1.445 (1.445)
Concentration: 1 µg/L
Sample type: Sample



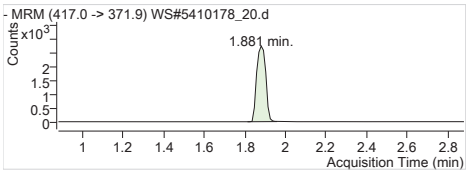



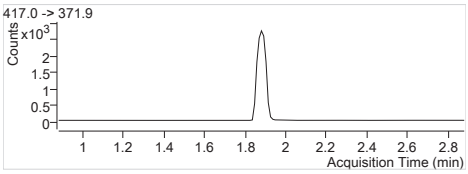

**MPFHxS** Internal Standard
RT (Exp. RT): 1.679 (1.668)
Concentration: 1 µg/L
Sample type: Sample



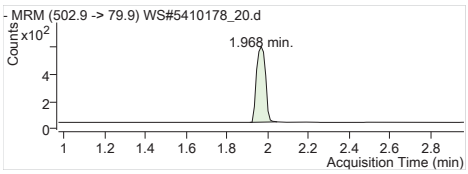



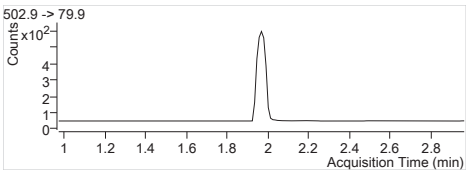

**MPFHpA** Internal Standard
RT (Exp. RT): 1.702 (1.702)
Concentration: 1 µg/L
Sample type: Sample



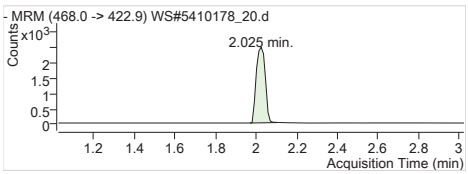



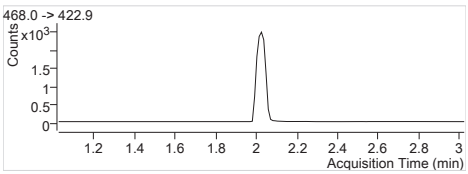

**MPFOA** Internal Standard
RT (Exp. RT): 1.881 (1.881)
Concentration: 1 µg/L
Sample type: Sample



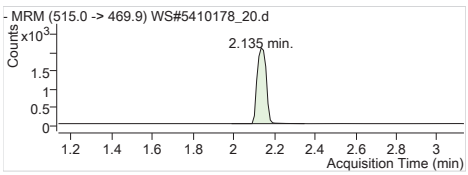



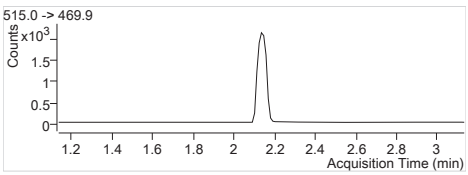

**MPFOS** Internal Standard
RT (Exp. RT): 1.968 (1.968)
Concentration: 1 µg/L
Sample type: Sample



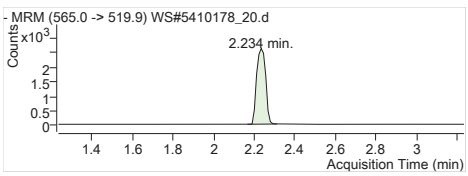



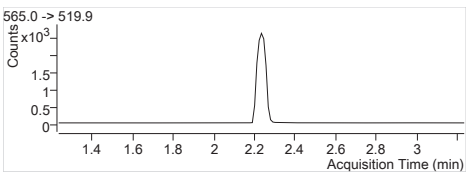

**MPFNA** Internal Standard
RT (Exp. RT): 2.025 (2.025)
Concentration: 1 µg/L
Sample type: Sample



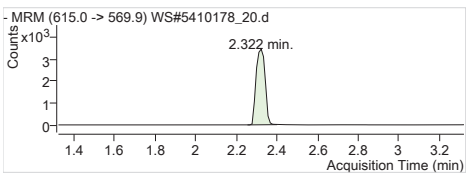



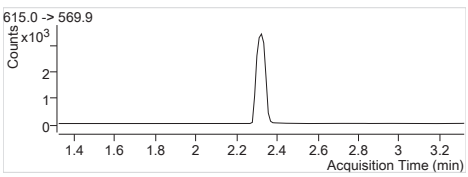

**MPFDA** Internal Standard
RT (Exp. RT): 2.135 (2.135)
Concentration: 1 µg/L
Sample type: Sample



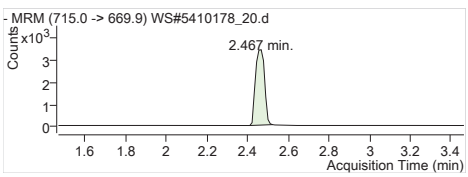



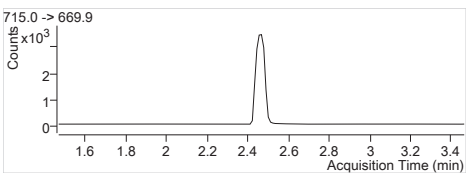

**MPFUnA** Internal Standard
RT (Exp. RT): 2.234 (2.234)
Concentration: 1 µg/L
Sample type: Sample



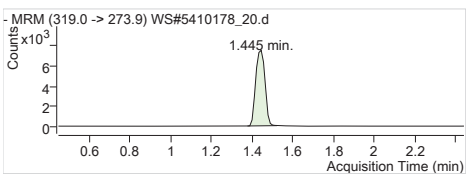



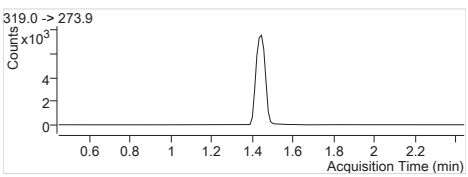

**MPFDoA** Internal Standard
RT (Exp. RT): 2.322 (2.322)
Concentration: 1 µg/L
Sample type: Sample



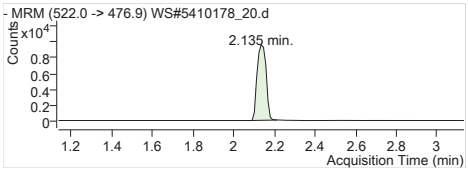



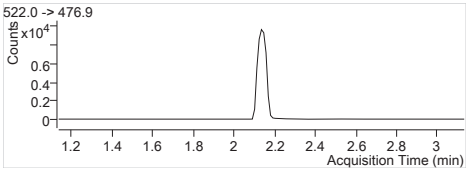

**MPFTeDA** Internal Standard
RT (Exp. RT): 2.467 (2.467)
Concentration: 1 µg/L
Sample type: Sample



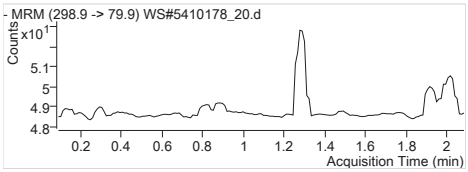



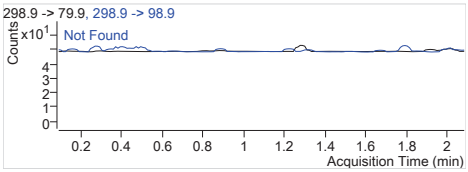

**13C6-PFHxA IS** Internal Standard
RT (Exp. RT): 1.445 (1.445)
Concentration: 1 µg/L
Sample type: Sample



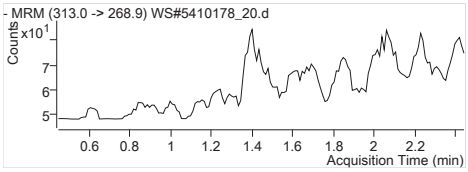



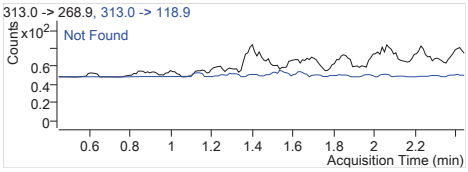

**13C9-PFDA IS** Internal Standard
RT (Exp. RT): 2.135 (2.135)
Concentration: 1 µg/L
Sample type: Sample



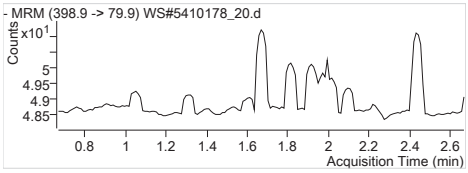



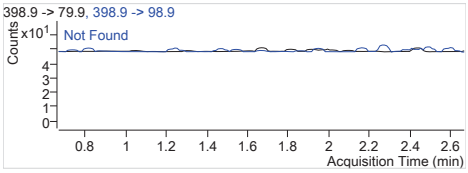

**PFBS 1** 298.9 -> 79.9
RT (Exp. RT): 0.000 (1.087)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



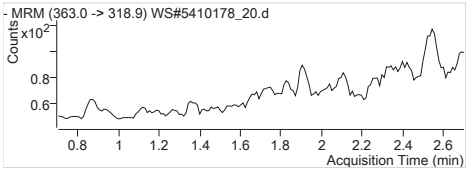



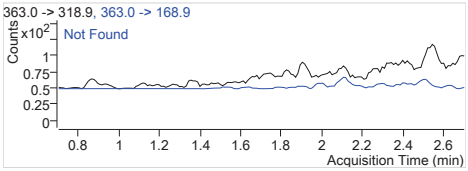

**PFHxA 1** 313.0 -> 268.9
RT (Exp. RT): 0.000 (1.445)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



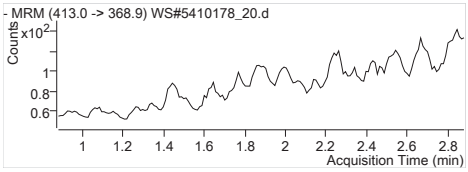



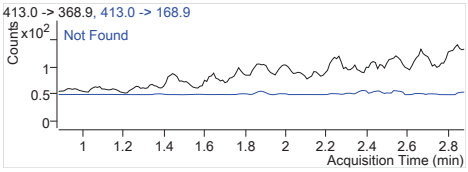

**PFHxS 1** 398.9 -> 79.9
RT (Exp. RT): 0.000 (1.668)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



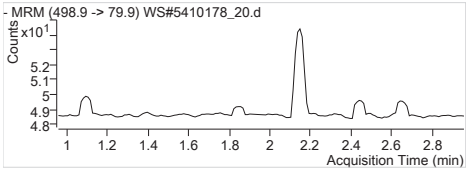



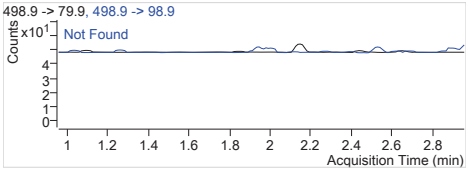

**PFHpA 1** 363.0 -> 318.9
RT (Exp. RT): 0.000 (1.702)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



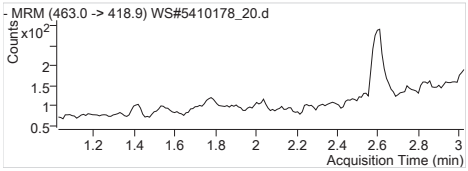



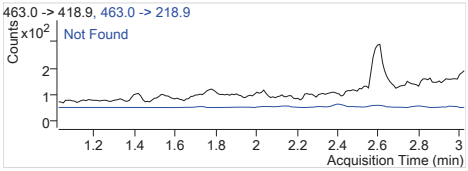

**PFOA 1** 413.0 -> 368.9
RT (Exp. RT): 0.000 (1.881)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



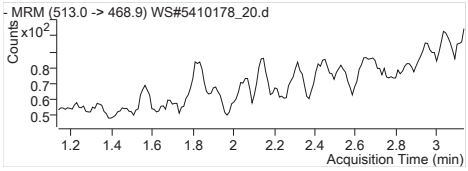



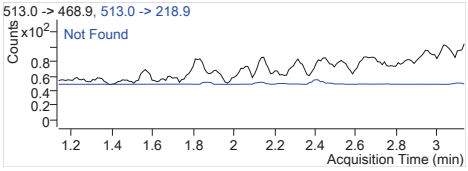

**PFOS 1** 498.9 -> 79.9
RT (Exp. RT): 0.000 (1.957)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



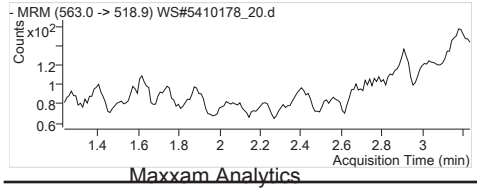



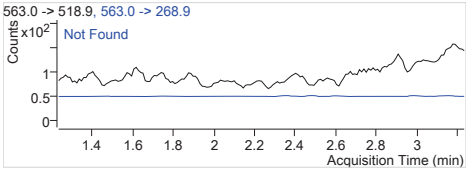

**PFNA 1** 463.0 -> 418.9
RT (Exp. RT): 0.000 (2.025)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



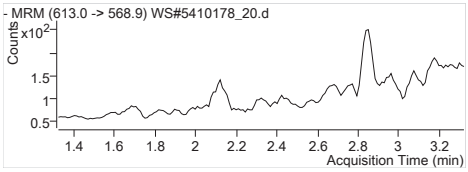



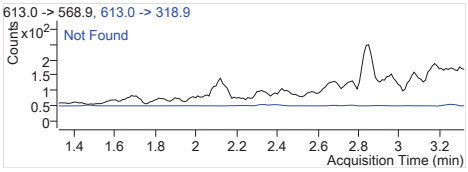

**PFDA 1** 513.0 -> 468.9
RT (Exp. RT): 0.000 (2.135)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



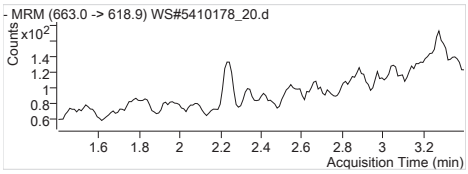



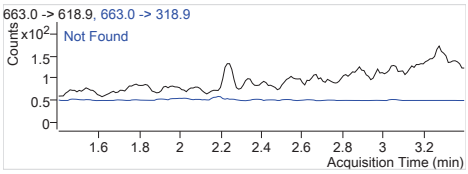

**PFUnA 1** 563.0 -> 518.9
RT (Exp. RT): 0.000 (2.234)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



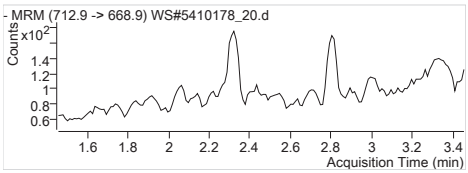



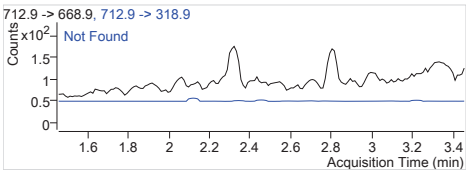

**PFDoA 1** 613.0 -> 568.9
RT (Exp. RT): 0.000 (2.323)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



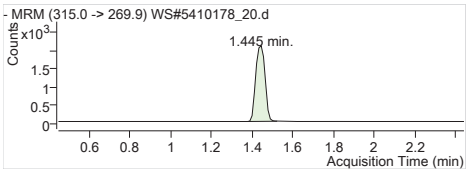



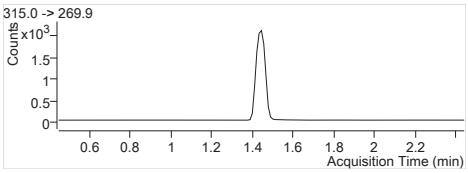

**PFTrDA 1** 663.0 -> 618.9
RT (Exp. RT): 0.000 (2.400)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



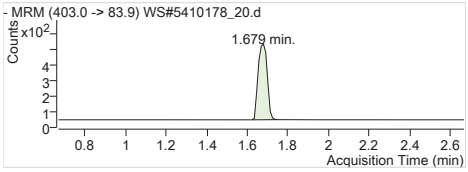



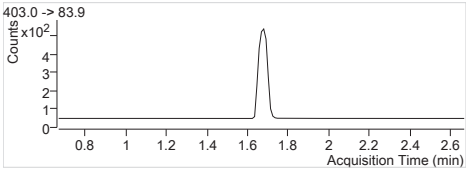

**PFTeDA 1** 712.9 -> 668.9
RT (Exp. RT): 0.000 (2.456)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



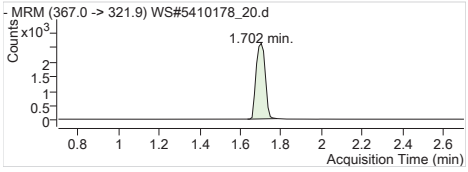



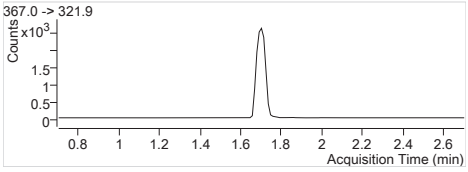

**13C2-PFHxA** 315.0 -> 269.9
RT (Exp. RT): 1.445 (1.445)
Calc. conc. 94.55 µg/L
Area ratio: 0.27972
Sample type: Sample



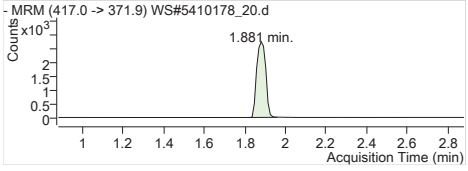



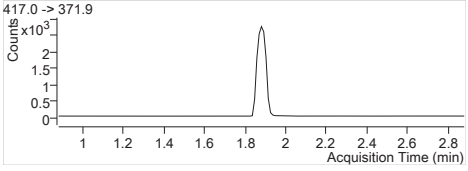

**18O2-PFHxS** 403.0 -> 83.9
RT (Exp. RT): 1.679 (1.668)
Calc. conc. 92.67 µg/L
Area ratio: 0.06392
Sample type: Sample



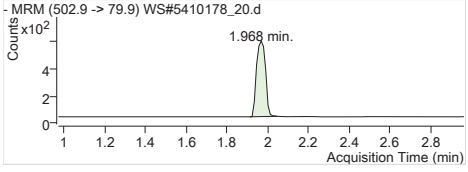



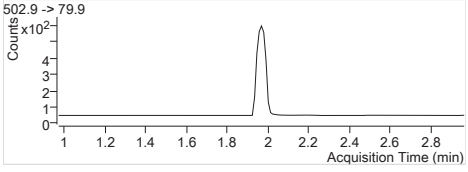

**13C4-PFHpA** 367.0 -> 321.9
RT (Exp. RT): 1.702 (1.702)
Calc. conc. 92.33 µg/L
Area ratio: 0.34204
Sample type: Sample



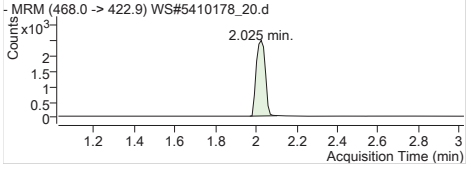



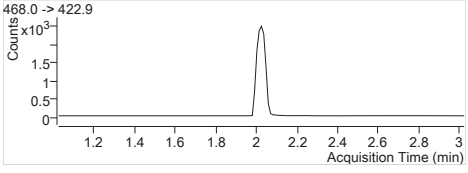

**13C4-PFOA** 417.0 -> 371.9
RT (Exp. RT): 1.881 (1.881)
Calc. conc. 96.56 µg/L
Area ratio: 0.35412
Sample type: Sample



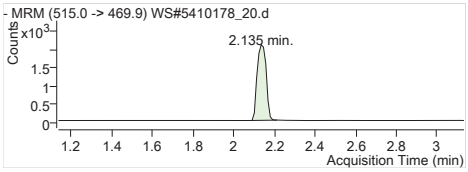



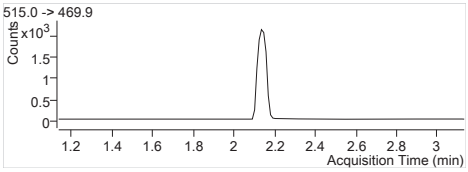

**13C4-PFOS** 502.9 -> 79.9
RT (Exp. RT): 1.968 (1.968)
Calc. conc. 88.54 µg/L
Area ratio: 0.07112
Sample type: Sample



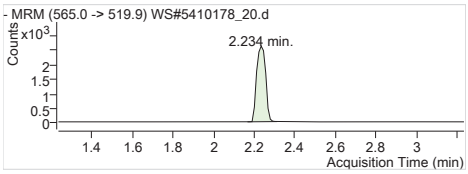



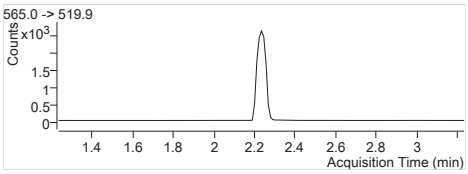

**13C5-PFNA** 468.0 -> 422.9
RT (Exp. RT): 2.025 (2.025)
Calc. conc. 89.46 µg/L
Area ratio: 0.31900
Sample type: Sample



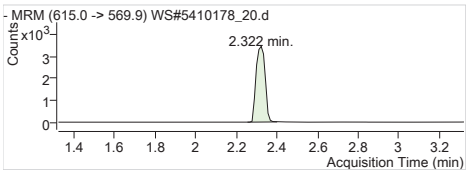



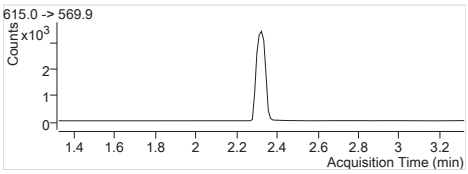

**13C2-PFDA** 515.0 -> 469.9
RT (Exp. RT): 2.135 (2.135)
Calc. conc. 90.23 µg/L
Area ratio: 0.21746
Sample type: Sample



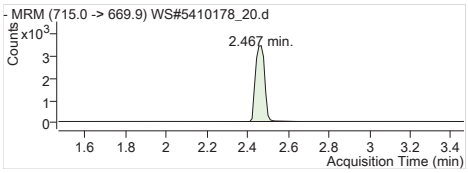



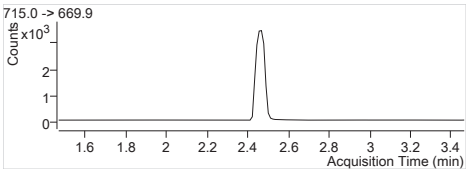

**13C2-PFUnA** 565.0 -> 519.9
RT (Exp. RT): 2.234 (2.234)
Calc. conc. 86.54 µg/L
Area ratio: 0.26948
Sample type: Sample



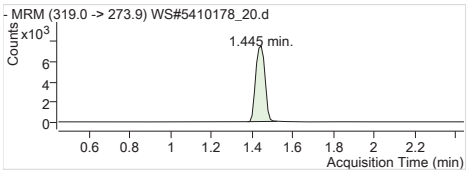



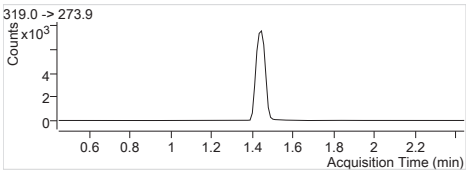

**13C2-PFDoA** 615.0 -> 569.9
RT (Exp. RT): 2.322 (2.322)
Calc. conc. 89.63 µg/L
Area ratio: 0.35383
Sample type: Sample



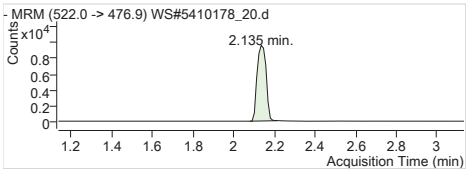



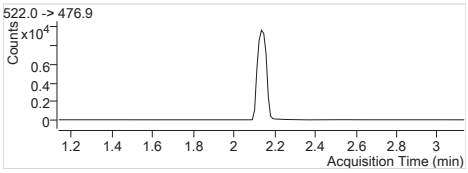

**13C2-PFTeDA** 715.0 -> 669.9
RT (Exp. RT): 2.467 (2.467)
Calc. conc. 88.32 µg/L
Area ratio: 0.36791
Sample type: Sample




**13C6-PFHxA** 319.0 -> 273.9
RT (Exp. RT): 1.445 (1.445)
Calc. conc. 2.53 µg/L
Area ratio: 0
Sample type: Sample




**13C9-PFDA** 522.0 -> 476.9
RT (Exp. RT): 2.135 (2.135)
Calc. conc. 2.62 µg/L
Area ratio: 0
Sample type: Sample

# Quantitation Results

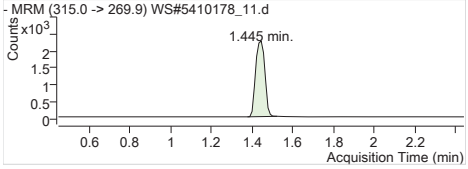
Agilent Technologies

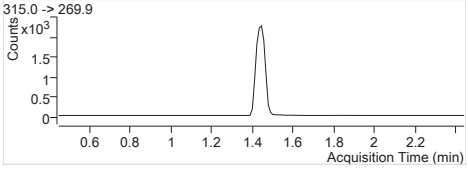
| | |
|---|---|
| **Batch Path** | T:\lcms4\PFC\20180223\WS#5410178\QuantResults\PFC_Water_Low_180223_WS#5410178_EToxics |

| | | | |
|---|---|---|---|
| **Sample Name** | **5410178:BLANK** | **Instrument** | LCMS04 |
| **Data File** | WS#5410178_11.d | **Operator** | |
| **Sample Type** | Sample | **Dilution** | 0.024 |
| **Acq. Method** | PFC_Water_Low.m | **Position** | P1-B1 |
| **Acq. Date** | 2018/02/23 5:23:55 PM | **Injection Volume** | Per Method |
| **Sample Annotation** | - | | |

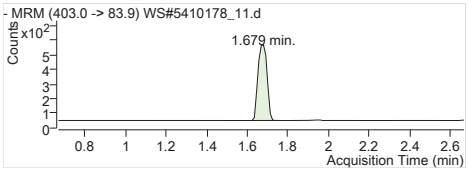
| ISTD Compounds | Response | RT | Target conc. | | |
|---|---|---|---|---|---|
| MPFHxA | 7064 | 1.44 | 1 µg/L | | |
| MPFHxS | 1620 | 1.68 | 1 µg/L | | |
| MPFHpA | 8272 | 1.70 | 1 µg/L | | |
| MPFOA | 8265 | 1.88 | 1 µg/L | | |
| MPFOS | 1879 | 1.97 | 1 µg/L | | |
| MPFNA | 8607 | 2.02 | 1 µg/L | | |
| MPFDA | 6728 | 2.14 | 1 µg/L | | |
| MPFUnA | 8186 | 2.23 | 1 µg/L | | |
| MPFDoA | 10366 | 2.32 | 1 µg/L | | |
| MPFTeDA | 9886 | 2.46 | 1 µg/L | | |
| 13C6-PFHxA IS | 23209 | 1.44 | 1 µg/L | | |
| 13C9-PFDA IS | 28413 | 2.13 | 1 µg/L | | |

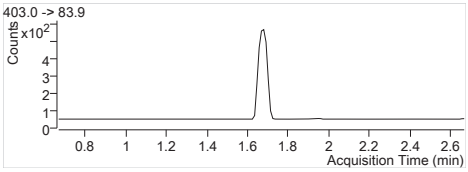
| Compound | Response | RT | Target Conc. | Calc. Conc. | Accuracy |
|---|---|---|---|---|---|
| PFBS 1 | | | - | ND | - |
| PFHxA 1 | | | - | ND | - |
| PFHxS 1 | | | - | ND | - |
| PFHpA 1 | | | - | ND | - |
| PFOA 1 | | | - | ND | - |
| PFOS 1 | | | - | ND | - |
| PFNA 1 | | | - | ND | - |
| PFDA 1 | | | - | ND | - |
| PFUnA 1 | | | - | ND | - |
| PFDoA 1 | | | - | ND | - |
| PFTrDA 1 | | | - | ND | - |
| PFTeDA 1 | | | - | ND | - |
| 13C2-PFHxA | 7064 | 1.44 | - | 102.88 µg/L | - |
| 18O2-PFHxS | 1620 | 1.68 | - | 101.20 µg/L | - |
| 13C4-PFHpA | 8272 | 1.70 | - | 96.22 µg/L | - |
| 13C4-PFOA | 8265 | 1.88 | - | 97.10 µg/L | - |
| 13C4-PFOS | 1879 | 1.97 | - | 100.79 µg/L | - |
| 13C5-PFNA | 8607 | 2.02 | - | 104.00 µg/L | - |
| 13C2-PFDA | 6687 | 2.14 | - | 97.66 µg/L | - |
| 13C2-PFUnA | 8186 | 2.23 | - | 92.53 µg/L | - |
| 13C2-PFDoA | 10366 | 2.32 | - | 92.42 µg/L | - |
| 13C2-PFTeDA | 10060 | 2.46 | - | 85.00 µg/L | - |
| 13C6-PFHxA | 23209 | 1.44 | - | 2.47 µg/L | - |
| 13C9-PFDA | 28413 | 2.13 | - | 2.51 µg/L | - |



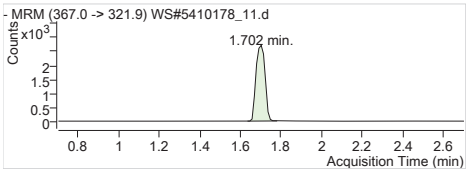



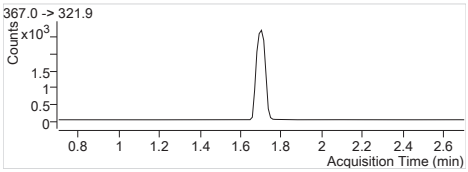

| | |
|---|---|
| **MPFHxA** | Internal Standard |
| RT (Exp. RT): | 1.445 (1.445) |
| Concentration: | 1 µg/L |
| Sample type: | Sample |



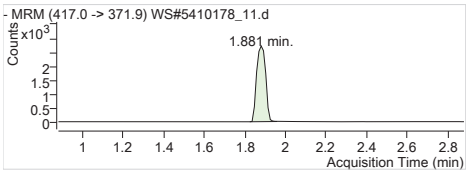



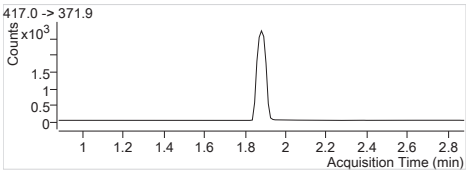

**MPFHxS** Internal Standard
RT (Exp. RT): 1.679 (1.668)
Concentration: 1 µg/L
Sample type: Sample



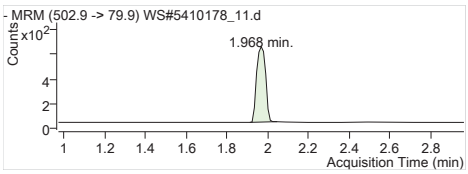



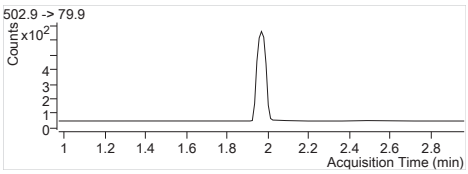

**MPFHpA** Internal Standard
RT (Exp. RT): 1.702 (1.702)
Concentration: 1 µg/L
Sample type: Sample



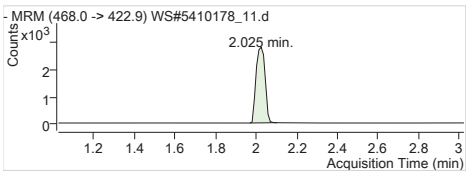



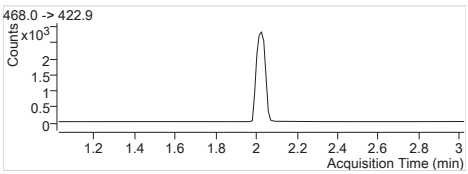

**MPFOA** Internal Standard
RT (Exp. RT): 1.881 (1.881)
Concentration: 1 µg/L
Sample type: Sample



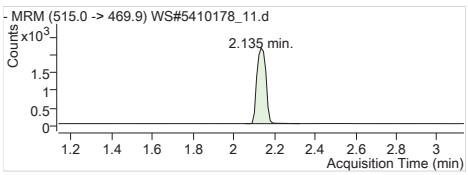



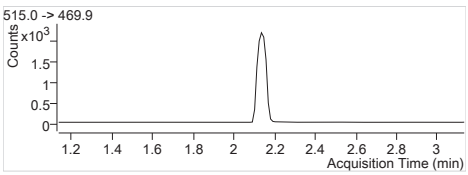

**MPFOS** Internal Standard
RT (Exp. RT): 1.968 (1.968)
Concentration: 1 µg/L
Sample type: Sample



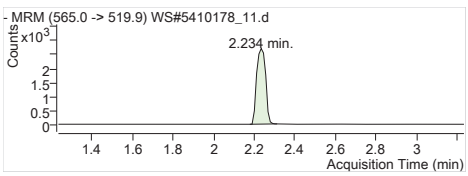



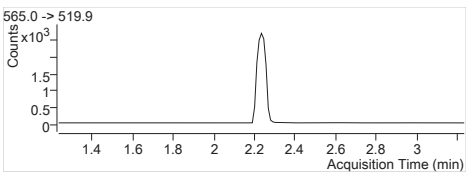

**MPFNA** Internal Standard
RT (Exp. RT): 2.025 (2.025)
Concentration: 1 µg/L
Sample type: Sample



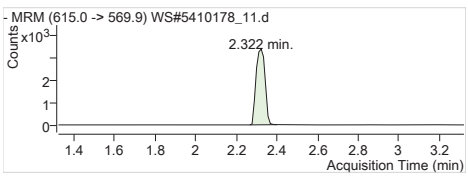



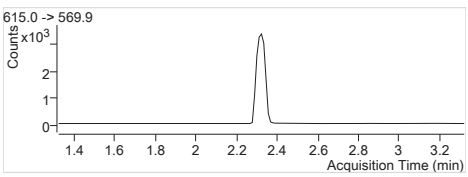

**MPFDA** Internal Standard
RT (Exp. RT): 2.135 (2.135)
Concentration: 1 µg/L
Sample type: Sample



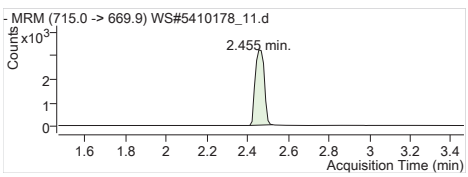



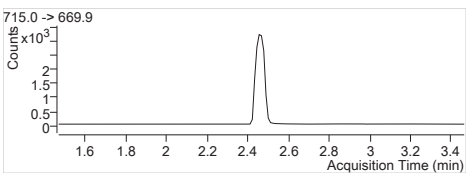

**MPFUnA** Internal Standard
RT (Exp. RT): 2.234 (2.234)
Concentration: 1 µg/L
Sample type: Sample



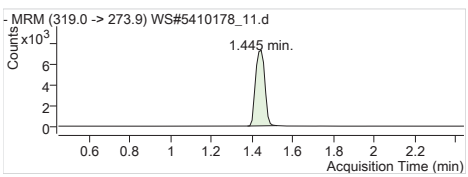



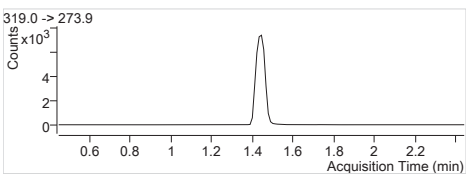

**MPFDoA** Internal Standard
RT (Exp. RT): 2.322 (2.322)
Concentration: 1 µg/L
Sample type: Sample



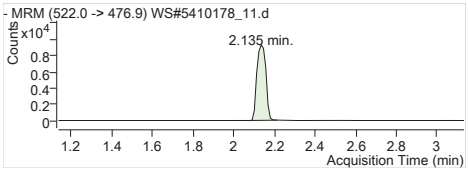



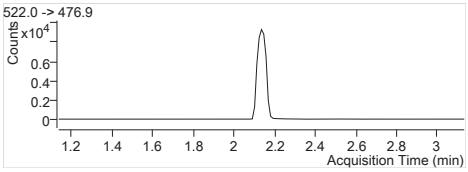

**MPFTeDA** Internal Standard
RT (Exp. RT): 2.455 (2.467)
Concentration: 1 µg/L
Sample type: Sample



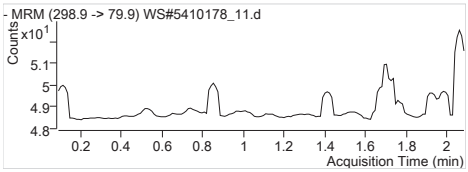



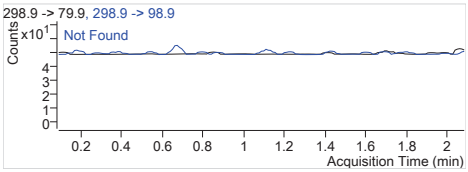

**13C6-PFHxA IS** Internal Standard
RT (Exp. RT): 1.445 (1.445)
Concentration: 1 µg/L
Sample type: Sample



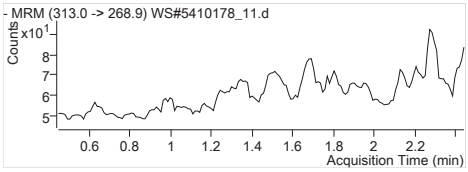



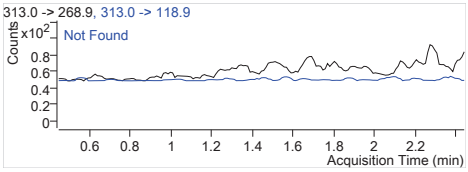

**13C9-PFDA IS** Internal Standard
RT (Exp. RT): 2.135 (2.135)
Concentration: 1 µg/L
Sample type: Sample



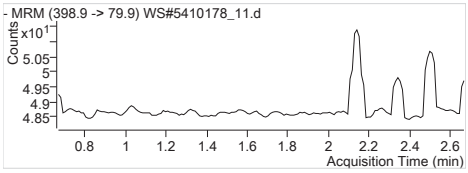



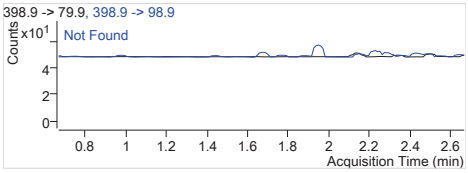

**PFBS 1** 298.9 -> 79.9
RT (Exp. RT): 0.000 (1.087)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



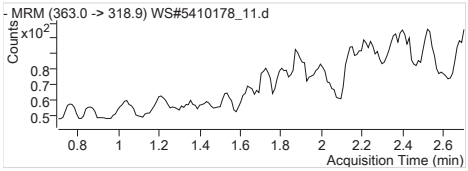



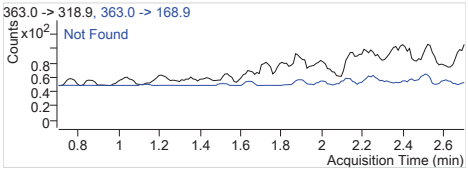

**PFHxA 1** 313.0 -> 268.9
RT (Exp. RT): 0.000 (1.445)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



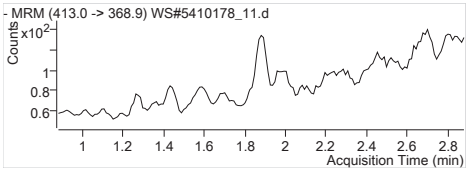



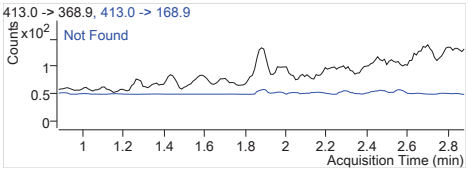

**PFHxS 1** 398.9 -> 79.9
RT (Exp. RT): 0.000 (1.668)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



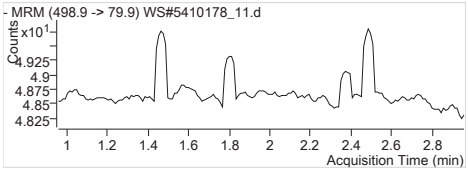



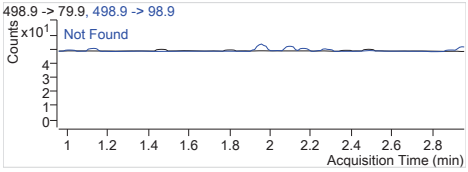

**PFHpA 1** 363.0 -> 318.9
RT (Exp. RT): 0.000 (1.702)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



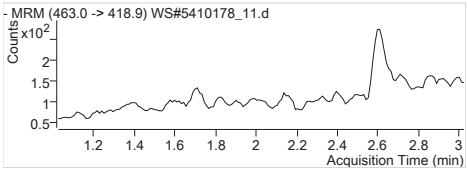



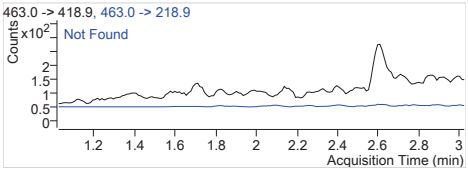

**PFOA 1** 413.0 -> 368.9
RT (Exp. RT): 0.000 (1.881)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



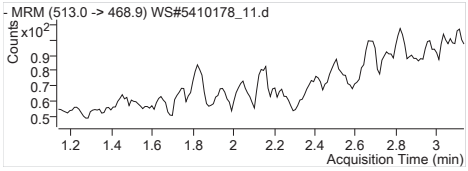



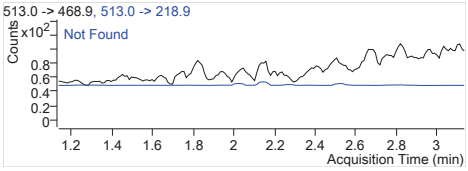

**PFOS 1** 498.9 -> 79.9
RT (Exp. RT): 0.000 (1.957)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



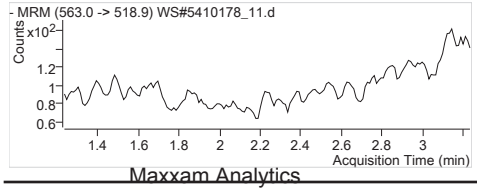



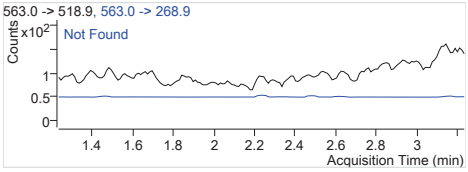

**PFNA 1** 463.0 -> 418.9
RT (Exp. RT): 0.000 (2.025)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



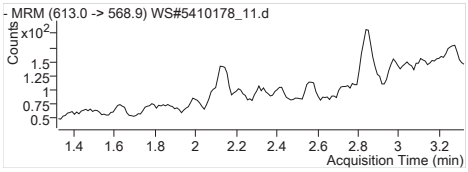



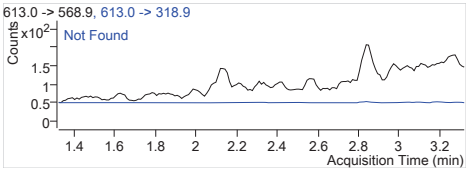

**PFDA 1** 513.0 -> 468.9
RT (Exp. RT): 0.000 (2.135)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



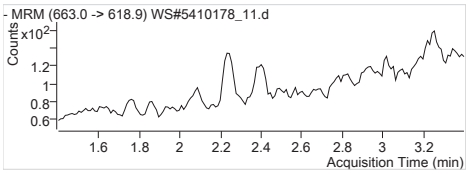



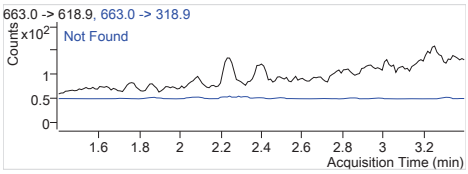

**PFUnA 1** 563.0 -> 518.9
RT (Exp. RT): 0.000 (2.234)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



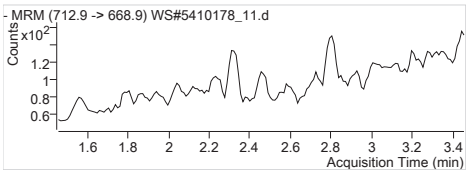



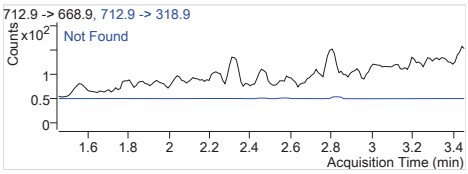

**PFDoA 1** 613.0 -> 568.9
RT (Exp. RT): 0.000 (2.323)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



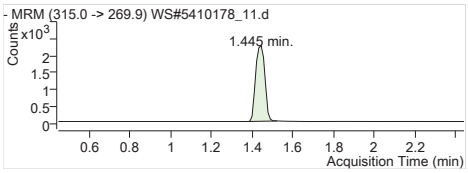



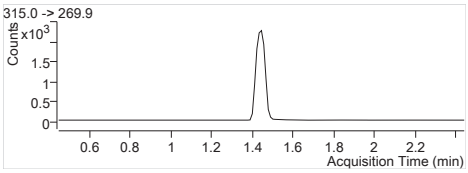

**PFTrDA 1** 663.0 -> 618.9
RT (Exp. RT): 0.000 (2.400)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



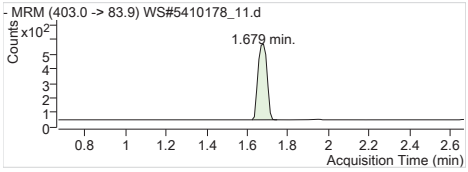



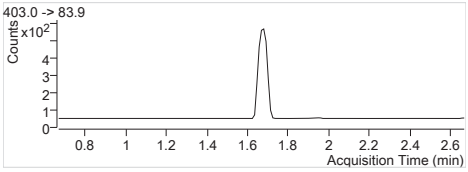

**PFTeDA 1** 712.9 -> 668.9
RT (Exp. RT): 0.000 (2.456)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



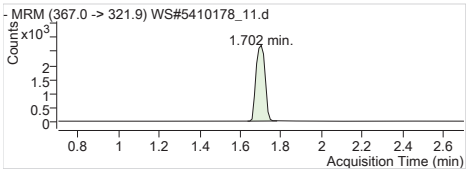



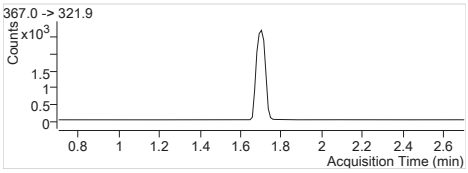

**13C2-PFHxA** 315.0 -> 269.9
RT (Exp. RT): 1.445 (1.445)
Calc. conc. 102.88 µg/L
Area ratio: 0.30436
Sample type: Sample



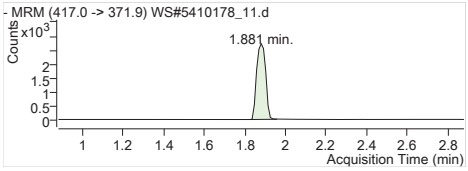



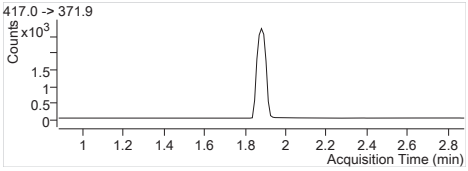

**18O2-PFHxS** 403.0 -> 83.9
RT (Exp. RT): 1.679 (1.668)
Calc. conc. 101.20 µg/L
Area ratio: 0.06980
Sample type: Sample



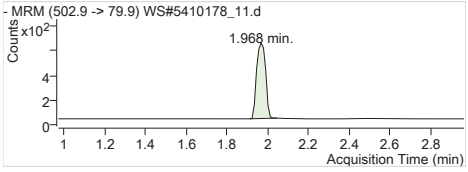



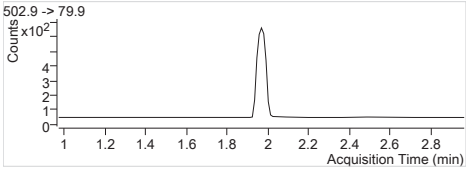

**13C4-PFHpA** 367.0 -> 321.9
RT (Exp. RT): 1.702 (1.702)
Calc. conc. 96.22 µg/L
Area ratio: 0.35641
Sample type: Sample



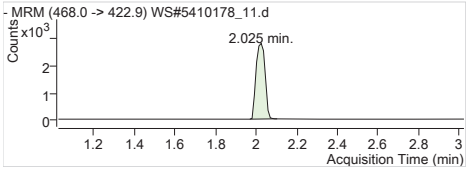



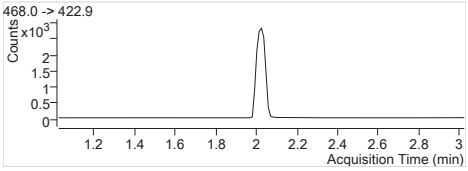

**13C4-PFOA** 417.0 -> 371.9
RT (Exp. RT): 1.881 (1.881)
Calc. conc. 97.10 µg/L
Area ratio: 0.35611
Sample type: Sample



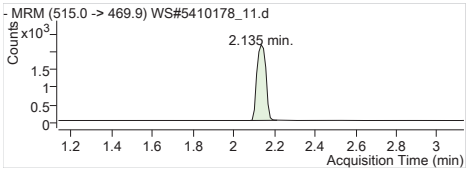



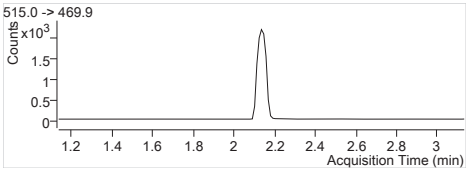

**13C4-PFOS** 502.9 -> 79.9
RT (Exp. RT): 1.968 (1.968)
Calc. conc. 100.79 µg/L
Area ratio: 0.08096
Sample type: Sample



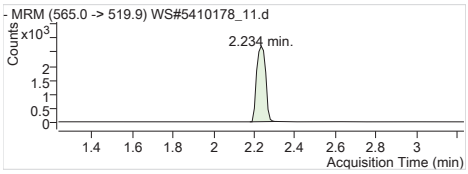



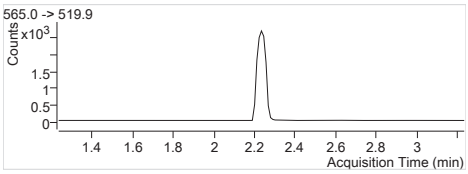

**13C5-PFNA** 468.0 -> 422.9
RT (Exp. RT): 2.025 (2.025)
Calc. conc. 104.00 µg/L
Area ratio: 0.37085
Sample type: Sample



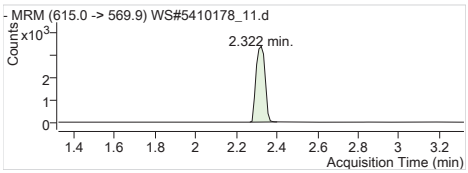



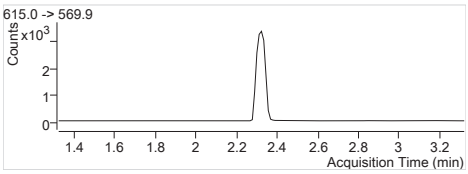

**13C2-PFDA** 515.0 -> 469.9
RT (Exp. RT): 2.135 (2.135)
Calc. conc. 97.66 µg/L
Area ratio: 0.23535
Sample type: Sample



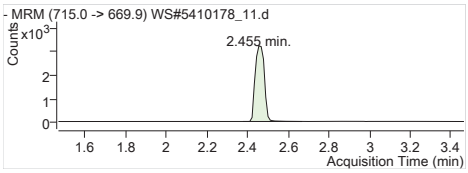



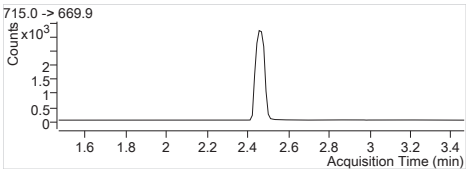

**13C2-PFUnA** 565.0 -> 519.9
RT (Exp. RT): 2.234 (2.234)
Calc. conc. 92.53 µg/L
Area ratio: 0.28811
Sample type: Sample



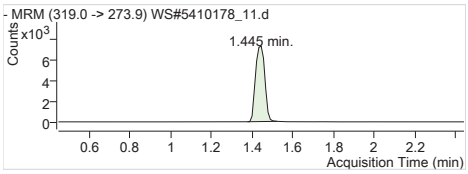



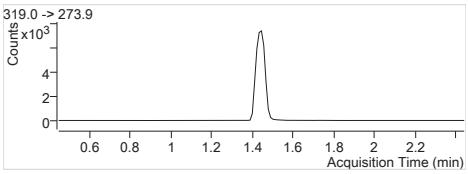

**13C2-PFDoA** 615.0 -> 569.9
RT (Exp. RT): 2.322 (2.322)
Calc. conc. 92.42 µg/L
Area ratio: 0.36483
Sample type: Sample



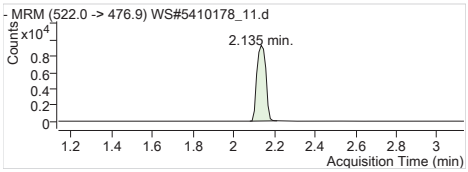



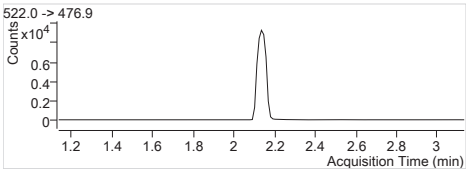

**13C2-PFTeDA** 715.0 -> 669.9
RT (Exp. RT): 2.455 (2.467)
Calc. conc. 85.00 µg/L
Area ratio: 0.35406
Sample type: Sample




**13C6-PFHxA** 319.0 -> 273.9
RT (Exp. RT): 1.445 (1.445)
Calc. conc. 2.47 µg/L
Area ratio: 0
Sample type: Sample




**13C9-PFDA** 522.0 -> 476.9
RT (Exp. RT): 2.135 (2.135)
Calc. conc. 2.51 µg/L
Area ratio: 0
Sample type: Sample

# Quantitation Results

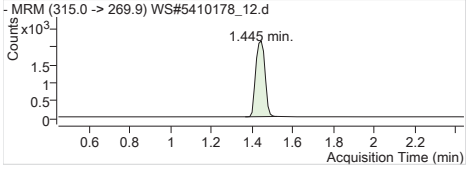
Agilent Technologies

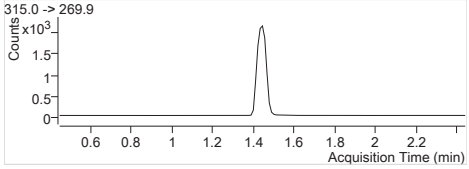
| | |
|---|---|
| **Batch Path** | T:\lcms4\PFC\20180223\WS#5410178\QuantResults\PFC_Water_Low_180223_WS#5410178_EToxics |

| | | | |
|---|---|---|---|
| **Sample Name** | **5410178:SPIKE** | **Instrument** | LCMS04 |
| **Data File** | WS#5410178_12.d | **Operator** | |
| **Sample Type** | QC | **Dilution** | 0.024 |
| **Acq. Method** | PFC_Water_Low.m | **Position** | P1-B2 |
| **Acq. Date** | 2018/02/23 5:28:51 PM | **Injection Volume** | Per Method |
| **Sample Annotation** | - | | |

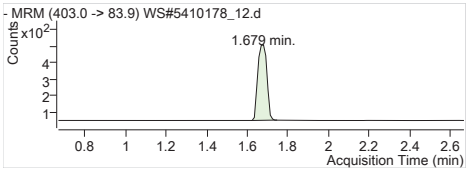
| ISTD Compounds | Response | RT | Target conc. | | |
|---|---|---|---|---|---|
| MPFHxA | 6710 | 1.44 | 1 µg/L | | |
| MPFHxS | 1435 | 1.68 | 1 µg/L | | |
| MPFHpA | 7919 | 1.70 | 1 µg/L | | |
| MPFOA | 8433 | 1.88 | 1 µg/L | | |
| MPFOS | 1918 | 1.97 | 1 µg/L | | |
| MPFNA | 8272 | 2.02 | 1 µg/L | | |
| MPFDA | 6939 | 2.14 | 1 µg/L | | |
| MPFUnA | 7762 | 2.23 | 1 µg/L | | |
| MPFDoA | 9354 | 2.32 | 1 µg/L | | |
| MPFTeDA | 10080 | 2.47 | 1 µg/L | | |
| 13C6-PFHxA IS | 21178 | 1.44 | 1 µg/L | | |
| 13C9-PFDA IS | 25614 | 2.13 | 1 µg/L | | |

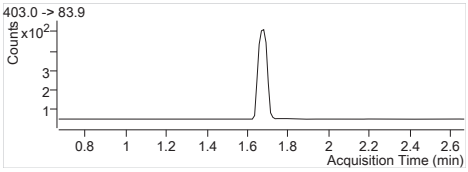
| Compound | Response | RT | Target Conc. | Calc. Conc. | Accuracy |
|---|---|---|---|---|---|
| PFBS 1 | 15998 | 1.09 | 20.80 | 0.57 µg/L | 115.08 |
| PFHxA 1 | 57536 | 1.45 | 20.80 | 0.51 µg/L | 102.03 |
| PFHxS 1 | 15924 | 1.67 | 20.80 | 0.57 µg/L | 114.01 |
| PFHpA 1 | 72216 | 1.70 | 20.80 | 0.53 µg/L | 105.39 |
| PFOA 1 | 80887 | 1.88 | 20.80 | 0.51 µg/L | 101.42 |
| PFOS 1 | 14393 | 1.96 | 20.80 | 0.46 µg/L | 93.12 |
| PFNA 1 | 73458 | 2.03 | 20.80 | 0.52 µg/L | 103.57 |
| PFDA 1 | 72807 | 2.14 | 20.80 | 0.48 µg/L | 96.81 |
| PFUnA 1 | 72767 | 2.23 | 20.80 | 0.50 µg/L | 100.70 |
| PFDoA 1 | 87463 | 2.32 | 20.80 | 0.52 µg/L | 104.65 |
| PFTrDA 1 | 97258 | 2.40 | 20.80 | 0.51 µg/L | 103.00 |
| PFTeDA 1 | 80727 | 2.46 | 20.80 | 0.51 µg/L | 101.77 |
| 13C2-PFHxA | 6710 | 1.44 | 100.00 | 107.10 µg/L | 107.10 |
| 18O2-PFHxS | 1435 | 1.68 | 100.00 | 98.24 µg/L | 98.24 |
| 13C4-PFHpA | 7919 | 1.70 | 100.00 | 100.94 µg/L | 100.94 |
| 13C4-PFOA | 8433 | 1.88 | 100.00 | 108.57 µg/L | 108.57 |
| 13C4-PFOS | 1918 | 1.97 | 100.00 | 112.75 µg/L | 112.75 |
| 13C5-PFNA | 8272 | 2.02 | 100.00 | 109.54 µg/L | 109.54 |
| 13C2-PFDA | 6898 | 2.14 | 100.00 | 111.75 µg/L | 111.75 |
| 13C2-PFUnA | 7762 | 2.23 | 100.00 | 97.32 µg/L | 97.32 |
| 13C2-PFDoA | 9354 | 2.32 | 100.00 | 92.51 µg/L | 92.51 |
| 13C2-PFTeDA | 10191 | 2.47 | 100.00 | 95.52 µg/L | 95.52 |
| 13C6-PFHxA | 21178 | 1.44 | 100.00 | 2.25 µg/L | 93.86 |
| 13C9-PFDA | 25614 | 2.13 | 100.00 | 2.26 µg/L | 94.36 |



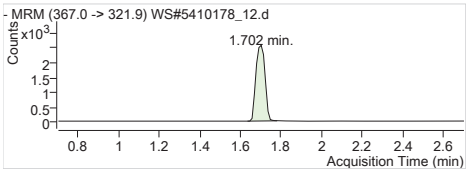



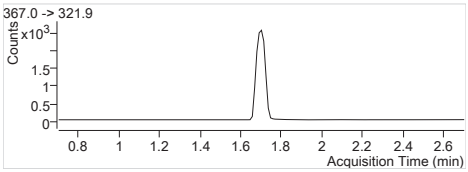

| | |
|---|---|
| **MPFHxA** | Internal Standard |
| RT (Exp. RT): | 1.445 (1.445) |
| Concentration: | 1 µg/L |
| Sample type: | QC |



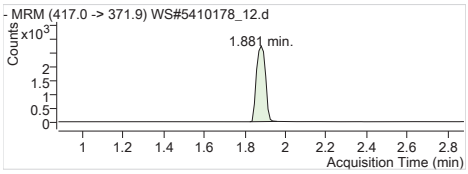



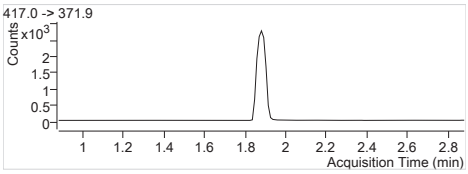

**MPFHxS** Internal Standard
RT (Exp. RT): 1.679 (1.668)
Concentration: 1 µg/L
Sample type: QC



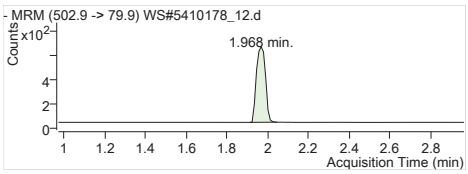



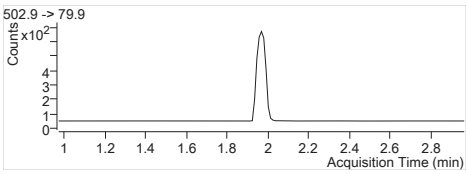

**MPFHpA** Internal Standard
RT (Exp. RT): 1.702 (1.702)
Concentration: 1 µg/L
Sample type: QC



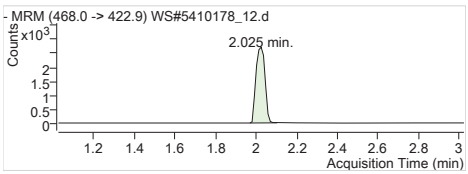



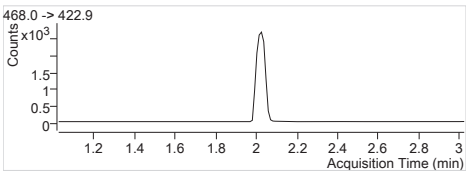

**MPFOA** Internal Standard
RT (Exp. RT): 1.881 (1.881)
Concentration: 1 µg/L
Sample type: QC



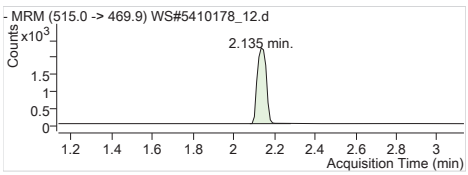



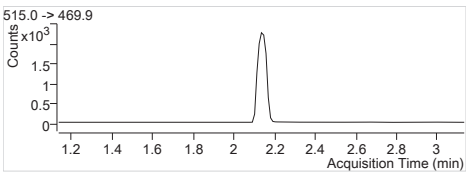

**MPFOS** Internal Standard
RT (Exp. RT): 1.968 (1.968)
Concentration: 1 µg/L
Sample type: QC



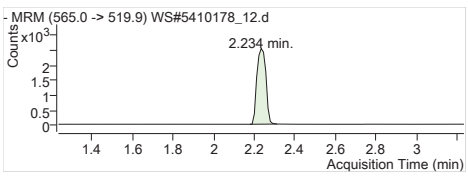



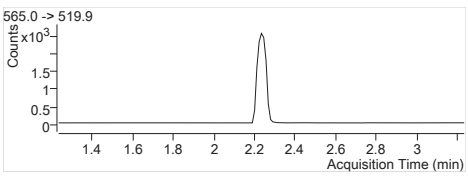

**MPFNA** Internal Standard
RT (Exp. RT): 2.025 (2.025)
Concentration: 1 µg/L
Sample type: QC



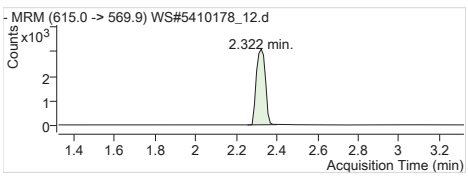



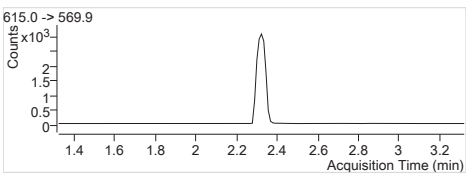

**MPFDA** Internal Standard
RT (Exp. RT): 2.135 (2.135)
Concentration: 1 µg/L
Sample type: QC



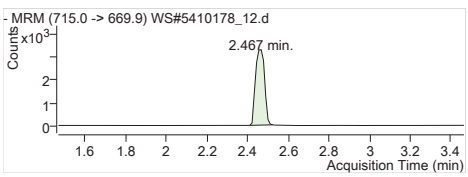



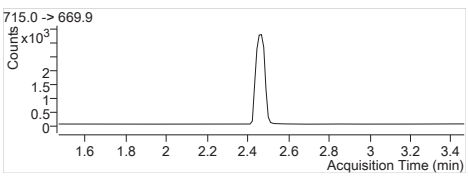

**MPFUnA** Internal Standard
RT (Exp. RT): 2.234 (2.234)
Concentration: 1 µg/L
Sample type: QC



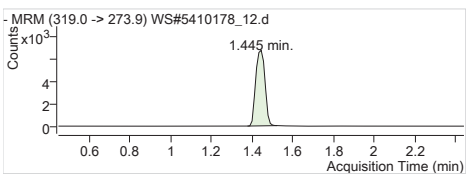



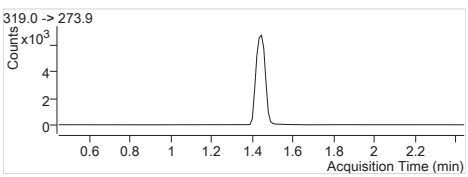

**MPFDoA** Internal Standard
RT (Exp. RT): 2.322 (2.322)
Concentration: 1 µg/L
Sample type: QC



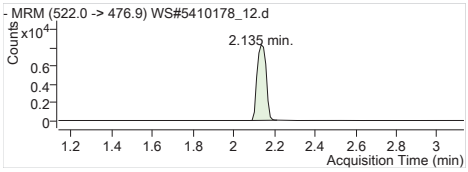



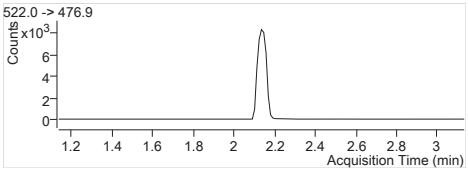

**MPFTeDA** Internal Standard
RT (Exp. RT): 2.467 (2.467)
Concentration: 1 µg/L
Sample type: QC



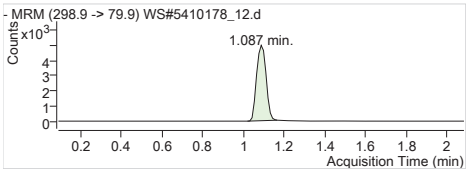



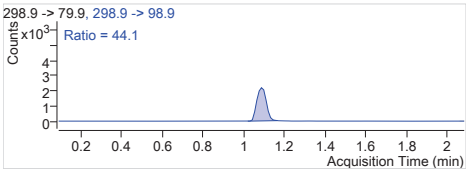

**13C6-PFHxA IS** Internal Standard
RT (Exp. RT): 1.445 (1.445)
Concentration: 1 µg/L
Sample type: QC



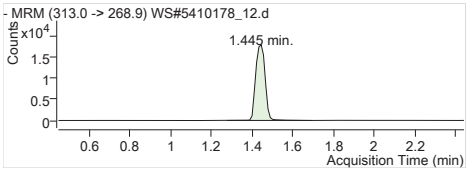



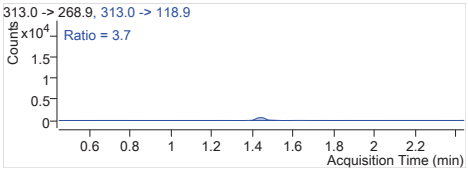

**13C9-PFDA IS** Internal Standard
RT (Exp. RT): 2.135 (2.135)
Concentration: 1 µg/L
Sample type: QC



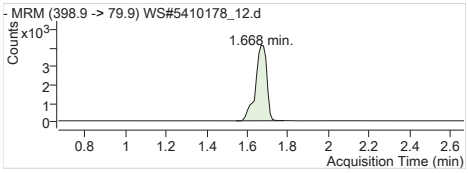



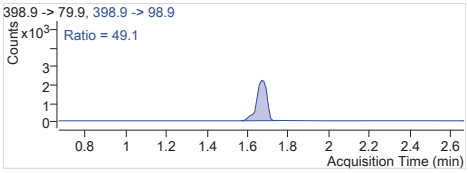

**PFBS 1** 298.9 -> 79.9
RT (Exp. RT): 1.087 (1.087)
Calc. conc. 0.57 µg/L
Area ratio: 11.14843
Sample type: QC



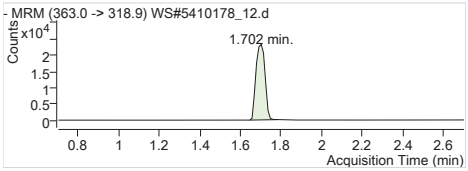



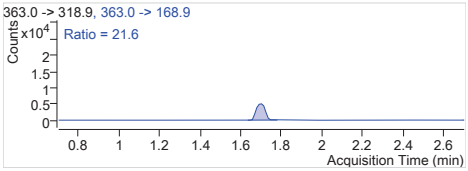

**PFHxA 1** 313.0 -> 268.9
RT (Exp. RT): 1.445 (1.445)
Calc. conc. 0.51 µg/L
Area ratio: 8.57466
Sample type: QC



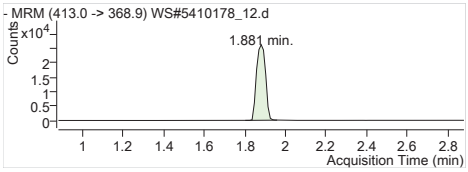



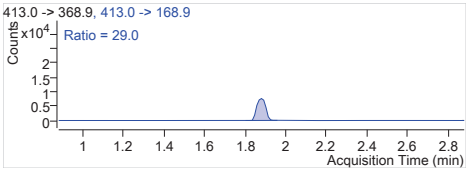

**PFHxS 1** 398.9 -> 79.9
RT (Exp. RT): 1.668 (1.668)
Calc. conc. 0.57 µg/L
Area ratio: 11.09686
Sample type: QC



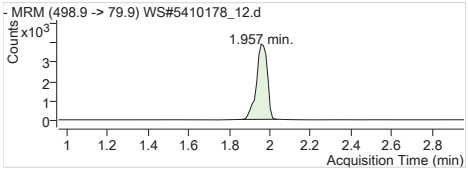



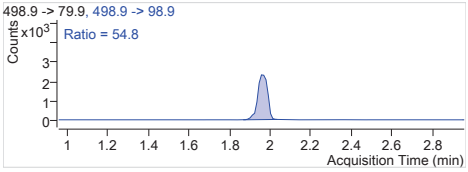

**PFHpA 1** 363.0 -> 318.9
RT (Exp. RT): 1.702 (1.702)
Calc. conc. 0.53 µg/L
Area ratio: 9.11933
Sample type: QC



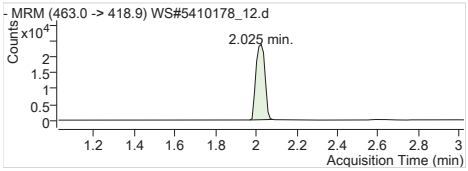



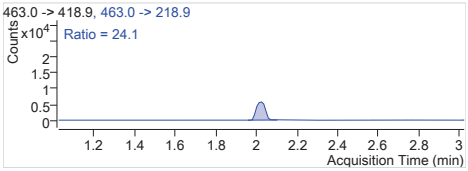

**PFOA 1** 413.0 -> 368.9
RT (Exp. RT): 1.881 (1.881)
Calc. conc. 0.51 µg/L
Area ratio: 9.59172
Sample type: QC



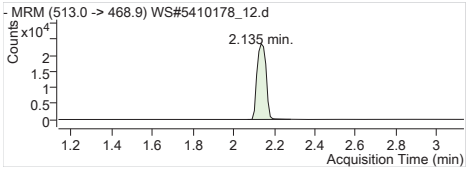



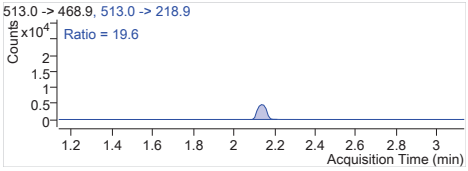

**PFOS 1** 498.9 -> 79.9
RT (Exp. RT): 1.957 (1.957)
Calc. conc. 0.46 µg/L
Area ratio: 7.50417
Sample type: QC



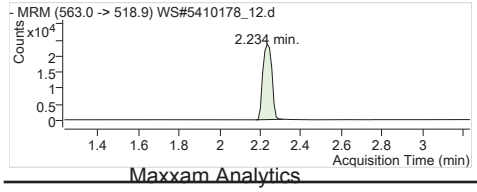



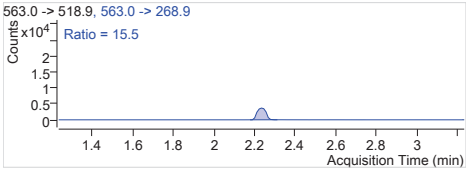

**PFNA 1** 463.0 -> 418.9
RT (Exp. RT): 2.025 (2.025)
Calc. conc. 0.52 µg/L
Area ratio: 8.88032
Sample type: QC



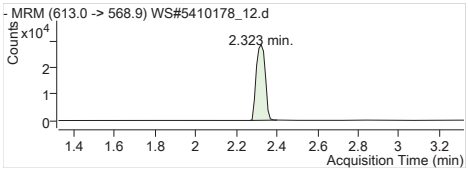



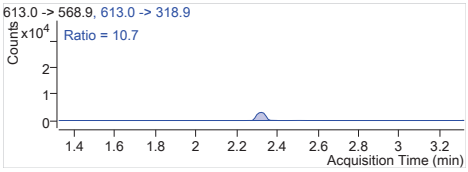

**PFDA 1** 513.0 -> 468.9
RT (Exp. RT): 2.135 (2.135)
Calc. conc. 0.48 µg/L
Area ratio: 10.49243
Sample type: QC



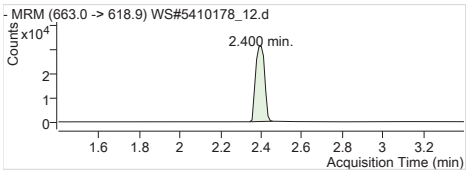



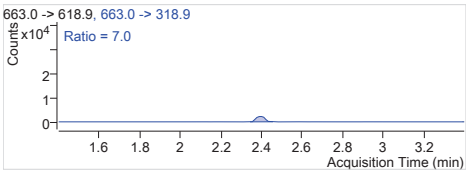

**PFUnA 1** 563.0 -> 518.9
RT (Exp. RT): 2.234 (2.234)
Calc. conc. 0.50 µg/L
Area ratio: 9.37477
Sample type: QC



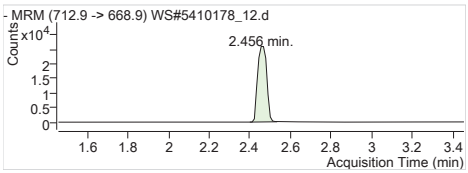



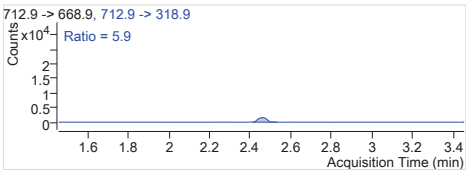

**PFDoA 1** 613.0 -> 568.9
RT (Exp. RT): 2.323 (2.323)
Calc. conc. 0.52 µg/L
Area ratio: 9.35033
Sample type: QC



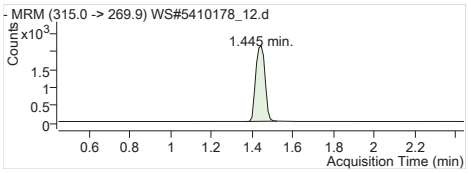



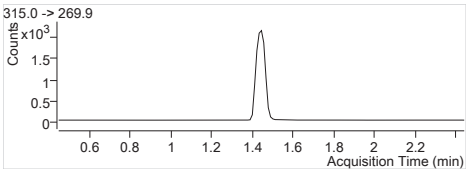

**PFTrDA 1** 663.0 -> 618.9
RT (Exp. RT): 2.400 (2.400)
Calc. conc. 0.51 µg/L
Area ratio: 9.64861
Sample type: QC



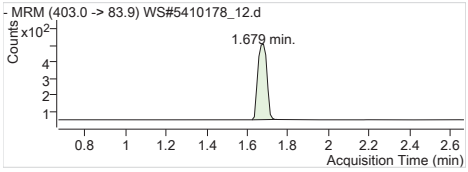



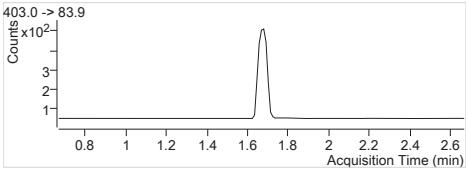

**PFTeDA 1** 712.9 -> 668.9
RT (Exp. RT): 2.456 (2.456)
Calc. conc. 0.51 µg/L
Area ratio: 8.00863
Sample type: QC



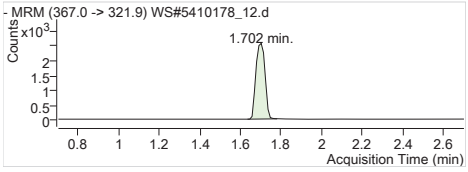



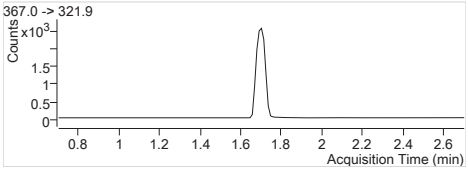

**13C2-PFHxA** 315.0 -> 269.9
RT (Exp. RT): 1.445 (1.445)
Calc. conc. 107.10 µg/L
Area ratio: 0.31684
Sample type: QC



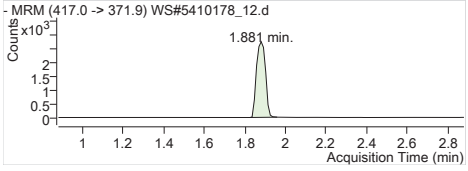



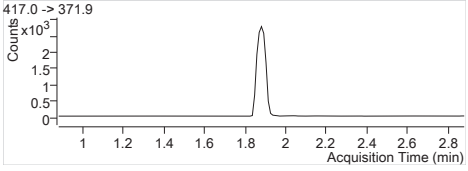

**18O2-PFHxS** 403.0 -> 83.9
RT (Exp. RT): 1.679 (1.668)
Calc. conc. 98.24 µg/L
Area ratio: 0.06776
Sample type: QC



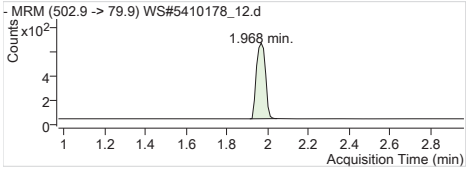



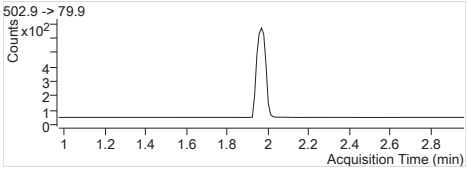

**13C4-PFHpA** 367.0 -> 321.9
RT (Exp. RT): 1.702 (1.702)
Calc. conc. 100.94 µg/L
Area ratio: 0.37393
Sample type: QC



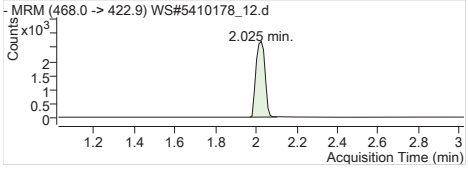



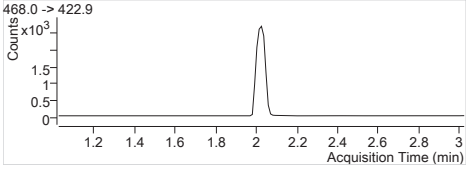

**13C4-PFOA** 417.0 -> 371.9
RT (Exp. RT): 1.881 (1.881)
Calc. conc. 108.57 µg/L
Area ratio: 0.39820
Sample type: QC



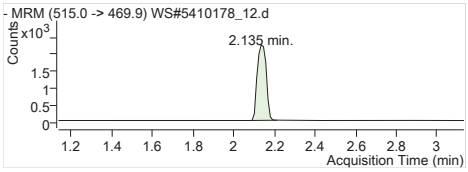



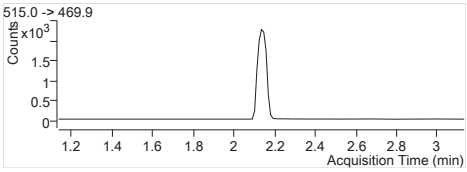

**13C4-PFOS** 502.9 -> 79.9
RT (Exp. RT): 1.968 (1.968)
Calc. conc. 112.75 µg/L
Area ratio: 0.09057
Sample type: QC



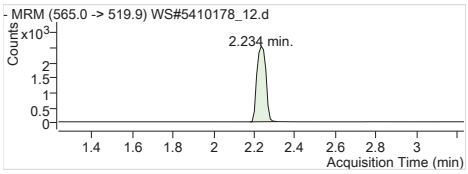



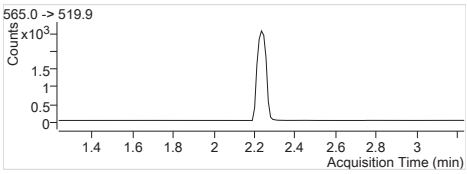

**13C5-PFNA** 468.0 -> 422.9
RT (Exp. RT): 2.025 (2.025)
Calc. conc. 109.54 µg/L
Area ratio: 0.39059
Sample type: QC



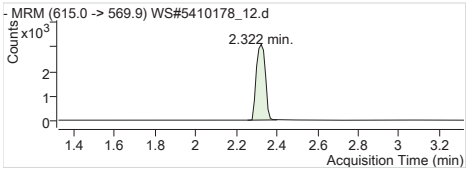



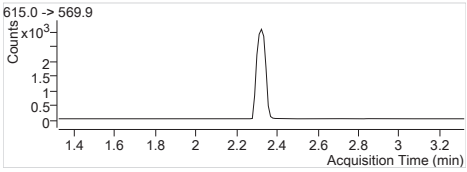

**13C2-PFDA** 515.0 -> 469.9
RT (Exp. RT): 2.135 (2.135)
Calc. conc. 111.75 µg/L
Area ratio: 0.26931
Sample type: QC



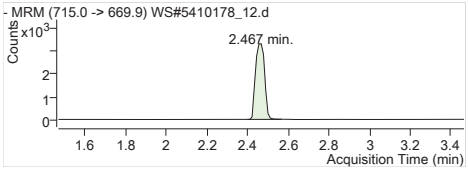



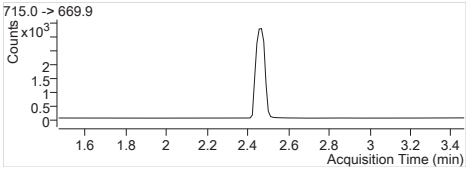

**13C2-PFUnA** 565.0 -> 519.9
RT (Exp. RT): 2.234 (2.234)
Calc. conc. 97.32 µg/L
Area ratio: 0.30304
Sample type: QC



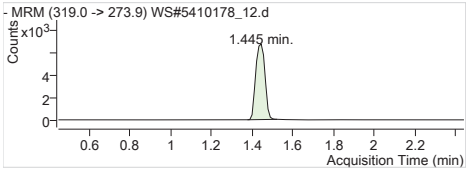



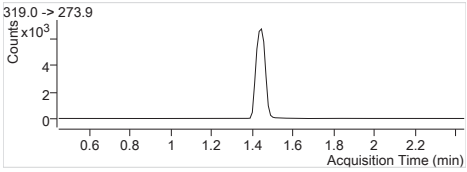

**13C2-PFDoA** 615.0 -> 569.9
RT (Exp. RT): 2.322 (2.322)
Calc. conc. 92.51 µg/L
Area ratio: 0.36519
Sample type: QC



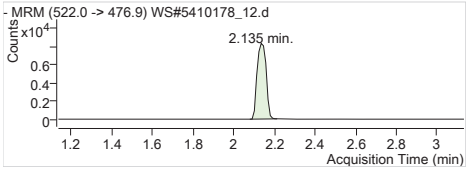



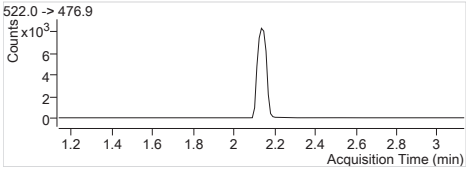

**13C2-PFTeDA** 715.0 -> 669.9
RT (Exp. RT): 2.467 (2.467)
Calc. conc. 95.52 µg/L
Area ratio: 0.39787
Sample type: QC




**13C6-PFHxA** 319.0 -> 273.9
RT (Exp. RT): 1.445 (1.445)
Calc. conc. 2.25 µg/L
Area ratio: 0
Sample type: QC



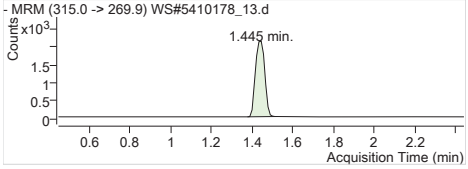

**13C9-PFDA** 522.0 -> 476.9
RT (Exp. RT): 2.135 (2.135)
Calc. conc. 2.26 µg/L
Area ratio: 0
Sample type: QC

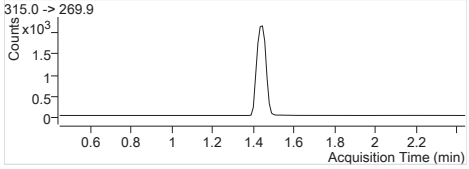
**Batch Path** T:\lcms4\PFC\20180223\WS#5410178\QuantResults\PFC_Water_Low_180223_WS#5410178_EToxics

| | | | |
|---|---|---|---|
| **Sample Name** | **5410178:SPIKE:D1** | **Instrument** | LCMS04 |
| **Data File** | WS#5410178_13.d | **Operator** | |
| **Sample Type** | QC | **Dilution** | 0.024 |
| **Acq. Method** | PFC_Water_Low.m | **Position** | P1-B3 |
| **Acq. Date** | 2018/02/23 5:33:47 PM | **Injection Volume** | Per Method |
| **Sample Annotation** | - | | |

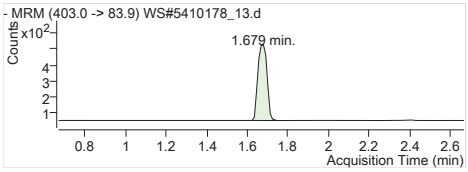
| ISTD Compounds | Response | RT | Target conc. | | |
|---|---|---|---|---|---|
| MPFHxA | 6744 | 1.44 | 1 µg/L | | |
| MPFHxS | 1503 | 1.68 | 1 µg/L | | |
| MPFHpA | 8233 | 1.70 | 1 µg/L | | |
| MPFOA | 8600 | 1.88 | 1 µg/L | | |
| MPFOS | 1784 | 1.97 | 1 µg/L | | |
| MPFNA | 8482 | 2.02 | 1 µg/L | | |
| MPFDA | 6316 | 2.14 | 1 µg/L | | |
| MPFUnA | 8006 | 2.23 | 1 µg/L | | |
| MPFDoA | 10032 | 2.32 | 1 µg/L | | |
| MPFTeDA | 10409 | 2.47 | 1 µg/L | | |
| 13C6-PFHxA IS | 23363 | 1.44 | 1 µg/L | | |
| 13C9-PFDA IS | 28328 | 2.13 | 1 µg/L | | |

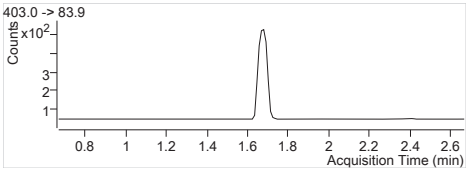
| Compound | Response | RT | Target Conc. | Calc. Conc. | Accuracy |
|---|---|---|---|---|---|
| PFBS 1 | 16116 | 1.09 | 20.80 | 0.55 µg/L | 110.73 |
| PFHxA 1 | 57397 | 1.45 | 20.80 | 0.51 µg/L | 101.27 |
| PFHxS 1 | 14955 | 1.67 | 20.80 | 0.51 µg/L | 102.35 |
| PFHpA 1 | 72464 | 1.70 | 20.80 | 0.51 µg/L | 101.77 |
| PFOA 1 | 78004 | 1.88 | 20.80 | 0.48 µg/L | 95.95 |
| PFOS 1 | 13721 | 1.96 | 20.80 | 0.48 µg/L | 95.42 |
| PFNA 1 | 73202 | 2.03 | 20.80 | 0.50 µg/L | 100.68 |
| PFDA 1 | 72684 | 2.14 | 20.80 | 0.53 µg/L | 106.12 |
| PFUnA 1 | 76026 | 2.23 | 20.80 | 0.51 µg/L | 101.99 |
| PFDoA 1 | 88845 | 2.32 | 20.80 | 0.50 µg/L | 99.17 |
| PFTrDA 1 | 95803 | 2.40 | 20.80 | 0.49 µg/L | 98.28 |
| PFTeDA 1 | 80438 | 2.47 | 20.80 | 0.49 µg/L | 98.22 |
| 13C2-PFHxA | 6744 | 1.44 | 100.00 | 97.58 µg/L | 97.58 |
| 18O2-PFHxS | 1503 | 1.68 | 100.00 | 93.27 µg/L | 93.27 |
| 13C4-PFHpA | 8233 | 1.70 | 100.00 | 95.13 µg/L | 95.13 |
| 13C4-PFOA | 8600 | 1.88 | 100.00 | 100.37 µg/L | 100.37 |
| 13C4-PFOS | 1784 | 1.97 | 100.00 | 95.06 µg/L | 95.06 |
| 13C5-PFNA | 8437 | 2.02 | 100.00 | 101.28 µg/L | 101.28 |
| 13C2-PFDA | 6236 | 2.14 | 100.00 | 91.34 µg/L | 91.34 |
| 13C2-PFUnA | 8006 | 2.23 | 100.00 | 90.76 µg/L | 90.76 |
| 13C2-PFDoA | 10032 | 2.32 | 100.00 | 89.71 µg/L | 89.71 |
| 13C2-PFTeDA | 10492 | 2.47 | 100.00 | 88.91 µg/L | 88.91 |
| 13C6-PFHxA | 23363 | 1.44 | 100.00 | 2.49 µg/L | 103.54 |
| 13C9-PFDA | 28328 | 2.13 | 100.00 | 2.50 µg/L | 104.36 |



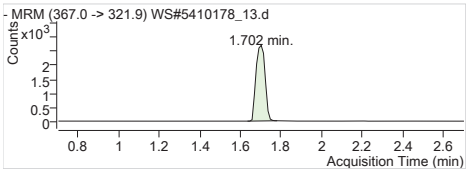



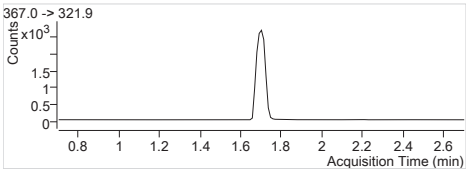

| | |
|---|---|
| **MPFHxA** | Internal Standard |
| RT (Exp. RT): | 1.445 (1.445) |
| Concentration: | 1 µg/L |
| Sample type: | QC |



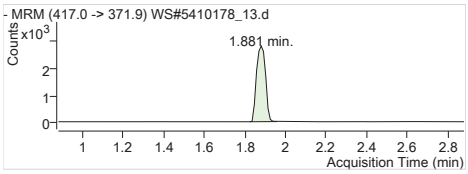



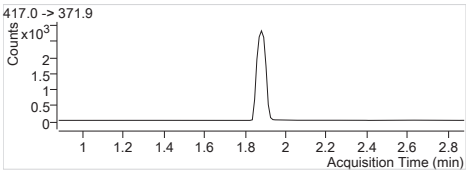

**MPFHxS** Internal Standard
RT (Exp. RT): 1.679 (1.668)
Concentration: 1 µg/L
Sample type: QC



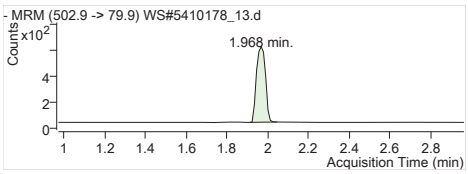



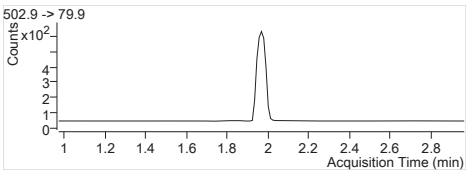

**MPFHpA** Internal Standard
RT (Exp. RT): 1.702 (1.702)
Concentration: 1 µg/L
Sample type: QC



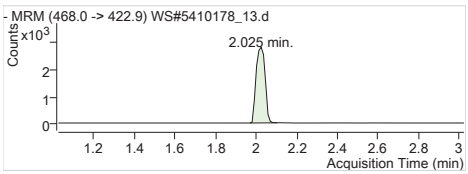



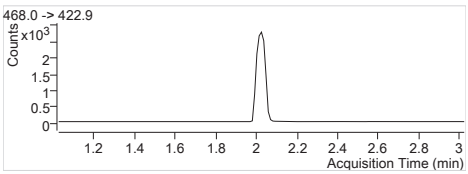

**MPFOA** Internal Standard
RT (Exp. RT): 1.881 (1.881)
Concentration: 1 µg/L
Sample type: QC



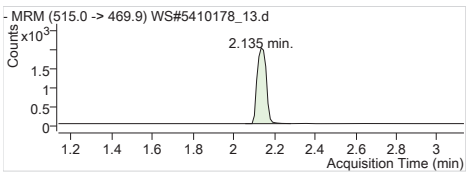



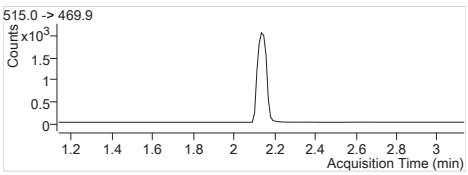

**MPFOS** Internal Standard
RT (Exp. RT): 1.968 (1.968)
Concentration: 1 µg/L
Sample type: QC



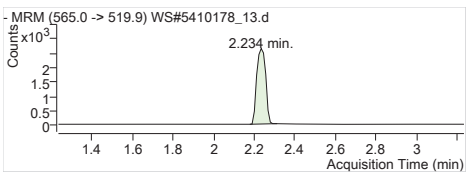



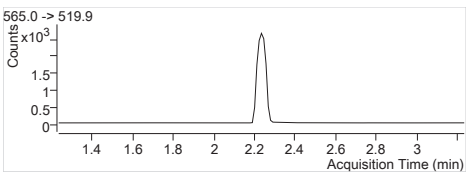

**MPFNA** Internal Standard
RT (Exp. RT): 2.025 (2.025)
Concentration: 1 µg/L
Sample type: QC



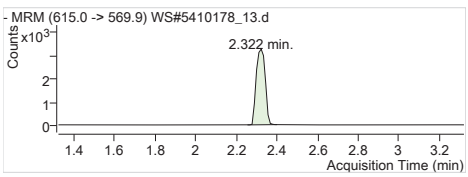



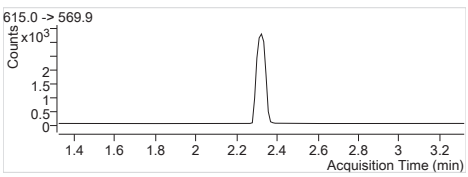

**MPFDA** Internal Standard
RT (Exp. RT): 2.135 (2.135)
Concentration: 1 µg/L
Sample type: QC



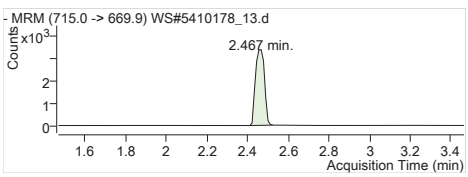



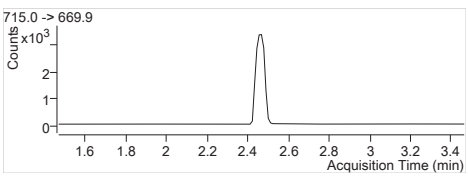

**MPFUnA** Internal Standard
RT (Exp. RT): 2.234 (2.234)
Concentration: 1 µg/L
Sample type: QC



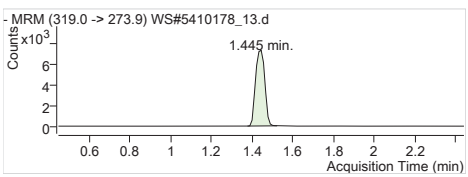



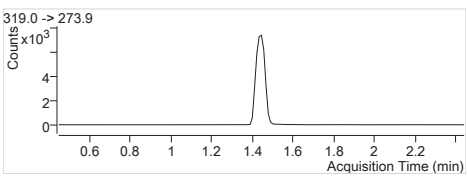

**MPFDoA** Internal Standard
RT (Exp. RT): 2.322 (2.322)
Concentration: 1 µg/L
Sample type: QC



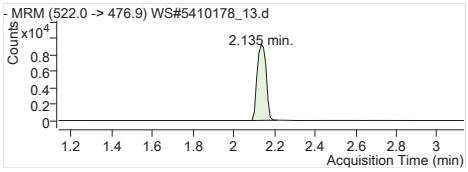



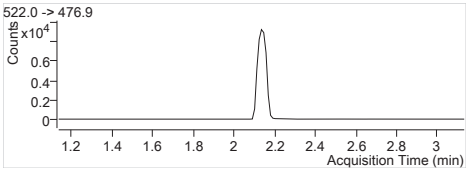

**MPFTeDA** Internal Standard
RT (Exp. RT): 2.467 (2.467)
Concentration: 1 µg/L
Sample type: QC



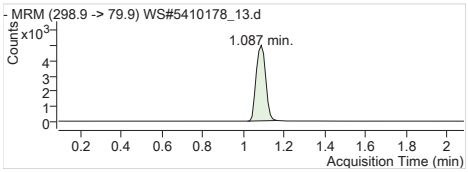



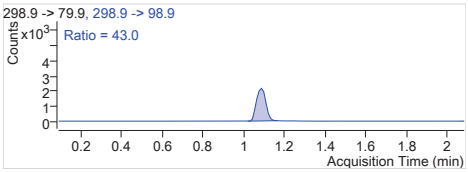

**13C6-PFHxA IS** Internal Standard
RT (Exp. RT): 1.445 (1.445)
Concentration: 1 µg/L
Sample type: QC



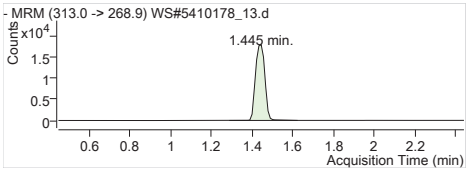



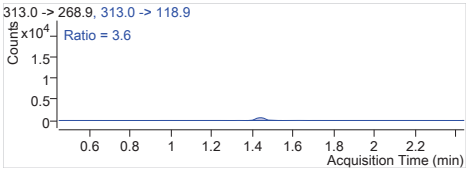

**13C9-PFDA IS** Internal Standard
RT (Exp. RT): 2.135 (2.135)
Concentration: 1 µg/L
Sample type: QC



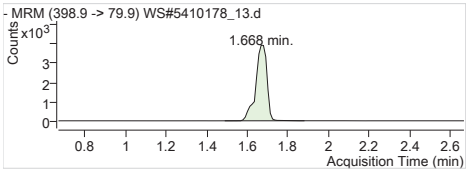



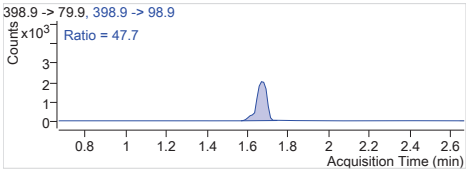

**PFBS 1** 298.9 -> 79.9
RT (Exp. RT): 1.087 (1.087)
Calc. conc. 0.55 µg/L
Area ratio: 10.72255
Sample type: QC



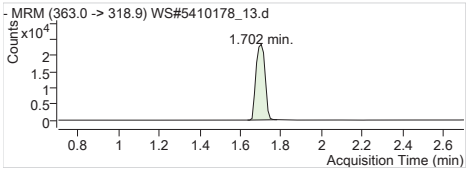



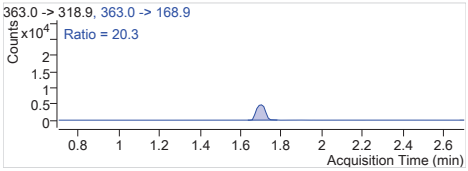

**PFHxA 1** 313.0 -> 268.9
RT (Exp. RT): 1.445 (1.445)
Calc. conc. 0.51 µg/L
Area ratio: 8.51082
Sample type: QC



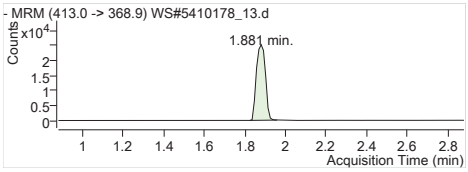



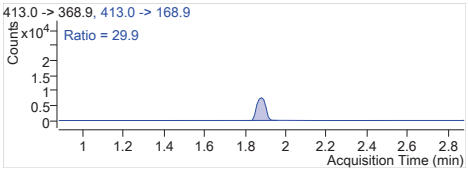

**PFHxS 1** 398.9 -> 79.9
RT (Exp. RT): 1.668 (1.668)
Calc. conc. 0.51 µg/L
Area ratio: 9.95010
Sample type: QC



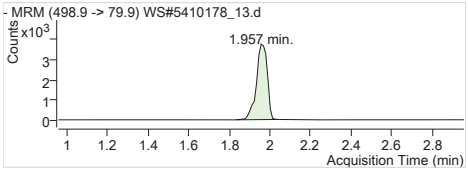



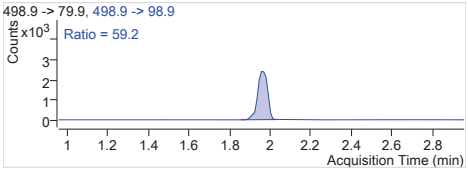

**PFHpA 1** 363.0 -> 318.9
RT (Exp. RT): 1.702 (1.702)
Calc. conc. 0.51 µg/L
Area ratio: 8.80165
Sample type: QC



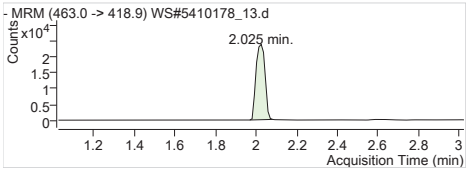



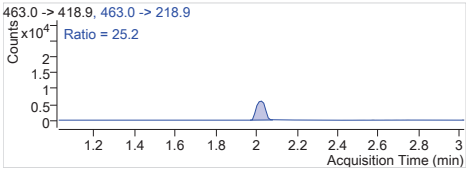

**PFOA 1** 413.0 -> 368.9
RT (Exp. RT): 1.881 (1.881)
Calc. conc. 0.48 µg/L
Area ratio: 9.07023
Sample type: QC



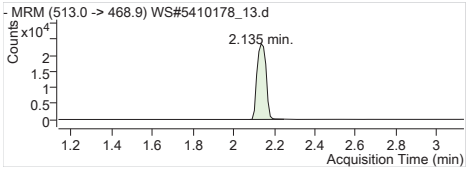



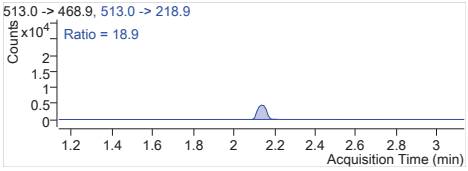

**PFOS 1** 498.9 -> 79.9
RT (Exp. RT): 1.957 (1.957)
Calc. conc. 0.48 µg/L
Area ratio: 7.69114
Sample type: QC



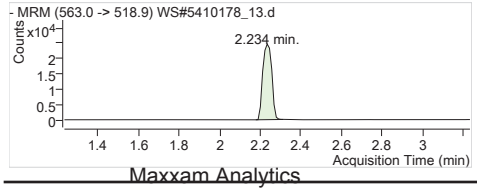



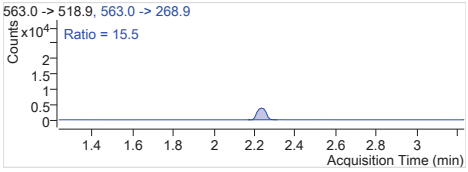

**PFNA 1** 463.0 -> 418.9
RT (Exp. RT): 2.025 (2.025)
Calc. conc. 0.50 µg/L
Area ratio: 8.63028
Sample type: QC



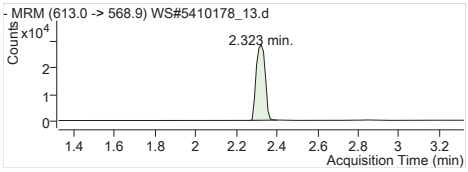



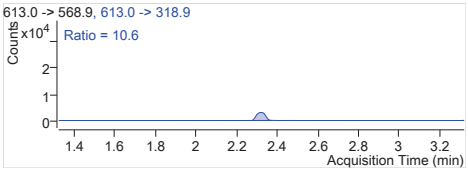

**PFDA 1** 513.0 -> 468.9
RT (Exp. RT): 2.135 (2.135)
Calc. conc. 0.53 µg/L
Area ratio: 11.50792
Sample type: QC



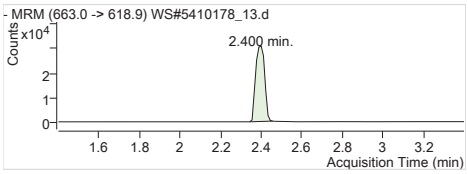



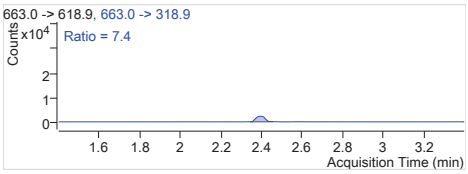

**PFUnA 1** 563.0 -> 518.9
RT (Exp. RT): 2.234 (2.234)
Calc. conc. 0.51 µg/L
Area ratio: 9.49613
Sample type: QC



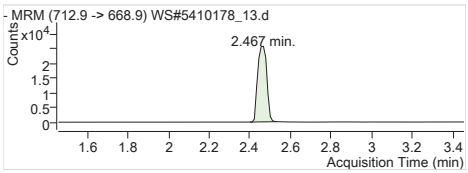



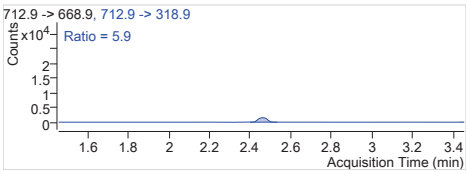

**PFDoA 1** 613.0 -> 568.9
RT (Exp. RT): 2.323 (2.323)
Calc. conc. 0.50 µg/L
Area ratio: 8.85616
Sample type: QC



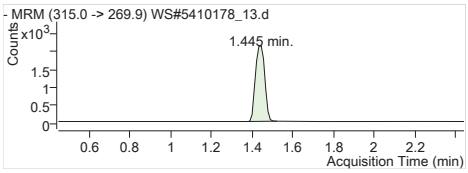



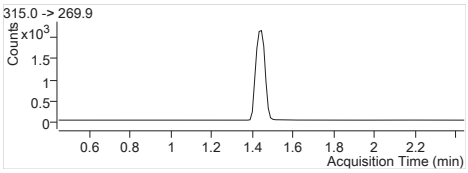

**PFTrDA 1** 663.0 -> 618.9
RT (Exp. RT): 2.400 (2.400)
Calc. conc. 0.49 µg/L
Area ratio: 9.20386
Sample type: QC



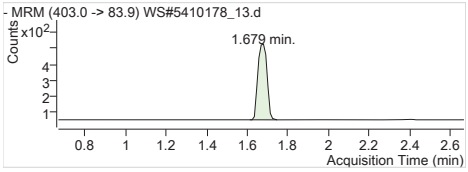



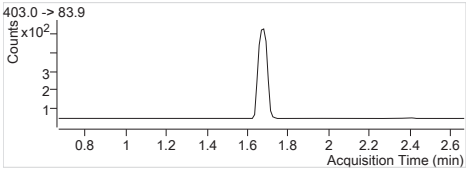

**PFTeDA 1** 712.9 -> 668.9
RT (Exp. RT): 2.467 (2.456)
Calc. conc. 0.49 µg/L
Area ratio: 7.72774
Sample type: QC



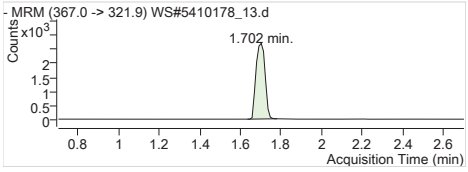



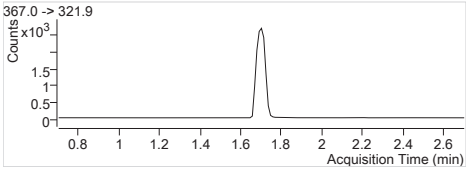

**13C2-PFHxA** 315.0 -> 269.9
RT (Exp. RT): 1.445 (1.445)
Calc. conc. 97.58 µg/L
Area ratio: 0.28866
Sample type: QC



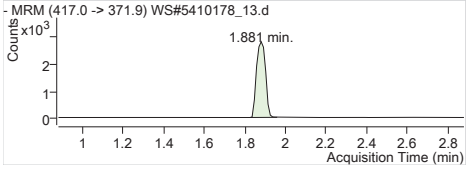



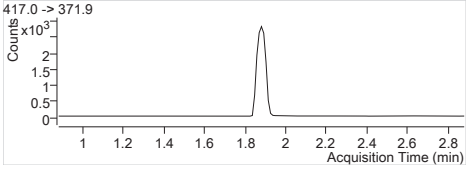

**18O2-PFHxS** 403.0 -> 83.9
RT (Exp. RT): 1.679 (1.668)
Calc. conc. 93.27 µg/L
Area ratio: 0.06433
Sample type: QC



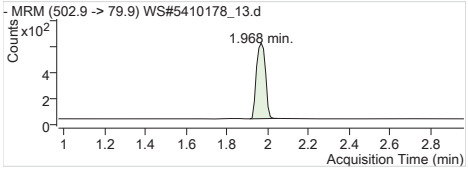



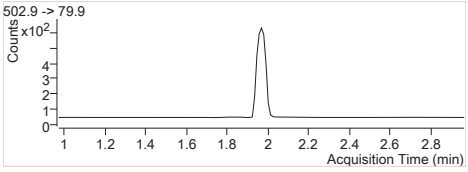

**13C4-PFHpA** 367.0 -> 321.9
RT (Exp. RT): 1.702 (1.702)
Calc. conc. 95.13 µg/L
Area ratio: 0.35239
Sample type: QC



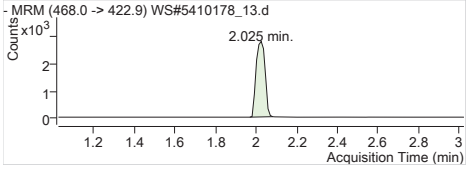



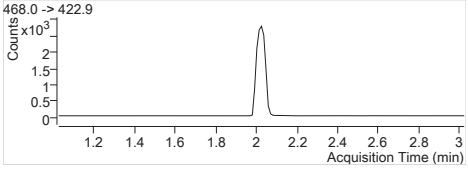

**13C4-PFOA** 417.0 -> 371.9
RT (Exp. RT): 1.881 (1.881)
Calc. conc. 100.37 µg/L
Area ratio: 0.36810
Sample type: QC



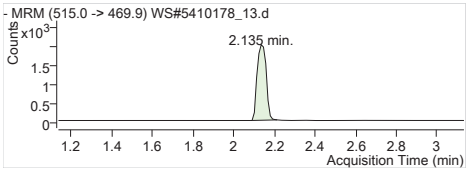



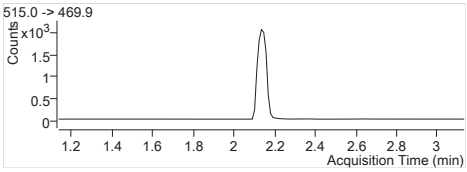

**13C4-PFOS** 502.9 -> 79.9
RT (Exp. RT): 1.968 (1.968)
Calc. conc. 95.06 µg/L
Area ratio: 0.07636
Sample type: QC



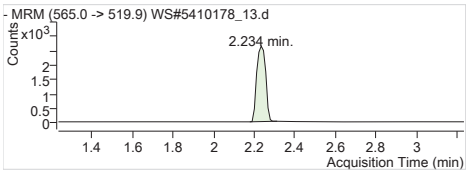



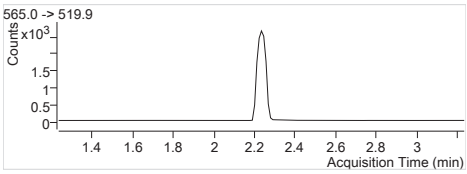

**13C5-PFNA** 468.0 -> 422.9
RT (Exp. RT): 2.025 (2.025)
Calc. conc. 101.28 µg/L
Area ratio: 0.36113
Sample type: QC



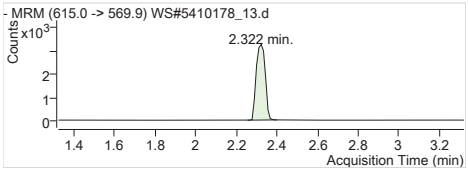



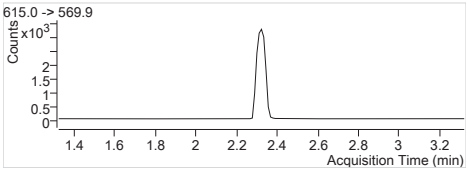

**13C2-PFDA** 515.0 -> 469.9
RT (Exp. RT): 2.135 (2.135)
Calc. conc. 91.34 µg/L
Area ratio: 0.22014
Sample type: QC



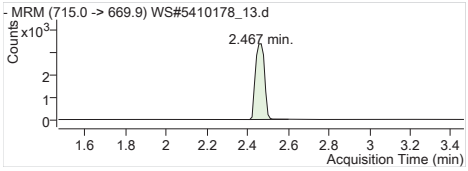



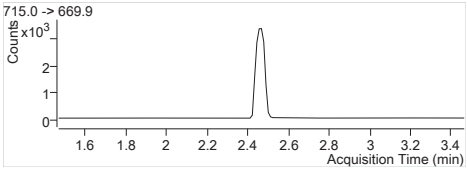

**13C2-PFUnA** 565.0 -> 519.9
RT (Exp. RT): 2.234 (2.234)
Calc. conc. 90.76 µg/L
Area ratio: 0.28262
Sample type: QC



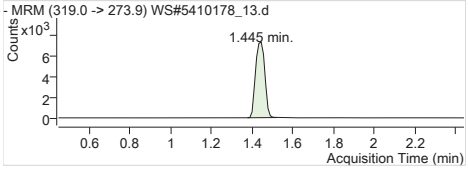



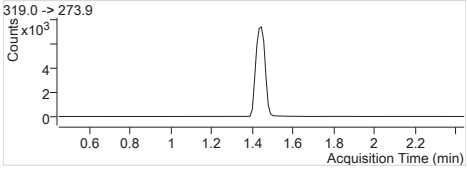

**13C2-PFDoA** 615.0 -> 569.9
RT (Exp. RT): 2.322 (2.322)
Calc. conc. 89.71 µg/L
Area ratio: 0.35414
Sample type: QC



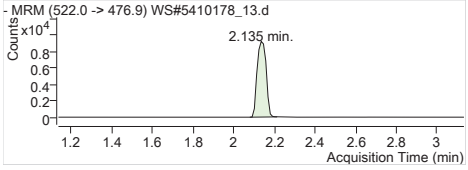



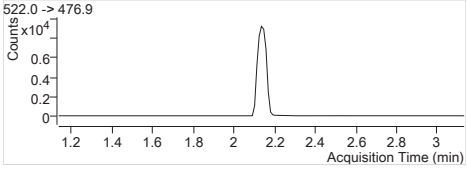

**13C2-PFTeDA** 715.0 -> 669.9
RT (Exp. RT): 2.467 (2.467)
Calc. conc. 88.91 µg/L
Area ratio: 0.37038
Sample type: QC




**13C6-PFHxA** 319.0 -> 273.9
RT (Exp. RT): 1.445 (1.445)
Calc. conc. 2.49 µg/L
Area ratio: 0
Sample type: QC



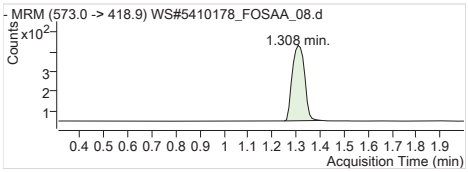

**13C9-PFDA** 522.0 -> 476.9
RT (Exp. RT): 2.135 (2.135)
Calc. conc. 2.50 µg/L
Area ratio: 0
Sample type: QC

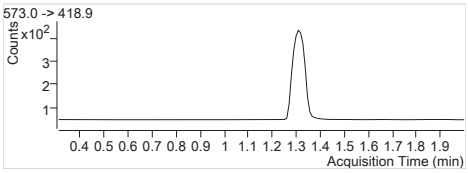
| | |
|---|---|
| **Batch Path** | T:\lcms4\PFC\20180223\WS#5410178_FOSAA\QuantResults\PFC_Water_Low_180223_WS#5410178_FOSAA_ETOxics |

| | | | |
|---|---|---|---|
| **Sample Name** | **IB** | **Instrument** | LCMS04 |
| **Data File** | WS#5410178_FOSAA_08.d | **Operator** | |
| **Sample Type** | Sample | **Dilution** | 0.024 |
| **Acq. Method** | PFC_Water_Low_FOSAA.m | **Position** | P1-A8 |
| **Acq. Date** | 2018/02/24 3:25:20 AM | **Injection Volume** | Per Method |
| **Sample Annotation** | - | | |

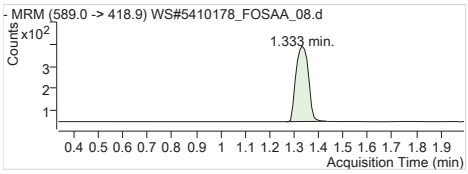
| ISTD Compounds | Response | RT | Target conc. | | |
|---|---|---|---|---|---|
| D3-MeFOSAA IS | 1364 | 1.31 | 1 µg/L | | |
| D5-EtFOSAA IS | 1213 | 1.33 | 1 µg/L | | |
| 13C9-PFDA IS | 22547 | 0.91 | 1 µg/L | | |

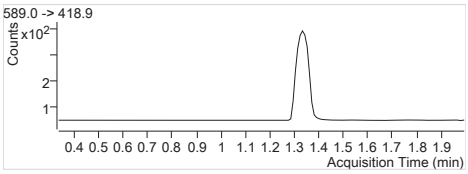
| Compound | Response | RT | Target Conc. | Calc. Conc. | Accuracy |
|---|---|---|---|---|---|
| MeFOSAA 1 | | | - | ND | - |
| EtFOSAA 1 | | | - | ND | - |
| D3-MeFOSAA | 1378 | 1.31 | - | 88.38 µg/L | - |
| D5-EtFOSAA | 1221 | 1.33 | - | 91.96 µg/L | - |
| 13C9-PFDA | 22186 | 0.91 | - | 2.65 µg/L | - |



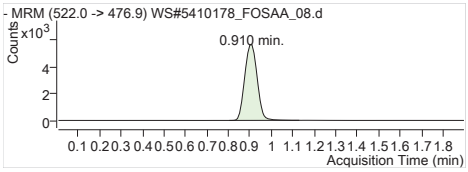



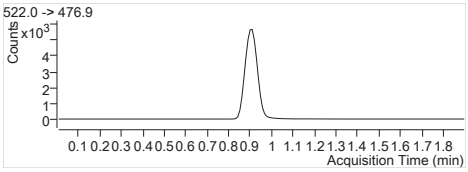

**D3-MeFOSAA IS** Internal Standard
RT (Exp. RT): 1.308 (1.308)
Concentration: 1 µg/L
Sample type: Sample



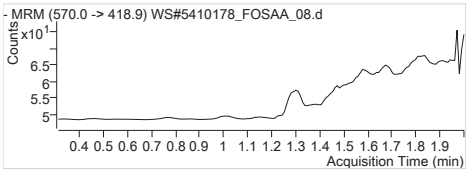



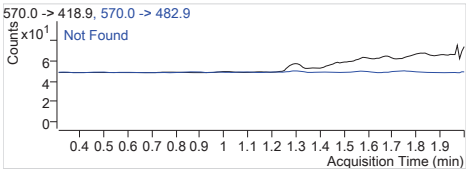

**D5-EtFOSAA IS** Internal Standard
RT (Exp. RT): 1.333 (1.333)
Concentration: 1 µg/L
Sample type: Sample



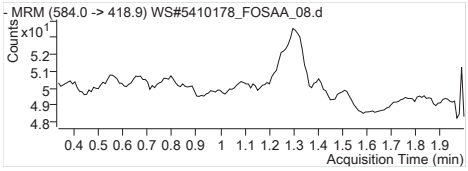



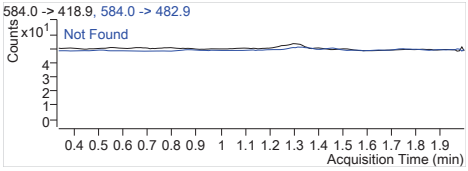

**13C9-PFDA IS** Internal Standard
RT (Exp. RT): 0.910 (0.900)
Concentration: 1 µg/L
Sample type: Sample



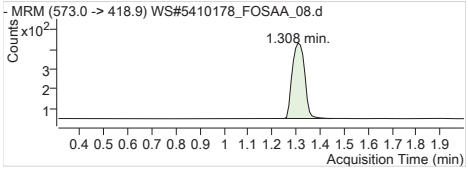



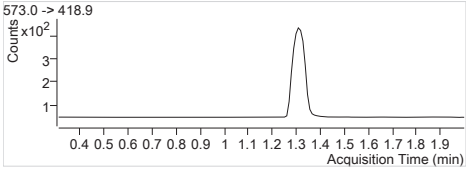

**MeFOSAA 1** 570.0 -> 418.9
RT (Exp. RT): 0.000 (1.310)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



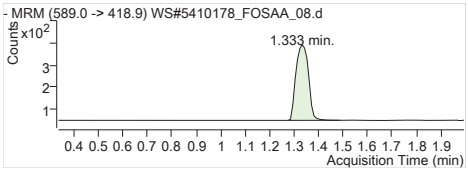



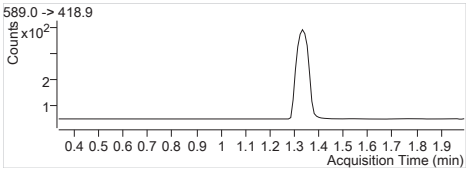

**EtFOSAA 1** 584.0 -> 418.9
RT (Exp. RT): 0.000 (1.334)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



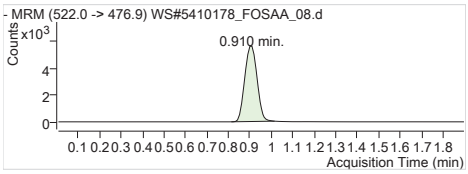



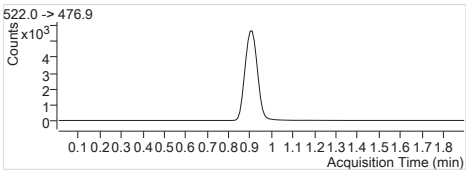

**D3-MeFOSAA** 573.0 -> 418.9
RT (Exp. RT): 1.308 (1.308)
Calc. conc. 88.38 µg/L
Area ratio: 0.06112
Sample type: Sample




| | |
|---|---|
| **D5-EtFOSAA** | 589.0 -> 418.9 |
| RT (Exp. RT): | 1.333 (1.333) |
| Calc. conc. | 91.96 µg/L |
| Area ratio: | 0.05415 |
| Sample type: | Sample |



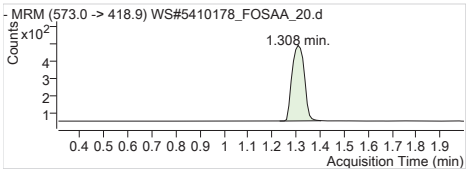

| | |
|---|---|
| **13C9-PFDA** | 522.0 -> 476.9 |
| RT (Exp. RT): | 0.910 (0.900) |
| Calc. conc. | 2.65 µg/L |
| Area ratio: | 0 |
| Sample type: | Sample |

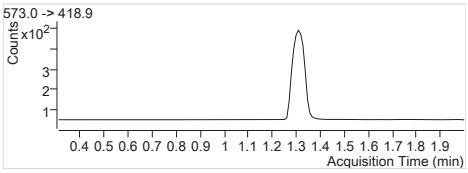
| | |
|---|---|
| **Batch Path** | T:\lcms4\PFC\20180223\WS#5410178_FOSAA\QuantResults\PFC_Water_Low_180223_WS#5410178_FOSAA_ETOxics |

| | | | |
|---|---|---|---|
| **Sample Name** | **IB** | **Instrument** | LCMS04 |
| **Data File** | WS#5410178_FOSAA_20.d | **Operator** | |
| **Sample Type** | Sample | **Dilution** | 0.024 |
| **Acq. Method** | PFC_Water_Low_FOSAA.m | **Position** | P1-A8 |
| **Acq. Date** | 2018/02/24 3:54:19 AM | **Injection Volume** | Per Method |
| **Sample Annotation** | - | | |

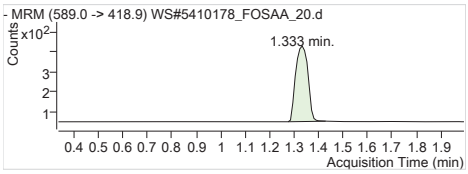
| ISTD Compounds | Response | RT | Target conc. | | |
|---|---|---|---|---|---|
| D3-MeFOSAA IS | 1573 | 1.31 | 1 µg/L | | |
| D5-EtFOSAA IS | 1327 | 1.33 | 1 µg/L | | |
| 13C9-PFDA IS | 23702 | 0.90 | 1 µg/L | | |

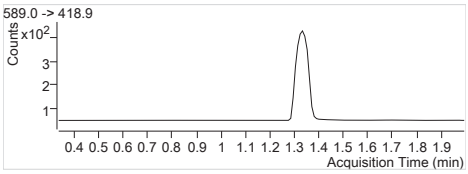
| Compound | Response | RT | Target Conc. | Calc. Conc. | Accuracy |
|---|---|---|---|---|---|
| MeFOSAA 1 | | | - | ND | - |
| EtFOSAA 1 | | | - | ND | - |
| D3-MeFOSAA | 1573 | 1.31 | - | 95.97 µg/L | - |
| D5-EtFOSAA | 1326 | 1.33 | - | 95.00 µg/L | - |
| 13C9-PFDA | 23328 | 0.90 | - | 2.79 µg/L | - |



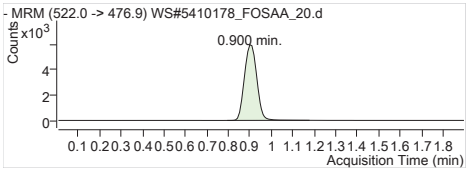



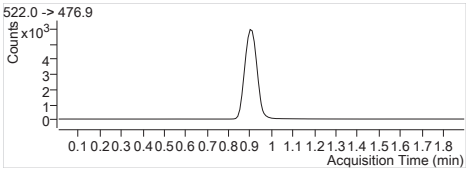

**D3-MeFOSAA IS** Internal Standard
RT (Exp. RT): 1.308 (1.308)
Concentration: 1 µg/L
Sample type: Sample



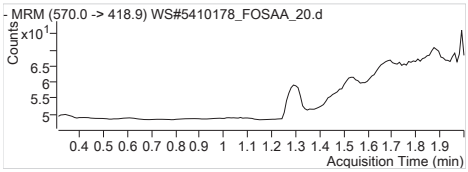



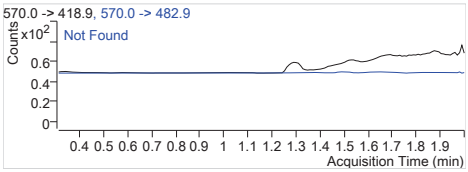

**D5-EtFOSAA IS** Internal Standard
RT (Exp. RT): 1.333 (1.333)
Concentration: 1 µg/L
Sample type: Sample



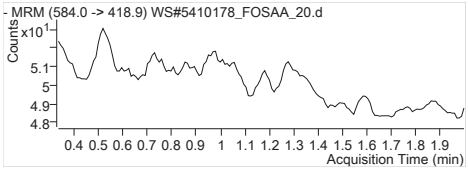



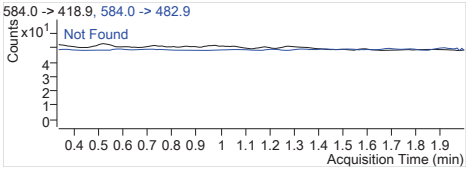

**13C9-PFDA IS** Internal Standard
RT (Exp. RT): 0.900 (0.900)
Concentration: 1 µg/L
Sample type: Sample



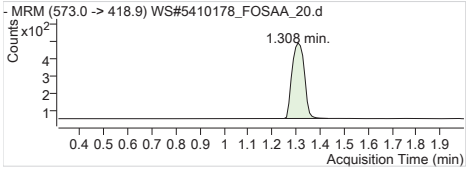



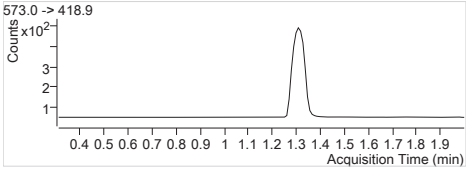

**MeFOSAA 1** 570.0 -> 418.9
RT (Exp. RT): 0.000 (1.310)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



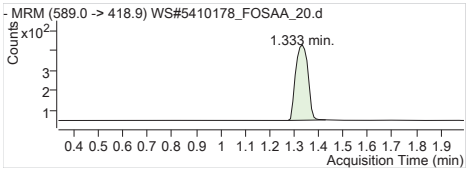



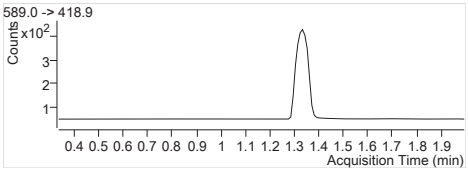

**EtFOSAA 1** 584.0 -> 418.9
RT (Exp. RT): 0.000 (1.334)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



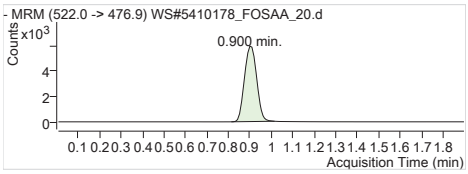



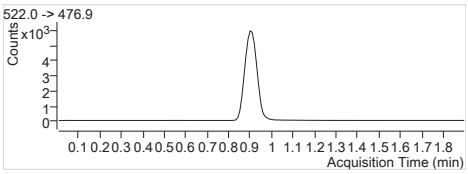

**D3-MeFOSAA** 573.0 -> 418.9
RT (Exp. RT): 1.308 (1.308)
Calc. conc. 95.97 µg/L
Area ratio: 0.06637
Sample type: Sample




| | |
|---|---|
| **D5-EtFOSAA** | 589.0 -> 418.9 |
| RT (Exp. RT): | 1.333 (1.333) |
| Calc. conc. | 95.00 µg/L |
| Area ratio: | 0.05594 |
| Sample type: | Sample |




| | |
|---|---|
| **13C9-PFDA** | 522.0 -> 476.9 |
| RT (Exp. RT): | 0.900 (0.900) |
| Calc. conc. | 2.79 µg/L |
| Area ratio: | 0 |
| Sample type: | Sample |

# Quantitation Results

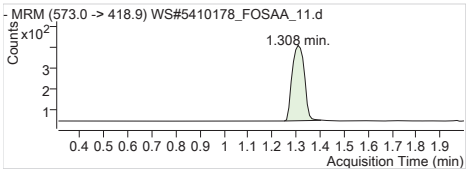
Agilent Technologies

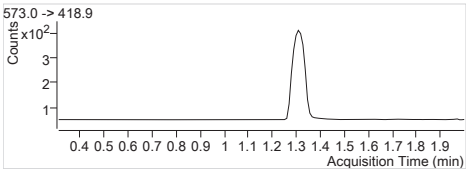
| | |
|---|---|
| **Batch Path** | T:\lcms4\PFC\20180223\WS#5410178_FOSAA\QuantResults\PFC_Water_Low_180223_WS#5410178_FOSAA_ETOxics |

| | | | |
|---|---|---|---|
| **Sample Name** | **5410178:BLANK** | **Instrument** | LCMS04 |
| **Data File** | WS#5410178_FOSAA_11.d | **Operator** | |
| **Sample Type** | Sample | **Dilution** | 0.024 |
| **Acq. Method** | PFC_Water_Low_FOSAA.m | **Position** | P1-B1 |
| **Acq. Date** | 2018/02/24 3:32:35 AM | **Injection Volume** | Per Method |
| **Sample Annotation** | - | | |

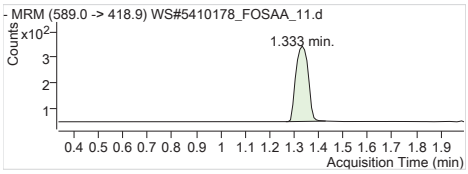
| ISTD Compounds | Response | RT | Target conc. | | |
|---|---|---|---|---|---|
| D3-MeFOSAA IS | 1278 | 1.31 | 1 µg/L | | |
| D5-EtFOSAA IS | 1032 | 1.33 | 1 µg/L | | |
| 13C9-PFDA IS | 21843 | 0.90 | 1 µg/L | | |

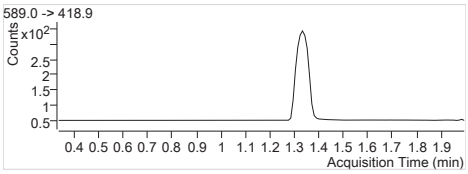
| Compound | Response | RT | Target Conc. | Calc. Conc. | Accuracy |
|---|---|---|---|---|---|
| MeFOSAA 1 | | | - | ND | - |
| EtFOSAA 1 | | | - | ND | - |
| D3-MeFOSAA | 1295 | 1.31 | - | 85.73 µg/L | - |
| D5-EtFOSAA | 1044 | 1.33 | - | 81.16 µg/L | - |
| 13C9-PFDA | 21974 | 0.90 | - | 2.63 µg/L | - |



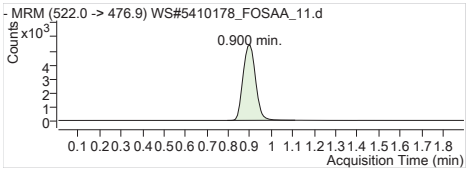



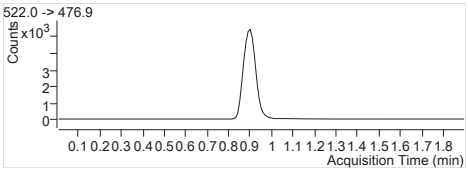

**D3-MeFOSAA IS** Internal Standard
RT (Exp. RT): 1.308 (1.308)
Concentration: 1 µg/L
Sample type: Sample



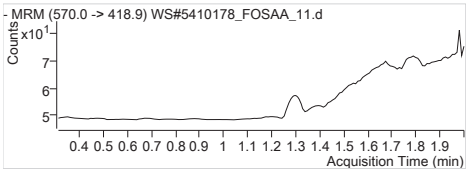



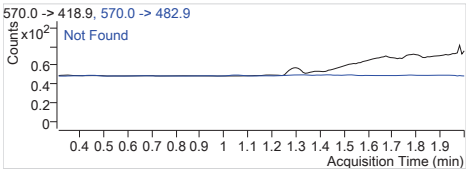

**D5-EtFOSAA IS** Internal Standard
RT (Exp. RT): 1.333 (1.333)
Concentration: 1 µg/L
Sample type: Sample



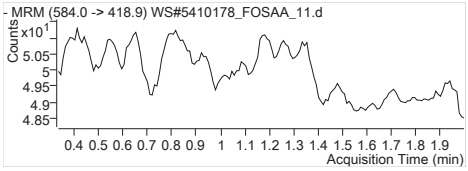



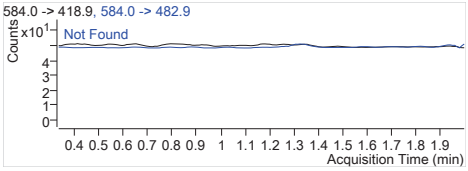

**13C9-PFDA IS** Internal Standard
RT (Exp. RT): 0.900 (0.900)
Concentration: 1 µg/L
Sample type: Sample



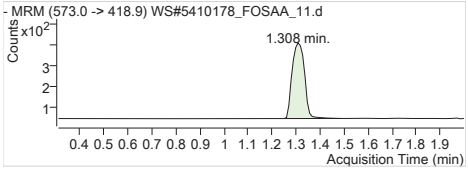



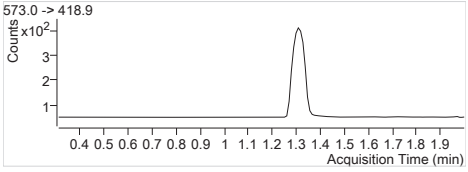

**MeFOSAA 1** 570.0 -> 418.9
RT (Exp. RT): 0.000 (1.310)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



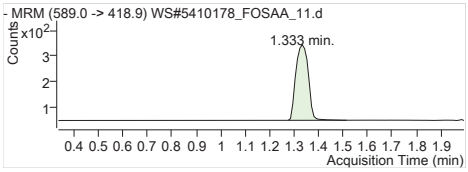



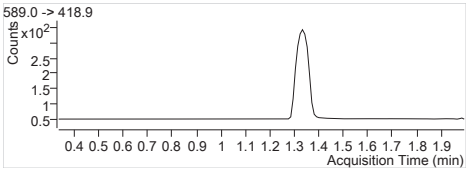

**EtFOSAA 1** 584.0 -> 418.9
RT (Exp. RT): 0.000 (1.334)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



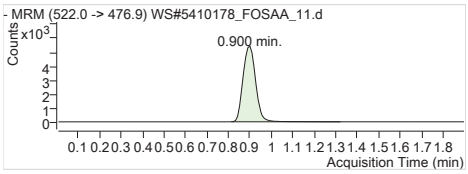



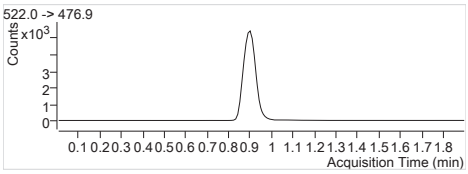

**D3-MeFOSAA** 573.0 -> 418.9
RT (Exp. RT): 1.308 (1.308)
Calc. conc. 85.73 µg/L
Area ratio: 0.05929
Sample type: Sample




| | |
|---|---|
| **D5-EtFOSAA** | 589.0 -> 418.9 |
| RT (Exp. RT): | 1.333 (1.333) |
| Calc. conc. | 81.16 µg/L |
| Area ratio: | 0.04780 |
| Sample type: | Sample |




| | |
|---|---|
| **13C9-PFDA** | 522.0 -> 476.9 |
| RT (Exp. RT): | 0.900 (0.900) |
| Calc. conc. | 2.63 µg/L |
| Area ratio: | 0 |
| Sample type: | Sample |

# Quantitation Results

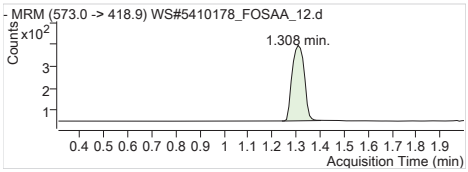
Agilent Technologies

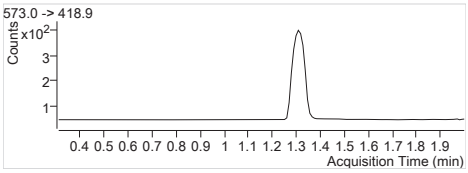
| | |
|---|---|
| **Batch Path** | T:\lcms4\PFC\20180223\WS#5410178_FOSAA\QuantResults\PFC_Water_Low_180223_WS#5410178_FOSAA_ETOxics |

| | | | |
|---|---|---|---|
| **Sample Name** | **5410178:SPIKE** | **Instrument** | LCMS04 |
| **Data File** | WS#5410178_FOSAA_12.d | **Operator** | |
| **Sample Type** | QC | **Dilution** | 0.024 |
| **Acq. Method** | PFC_Water_Low_FOSAA.m | **Position** | P1-B2 |
| **Acq. Date** | 2018/02/24 3:34:59 AM | **Injection Volume** | Per Method |
| **Sample Annotation** | - | | |

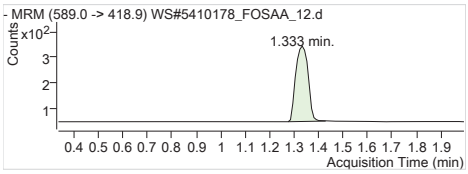
| ISTD Compounds | Response | RT | Target conc. | | |
|---|---|---|---|---|---|
| D3-MeFOSAA IS | 1227 | 1.31 | 1 µg/L | | |
| D5-EtFOSAA IS | 1038 | 1.33 | 1 µg/L | | |
| 13C9-PFDA IS | 19805 | 0.90 | 1 µg/L | | |

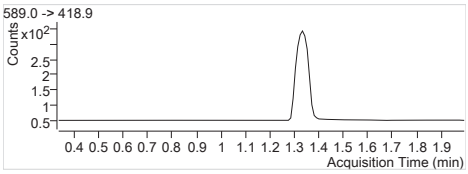
| Compound | Response | RT | Target Conc. | Calc. Conc. | Accuracy |
|---|---|---|---|---|---|
| MeFOSAA 1 | 9090 | 1.31 | 20.80 | 0.49 µg/L | 97.81 |
| EtFOSAA 1 | 9023 | 1.33 | 20.80 | 0.49 µg/L | 97.99 |
| D3-MeFOSAA | 1224 | 1.31 | 100.00 | 89.37 µg/L | 89.37 |
| D5-EtFOSAA | 1044 | 1.33 | 100.00 | 89.52 µg/L | 89.52 |
| 13C9-PFDA | 19800 | 0.90 | 100.00 | 2.37 µg/L | 98.59 |



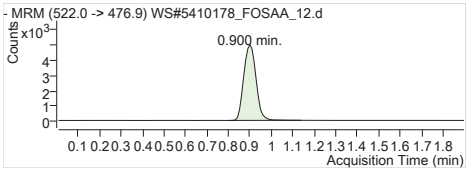



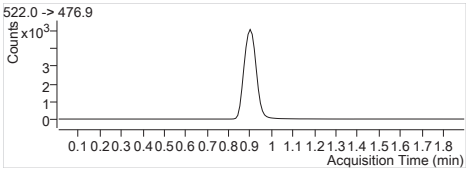

**D3-MeFOSAA IS** Internal Standard
RT (Exp. RT): 1.308 (1.308)
Concentration: 1 µg/L
Sample type: QC



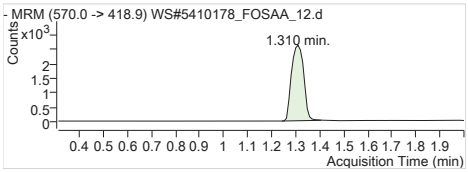



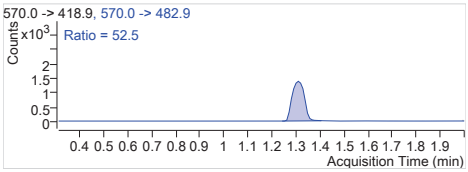

**D5-EtFOSAA IS** Internal Standard
RT (Exp. RT): 1.333 (1.333)
Concentration: 1 µg/L
Sample type: QC



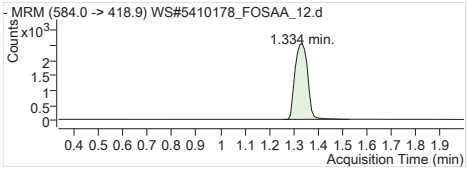



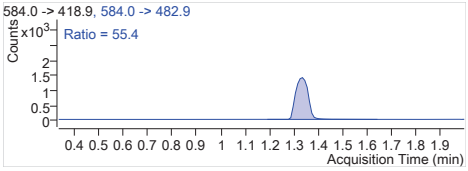

**13C9-PFDA IS** Internal Standard
RT (Exp. RT): 0.900 (0.900)
Concentration: 1 µg/L
Sample type: QC



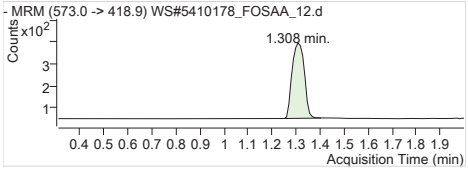



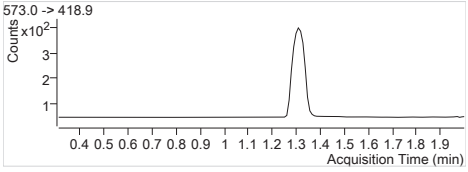

**MeFOSAA 1** 570.0 -> 418.9
RT (Exp. RT): 1.310 (1.310)
Calc. conc. 0.49 µg/L
Area ratio: 7.40831
Sample type: QC



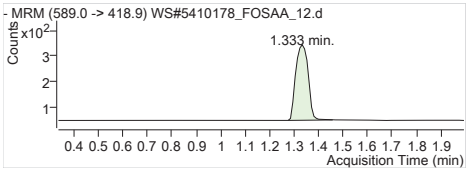



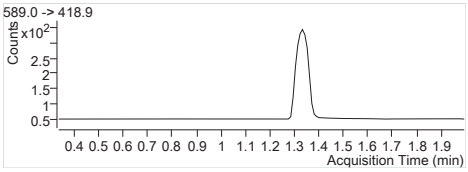

**EtFOSAA 1** 584.0 -> 418.9
RT (Exp. RT): 1.334 (1.334)
Calc. conc. 0.49 µg/L
Area ratio: 8.69268
Sample type: QC



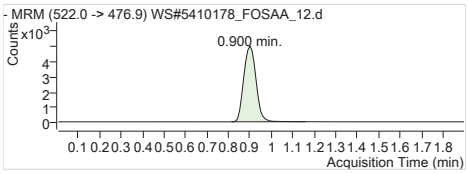



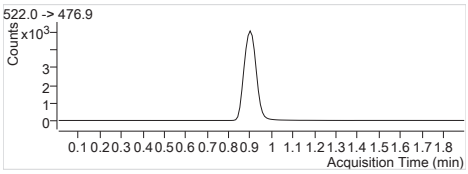

**D3-MeFOSAA** 573.0 -> 418.9
RT (Exp. RT): 1.308 (1.308)
Calc. conc. 89.37 µg/L
Area ratio: 0.06180
Sample type: QC




| | |
|---|---|
| **D5-EtFOSAA** | 589.0 -> 418.9 |
| RT (Exp. RT): | 1.333 (1.333) |
| Calc. conc. | 89.52 µg/L |
| Area ratio: | 0.05271 |
| Sample type: | QC |



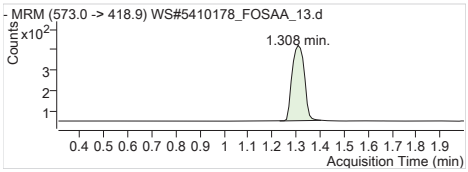

| | |
|---|---|
| **13C9-PFDA** | 522.0 -> 476.9 |
| RT (Exp. RT): | 0.900 (0.900) |
| Calc. conc. | 2.37 µg/L |
| Area ratio: | 0 |
| Sample type: | QC |

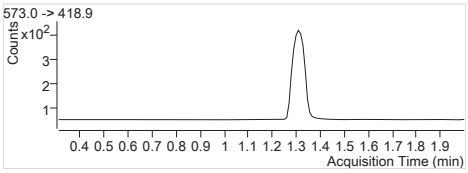
| | |
|---|---|
| **Batch Path** | T:\lcms4\PFC\20180223\WS#5410178_FOSAA\QuantResults\PFC_Water_Low_180223_WS#5410178_FOSAA_EToxics |

| | | | |
|---|---|---|---|
| **Sample Name** | **5410178:SPIKE:D1** | **Instrument** | LCMS04 |
| **Data File** | WS#5410178_FOSAA_13.d | **Operator** | |
| **Sample Type** | QC | **Dilution** | 0.024 |
| **Acq. Method** | PFC_Water_Low_FOSAA.m | **Position** | P1-B3 |
| **Acq. Date** | 2018/02/24 3:37:23 AM | **Injection Volume** | Per Method |
| **Sample Annotation** | - | | |

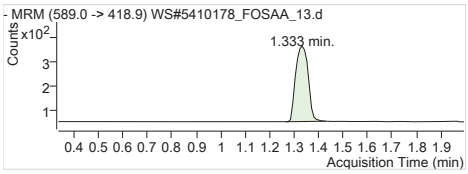
| ISTD Compounds | Response | RT | Target conc. | | |
|---|---|---|---|---|---|
| D3-MeFOSAA IS | 1317 | 1.31 | 1 µg/L | | |
| D5-EtFOSAA IS | 1127 | 1.33 | 1 µg/L | | |
| 13C9-PFDA IS | 22136 | 0.90 | 1 µg/L | | |

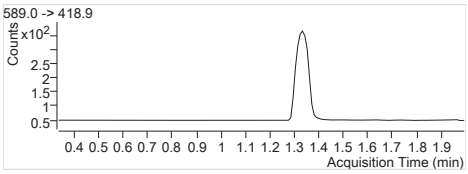
| Compound | Response | RT | Target Conc. | Calc. Conc. | Accuracy |
|---|---|---|---|---|---|
| MeFOSAA 1 | 9890 | 1.31 | 20.80 | 0.49 µg/L | 99.14 |
| EtFOSAA 1 | 9726 | 1.33 | 20.80 | 0.49 µg/L | 97.29 |
| D3-MeFOSAA | 1332 | 1.31 | 100.00 | 87.01 µg/L | 87.01 |
| D5-EtFOSAA | 1132 | 1.33 | 100.00 | 86.84 µg/L | 86.84 |
| 13C9-PFDA | 22217 | 0.90 | 100.00 | 2.65 µg/L | 110.62 |



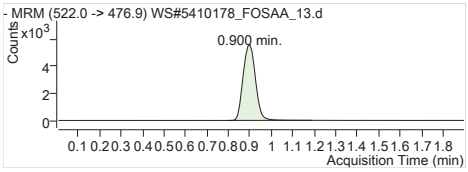



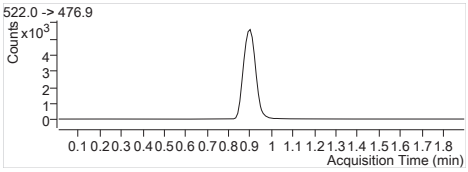

**D3-MeFOSAA IS** Internal Standard
RT (Exp. RT): 1.308 (1.308)
Concentration: 1 µg/L
Sample type: QC



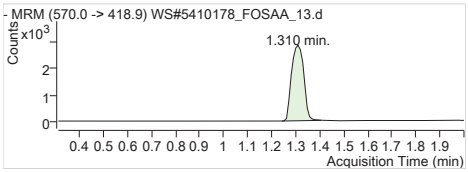



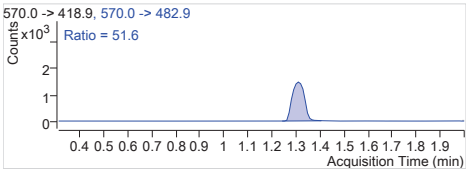

**D5-EtFOSAA IS** Internal Standard
RT (Exp. RT): 1.333 (1.333)
Concentration: 1 µg/L
Sample type: QC



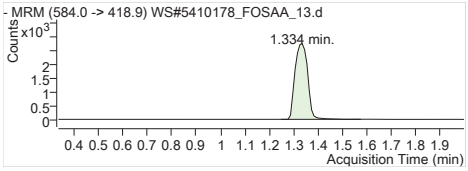



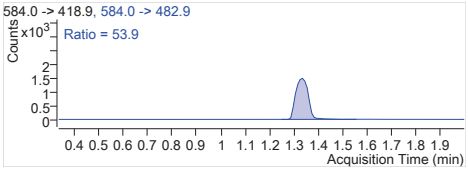

**13C9-PFDA IS** Internal Standard
RT (Exp. RT): 0.900 (0.900)
Concentration: 1 µg/L
Sample type: QC



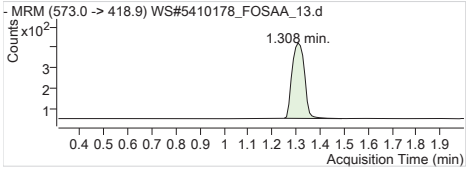



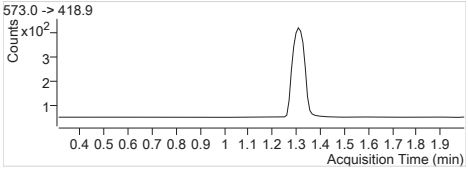

**MeFOSAA 1** 570.0 -> 418.9
RT (Exp. RT): 1.310 (1.310)
Calc. conc. 0.49 µg/L
Area ratio: 7.50949
Sample type: QC



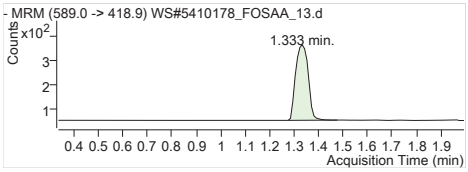



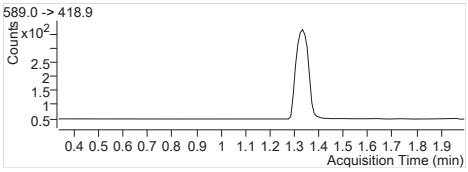

**EtFOSAA 1** 584.0 -> 418.9
RT (Exp. RT): 1.334 (1.334)
Calc. conc. 0.49 µg/L
Area ratio: 8.62999
Sample type: QC



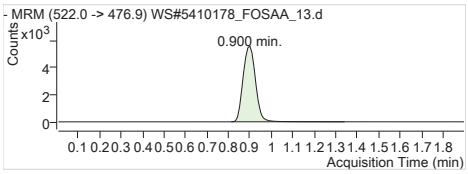



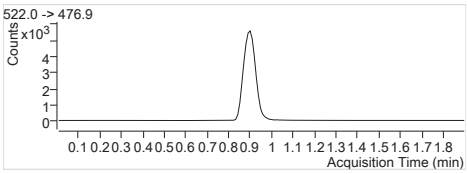

**D3-MeFOSAA** 573.0 -> 418.9
RT (Exp. RT): 1.308 (1.308)
Calc. conc. 87.01 µg/L
Area ratio: 0.06017
Sample type: QC




| | |
|---|---|
| **D5-EtFOSAA** | 589.0 -> 418.9 |
| RT (Exp. RT): | 1.333 (1.333) |
| Calc. conc. | 86.84 µg/L |
| Area ratio: | 0.05114 |
| Sample type: | QC |



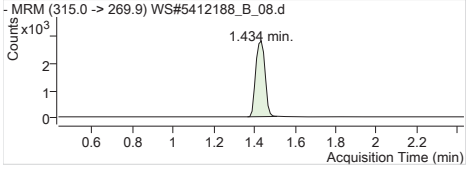

| | |
|---|---|
| **13C9-PFDA** | 522.0 -> 476.9 |
| RT (Exp. RT): | 0.900 (0.900) |
| Calc. conc. | 2.65 µg/L |
| Area ratio: | 0 |
| Sample type: | QC |

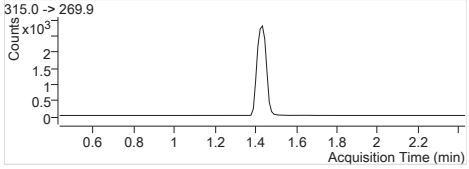
**Batch Path** T:\lcms4\PFC\20180226\WS#5412188_B\QuantResults\PFC_Water_Low_180227_WS#5412188_B_EToxics

| | | | |
|---|---|---|---|
| **Sample Name** | **IB** | **Instrument** | LCMS04 |
| **Data File** | WS#5412188_B_08.d | **Operator** | |
| **Sample Type** | Sample | **Dilution** | 0.024 |
| **Acq. Method** | PFC_Water_Low.m | **Position** | P1-C7 |
| **Acq. Date** | 2018/02/27 1:36:43 PM | **Injection Volume** | Per Method |
| **Sample Annotation** | - | | |

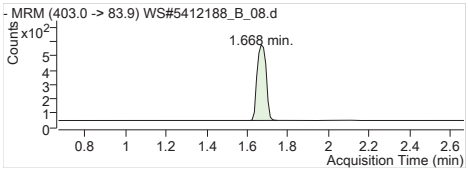
| ISTD Compounds | Response | RT | Target conc. | | |
|---|---|---|---|---|---|
| MPFHxA | 8768 | 1.43 | 1 µg/L | | |
| MPFHxS | 1638 | 1.67 | 1 µg/L | | |
| MPFHpA | 9350 | 1.69 | 1 µg/L | | |
| MPFOA | 9995 | 1.87 | 1 µg/L | | |
| MPFOS | 2120 | 1.97 | 1 µg/L | | |
| MPFNA | 9866 | 2.01 | 1 µg/L | | |
| MPFDA | 8885 | 2.14 | 1 µg/L | | |
| MPFUnA | 10017 | 2.23 | 1 µg/L | | |
| MPFDoA | 12487 | 2.31 | 1 µg/L | | |
| MPFTeDA | 14401 | 2.46 | 1 µg/L | | |
| 13C6-PFHxA IS | 31445 | 1.43 | 1 µg/L | | |
| 13C9-PFDA IS | 37273 | 2.13 | 1 µg/L | | |

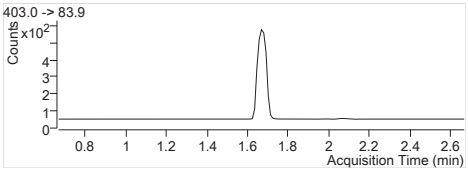
| Compound | Response | RT | Target Conc. | Calc. Conc. | Accuracy |
|---|---|---|---|---|---|
| PFBS 1 | | | - | ND | - |
| PFHxA 1 | | | - | ND | - |
| PFHxS 1 | | | - | ND | - |
| PFHpA 1 | | | - | ND | - |
| PFOA 1 | | | - | ND | - |
| PFOS 1 | | | - | ND | - |
| PFNA 1 | | | - | ND | - |
| PFDA 1 | | | - | ND | - |
| PFUnA 1 | | | - | ND | - |
| PFDoA 1 | | | - | ND | - |
| PFTrDA 1 | | | - | ND | - |
| PFTeDA 1 | | | - | ND | - |
| 13C2-PFHxA | 8768 | 1.43 | - | 112.18 µg/L | - |
| 18O2-PFHxS | 1638 | 1.67 | - | 100.31 µg/L | - |
| 13C4-PFHpA | 9350 | 1.69 | - | 103.28 µg/L | - |
| 13C4-PFOA | 9995 | 1.87 | - | 107.03 µg/L | - |
| 13C4-PFOS | 2120 | 1.97 | - | 112.13 µg/L | - |
| 13C5-PFNA | 9866 | 2.01 | - | 109.08 µg/L | - |
| 13C2-PFDA | 8721 | 2.14 | - | 106.23 µg/L | - |
| 13C2-PFUnA | 10017 | 2.23 | - | 104.93 µg/L | - |
| 13C2-PFDoA | 12487 | 2.31 | - | 103.24 µg/L | - |
| 13C2-PFTeDA | 14488 | 2.46 | - | 108.96 µg/L | - |
| 13C6-PFHxA | 31445 | 1.43 | - | 2.41 µg/L | - |
| 13C9-PFDA | 37273 | 2.13 | - | 2.40 µg/L | - |



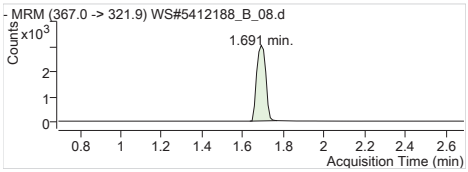



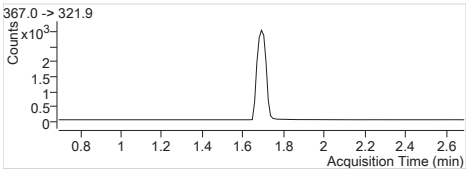

**MPFHxA** Internal Standard
RT (Exp. RT): 1.434 (1.434)
Concentration: 1 µg/L
Sample type: Sample



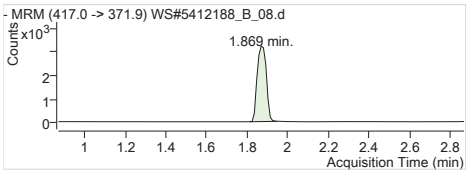



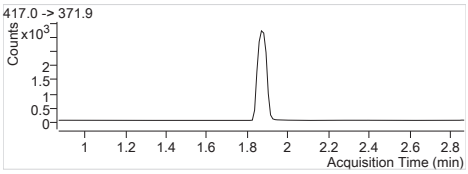

**MPFHxS** Internal Standard
RT (Exp. RT): 1.668 (1.668)
Concentration: 1 µg/L
Sample type: Sample



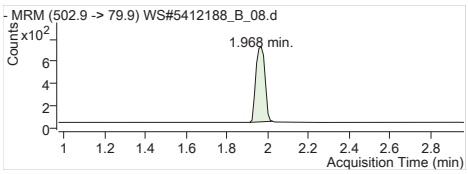



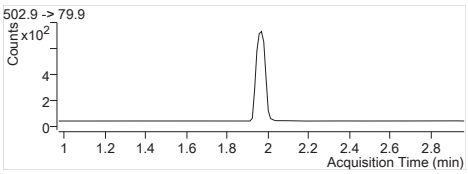

**MPFHpA** Internal Standard
RT (Exp. RT): 1.691 (1.691)
Concentration: 1 µg/L
Sample type: Sample



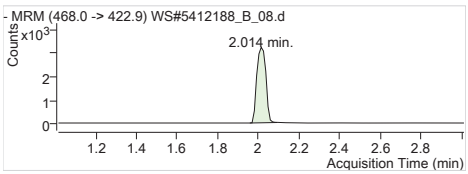



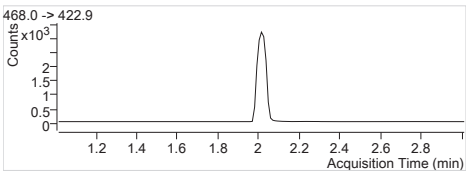

**MPFOA** Internal Standard
RT (Exp. RT): 1.869 (1.869)
Concentration: 1 µg/L
Sample type: Sample



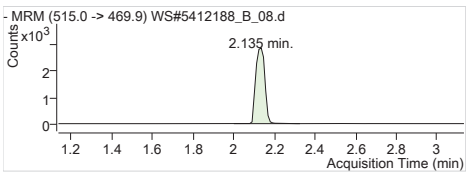



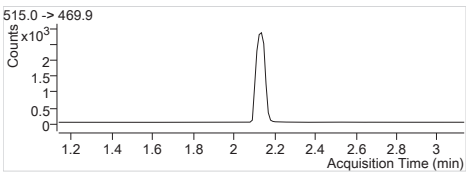

**MPFOS** Internal Standard
RT (Exp. RT): 1.968 (1.968)
Concentration: 1 µg/L
Sample type: Sample



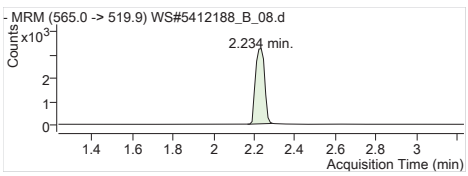



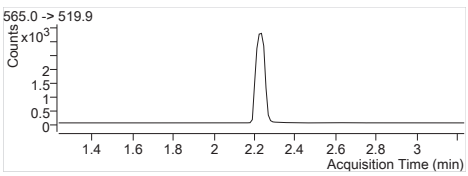

**MPFNA** Internal Standard
RT (Exp. RT): 2.014 (2.014)
Concentration: 1 µg/L
Sample type: Sample



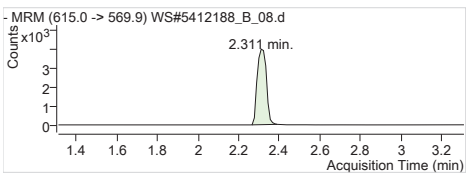



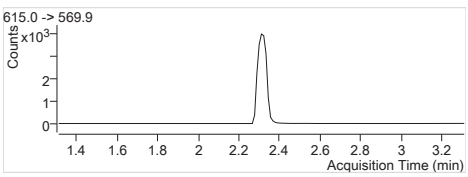

**MPFDA** Internal Standard
RT (Exp. RT): 2.135 (2.135)
Concentration: 1 µg/L
Sample type: Sample



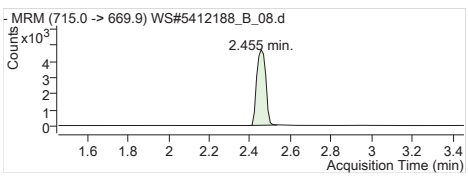



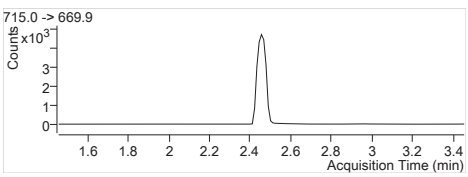

**MPFUnA** Internal Standard
RT (Exp. RT): 2.234 (2.234)
Concentration: 1 µg/L
Sample type: Sample



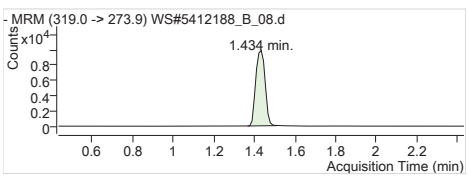



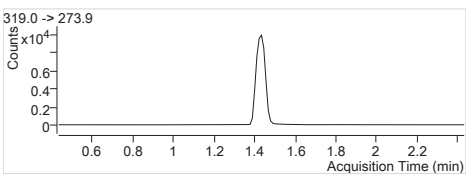

**MPFDoA** Internal Standard
RT (Exp. RT): 2.311 (2.311)
Concentration: 1 µg/L
Sample type: Sample



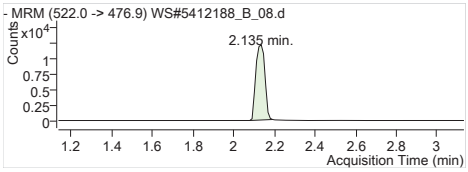



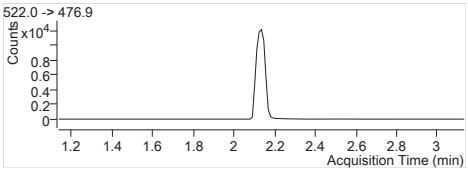

**MPFTeDA** Internal Standard
RT (Exp. RT): 2.455 (2.455)
Concentration: 1 µg/L
Sample type: Sample



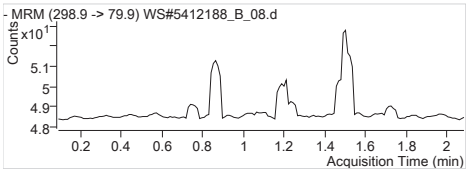



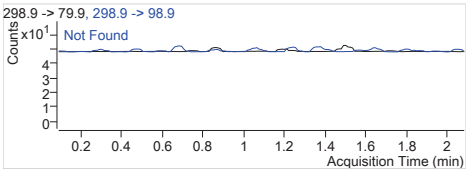

**13C6-PFHxA IS** Internal Standard
RT (Exp. RT): 1.434 (1.434)
Concentration: 1 µg/L
Sample type: Sample



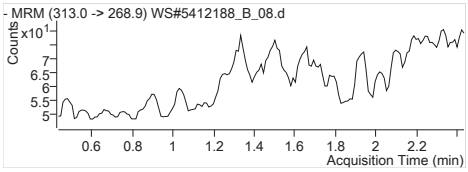



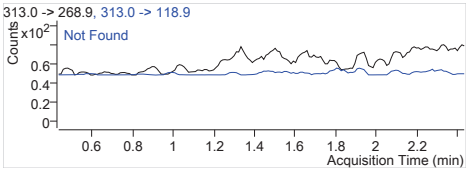

**13C9-PFDA IS** Internal Standard
RT (Exp. RT): 2.135 (2.135)
Concentration: 1 µg/L
Sample type: Sample



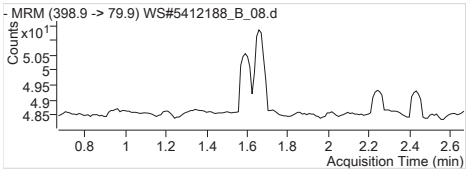



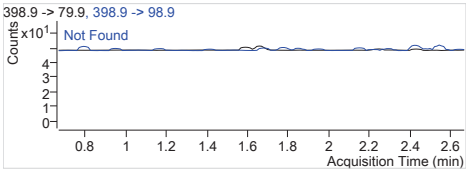

**PFBS 1** 298.9 -> 79.9
RT (Exp. RT): 0.000 (1.087)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



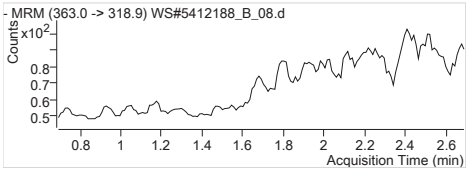



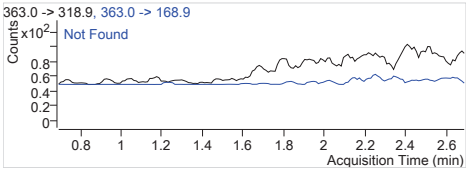

**PFHxA 1** 313.0 -> 268.9
RT (Exp. RT): 0.000 (1.434)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



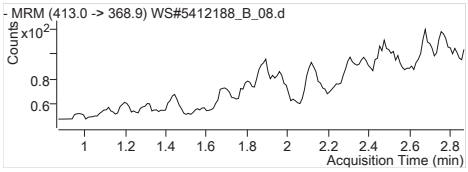



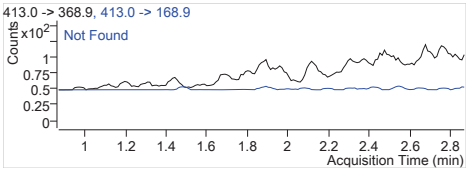

**PFHxS 1** 398.9 -> 79.9
RT (Exp. RT): 0.000 (1.668)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



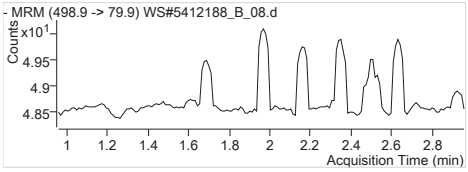



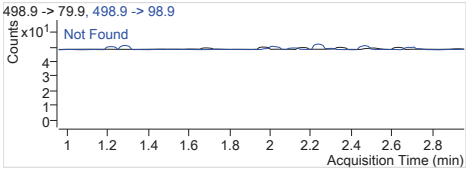

**PFHpA 1** 363.0 -> 318.9
RT (Exp. RT): 0.000 (1.691)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



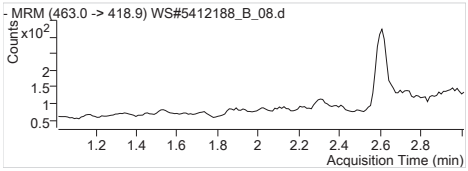



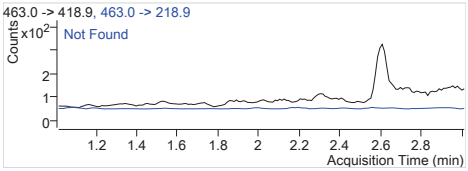

**PFOA 1** 413.0 -> 368.9
RT (Exp. RT): 0.000 (1.869)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



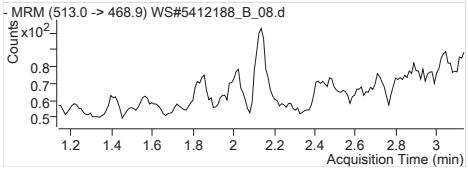



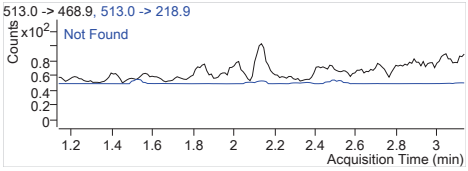

**PFOS 1** 498.9 -> 79.9
RT (Exp. RT): 0.000 (1.957)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



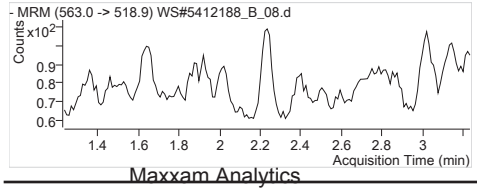



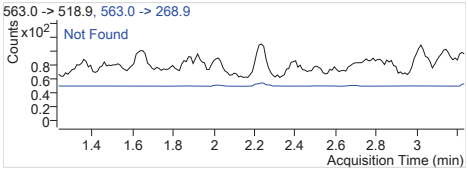

**PFNA 1** 463.0 -> 418.9
RT (Exp. RT): 0.000 (2.014)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



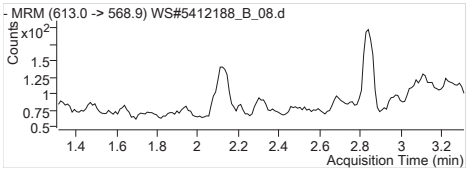



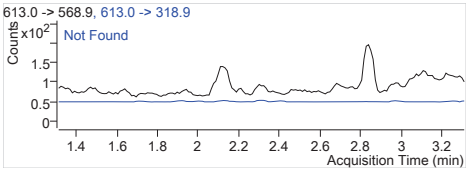

**PFDA 1** 513.0 -> 468.9
RT (Exp. RT): 0.000 (2.135)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



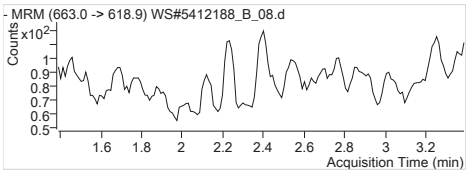



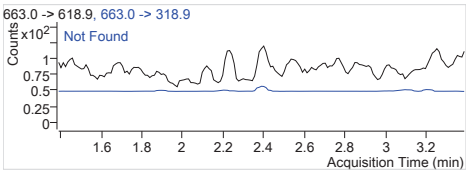

**PFUnA 1** 563.0 -> 518.9
RT (Exp. RT): 0.000 (2.234)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



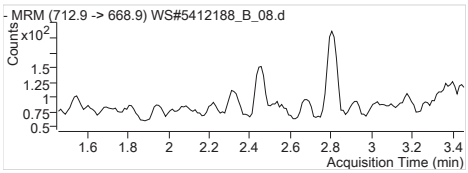



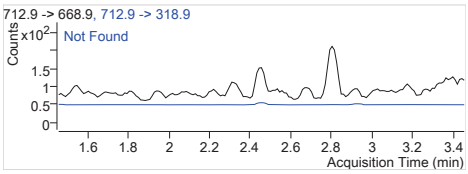

| | |
|---|---|
| **PFDoA 1** | 613.0 -> 568.9 |
| RT (Exp. RT): | 0.000 (2.311) |
| Calc. conc. | N.D. |
| Area ratio: | 0 |
| Sample type: | Sample |



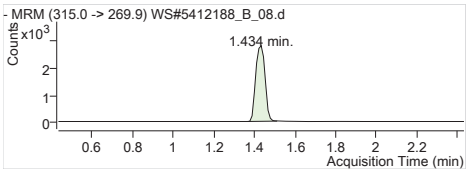



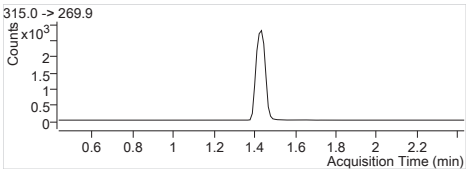

| | |
|---|---|
| **PFTrDA 1** | 663.0 -> 618.9 |
| RT (Exp. RT): | 0.000 (2.389) |
| Calc. conc. | N.D. |
| Area ratio: | 0 |
| Sample type: | Sample |



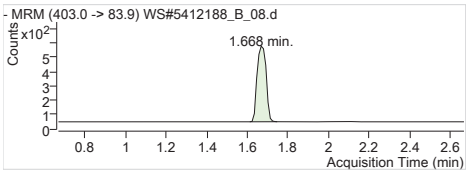



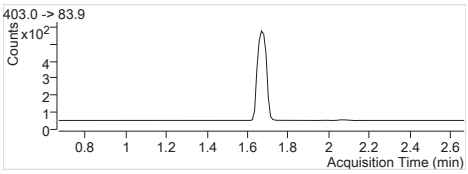

| | |
|---|---|
| **PFTeDA 1** | 712.9 -> 668.9 |
| RT (Exp. RT): | 0.000 (2.456) |
| Calc. conc. | N.D. |
| Area ratio: | 0 |
| Sample type: | Sample |



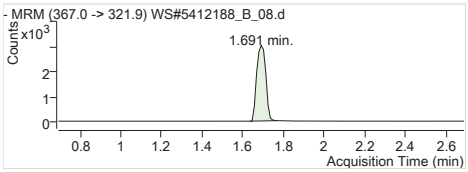



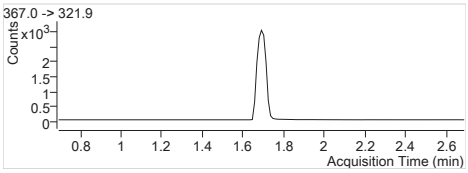

| | |
|---|---|
| **13C2-PFHxA** | 315.0 -> 269.9 |
| RT (Exp. RT): | 1.434 (1.434) |
| Calc. conc. | 112.18 µg/L |
| Area ratio: | 0.27884 |
| Sample type: | Sample |



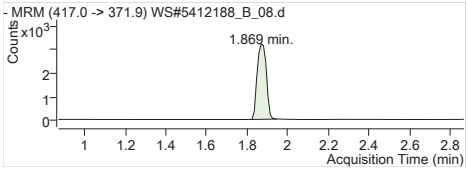



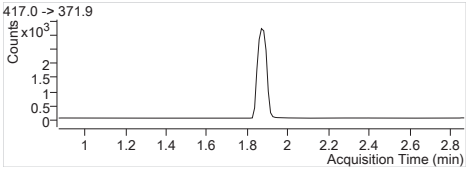

| | |
|---|---|
| **18O2-PFHxS** | 403.0 -> 83.9 |
| RT (Exp. RT): | 1.668 (1.668) |
| Calc. conc. | 100.31 µg/L |
| Area ratio: | 0.05209 |
| Sample type: | Sample |



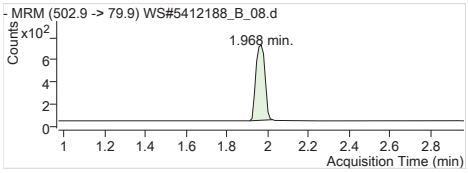



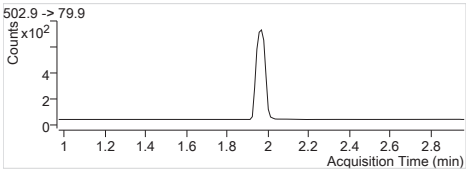

| | |
|---|---|
| **13C4-PFHpA** | 367.0 -> 321.9 |
| RT (Exp. RT): | 1.691 (1.691) |
| Calc. conc. | 103.28 µg/L |
| Area ratio: | 0.29734 |
| Sample type: | Sample |



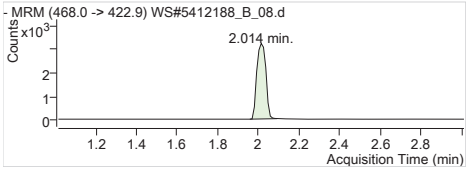



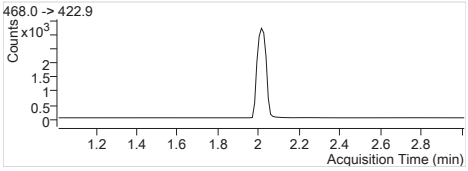

| | |
|---|---|
| **13C4-PFOA** | 417.0 -> 371.9 |
| RT (Exp. RT): | 1.869 (1.869) |
| Calc. conc. | 107.03 µg/L |
| Area ratio: | 0.31786 |
| Sample type: | Sample |



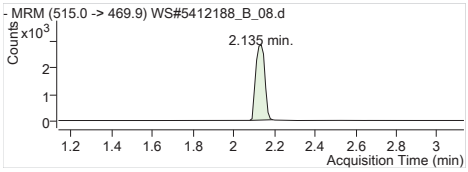



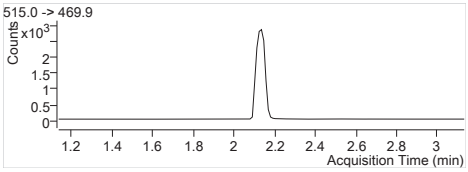

| | |
|---|---|
| **13C4-PFOS** | 502.9 -> 79.9 |
| RT (Exp. RT): | 1.968 (1.968) |
| Calc. conc. | 112.13 µg/L |
| Area ratio: | 0.06742 |
| Sample type: | Sample |



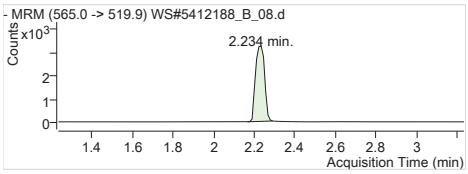



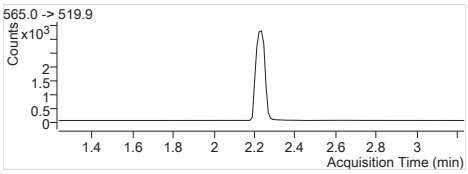

| | |
|---|---|
| **13C5-PFNA** | 468.0 -> 422.9 |
| RT (Exp. RT): | 2.014 (2.014) |
| Calc. conc. | 109.08 µg/L |
| Area ratio: | 0.31375 |
| Sample type: | Sample |



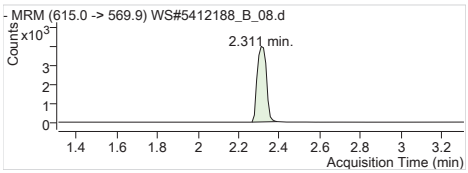



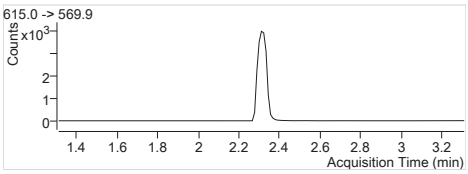

**13C2-PFDA** 515.0 -> 469.9
RT (Exp. RT): 2.135 (2.135)
Calc. conc. 106.23 µg/L
Area ratio: 0.23398
Sample type: Sample



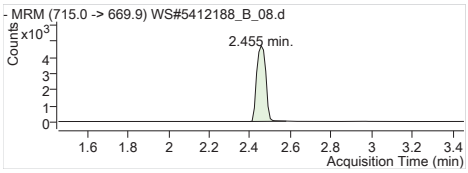



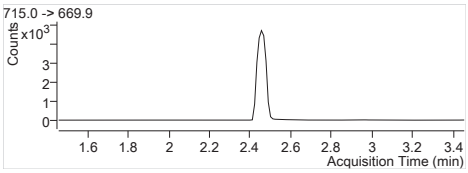

**13C2-PFUnA** 565.0 -> 519.9
RT (Exp. RT): 2.234 (2.234)
Calc. conc. 104.93 µg/L
Area ratio: 0.26875
Sample type: Sample



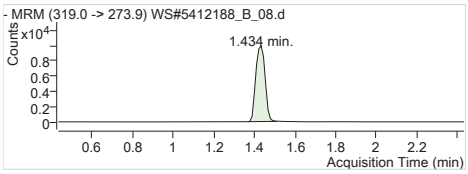



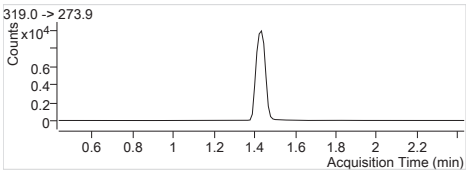

**13C2-PFDoA** 615.0 -> 569.9
RT (Exp. RT): 2.311 (2.311)
Calc. conc. 103.24 µg/L
Area ratio: 0.33501
Sample type: Sample



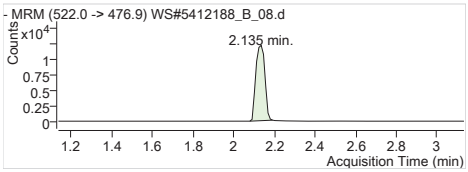



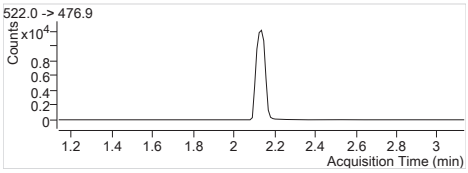

**13C2-PFTeDA** 715.0 -> 669.9
RT (Exp. RT): 2.455 (2.455)
Calc. conc. 108.96 µg/L
Area ratio: 0.38870
Sample type: Sample




**13C6-PFHxA** 319.0 -> 273.9
RT (Exp. RT): 1.434 (1.434)
Calc. conc. 2.41 µg/L
Area ratio: 0
Sample type: Sample



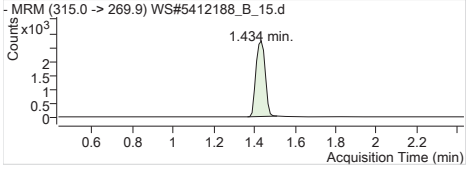

**13C9-PFDA** 522.0 -> 476.9
RT (Exp. RT): 2.135 (2.135)
Calc. conc. 2.40 µg/L
Area ratio: 0
Sample type: Sample

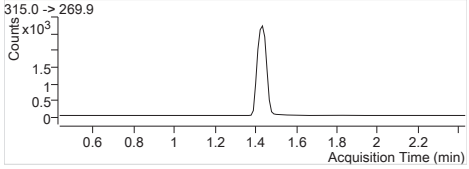
| | |
|---|---|
| **Batch Path** | T:\lcms4\PFC\20180226\WS#5412188_B\QuantResults\PFC_Water_Low_180227_WS#5412188_B_EToxics |

| | | | |
|---|---|---|---|
| **Sample Name** | **IB** | **Instrument** | LCMS04 |
| **Data File** | WS#5412188_B_15.d | **Operator** | |
| **Sample Type** | Sample | **Dilution** | 0.024 |
| **Acq. Method** | PFC_Water_Low.m | **Position** | P1-C7 |
| **Acq. Date** | 2018/02/27 2:21:53 PM | **Injection Volume** | Per Method |
| **Sample Annotation** | - | | |

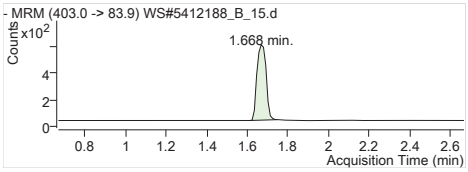
| ISTD Compounds | Response | RT | Target conc. | | |
|---|---|---|---|---|---|
| MPFHxA | 8473 | 1.43 | 1 µg/L | | |
| MPFHxS | 1760 | 1.67 | 1 µg/L | | |
| MPFHpA | 10251 | 1.69 | 1 µg/L | | |
| MPFOA | 9880 | 1.87 | 1 µg/L | | |
| MPFOS | 1991 | 1.97 | 1 µg/L | | |
| MPFNA | 9764 | 2.01 | 1 µg/L | | |
| MPFDA | 8873 | 2.14 | 1 µg/L | | |
| MPFUnA | 10287 | 2.23 | 1 µg/L | | |
| MPFDoA | 12993 | 2.31 | 1 µg/L | | |
| MPFTeDA | 14421 | 2.46 | 1 µg/L | | |
| 13C6-PFHxA IS | 33232 | 1.43 | 1 µg/L | | |
| 13C9-PFDA IS | 38020 | 2.13 | 1 µg/L | | |

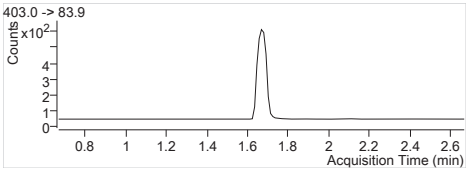
| Compound | Response | RT | Target Conc. | Calc. Conc. | Accuracy |
|---|---|---|---|---|---|
| PFBS 1 | | | - | ND | - |
| PFHxA 1 | | | - | ND | - |
| PFHxS 1 | | | - | ND | - |
| PFHpA 1 | | | - | ND | - |
| PFOA 1 | | | - | ND | - |
| PFOS 1 | | | - | ND | - |
| PFNA 1 | | | - | ND | - |
| PFDA 1 | | | - | ND | - |
| PFUnA 1 | | | - | ND | - |
| PFDoA 1 | | | - | ND | - |
| PFTrDA 1 | | | - | ND | - |
| PFTeDA 1 | | | - | ND | - |
| 13C2-PFHxA | 8473 | 1.43 | - | 102.57 µg/L | - |
| 18O2-PFHxS | 1760 | 1.67 | - | 101.99 µg/L | - |
| 13C4-PFHpA | 10251 | 1.69 | - | 107.14 µg/L | - |
| 13C4-PFOA | 9880 | 1.87 | - | 100.11 µg/L | - |
| 13C4-PFOS | 1991 | 1.97 | - | 99.64 µg/L | - |
| 13C5-PFNA | 9765 | 2.01 | - | 102.15 µg/L | - |
| 13C2-PFDA | 8785 | 2.14 | - | 104.91 µg/L | - |
| 13C2-PFUnA | 10287 | 2.23 | - | 105.64 µg/L | - |
| 13C2-PFDoA | 12993 | 2.31 | - | 105.32 µg/L | - |
| 13C2-PFTeDA | 14588 | 2.46 | - | 107.56 µg/L | - |
| 13C6-PFHxA | 33232 | 1.43 | - | 2.55 µg/L | - |
| 13C9-PFDA | 38020 | 2.13 | - | 2.45 µg/L | - |



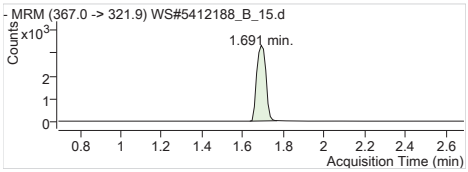



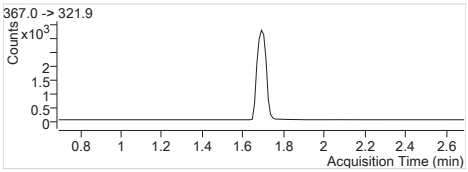

| | |
|---|---|
| **MPFHxA** | Internal Standard |
| RT (Exp. RT): | 1.434 (1.434) |
| Concentration: | 1 µg/L |
| Sample type: | Sample |



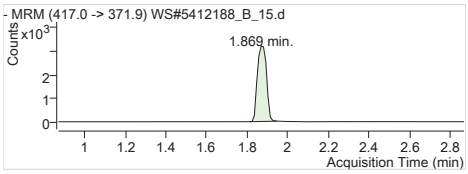



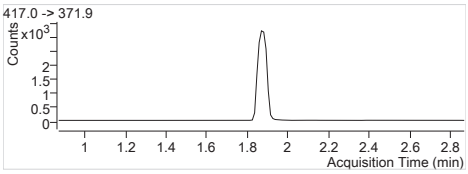

**MPFHxS** Internal Standard
RT (Exp. RT): 1.668 (1.668)
Concentration: 1 µg/L
Sample type: Sample



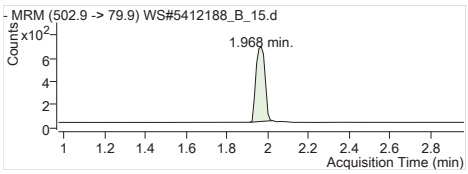



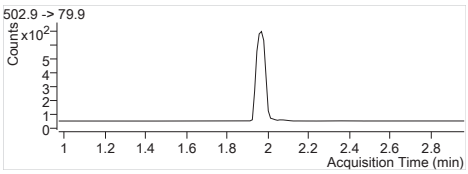

**MPFHpA** Internal Standard
RT (Exp. RT): 1.691 (1.691)
Concentration: 1 µg/L
Sample type: Sample



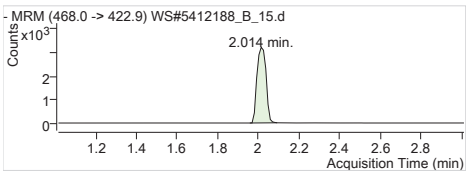



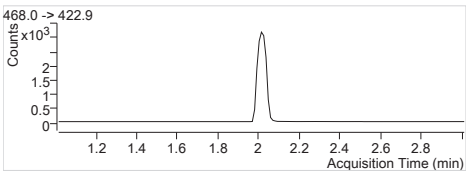

**MPFOA** Internal Standard
RT (Exp. RT): 1.869 (1.869)
Concentration: 1 µg/L
Sample type: Sample



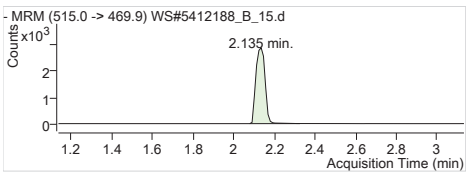



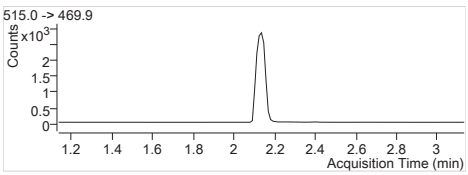

**MPFOS** Internal Standard
RT (Exp. RT): 1.968 (1.968)
Concentration: 1 µg/L
Sample type: Sample



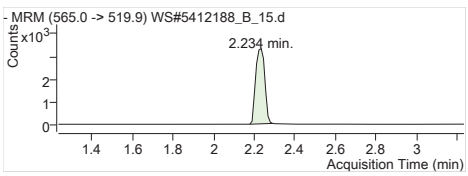



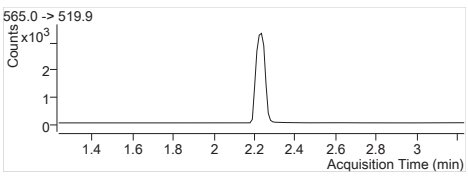

**MPFNA** Internal Standard
RT (Exp. RT): 2.014 (2.014)
Concentration: 1 µg/L
Sample type: Sample



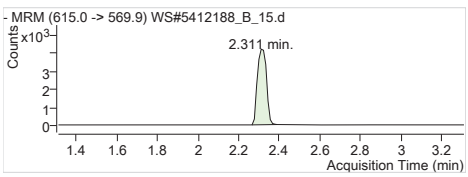



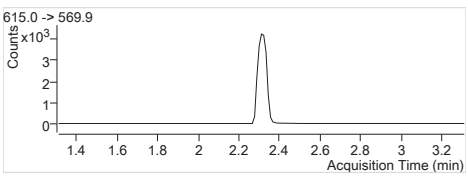

**MPFDA** Internal Standard
RT (Exp. RT): 2.135 (2.135)
Concentration: 1 µg/L
Sample type: Sample



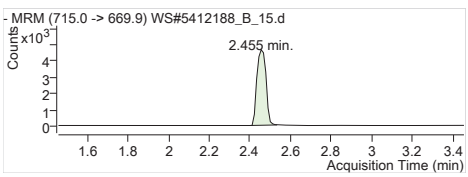



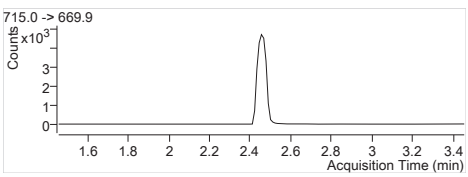

**MPFUnA** Internal Standard
RT (Exp. RT): 2.234 (2.234)
Concentration: 1 µg/L
Sample type: Sample



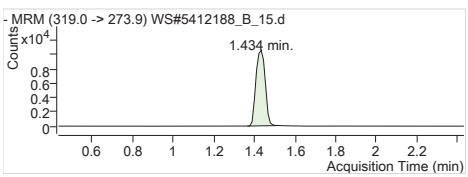



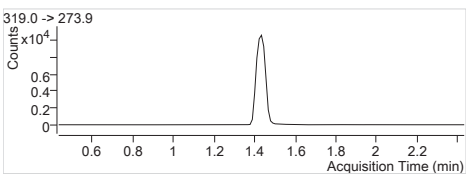

**MPFDoA** Internal Standard
RT (Exp. RT): 2.311 (2.311)
Concentration: 1 µg/L
Sample type: Sample



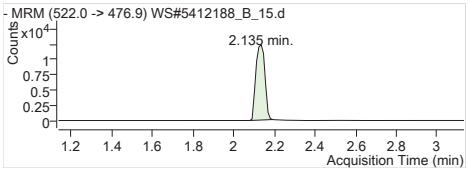



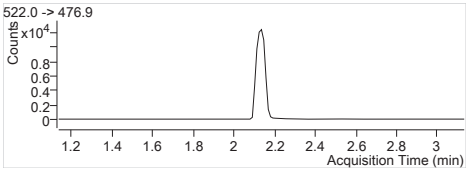

**MPFTeDA** Internal Standard
RT (Exp. RT): 2.455 (2.455)
Concentration: 1 µg/L
Sample type: Sample



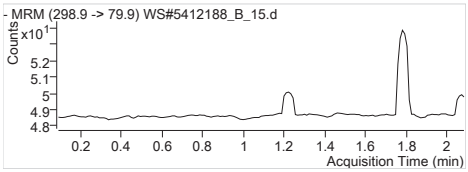



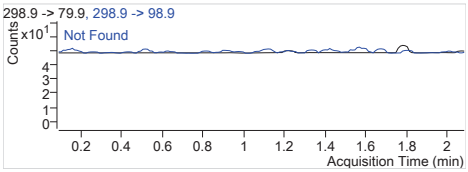

**13C6-PFHxA IS** Internal Standard
RT (Exp. RT): 1.434 (1.434)
Concentration: 1 µg/L
Sample type: Sample



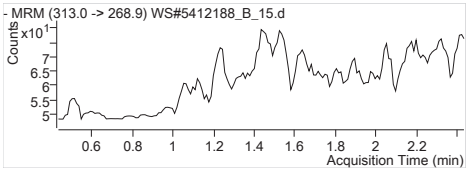



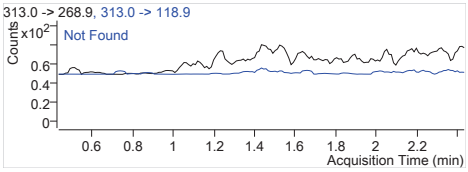

**13C9-PFDA IS** Internal Standard
RT (Exp. RT): 2.135 (2.135)
Concentration: 1 µg/L
Sample type: Sample



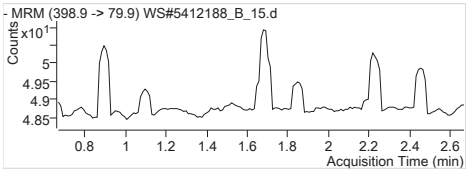



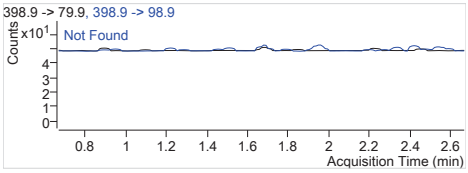

**PFBS 1** 298.9 -> 79.9
RT (Exp. RT): 0.000 (1.087)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



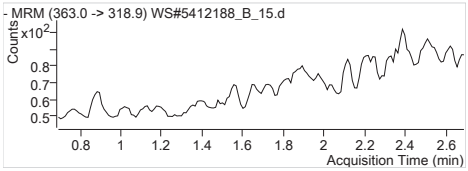



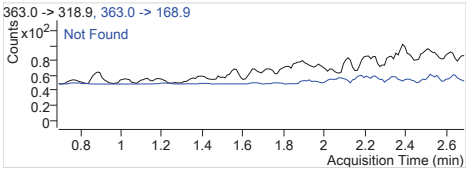

**PFHxA 1** 313.0 -> 268.9
RT (Exp. RT): 0.000 (1.434)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



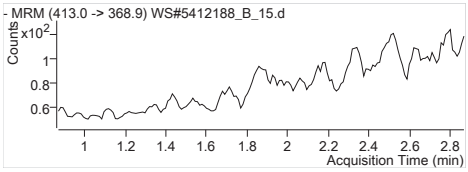



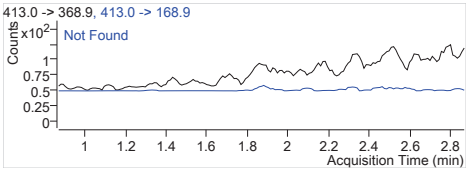

**PFHxS 1** 398.9 -> 79.9
RT (Exp. RT): 0.000 (1.668)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



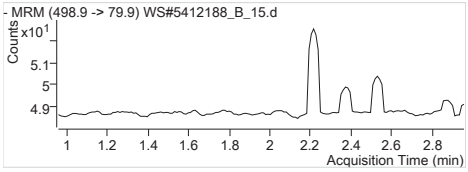



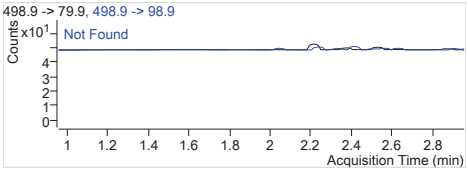

**PFHpA 1** 363.0 -> 318.9
RT (Exp. RT): 0.000 (1.691)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



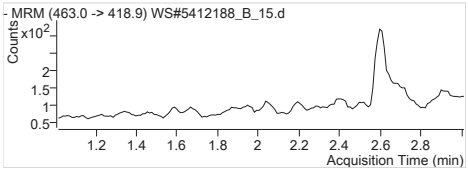



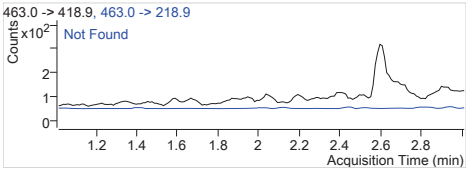

**PFOA 1** 413.0 -> 368.9
RT (Exp. RT): 0.000 (1.869)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



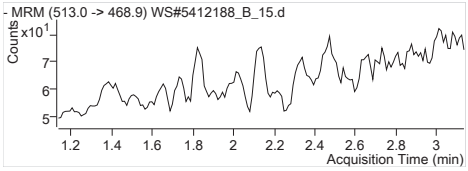



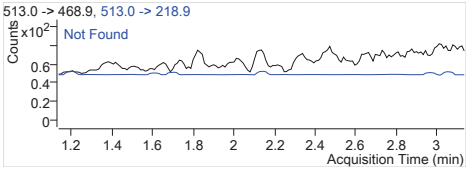

**PFOS 1** 498.9 -> 79.9
RT (Exp. RT): 0.000 (1.957)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



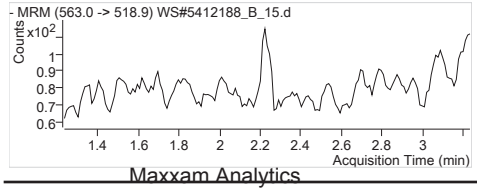



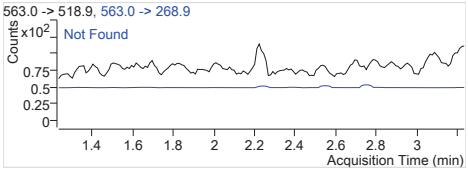

**PFNA 1** 463.0 -> 418.9
RT (Exp. RT): 0.000 (2.014)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



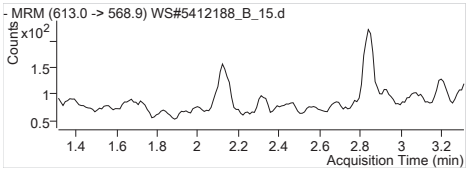



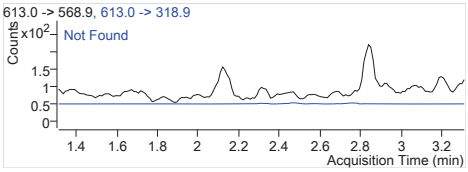

**PFDA 1** 513.0 -> 468.9
RT (Exp. RT): 0.000 (2.135)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



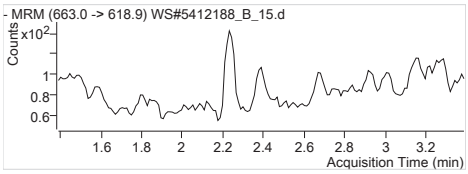



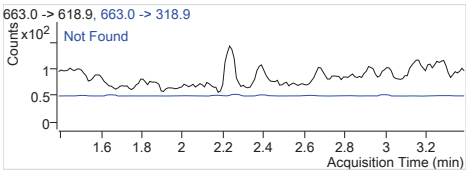

**PFUnA 1** 563.0 -> 518.9
RT (Exp. RT): 0.000 (2.234)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



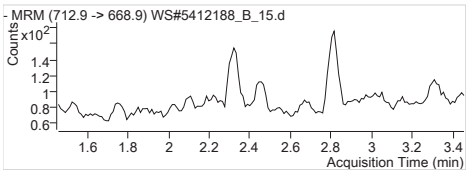



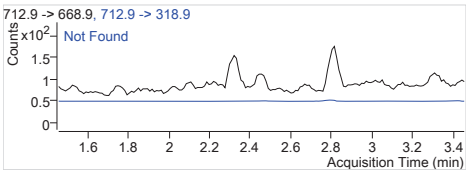

**PFDoA 1** 613.0 -> 568.9
RT (Exp. RT): 0.000 (2.311)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



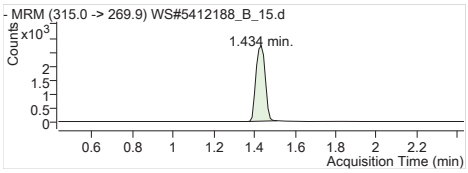



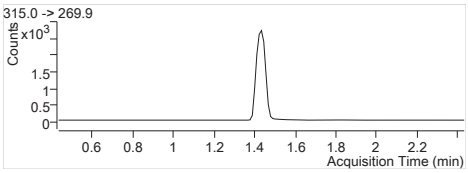

**PFTrDA 1** 663.0 -> 618.9
RT (Exp. RT): 0.000 (2.389)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



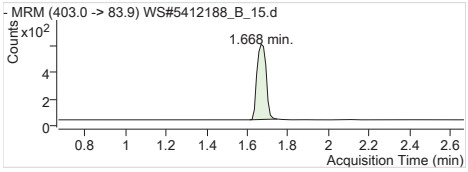



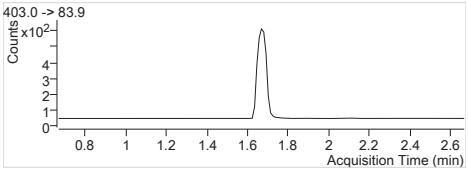

**PFTeDA 1** 712.9 -> 668.9
RT (Exp. RT): 0.000 (2.456)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



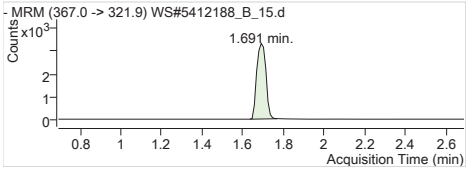



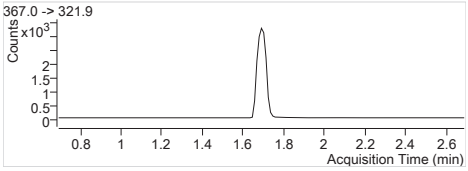

**13C2-PFHxA** 315.0 -> 269.9
RT (Exp. RT): 1.434 (1.434)
Calc. conc. 102.57 µg/L
Area ratio: 0.25497
Sample type: Sample



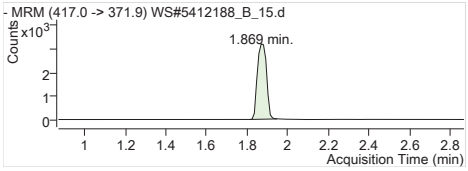



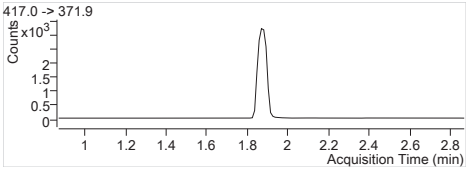

**18O2-PFHxS** 403.0 -> 83.9
RT (Exp. RT): 1.668 (1.668)
Calc. conc. 101.99 µg/L
Area ratio: 0.05296
Sample type: Sample



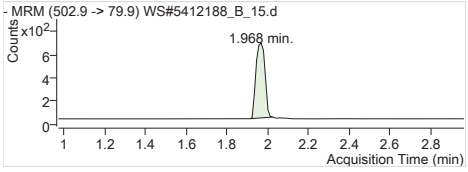



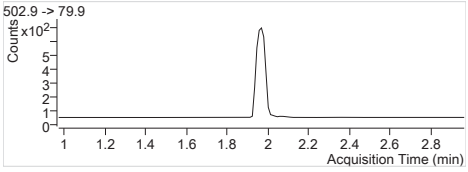

**13C4-PFHpA** 367.0 -> 321.9
RT (Exp. RT): 1.691 (1.691)
Calc. conc. 107.14 µg/L
Area ratio: 0.30847
Sample type: Sample



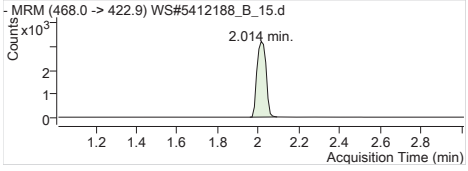



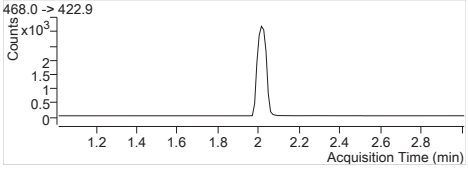

**13C4-PFOA** 417.0 -> 371.9
RT (Exp. RT): 1.869 (1.869)
Calc. conc. 100.11 µg/L
Area ratio: 0.29730
Sample type: Sample



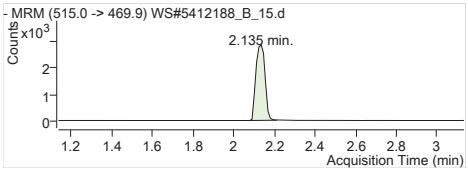



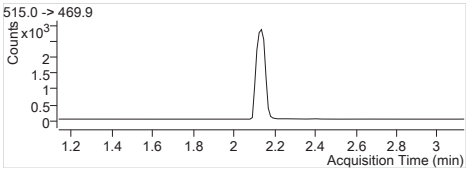

**13C4-PFOS** 502.9 -> 79.9
RT (Exp. RT): 1.968 (1.968)
Calc. conc. 99.64 µg/L
Area ratio: 0.05991
Sample type: Sample



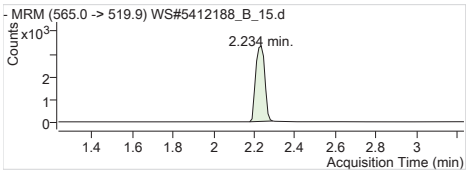



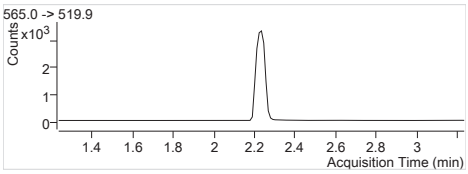

**13C5-PFNA** 468.0 -> 422.9
RT (Exp. RT): 2.014 (2.014)
Calc. conc. 102.15 µg/L
Area ratio: 0.29384
Sample type: Sample



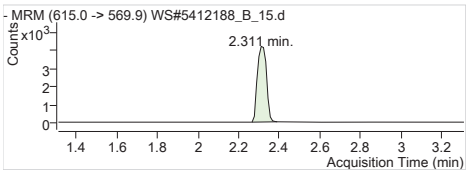



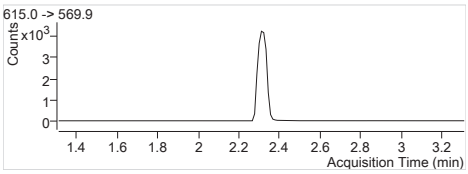

**13C2-PFDA** 515.0 -> 469.9
RT (Exp. RT): 2.135 (2.135)
Calc. conc. 104.91 µg/L
Area ratio: 0.23106
Sample type: Sample



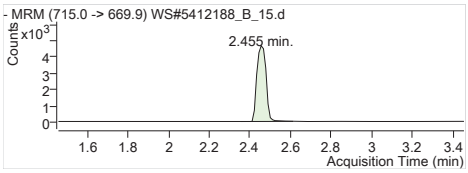



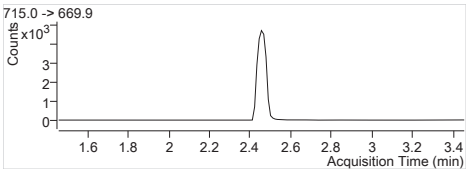

**13C2-PFUnA** 565.0 -> 519.9
RT (Exp. RT): 2.234 (2.234)
Calc. conc. 105.64 µg/L
Area ratio: 0.27057
Sample type: Sample



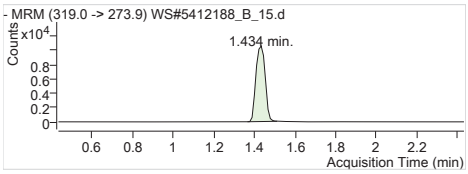



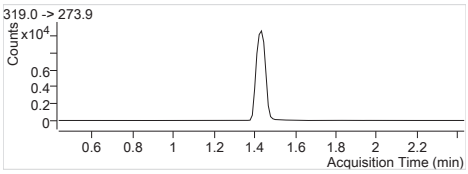

**13C2-PFDoA** 615.0 -> 569.9
RT (Exp. RT): 2.311 (2.311)
Calc. conc. 105.32 µg/L
Area ratio: 0.34174
Sample type: Sample



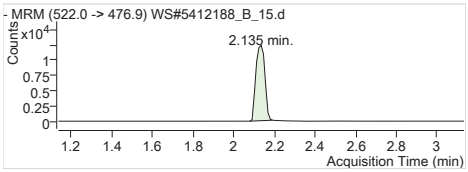



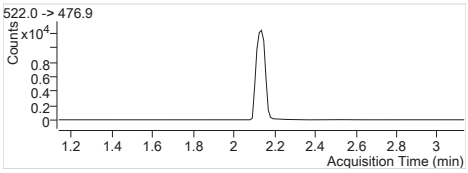

**13C2-PFTeDA** 715.0 -> 669.9
RT (Exp. RT): 2.455 (2.455)
Calc. conc. 107.56 µg/L
Area ratio: 0.38369
Sample type: Sample




**13C6-PFHxA** 319.0 -> 273.9
RT (Exp. RT): 1.434 (1.434)
Calc. conc. 2.55 µg/L
Area ratio: 0
Sample type: Sample



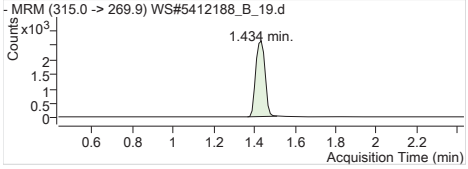

**13C9-PFDA** 522.0 -> 476.9
RT (Exp. RT): 2.135 (2.135)
Calc. conc. 2.45 µg/L
Area ratio: 0
Sample type: Sample

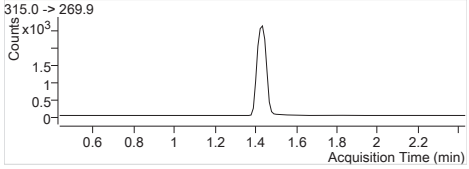
| | |
|---|---|
| **Batch Path** | T:\lcms4\PFC\20180226\WS#5412188_B\QuantResults\PFC_Water_Low_180227_WS#5412188_B_EToxics |

| | | | |
|---|---|---|---|
| **Sample Name** | **IB** | **Instrument** | LCMS04 |
| **Data File** | WS#5412188_B_19.d | **Operator** | |
| **Sample Type** | Sample | **Dilution** | 0.024 |
| **Acq. Method** | PFC_Water_Low.m | **Position** | P1-C7 |
| **Acq. Date** | 2018/02/27 2:41:36 PM | **Injection Volume** | Per Method |
| **Sample Annotation** | - | | |

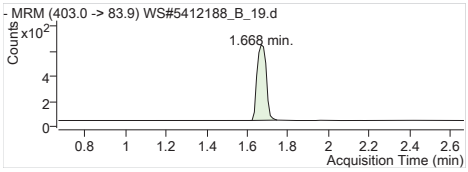
| ISTD Compounds | Response | RT | Target conc. | | |
|---|---|---|---|---|---|
| MPFHxA | 8218 | 1.43 | 1 µg/L | | |
| MPFHxS | 1893 | 1.67 | 1 µg/L | | |
| MPFHpA | 9852 | 1.69 | 1 µg/L | | |
| MPFOA | 10464 | 1.87 | 1 µg/L | | |
| MPFOS | 2012 | 1.97 | 1 µg/L | | |
| MPFNA | 9558 | 2.01 | 1 µg/L | | |
| MPFDA | 8642 | 2.14 | 1 µg/L | | |
| MPFUnA | 10746 | 2.22 | 1 µg/L | | |
| MPFDoA | 13195 | 2.31 | 1 µg/L | | |
| MPFTeDA | 14266 | 2.46 | 1 µg/L | | |
| 13C6-PFHxA IS | 31125 | 1.43 | 1 µg/L | | |
| 13C9-PFDA IS | 38015 | 2.13 | 1 µg/L | | |

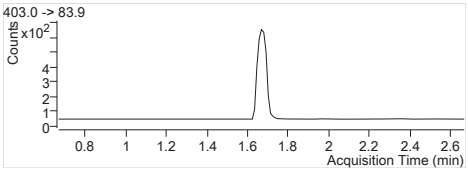
| Compound | Response | RT | Target Conc. | Calc. Conc. | Accuracy |
|---|---|---|---|---|---|
| PFBS 1 | | | - | ND | - |
| PFHxA 1 | | | - | ND | - |
| PFHxS 1 | | | - | ND | - |
| PFHpA 1 | | | - | ND | - |
| PFOA 1 | | | - | ND | - |
| PFOS 1 | | | - | ND | - |
| PFNA 1 | | | - | ND | - |
| PFDA 1 | | | - | ND | - |
| PFUnA 1 | | | - | ND | - |
| PFDoA 1 | | | - | ND | - |
| PFTrDA 1 | | | - | ND | - |
| PFTeDA 1 | | | - | ND | - |
| 13C2-PFHxA | 8218 | 1.43 | - | 106.22 µg/L | - |
| 18O2-PFHxS | 1893 | 1.67 | - | 117.12 µg/L | - |
| 13C4-PFHpA | 9852 | 1.69 | - | 109.94 µg/L | - |
| 13C4-PFOA | 10464 | 1.87 | - | 113.20 µg/L | - |
| 13C4-PFOS | 2012 | 1.97 | - | 107.51 µg/L | - |
| 13C5-PFNA | 9558 | 2.01 | - | 106.76 µg/L | - |
| 13C2-PFDA | 8489 | 2.14 | - | 101.39 µg/L | - |
| 13C2-PFUnA | 10746 | 2.22 | - | 110.37 µg/L | - |
| 13C2-PFDoA | 13195 | 2.31 | - | 106.97 µg/L | - |
| 13C2-PFTeDA | 14549 | 2.46 | - | 107.29 µg/L | - |
| 13C6-PFHxA | 31125 | 1.43 | - | 2.38 µg/L | - |
| 13C9-PFDA | 38015 | 2.13 | - | 2.45 µg/L | - |



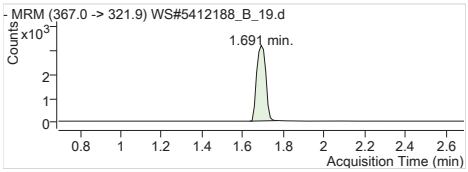



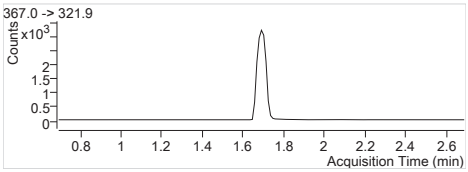

| | |
|---|---|
| **MPFHxA** | Internal Standard |
| RT (Exp. RT): | 1.434 (1.434) |
| Concentration: | 1 µg/L |
| Sample type: | Sample |



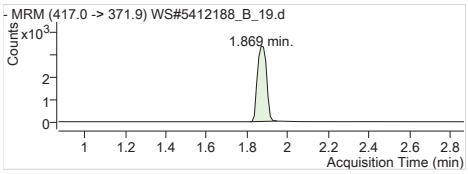



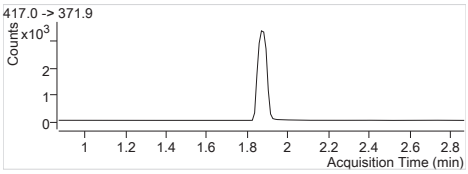

**MPFHxS** Internal Standard
RT (Exp. RT): 1.668 (1.668)
Concentration: 1 µg/L
Sample type: Sample



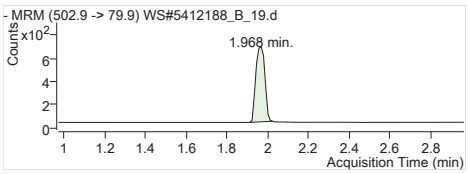



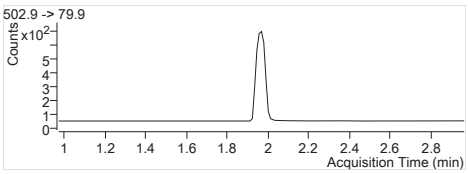

**MPFHpA** Internal Standard
RT (Exp. RT): 1.691 (1.691)
Concentration: 1 µg/L
Sample type: Sample



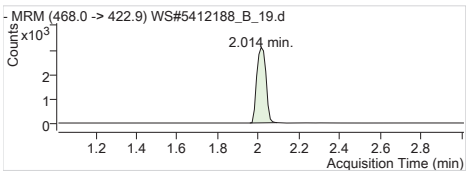



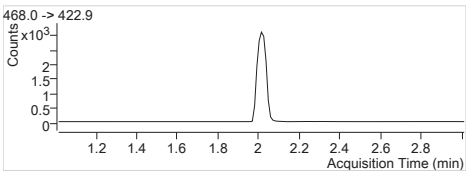

**MPFOA** Internal Standard
RT (Exp. RT): 1.869 (1.869)
Concentration: 1 µg/L
Sample type: Sample



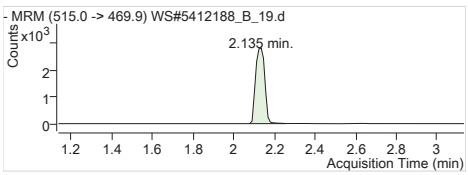



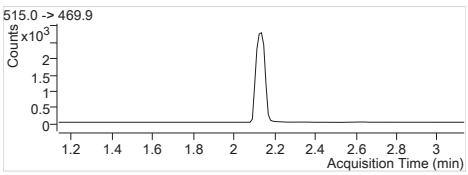

**MPFOS** Internal Standard
RT (Exp. RT): 1.968 (1.968)
Concentration: 1 µg/L
Sample type: Sample



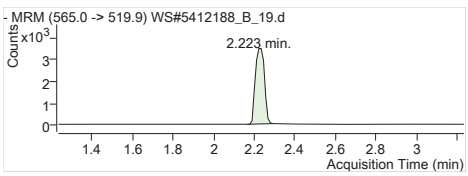



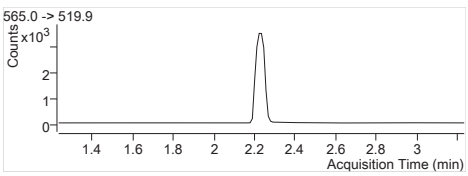

**MPFNA** Internal Standard
RT (Exp. RT): 2.014 (2.014)
Concentration: 1 µg/L
Sample type: Sample



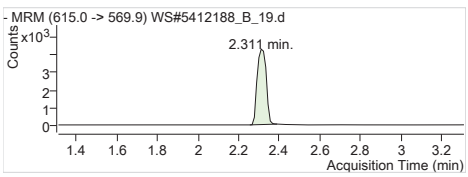



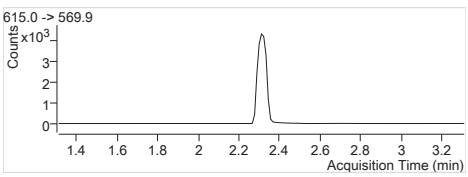

**MPFDA** Internal Standard
RT (Exp. RT): 2.135 (2.135)
Concentration: 1 µg/L
Sample type: Sample



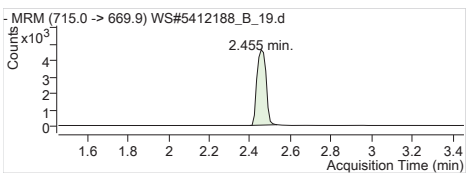



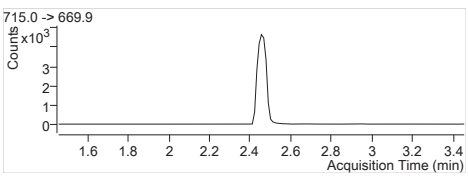

**MPFUnA** Internal Standard
RT (Exp. RT): 2.223 (2.234)
Concentration: 1 µg/L
Sample type: Sample



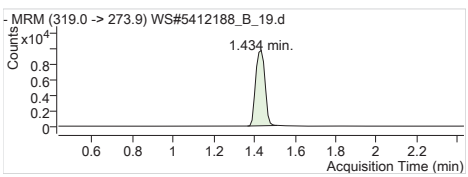



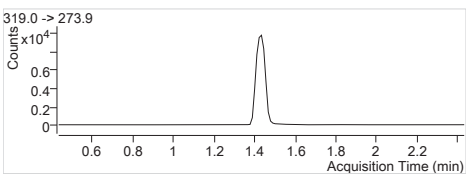

**MPFDoA** Internal Standard
RT (Exp. RT): 2.311 (2.311)
Concentration: 1 µg/L
Sample type: Sample



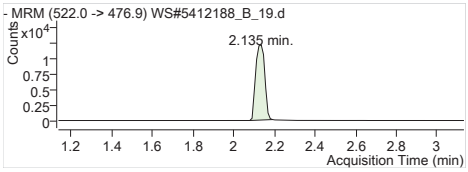



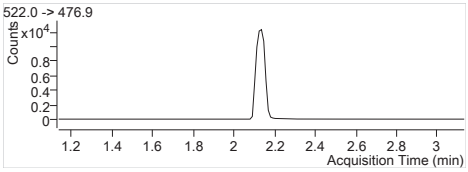

**MPFTeDA** Internal Standard
RT (Exp. RT): 2.455 (2.455)
Concentration: 1 µg/L
Sample type: Sample



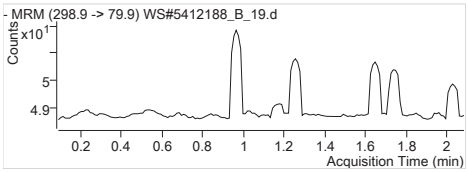



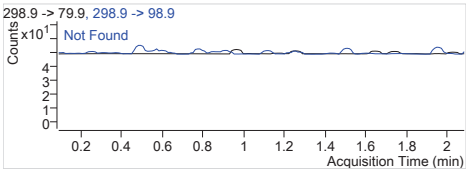

**13C6-PFHxA IS** Internal Standard
RT (Exp. RT): 1.434 (1.434)
Concentration: 1 µg/L
Sample type: Sample



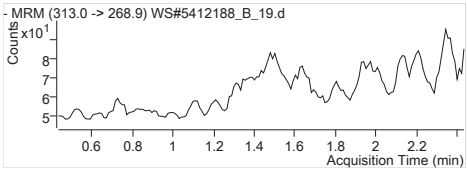



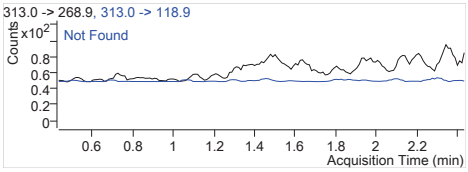

**13C9-PFDA IS** Internal Standard
RT (Exp. RT): 2.135 (2.135)
Concentration: 1 µg/L
Sample type: Sample



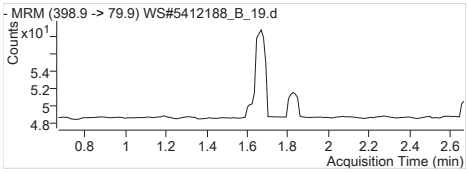



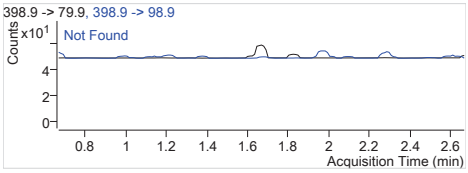

**PFBS 1** 298.9 -> 79.9
RT (Exp. RT): 0.000 (1.087)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



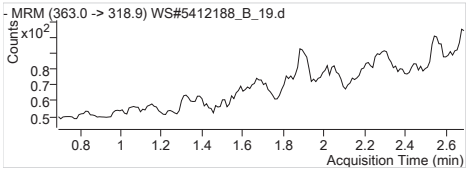



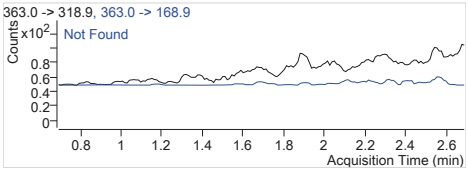

**PFHxA 1** 313.0 -> 268.9
RT (Exp. RT): 0.000 (1.434)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



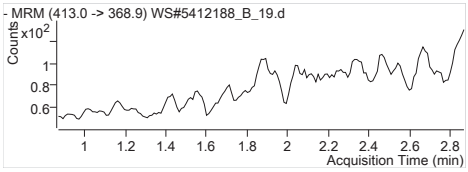



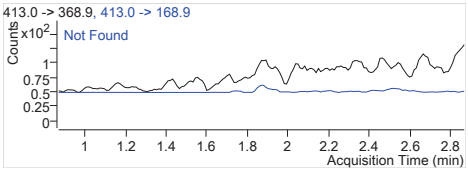

**PFHxS 1** 398.9 -> 79.9
RT (Exp. RT): 0.000 (1.668)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



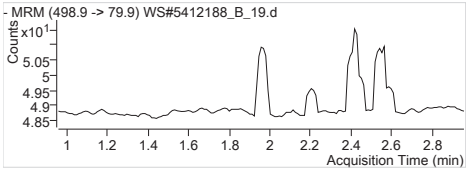



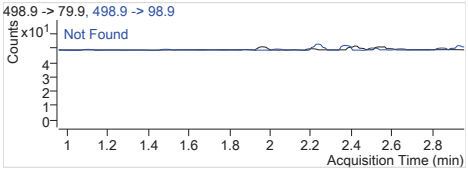

**PFHpA 1** 363.0 -> 318.9
RT (Exp. RT): 0.000 (1.691)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



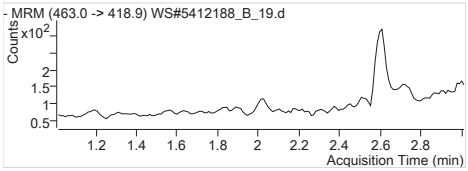



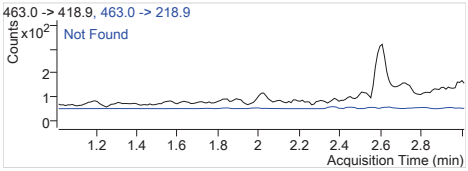

**PFOA 1** 413.0 -> 368.9
RT (Exp. RT): 0.000 (1.869)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



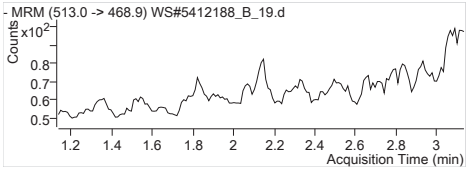



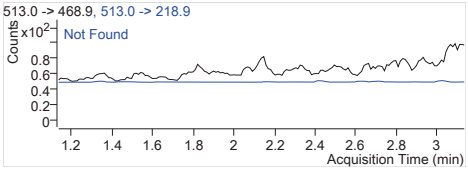

**PFOS 1** 498.9 -> 79.9
RT (Exp. RT): 0.000 (1.957)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



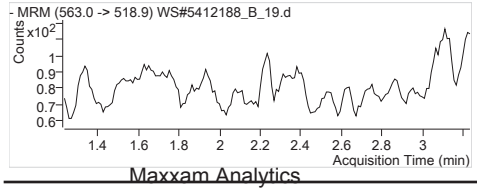



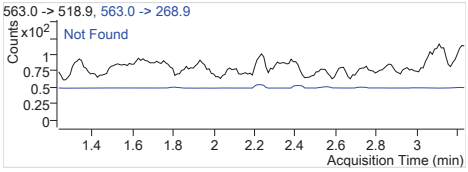

**PFNA 1** 463.0 -> 418.9
RT (Exp. RT): 0.000 (2.014)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



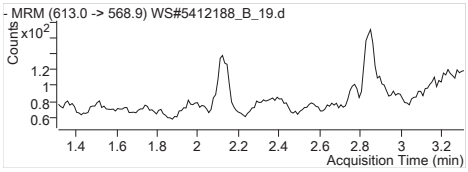



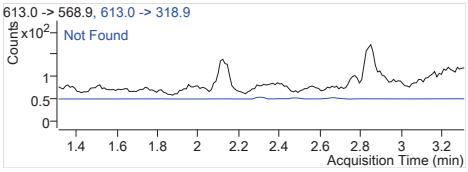

**PFDA 1** 513.0 -> 468.9
RT (Exp. RT): 0.000 (2.135)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



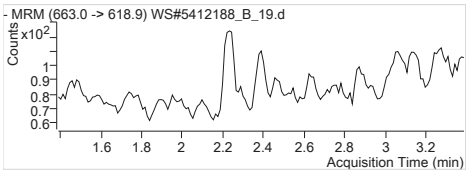



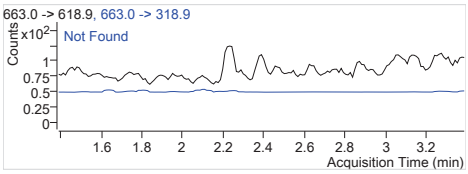

**PFUnA 1** 563.0 -> 518.9
RT (Exp. RT): 0.000 (2.234)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



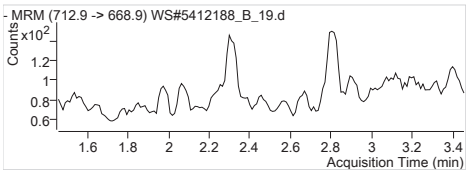



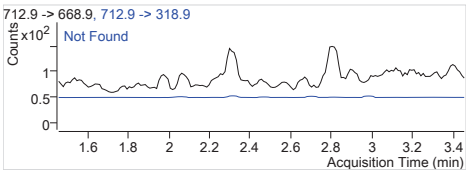

| | |
|---|---|
| **PFDoA 1** | 613.0 -> 568.9 |
| RT (Exp. RT): | 0.000 (2.311) |
| Calc. conc. | N.D. |
| Area ratio: | 0 |
| Sample type: | Sample |



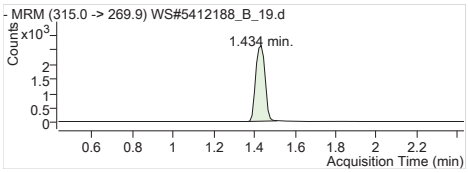



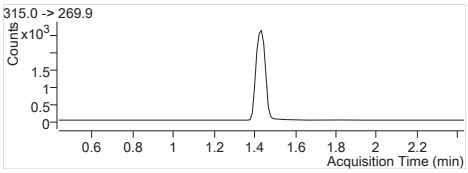

| | |
|---|---|
| **PFTrDA 1** | 663.0 -> 618.9 |
| RT (Exp. RT): | 0.000 (2.389) |
| Calc. conc. | N.D. |
| Area ratio: | 0 |
| Sample type: | Sample |



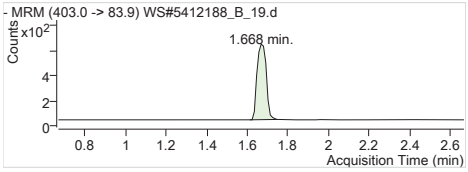



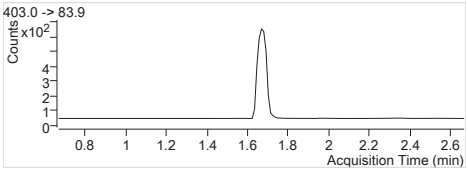

| | |
|---|---|
| **PFTeDA 1** | 712.9 -> 668.9 |
| RT (Exp. RT): | 0.000 (2.456) |
| Calc. conc. | N.D. |
| Area ratio: | 0 |
| Sample type: | Sample |



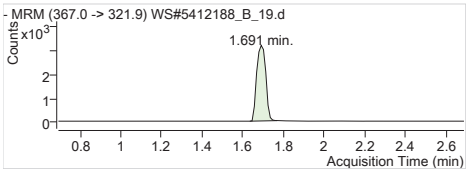



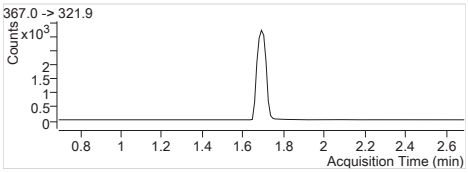

| | |
|---|---|
| **13C2-PFHxA** | 315.0 -> 269.9 |
| RT (Exp. RT): | 1.434 (1.434) |
| Calc. conc. | 106.22 µg/L |
| Area ratio: | 0.26403 |
| Sample type: | Sample |



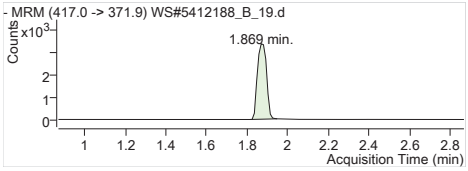



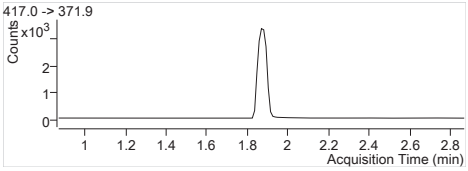

| | |
|---|---|
| **18O2-PFHxS** | 403.0 -> 83.9 |
| RT (Exp. RT): | 1.668 (1.668) |
| Calc. conc. | 117.12 µg/L |
| Area ratio: | 0.06082 |
| Sample type: | Sample |



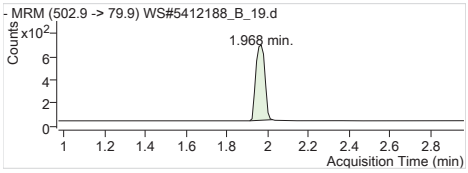



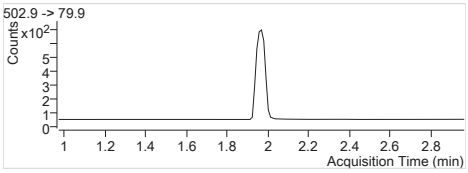

| | |
|---|---|
| **13C4-PFHpA** | 367.0 -> 321.9 |
| RT (Exp. RT): | 1.691 (1.691) |
| Calc. conc. | 109.94 µg/L |
| Area ratio: | 0.31653 |
| Sample type: | Sample |



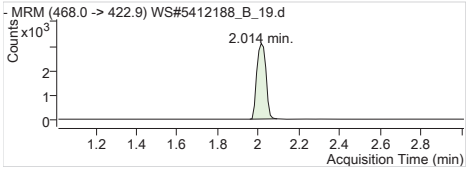



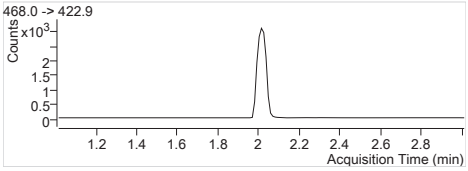

| | |
|---|---|
| **13C4-PFOA** | 417.0 -> 371.9 |
| RT (Exp. RT): | 1.869 (1.869) |
| Calc. conc. | 113.20 µg/L |
| Area ratio: | 0.33619 |
| Sample type: | Sample |



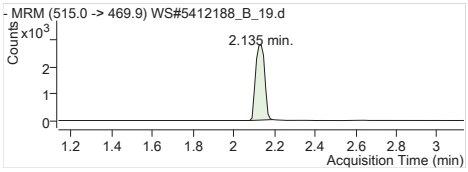



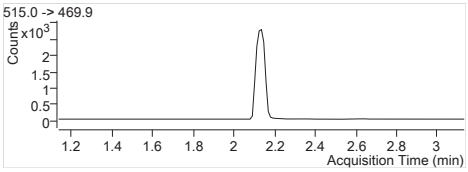

| | |
|---|---|
| **13C4-PFOS** | 502.9 -> 79.9 |
| RT (Exp. RT): | 1.968 (1.968) |
| Calc. conc. | 107.51 µg/L |
| Area ratio: | 0.06464 |
| Sample type: | Sample |



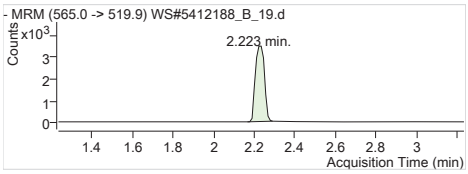



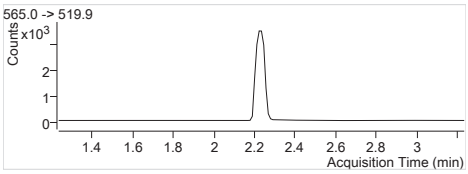

| | |
|---|---|
| **13C5-PFNA** | 468.0 -> 422.9 |
| RT (Exp. RT): | 2.014 (2.014) |
| Calc. conc. | 106.76 µg/L |
| Area ratio: | 0.30708 |
| Sample type: | Sample |



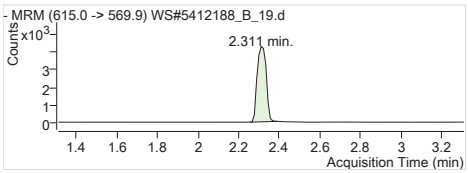



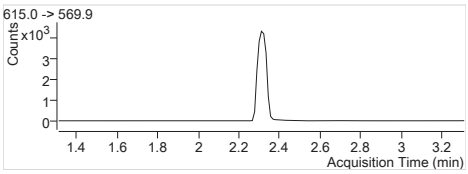

**13C2-PFDA** 515.0 -> 469.9
RT (Exp. RT): 2.135 (2.135)
Calc. conc. 101.39 µg/L
Area ratio: 0.22331
Sample type: Sample



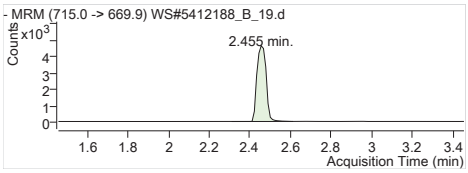



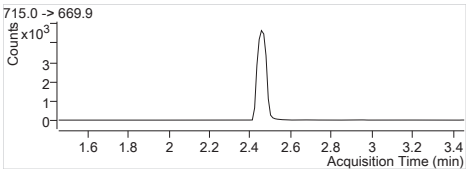

**13C2-PFUnA** 565.0 -> 519.9
RT (Exp. RT): 2.223 (2.234)
Calc. conc. 110.37 µg/L
Area ratio: 0.28268
Sample type: Sample



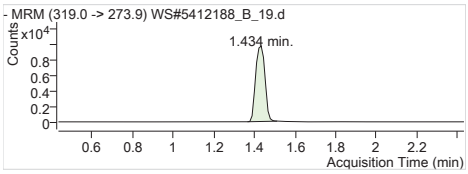



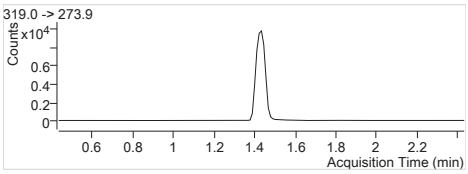

**13C2-PFDoA** 615.0 -> 569.9
RT (Exp. RT): 2.311 (2.311)
Calc. conc. 106.97 µg/L
Area ratio: 0.34710
Sample type: Sample



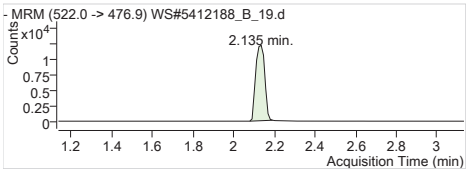



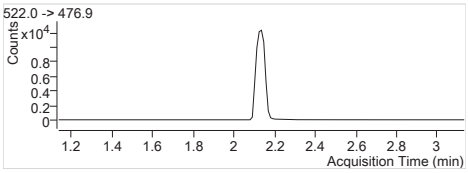

**13C2-PFTeDA** 715.0 -> 669.9
RT (Exp. RT): 2.455 (2.455)
Calc. conc. 107.29 µg/L
Area ratio: 0.38272
Sample type: Sample




**13C6-PFHxA** 319.0 -> 273.9
RT (Exp. RT): 1.434 (1.434)
Calc. conc. 2.38 µg/L
Area ratio: 0
Sample type: Sample



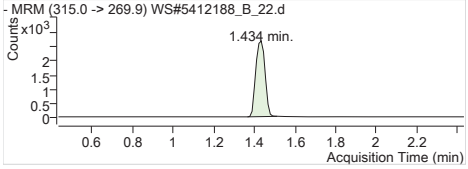

**13C9-PFDA** 522.0 -> 476.9
RT (Exp. RT): 2.135 (2.135)
Calc. conc. 2.45 µg/L
Area ratio: 0
Sample type: Sample

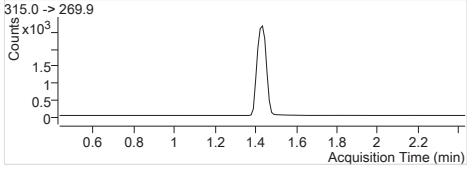
**Batch Path** T:\lcms4\PFC\20180226\WS#5412188_B\QuantResults\PFC_Water_Low_180227_WS#5412188_B_EToxics

| | | | |
|---|---|---|---|
| **Sample Name** | **IB** | **Instrument** | LCMS04 |
| **Data File** | WS#5412188_B_22.d | **Operator** | |
| **Sample Type** | Sample | **Dilution** | 0.024 |
| **Acq. Method** | PFC_Water_Low.m | **Position** | P1-C7 |
| **Acq. Date** | 2018/02/27 2:56:24 PM | **Injection Volume** | Per Method |
| **Sample Annotation** | - | | |

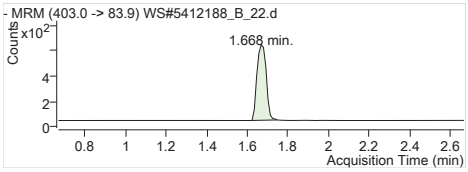
| ISTD Compounds | Response | RT | Target conc. | | |
|---|---|---|---|---|---|
| MPFHxA | 8393 | 1.43 | 1 µg/L | | |
| MPFHxS | 1887 | 1.67 | 1 µg/L | | |
| MPFHpA | 10008 | 1.69 | 1 µg/L | | |
| MPFOA | 10428 | 1.87 | 1 µg/L | | |
| MPFOS | 2325 | 1.97 | 1 µg/L | | |
| MPFNA | 9789 | 2.01 | 1 µg/L | | |
| MPFDA | 8838 | 2.14 | 1 µg/L | | |
| MPFUnA | 10500 | 2.23 | 1 µg/L | | |
| MPFDoA | 13679 | 2.31 | 1 µg/L | | |
| MPFTeDA | 14098 | 2.46 | 1 µg/L | | |
| 13C6-PFHxA IS | 32635 | 1.43 | 1 µg/L | | |
| 13C9-PFDA IS | 39107 | 2.13 | 1 µg/L | | |

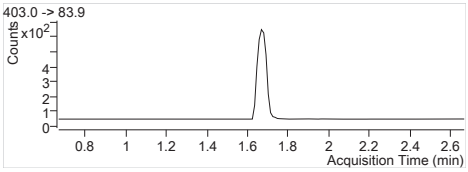
| Compound | Response | RT | Target Conc. | Calc. Conc. | Accuracy |
|---|---|---|---|---|---|
| PFBS 1 | | | - | ND | - |
| PFHxA 1 | | | - | ND | - |
| PFHxS 1 | | | - | ND | - |
| PFHpA 1 | | | - | ND | - |
| PFOA 1 | | | - | ND | - |
| PFOS 1 | | | - | ND | - |
| PFNA 1 | | | - | ND | - |
| PFDA 1 | | | - | ND | - |
| PFUnA 1 | | | - | ND | - |
| PFDoA 1 | | | - | ND | - |
| PFTrDA 1 | | | - | ND | - |
| PFTeDA 1 | | | - | ND | - |
| 13C2-PFHxA | 8393 | 1.43 | - | 103.46 µg/L | - |
| 18O2-PFHxS | 1887 | 1.67 | - | 111.35 µg/L | - |
| 13C4-PFHpA | 10008 | 1.69 | - | 106.51 µg/L | - |
| 13C4-PFOA | 10428 | 1.87 | - | 107.59 µg/L | - |
| 13C4-PFOS | 2325 | 1.97 | - | 118.49 µg/L | - |
| 13C5-PFNA | 9791 | 2.01 | - | 104.30 µg/L | - |
| 13C2-PFDA | 8667 | 2.14 | - | 100.63 µg/L | - |
| 13C2-PFUnA | 10500 | 2.23 | - | 104.83 µg/L | - |
| 13C2-PFDoA | 13679 | 2.31 | - | 107.80 µg/L | - |
| 13C2-PFTeDA | 14188 | 2.46 | - | 101.70 µg/L | - |
| 13C6-PFHxA | 32635 | 1.43 | - | 2.50 µg/L | - |
| 13C9-PFDA | 39107 | 2.13 | - | 2.52 µg/L | - |



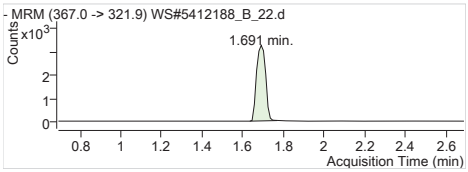



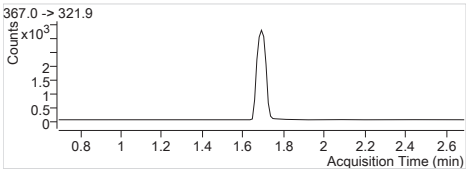

**MPFHxA** Internal Standard
RT (Exp. RT): 1.434 (1.434)
Concentration: 1 µg/L
Sample type: Sample



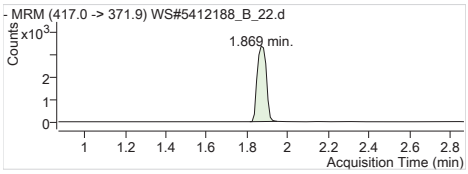



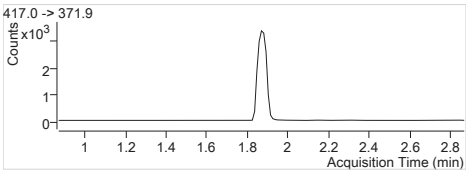

**MPFHxS** Internal Standard
RT (Exp. RT): 1.668 (1.668)
Concentration: 1 µg/L
Sample type: Sample



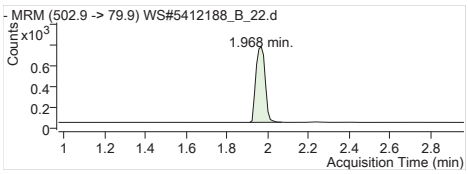



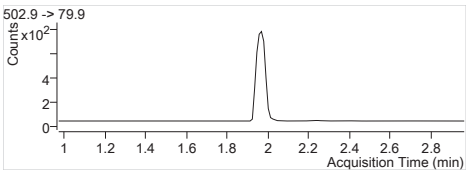

**MPFHpA** Internal Standard
RT (Exp. RT): 1.691 (1.691)
Concentration: 1 µg/L
Sample type: Sample



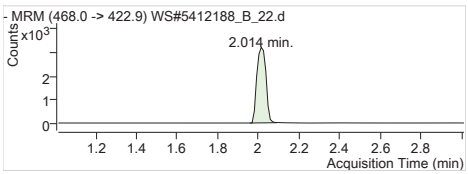



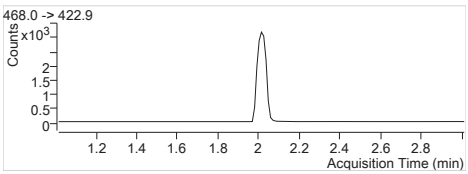

**MPFOA** Internal Standard
RT (Exp. RT): 1.869 (1.869)
Concentration: 1 µg/L
Sample type: Sample



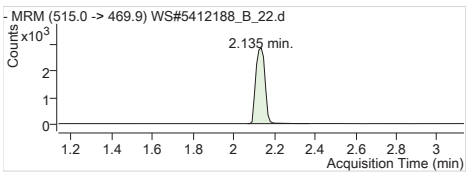



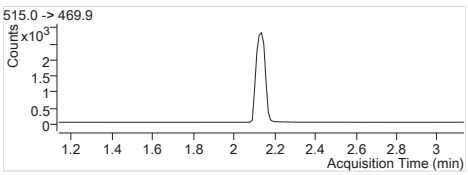

**MPFOS** Internal Standard
RT (Exp. RT): 1.968 (1.968)
Concentration: 1 µg/L
Sample type: Sample



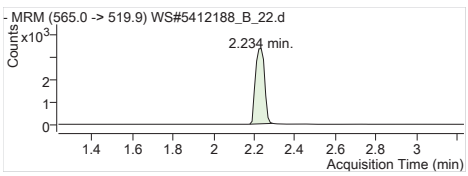



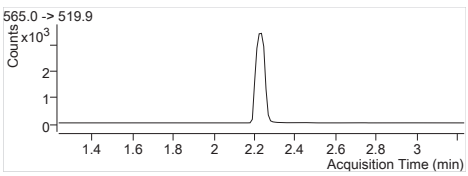

**MPFNA** Internal Standard
RT (Exp. RT): 2.014 (2.014)
Concentration: 1 µg/L
Sample type: Sample



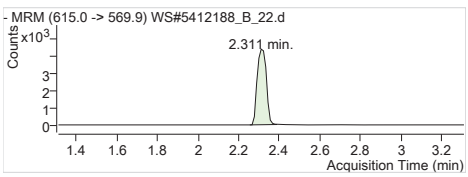



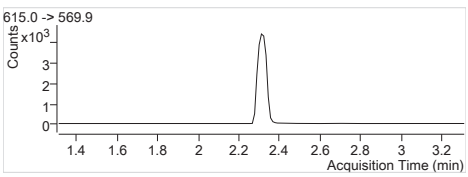

**MPFDA** Internal Standard
RT (Exp. RT): 2.135 (2.135)
Concentration: 1 µg/L
Sample type: Sample



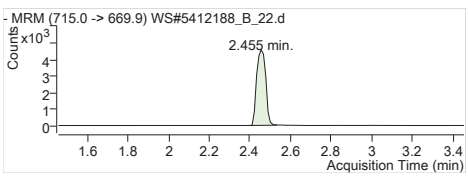



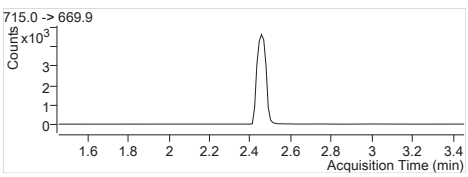

**MPFUnA** Internal Standard
RT (Exp. RT): 2.234 (2.234)
Concentration: 1 µg/L
Sample type: Sample



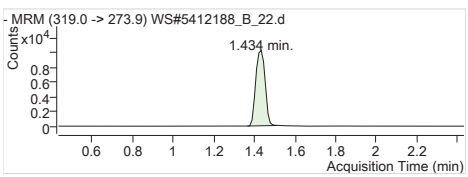



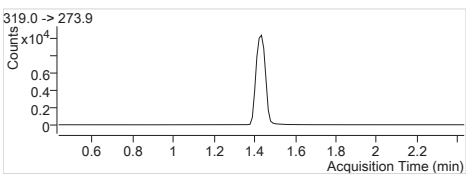

**MPFDoA** Internal Standard
RT (Exp. RT): 2.311 (2.311)
Concentration: 1 µg/L
Sample type: Sample



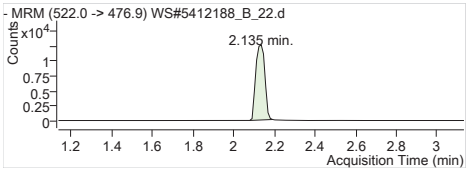



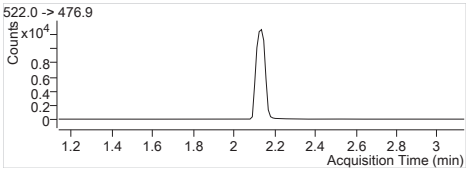

**MPFTeDA** Internal Standard
RT (Exp. RT): 2.455 (2.455)
Concentration: 1 µg/L
Sample type: Sample



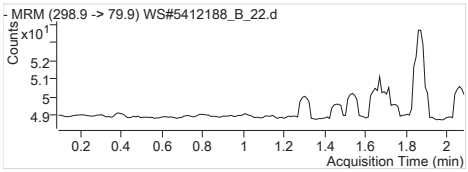



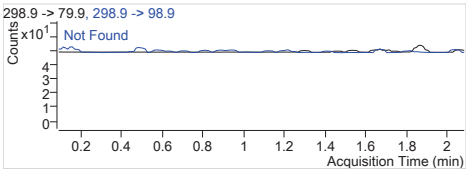

**13C6-PFHxA IS** Internal Standard
RT (Exp. RT): 1.434 (1.434)
Concentration: 1 µg/L
Sample type: Sample



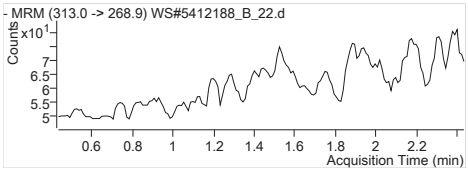



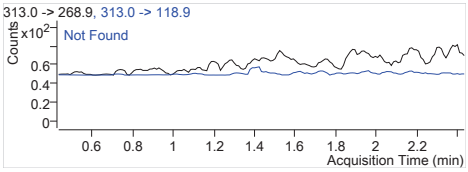

**13C9-PFDA IS** Internal Standard
RT (Exp. RT): 2.135 (2.135)
Concentration: 1 µg/L
Sample type: Sample



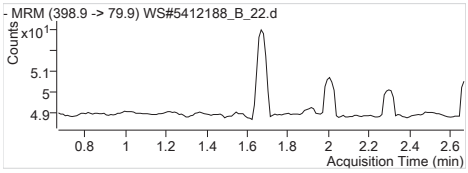



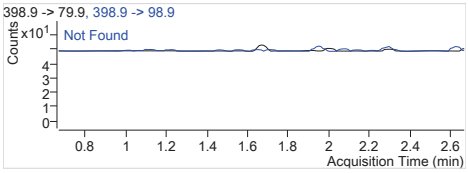

**PFBS 1** 298.9 -> 79.9
RT (Exp. RT): 0.000 (1.087)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



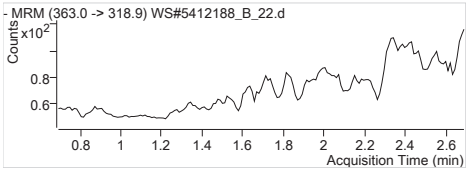



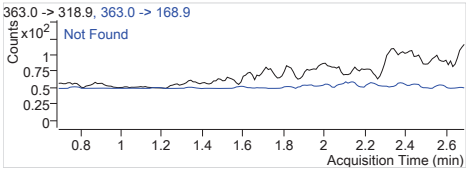

**PFHxA 1** 313.0 -> 268.9
RT (Exp. RT): 0.000 (1.434)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



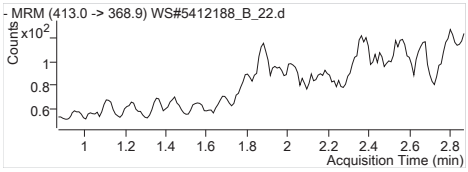



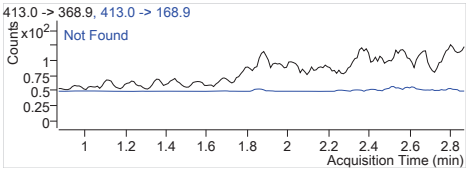

**PFHxS 1** 398.9 -> 79.9
RT (Exp. RT): 0.000 (1.668)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



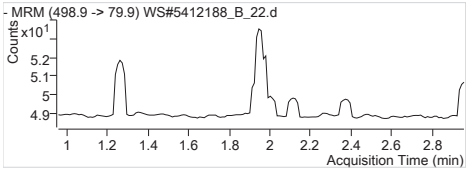



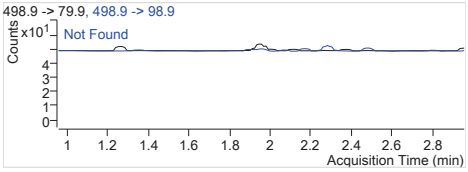

**PFHpA 1** 363.0 -> 318.9
RT (Exp. RT): 0.000 (1.691)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



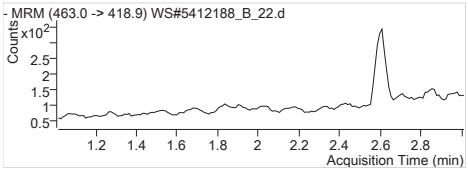



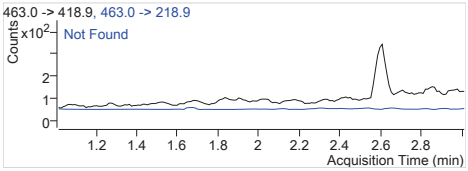

**PFOA 1** 413.0 -> 368.9
RT (Exp. RT): 0.000 (1.869)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



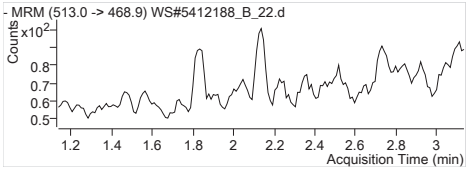



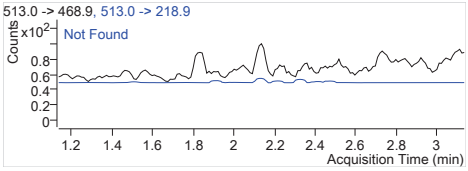

**PFOS 1** 498.9 -> 79.9
RT (Exp. RT): 0.000 (1.957)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



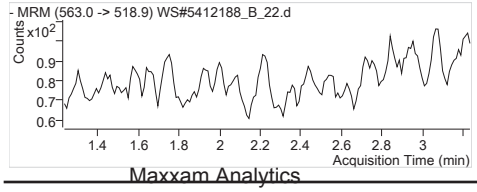



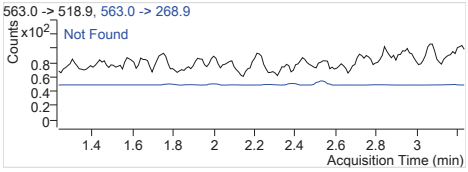

**PFNA 1** 463.0 -> 418.9
RT (Exp. RT): 0.000 (2.014)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



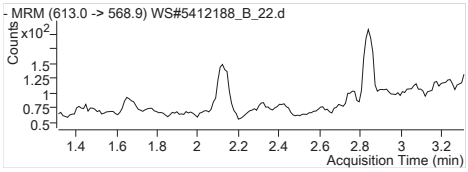



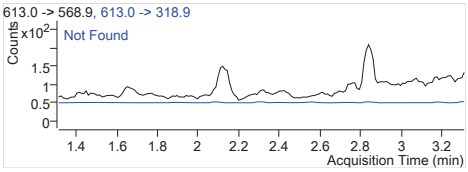

**PFDA 1** 513.0 -> 468.9
RT (Exp. RT): 0.000 (2.135)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



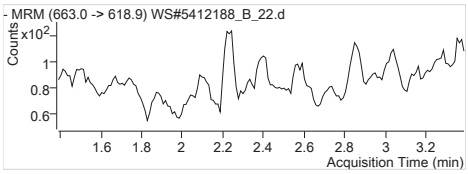



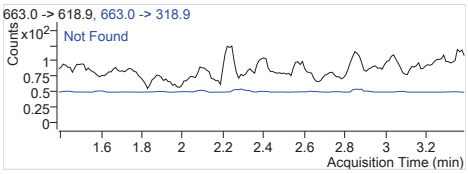

**PFUnA 1** 563.0 -> 518.9
RT (Exp. RT): 0.000 (2.234)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



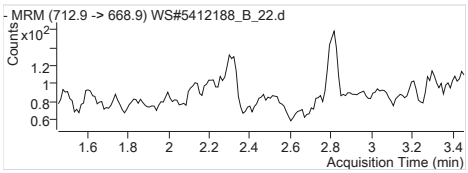



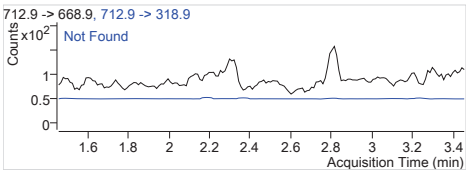

| | |
|---|---|
| **PFDoA 1** | 613.0 -> 568.9 |
| RT (Exp. RT): | 0.000 (2.311) |
| Calc. conc. | N.D. |
| Area ratio: | 0 |
| Sample type: | Sample |



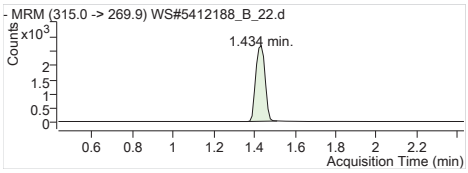



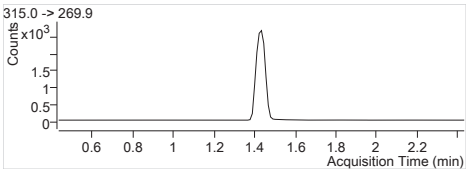

| | |
|---|---|
| **PFTrDA 1** | 663.0 -> 618.9 |
| RT (Exp. RT): | 0.000 (2.389) |
| Calc. conc. | N.D. |
| Area ratio: | 0 |
| Sample type: | Sample |



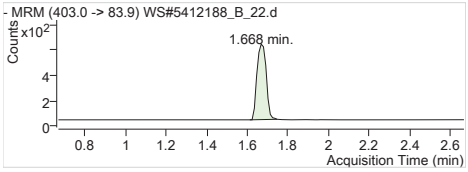



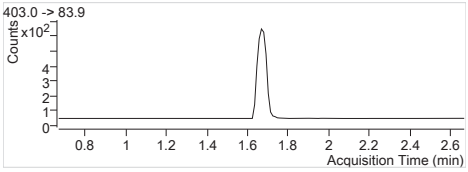

| | |
|---|---|
| **PFTeDA 1** | 712.9 -> 668.9 |
| RT (Exp. RT): | 0.000 (2.456) |
| Calc. conc. | N.D. |
| Area ratio: | 0 |
| Sample type: | Sample |



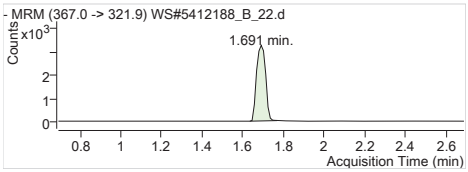



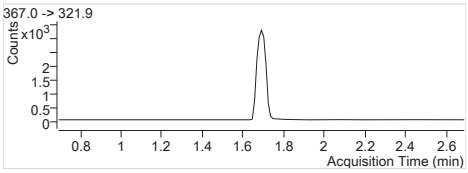

| | |
|---|---|
| **13C2-PFHxA** | 315.0 -> 269.9 |
| RT (Exp. RT): | 1.434 (1.434) |
| Calc. conc. | 103.46 µg/L |
| Area ratio: | 0.25718 |
| Sample type: | Sample |



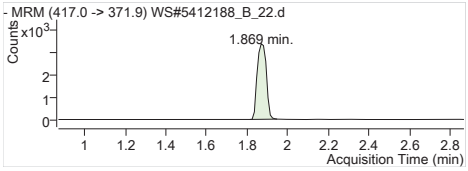



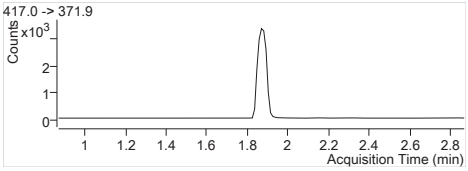

| | |
|---|---|
| **18O2-PFHxS** | 403.0 -> 83.9 |
| RT (Exp. RT): | 1.668 (1.668) |
| Calc. conc. | 111.35 µg/L |
| Area ratio: | 0.05782 |
| Sample type: | Sample |



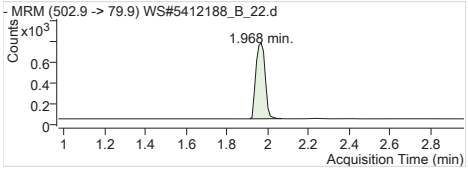



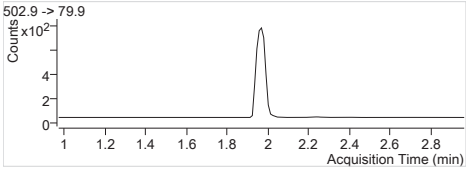

| | |
|---|---|
| **13C4-PFHpA** | 367.0 -> 321.9 |
| RT (Exp. RT): | 1.691 (1.691) |
| Calc. conc. | 106.51 µg/L |
| Area ratio: | 0.30666 |
| Sample type: | Sample |



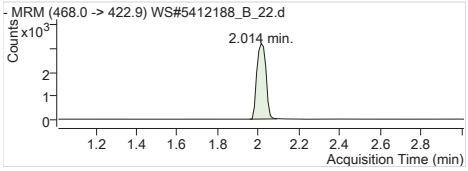



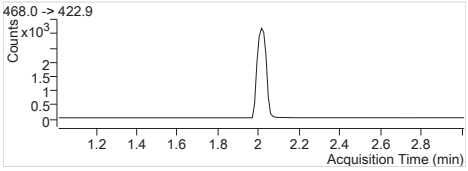

| | |
|---|---|
| **13C4-PFOA** | 417.0 -> 371.9 |
| RT (Exp. RT): | 1.869 (1.869) |
| Calc. conc. | 107.59 µg/L |
| Area ratio: | 0.31953 |
| Sample type: | Sample |



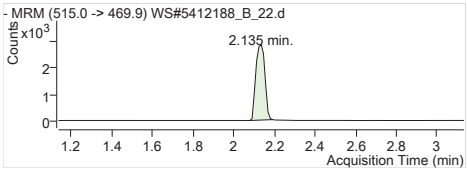



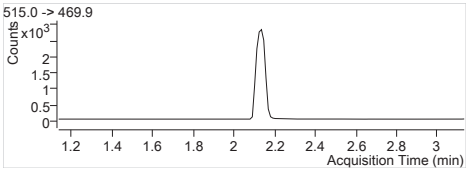

| | |
|---|---|
| **13C4-PFOS** | 502.9 -> 79.9 |
| RT (Exp. RT): | 1.968 (1.968) |
| Calc. conc. | 118.49 µg/L |
| Area ratio: | 0.07124 |
| Sample type: | Sample |



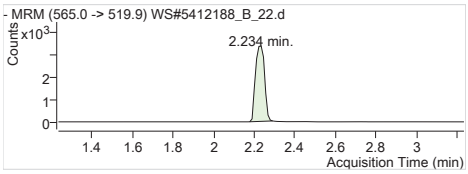



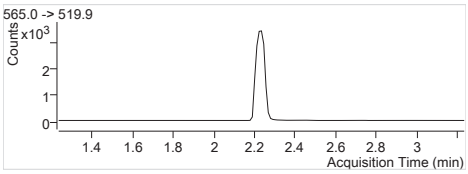

| | |
|---|---|
| **13C5-PFNA** | 468.0 -> 422.9 |
| RT (Exp. RT): | 2.014 (2.014) |
| Calc. conc. | 104.30 µg/L |
| Area ratio: | 0.30002 |
| Sample type: | Sample |



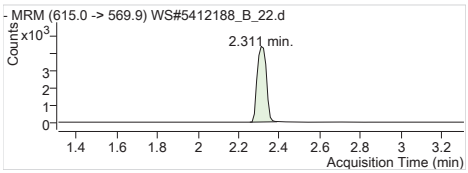



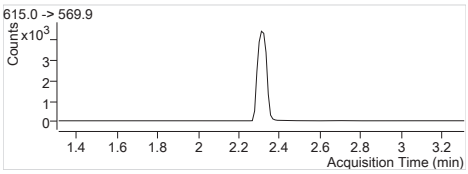

**13C2-PFDA** 515.0 -> 469.9
RT (Exp. RT): 2.135 (2.135)
Calc. conc. 100.63 µg/L
Area ratio: 0.22162
Sample type: Sample



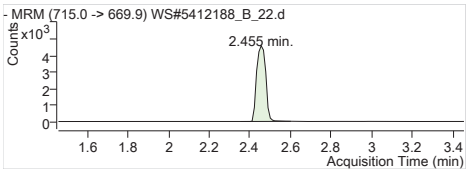



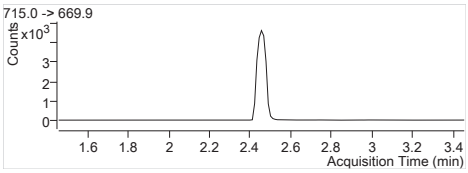

**13C2-PFUnA** 565.0 -> 519.9
RT (Exp. RT): 2.234 (2.234)
Calc. conc. 104.83 µg/L
Area ratio: 0.26849
Sample type: Sample



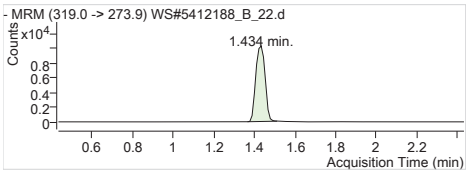



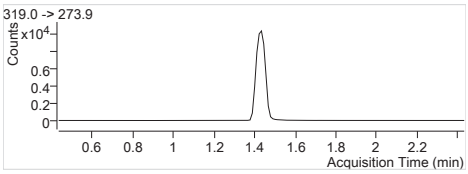

**13C2-PFDoA** 615.0 -> 569.9
RT (Exp. RT): 2.311 (2.311)
Calc. conc. 107.80 µg/L
Area ratio: 0.34978
Sample type: Sample



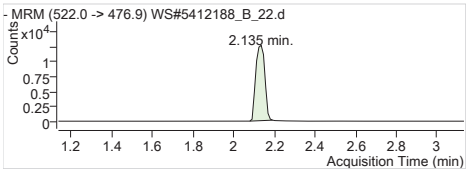



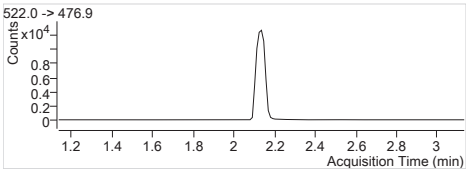

**13C2-PFTeDA** 715.0 -> 669.9
RT (Exp. RT): 2.455 (2.455)
Calc. conc. 101.70 µg/L
Area ratio: 0.36280
Sample type: Sample




**13C6-PFHxA** 319.0 -> 273.9
RT (Exp. RT): 1.434 (1.434)
Calc. conc. 2.50 µg/L
Area ratio: 0
Sample type: Sample




**13C9-PFDA** 522.0 -> 476.9
RT (Exp. RT): 2.135 (2.135)
Calc. conc. 2.52 µg/L
Area ratio: 0
Sample type: Sample

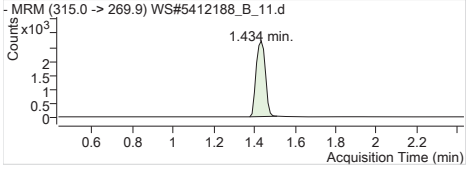
# Quantitation Results

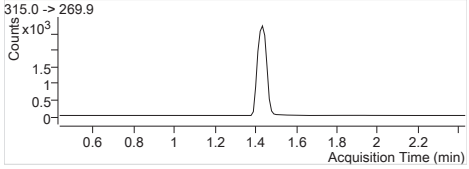
Agilent Technologies

| | | | |
|---|---|---|---|
| **Batch Path** | T:\lcms4\PFC\20180226\WS#5412188_B\QuantResults\PFC_Water_Low_180227_WS#5412188_B_EToxics | | |
| **Sample Name** | **5412188:BLANK** | **Instrument** | LCMS04 |
| **Data File** | WS#5412188_B_11.d | **Operator** | |
| **Sample Type** | Sample | **Dilution** | 0.024 |
| **Acq. Method** | PFC_Water_Low.m | **Position** | P1-C9 |
| **Acq. Date** | 2018/02/27 2:02:09 PM | **Injection Volume** | Per Method |
| **Sample Annotation** | - | | |

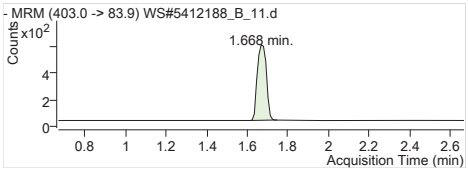
| ISTD Compounds | Response | RT | Target conc. | | |
|---|---|---|---|---|---|
| MPFHxA | 8434 | 1.43 | 1 µg/L | | |
| MPFHxS | 1739 | 1.67 | 1 µg/L | | |
| MPFHpA | 9524 | 1.69 | 1 µg/L | | |
| MPFOA | 9550 | 1.87 | 1 µg/L | | |
| MPFOS | 1796 | 1.97 | 1 µg/L | | |
| MPFNA | 9414 | 2.01 | 1 µg/L | | |
| MPFDA | 8373 | 2.14 | 1 µg/L | | |
| MPFUnA | 9648 | 2.23 | 1 µg/L | | |
| MPFDoA | 11796 | 2.31 | 1 µg/L | | |
| MPFTeDA | 12070 | 2.46 | 1 µg/L | | |
| 13C6-PFHxA IS | 30908 | 1.43 | 1 µg/L | | |
| 13C9-PFDA IS | 34891 | 2.13 | 1 µg/L | | |

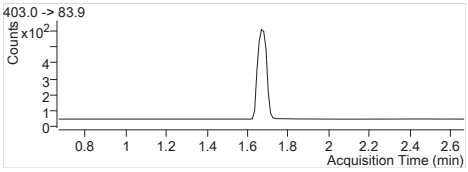
| Compound | Response | RT | Target Conc. | Calc. Conc. | Accuracy |
|---|---|---|---|---|---|
| PFBS 1 | | | - | ND | - |
| PFHxA 1 | | | - | ND | - |
| PFHxS 1 | | | - | ND | - |
| PFHpA 1 | | | - | ND | - |
| PFOA 1 | | | - | ND | - |
| PFOS 1 | | | - | ND | - |
| PFNA 1 | | | - | ND | - |
| PFDA 1 | | | - | ND | - |
| PFUnA 1 | | | - | ND | - |
| PFDoA 1 | | | - | ND | - |
| PFTrDA 1 | | | - | ND | - |
| PFTeDA 1 | | | - | ND | - |
| 13C2-PFHxA | 8434 | 1.43 | - | 109.78 µg/L | - |
| 18O2-PFHxS | 1739 | 1.67 | - | 108.35 µg/L | - |
| 13C4-PFHpA | 9524 | 1.69 | - | 107.03 µg/L | - |
| 13C4-PFOA | 9550 | 1.87 | - | 104.04 µg/L | - |
| 13C4-PFOS | 1796 | 1.97 | - | 96.64 µg/L | - |
| 13C5-PFNA | 9413 | 2.01 | - | 105.88 µg/L | - |
| 13C2-PFDA | 8284 | 2.14 | - | 107.80 µg/L | - |
| 13C2-PFUnA | 9648 | 2.23 | - | 107.96 µg/L | - |
| 13C2-PFDoA | 11796 | 2.31 | - | 104.19 µg/L | - |
| 13C2-PFTeDA | 12194 | 2.46 | - | 97.97 µg/L | - |
| 13C6-PFHxA | 30908 | 1.43 | - | 2.37 µg/L | - |
| 13C9-PFDA | 34891 | 2.13 | - | 2.25 µg/L | - |



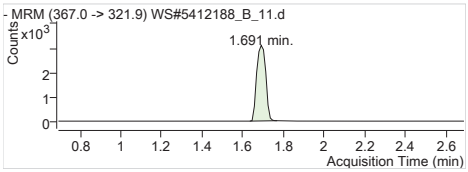



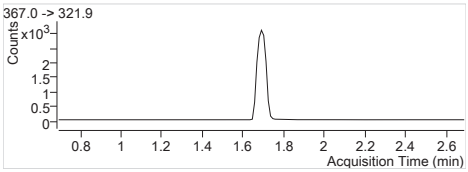

| | |
|---|---|
| **MPFHxA** | Internal Standard |
| RT (Exp. RT): | 1.434 (1.434) |
| Concentration: | 1 µg/L |
| Sample type: | Sample |



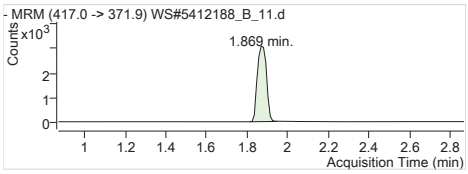



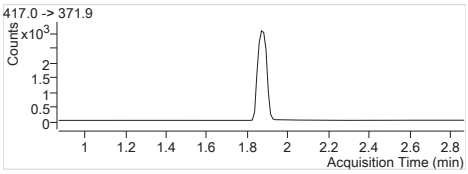

**MPFHxS** Internal Standard
RT (Exp. RT): 1.668 (1.668)
Concentration: 1 µg/L
Sample type: Sample



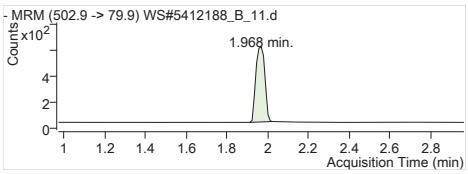



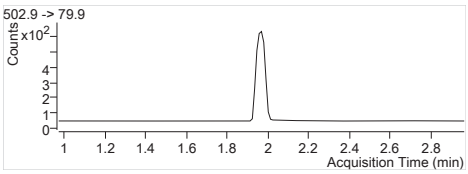

**MPFHpA** Internal Standard
RT (Exp. RT): 1.691 (1.691)
Concentration: 1 µg/L
Sample type: Sample



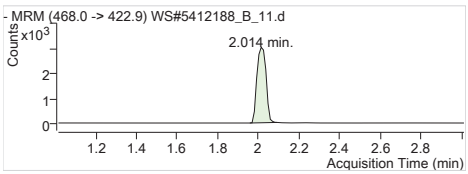



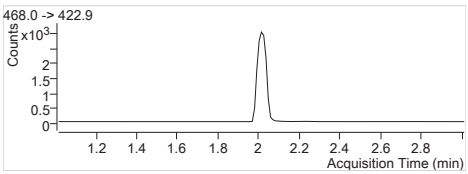

**MPFOA** Internal Standard
RT (Exp. RT): 1.869 (1.869)
Concentration: 1 µg/L
Sample type: Sample



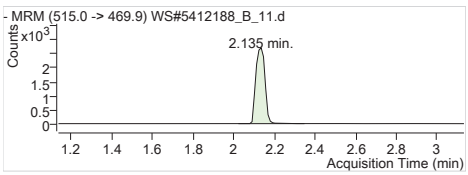



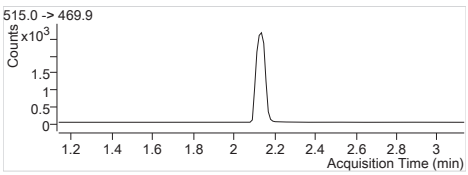

**MPFOS** Internal Standard
RT (Exp. RT): 1.968 (1.968)
Concentration: 1 µg/L
Sample type: Sample



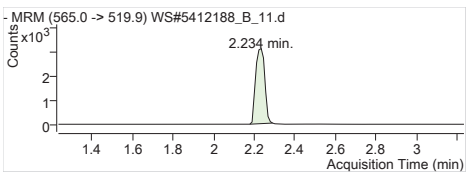



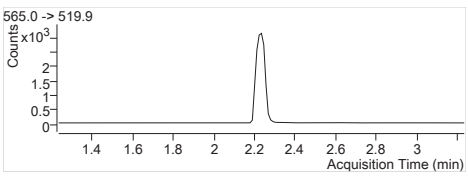

**MPFNA** Internal Standard
RT (Exp. RT): 2.014 (2.014)
Concentration: 1 µg/L
Sample type: Sample



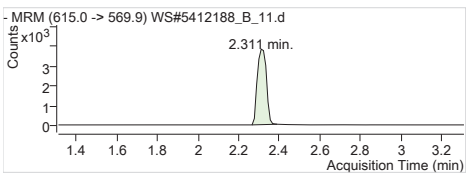



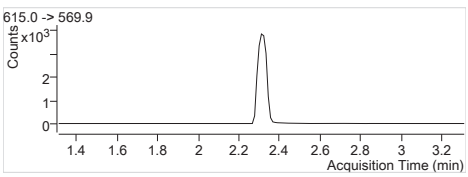

**MPFDA** Internal Standard
RT (Exp. RT): 2.135 (2.135)
Concentration: 1 µg/L
Sample type: Sample



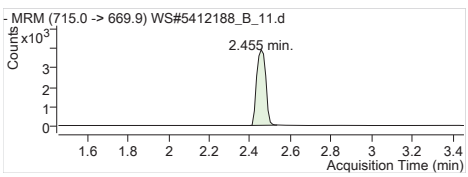



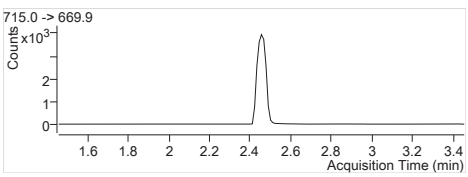

**MPFUnA** Internal Standard
RT (Exp. RT): 2.234 (2.234)
Concentration: 1 µg/L
Sample type: Sample



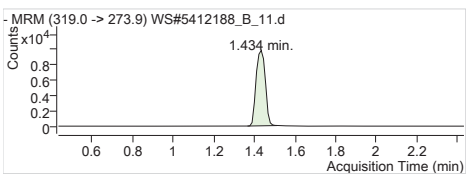



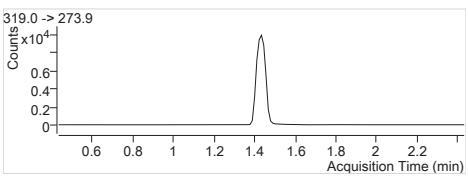

**MPFDoA** Internal Standard
RT (Exp. RT): 2.311 (2.311)
Concentration: 1 µg/L
Sample type: Sample



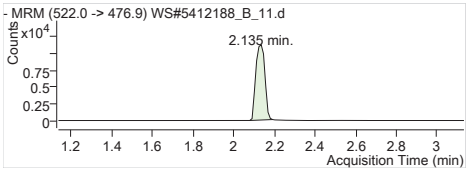



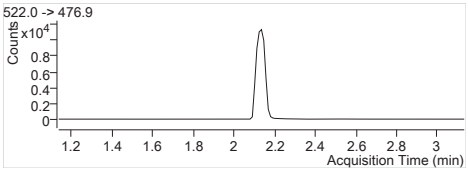

**MPFTeDA** Internal Standard
RT (Exp. RT): 2.455 (2.455)
Concentration: 1 µg/L
Sample type: Sample



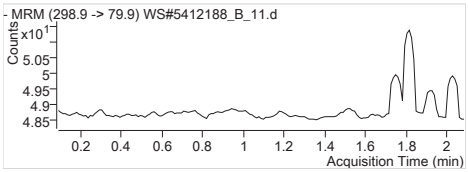



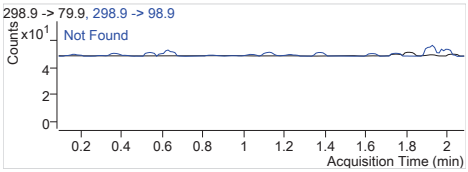

**13C6-PFHxA IS** Internal Standard
RT (Exp. RT): 1.434 (1.434)
Concentration: 1 µg/L
Sample type: Sample



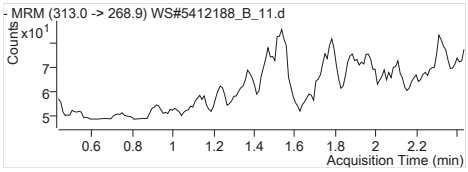



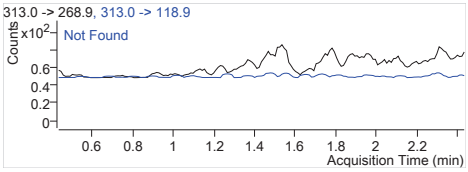

**13C9-PFDA IS** Internal Standard
RT (Exp. RT): 2.135 (2.135)
Concentration: 1 µg/L
Sample type: Sample



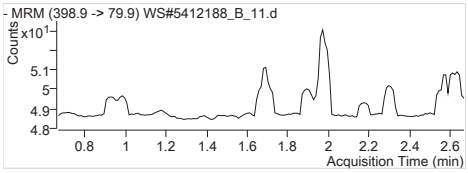



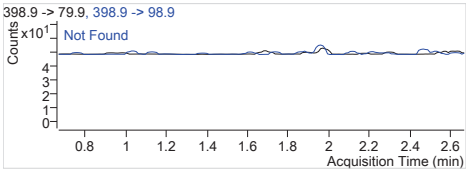

**PFBS 1** 298.9 -> 79.9
RT (Exp. RT): 0.000 (1.087)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



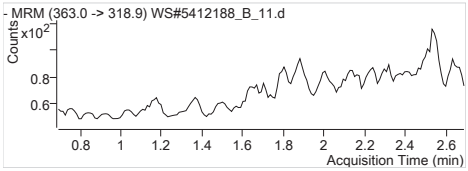



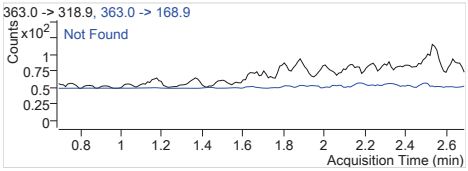

**PFHxA 1** 313.0 -> 268.9
RT (Exp. RT): 0.000 (1.434)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



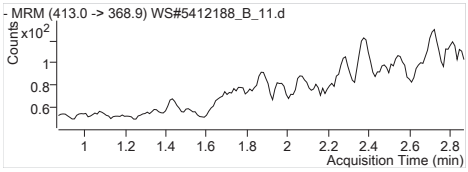



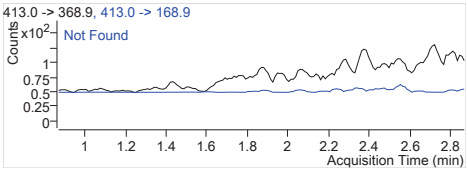

**PFHxS 1** 398.9 -> 79.9
RT (Exp. RT): 0.000 (1.668)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



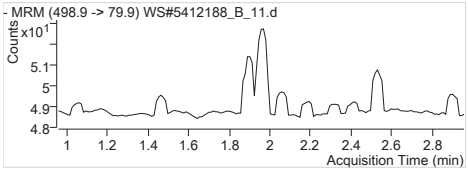



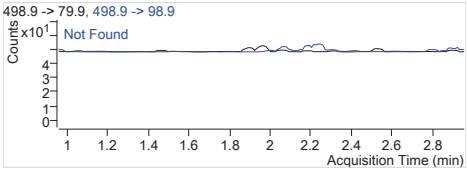

**PFHpA 1** 363.0 -> 318.9
RT (Exp. RT): 0.000 (1.691)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



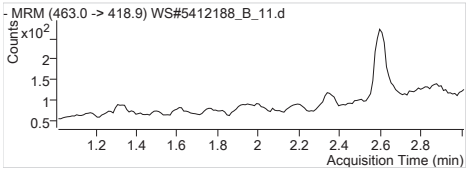



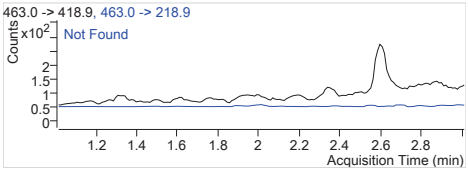

**PFOA 1** 413.0 -> 368.9
RT (Exp. RT): 0.000 (1.869)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



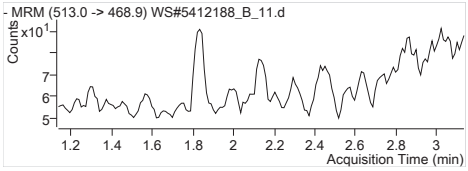



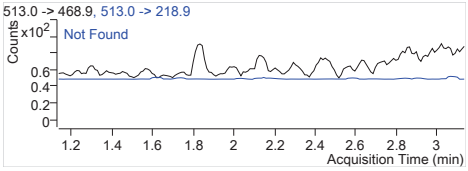

**PFOS 1** 498.9 -> 79.9
RT (Exp. RT): 0.000 (1.957)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



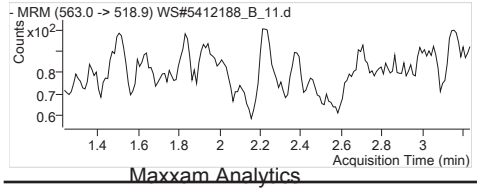



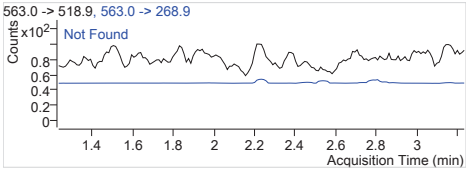

**PFNA 1** 463.0 -> 418.9
RT (Exp. RT): 0.000 (2.014)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



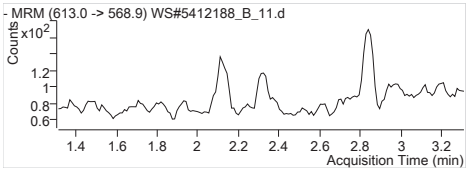



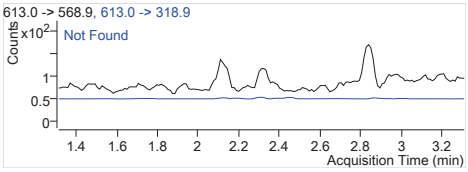

**PFDA 1** 513.0 -> 468.9
RT (Exp. RT): 0.000 (2.135)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



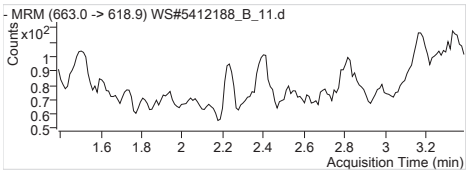



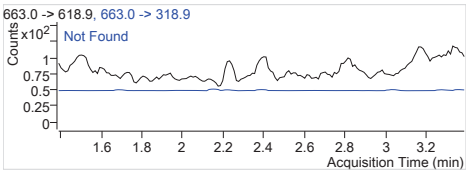

**PFUnA 1** 563.0 -> 518.9
RT (Exp. RT): 0.000 (2.234)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



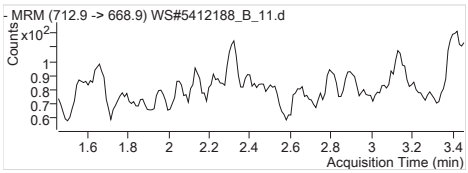



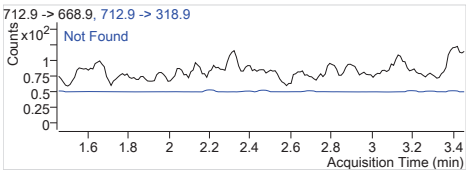

**PFDoA 1** 613.0 -> 568.9
RT (Exp. RT): 0.000 (2.311)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



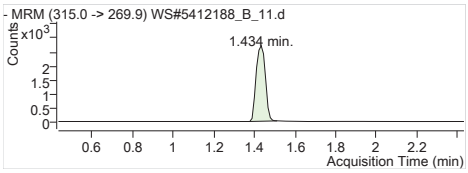



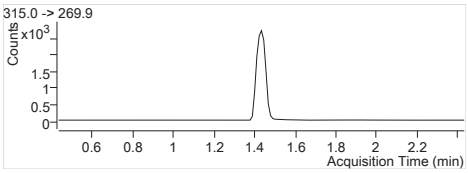

**PFTrDA 1** 663.0 -> 618.9
RT (Exp. RT): 0.000 (2.389)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



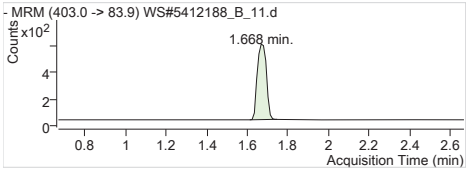



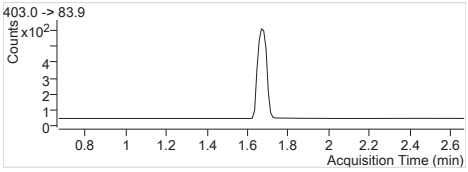

**PFTeDA 1** 712.9 -> 668.9
RT (Exp. RT): 0.000 (2.456)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



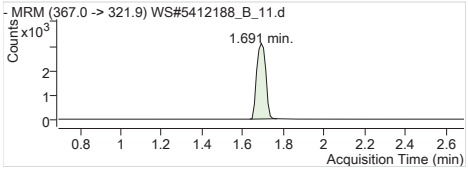



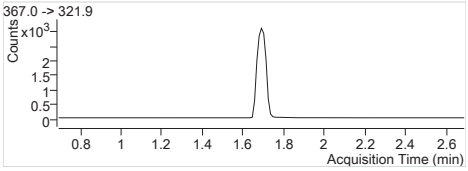

**13C2-PFHxA** 315.0 -> 269.9
RT (Exp. RT): 1.434 (1.434)
Calc. conc. 109.78 µg/L
Area ratio: 0.27287
Sample type: Sample



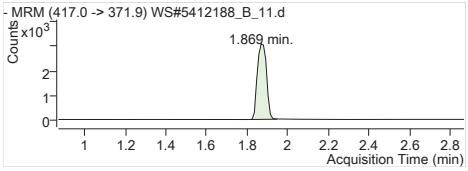



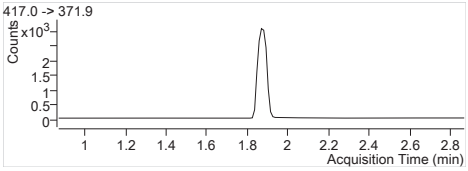

**18O2-PFHxS** 403.0 -> 83.9
RT (Exp. RT): 1.668 (1.668)
Calc. conc. 108.35 µg/L
Area ratio: 0.05626
Sample type: Sample



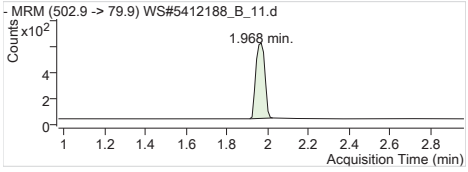



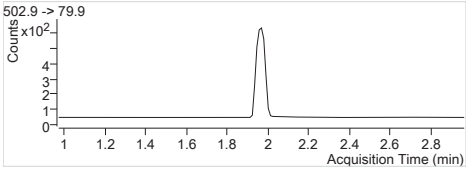

**13C4-PFHpA** 367.0 -> 321.9
RT (Exp. RT): 1.691 (1.691)
Calc. conc. 107.03 µg/L
Area ratio: 0.30814
Sample type: Sample



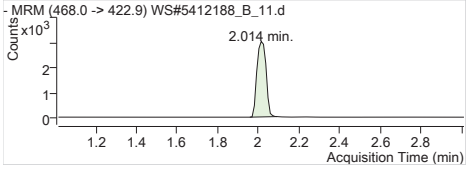



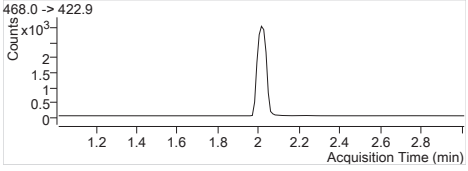

**13C4-PFOA** 417.0 -> 371.9
RT (Exp. RT): 1.869 (1.869)
Calc. conc. 104.04 µg/L
Area ratio: 0.30898
Sample type: Sample



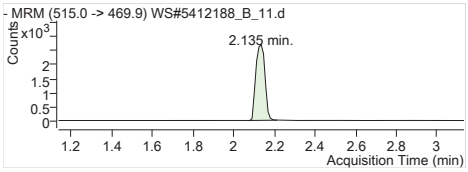



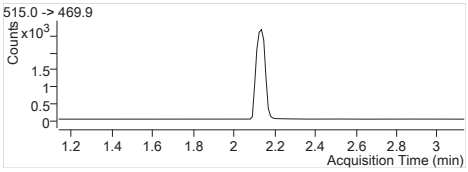

**13C4-PFOS** 502.9 -> 79.9
RT (Exp. RT): 1.968 (1.968)
Calc. conc. 96.64 µg/L
Area ratio: 0.05811
Sample type: Sample



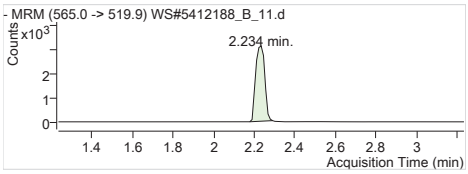



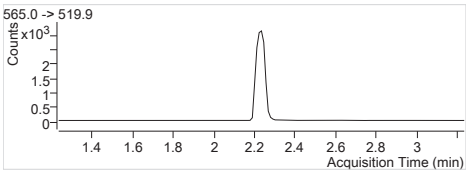

**13C5-PFNA** 468.0 -> 422.9
RT (Exp. RT): 2.014 (2.014)
Calc. conc. 105.88 µg/L
Area ratio: 0.30455
Sample type: Sample



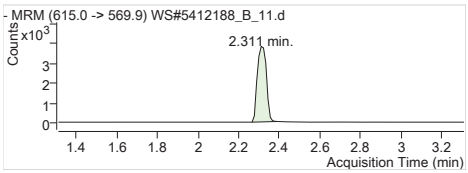



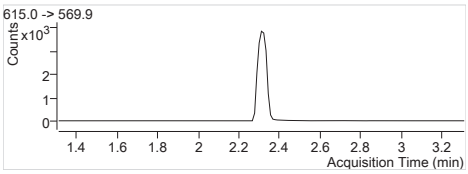

**13C2-PFDA** 515.0 -> 469.9
RT (Exp. RT): 2.135 (2.135)
Calc. conc. 107.80 µg/L
Area ratio: 0.23743
Sample type: Sample



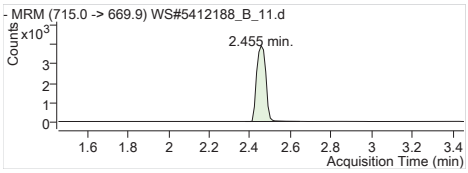



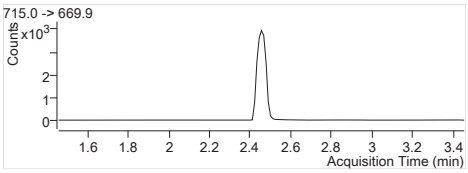

**13C2-PFUnA** 565.0 -> 519.9
RT (Exp. RT): 2.234 (2.234)
Calc. conc. 107.96 µg/L
Area ratio: 0.27652
Sample type: Sample



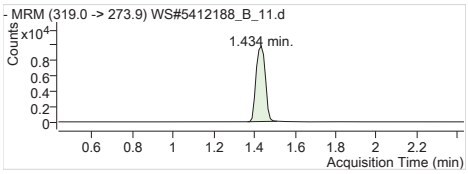



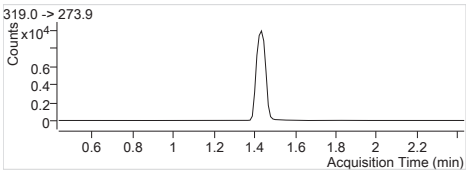

**13C2-PFDoA** 615.0 -> 569.9
RT (Exp. RT): 2.311 (2.311)
Calc. conc. 104.19 µg/L
Area ratio: 0.33808
Sample type: Sample



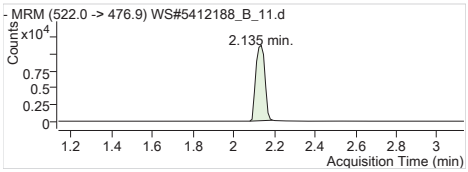



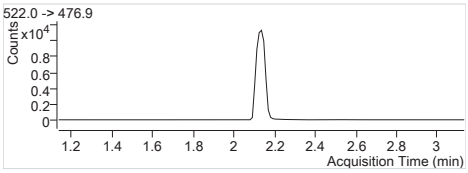

**13C2-PFTeDA** 715.0 -> 669.9
RT (Exp. RT): 2.455 (2.455)
Calc. conc. 97.97 µg/L
Area ratio: 0.34949
Sample type: Sample




**13C6-PFHxA** 319.0 -> 273.9
RT (Exp. RT): 1.434 (1.434)
Calc. conc. 2.37 µg/L
Area ratio: 0
Sample type: Sample



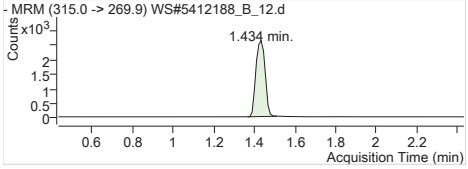

**13C9-PFDA** 522.0 -> 476.9
RT (Exp. RT): 2.135 (2.135)
Calc. conc. 2.25 µg/L
Area ratio: 0
Sample type: Sample

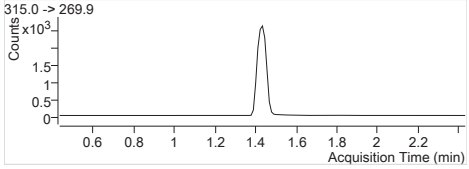
| | |
|---|---|
| **Batch Path** | T:\lcms4\PFC\20180226\WS#5412188_B\QuantResults\PFC_Water_Low_180227_WS#5412188_B_EToxics |

| | | | |
|---|---|---|---|
| **Sample Name** | **5412188:SPIKE** | **Instrument** | LCMS04 |
| **Data File** | WS#5412188_B_12.d | **Operator** | |
| **Sample Type** | QC | **Dilution** | 0.024 |
| **Acq. Method** | PFC_Water_Low.m | **Position** | P1-D1 |
| **Acq. Date** | 2018/02/27 2:07:04 PM | **Injection Volume** | Per Method |
| **Sample Annotation** | - | | |

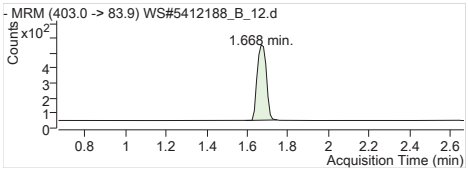
| ISTD Compounds | Response | RT | Target conc. | | |
|---|---|---|---|---|---|
| MPFHxA | 8181 | 1.43 | 1 µg/L | | |
| MPFHxS | 1595 | 1.67 | 1 µg/L | | |
| MPFHpA | 9035 | 1.69 | 1 µg/L | | |
| MPFOA | 9314 | 1.87 | 1 µg/L | | |
| MPFOS | 1959 | 1.97 | 1 µg/L | | |
| MPFNA | 9386 | 2.01 | 1 µg/L | | |
| MPFDA | 7917 | 2.14 | 1 µg/L | | |
| MPFUnA | 9444 | 2.23 | 1 µg/L | | |
| MPFDoA | 11345 | 2.31 | 1 µg/L | | |
| MPFTeDA | 10999 | 2.46 | 1 µg/L | | |
| 13C6-PFHxA IS | 30023 | 1.43 | 1 µg/L | | |
| 13C9-PFDA IS | 34110 | 2.13 | 1 µg/L | | |

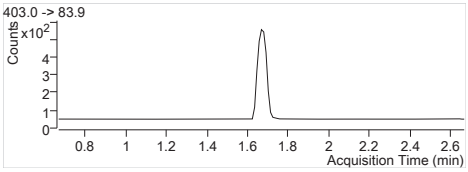
| Compound | Response | RT | Target Conc. | Calc. Conc. | Accuracy |
|---|---|---|---|---|---|
| PFBS 1 | 15294 | 1.09 | 20.80 | 0.51 µg/L | 102.03 |
| PFHxA 1 | 65290 | 1.43 | 20.80 | 0.46 µg/L | 92.75 |
| PFHxS 1 | 15800 | 1.67 | 20.80 | 0.53 µg/L | 106.49 |
| PFHpA 1 | 81434 | 1.69 | 20.80 | 0.48 µg/L | 95.56 |
| PFOA 1 | 88436 | 1.87 | 20.80 | 0.50 µg/L | 100.78 |
| PFOS 1 | 14641 | 1.96 | 20.80 | 0.43 µg/L | 86.47 |
| PFNA 1 | 77696 | 2.01 | 20.80 | 0.46 µg/L | 92.73 |
| PFDA 1 | 82992 | 2.14 | 20.80 | 0.52 µg/L | 104.95 |
| PFUnA 1 | 86446 | 2.23 | 20.80 | 0.49 µg/L | 97.64 |
| PFDoA 1 | 98602 | 2.31 | 20.80 | 0.47 µg/L | 94.53 |
| PFTrDA 1 | 106926 | 2.39 | 20.80 | 0.51 µg/L | 103.05 |
| PFTeDA 1 | 87393 | 2.46 | 20.80 | 0.50 µg/L | 100.90 |
| 13C2-PFHxA | 8181 | 1.43 | 100.00 | 109.62 µg/L | 109.62 |
| 18O2-PFHxS | 1595 | 1.67 | 100.00 | 102.30 µg/L | 102.30 |
| 13C4-PFHpA | 9035 | 1.69 | 100.00 | 104.52 µg/L | 104.52 |
| 13C4-PFOA | 9314 | 1.87 | 100.00 | 104.46 µg/L | 104.46 |
| 13C4-PFOS | 1959 | 1.97 | 100.00 | 108.52 µg/L | 108.52 |
| 13C5-PFNA | 9385 | 2.01 | 100.00 | 108.67 µg/L | 108.67 |
| 13C2-PFDA | 7852 | 2.14 | 100.00 | 104.52 µg/L | 104.52 |
| 13C2-PFUnA | 9444 | 2.23 | 100.00 | 108.10 µg/L | 108.10 |
| 13C2-PFDoA | 11345 | 2.31 | 100.00 | 102.50 µg/L | 102.50 |
| 13C2-PFTeDA | 11093 | 2.46 | 100.00 | 91.17 µg/L | 91.17 |
| 13C6-PFHxA | 30023 | 1.43 | 100.00 | 2.30 µg/L | 95.82 |
| 13C9-PFDA | 34110 | 2.13 | 100.00 | 2.20 µg/L | 91.53 |



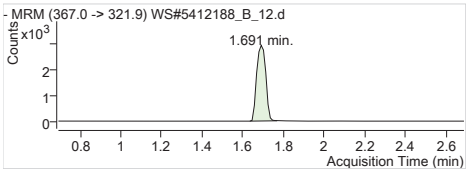



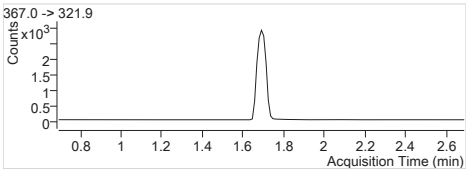

| | |
|---|---|
| **MPFHxA** | Internal Standard |
| RT (Exp. RT): | 1.434 (1.434) |
| Concentration: | 1 µg/L |
| Sample type: | QC |



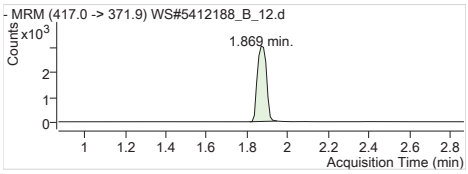



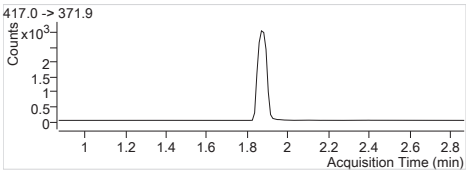

**MPFHxS** Internal Standard
RT (Exp. RT): 1.668 (1.668)
Concentration: 1 µg/L
Sample type: QC



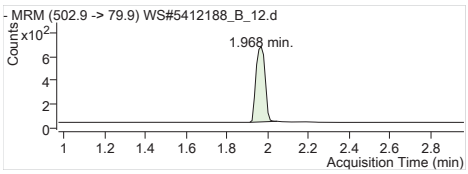



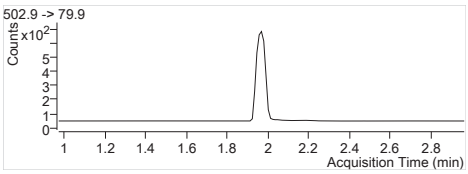

**MPFHpA** Internal Standard
RT (Exp. RT): 1.691 (1.691)
Concentration: 1 µg/L
Sample type: QC



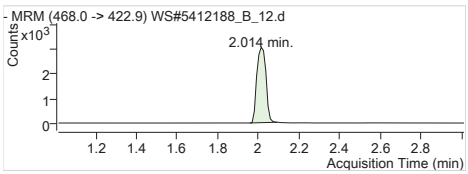



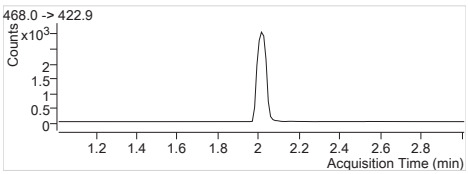

**MPFOA** Internal Standard
RT (Exp. RT): 1.869 (1.869)
Concentration: 1 µg/L
Sample type: QC



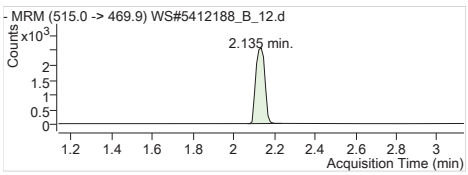



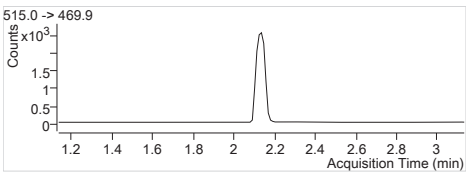

**MPFOS** Internal Standard
RT (Exp. RT): 1.968 (1.968)
Concentration: 1 µg/L
Sample type: QC



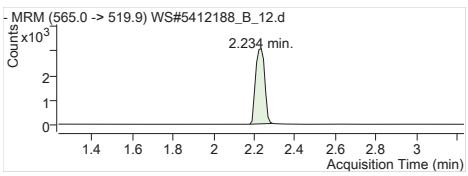



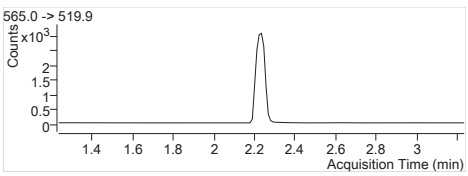

**MPFNA** Internal Standard
RT (Exp. RT): 2.014 (2.014)
Concentration: 1 µg/L
Sample type: QC



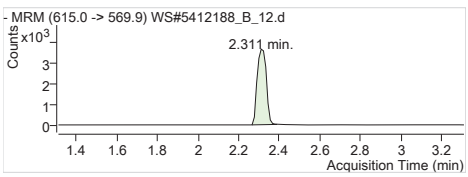



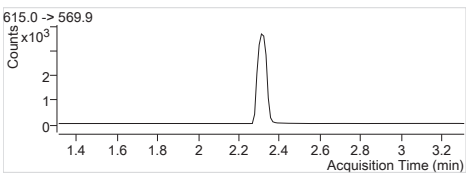

**MPFDA** Internal Standard
RT (Exp. RT): 2.135 (2.135)
Concentration: 1 µg/L
Sample type: QC



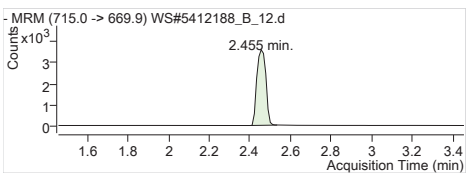



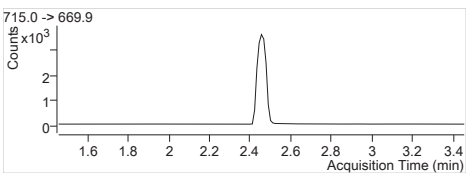

**MPFUnA** Internal Standard
RT (Exp. RT): 2.234 (2.234)
Concentration: 1 µg/L
Sample type: QC



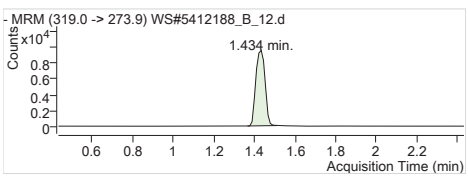



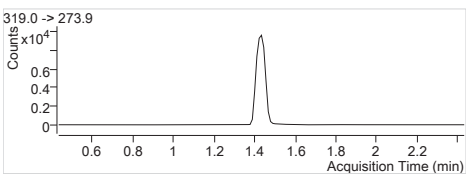

**MPFDoA** Internal Standard
RT (Exp. RT): 2.311 (2.311)
Concentration: 1 µg/L
Sample type: QC



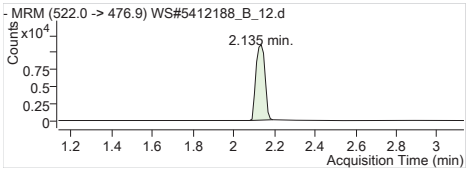



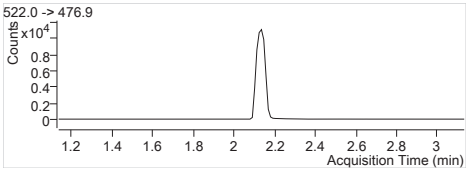

**MPFTeDA** Internal Standard
RT (Exp. RT): 2.455 (2.455)
Concentration: 1 µg/L
Sample type: QC



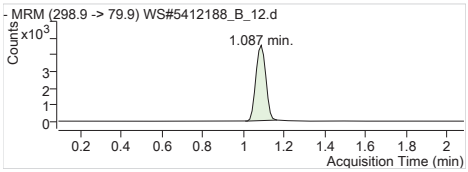



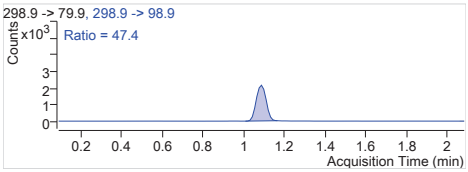

**13C6-PFHxA IS** Internal Standard
RT (Exp. RT): 1.434 (1.434)
Concentration: 1 µg/L
Sample type: QC



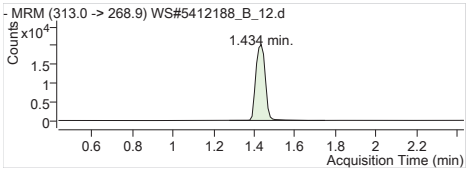



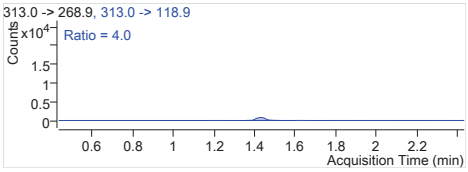

**13C9-PFDA IS** Internal Standard
RT (Exp. RT): 2.135 (2.135)
Concentration: 1 µg/L
Sample type: QC



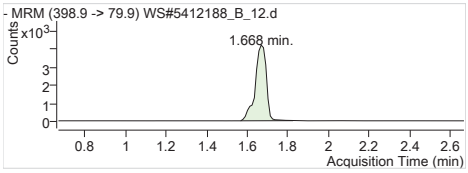



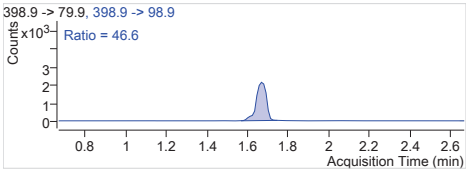

**PFBS 1** 298.9 -> 79.9
RT (Exp. RT): 1.087 (1.087)
Calc. conc. 0.51 µg/L
Area ratio: 9.58871
Sample type: QC



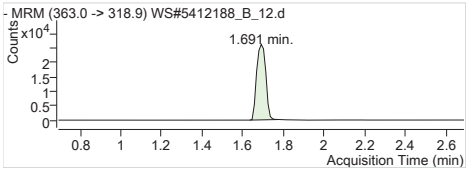



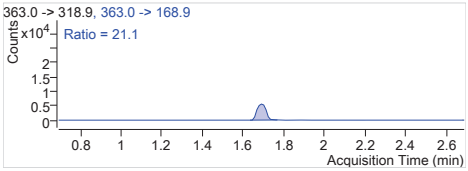

**PFHxA 1** 313.0 -> 268.9
RT (Exp. RT): 1.434 (1.434)
Calc. conc. 0.46 µg/L
Area ratio: 7.98069
Sample type: QC



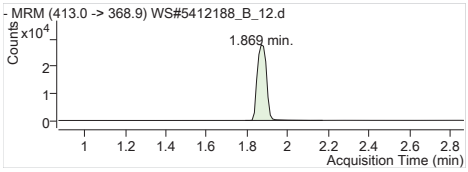



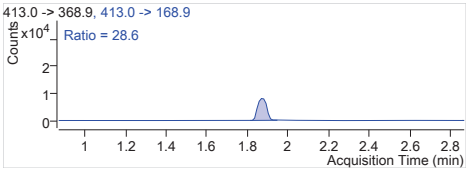

**PFHxS 1** 398.9 -> 79.9
RT (Exp. RT): 1.668 (1.668)
Calc. conc. 0.53 µg/L
Area ratio: 9.90596
Sample type: QC



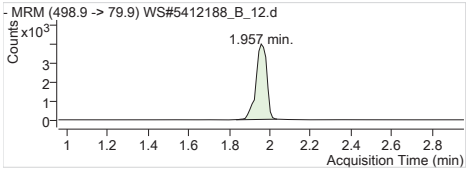



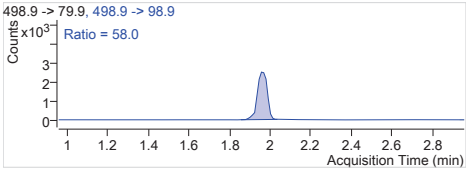

**PFHpA 1** 363.0 -> 318.9
RT (Exp. RT): 1.691 (1.691)
Calc. conc. 0.48 µg/L
Area ratio: 9.01317
Sample type: QC



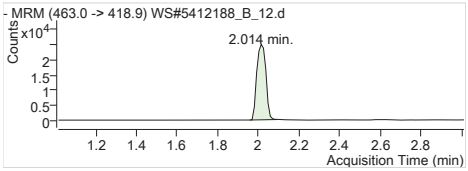



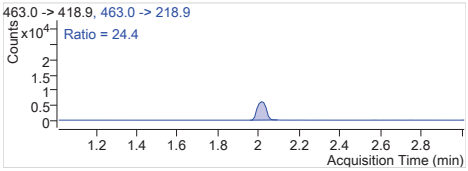

**PFOA 1** 413.0 -> 368.9
RT (Exp. RT): 1.869 (1.869)
Calc. conc. 0.50 µg/L
Area ratio: 9.49495
Sample type: QC



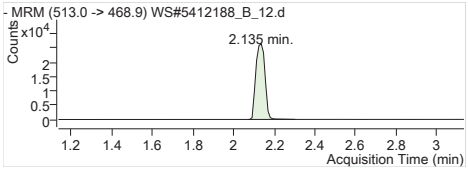



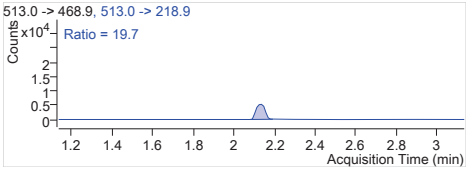

**PFOS 1** 498.9 -> 79.9
RT (Exp. RT): 1.957 (1.957)
Calc. conc. 0.43 µg/L
Area ratio: 7.47371
Sample type: QC



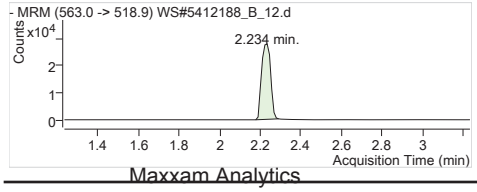



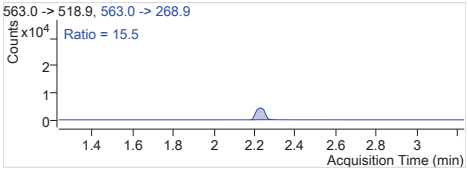

**PFNA 1** 463.0 -> 418.9
RT (Exp. RT): 2.014 (2.014)
Calc. conc. 0.46 µg/L
Area ratio: 8.27786
Sample type: QC



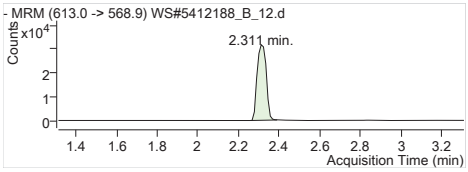



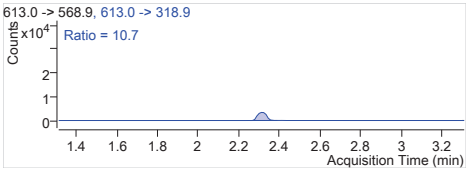

**PFDA 1** 513.0 -> 468.9
RT (Exp. RT): 2.135 (2.135)
Calc. conc. 0.52 µg/L
Area ratio: 10.48276
Sample type: QC



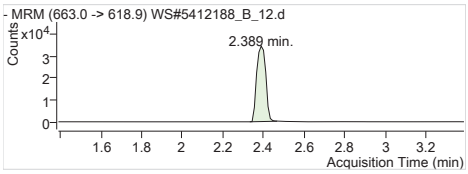



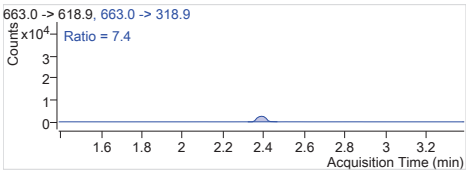

**PFUnA 1** 563.0 -> 518.9
RT (Exp. RT): 2.234 (2.234)
Calc. conc. 0.49 µg/L
Area ratio: 9.15354
Sample type: QC



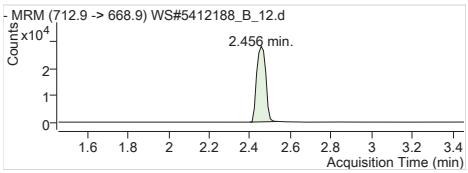



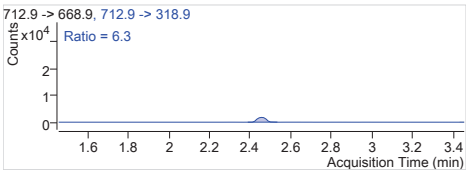

**PFDoA 1** 613.0 -> 568.9
RT (Exp. RT): 2.311 (2.311)
Calc. conc. 0.47 µg/L
Area ratio: 8.69123
Sample type: QC



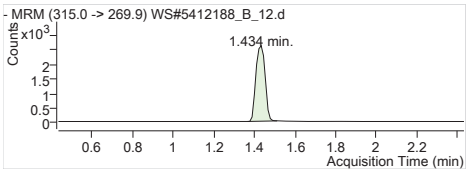



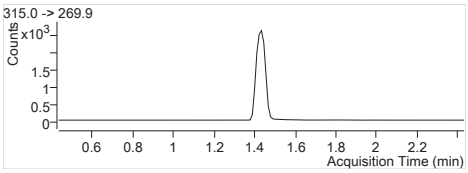

**PFTrDA 1** 663.0 -> 618.9
RT (Exp. RT): 2.389 (2.389)
Calc. conc. 0.51 µg/L
Area ratio: 9.72143
Sample type: QC



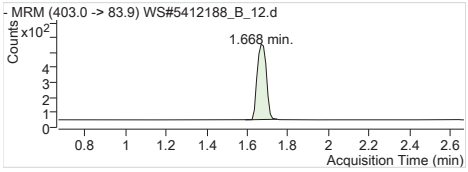



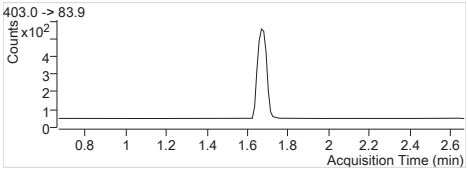

**PFTeDA 1** 712.9 -> 668.9
RT (Exp. RT): 2.456 (2.456)
Calc. conc. 0.50 µg/L
Area ratio: 7.94554
Sample type: QC



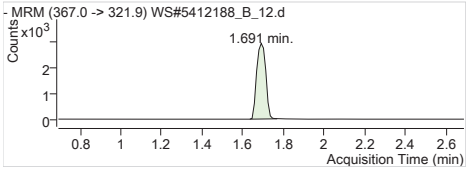



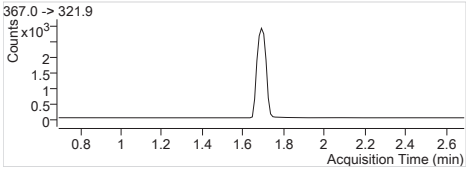

**13C2-PFHxA** 315.0 -> 269.9
RT (Exp. RT): 1.434 (1.434)
Calc. conc. 109.62 µg/L
Area ratio: 0.27249
Sample type: QC



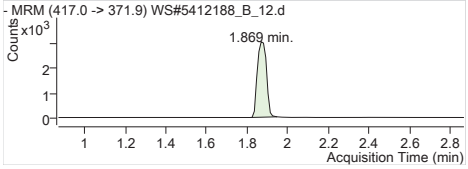



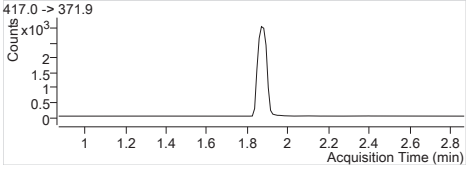

**18O2-PFHxS** 403.0 -> 83.9
RT (Exp. RT): 1.668 (1.668)
Calc. conc. 102.30 µg/L
Area ratio: 0.05313
Sample type: QC



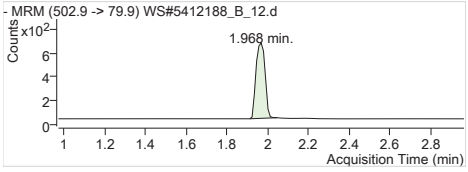



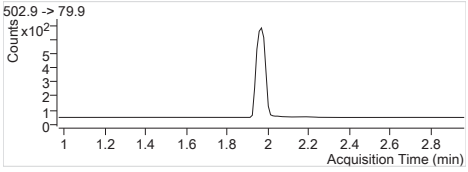

**13C4-PFHpA** 367.0 -> 321.9
RT (Exp. RT): 1.691 (1.691)
Calc. conc. 104.52 µg/L
Area ratio: 0.30094
Sample type: QC



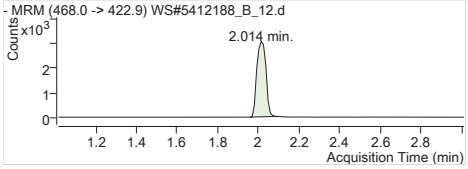



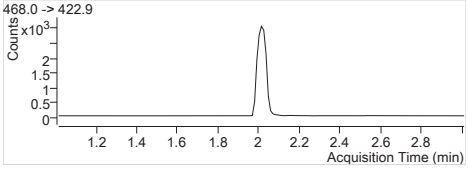

**13C4-PFOA** 417.0 -> 371.9
RT (Exp. RT): 1.869 (1.869)
Calc. conc. 104.46 µg/L
Area ratio: 0.31023
Sample type: QC



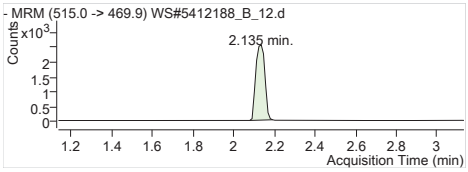



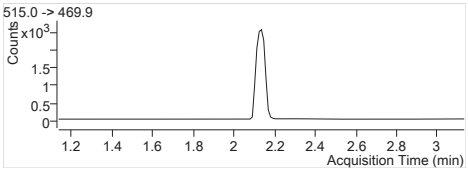

**13C4-PFOS** 502.9 -> 79.9
RT (Exp. RT): 1.968 (1.968)
Calc. conc. 108.52 µg/L
Area ratio: 0.06525
Sample type: QC



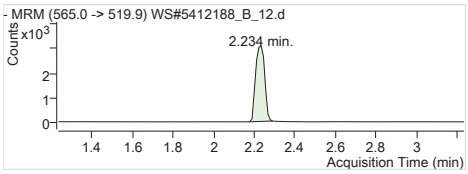



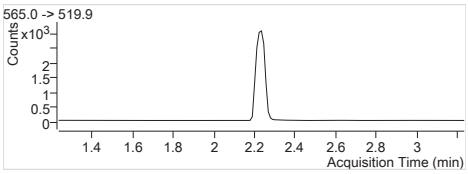

**13C5-PFNA** 468.0 -> 422.9
RT (Exp. RT): 2.014 (2.014)
Calc. conc. 108.67 µg/L
Area ratio: 0.31259
Sample type: QC



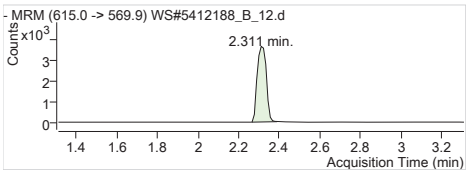



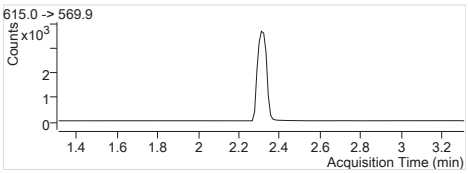

**13C2-PFDA** 515.0 -> 469.9
RT (Exp. RT): 2.135 (2.135)
Calc. conc. 104.52 µg/L
Area ratio: 0.23020
Sample type: QC



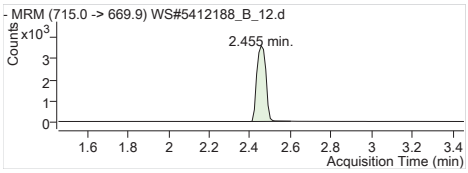



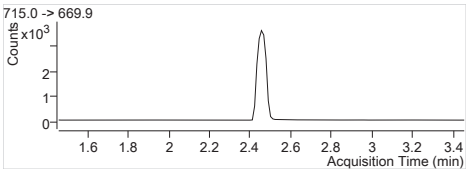

**13C2-PFUnA** 565.0 -> 519.9
RT (Exp. RT): 2.234 (2.234)
Calc. conc. 108.10 µg/L
Area ratio: 0.27687
Sample type: QC



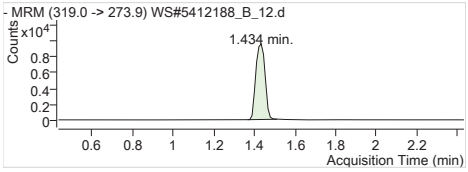



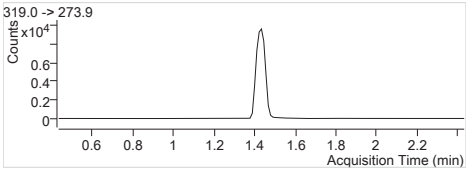

**13C2-PFDoA** 615.0 -> 569.9
RT (Exp. RT): 2.311 (2.311)
Calc. conc. 102.50 µg/L
Area ratio: 0.33260
Sample type: QC



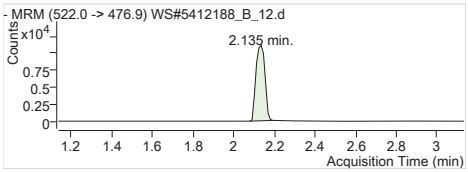



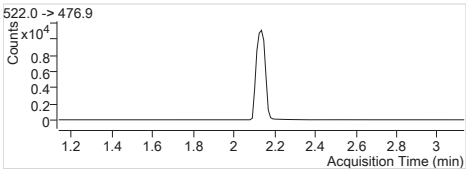

**13C2-PFTeDA** 715.0 -> 669.9
RT (Exp. RT): 2.455 (2.455)
Calc. conc. 91.17 µg/L
Area ratio: 0.32521
Sample type: QC




**13C6-PFHxA** 319.0 -> 273.9
RT (Exp. RT): 1.434 (1.434)
Calc. conc. 2.30 µg/L
Area ratio: 0
Sample type: QC



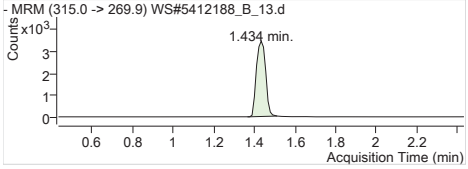

**13C9-PFDA** 522.0 -> 476.9
RT (Exp. RT): 2.135 (2.135)
Calc. conc. 2.20 µg/L
Area ratio: 0
Sample type: QC

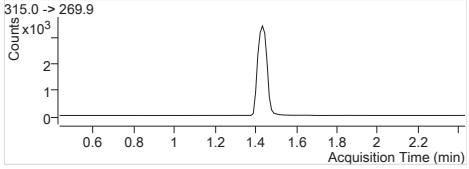
| | |
|---|---|
| **Batch Path** | T:\lcms4\PFC\20180226\WS#5412188_B\QuantResults\PFC_Water_Low_180227_WS#5412188_B_EToxics |

| | | | |
|---|---|---|---|
| **Sample Name** | **5412188:SPIKE:D1** | **Instrument** | LCMS04 |
| **Data File** | WS#5412188_B_13.d | **Operator** | |
| **Sample Type** | QC | **Dilution** | 0.024 |
| **Acq. Method** | PFC_Water_Low.m | **Position** | P1-D2 |
| **Acq. Date** | 2018/02/27 2:12:00 PM | **Injection Volume** | Per Method |
| **Sample Annotation** | Reinjected to confirm analyte recovery | | |

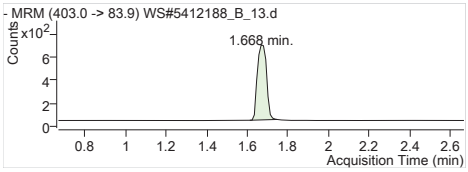
| ISTD Compounds | Response | RT | Target conc. | | |
|---|---|---|---|---|---|
| MPFHxA | 10691 | 1.43 | 1 µg/L | | |
| MPFHxS | 2044 | 1.67 | 1 µg/L | | |
| MPFHpA | 12246 | 1.69 | 1 µg/L | | |
| MPFOA | 12588 | 1.87 | 1 µg/L | | |
| MPFOS | 2440 | 1.97 | 1 µg/L | | |
| MPFNA | 12361 | 2.01 | 1 µg/L | | |
| MPFDA | 10906 | 2.14 | 1 µg/L | | |
| MPFUnA | 12381 | 2.23 | 1 µg/L | | |
| MPFDoA | 14813 | 2.31 | 1 µg/L | | |
| MPFTeDA | 9883 | 2.46 | 1 µg/L | | |
| 13C6-PFHxA IS | 38181 | 1.43 | 1 µg/L | | |
| 13C9-PFDA IS | 44883 | 2.13 | 1 µg/L | | |

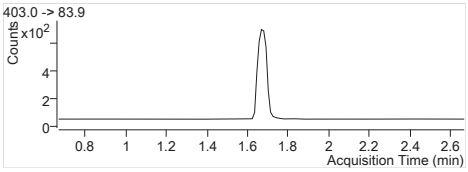
| Compound | Response | RT | Target Conc. | Calc. Conc. | Accuracy |
|---|---|---|---|---|---|
| PFBS 1 | 21005 | 1.09 | 20.80 | 0.55 µg/L | 109.42 |
| PFHxA 1 | 84801 | 1.43 | 20.80 | 0.46 µg/L | 92.18 |
| PFHxS 1 | 20518 | 1.67 | 20.80 | 0.54 µg/L | 107.92 |
| PFHpA 1 | 107568 | 1.69 | 20.80 | 0.46 µg/L | 93.12 |
| PFOA 1 | 113245 | 1.87 | 20.80 | 0.48 µg/L | 95.45 |
| PFOS 1 | 20133 | 1.96 | 20.80 | 0.48 µg/L | 95.38 |
| PFNA 1 | 102784 | 2.01 | 20.80 | 0.47 µg/L | 93.15 |
| PFDA 1 | 108025 | 2.14 | 20.80 | 0.49 µg/L | 99.13 |
| PFUnA 1 | 114737 | 2.23 | 20.80 | 0.49 µg/L | 98.85 |
| PFDoA 1 | 131211 | 2.31 | 20.80 | 0.48 µg/L | 96.35 |
| PFTrDA 1 | 139114 | 2.39 | 20.80 | 0.75 µg/L | 149.44 |
| PFTeDA 1 | 114523 | 2.46 | 20.80 | 0.74 µg/L | 147.38 |
| 13C2-PFHxA | 10691 | 1.43 | 100.00 | 112.65 µg/L | 112.65 |
| 18O2-PFHxS | 2044 | 1.67 | 100.00 | 103.09 µg/L | 103.09 |
| 13C4-PFHpA | 12246 | 1.69 | 100.00 | 111.40 µg/L | 111.40 |
| 13C4-PFOA | 12588 | 1.87 | 100.00 | 111.01 µg/L | 111.01 |
| 13C4-PFOS | 2440 | 1.97 | 100.00 | 106.28 µg/L | 106.28 |
| 13C5-PFNA | 12361 | 2.01 | 100.00 | 112.55 µg/L | 112.55 |
| 13C2-PFDA | 10740 | 2.14 | 100.00 | 108.65 µg/L | 108.65 |
| 13C2-PFUnA | 12381 | 2.23 | 100.00 | 107.70 µg/L | 107.70 |
| 13C2-PFDoA | 14813 | 2.31 | 100.00 | 101.71 µg/L | 101.71 |
| 13C2-PFTeDA | 10116 | 2.46 | 100.00 | 63.18 µg/L | 63.18 |
| 13C6-PFHxA | 38181 | 1.43 | 100.00 | 2.92 µg/L | 121.86 |
| 13C9-PFDA | 44883 | 2.13 | 100.00 | 2.89 µg/L | 120.44 |



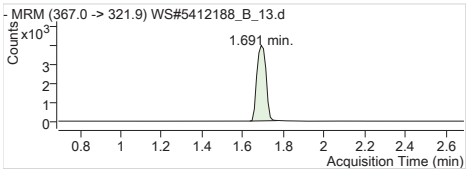



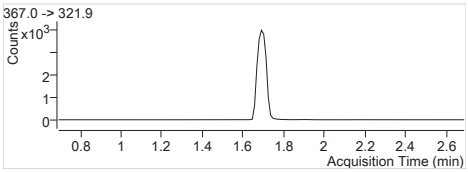

| | |
|---|---|
| **MPFHxA** | Internal Standard |
| RT (Exp. RT): | 1.434 (1.434) |
| Concentration: | 1 µg/L |
| Sample type: | QC |



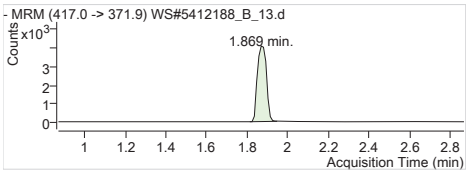



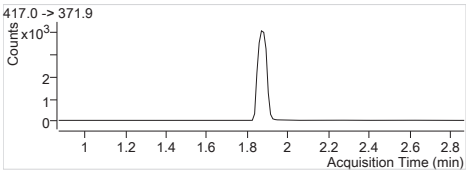

**MPFHxS** Internal Standard
RT (Exp. RT): 1.668 (1.668)
Concentration: 1 µg/L
Sample type: QC



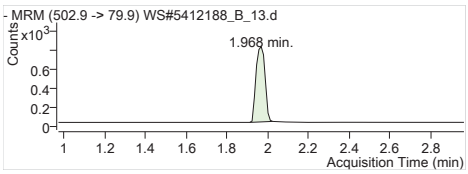



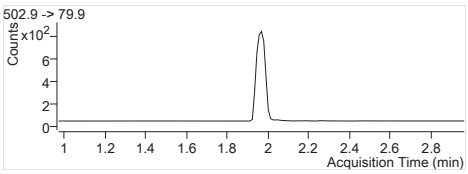

**MPFHpA** Internal Standard
RT (Exp. RT): 1.691 (1.691)
Concentration: 1 µg/L
Sample type: QC



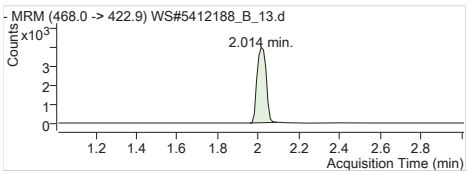



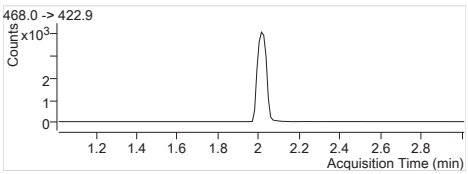

**MPFOA** Internal Standard
RT (Exp. RT): 1.869 (1.869)
Concentration: 1 µg/L
Sample type: QC



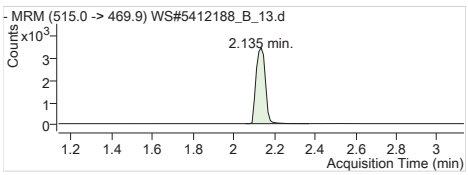



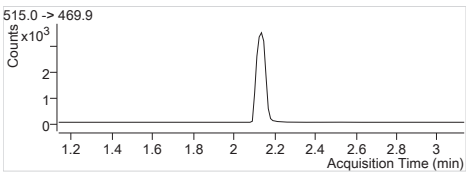

**MPFOS** Internal Standard
RT (Exp. RT): 1.968 (1.968)
Concentration: 1 µg/L
Sample type: QC



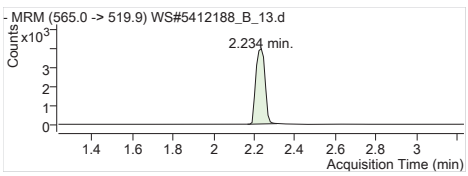



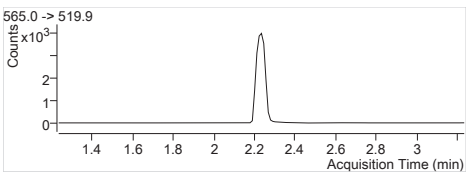

**MPFNA** Internal Standard
RT (Exp. RT): 2.014 (2.014)
Concentration: 1 µg/L
Sample type: QC



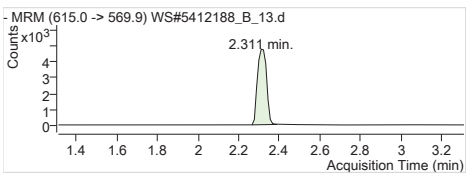



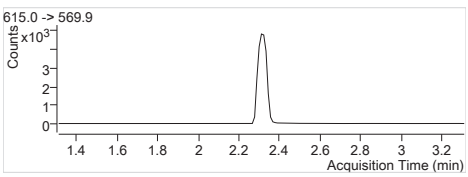

**MPFDA** Internal Standard
RT (Exp. RT): 2.135 (2.135)
Concentration: 1 µg/L
Sample type: QC



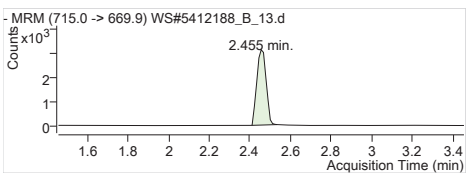



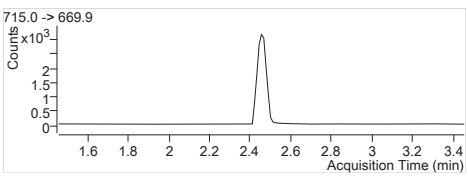

**MPFUnA** Internal Standard
RT (Exp. RT): 2.234 (2.234)
Concentration: 1 µg/L
Sample type: QC



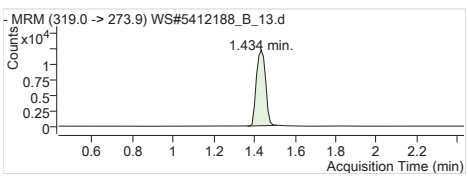



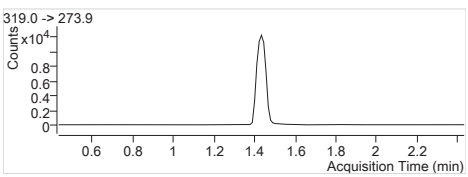

**MPFDoA** Internal Standard
RT (Exp. RT): 2.311 (2.311)
Concentration: 1 µg/L
Sample type: QC



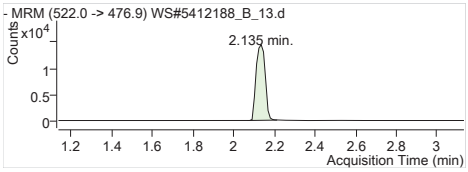



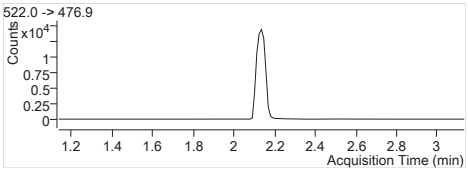

**MPFTeDA** Internal Standard
RT (Exp. RT): 2.455 (2.455)
Concentration: 1 µg/L
Sample type: QC



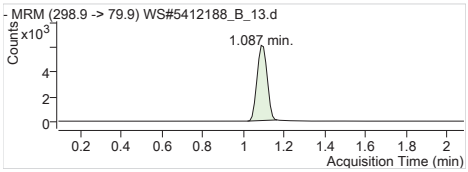



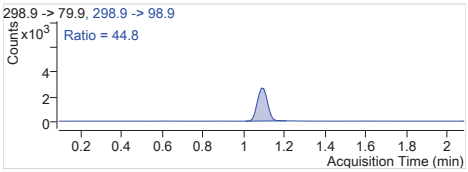

**13C6-PFHxA IS** Internal Standard
RT (Exp. RT): 1.434 (1.434)
Concentration: 1 µg/L
Sample type: QC



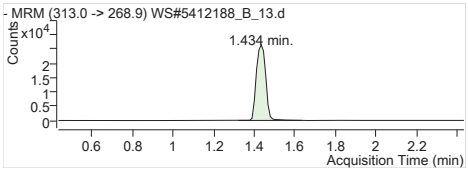



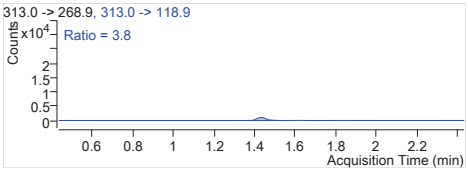

**13C9-PFDA IS** Internal Standard
RT (Exp. RT): 2.135 (2.135)
Concentration: 1 µg/L
Sample type: QC



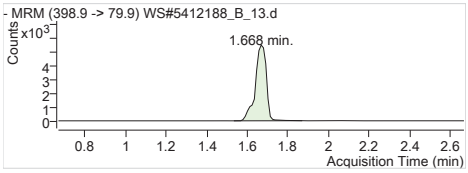



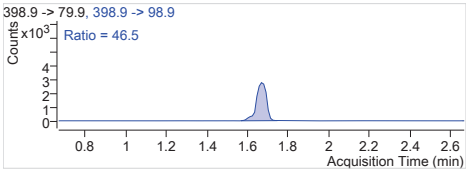

**PFBS 1** 298.9 -> 79.9
RT (Exp. RT): 1.087 (1.087)
Calc. conc. 0.55 µg/L
Area ratio: 10.27642
Sample type: QC



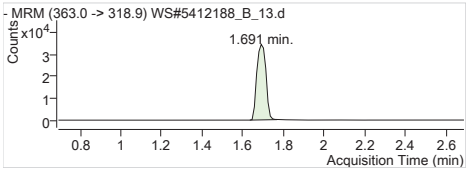



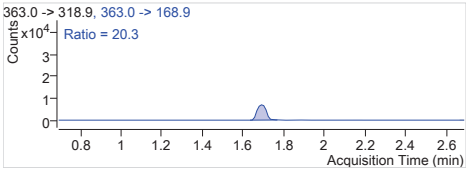

**PFHxA 1** 313.0 -> 268.9
RT (Exp. RT): 1.434 (1.434)
Calc. conc. 0.46 µg/L
Area ratio: 7.93200
Sample type: QC



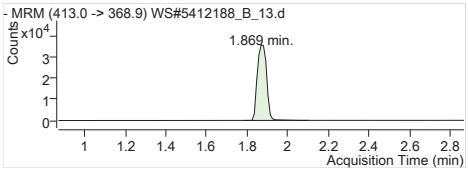



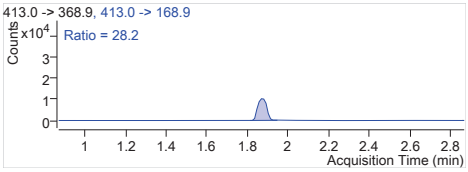

**PFHxS 1** 398.9 -> 79.9
RT (Exp. RT): 1.668 (1.668)
Calc. conc. 0.54 µg/L
Area ratio: 10.03816
Sample type: QC



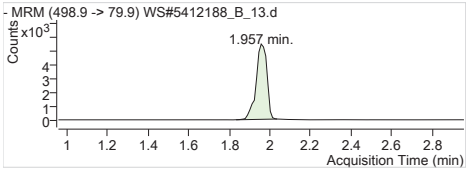



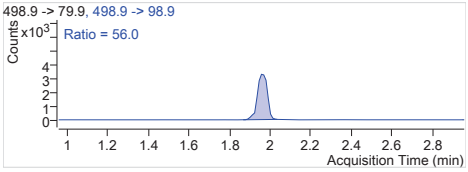

**PFHpA 1** 363.0 -> 318.9
RT (Exp. RT): 1.691 (1.691)
Calc. conc. 0.46 µg/L
Area ratio: 8.78393
Sample type: QC



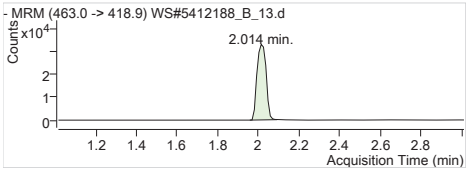



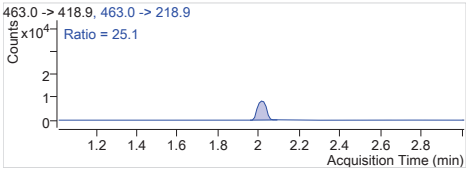

**PFOA 1** 413.0 -> 368.9
RT (Exp. RT): 1.869 (1.869)
Calc. conc. 0.48 µg/L
Area ratio: 8.99627
Sample type: QC



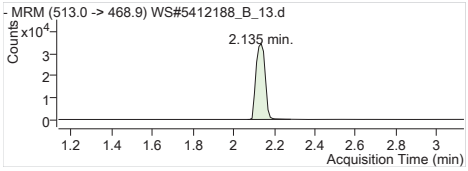



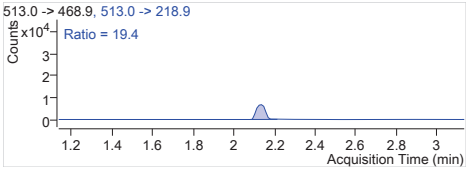

**PFOS 1** 498.9 -> 79.9
RT (Exp. RT): 1.957 (1.957)
Calc. conc. 0.48 µg/L
Area ratio: 8.25123
Sample type: QC



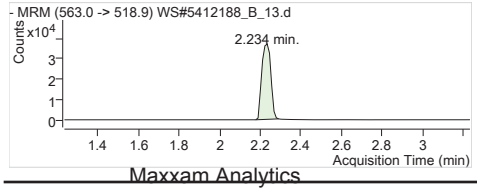



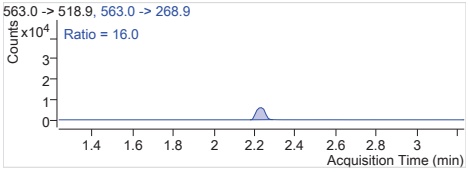

**PFNA 1** 463.0 -> 418.9
RT (Exp. RT): 2.014 (2.014)
Calc. conc. 0.47 µg/L
Area ratio: 8.31518
Sample type: QC



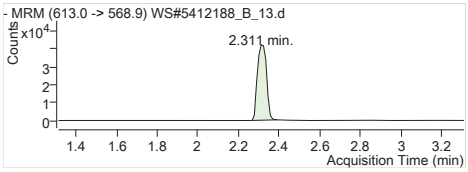



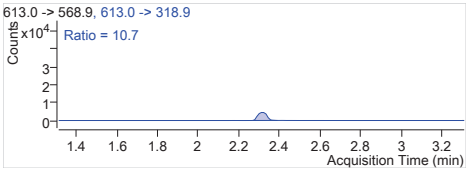

**PFDA 1** 513.0 -> 468.9
RT (Exp. RT): 2.135 (2.135)
Calc. conc. 0.49 µg/L
Area ratio: 9.90510
Sample type: QC



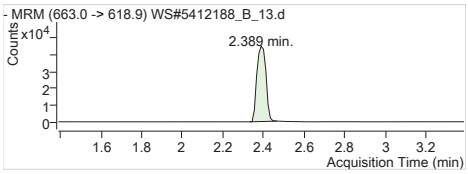



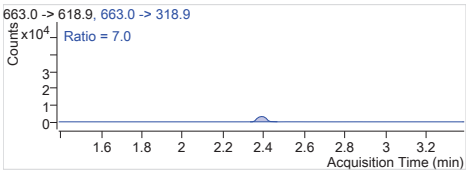

**PFUnA 1** 563.0 -> 518.9
RT (Exp. RT): 2.234 (2.234)
Calc. conc. 0.49 µg/L
Area ratio: 9.26718
Sample type: QC



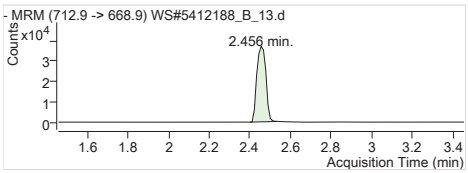



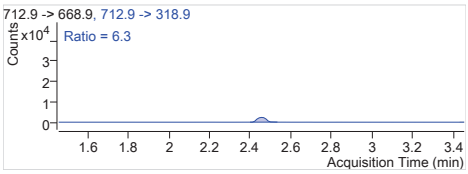

**PFDoA 1** 613.0 -> 568.9
RT (Exp. RT): 2.311 (2.311)
Calc. conc. 0.48 µg/L
Area ratio: 8.85783
Sample type: QC



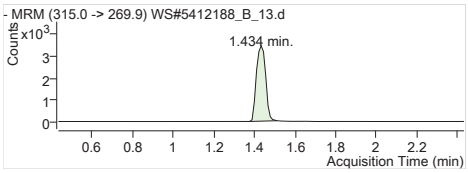



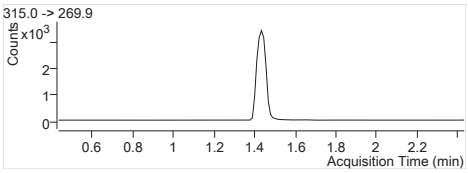

**PFTrDA 1** 663.0 -> 618.9
RT (Exp. RT): 2.389 (2.389)
Calc. conc. 0.75 µg/L
Area ratio: 14.07609
Sample type: QC



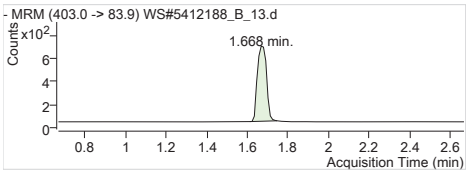



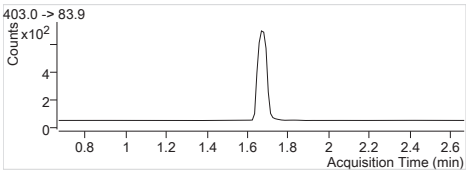

**PFTeDA 1** 712.9 -> 668.9
RT (Exp. RT): 2.456 (2.456)
Calc. conc. 0.74 µg/L
Area ratio: 11.58788
Sample type: QC



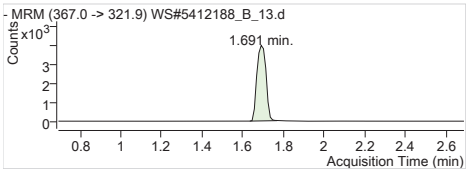



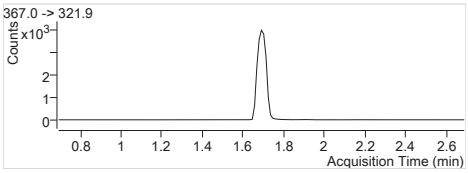

**13C2-PFHxA** 315.0 -> 269.9
RT (Exp. RT): 1.434 (1.434)
Calc. conc. 112.65 µg/L
Area ratio: 0.28001
Sample type: QC



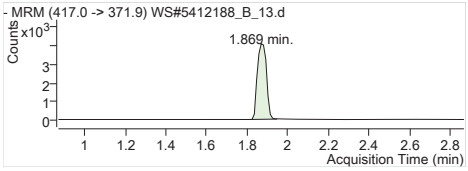



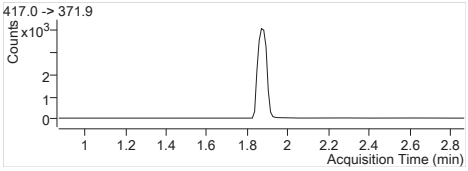

**18O2-PFHxS** 403.0 -> 83.9
RT (Exp. RT): 1.668 (1.668)
Calc. conc. 103.09 µg/L
Area ratio: 0.05353
Sample type: QC



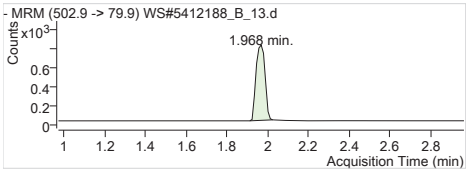



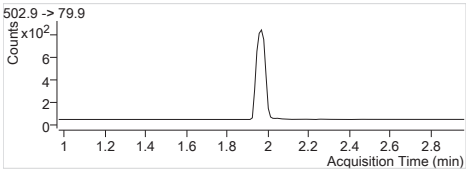

**13C4-PFHpA** 367.0 -> 321.9
RT (Exp. RT): 1.691 (1.691)
Calc. conc. 111.40 µg/L
Area ratio: 0.32074
Sample type: QC



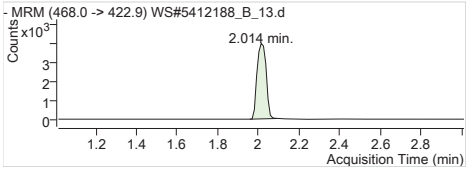



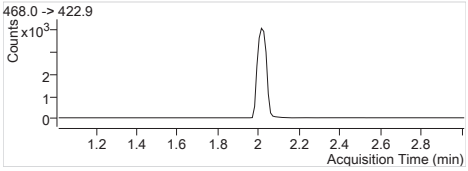

**13C4-PFOA** 417.0 -> 371.9
RT (Exp. RT): 1.869 (1.869)
Calc. conc. 111.01 µg/L
Area ratio: 0.32969
Sample type: QC



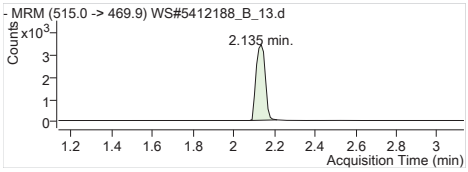



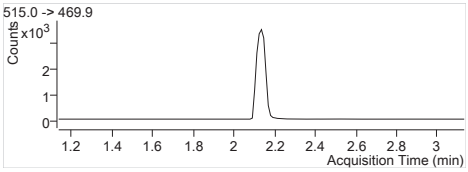

**13C4-PFOS** 502.9 -> 79.9
RT (Exp. RT): 1.968 (1.968)
Calc. conc. 106.28 µg/L
Area ratio: 0.06391
Sample type: QC



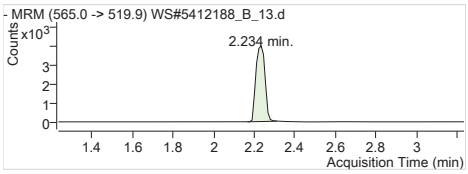



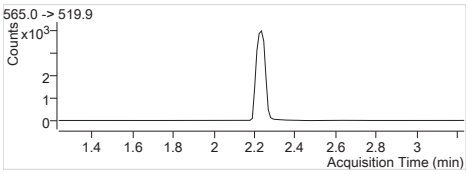

**13C5-PFNA** 468.0 -> 422.9
RT (Exp. RT): 2.014 (2.014)
Calc. conc. 112.55 µg/L
Area ratio: 0.32375
Sample type: QC



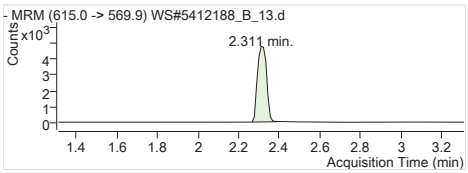



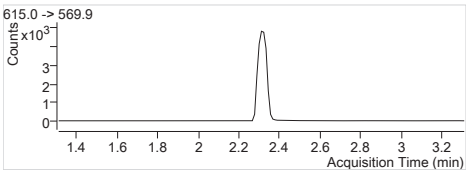

**13C2-PFDA** 515.0 -> 469.9
RT (Exp. RT): 2.135 (2.135)
Calc. conc. 108.65 µg/L
Area ratio: 0.23929
Sample type: QC



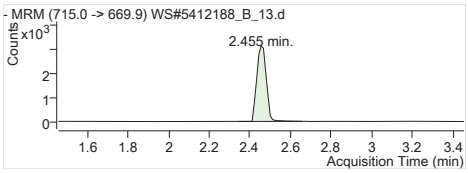



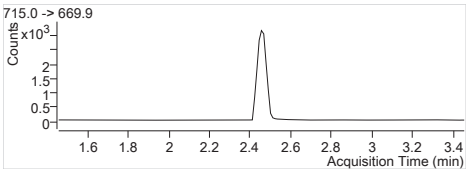

**13C2-PFUnA** 565.0 -> 519.9
RT (Exp. RT): 2.234 (2.234)
Calc. conc. 107.70 µg/L
Area ratio: 0.27585
Sample type: QC



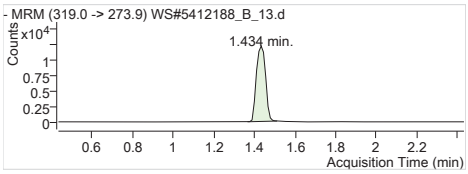



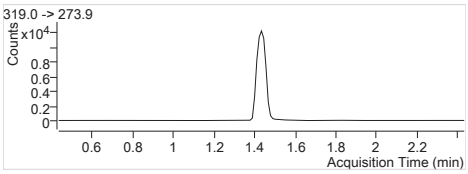

**13C2-PFDoA** 615.0 -> 569.9
RT (Exp. RT): 2.311 (2.311)
Calc. conc. 101.71 µg/L
Area ratio: 0.33004
Sample type: QC



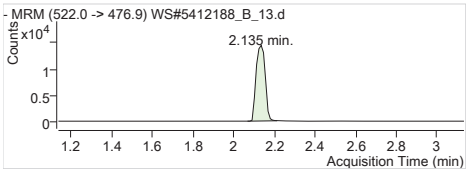



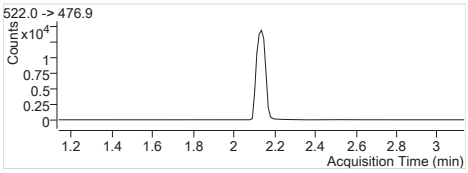

**13C2-PFTeDA** 715.0 -> 669.9
RT (Exp. RT): 2.455 (2.455)
Calc. conc. 63.18 µg/L
Area ratio: 0.22539
Sample type: QC




**13C6-PFHxA** 319.0 -> 273.9
RT (Exp. RT): 1.434 (1.434)
Calc. conc. 2.92 µg/L
Area ratio: 0
Sample type: QC



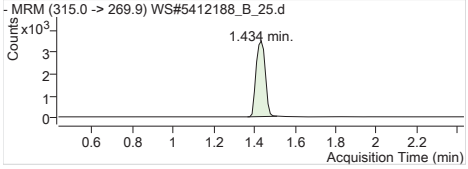

**13C9-PFDA** 522.0 -> 476.9
RT (Exp. RT): 2.135 (2.135)
Calc. conc. 2.89 µg/L
Area ratio: 0
Sample type: QC

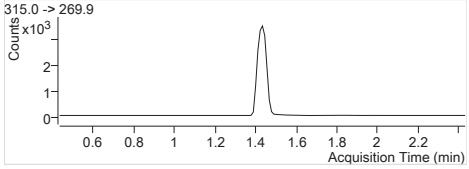
| | |
|---|---|
| **Batch Path** | T:\lcms4\PFC\20180226\WS#5412188_B\QuantResults\PFC_Water_Low_180227_WS#5412188_B_EToxics |

| | | | |
|---|---|---|---|
| **Sample Name** | **5412188:SPIKE:D1** | **Instrument** | LCMS04 |
| **Data File** | WS#5412188_B_25.d | **Operator** | |
| **Sample Type** | QC | **Dilution** | 0.024 |
| **Acq. Method** | PFC_Water_Low.m | **Position** | P1-D2 |
| **Acq. Date** | 2018/02/27 4:00:27 PM | **Injection Volume** | Per Method |
| **Sample Annotation** | Reinjection, reported | | |

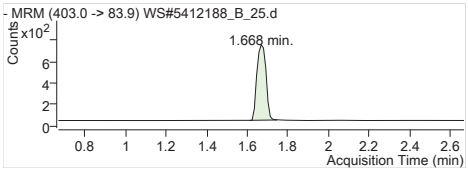
| ISTD Compounds | Response | RT | Target conc. | | |
|---|---|---|---|---|---|
| MPFHxA | 10835 | 1.43 | 1 µg/L | | |
| MPFHxS | 2200 | 1.67 | 1 µg/L | | |
| MPFHpA | 12261 | 1.69 | 1 µg/L | | |
| MPFOA | 12083 | 1.87 | 1 µg/L | | |
| MPFOS | 2615 | 1.97 | 1 µg/L | | |
| MPFNA | 12080 | 2.01 | 1 µg/L | | |
| MPFDA | 10197 | 2.14 | 1 µg/L | | |
| MPFUnA | 12094 | 2.23 | 1 µg/L | | |
| MPFDoA | 14298 | 2.31 | 1 µg/L | | |
| MPFTeDA | 13959 | 2.46 | 1 µg/L | | |
| 13C6-PFHxA IS | 38026 | 1.43 | 1 µg/L | | |
| 13C9-PFDA IS | 41792 | 2.13 | 1 µg/L | | |

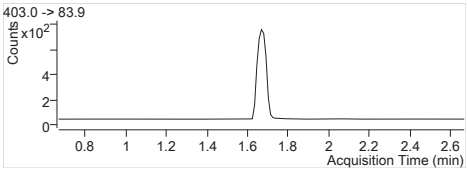
| Compound | Response | RT | Target Conc. | Calc. Conc. | Accuracy |
|---|---|---|---|---|---|
| PFBS 1 | 22700 | 1.09 | 20.80 | 0.55 µg/L | 109.86 |
| PFHxA 1 | 85107 | 1.43 | 20.80 | 0.46 µg/L | 91.28 |
| PFHxS 1 | 20483 | 1.67 | 20.80 | 0.50 µg/L | 100.04 |
| PFHpA 1 | 102226 | 1.69 | 20.80 | 0.44 µg/L | 88.38 |
| PFOA 1 | 114001 | 1.87 | 20.80 | 0.50 µg/L | 100.14 |
| PFOS 1 | 20060 | 1.96 | 20.80 | 0.44 µg/L | 88.73 |
| PFNA 1 | 99054 | 2.01 | 20.80 | 0.46 µg/L | 91.86 |
| PFDA 1 | 100435 | 2.14 | 20.80 | 0.49 µg/L | 98.57 |
| PFUnA 1 | 107299 | 2.23 | 20.80 | 0.47 µg/L | 94.63 |
| PFDoA 1 | 127754 | 2.31 | 20.80 | 0.49 µg/L | 97.19 |
| PFTrDA 1 | 134988 | 2.39 | 20.80 | 0.51 µg/L | 102.51 |
| PFTeDA 1 | 107629 | 2.46 | 20.80 | 0.49 µg/L | 97.90 |
| 13C2-PFHxA | 10835 | 1.43 | 100.00 | 114.63 µg/L | 114.63 |
| 18O2-PFHxS | 2200 | 1.67 | 100.00 | 111.41 µg/L | 111.41 |
| 13C4-PFHpA | 12261 | 1.69 | 100.00 | 111.99 µg/L | 111.99 |
| 13C4-PFOA | 12083 | 1.87 | 100.00 | 106.99 µg/L | 106.99 |
| 13C4-PFOS | 2615 | 1.97 | 100.00 | 114.37 µg/L | 114.37 |
| 13C5-PFNA | 12080 | 2.01 | 100.00 | 110.44 µg/L | 110.44 |
| 13C2-PFDA | 9931 | 2.14 | 100.00 | 107.89 µg/L | 107.89 |
| 13C2-PFUnA | 12094 | 2.23 | 100.00 | 112.99 µg/L | 112.99 |
| 13C2-PFDoA | 14298 | 2.31 | 100.00 | 105.43 µg/L | 105.43 |
| 13C2-PFTeDA | 14227 | 2.46 | 100.00 | 95.43 µg/L | 95.43 |
| 13C6-PFHxA | 38026 | 1.43 | 100.00 | 2.91 µg/L | 121.37 |
| 13C9-PFDA | 41792 | 2.13 | 100.00 | 2.69 µg/L | 112.15 |



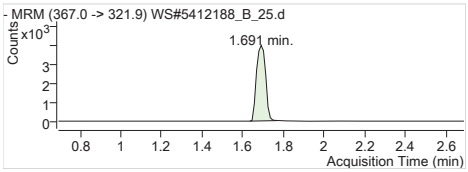



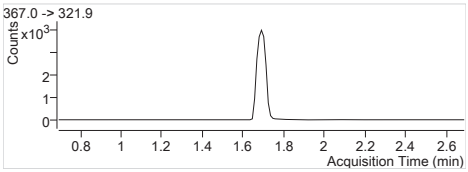

| | |
|---|---|
| **MPFHxA** | Internal Standard |
| RT (Exp. RT): | 1.434 (1.434) |
| Concentration: | 1 µg/L |
| Sample type: | QC |



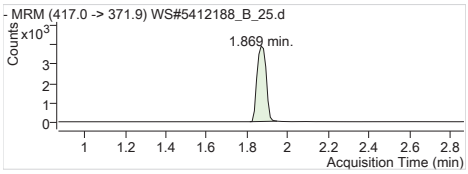



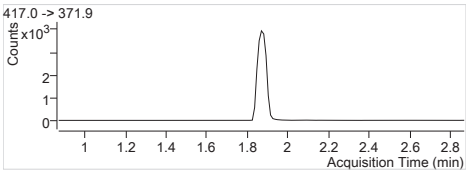

**MPFHxS** Internal Standard
RT (Exp. RT): 1.668 (1.668)
Concentration: 1 µg/L
Sample type: QC



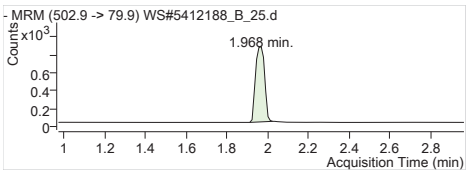



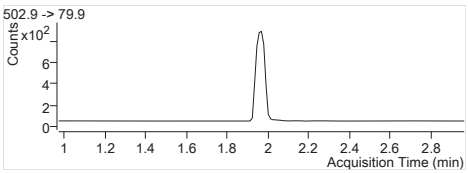

**MPFHpA** Internal Standard
RT (Exp. RT): 1.691 (1.691)
Concentration: 1 µg/L
Sample type: QC



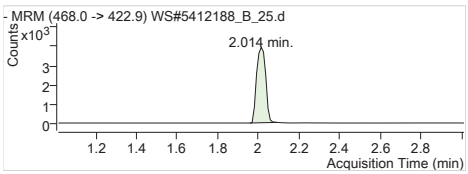



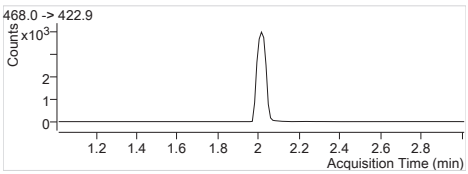

**MPFOA** Internal Standard
RT (Exp. RT): 1.869 (1.869)
Concentration: 1 µg/L
Sample type: QC



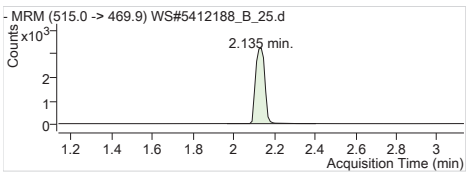



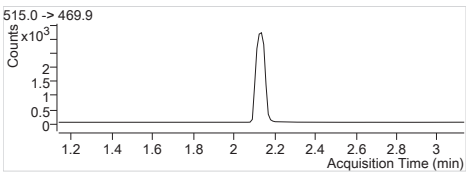

**MPFOS** Internal Standard
RT (Exp. RT): 1.968 (1.968)
Concentration: 1 µg/L
Sample type: QC



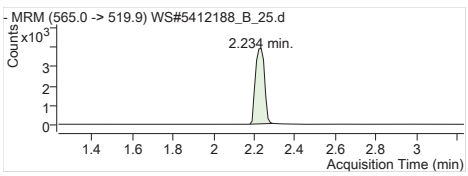



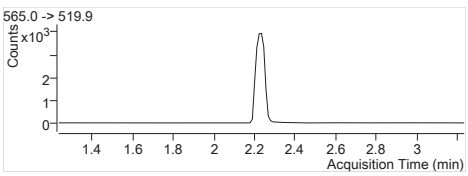

**MPFNA** Internal Standard
RT (Exp. RT): 2.014 (2.014)
Concentration: 1 µg/L
Sample type: QC



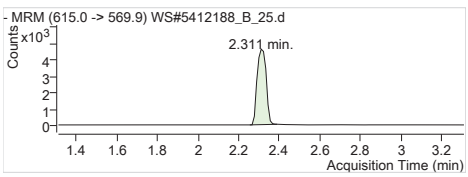



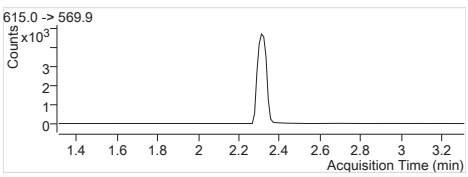

**MPFDA** Internal Standard
RT (Exp. RT): 2.135 (2.135)
Concentration: 1 µg/L
Sample type: QC



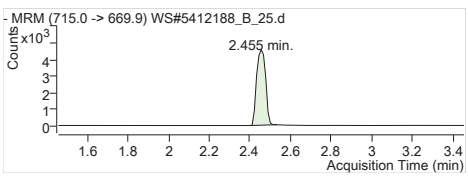



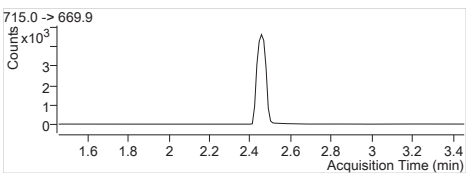

**MPFUnA** Internal Standard
RT (Exp. RT): 2.234 (2.234)
Concentration: 1 µg/L
Sample type: QC



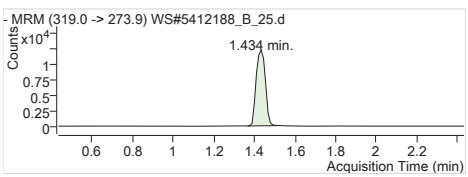



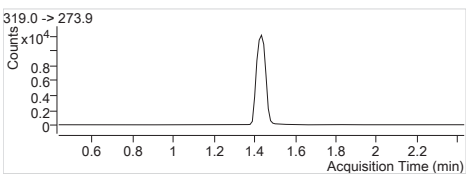

**MPFDoA** Internal Standard
RT (Exp. RT): 2.311 (2.311)
Concentration: 1 µg/L
Sample type: QC



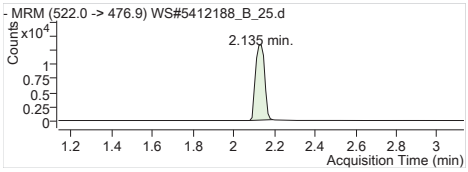



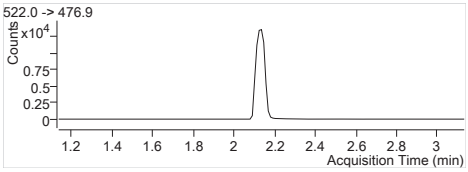

**MPFTeDA** Internal Standard
RT (Exp. RT): 2.455 (2.455)
Concentration: 1 µg/L
Sample type: QC



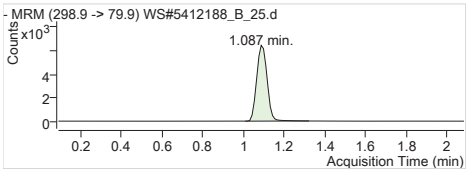



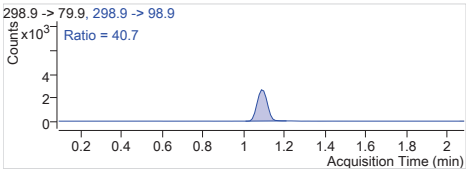

**13C6-PFHxA IS** Internal Standard
RT (Exp. RT): 1.434 (1.434)
Concentration: 1 µg/L
Sample type: QC



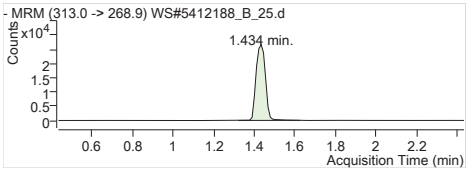



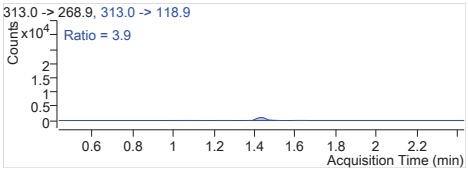

**13C9-PFDA IS** Internal Standard
RT (Exp. RT): 2.135 (2.135)
Concentration: 1 µg/L
Sample type: QC



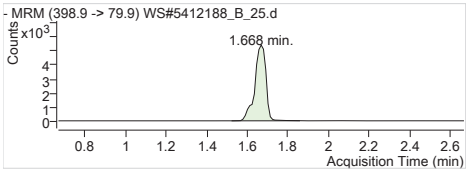



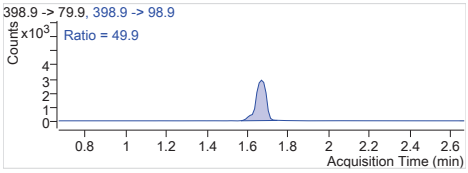

**PFBS 1** 298.9 -> 79.9
RT (Exp. RT): 1.087 (1.087)
Calc. conc. 0.55 µg/L
Area ratio: 10.31818
Sample type: QC



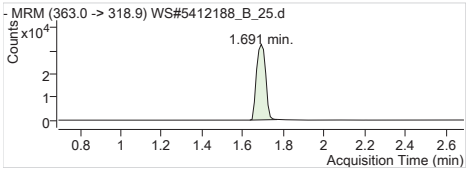



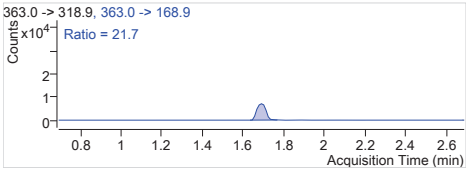

**PFHxA 1** 313.0 -> 268.9
RT (Exp. RT): 1.434 (1.434)
Calc. conc. 0.46 µg/L
Area ratio: 7.85482
Sample type: QC



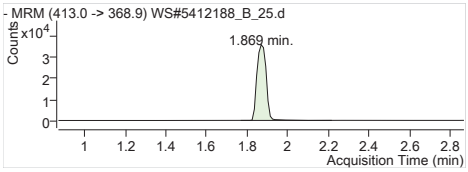



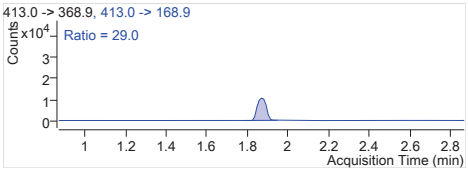

**PFHxS 1** 398.9 -> 79.9
RT (Exp. RT): 1.668 (1.668)
Calc. conc. 0.50 µg/L
Area ratio: 9.31045
Sample type: QC



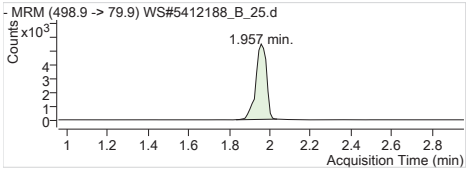



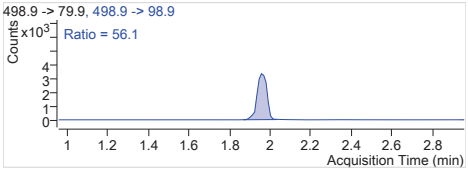

**PFHpA 1** 363.0 -> 318.9
RT (Exp. RT): 1.691 (1.691)
Calc. conc. 0.44 µg/L
Area ratio: 8.33749
Sample type: QC



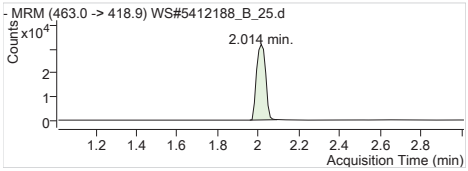



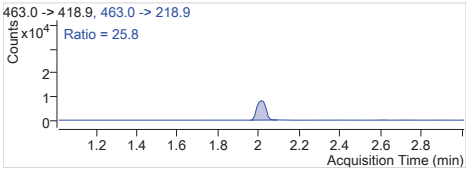

**PFOA 1** 413.0 -> 368.9
RT (Exp. RT): 1.869 (1.869)
Calc. conc. 0.50 µg/L
Area ratio: 9.43483
Sample type: QC



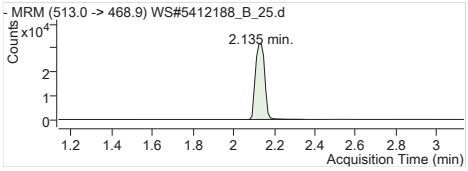



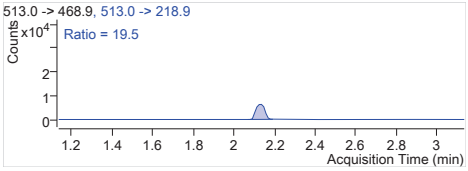

**PFOS 1** 498.9 -> 79.9
RT (Exp. RT): 1.957 (1.957)
Calc. conc. 0.44 µg/L
Area ratio: 7.67113
Sample type: QC



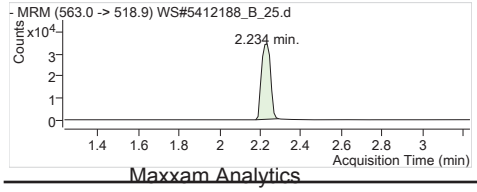



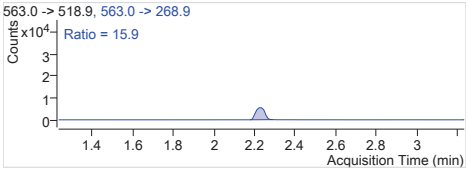

**PFNA 1** 463.0 -> 418.9
RT (Exp. RT): 2.014 (2.014)
Calc. conc. 0.46 µg/L
Area ratio: 8.19983
Sample type: QC



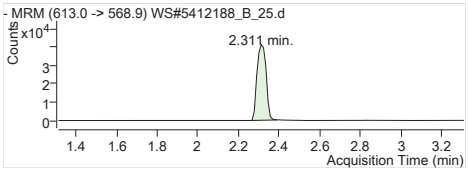



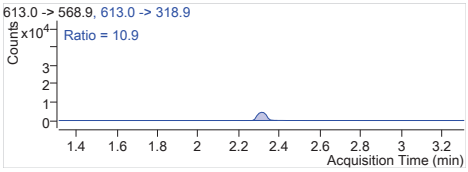

**PFDA 1** 513.0 -> 468.9
RT (Exp. RT): 2.135 (2.135)
Calc. conc. 0.49 µg/L
Area ratio: 9.84947
Sample type: QC



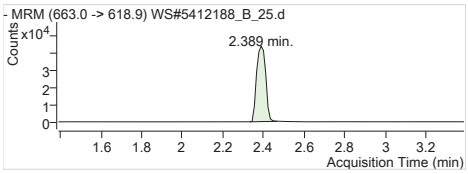



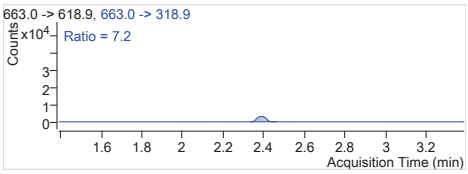

**PFUnA 1** 563.0 -> 518.9
RT (Exp. RT): 2.234 (2.234)
Calc. conc. 0.47 µg/L
Area ratio: 8.87209
Sample type: QC



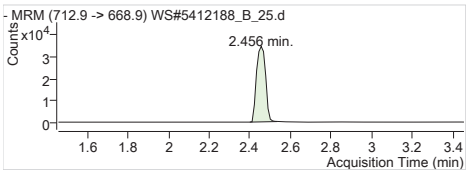



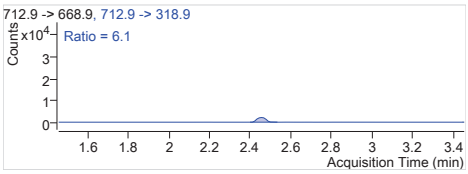

**PFDoA 1** 613.0 -> 568.9
RT (Exp. RT): 2.311 (2.311)
Calc. conc. 0.49 µg/L
Area ratio: 8.93510
Sample type: QC



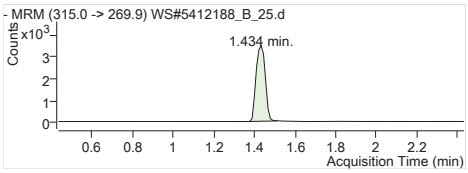



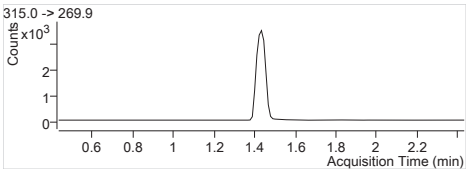

**PFTrDA 1** 663.0 -> 618.9
RT (Exp. RT): 2.389 (2.389)
Calc. conc. 0.51 µg/L
Area ratio: 9.67032
Sample type: QC



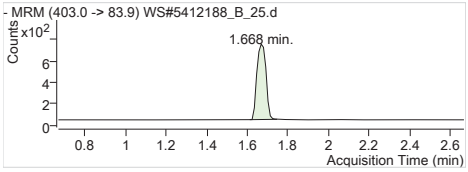



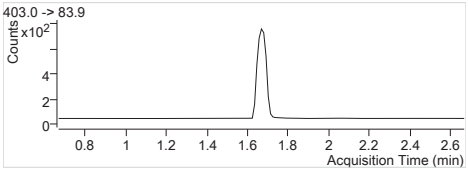

**PFTeDA 1** 712.9 -> 668.9
RT (Exp. RT): 2.456 (2.456)
Calc. conc. 0.49 µg/L
Area ratio: 7.71037
Sample type: QC



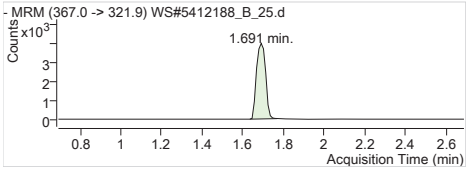



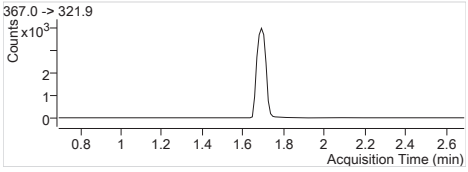

**13C2-PFHxA** 315.0 -> 269.9
RT (Exp. RT): 1.434 (1.434)
Calc. conc. 114.63 µg/L
Area ratio: 0.28494
Sample type: QC



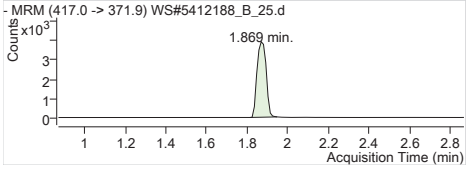



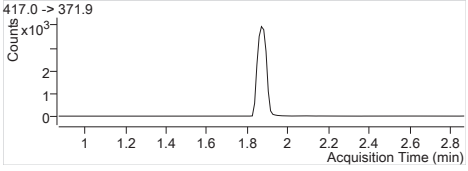

**18O2-PFHxS** 403.0 -> 83.9
RT (Exp. RT): 1.668 (1.668)
Calc. conc. 111.41 µg/L
Area ratio: 0.05786
Sample type: QC



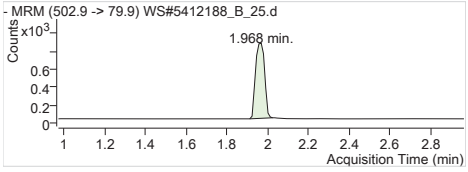



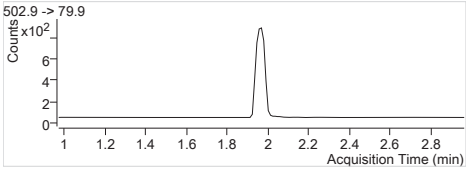

**13C4-PFHpA** 367.0 -> 321.9
RT (Exp. RT): 1.691 (1.691)
Calc. conc. 111.99 µg/L
Area ratio: 0.32244
Sample type: QC



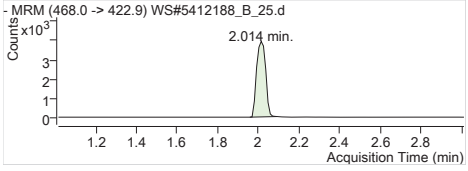



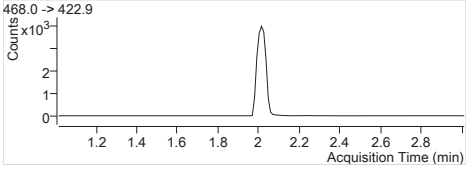

**13C4-PFOA** 417.0 -> 371.9
RT (Exp. RT): 1.869 (1.869)
Calc. conc. 106.99 µg/L
Area ratio: 0.31776
Sample type: QC



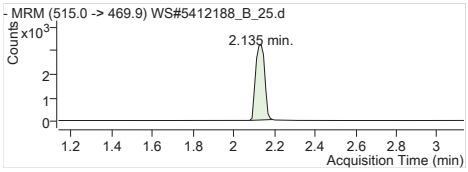



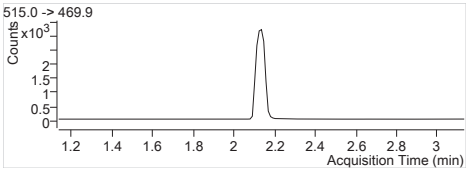

**13C4-PFOS** 502.9 -> 79.9
RT (Exp. RT): 1.968 (1.968)
Calc. conc. 114.37 µg/L
Area ratio: 0.06877
Sample type: QC



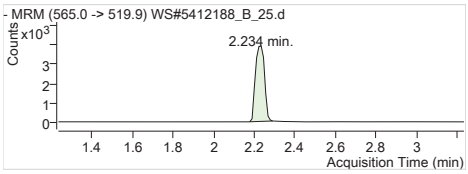



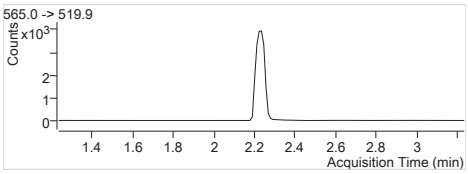

**13C5-PFNA** 468.0 -> 422.9
RT (Exp. RT): 2.014 (2.014)
Calc. conc. 110.44 µg/L
Area ratio: 0.31768
Sample type: QC



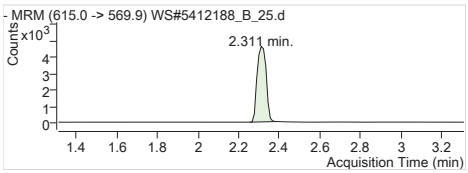



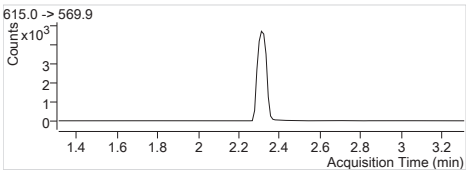

**13C2-PFDA** 515.0 -> 469.9
RT (Exp. RT): 2.135 (2.135)
Calc. conc. 107.89 µg/L
Area ratio: 0.23763
Sample type: QC



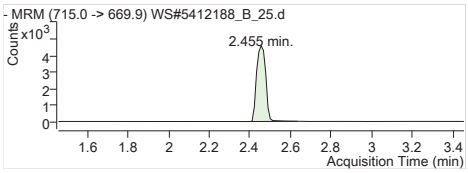



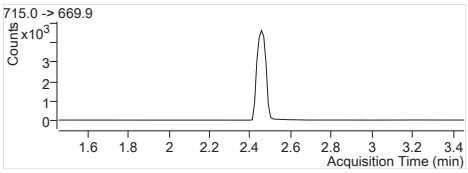

**13C2-PFUnA** 565.0 -> 519.9
RT (Exp. RT): 2.234 (2.234)
Calc. conc. 112.99 µg/L
Area ratio: 0.28939
Sample type: QC



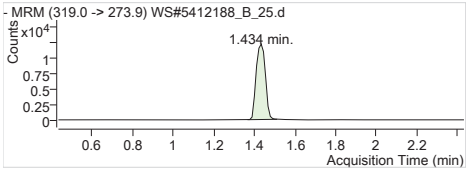



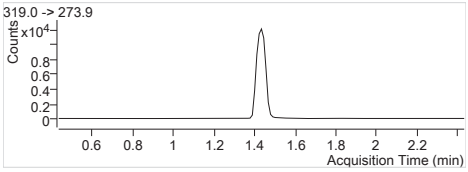

**13C2-PFDoA** 615.0 -> 569.9
RT (Exp. RT): 2.311 (2.311)
Calc. conc. 105.43 µg/L
Area ratio: 0.34212
Sample type: QC



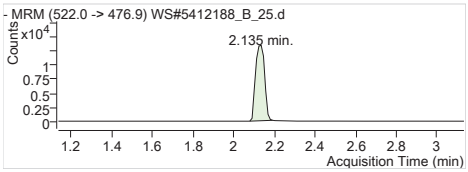



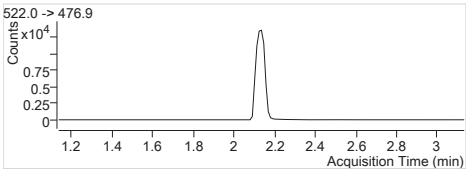

**13C2-PFTeDA** 715.0 -> 669.9
RT (Exp. RT): 2.455 (2.455)
Calc. conc. 95.43 µg/L
Area ratio: 0.34042
Sample type: QC




**13C6-PFHxA** 319.0 -> 273.9
RT (Exp. RT): 1.434 (1.434)
Calc. conc. 2.91 µg/L
Area ratio: 0
Sample type: QC



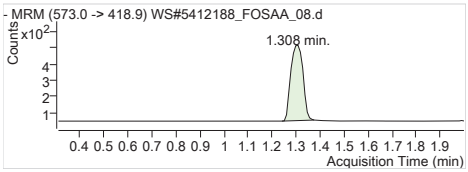

**13C9-PFDA** 522.0 -> 476.9
RT (Exp. RT): 2.135 (2.135)
Calc. conc. 2.69 µg/L
Area ratio: 0
Sample type: QC

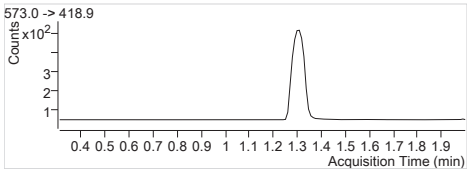
| | |
|---|---|
| **Batch Path** | T:\lcms4\PFC\20180226\WS#5412188_FOSAA\QuantResults\PFC_Water_Low_180226_WS#5412188_FOSAA_ETOxics |

| | | | |
|---|---|---|---|
| **Sample Name** | **IB** | **Instrument** | LCMS04 |
| **Data File** | WS#5412188_FOSAA_08.d | **Operator** | |
| **Sample Type** | Sample | **Dilution** | 0.024 |
| **Acq. Method** | PFC_Water_Low_FOSAA.m | **Position** | P1-C7 |
| **Acq. Date** | 2018/02/27 4:54:03 AM | **Injection Volume** | Per Method |
| **Sample Annotation** | - | | |

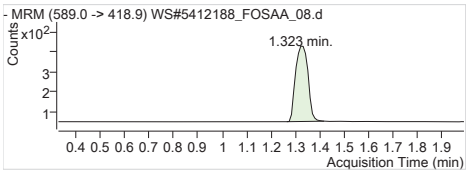
| ISTD Compounds | Response | RT | Target conc. | | |
|---|---|---|---|---|---|
| D3-MeFOSAA IS | 1645 | 1.31 | 1 µg/L | | |
| D5-EtFOSAA IS | 1357 | 1.32 | 1 µg/L | | |
| 13C9-PFDA IS | 26496 | 0.89 | 1 µg/L | | |

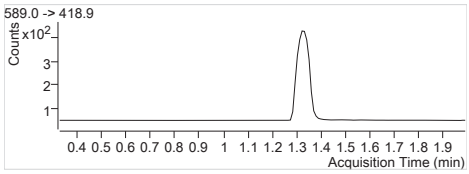
| Compound | Response | RT | Target Conc. | Calc. Conc. | Accuracy |
|---|---|---|---|---|---|
| MeFOSAA 1 | | | - | ND | - |
| EtFOSAA 1 | | | - | ND | - |
| D3-MeFOSAA | 1679 | 1.31 | - | 104.18 µg/L | - |
| D5-EtFOSAA | 1363 | 1.32 | - | 99.33 µg/L | - |
| 13C9-PFDA | 25745 | 0.89 | - | 2.43 µg/L | - |



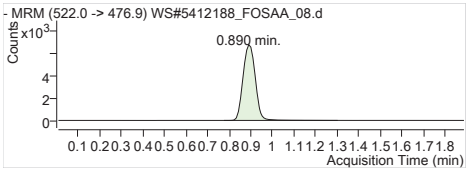



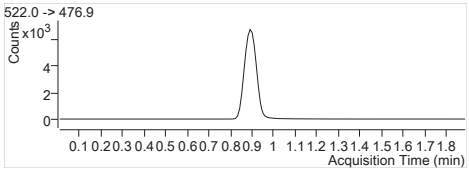

**D3-MeFOSAA IS** Internal Standard
RT (Exp. RT): 1.308 (1.308)
Concentration: 1 µg/L
Sample type: Sample



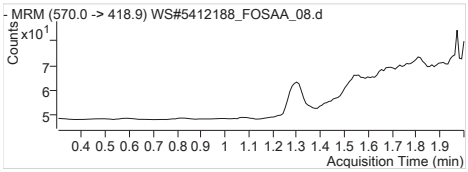



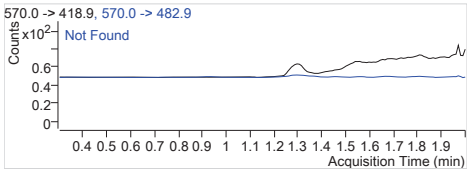

**D5-EtFOSAA IS** Internal Standard
RT (Exp. RT): 1.323 (1.323)
Concentration: 1 µg/L
Sample type: Sample



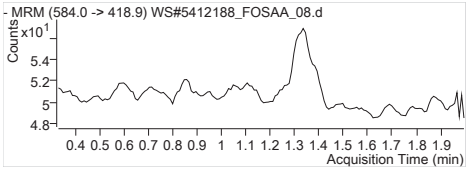



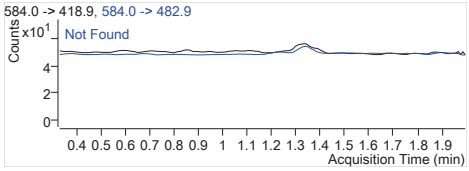

**13C9-PFDA IS** Internal Standard
RT (Exp. RT): 0.890 (0.890)
Concentration: 1 µg/L
Sample type: Sample



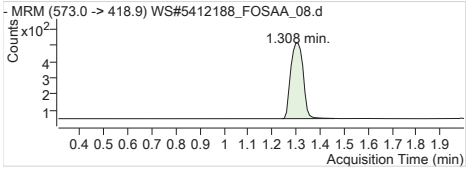



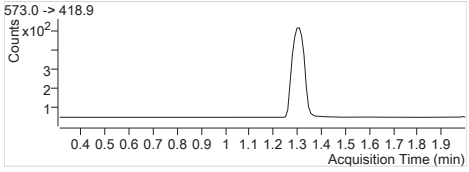

**MeFOSAA 1** 570.0 -> 418.9
RT (Exp. RT): 0.000 (1.300)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



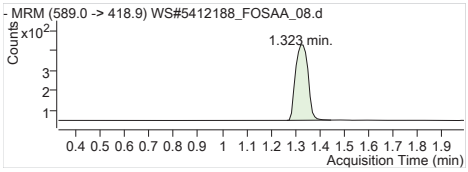



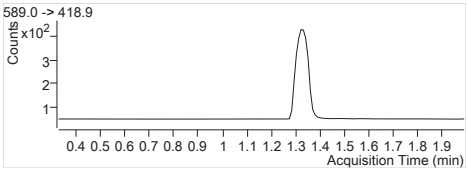

**EtFOSAA 1** 584.0 -> 418.9
RT (Exp. RT): 0.000 (1.325)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



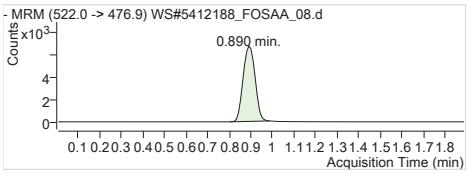



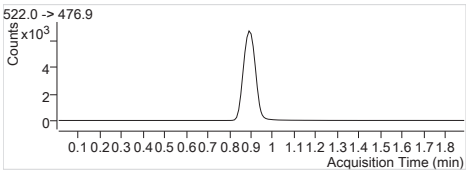

**D3-MeFOSAA** 573.0 -> 418.9
RT (Exp. RT): 1.308 (1.308)
Calc. conc. 104.18 µg/L
Area ratio: 0.06337
Sample type: Sample




| | |
|---|---|
| **D5-EtFOSAA** | 589.0 -> 418.9 |
| RT (Exp. RT): | 1.323 (1.323) |
| Calc. conc. | 99.33 µg/L |
| Area ratio: | 0.05144 |
| Sample type: | Sample |



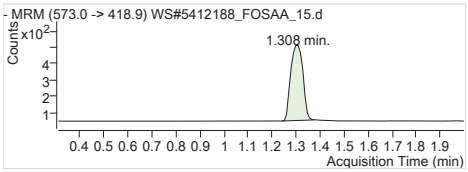

| | |
|---|---|
| **13C9-PFDA** | 522.0 -> 476.9 |
| RT (Exp. RT): | 0.890 (0.890) |
| Calc. conc. | 2.43 µg/L |
| Area ratio: | 0 |
| Sample type: | Sample |

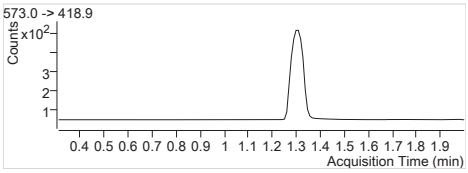
| | |
|---|---|
| **Batch Path** | T:\lcms4\PFC\20180226\WS#5412188_FOSAA\QuantResults\PFC_Water_Low_180226_WS#5412188_FOSAA_ETOxics |

| | | | |
|---|---|---|---|
| **Sample Name** | **IB** | **Instrument** | LCMS04 |
| **Data File** | WS#5412188_FOSAA_15.d | **Operator** | |
| **Sample Type** | Sample | **Dilution** | 0.024 |
| **Acq. Method** | PFC_Water_Low_FOSAA.m | **Position** | P1-C7 |
| **Acq. Date** | 2018/02/27 5:10:53 AM | **Injection Volume** | Per Method |
| **Sample Annotation** | - | | |

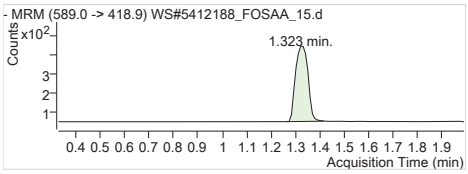
| ISTD Compounds | Response | RT | Target conc. | | |
|---|---|---|---|---|---|
| D3-MeFOSAA IS | 1632 | 1.31 | 1 µg/L | | |
| D5-EtFOSAA IS | 1421 | 1.32 | 1 µg/L | | |
| 13C9-PFDA IS | 26197 | 0.89 | 1 µg/L | | |

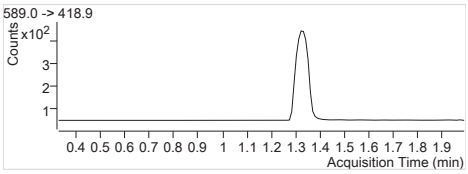
| Compound | Response | RT | Target Conc. | Calc. Conc. | Accuracy |
|---|---|---|---|---|---|
| MeFOSAA 1 | | | - | ND | - |
| EtFOSAA 1 | | | - | ND | - |
| D3-MeFOSAA | 1678 | 1.31 | - | 105.31 µg/L | - |
| D5-EtFOSAA | 1426 | 1.32 | - | 105.10 µg/L | - |
| 13C9-PFDA | 25638 | 0.89 | - | 2.42 µg/L | - |



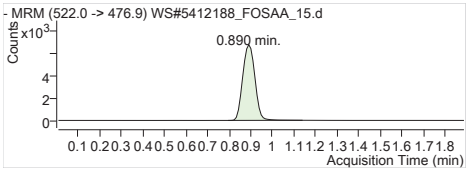



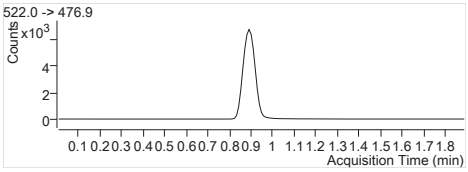

**D3-MeFOSAA IS** Internal Standard
RT (Exp. RT): 1.308 (1.308)
Concentration: 1 µg/L
Sample type: Sample



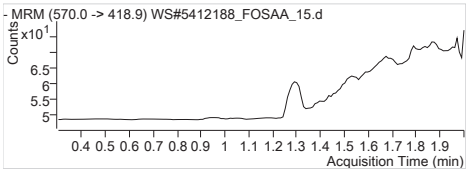



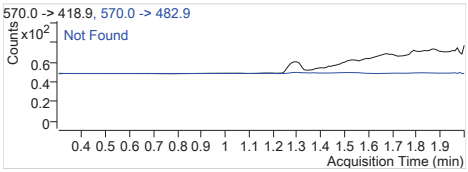

**D5-EtFOSAA IS** Internal Standard
RT (Exp. RT): 1.323 (1.323)
Concentration: 1 µg/L
Sample type: Sample



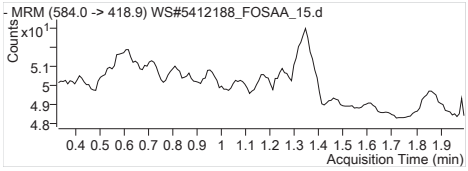



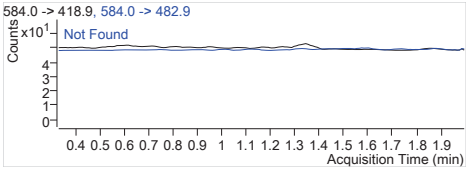

**13C9-PFDA IS** Internal Standard
RT (Exp. RT): 0.890 (0.890)
Concentration: 1 µg/L
Sample type: Sample



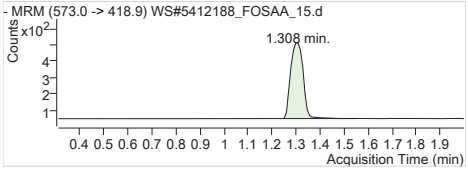



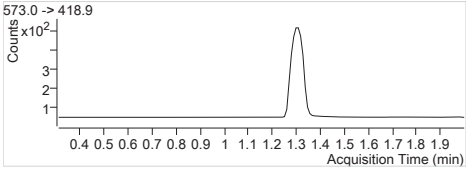

**MeFOSAA 1** 570.0 -> 418.9
RT (Exp. RT): 0.000 (1.300)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



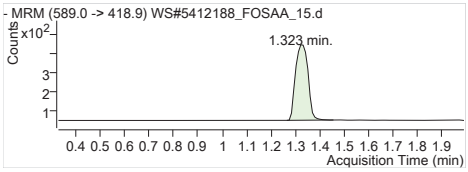



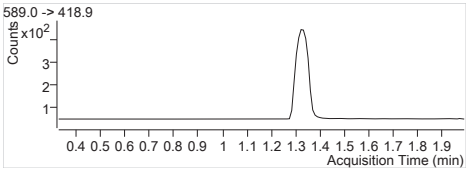

**EtFOSAA 1** 584.0 -> 418.9
RT (Exp. RT): 0.000 (1.325)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



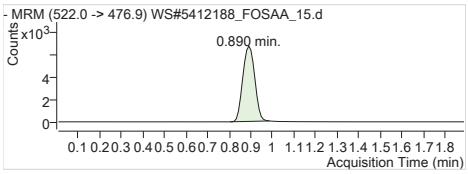



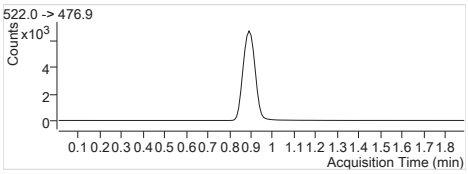

**D3-MeFOSAA** 573.0 -> 418.9
RT (Exp. RT): 1.308 (1.308)
Calc. conc. 105.31 µg/L
Area ratio: 0.06405
Sample type: Sample




| | |
|---|---|
| **D5-EtFOSAA** | 589.0 -> 418.9 |
| RT (Exp. RT): | 1.323 (1.323) |
| Calc. conc. | 105.10 µg/L |
| Area ratio: | 0.05443 |
| Sample type: | Sample |



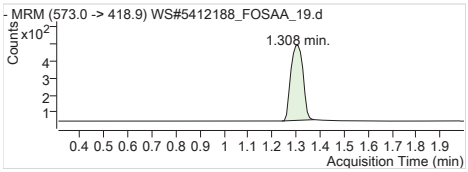

| | |
|---|---|
| **13C9-PFDA** | 522.0 -> 476.9 |
| RT (Exp. RT): | 0.890 (0.890) |
| Calc. conc. | 2.42 µg/L |
| Area ratio: | 0 |
| Sample type: | Sample |

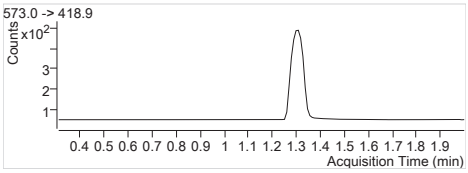
| | |
|---|---|
| **Batch Path** | T:\lcms4\PFC\20180226\WS#5412188_FOSAA\QuantResults\PFC_Water_Low_180226_WS#5412188_FOSAA_ETOxics |

| | | | |
|---|---|---|---|
| **Sample Name** | **IB** | **Instrument** | LCMS04 |
| **Data File** | WS#5412188_FOSAA_19.d | **Operator** | |
| **Sample Type** | Sample | **Dilution** | 0.024 |
| **Acq. Method** | PFC_Water_Low_FOSAA.m | **Position** | P1-C7 |
| **Acq. Date** | 2018/02/27 5:20:33 AM | **Injection Volume** | Per Method |
| **Sample Annotation** | - | | |

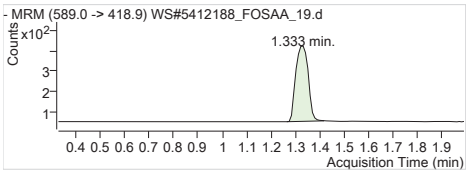
| ISTD Compounds | Response | RT | Target conc. | | |
|---|---|---|---|---|---|
| D3-MeFOSAA IS | 1545 | 1.31 | 1 µg/L | | |
| D5-EtFOSAA IS | 1341 | 1.33 | 1 µg/L | | |
| 13C9-PFDA IS | 25541 | 0.89 | 1 µg/L | | |

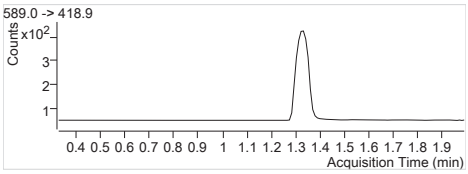
| Compound | Response | RT | Target Conc. | Calc. Conc. | Accuracy |
|---|---|---|---|---|---|
| MeFOSAA 1 | | | - | ND | - |
| EtFOSAA 1 | | | - | ND | - |
| D3-MeFOSAA | 1570 | 1.31 | - | 101.06 µg/L | - |
| D5-EtFOSAA | 1364 | 1.33 | - | 103.11 µg/L | - |
| 13C9-PFDA | 25044 | 0.89 | - | 2.36 µg/L | - |



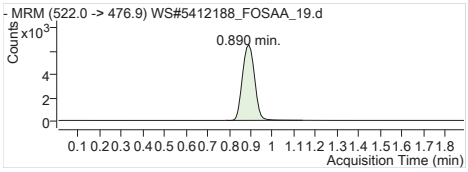



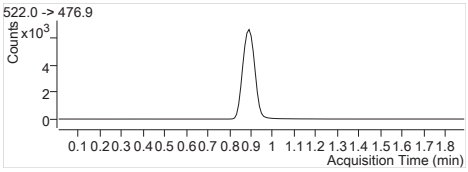

**D3-MeFOSAA IS** Internal Standard
RT (Exp. RT): 1.308 (1.308)
Concentration: 1 µg/L
Sample type: Sample



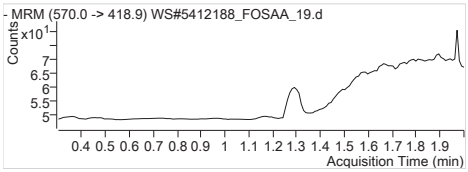



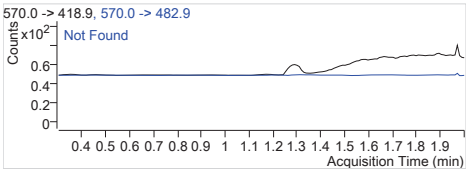

**D5-EtFOSAA IS** Internal Standard
RT (Exp. RT): 1.333 (1.323)
Concentration: 1 µg/L
Sample type: Sample



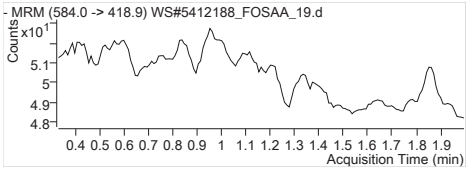



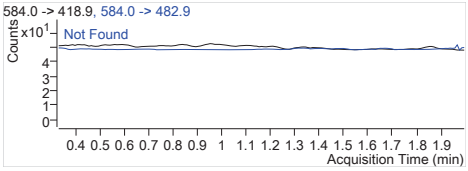

**13C9-PFDA IS** Internal Standard
RT (Exp. RT): 0.890 (0.890)
Concentration: 1 µg/L
Sample type: Sample



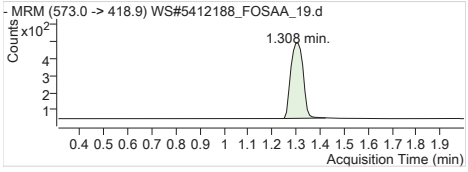



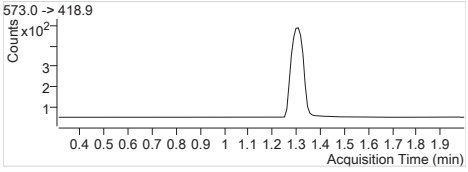

**MeFOSAA 1** 570.0 -> 418.9
RT (Exp. RT): 0.000 (1.300)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



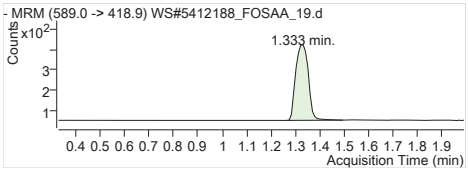



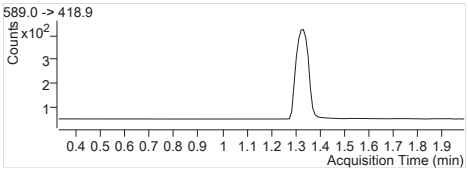

**EtFOSAA 1** 584.0 -> 418.9
RT (Exp. RT): 0.000 (1.325)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



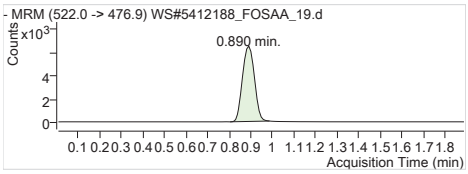



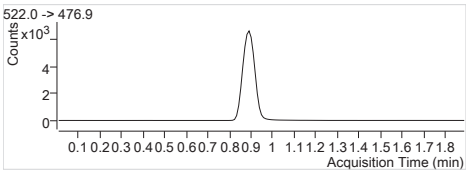

**D3-MeFOSAA** 573.0 -> 418.9
RT (Exp. RT): 1.308 (1.308)
Calc. conc. 101.06 µg/L
Area ratio: 0.06147
Sample type: Sample




| | |
|---|---|
| **D5-EtFOSAA** | 589.0 -> 418.9 |
| RT (Exp. RT): | 1.333 (1.323) |
| Calc. conc. | 103.11 µg/L |
| Area ratio: | 0.05340 |
| Sample type: | Sample |



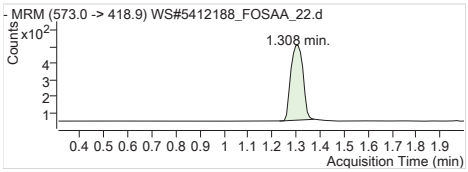

| | |
|---|---|
| **13C9-PFDA** | 522.0 -> 476.9 |
| RT (Exp. RT): | 0.890 (0.890) |
| Calc. conc. | 2.36 µg/L |
| Area ratio: | 0 |
| Sample type: | Sample |

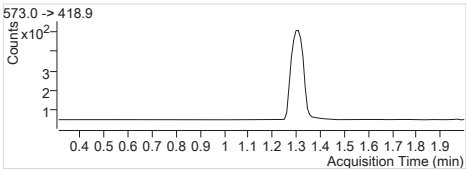
| | |
|---|---|
| **Batch Path** | T:\lcms4\PFC\20180226\WS#5412188_FOSAA\QuantResults\PFC_Water_Low_180226_WS#5412188_FOSAA_ETOxics |

| | | | |
|---|---|---|---|
| **Sample Name** | **IB** | **Instrument** | LCMS04 |
| **Data File** | WS#5412188_FOSAA_22.d | **Operator** | |
| **Sample Type** | Sample | **Dilution** | 0.024 |
| **Acq. Method** | PFC_Water_Low_FOSAA.m | **Position** | P1-C7 |
| **Acq. Date** | 2018/02/27 5:27:48 AM | **Injection Volume** | Per Method |
| **Sample Annotation** | - | | |

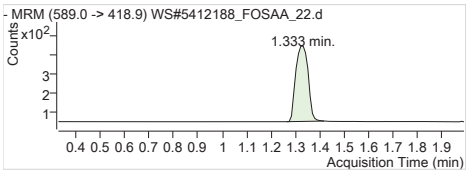
| ISTD Compounds | Response | RT | Target conc. | | |
|---|---|---|---|---|---|
| D3-MeFOSAA IS | 1607 | 1.31 | 1 µg/L | | |
| D5-EtFOSAA IS | 1403 | 1.33 | 1 µg/L | | |
| 13C9-PFDA IS | 25961 | 0.89 | 1 µg/L | | |

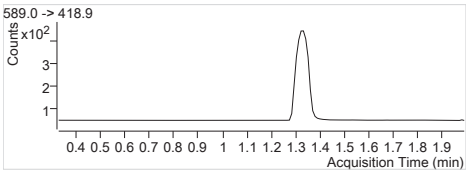
| Compound | Response | RT | Target Conc. | Calc. Conc. | Accuracy |
|---|---|---|---|---|---|
| MeFOSAA 1 | | | - | ND | - |
| EtFOSAA 1 | | | - | ND | - |
| D3-MeFOSAA | 1665 | 1.31 | - | 105.44 µg/L | - |
| D5-EtFOSAA | 1417 | 1.33 | - | 105.39 µg/L | - |
| 13C9-PFDA | 25397 | 0.89 | - | 2.40 µg/L | - |



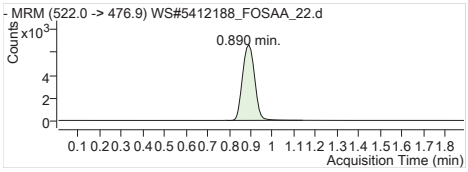



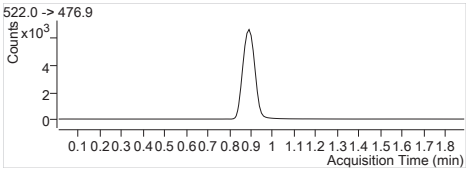

**D3-MeFOSAA IS** Internal Standard
RT (Exp. RT): 1.308 (1.308)
Concentration: 1 µg/L
Sample type: Sample



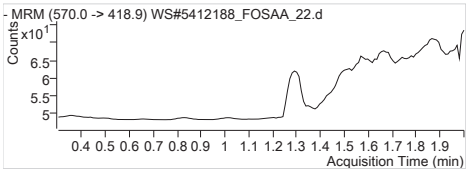



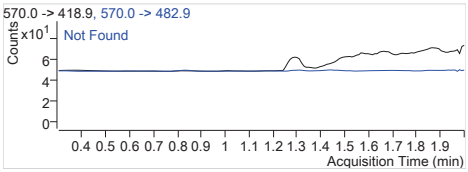

**D5-EtFOSAA IS** Internal Standard
RT (Exp. RT): 1.333 (1.323)
Concentration: 1 µg/L
Sample type: Sample



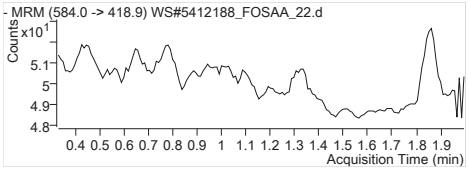



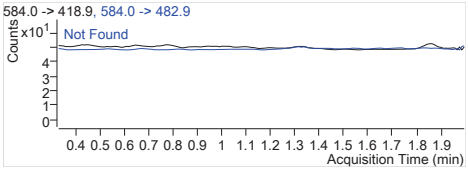

**13C9-PFDA IS** Internal Standard
RT (Exp. RT): 0.890 (0.890)
Concentration: 1 µg/L
Sample type: Sample



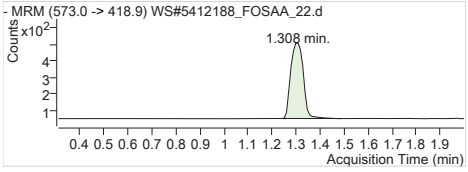



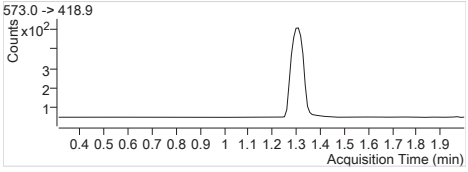

**MeFOSAA 1** 570.0 -> 418.9
RT (Exp. RT): 0.000 (1.300)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



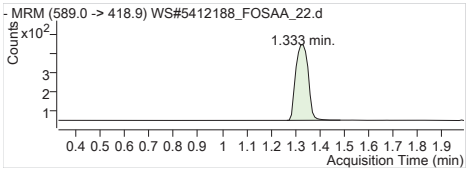



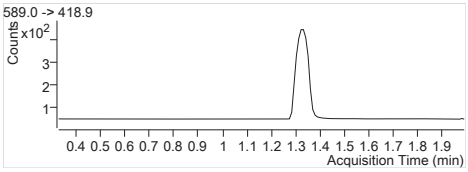

**EtFOSAA 1** 584.0 -> 418.9
RT (Exp. RT): 0.000 (1.325)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



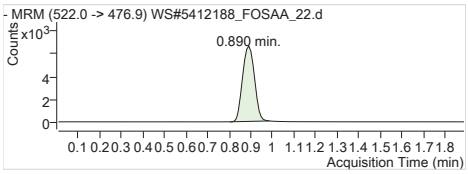



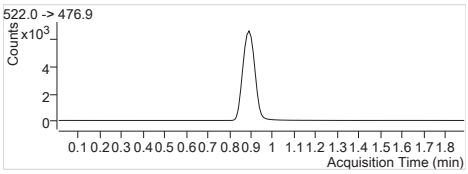

**D3-MeFOSAA** 573.0 -> 418.9
RT (Exp. RT): 1.308 (1.308)
Calc. conc. 105.44 µg/L
Area ratio: 0.06413
Sample type: Sample




| | |
|---|---|
| **D5-EtFOSAA** | 589.0 -> 418.9 |
| RT (Exp. RT): | 1.333 (1.323) |
| Calc. conc. | 105.39 µg/L |
| Area ratio: | 0.05458 |
| Sample type: | Sample |




| | |
|---|---|
| **13C9-PFDA** | 522.0 -> 476.9 |
| RT (Exp. RT): | 0.890 (0.890) |
| Calc. conc. | 2.40 µg/L |
| Area ratio: | 0 |
| Sample type: | Sample |

# Quantitation Results

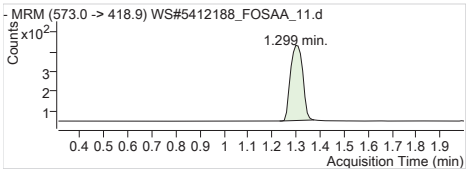
Agilent Technologies

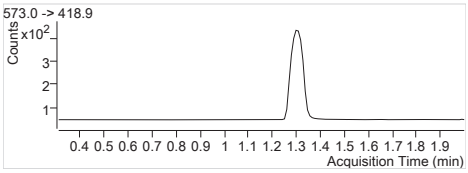
| | |
|---|---|
| **Batch Path** | T:\lcms4\PFC\20180226\WS#5412188_FOSAA\QuantResults\PFC_Water_Low_180226_WS#5412188_FOSAA_ETOxics |

| | | | |
|---|---|---|---|
| **Sample Name** | **5412188:BLANK** | **Instrument** | LCMS04 |
| **Data File** | WS#5412188_FOSAA_11.d | **Operator** | |
| **Sample Type** | Sample | **Dilution** | 0.024 |
| **Acq. Method** | PFC_Water_Low_FOSAA.m | **Position** | P1-C9 |
| **Acq. Date** | 2018/02/27 5:01:17 AM | **Injection Volume** | Per Method |
| **Sample Annotation** | - | | |

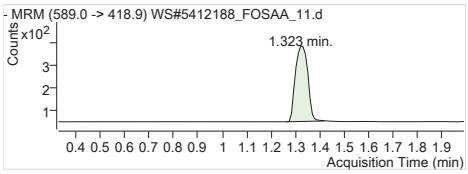
| ISTD Compounds | Response | RT | Target conc. | | |
|---|---|---|---|---|---|
| D3-MeFOSAA IS | 1354 | 1.30 | 1 µg/L | | |
| D5-EtFOSAA IS | 1204 | 1.32 | 1 µg/L | | |
| 13C9-PFDA IS | 25416 | 0.88 | 1 µg/L | | |

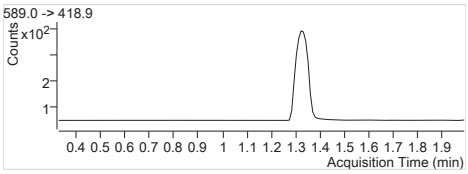
| Compound | Response | RT | Target Conc. | Calc. Conc. | Accuracy |
|---|---|---|---|---|---|
| MeFOSAA 1 | | | - | ND | - |
| EtFOSAA 1 | | | - | ND | - |
| D3-MeFOSAA | 1376 | 1.30 | - | 89.01 µg/L | - |
| D5-EtFOSAA | 1219 | 1.32 | - | 92.61 µg/L | - |
| 13C9-PFDA | 25419 | 0.88 | - | 2.40 µg/L | - |



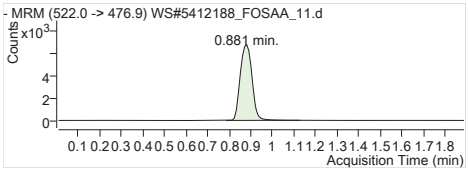



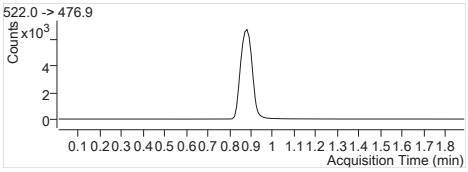

**D3-MeFOSAA IS** Internal Standard
RT (Exp. RT): 1.299 (1.308)
Concentration: 1 µg/L
Sample type: Sample



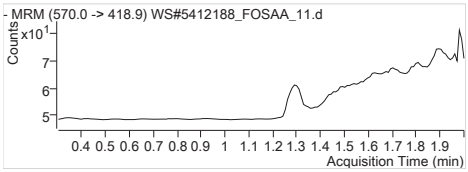



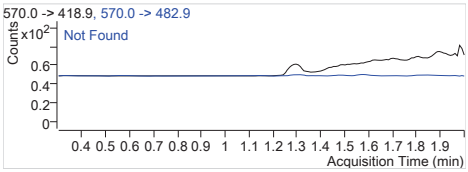

**D5-EtFOSAA IS** Internal Standard
RT (Exp. RT): 1.323 (1.323)
Concentration: 1 µg/L
Sample type: Sample



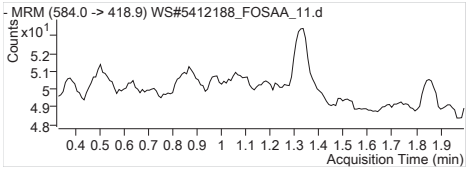



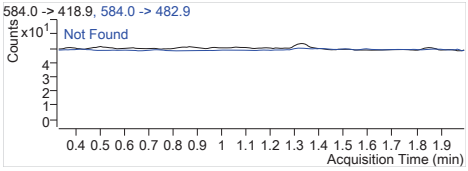

**13C9-PFDA IS** Internal Standard
RT (Exp. RT): 0.881 (0.890)
Concentration: 1 µg/L
Sample type: Sample



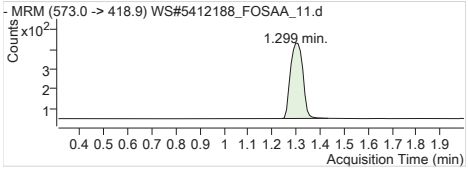



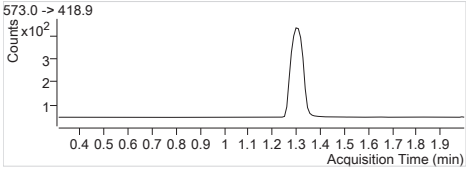

**MeFOSAA 1** 570.0 -> 418.9
RT (Exp. RT): 0.000 (1.300)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



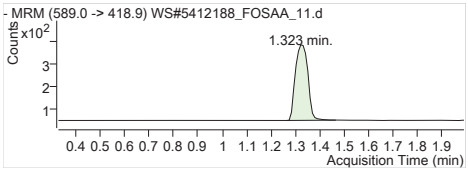



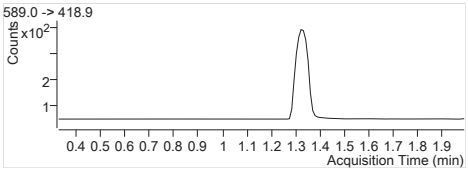

**EtFOSAA 1** 584.0 -> 418.9
RT (Exp. RT): 0.000 (1.325)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



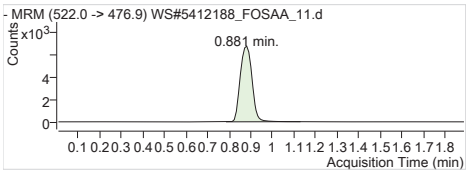



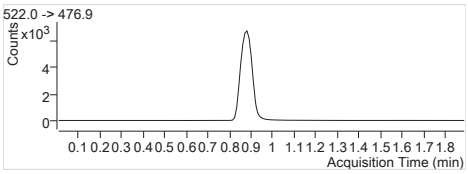

**D3-MeFOSAA** 573.0 -> 418.9
RT (Exp. RT): 1.299 (1.308)
Calc. conc. 89.01 µg/L
Area ratio: 0.05414
Sample type: Sample




| | |
|---|---|
| **D5-EtFOSAA** | 589.0 -> 418.9 |
| RT (Exp. RT): | 1.323 (1.323) |
| Calc. conc. | 92.61 µg/L |
| Area ratio: | 0.04796 |
| Sample type: | Sample |




| | |
|---|---|
| **13C9-PFDA** | 522.0 -> 476.9 |
| RT (Exp. RT): | 0.881 (0.890) |
| Calc. conc. | 2.40 µg/L |
| Area ratio: | 0 |
| Sample type: | Sample |

# Quantitation Results

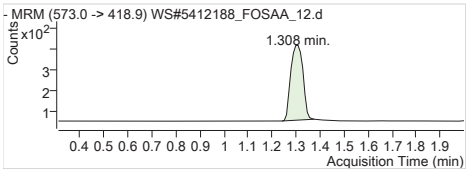
Agilent Technologies

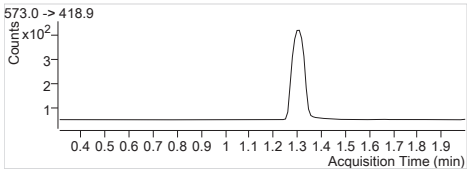
| | |
|---|---|
| **Batch Path** | T:\lcms4\PFC\20180226\WS#5412188_FOSAA\QuantResults\PFC_Water_Low_180226_WS#5412188_FOSAA_ETOxics |

| | | | |
|---|---|---|---|
| **Sample Name** | **5412188:SPIKE** | **Instrument** | LCMS04 |
| **Data File** | WS#5412188_FOSAA_12.d | **Operator** | |
| **Sample Type** | QC | **Dilution** | 0.024 |
| **Acq. Method** | PFC_Water_Low_FOSAA.m | **Position** | P1-D1 |
| **Acq. Date** | 2018/02/27 5:03:41 AM | **Injection Volume** | Per Method |
| **Sample Annotation** | - | | |

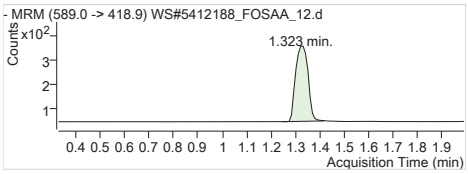
| ISTD Compounds | Response | RT | Target conc. | | |
|---|---|---|---|---|---|
| D3-MeFOSAA IS | 1301 | 1.31 | 1 µg/L | | |
| D5-EtFOSAA IS | 1105 | 1.32 | 1 µg/L | | |
| 13C9-PFDA IS | 24238 | 0.89 | 1 µg/L | | |

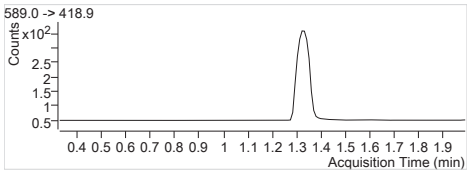
| Compound | Response | RT | Target Conc. | Calc. Conc. | Accuracy |
|---|---|---|---|---|---|
| MeFOSAA 1 | 9606 | 1.30 | 20.80 | 0.47 µg/L | 93.98 |
| EtFOSAA 1 | 9622 | 1.32 | 20.80 | 0.47 µg/L | 94.74 |
| D3-MeFOSAA | 1359 | 1.31 | 100.00 | 92.18 µg/L | 92.18 |
| D5-EtFOSAA | 1120 | 1.32 | 100.00 | 89.22 µg/L | 89.22 |
| 13C9-PFDA | 23793 | 0.89 | 100.00 | 2.25 µg/L | 93.58 |



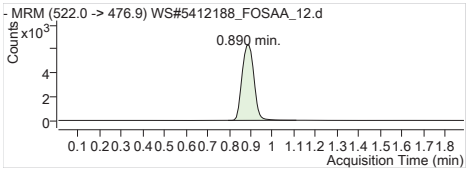



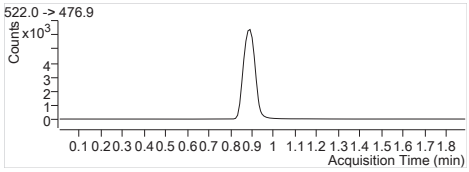

**D3-MeFOSAA IS** Internal Standard
RT (Exp. RT): 1.308 (1.308)
Concentration: 1 µg/L
Sample type: QC



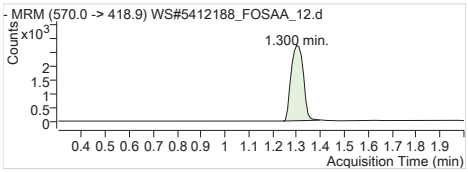



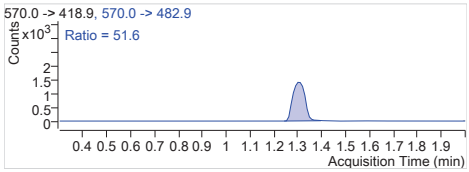

**D5-EtFOSAA IS** Internal Standard
RT (Exp. RT): 1.323 (1.323)
Concentration: 1 µg/L
Sample type: QC



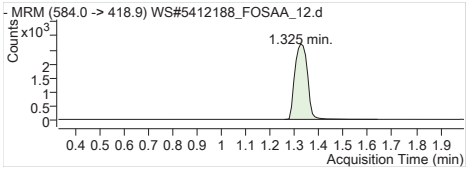



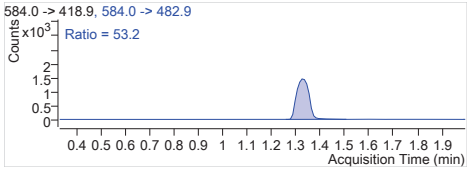

**13C9-PFDA IS** Internal Standard
RT (Exp. RT): 0.890 (0.890)
Concentration: 1 µg/L
Sample type: QC



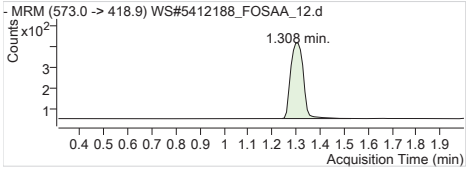



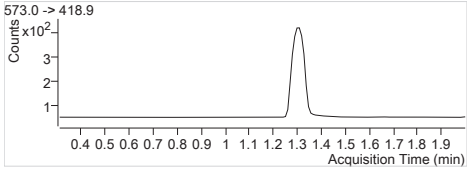

**MeFOSAA 1** 570.0 -> 418.9
RT (Exp. RT): 1.300 (1.300)
Calc. conc. 0.47 µg/L
Area ratio: 7.38355
Sample type: QC



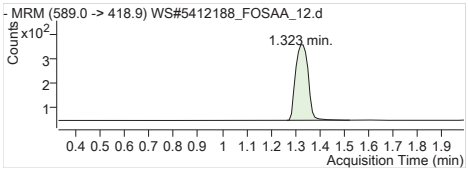



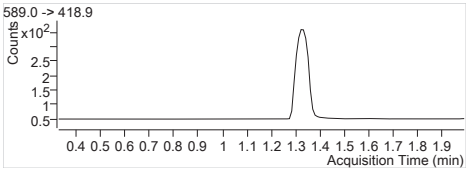

**EtFOSAA 1** 584.0 -> 418.9
RT (Exp. RT): 1.325 (1.325)
Calc. conc. 0.47 µg/L
Area ratio: 8.70769
Sample type: QC



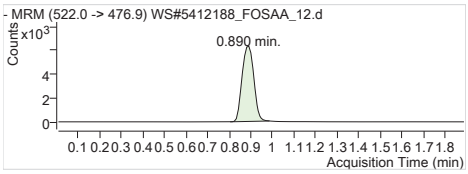



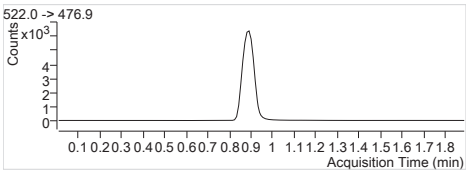

**D3-MeFOSAA** 573.0 -> 418.9
RT (Exp. RT): 1.308 (1.308)
Calc. conc. 92.18 µg/L
Area ratio: 0.05607
Sample type: QC




| | |
|---|---|
| **D5-EtFOSAA** | 589.0 -> 418.9 |
| RT (Exp. RT): | 1.323 (1.323) |
| Calc. conc. | 89.22 µg/L |
| Area ratio: | 0.04621 |
| Sample type: | QC |



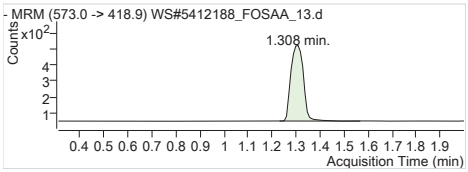

| | |
|---|---|
| **13C9-PFDA** | 522.0 -> 476.9 |
| RT (Exp. RT): | 0.890 (0.890) |
| Calc. conc. | 2.25 µg/L |
| Area ratio: | 0 |
| Sample type: | QC |

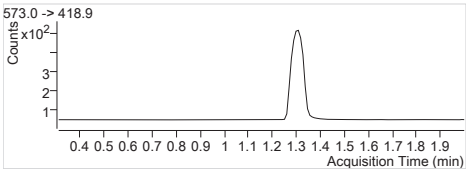
| | |
|---|---|
| **Batch Path** | T:\lcms4\PFC\20180226\WS#5412188_FOSAA\QuantResults\PFC_Water_Low_180226_WS#5412188_FOSAA_ETOxics |

| | | | |
|---|---|---|---|
| **Sample Name** | **5412188:SPIKE:D1** | **Instrument** | LCMS04 |
| **Data File** | WS#5412188_FOSAA_13.d | **Operator** | |
| **Sample Type** | QC | **Dilution** | 0.024 |
| **Acq. Method** | PFC_Water_Low_FOSAA.m | **Position** | P1-D2 |
| **Acq. Date** | 2018/02/27 5:06:04 AM | **Injection Volume** | Per Method |
| **Sample Annotation** | - | | |

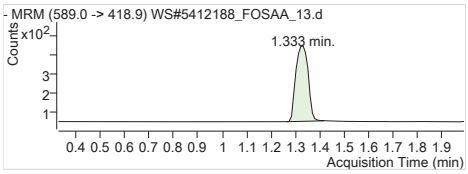
| ISTD Compounds | Response | RT | Target conc. | | |
|---|---|---|---|---|---|
| D3-MeFOSAA IS | 1710 | 1.31 | 1 µg/L | | |
| D5-EtFOSAA IS | 1394 | 1.33 | 1 µg/L | | |
| 13C9-PFDA IS | 29386 | 0.90 | 1 µg/L | | |

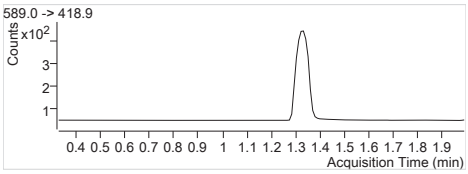
| Compound | Response | RT | Target Conc. | Calc. Conc. | Accuracy |
|---|---|---|---|---|---|
| MeFOSAA 1 | 12284 | 1.30 | 20.80 | 0.46 µg/L | 91.42 |
| EtFOSAA 1 | 12010 | 1.32 | 20.80 | 0.47 µg/L | 93.73 |
| D3-MeFOSAA | 1698 | 1.31 | 100.00 | 95.00 µg/L | 95.00 |
| D5-EtFOSAA | 1396 | 1.33 | 100.00 | 91.73 µg/L | 91.73 |
| 13C9-PFDA | 28594 | 0.90 | 100.00 | 2.70 µg/L | 112.46 |



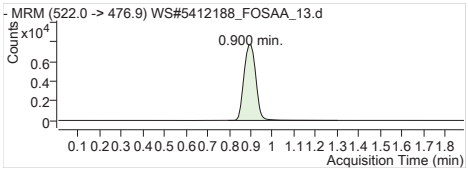



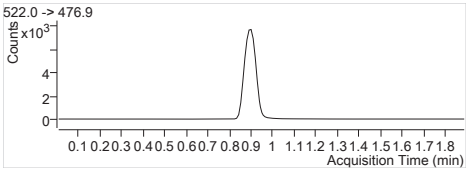

**D3-MeFOSAA IS** Internal Standard
RT (Exp. RT): 1.308 (1.308)
Concentration: 1 µg/L
Sample type: QC



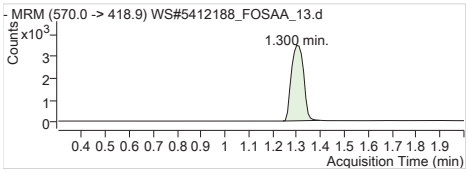



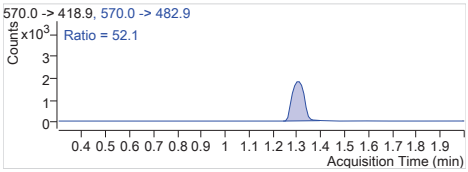

**D5-EtFOSAA IS** Internal Standard
RT (Exp. RT): 1.333 (1.323)
Concentration: 1 µg/L
Sample type: QC



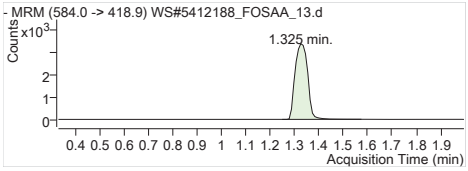



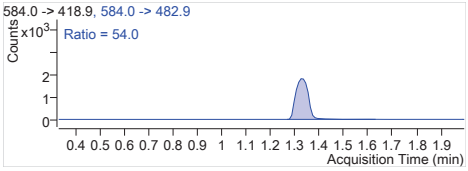

**13C9-PFDA IS** Internal Standard
RT (Exp. RT): 0.900 (0.890)
Concentration: 1 µg/L
Sample type: QC



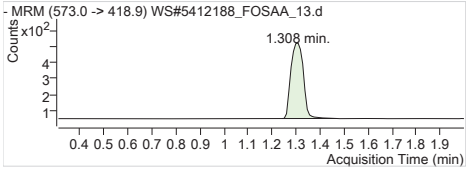



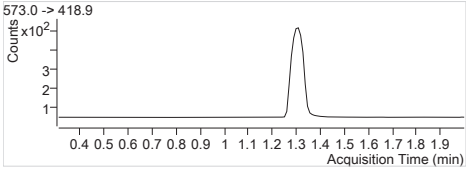

**MeFOSAA 1** 570.0 -> 418.9
RT (Exp. RT): 1.300 (1.300)
Calc. conc. 0.46 µg/L
Area ratio: 7.18363
Sample type: QC



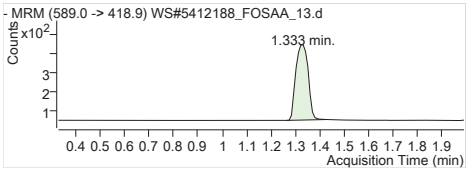



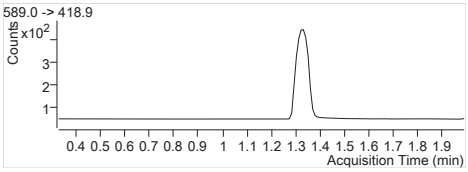

**EtFOSAA 1** 584.0 -> 418.9
RT (Exp. RT): 1.325 (1.325)
Calc. conc. 0.47 µg/L
Area ratio: 8.61549
Sample type: QC



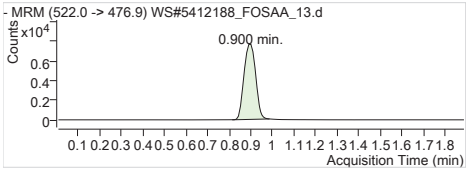



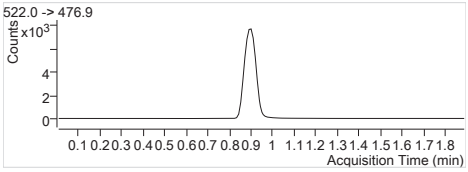

**D3-MeFOSAA** 573.0 -> 418.9
RT (Exp. RT): 1.308 (1.308)
Calc. conc. 95.00 µg/L
Area ratio: 0.05778
Sample type: QC




| | |
|---|---|
| **D5-EtFOSAA** | 589.0 -> 418.9 |
| RT (Exp. RT): | 1.333 (1.323) |
| Calc. conc. | 91.73 µg/L |
| Area ratio: | 0.04751 |
| Sample type: | QC |




| | |
|---|---|
| **13C9-PFDA** | 522.0 -> 476.9 |
| RT (Exp. RT): | 0.900 (0.890) |
| Calc. conc. | 2.70 µg/L |
| Area ratio: | 0 |
| Sample type: | QC |

## DoD Projects - Internal Data Validation Checklist

Run date: 2018/02/23

Worksheet # (s): 5410178

Analysis: PFOSALCM-W

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

Reviewed by: KC Date: 2018/02/27

Comments:

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

Reviewed by: [signature] Date: 2018/02/27

Comments:

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

# Worksheet Data Validation Checklist - Extractable Organics

Worksheet # 5410178 Testcode: PFOSALCM_W

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

Reviewed by: [signature] Date: 2018/2/22

Comments:

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

See attached BRLFCD-00002 FC 2018/02/22

FC 2018/02/22

Reviewed by: Date:

Comments:

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

Reviewed by: Date:

Comments:

**WS# : 5410178**

Page #: 1/2

Report Name : Worksheet - (Liquids and Solids)

Assignment Date : Thursday, February 22, 2018

Assigned to : Shahbaz Ahmad

Test Code : PFOSALCM-W

Instrument Id:

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

Sediment gm ml ml SAD 2018/2/22

| Job Number | Sample Number | D | Sample ID | F | % Moisture | Wt or Vol | Final Vol | DF or AF | # Cont | Expiry Date | Test DeadLine | Criteria | Extract Date | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | SPIKE | 0 | PFC-W | | 0 | 125 | 3 | | | | | | 2018/02/22 | 29.1 |
| | SPIKE | 1 | PFC-W | | 0 | 125 | 3 | | | | | | 2018/02/22 | 29.2 |
| | BLANK | | | | 0 | 125 | 3 | | | | | | 2018/02/22 | 31.3 |
| B833226 | *GBV345-01R | | EB-CEF-MFS-0208* | | <0.1 | 125 | 3 | 1X | 2 | 2018/02/22 | 2018/02/27 23:00 | DOD | 2018/02/22 | 31.0 |
| B833226 | *GBV346-01R | | EB-CEF-MFS-0208* | | <0.1 | 125 | 3 | 1X | 2 | 2018/02/22 | 2018/02/27 23:00 | DOD | 2018/02/22 | 31.4 |
| B833226 | *GBV347-01R | | EB-CEF-MFS-0208* | | <0.1 | 125 | 3 | 1X | 2 | 2018/02/22 | 2018/02/27 23:00 | DOD | 2018/02/22 | 30.5 |
| B833226 | *GBV348-01R | | FB-CEF-MFS-0208* | | 0 | 125 | 3 | 1X | 2 | 2018/02/22 | 2018/02/27 23:00 | DOD | 2018/02/22 | 31.3 |
| B833226 | *GBV349-01R | | CEF-1820-TW02-0* | | <0.1 | 125 | 3 | 1X/10X | 2 | 2018/02/22 | 2018/02/27 23:00 | DOD | 2018/02/22 | 30.3 |

SAD 2018/2/22

Remarks:

Samples extracted by: Shahbaz Ahmad SAD 2018/2/22

Instrumentation performed by: KC Date: 2018/02/23

Calculations performed by: KC Date: 2018/02/26

Validated by: AA Date: 2018/02/27

| Job No. | Rep / Client Name | Contact | Client Tier | National |
|---|---|---|---|---|
| | Remarks | | | |
| GB833226 | SP8 Earth Toxics Inc | Rick Carr | Tier 5 (Enviro.) | AECOM |

NREG. PFOSALCM-W Level IV Package and TetraTech EDD required f/c ZAL. 2018/02/20 Project #: JM10 CECIL

| Job | Sample | Lab Comments |
|---|---|---|
| | SPIKE | |
| | SPIKE | |
| | BLANK | |
| B833226 | GBV345-01R | |
| B833226 | GBV346-01R | |
| B833226 | GBV347-01R | |
| B833226 | GBV348-01R | |
| B833226 | GBV349-01R | |

| Standard | Vol. of Methanol | Spiked Amount | |
|---|---|---|---|
| S1 | 2825 | 25 | SK-7377 2/3 |
| S2 | 2800 | 50 | |
| S3 | 2700 | 150 | |
| S4 | 2813 | 37.5 | I-5297 2/3 |
| S5 | 2775 | 75 | |
| S6 | 2725 | 125 | |
| ICV | 2788 | 62.5 | I-5299 3/3 |
| EB | 2850 | — | |

## Worksheet Reagent Tracking Record

Worksheet # 5410178

| Surrogate/Spike solutions | √ | Solution ID # | Conc. | Blk-Spk Volume (µL) Solid | Blk-Spk Volume (µL) Liquid | MS Volume (µL) Solid | MS Volume (µL) Liquid | Samples Volume (µL) Solid | Samples Volume (µL) Liquid |
|---|---|---|---|---|---|---|---|---|---|
| DGT Spike | | | 100 ug/mL | 60 | 30 | 60 | 30 | NA | NA |
| Diquat Dibromide | | | 50 ug/mL | NA | 350 | NA | 350 | NA | NA |
| Explosives Spiking solution A | | | 20 ug/mL | 250 | 100 | 250 | 100 | NA | NA |
| Explosives Spiking solution B | | | 20/80 ug/mL | 250 | 100 | 250 | 100 | NA | NA |
| Formaldehyde Spike | | | 100 ug/mL | 25 | 25 | 25 | 25 | NA | NA |
| Glyphosate Spike | | | 25 ug/mL | 500 | 20 | 500 | 20 | NA | NA |
| Nonylphenol Ethoxylate Spike | | | 100 ug/mL | 100 | 100 | 100 | 100 | NA | NA |
| Nonylphenol Spike | | | 10 ug/mL | 100 | 100 | 100 | 100 | NA | NA |
| Paraquat Cl Tetrahydrate | | | 20 ug/mL | NA | 125 | NA | 125 | NA | NA |
| Perchlorate Standard Spike | | | 10 ng/mL | NA | 100 | NA | 100 | NA | NA |
| Perchlorate Standard Spike | | | 500 ng/mL | 40 | NA | 40 | NA | NA | NA |
| Perchlorate O-18 Internal Standard | | | 0.10 ng/uL | 20 | 20 | 20 | 20 | 20 | 20 |
| Morpholine Second Source Working Std | | | 2500 ug/L | NA | 80 | NA | 80 | NA | NA |
| Morpholine-D8 Internal Standard | | | 10 ug/mL | NA | 50 | NA | 50 | NA | 50 |
| Steril Second Source Spiking Solution | | | NA | 20 | NA | 20 | NA | NA | NA |
| Sterilants Comp. IS Working Solution | | | 3 ug/mL | 50 | NA | 50 | NA | 50 | NA |
| Comp. PFC Working Solution A | ✓ | I-5299 3/3 DM3 | 1ug/mL | 75 | 21 (62.5) | 75 | 21 (62.5) | NA | NA |
| PFC Internal Standard Solution | ✓ | SI-6801 3/4 DM3 | 50/125 ng/mL | 200 | 100 (150) | 200 | 100 (150) | 200 | 100/(150) |
| PFC Injection IS | ✓ | SI 6770 1/2 | 400 ng/mL | 20 | 20 | 20 | 20 | 20 | 20 |
| ICV | | I-5299 3/3 | | | | | | | |

| Solvent/Reagent | √ | Lot No. | Date Opened | Solvent/Reagent | √ | Lot No. | Date Opened/ Prepared |
|---|---|---|---|---|---|---|---|
| DCM | | | | 50% NaOH | | | |
| Ottawa Sand | | | | o-Phosphoric Acid | | | |
| Methanol | ✓ | SHBJ8485 | 2018/2/22 | Borax | | | |
| 2-Propanol (IPA) | | | | Calcium Chloride | | | |
| Acetonitrile | | | | EDTA | | | |
| Sodium Sulfate | | | | Phosphate Buffer | | | |
| 70:30 Methanol: Water | | | | Sodium Thiosulphate | | | |
| 60:40 Water: Methanol | ✓ | PRLE | 108-371 | DNPH | | | |
| DCM:Ethyl Ether (75:25) | | | | FMOC | | | |
| Hexane:IPA (98:2) | | | | 5M Acetate Buffer | | | |
| 2% Formic Acid | ✓ | PRLE | 108-370 | 0.2% $NH_4OH$ | ✓ | PRLE | 108-365 |
| 0.2% Formic Acid | | | | Leachate Fluid | | | |
| 0.05M KOH | | | | Reagent Water | ✓ | 57297 | 2018/2/21 |
| 0.05M HCl | | | | | | | |
| | | | | | | | |
| | | | | | | | |

*Spiked by: SAP

Spike Date: 2018/2/22

Spike Syringe/Pipette ID#: M41011F

Int. Std Syringe/Pipette ID#: G243906

*Spiking Witnessed by: DM3

Final pH:

| Equipment & ID | √ | Equipment | ID# | √ | Equipment | Lot # |
|---|---|---|---|---|---|---|
| Pipettor | | SPE Cartridge | | | QC Balance ID | |
| | | Filter | | | Thermometer ID &Temp | |
| Dispenser | | Centrifuge | | | | |
| | | Sonicator | | | | |

Bottle Tracking

Bottle# 18801

Cap# 18-778

Systems plus Lot# 18-01-31

Comments:

* - SPIKING OF SAMPLES MUST BE WITNESSED AT ALL TIMES.

**Worksheet:** 5410178

## Dilution and Column Cleanup Worksheet

Maxxam Analytics

| Job Number | Sample ID | Sample: Initial Final Volume | Dilution Required | Sample added mL | Solvent Added mL | Int Stan Added uL | New Effective Final Volume | INITIAL DATE | Column Clean Up |
|---|---|---|---|---|---|---|---|---|---|
| B833226 | GBY349-01 | 1X | 10X | 12.5 | — | 150 | 12.5 | [illegible] 2018/12/22 | — |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | [illegible] 2018/12/22 | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |

Worksheet Number: **5410178**

PFOS and PFOA in water by SPE/LCMS - Water

ug/L

| Parameter Name | Units | SPIKE | SPIKE Dup1 | BLANK | B833226 GBV345 | B833226 GBV346 | B833226 GBV347 |
|---|---|---|---|---|---|---|---|
| 6:2 Fluorotelomer sulfonate | ug/L | 104.57947 | 101.17622 | 0 | N/A******* | N/A******* | N/A******* |
| 8:2 Fluorotelomer sulfonate | ug/L | 112.21436 | 105.47088 | 0 | N/A******* | N/A******* | N/A******* |
| N-ethylperfluorooctane sulfonamide | ug/L | 93.85059 | 97.33535 | 0 | N/A******* | N/A******* | N/A******* |
| EtFOSAA | ug/L | 97.83049 | 97.13051 | 0 | 0 | 0 | 0 |
| N-ethylperfluorooctane sulfonamidoe | ug/L | 103.62933 | 97.71617 | 0 | N/A******* | N/A******* | N/A******* |
| N-methylperfluorooctane sulfonamide | ug/L | 96.44646 | 94.62339 | 0 | N/A******* | N/A******* | N/A******* |
| MeFOSAA | ug/L | 97.65427 | 98.97928 | 0 | 0 | 0 | 0 |
| N-methylperfluorooctanesulfonamidol | ug/L | 91.06951 | 96.32557 | 0 | N/A******* | N/A******* | N/A******* |
| Perfluorobutanoic acid | ug/L | 108.41214 | 106.23146 | 0 | N/A******* | N/A******* | N/A******* |
| Perfluorobutane Sulfonate (PFBS) | ug/L | 114.89115 | 110.55300 | 0 | 0 | 0 | 0 |
| Perfluorodecane Sulfonate | ug/L | 89.83545 | 94.41773 | 0 | N/A******* | N/A******* | N/A******* |
| Perfluoroheptanoic Acid (PFHpA) | ug/L | 105.22248 | 101.60261 | 0 | 0 | 0 | 0 |
| Perfluoroheptane sulfonate | ug/L | 104.63532 | 103.18603 | 0 | N/A******* | N/A******* | N/A******* |
| Perfluorohexanoic Acid (PFHxA) | ug/L | 101.86286 | 101.10933 | 0 | 0 | 0 | 0 |
| Perfluorohexane Sulfonate (PFHxS) | ug/L | 113.82603 | 102.18863 | 0 | 0 | 0 | 0 |
| Perfluorononanoic Acid (PFNA) | ug/L | 103.40302 | 100.51643 | 0 | 0 | 0 | 0 |
| Perfluorooctane Sulfonamide (PFOSA) | ug/L | 99.29490 | 100.67477 | 0 | N/A******* | N/A******* | N/A******* |
| Perfluoropentanoic Acid (PFPeA) | ug/L | 102.88732 | 102.99295 | 0 | N/A******* | N/A******* | N/A******* |
| Perfluorotetradecanoic Acid | ug/L | 101.60932 | 98.06120 | 0 | 0 | 0 | 0 |
| Perfluorotridecanoic Acid | ug/L | 102.84016 | 98.12275 | 0 | 0 | 0 | 0 |
| Perfluoroundecanoic Acid (PFUnA) | ug/L | 100.54371 | 101.82974 | 0 | 0 | 0 | 0 |
| Perfluorodecanoic Acid (PFDA) | ug/L | 96.65524 | 105.94541 | 0 | 0 | 0 | 0 |
| Perfluorododecanoic Acid (PFDoA) | ug/L | 104.48336 | 99.01245 | 0 | 0 | 0 | 0 |
| Perfluoro-n-Octanoic Acid (PFOA) | ug/L | 101.25898 | 95.79924 | 0 | 0 | 0 | 0 |
| Perfluorooctane Sulfonate (PFOS) | ug/L | 92.97346 | 95.26326 | 0 | 0 | 0.02144820 | 0 |
| 13C2-6:2 Fluorotelomer sulfonate | ug/L | 109.903851 | 97.8040593 | 101.577855 | N/A******* | N/A******* | N/A******* |
| 13C2-8:2 Fluorotelomer sulfonate | ug/L | 97.5136187 | 98.0955143 | 102.162548 | N/A******* | N/A******* | N/A******* |
| 13C2-perfluorotetradecanoic acid | ug/L | 95.5150982 | 88.9149930 | 84.9989419 | 87.3894649 | 74.3542136 | 76.4113922 |
| 13C4-Perfluorobutanoic acid | ug/L | 104.427663 | 94.0791785 | 99.1686284 | 107.033099 | 88.5247353 | 88.0325539 |
| D3-MeFOSAA | ug/L | 89.3689947 | 87.0132480 | 85.7309792 | 90.4197354 | 80.2407075 | 74.1822741 |
| D5-EtFOSAA | ug/L | 89.5158472 | 86.8403480 | 81.1638215 | 90.6290015 | 77.6895437 | 71.1418719 |
| N-methyl-d3-perfluorooctane sulfona | ug/L | 94.4913764 | 81.0531707 | 91.0627958 | N/A******* | N/A******* | N/A******* |
| N-ethyl-d5-perfluorooctane sulfonam | ug/L | 85.6581253 | 86.9008929 | 81.3518913 | N/A******* | N/A******* | N/A******* |
| 13C2-Perfluorodecanoic acid | ug/L | 111.745166 | 91.3425546 | 97.6556089 | 99.1334382 | 86.8924234 | 90.7211595 |
| 13C2-Perfluorododecanoic acid | ug/L | 92.5110675 | 89.7109265 | 92.4204003 | 87.0126131 | 79.0799091 | 75.9975202 |
| 13C2-Perfluorohexanoic acid | ug/L | 107.101155 | 97.5765668 | 102.884711 | 105.377199 | 95.3508725 | 96.6816050 |
| 13C2-Perfluoroundecanoic acid | ug/L | 97.3210856 | 90.7633221 | 92.5263351 | 93.5248775 | 89.4835601 | 81.8449279 |
| 13C4-Perfluoroheptanoic acid | ug/L | 100.943460 | 95.1310517 | 96.2159094 | 107.276204 | 91.3277585 | 94.8621187 |
| 13C5-Perfluorononanoic acid | ug/L | 109.541443 | 101.277347 | 104.003571 | 113.457209 | 94.3203245 | 87.8062621 |
| 13C4-Perfluorooctanoic acid | ug/L | 108.574604 | 100.369310 | 97.0996193 | 113.568255 | 97.4178486 | 91.6937645 |
| 13C4-Perfluorooctanesulfonate | ug/L | 112.746449 | 95.0616739 | 100.788171 | 108.255895 | 91.0456951 | 83.0426059 |
| 13C5-Perfluoropentanoic acid | ug/L | 108.350085 | 97.9500199 | 104.718098 | N/A******* | N/A******* | N/A******* |
| 13C8-Perfluorooctane Sulfonamide | ug/L | 95.0670807 | 83.2339234 | 91.2798153 | N/A******* | N/A******* | N/A******* |
| 18O2-Perfluorohexanesulfonate | ug/L | 98.2362389 | 93.2685320 | 101.196002 | 102.556321 | 94.7443833 | 95.6950791 |

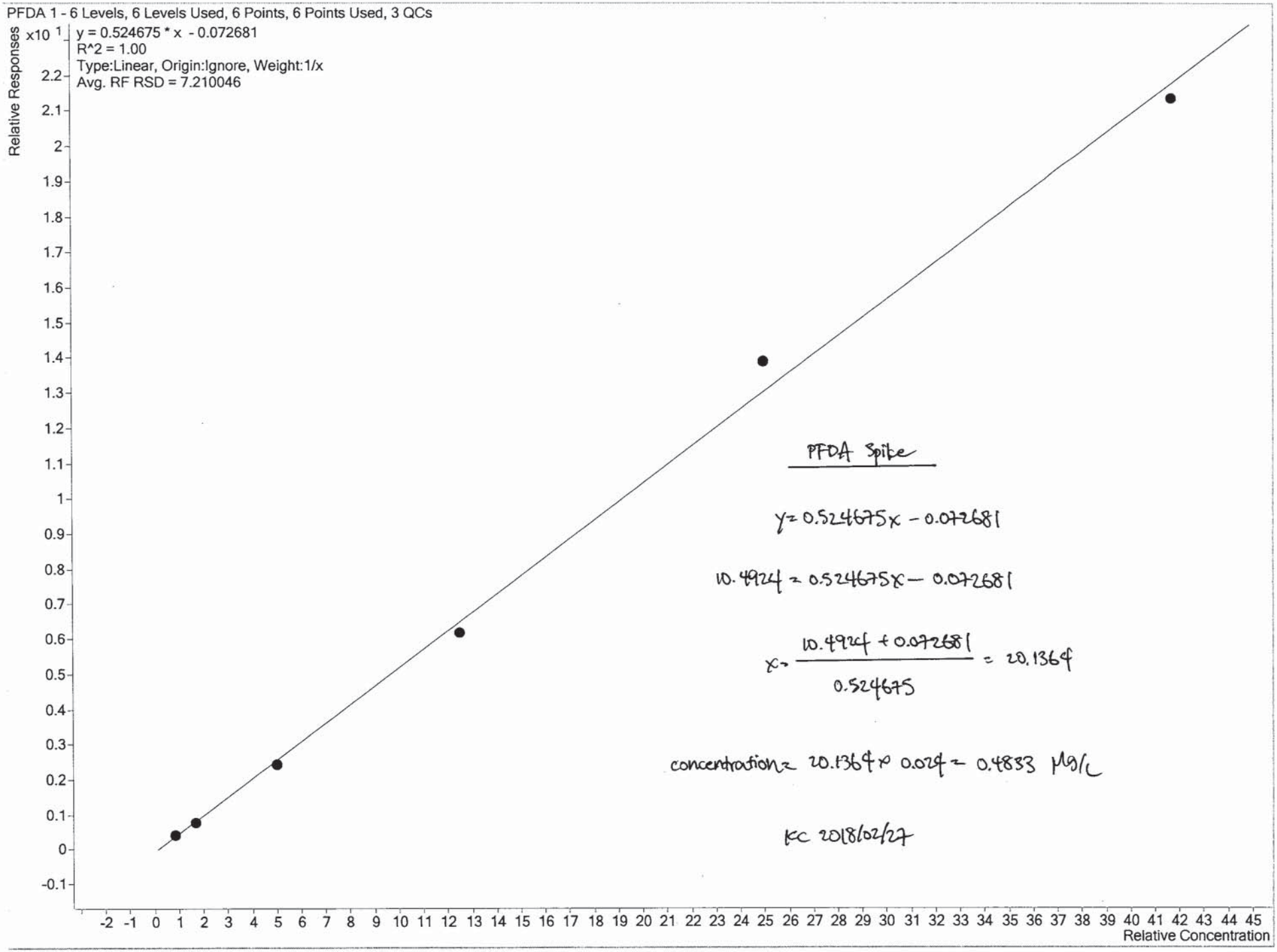
RC 2018/02/27

Worksheet Number: **5410178**

PFOS and PFOA in water by SPE/LCMS - Water

ug/L

| Parameter Name | B833226 GBV348 | DL | B833226 GBV349 | DL | RDL | MDL | IDL |
|---|---|---|---|---|---|---|---|
| 6:2 Fluorotelomer sulfonate | N/A******* | 0.02 | N/A******* | 0.02 | 0.02 | 0.0066 | 0 |
| 8:2 Fluorotelomer sulfonate | N/A******* | 0.02 | N/A******* | 0.02 | 0.02 | 0.0066 | 0 |
| N-ethylperfluorooctane sulfonamide | N/A******* | 0.02 | N/A******* | 0.02 | 0.02 | 0.01 | 0 |
| EtFOSAA | 0 | 0.02 | 0 | 0.02 | 0.02 | 0.0033 | 0 |
| N-ethylperfluorooctane sulfonamidoe | N/A******* | 0.02 | N/A******* | 0.02 | 0.02 | 0.0079 | 0 |
| N-methylperfluorooctane sulfonamide | N/A******* | 0.02 | N/A******* | 0.02 | 0.02 | 0.013 | 0 |
| MeFOSAA | 0 | 0.02 | 0 | 0.02 | 0.02 | 0.0029 | 0 |
| N-methylperfluorooctanesulfonamidol | N/A******* | 0.02 | N/A******* | 0.02 | 0.02 | 0.012 | 0 |
| Perfluorobutanoic acid | N/A******* | 0.02 | N/A******* | 0.02 | 0.02 | 0.0055 | 0 |
| Perfluorobutane Sulfonate (PFBS) | 0 | 0.02 | 0.03139091 | 0.02 | 0.02 | 0.0054 | 0 |
| Perfluorodecane Sulfonate | N/A******* | 0.02 | N/A******* | 0.02 | 0.02 | 0.006 | 0 |
| Perfluoroheptanoic Acid (PFHpA) | 0 | 0.02 | 0.07981266 | 0.02 | 0.02 | 0.0074 | 0 |
| Perfluoroheptane sulfonate | N/A******* | 0.02 | N/A******* | 0.02 | 0.02 | 0.008 | 0 |
| Perfluorohexanoic Acid (PFHxA) | 0 | 0.02 | 0.18538337 | 0.02 | 0.02 | 0.0035 | 0 |
| Perfluorohexane Sulfonate (PFHxS) | 0 | 0.02 | 1.24784359 | 0.20 | 0.02 | 0.0056 | 0 |
| Perfluorononanoic Acid (PFNA) | 0 | 0.02 | 0.01972712 | 0.02 | 0.02 | 0.0087 | 0 |
| Perfluorooctane Sulfonamide (PFOSA) | N/A******* | 0.02 | N/A******* | 0.02 | 0.02 | 0.0034 | 0 |
| Perfluoropentanoic Acid (PFPeA) | N/A******* | 0.02 | N/A******* | 0.02 | 0.02 | 0.0075 | 0 |
| Perfluorotetradecanoic Acid | 0 | 0.02 | 0 | 0.02 | 0.02 | 0.0027 | 0 |
| Perfluorotridecanoic Acid | 0 | 0.02 | 0 | 0.02 | 0.02 | 0.0038 | 0 |
| Perfluoroundecanoic Acid (PFUnA) | 0 | 0.02 | 0 | 0.02 | 0.02 | 0.0025 | 0 |
| Perfluorodecanoic Acid (PFDA) | 0 | 0.02 | 0 | 0.02 | 0.02 | 0.0061 | 0 |
| Perfluorododecanoic Acid (PFDoA) | 0 | 0.02 | 0 | 0.02 | 0.02 | 0.005 | 0 |
| Perfluoro-n-Octanoic Acid (PFOA) | 0 | 0.02 | 0.06696004 | 0.02 | 0.02 | 0.0033 | 0 |
| Perfluorooctane Sulfonate (PFOS) | 0 | 0.02 | 2.44624865 | 0.20 | 0.02 | 0.006 | 0 |
| 13C2-6:2 Fluorotelomer sulfonate | N/A******* | | N/A******* | | | | |
| 13C2-8:2 Fluorotelomer sulfonate | N/A******* | | N/A******* | | | | |
| 13C2-perfluorotetradecanoic acid | 69.0567804 | | 82.5751103 | | | | |
| 13C4-Perfluorobutanoic acid | 84.3258610 | | 80.8948204 | | | | |
| D3-MeFOSAA | 75.8982901 | | 82.9222374 | | | | |
| D5-EtFOSAA | 75.9835083 | | 81.3392062 | | | | |
| N-methyl-d3-perfluorooctane sulfona | N/A******* | | N/A******* | | | | |
| N-ethyl-d5-perfluorooctane sulfonam | N/A******* | | N/A******* | | | | |
| 13C2-Perfluorodecanoic acid | 84.8676636 | | 83.1941605 | | | | |
| 13C2-Perfluorododecanoic acid | 76.3976376 | | 84.2586309 | | | | |
| 13C2-Perfluorohexanoic acid | 90.7526758 | | 84.3941472 | | | | |
| 13C2-Perfluoroundecanoic acid | 83.7894978 | | 79.4005158 | | | | |
| 13C4-Perfluoroheptanoic acid | 88.9220635 | | 84.6587618 | | | | |
| 13C5-Perfluorononanoic acid | 89.4801735 | | 88.7032933 | | | | |
| 13C4-Perfluorooctanoic acid | 92.5778136 | | 89.4223954 | | | | |
| 13C4-Perfluorooctanesulfonate | 86.9100985 | | 72.5049115 | | | | |
| 13C5-Perfluoropentanoic acid | N/A******* | | N/A******* | | | | |
| 13C8-Perfluorooctane Sulfonamide | N/A******* | | N/A******* | | | | |
| 18O2-Perfluorohexanesulfonate | 89.1927643 | | 82.7737982 | | | | |




PFDA Spike

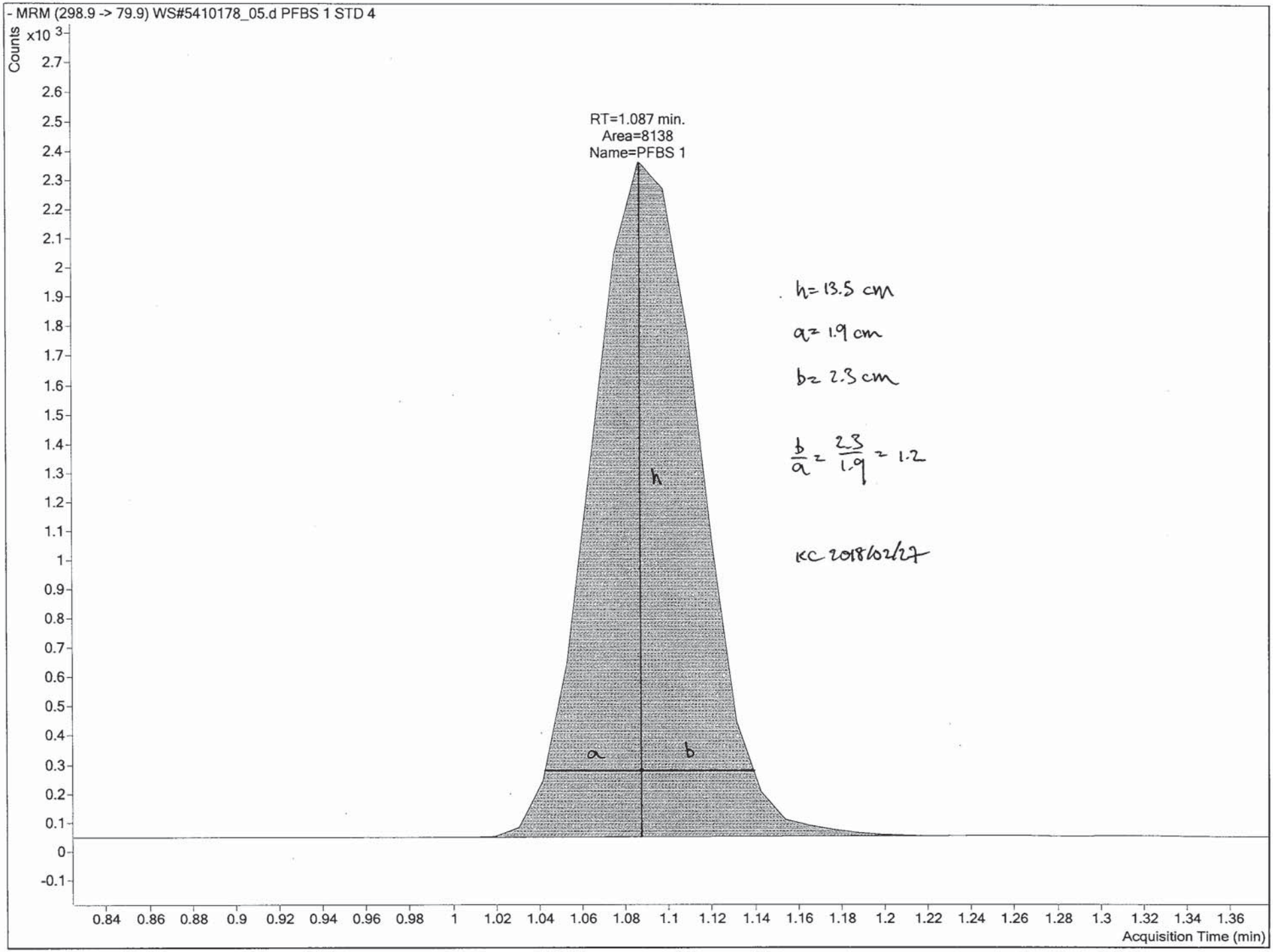
$y = 0.524675x - 0.072681$

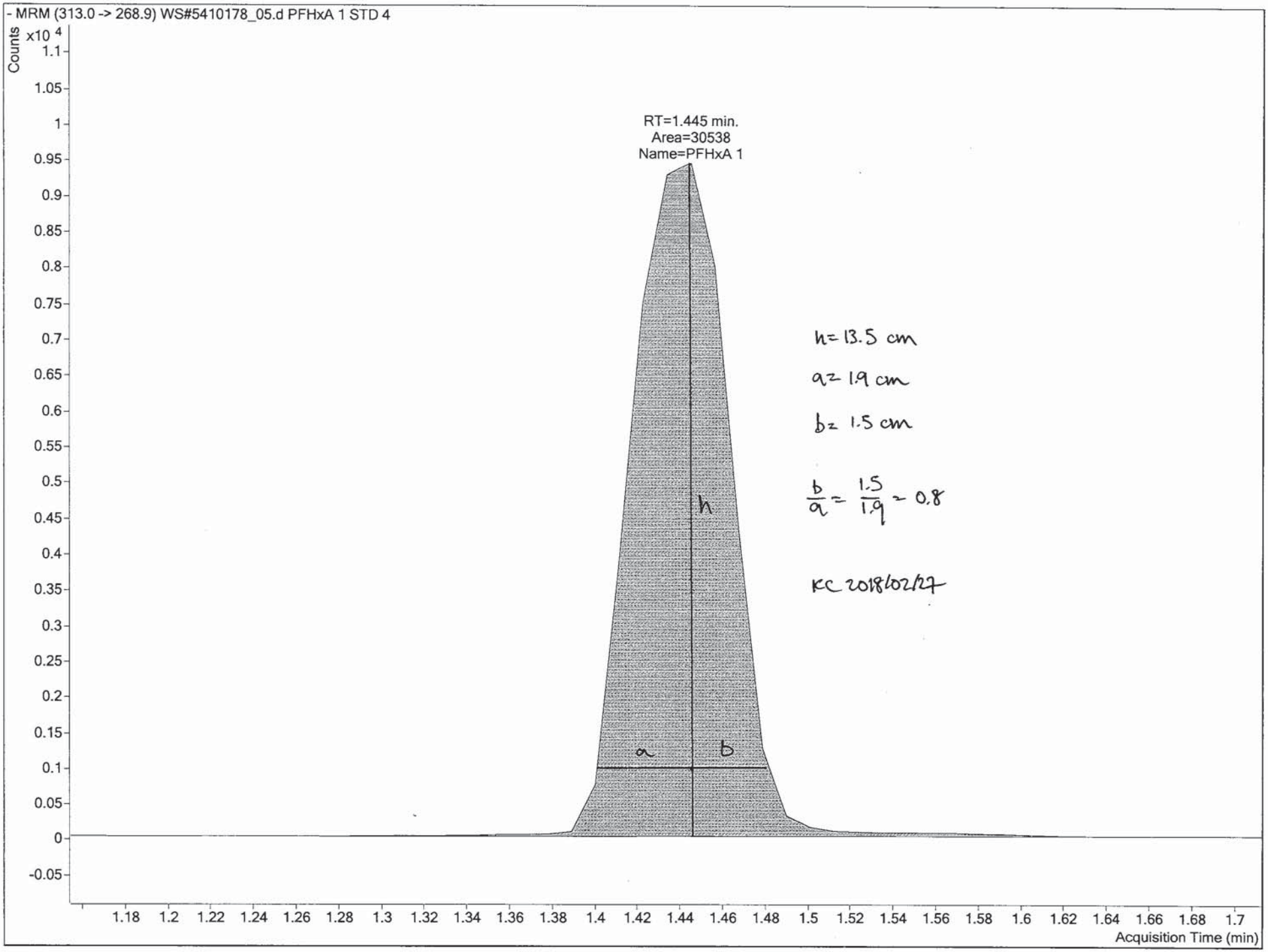
$10.4924 = 0.524675x - 0.072681$

$x = \frac{10.4924 + 0.072681}{0.524675} = 20.1364$

concentration = $20.1364 \times 0.024 = 0.4833$ µg/L

KC 2018/02/27


- MRM (298.9 -> 79.9) WS#5410178_05.d PFBS 1 STD 4
Counts
x10 3
RT=1.087 min.
Area=8138
Name=PFBS 1
h
a
b
h= 13.5 cm
a= 1.9 cm
b= 2.3 cm
b/a = 2.3/1.9 = 1.2
KC 2018/02/27
Acquisition Time (min)


- MRM (313.0 -> 268.9) WS#5410178_05.d PFHxA 1 STD 4
Counts
x10 4
RT=1.445 min.
Area=30538
Name=PFHxA 1
h
a
b
h= 13.5 cm
a= 1.9 cm
b= 1.5 cm
b/a = 1.5/1.9 = 0.8
KC 2018/02/27
Acquisition Time (min)

Report Name: Worksheet - Parameter Lists

Report Date: 2018/02/22

Test Code: **PFOSALCM-W**

Worksheet Number: **5410178**

| Sample Number | Parameter Code | Parameter | |
|---|---|---|---|
| GBV345-01 | ETFOSAA | EtFOSAA | * |
| GBV346-01 | MEFOSAA | MeFOSAA | * |
| GBV347-01 | PFBS | Perfluorobutane Sulfonate (PFBS) | |
| GBV348-01 | PFHPA | Perfluoroheptanoic Acid (PFHpA) | |
| GBV349-01 | PFHXA | Perfluorohexanoic Acid (PFHxA) | |
| | PFHXS | Perfluorohexane Sulfonate (PFHxS) | |
| | PFNA | Perfluorononanoic Acid (PFNA) | |
| | PFTEDA | Perfluorotetradecanoic Acid | |
| | PFTRDA | Perfluorotridecanoic Acid | |
| | PFUNA | Perfluoroundecanoic Acid (PFUnA) | |
| | PFDA | Perfluorodecanoic Acid (PFDA) | |
| | PFDOA | Perfluorododecanoic Acid (PFDoA) | |
| | PFOA | Perfluoro-n-Octanoic Acid (PFOA) | |
| | PFOS | Perfluorooctane Sulfonate (PFOS) | |

SAD
2018/2/12

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

# WorkSheet 5410178 Instrument Sequences

| | | |
|---|---|---|
| 1. | 5410178:SPIKE | SPIKE |
| 2. | 5410178:SPIKE:D1 | SPIKE :D1 |
| 3. | 5410178:BLANK | BLANK |
| 4. | 5410178:GBV345-01 | EB-CEF-MFS-020818-17 |
| 5. | 5410178:GBV346-01 | EB-CEF-MFS-020818-18 |
| 6. | 5410178:GBV347-01 | EB-CEF-MFS-020818-19 |
| 7. | 5410178:GBV348-01 | FB-CEF-MFS-020818-12 |
| 8. | 5410178:GBV349-01 | CEF-1820-TW02-0218 |



# Worklist Report

Agilent Technologies

**Instrument Name:** LCMS04 **Worklist Path:** D:\MassHunter\Worklists\PFCs\PFC_180223_Low.wkl

**Operator Name:** ---
**Run Type:** Standard Start
**Part of Method to Run:** Acquisition Only
**Execution of Acquisition-DA:** Synchronous
**Acquisition Method Path:** D:\MassHunter\Acquisition Method
**DA Method Path:** D:\MassHunter\methods
**Data File Path:** D:\MassHunter\Data\PFC\20180223\WS#5410178
**Pre-Worklist Script:** ---
**Post-Worklist Script:** SCP_InstrumentStandby(){MH_Acq_Scripts.exe}
**Acquisition Clean Up Script:** ---
**Overlapped Injection:** Yes
**Clear Sample Selection After Run:** Yes
**Wait Time for Ready(Min):** 10
**Threshold Disk Value(GB):** 10
**Comment:** Column #199
MP A1: Solution# 280 (FSRE18)
MP B1: Methanol lot# SHBJ5451, Sigma

RC
2018/02/23

**Plate Barcode:**

| Plate | Barcode |
|---|---|
| P1 | |

**Worklist Table**

| | Sample Name | Sample Position | Method | Data File | Sample Type | Level Name | Inj Vol (µl) | Comment |
|---|---|---|---|---|---|---|---|---|
| 1 | Solvent | P1-A1 | PFC_Water_Low.m | WS#5410178_01.d | Sample | | As Method | - |
| 2 | STD 1 | P1-A2 | PFC_Water_Low.m | WS#5410178_02.d | Calibration | STD 1 | As Method | - |
| 3 | STD 2 | P1-A3 | PFC_Water_Low.m | WS#5410178_03.d | Calibration | STD 2 | As Method | - |
| 4 | STD 3 | P1-A4 | PFC_Water_Low.m | WS#5410178_04.d | Calibration | STD 3 | As Method | - |
| 5 | STD 4 | P1-A5 | PFC_Water_Low.m | WS#5410178_05.d | Calibration | STD 4 | As Method | - |
| 6 | STD 5 | P1-A6 | PFC_Water_Low.m | WS#5410178_06.d | Calibration | STD 5 | As Method | - |
| 7 | STD 6 | P1-A7 | PFC_Water_Low.m | WS#5410178_07.d | Calibration | STD 6 | As Method | - |

# Worklist Report

Agilent Technologies

Maxxam Analytics

| | Sample Name | Sample Position | Method | Data File | Sample Type | Level Name | Inj Vol (µl) | Comment |
|---|---|---|---|---|---|---|---|---|
| 8 | IB | P1-A8 | PFC_Water_Low.m | WS#5410178_08.d | Sample | | As Method | - |
| 9 | ICV | P1-A9 | PFC_Water_Low.m | WS#5410178_09.d | QC | ICV | As Method | - |
| 10 | ISC | P1-A2 | PFC_Water_Low.m | WS#5410178_10.d | ConCal | STD 1 | As Method | - |
| 11 | 5410178:BLANK | P1-B1 | PFC_Water_Low.m | WS#5410178_11.d | Sample | | As Method | - |
| 12 | 5410178:SPIKE | P1-B2 | PFC_Water_Low.m | WS#5410178_12.d | QC | ICV | As Method | - |
| 13 | 5410178:SPIKE:D1 | P1-B3 | PFC_Water_Low.m | WS#5410178_13.d | QC | ICV | As Method | - |
| 14 | 5410178:GBV345-01 | P1-B4 | PFC_Water_Low.m | WS#5410178_14.d | Sample | | As Method | - |
| 15 | 5410178:GBV346-01 | P1-B5 | PFC_Water_Low.m | WS#5410178_15.d | Sample | | As Method | - |
| 16 | 5410178:GBV347-01 | P1-B6 | PFC_Water_Low.m | WS#5410178_16.d | Sample | | As Method | - |
| 17 | 5410178:GBV348-01 | P1-B7 | PFC_Water_Low.m | WS#5410178_17.d | Sample | | As Method | - |
| 18 | 5410178:GBV349-01:10x | P1-B8 | PFC_Water_Low.m | WS#5410178_18.d | Sample | | As Method | - |
| 19 | 5410178:GBV349-01 | P1-B9 | PFC_Water_Low.m | WS#5410178_19.d | Sample | | As Method | - |
| 20 | IB | P1-A8 | PFC_Water_Low.m | WS#5410178_20.d | Sample | | As Method | - |
| 21 | CCV | P1-A5 | PFC_Water_Low.m | WS#5410178_21.d | ConCal | STD 4 | As Method | - |

# Worklist Report

Agilent Technologies

**Instrument Name:** LCMS04 **Worklist Path:** D:\MassHunter\Worklists\PFCs\PFC_180223_Low_FOSAA.wkl

MaxCam Analytics

**Operator Name:** ---
**Run Type:** Standard Start
**Part of Method to Run:** Acquisition Only
**Execution of Acquisition-DA:** Synchronous
**Acquisition Method Path:** D:\MassHunter\Acquisition Method
**DA Method Path:** D:\MassHunter\methods
**Data File Path:** D:\MassHunter\Data\PFC\20180223\WS#5410178_FOSAA
**Pre-Worklist Script:** ---
**Post-Worklist Script:** SCP_InstrumentStandby(){MH_Acq_Scripts.exe}
**Acquisition Clean Up Script:** ---
**Overlapped Injection:** Yes
**Clear Sample Selection After Run:** Yes
**Wait Time for Ready(Min):** 10
**Threshold Disk Value(GB):** 10
**Comment:** Column #199
MP A1: Solution# 280 (FSRE18)
MP B1: Solution# 290 (FSRE18)

KC 2018/02/23

**Plate Barcode:**

| Plate | Barcode |
|---|---|
| P1 | |

**Worklist Table**

| | Sample Name | Sample Position | Method | Data File | Sample Type | Level Name | Inj Vol (µl) | Comment |
|---|---|---|---|---|---|---|---|---|
| 1 | Solvent | P1-A1 | PFC_Water_Low_FOSAA.m | WS#5410178_FOSAA_01.d | Sample | | As Method | - |
| 2 | STD 1 | P1-A2 | PFC_Water_Low_FOSAA.m | WS#5410178_FOSAA_02.d | Calibration | STD 1 | As Method | - |
| 3 | STD 2 | P1-A3 | PFC_Water_Low_FOSAA.m | WS#5410178_FOSAA_03.d | Calibration | STD 2 | As Method | - |
| 4 | STD 3 | P1-A4 | PFC_Water_Low_FOSAA.m | WS#5410178_FOSAA_04.d | Calibration | STD 3 | As Method | - |
| 5 | STD 4 | P1-A5 | PFC_Water_Low_FOSAA.m | WS#5410178_FOSAA_05.d | Calibration | STD 4 | As Method | - |
| 6 | STD 5 | P1-A6 | PFC_Water_Low_FOSAA.m | WS#5410178_FOSAA_06.d | Calibration | STD 5 | As Method | - |
| 7 | STD 6 | P1-A7 | PFC_Water_Low_FOSAA.m | WS#5410178_FOSAA_07.d | Calibration | STD 6 | As Method | - |
| 8 | IB | P1-A8 | PFC_Water_Low_FOSAA.m | WS#5410178_FOSAA_08.d | Sample | | As Method | - |

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# Worklist Report

Agilent Technologies

| | Sample Name | Sample Position | Method | Data File | Sample Type | Level Name | Inj Vol (µl) | Comment |
|---|---|---|---|---|---|---|---|---|
| 9 | ICV | P1-A9 | PFC_Water_Low_FOSAA.m | WS#5410178_FOSAA_09.d | QC | ICV | As Method | - |
| 10 | ISC | P1-A2 | PFC_Water_Low_FOSAA.m | WS#5410178_FOSAA_10.d | ConCal | STD 1 | As Method | - |
| 11 | 5410178:BLANK | P1-B1 | PFC_Water_Low_FOSAA.m | WS#5410178_FOSAA_11.d | Sample | | As Method | - |
| 12 | 5410178:SPIKE | P1-B2 | PFC_Water_Low_FOSAA.m | WS#5410178_FOSAA_12.d | QC | ICV | As Method | - |
| 13 | 5410178:SPIKE:D1 | P1-B3 | PFC_Water_Low_FOSAA.m | WS#5410178_FOSAA_13.d | QC | ICV | As Method | - |
| 14 | 5410178:GBV345-01 | P1-B4 | PFC_Water_Low_FOSAA.m | WS#5410178_FOSAA_14.d | Sample | | As Method | - |
| 15 | 5410178:GBV346-01 | P1-B5 | PFC_Water_Low_FOSAA.m | WS#5410178_FOSAA_15.d | Sample | | As Method | - |
| 16 | 5410178:GBV347-01 | P1-B6 | PFC_Water_Low_FOSAA.m | WS#5410178_FOSAA_16.d | Sample | | As Method | - |
| 17 | 5410178:GBV348-01 | P1-B7 | PFC_Water_Low_FOSAA.m | WS#5410178_FOSAA_17.d | Sample | | As Method | - |
| 18 | 5410178:GBV349-01:10x | P1-B8 | PFC_Water_Low_FOSAA.m | WS#5410178_FOSAA_18.d | Sample | | As Method | - |
| 19 | 5410178:GBV349-01 | P1-B9 | PFC_Water_Low_FOSAA.m | WS#5410178_FOSAA_19.d | Sample | | As Method | - |
| 20 | IB | P1-A8 | PFC_Water_Low_FOSAA.m | WS#5410178_FOSAA_20.d | Sample | | As Method | - |
| 21 | CCV | P1-A5 | PFC_Water_Low_FOSAA.m | WS#5410178_FOSAA_21.d | ConCal | STD 4 | As Method | - |

Maxxam Analytics

## FINAL INJECTION SEQUENCE

| Sample | | | | | |
|---|---|---|---|---|---|
| Name | Comment | Acq. Date-Time | Acq. Method File | Data File | Pos. |
| STD 1 | - | 2018/02/23 4:39 PM | PFC_Water_Low.m | WS#5410178_02.d | P1-A2 |
| STD 2 | - | 2018/02/23 4:44 PM | PFC_Water_Low.m | WS#5410178_03.d | P1-A3 |
| STD 3 | - | 2018/02/23 4:49 PM | PFC_Water_Low.m | WS#5410178_04.d | P1-A4 |
| STD 4 | - | 2018/02/23 4:54 PM | PFC_Water_Low.m | WS#5410178_05.d | P1-A5 |
| STD 5 | - | 2018/02/23 4:59 PM | PFC_Water_Low.m | WS#5410178_06.d | P1-A6 |
| STD 6 | - | 2018/02/23 5:04 PM | PFC_Water_Low.m | WS#5410178_07.d | P1-A7 |
| IB | - | 2018/02/23 5:09 PM | PFC_Water_Low.m | WS#5410178_08.d | P1-A8 |
| ICV | - | 2018/02/23 5:14 PM | PFC_Water_Low.m | WS#5410178_09.d | P1-A9 |
| ISC | - | 2018/02/23 5:19 PM | PFC_Water_Low.m | WS#5410178_10.d | P1-A2 |
| 5410178:BLANK | - | 2018/02/23 5:23 PM | PFC_Water_Low.m | WS#5410178_11.d | P1-B1 |
| 5410178:SPIKE | - | 2018/02/23 5:28 PM | PFC_Water_Low.m | WS#5410178_12.d | P1-B2 |
| 5410178:SPIKE:D1 | - | 2018/02/23 5:33 PM | PFC_Water_Low.m | WS#5410178_13.d | P1-B3 |
| 5410178:GBV345-01 | - | 2018/02/23 5:38 PM | PFC_Water_Low.m | WS#5410178_14.d | P1-B4 |
| 5410178:GBV346-01 | - | 2018/02/23 5:43 PM | PFC_Water_Low.m | WS#5410178_15.d | P1-B5 |
| 5410178:GBV347-01 | - | 2018/02/23 5:48 PM | PFC_Water_Low.m | WS#5410178_16.d | P1-B6 |
| 5410178:GBV348-01 | - | 2018/02/23 5:53 PM | PFC_Water_Low.m | WS#5410178_17.d | P1-B7 |
| 5410178:GBV349-01:10x | Reported for PFHxS and PFOS only. | 2018/02/23 5:58 PM | PFC_Water_Low.m | WS#5410178_18.d | P1-B8 |
| 5410178:GBV349-01 | Reported for all except PFHxS and PFOS. | 2018/02/23 6:03 PM | PFC_Water_Low.m | WS#5410178_19.d | P1-B9 |
| IB | - | 2018/02/23 6:08 PM | PFC_Water_Low.m | WS#5410178_20.d | P1-A8 |
| CCV | - | 2018/02/23 6:13 PM | PFC_Water_Low.m | WS#5410178_21.d | P1-A5 |

## FINAL INJECTION SEQUENCE

| Sample | | | | | |
|---|---|---|---|---|---|
| Name | Comment | Acq. Date-Time | Acq. Method File | Data File | Pos. |
| STD 1 | - | 2018/02/24 3:10 AM | PFC_Water_Low_FOSAA.m | WS#5410178_FOSAA_02.d | P1-A2 |
| STD 2 | - | 2018/02/24 3:13 AM | PFC_Water_Low_FOSAA.m | WS#5410178_FOSAA_03.d | P1-A3 |
| STD 3 | - | 2018/02/24 3:15 AM | PFC_Water_Low_FOSAA.m | WS#5410178_FOSAA_04.d | P1-A4 |
| STD 4 | - | 2018/02/24 3:18 AM | PFC_Water_Low_FOSAA.m | WS#5410178_FOSAA_05.d | P1-A5 |
| STD 5 | - | 2018/02/24 3:20 AM | PFC_Water_Low_FOSAA.m | WS#5410178_FOSAA_06.d | P1-A6 |
| STD 6 | - | 2018/02/24 3:22 AM | PFC_Water_Low_FOSAA.m | WS#5410178_FOSAA_07.d | P1-A7 |
| IB | - | 2018/02/24 3:25 AM | PFC_Water_Low_FOSAA.m | WS#5410178_FOSAA_08.d | P1-A8 |
| ICV | - | 2018/02/24 3:27 AM | PFC_Water_Low_FOSAA.m | WS#5410178_FOSAA_09.d | P1-A9 |
| ISC | - | 2018/02/24 3:30 AM | PFC_Water_Low_FOSAA.m | WS#5410178_FOSAA_10.d | P1-A2 |
| 5410178:BLANK | - | 2018/02/24 3:32 AM | PFC_Water_Low_FOSAA.m | WS#5410178_FOSAA_11.d | P1-B1 |
| 5410178:SPIKE | - | 2018/02/24 3:34 AM | PFC_Water_Low_FOSAA.m | WS#5410178_FOSAA_12.d | P1-B2 |
| 5410178:SPIKE:D1 | - | 2018/02/24 3:37 AM | PFC_Water_Low_FOSAA.m | WS#5410178_FOSAA_13.d | P1-B3 |
| 5410178:GBV345-01 | - | 2018/02/24 3:39 AM | PFC_Water_Low_FOSAA.m | WS#5410178_FOSAA_14.d | P1-B4 |
| 5410178:GBV346-01 | - | 2018/02/24 3:42 AM | PFC_Water_Low_FOSAA.m | WS#5410178_FOSAA_15.d | P1-B5 |
| 5410178:GBV347-01 | - | 2018/02/24 3:44 AM | PFC_Water_Low_FOSAA.m | WS#5410178_FOSAA_16.d | P1-B6 |
| 5410178:GBV348-01 | - | 2018/02/24 3:47 AM | PFC_Water_Low_FOSAA.m | WS#5410178_FOSAA_17.d | P1-B7 |
| 5410178:GBV349-01:10x | Not used. | 2018/02/24 3:49 AM | PFC_Water_Low_FOSAA.m | WS#5410178_FOSAA_18.d | P1-B8 |
| 5410178:GBV349-01 | Reported for all. | 2018/02/24 3:51 AM | PFC_Water_Low_FOSAA.m | WS#5410178_FOSAA_19.d | P1-B9 |
| IB | - | 2018/02/24 3:54 AM | PFC_Water_Low_FOSAA.m | WS#5410178_FOSAA_20.d | P1-A8 |
| CCV | - | 2018/02/24 3:56 AM | PFC_Water_Low_FOSAA.m | WS#5410178_FOSAA_21.d | P1-A5 |

## DoD Projects - Internal Data Validation Checklist

Run date: 2018/02/27

Worksheet # (s): 5412188

Analysis: PTO SALEM-W

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

Reviewed by: AE Date: 2018/02/27

Comments:

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

Reviewed by: SM Date: 2018/02/27

Comments:

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

# Worksheet Data Validation Checklist - Extractable Organics

Worksheet # 5412188 Testcode: PFOSALCM-W

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

Reviewed by: SAM Date: 2018/12/23

Comments:

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

Reviewed by: Date:

Comments:

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

Reviewed by: Date:

Comments:

**WS# : 5412188**

Page #: 1/2

Report Name : Worksheet - (Liquids and Solids)

Assignment Date : Friday, February 23, 2018

Assigned to : Shahbaz Ahmad

Test Code : PFOSALCM-W

Instrument Id:

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

sediment um ml ml SHD 2018/2/23

| Job Number | Sample Number | D | Sample ID | F | % Moisture | Wt or Vol | Final Vol | DF or AF | # Cont | Expiry Date | Test DeadLine | Criteria | Extract Date |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| B,3 | SPIKE | 0 | PFOS | | 0 | 125 | 3 | 1X | | | | | 2018/02/23 |
| 8.5 | SPIKE | 1 | PFOS | | 0 | 125 | 3 | 1X | | | | | 2018/02/23 |
| B,11 | BLANK | | | | 0 | 125 | 3 | 1X | | SHD 2018/2/23 | | | 2018/02/23 |
| B,7 | B833226 | *GBV350-01R | CEF-S3-TW01-0218 | | 60.1 | 12.5 | 3 | 1X/10X | 2 | 2018/02/23 | 2018/02/27 23:00 | DOD | 2018/02/23 |
| B,9 | B833226 | *GBV351-01R | FB-CEF-S3-020918* | | 60.1 | 125 | 3 | 1X | 2 | 2018/02/23 | 2018/02/27 23:00 | DOD | 2018/02/23 |
| B,11 | B833226 | *GBV352-01R | CEF-MFS-TW01-0* | | 60.1 | 125 | 3 | 1X/10X | 2 | 2018/02/23 | 2018/02/27 23:00 | DOD | 2018/02/23 |
| B,13 | B833226 | *GBV353-01R | CEF-MFS-TW02-0* | | 60.1 | 125 | 3 | 1X | 2 | 2018/02/23 | 2018/02/27 23:00 | DOD | 2018/02/23 |
| B,15 | B833226 | *GBV354-01R | CEF-S3-TW02-0209 | | 60.1 | 12.5 | 3 | 10X | 2 | 2018/02/23 | 2018/02/27 23:00 | DOD | 2018/02/23 |

SHD 2018/2/23

Remarks: Samples GBV 350-01 and GBV354-01 were dark and only 10X dilution was performed in extraction spike duplicate sample was extracted due to unavailability of extra samples.

Samples extracted by: Shahbaz Ahmad SHD 2018/2/23

Instrumentation performed by: KE Date: 2018/02/26 SHD 2018/02/27

Calculations performed by: AZ Date: 2018/02/27

Validated by: SM Date: 2018/02/27

| Job No. | Rep | Client Name | Contact | Client Tier | National |
|---|---|---|---|---|---|
| | Remarks | | | | |
| GB833226 | SP8 | Earth Toxics Inc | Rick Carr | Tier 5 (Enviro.) | AECOM |

NREG. PFOSALCM-W Level IV Package and TetraTech EDD required f/c ZAL. 2018/02/20 Project #: JM10 CECIL

SAD 2018/2/23

| Job | Sample | Lab Comments |
|---|---|---|
| | SPIKE | |
| | SPIKE | |
| | BLANK | |
| B833226 | GBV350-01R | |
| B833226 | GBV351-01R | |
| B833226 | GBV352-01R | |
| B833226 | GBV353-01R | |
| B833226 | GBV354-01R | |

| | | | |
|---|---|---|---|
| S1 | 2825 | 25 | SK7377 2/3 |
| S2 | 2800 | 50 | |
| S3 | 2700 | 150 | |
| S4 | 2813 | 37.5 | I-5297 3/3 |
| S5 | 2775 | 75 | |
| S6 | 2725 | 125 | |
| ICV | 2788 | 62.5 | I-5299 3/3 |
| IB | 2850 | — | |

SAD 2018/2/23

Tabb 2018 02 26 2018/02/27

Spike code changed to PFC — 2018/02/27

## Worksheet Reagent Tracking Record

Worksheet # 5412188

| Surrogate/Spike solutions | √ | Solution ID # | Conc. | Blk-Spk Volume (µL) Solid | Blk-Spk Liquid | MS Solid | MS Liquid | Samples Solid | Samples Liquid |
|---|---|---|---|---|---|---|---|---|---|
| DGT Spike | | | 100 ug/mL | 60 | 30 | 60 | 30 | NA | NA |
| Diquat Dibromide | | | 50 ug/mL | NA | 350 | NA | 350 | NA | NA |
| Explosives Spiking solution A | | | 20 ug/mL | 250 | 100 | 250 | 100 | NA | NA |
| Explosives Spiking solution B | | | 20/80 ug/mL | 250 | 100 | 250 | 100 | NA | NA |
| Formaldehyde Spike | | | 100 ug/mL | 25 | 25 | 25 | 25 | NA | NA |
| Glyphosate Spike | | | 25 ug/mL | 500 | 20 | 500 | 20 | NA | NA |
| Nonylphenol Ethoxylate Spike | | | 100 ug/mL | 100 | 100 | 100 | 100 | NA | NA |
| Nonylphenol Spike | | | 10 ug/mL | 100 | 100 | 100 | 100 | NA | NA |
| Paraquat Cl Tetrahydrate | | | 20 ug/mL | NA | 125 | NA | 125 | NA | NA |
| Perchlorate Standard Spike | | | 10 ng/mL | NA | 100 | NA | 100 | NA | NA |
| Perchlorate Standard Spike | | | 500 ng/mL | 40 | NA | 40 | NA | NA | NA |
| Perchlorate O-18 Internal Standard | | | 0.10 ng/uL | 20 | 20 | 20 | 20 | 20 | 20 |
| Morpholine Second Source Working Std | | | 2500 ug/L | NA | 80 | NA | 80 | NA | NA |
| Morpholine-D8 Internal Standard | | | 10 ug/mL | NA | 50 | NA | 50 | NA | 50 |
| Steril Second Source Spiking Solution | | | NA | 20 | NA | 20 | NA | NA | NA |
| Sterilants Comp. IS Working Solution | | | 3 ug/mL | 50 | NA | 50 | NA | 50 | NA |
| Comp. PFC Working Solution A | ✓ | I-5299 3/3 | 1ug/mL | 75 | 21 62.5 | 75 | 21 62.5 | NA | NA |
| PFC Internal Standard Solution | ✓ | ST 6801 4/4 | 50/125 ng/mL | 200 | 100 150 | 200 | 100 150 | 200 | 100/150 |
| PFC Injection IS | ✓ | ST 6770 2/2 | 400 ng/mL | 20 | 20 | 20 | 20 | 20 | 20 |
| ICV | ✓ | I-5299 3/3 | | | | | | | |

| Solvent/Reagent | √ | Lot No. | Date Opened | Solvent/Reagent | √ | Lot No. | Date Opened/ Prepared |
|---|---|---|---|---|---|---|---|
| DCM | | | | 50% NaOH | | | |
| Ottawa Sand | | | | o-Phosphoric Acid | | | |
| Methanol | ✓ | SHBJ 8485 | 2018/2/23 | Borax | | | |
| 2-Propanol (IPA) | | | | Calcium Chloride | | | |
| Acetonitrile | | | | EDTA | | | |
| Sodium Sulfate | | | | Phosphate Buffer | | | |
| 70:30 Methanol: Water | | | | Sodium Thiosulphate | | | |
| 60:40 Water: Methanol | ✓ | PRLRE | 108-380 | DNPH | | | |
| DCM:Ethyl Ether (75:25) | | | | FMOC | | | |
| Hexane:IPA (98:2) | | | | 5M Acetate Buffer | | | |
| 2% Formic Acid | ✓ | PRLRE | 108-377 | 0.2% $NH_4OH$ | ✓ | PRLRE | 108-382 |
| 0.2% Formic Acid | | | | Leachate Fluid | | | |
| 0.05M KOH | | | | Reagent Water | ✓ | 57297 | 2018/2/23 |
| 0.05M HCl | | | | | | | |
| | | | | | | | |
| | | | | | | | |

*Spiked by: SAP

Spike Date: 2018/2/23

Spike Syringe/Pipette ID#: #32773P

Int. Std Syringe/Pipette ID#: MM1011P

*Spiking Witnessed by: LR

Final pH:

| Equipment & ID | √ | Equipment | ID# | √ | Equipment | Lot # |
|---|---|---|---|---|---|---|
| Pipettor | | SPE Cartridge | 0039372647A | | QC Balance ID | |
| | | Filter | | | Thermometer ID &Temp | |
| Dispenser | | Centrifuge | | | | |
| | | Sonicator | | | | |

Bottle Tracking

Bottle#

Cap#

Systems plus Lot#

Comments:

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

Worksheet: 5412188

## Dilution and Column Cleanup Worksheet

| Job Number | Sample ID | Sample: Initial Final Volume | Dilution Required | Sample added mL | Solvent Added mL | Int Stan Added uL | New Effective Final Volume | INITIAL DATE | Column Clean Up |
|---|---|---|---|---|---|---|---|---|---|
| B833226 | GBV350-01 | 1 X | 10X | 12.5 | SAP 2018/12/23 ~~150~~ N/A | 150 | 12.5 | SAP 2018/12/23 | — |
| B833226 | GBV352-01 | 1 X | 10X | 12.5 | — | 150 | 12.5 | SAP 2018/12/23 | — |
| B833226 | GBV354-01 | 1 X | 10X | 12.5 | — | 150 | 12.5 | SAP 2018/12/23 | — |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | ~~SAP~~ 2018/12/23 | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |

Worksheet Number: **5412188**

PFOS and PFOA in water by SPE/LCMS - Water

ug/L

| Parameter Name | Units | SPIKE | SPIKE Dup1 | BLANK | DL | B833226 GBV350 | DL |
|---|---|---|---|---|---|---|---|
| 6:2 Fluorotelomer sulfonate | ug/L | 104.42496 | 98.60025 | 0 | 0.02 | N/A******* | 0.2 |
| 8:2 Fluorotelomer sulfonate | ug/L | 104.55991 | 96.72520 | 0 | 0.02 | N/A******* | 0.2 |
| N-ethylperfluorooctane sulfonamide | ug/L | 86.23102 | 76.99686 | 0 | 0.02 | N/A******* | 0.2 |
| EtFOSAA | ug/L | 94.58628 | 93.57752 | 0 | 0.02 | 0 | 0.2 |
| N-ethylperfluorooctane sulfonamidoe | ug/L | 78.90311 | 87.64001 | 0 | 0.02 | N/A******* | 0.2 |
| N-methylperfluorooctane sulfonamide | ug/L | 78.41770 | 76.23924 | 0 | 0.02 | N/A******* | 0.2 |
| MeFOSAA | ug/L | 93.83276 | 91.27196 | 0 | 0.02 | 0 | 0.2 |
| N-methylperfluorooctanesulfonamidol | ug/L | 93.67721 | 80.21754 | 0 | 0.02 | N/A******* | 0.2 |
| Perfluorobutanoic acid | ug/L | 104.86545 | 94.98298 | 0 | 0.02 | N/A******* | 0.2 |
| Perfluorobutane Sulfonate (PFBS) | ug/L | 101.87054 | 109.68866 | 0 | 0.02 | 0 | 0.2 |
| Perfluorodecane Sulfonate | ug/L | 98.56268 | 101.94063 | 0 | 0.02 | N/A******* | 0.2 |
| Perfluoroheptanoic Acid (PFHpA) | ug/L | 95.40503 | 88.23637 | 0 | 0.02 | 0 | 0.2 |
| Perfluoroheptane sulfonate | ug/L | 99.36673 | 93.71539 | 0 | 0.02 | N/A******* | 0.2 |
| Perfluorohexanoic Acid (PFHxA) | ug/L | 92.59954 | 91.13050 | 0 | 0.02 | 0 | 0.2 |
| Perfluorohexane Sulfonate (PFHxS) | ug/L | 106.31779 | 99.88149 | 0 | 0.02 | 0 | 0.2 |
| Perfluorononanoic Acid (PFNA) | ug/L | 92.58521 | 91.71154 | 0 | 0.02 | 0 | 0.2 |
| Perfluorooctane Sulfonamide (PFOSA) | ug/L | 89.00341 | 87.72336 | 0 | 0.02 | N/A******* | 0.2 |
| Perfluoropentanoic Acid (PFPeA) | ug/L | 101.90009 | 96.84511 | 0 | 0.02 | N/A******* | 0.2 |
| Perfluorotetradecanoic Acid | ug/L | 100.73808 | 97.74157 | 0 | 0.02 | 0 | 0.2 |
| Perfluorotridecanoic Acid | ug/L | 102.88718 | 102.34364 | 0 | 0.02 | 0 | 0.2 |
| Perfluoroundecanoic Acid (PFUnA) | ug/L | 97.48155 | 94.47361 | 0 | 0.02 | 0 | 0.2 |
| Perfluorodecanoic Acid (PFDA) | ug/L | 104.78334 | 98.41671 | 0 | 0.02 | 0 | 0.2 |
| Perfluorododecanoic Acid (PFDoA) | ug/L | 94.38316 | 97.03922 | 0 | 0.02 | 0 | 0.2 |
| Perfluoro-n-Octanoic Acid (PFOA) | ug/L | 100.61661 | 99.97571 | 0 | 0.02 | 0 | 0.2 |
| Perfluorooctane Sulfonate (PFOS) | ug/L | 86.33191 | 88.58954 | 0 | 0.02 | 0 | 0.2 |
| 13C2-6:2 Fluorotelomer sulfonate | ug/L | 96.7343888 | 89.9581069 | 109.081884 | | N/A******* | |
| 13C2-8:2 Fluorotelomer sulfonate | ug/L | 101.528722 | 122.920056 | 97.5023268 | | N/A******* | |
| 13C2-perfluorotetradecanoic acid | ug/L | 91.1667241 | 95.4309467 | 97.9719675 | | 73.6667709 | |
| 13C4-Perfluorobutanoic acid | ug/L | 100.930694 | 114.889585 | 106.207496 | | 111.858682 | |
| D3-MeFOSAA | ug/L | 92.1832673 | 95.0006623 | 89.0103797 | | 91.7006179 | |
| D5-EtFOSAA | ug/L | 89.2208805 | 91.7255253 | 92.6065633 | | 89.4824432 | |
| N-methyl-d3-perfluorooctane sulfona | ug/L | 89.7546055 | 112.683497 | 84.8994768 | | N/A******* | |
| N-ethyl-d5-perfluorooctane sulfonam | ug/L | 98.3369429 | 99.4095278 | 89.6619800 | | N/A******* | |
| 13C2-Perfluorodecanoic acid | ug/L | 104.517896 | 107.892663 | 107.800000 | | 96.0603643 | |
| 13C2-Perfluorododecanoic acid | ug/L | 102.499831 | 105.434442 | 104.188963 | | 97.8382456 | |
| 13C2-Perfluorohexanoic acid | ug/L | 109.623931 | 114.630803 | 109.778112 | | 105.509376 | |
| 13C2-Perfluoroundecanoic acid | ug/L | 108.098489 | 112.985360 | 107.961583 | | 91.3360484 | |
| 13C4-Perfluoroheptanoic acid | ug/L | 104.523638 | 111.991663 | 107.025910 | | 104.657351 | |
| 13C5-Perfluorononanoic acid | ug/L | 108.672907 | 110.440251 | 105.876177 | | 105.661945 | |
| 13C4-Perfluorooctanoic acid | ug/L | 104.457997 | 106.992584 | 104.038004 | | 105.795122 | |
| 13C4-Perfluorooctanesulfonate | ug/L | 108.519978 | 114.372180 | 96.6417485 | | 108.196603 | |
| 13C5-Perfluoropentanoic acid | ug/L | 107.359276 | 117.889238 | 108.831232 | | N/A******* | |
| 13C8-Perfluorooctane Sulfonamide | ug/L | 101.786167 | 107.427616 | 106.813468 | | N/A******* | |
| 18O2-Perfluorohexanesulfonate | ug/L | 102.303617 | 111.410578 | 108.346046 | | 103.654950 | |

22/8/02/27

Worksheet Number: **5412188**

PFOS and PFOA in water by SPE/LCMS - Water

ug/L

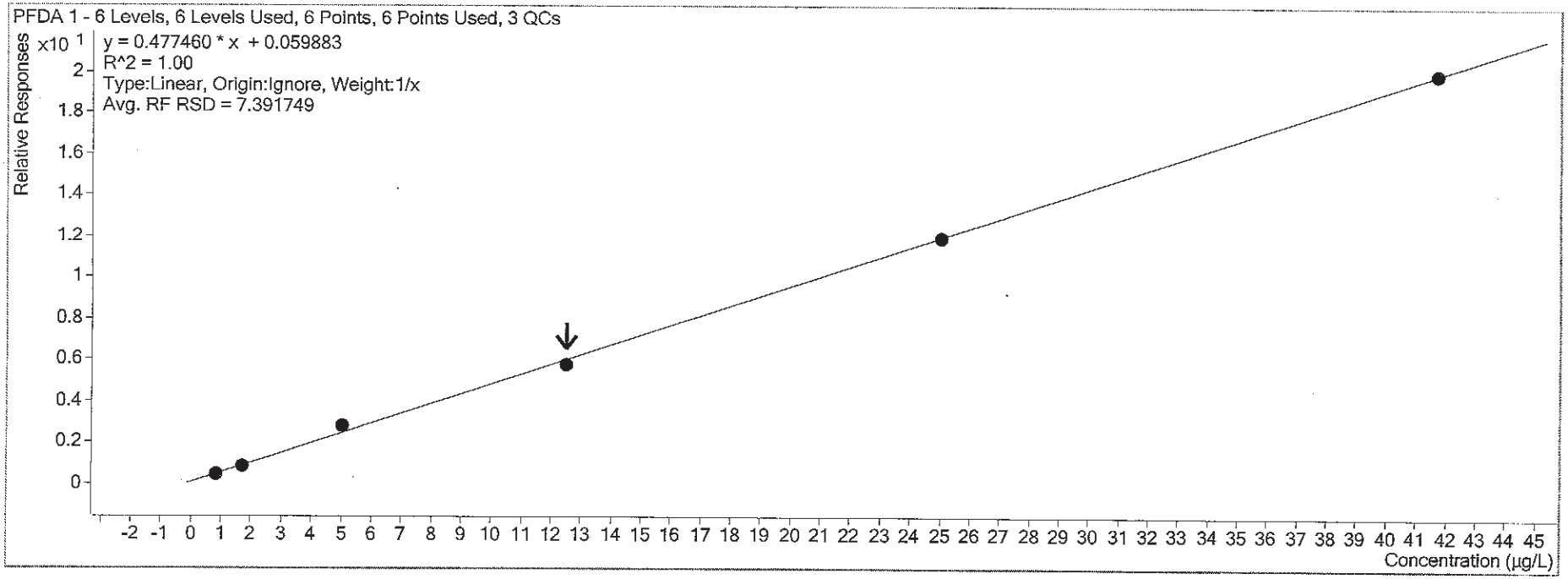
| Parameter Name | B833226 GBV351 | B833226 GBV352 | B833226 GBV353 | DL | B833226 GBV354 | DL | RDL |
|---|---|---|---|---|---|---|---|
| 6:2 Fluorotelomer sulfonate | N/A******* | N/A******* | N/A******* | 0.02 | N/A******* | 0.2 | 0.02 |
| 8:2 Fluorotelomer sulfonate | N/A******* | N/A******* | N/A******* | 0.02 | N/A******* | 0.2 | 0.02 |
| N-ethylperfluorooctane sulfonamide | N/A******* | N/A******* | N/A******* | 0.02 | N/A******* | 0.2 | 0.02 |
| EtFOSAA | 0 | 0 | 0 | 0.02 | 0 | 0.2 | 0.02 |
| N-ethylperfluorooctane sulfonamidoe | N/A******* | N/A******* | N/A******* | 0.02 | N/A******* | 0.2 | 0.02 |
| N-methylperfluorooctane sulfonamide | N/A******* | N/A******* | N/A******* | 0.02 | N/A******* | 0.2 | 0.02 |
| MeFOSAA | 0 | 0 | 0 | 0.02 | 0 | 0.2 | 0.02 |
| N-methylperfluorooctanesulfonamidol | N/A******* | N/A******* | N/A******* | 0.02 | N/A******* | 0.2 | 0.02 |
| Perfluorobutanoic acid | N/A******* | N/A******* | 0.03323401 | 0.02 | N/A******* | 0.2 | 0.02 |
| Perfluorobutane Sulfonate (PFBS) | 0 | 0.01109841 | 0 | 0.02 | 0 | 0.2 | 0.02 |
| Perfluorodecane Sulfonate | N/A******* | N/A******* | N/A******* | 0.02 | N/A******* | 0.2 | 0.02 |
| Perfluoroheptanoic Acid (PFHpA) | 0 | 0.32735107 | 0.05236113 | 0.02 | 0 | 0.2 | 0.02 |
| Perfluoroheptane sulfonate | N/A******* | N/A******* | N/A******* | 0.02 | N/A******* | 0.2 | 0.02 |
| Perfluorohexanoic Acid (PFHxA) | 0 | 0.30858314 | 0.06437103 | 0.02 | 0 | 0.2 | 0.02 |
| Perfluorohexane Sulfonate (PFHxS) | 0 | 0.70572253 | 0.00810832 | 0.02 | 0 | 0.2 | 0.02 |
| Perfluorononanoic Acid (PFNA) | 0 | 0.06309670 | 0.00528806 | 0.02 | 0 | 0.2 | 0.02 |
| Perfluorooctane Sulfonamide (PFOSA) | N/A******* | N/A******* | N/A******* | 0.02 | N/A******* | 0.2 | 0.02 |
| Perfluoropentanoic Acid (PFPeA) | N/A******* | N/A******* | N/A******* | 0.02 | N/A******* | 0.2 | 0.02 |
| Perfluorotetradecanoic Acid | 0 | 0 | 0 | 0.02 | 0 | 0.2 | 0.02 |
| Perfluorotridecanoic Acid | 0 | 0 | 0 | 0.02 | 0 | 0.2 | 0.02 |
| Perfluoroundecanoic Acid (PFUnA) | 0 | 0 | 0.00286868 | 0.02 | 0 | 0.2 | 0.02 |
| Perfluorodecanoic Acid (PFDA) | 0 | 0.00701185 | 0.00472718 | 0.02 | 0 | 0.2 | 0.02 |
| Perfluorododecanoic Acid (PFDoA) | 0 | 0 | 0 | 0.02 | 0 | 0.2 | 0.02 |
| Perfluoro-n-Octanoic Acid (PFOA) | 0 | 0.21016601 | 0.01444529 | 0.02 | 0 | 0.2 | 0.02 |
| Perfluorooctane Sulfonate (PFOS) | 0 | 0.80670736 | 0.02431257 | 0.02 | 0 | 0.2 | 0.02 |
| 13C2-6:2 Fluorotelomer sulfonate | N/A******* | N/A******* | N/A******* | | N/A******* | | |
| 13C2-8:2 Fluorotelomer sulfonate | N/A******* | N/A******* | N/A******* | | N/A******* | | |
| 13C2-perfluorotetradecanoic acid | 96.7286732 | 84.2293241 | 84.5485360 | | 68.3789102 | | |
| 13C4-Perfluorobutanoic acid | 107.655314 | 104.647773 | 105.498932 | | 105.853225 | | |
| D3-MeFOSAA | 94.2088789 | 95.9396680 | 91.6294426 | | 89.1905650 | | |
| D5-EtFOSAA | 88.8442510 | 92.8707494 | 92.3108581 | | 85.5326582 | | |
| N-methyl-d3-perfluorooctane sulfona | N/A******* | N/A******* | N/A******* | | N/A******* | | |
| N-ethyl-d5-perfluorooctane sulfonam | N/A******* | N/A******* | N/A******* | | N/A******* | | |
| 13C2-Perfluorodecanoic acid | 111.246397 | 98.1534088 | 102.990574 | | 90.0244296 | | |
| 13C2-Perfluorododecanoic acid | 97.9674725 | 97.9617448 | 95.3588933 | | 85.7688646 | | |
| 13C2-Perfluorohexanoic acid | 116.239297 | 106.701826 | 111.808610 | | 114.509565 | | |
| 13C2-Perfluoroundecanoic acid | 105.942918 | 101.290814 | 105.711020 | | 94.9673289 | | |
| 13C4-Perfluoroheptanoic acid | 111.716477 | 103.272431 | 111.093913 | | 106.916339 | | |
| 13C5-Perfluorononanoic acid | 115.773207 | 105.019915 | 109.150946 | | 101.751796 | | |
| 13C4-Perfluorooctanoic acid | 111.009512 | 105.576209 | 109.261869 | | 99.1197706 | | |
| 13C4-Perfluorooctanesulfonate | 118.881152 | 111.982285 | 110.589250 | | 105.675031 | | |
| 13C5-Perfluoropentanoic acid | N/A******* | N/A******* | N/A******* | | N/A******* | | |
| 13C8-Perfluorooctane Sulfonamide | N/A******* | N/A******* | N/A******* | | N/A******* | | |
| 18O2-Perfluorohexanesulfonate | 109.719752 | 103.531998 | 116.443204 | | 101.177048 | | |

Worksheet Number: **5412188**

PFOS and PFOA in water by SPE/LCMS - Water

ug/L

| Parameter Name | MDL | IDL | | | | | |
|---|---|---|---|---|---|---|---|
| 6:2 Fluorotelomer sulfonate | 0.0066 | 0 | | | | | |
| 8:2 Fluorotelomer sulfonate | 0.0066 | 0 | | | | | |
| N-ethylperfluorooctane sulfonamide | 0.01 | 0 | | | | | |
| EtFOSAA | 0.0033 | 0 | | | | | |
| N-ethylperfluorooctane sulfonamidoe | 0.0079 | 0 | | | | | |
| N-methylperfluorooctane sulfonamide | 0.013 | 0 | | | | | |
| MeFOSAA | 0.0029 | 0 | | | | | |
| N-methylperfluorooctanesulfonamidol | 0.012 | 0 | | | | | |
| Perfluorobutanoic acid | 0.0055 | 0 | | | | | |
| Perfluorobutane Sulfonate (PFBS) | 0.0054 | 0 | | | | | |
| Perfluorodecane Sulfonate | 0.006 | 0 | | | | | |
| Perfluoroheptanoic Acid (PFHpA) | 0.0074 | 0 | | | | | |
| Perfluoroheptane sulfonate | 0.008 | 0 | | | | | |
| Perfluorohexanoic Acid (PFHxA) | 0.0035 | 0 | | | | | |
| Perfluorohexane Sulfonate (PFHxS) | 0.0056 | 0 | | | | | |
| Perfluorononanoic Acid (PFNA) | 0.0087 | 0 | | | | | |
| Perfluorooctane Sulfonamide (PFOSA) | 0.0034 | 0 | | | | | |
| Perfluoropentanoic Acid (PFPeA) | 0.0075 | 0 | | | | | |
| Perfluorotetradecanoic Acid | 0.0027 | 0 | | | | | |
| Perfluorotridecanoic Acid | 0.0038 | 0 | | | | | |
| Perfluoroundecanoic Acid (PFUnA) | 0.0025 | 0 | | | | | |
| Perfluorodecanoic Acid (PFDA) | 0.0061 | 0 | | | | | |
| Perfluorododecanoic Acid (PFDoA) | 0.005 | 0 | | | | | |
| Perfluoro-n-Octanoic Acid (PFOA) | 0.0033 | 0 | | | | | |
| Perfluorooctane Sulfonate (PFOS) | 0.006 | 0 | | | | | |
| 13C2-6:2 Fluorotelomer sulfonate | | | | | | | |
| 13C2-8:2 Fluorotelomer sulfonate | | | | | | | |
| 13C2-perfluorotetradecanoic acid | | | | | | | |
| 13C4-Perfluorobutanoic acid | | | | | | | |
| D3-MeFOSAA | | | | | | | |
| D5-EtFOSAA | | | | | | | |
| N-methyl-d3-perfluorooctane sulfona | | | | | | | |
| N-ethyl-d5-perfluorooctane sulfonam | | | | | | | |
| 13C2-Perfluorodecanoic acid | | | | | | | |
| 13C2-Perfluorododecanoic acid | | | | | | | |
| 13C2-Perfluorohexanoic acid | | | | | | | |
| 13C2-Perfluoroundecanoic acid | | | | | | | |
| 13C4-Perfluoroheptanoic acid | | | | | | | |
| 13C5-Perfluorononanoic acid | | | | | | | |
| 13C4-Perfluorooctanoic acid | | | | | | | |
| 13C4-Perfluorooctanesulfonate | | | | | | | |
| 13C5-Perfluoropentanoic acid | | | | | | | |
| 13C8-Perfluorooctane Sulfonamide | | | | | | | |
| 18O2-Perfluorohexanesulfonate | | | | | | | |




Manual calculation for Spike:

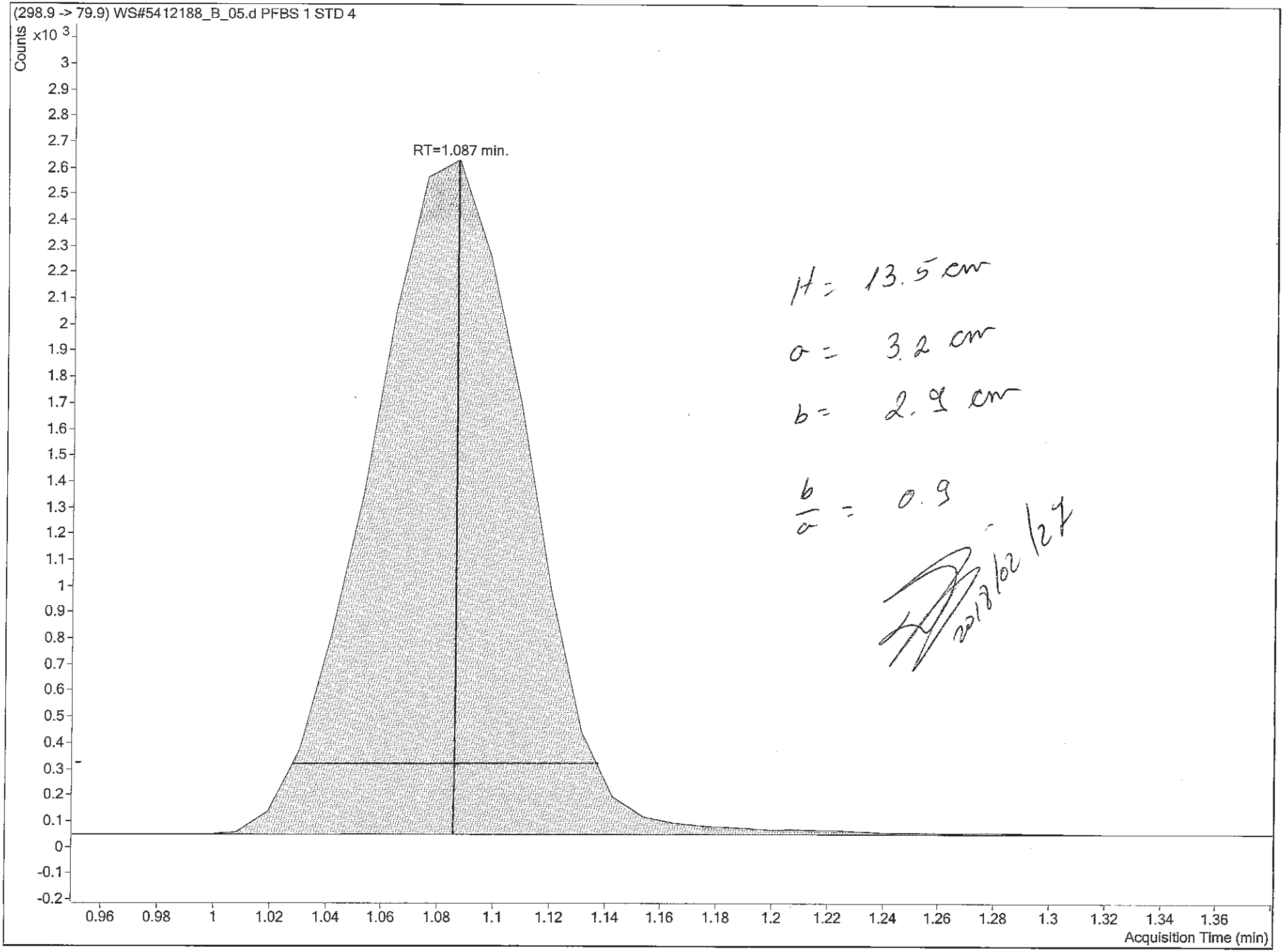
$10.4828 = 0.477460 x + 0.059883$

$x = 21.829927 \times 0.024$

$= 0.5239 \mu g/L$

$\frac{0.5239}{0.5} \times 100 = 104.8\%$

2018/02/27



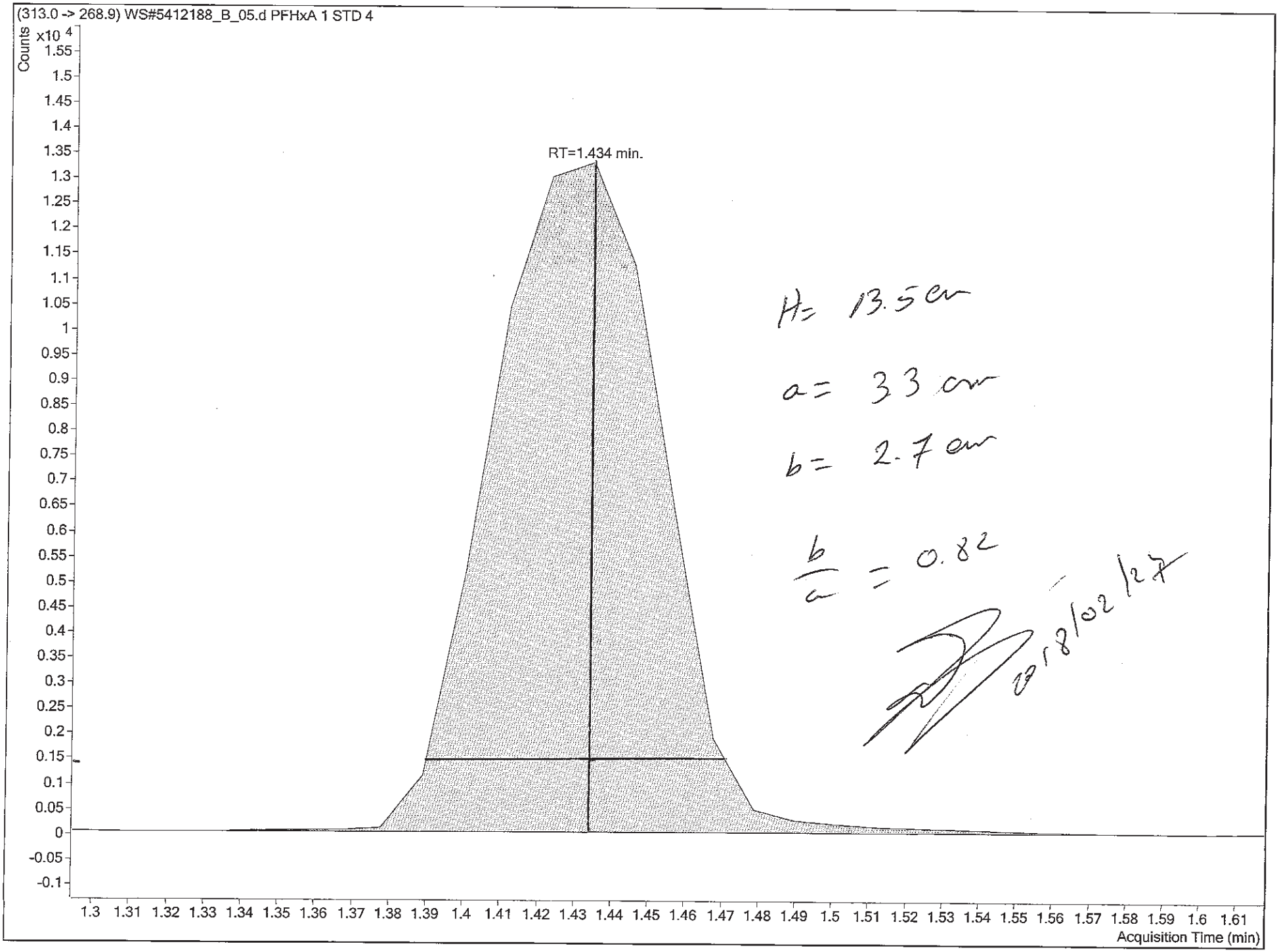

H = 13.5 cm

a = 3.2 cm

b = 2.9 cm

$\frac{b}{a}$ = 0.9

2018/02/27




H= 13.5 cm

a= 3.3 cm

b= 2.7 cm

$\frac{b}{a} = 0.82$

2018/02/27

Report Name: Worksheet - Parameter Lists

Report Date: 2018/02/23

Test Code: **PFOSALCM-W**

Worksheet Number: **5412188**

| Sample Number | Parameter Code | Parameter | |
|---|---|---|---|
| GBV350-01 | ETFOSAA | EtFOSAA | * |
| GBV351-01 | MEFOSAA | MeFOSAA | * |
| GBV352-01 | PFBS | Perfluorobutane Sulfonate (PFBS) | |
| GBV353-01 | PFHPA | Perfluoroheptanoic Acid (PFHpA) | |
| GBV354-01 | PFHXA | Perfluorohexanoic Acid (PFHxA) | |
| | PFHXS | Perfluorohexane Sulfonate (PFHxS) | |
| | PFNA | Perfluorononanoic Acid (PFNA) | |
| | PFTEDA | Perfluorotetradecanoic Acid | |
| | PFTRDA | Perfluorotridecanoic Acid | |
| | PFUNA | Perfluoroundecanoic Acid (PFUnA) | |
| | PFDA | Perfluorodecanoic Acid (PFDA) | |
| | PFDOA | Perfluorododecanoic Acid (PFDoA) | |
| | PFOA | Perfluoro-n-Octanoic Acid (PFOA) | |
| | PFOS | Perfluorooctane Sulfonate (PFOS) | |

RAD 2018/2/23

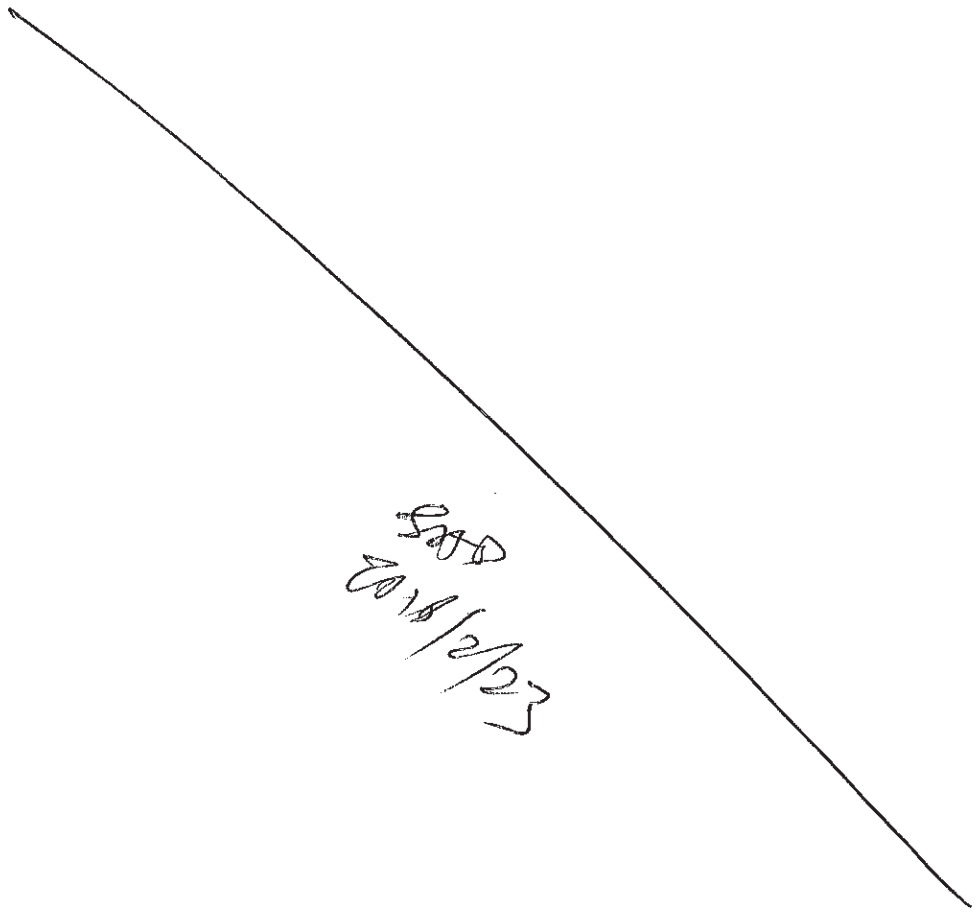
* - This parameter is usually off, but will be reported for this group of samples!



Folder 20180226 2018/02/27

# WorkSheet 5412188 Instrument Sequences

| | | |
|---|---|---|
| 1. | 5412188:SPIKE | SPIKE |
| 2. | 5412188:SPIKE:D1 | SPIKE :D1 |
| 3. | 5412188:BLANK | BLANK |
| 4. | 5412188:GBV350-01 | CEF-S3-TW01-0218 |
| 5. | 5412188:GBV351-01 | FB-CEF-S3-020918-13 |
| 6. | 5412188:GBV352-01 | CEF-MFS-TW01-0218 |
| 7. | 5412188:GBV353-01 | CEF-MFS-TW02-0218 |
| 8. | 5412188:GBV354-01 | CEF-S3-TW02-0209 |



# Worklist Report

Agilent Technologies

**Instrument Name:** LCMS04 **Worklist Path:** D:\MassHunter\Worklists\PFCs\PFC_180226_Low.wkl

Maxxam Analytics

**Operator Name:** ---
**Run Type:** Standard Start
**Part of Method to Run:** Acquisition Only
**Execution of Acquisition-DA:** Synchronous
**Acquisition Method Path:** D:\MassHunter\Acquisition Method
**DA Method Path:** D:\MassHunter\methods
**Data File Path:** D:\MassHunter\Data\PFC\20180226\WS#5412188
**Pre-Worklist Script:** ---
**Post-Worklist Script:** SCP_InstrumentStandby(){MH_Acq_Scripts.exe}
**Acquisition Clean Up Script:** ---
**Overlapped Injection:** Yes
**Clear Sample Selection After Run:** Yes
**Wait Time for Ready(Min):** 10
**Threshold Disk Value(GB):** 10
**Comment:** Column #199
MP A1: Solution# 280 (FSRE18)
MP B1: Methanol lot# SHBJ5451, Sigma

RC 20180226

**Plate Barcode:**

| Plate | Barcode |
|---|---|
| P1 | |

**Worklist Table**

| | Sample Name | Sample Position | Method | Data File | Sample Type | Level Name | Inj Vol (µl) | Comment |
|---|---|---|---|---|---|---|---|---|
| 1 | Solvent | P1-A1 | PFC_Water_Low.m | WS#5412188_01.d | Sample | | As Method | - |
| 2 | STD 1 | P1-C1 | PFC_Water_Low.m | WS#5412188_02.d | Calibration | STD 1 | As Method | - |
| 3 | STD 2 | P1-C2 | PFC_Water_Low.m | WS#5412188_03.d | Calibration | STD 2 | As Method | - |
| 4 | STD 3 | P1-C3 | PFC_Water_Low.m | WS#5412188_04.d | Calibration | STD 3 | As Method | - |
| 5 | STD 4 | P1-C4 | PFC_Water_Low.m | WS#5412188_05.d | Calibration | STD 4 | As Method | - |
| 6 | STD 5 | P1-C5 | PFC_Water_Low.m | WS#5412188_06.d | Calibration | STD 5 | As Method | - |
| 7 | STD 6 | P1-C6 | PFC_Water_Low.m | WS#5412188_07.d | Calibration | STD 6 | As Method | - |

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# Worklist Report

Agilent Technologies

Maxxam Analytics

| | Sample Name | Sample Position | Method | Data File | Sample Type | Level Name | Inj Vol (µl) | Comment |
|---|---|---|---|---|---|---|---|---|
| 8 | IB | P1-C7 | PFC_Water_Low.m | WS#5412188_08.d | Sample | | As Method | - |
| 9 | ICV | P1-C8 | PFC_Water_Low.m | WS#5412188_09.d | QC | ICV | As Method | - |
| 10 | ISC | P1-C1 | PFC_Water_Low.m | WS#5412188_10.d | ConCal | STD 1 | As Method | - |
| 11 | 5412188:BLANK | P1-C9 | PFC_Water_Low.m | WS#5412188_11.d | Sample | | As Method | - |
| 12 | 5412188:SPIKE | P1-D1 | PFC_Water_Low.m | WS#5412188_12.d | QC | ICV | As Method | - |
| 13 | 5412188:SPIKE:D1 | P1-D2 | PFC_Water_Low.m | WS#5412188_13.d | QC | ICV | As Method | - |
| 14 | 5412188:GBV350-01:10x | P1-D3 | PFC_Water_Low.m | WS#5412188_14.d | Sample | | As Method | - |
| 15 | IB | P1-C7 | PFC_Water_Low.m | WS#5412188_15.d | Sample | | As Method | - |
| 16 | 5412188:GBV351-01 | P1-D4 | PFC_Water_Low.m | WS#5412188_16.d | Sample | | As Method | - |
| 17 | 5412188:GBV352-01:10x | P1-D5 | PFC_Water_Low.m | WS#5412188_17.d | Sample | | As Method | - |
| 18 | 5412188:GBV352-01 | P1-D6 | PFC_Water_Low.m | WS#5412188_18.d | Sample | | As Method | - |
| 19 | IB | P1-C7 | PFC_Water_Low.m | WS#5412188_19.d | Sample | | As Method | - |
| 20 | 5412188:GBV353-01 | P1-D7 | PFC_Water_Low.m | WS#5412188_20.d | Sample | | As Method | - |
| 21 | 5412188:GBV354-01:10x | P1-D8 | PFC_Water_Low.m | WS#5412188_21.d | Sample | | As Method | - |
| 22 | IB | P1-C7 | PFC_Water_Low.m | WS#5412188_22.d | Sample | | As Method | - |
| 23 | CCV | P1-C4 | PFC_Water_Low.m | WS#5412188_23.d | ConCal | STD 4 | As Method | - |

# Worklist Report

Agilent Technologies

Maxxam Analytics

**Instrument Name:** LCMS04 **Worklist Path:** D:\MassHunter\Worklists\PFCs\PFC_180226_Low_FOSAA.wkl

**Operator Name:** ---
**Run Type:** Standard Start
**Part of Method to Run:** Acquisition Only
**Execution of Acquisition-DA:** Synchronous
**Acquisition Method Path:** D:\MassHunter\Acquisition Method
**DA Method Path:** D:\MassHunter\methods
**Data File Path:** D:\MassHunter\Data\PFC\20180226\WS#5412188_FOSAA
**Pre-Worklist Script:** ---
**Post-Worklist Script:** SCP_InstrumentStandby(){MH_Acq_Scripts.exe}
**Acquisition Clean Up Script:** ---
**Overlapped Injection:** Yes
**Clear Sample Selection After Run:** Yes
**Wait Time for Ready(Min):** 10
**Threshold Disk Value(GB):** 10
**Comment:** Column #199
MP A1: Solution# 280 (FSRE18)
MP B2: Solution# 290 (FSRE18)

KC 2018/02/26

**Plate Barcode:**

| Plate | Barcode |
|---|---|
| P1 | |

**Worklist Table**

| | Sample Name | Sample Position | Method | Data File | Sample Type | Level Name | Inj Vol (µl) | Comment |
|---|---|---|---|---|---|---|---|---|
| 1 | Solvent | P1-A1 | PFC_Water_Low_FOSAA.m | WS#5412188_FOSAA_01.d | Sample | | As Method | - |
| 2 | STD 1 | P1-C1 | PFC_Water_Low_FOSAA.m | WS#5412188_FOSAA_02.d | Calibration | STD 1 | As Method | - |
| 3 | STD 2 | P1-C2 | PFC_Water_Low_FOSAA.m | WS#5412188_FOSAA_03.d | Calibration | STD 2 | As Method | - |
| 4 | STD 3 | P1-C3 | PFC_Water_Low_FOSAA.m | WS#5412188_FOSAA_04.d | Calibration | STD 3 | As Method | - |
| 5 | STD 4 | P1-C4 | PFC_Water_Low_FOSAA.m | WS#5412188_FOSAA_05.d | Calibration | STD 4 | As Method | - |
| 6 | STD 5 | P1-C5 | PFC_Water_Low_FOSAA.m | WS#5412188_FOSAA_06.d | Calibration | STD 5 | As Method | - |
| 7 | STD 6 | P1-C6 | PFC_Water_Low_FOSAA.m | WS#5412188_FOSAA_07.d | Calibration | STD 6 | As Method | - |
| 8 | IB | P1-C7 | PFC_Water_Low_FOSAA.m | WS#5412188_FOSAA_08.d | Sample | | As Method | - |

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| | Sample Name | Sample Position | Method | Data File | Sample Type | Level Name | Inj Vol (µl) | Comment |
|---|---|---|---|---|---|---|---|---|
| 9 | ICV | P1-C8 | PFC_Water_Low_FOSAA.m | WS#5412188_FOSAA_09.d | QC | ICV | As Method | - |
| 10 | ISC | P1-C1 | PFC_Water_Low_FOSAA.m | WS#5412188_FOSAA_10.d | ConCal | STD 1 | As Method | - |
| 11 | 5412188:BLANK | P1-C9 | PFC_Water_Low_FOSAA.m | WS#5412188_FOSAA_11.d | Sample | | As Method | - |
| 12 | 5412188:SPIKE | P1-D1 | PFC_Water_Low_FOSAA.m | WS#5412188_FOSAA_12.d | QC | ICV | As Method | - |
| 13 | 5412188:SPIKE:D1 | P1-D2 | PFC_Water_Low_FOSAA.m | WS#5412188_FOSAA_13.d | QC | ICV | As Method | - |
| 14 | 5412188:GBV350-01:10x | P1-D3 | PFC_Water_Low_FOSAA.m | WS#5412188_FOSAA_14.d | Sample | | As Method | - |
| 15 | IB | P1-C7 | PFC_Water_Low_FOSAA.m | WS#5412188_FOSAA_15.d | Sample | | As Method | - |
| 16 | 5412188:GBV351-01 | P1-D4 | PFC_Water_Low_FOSAA.m | WS#5412188_FOSAA_16.d | Sample | | As Method | - |
| 17 | 5412188:GBV352-01:10x | P1-D5 | PFC_Water_Low_FOSAA.m | WS#5412188_FOSAA_17.d | Sample | | As Method | - |
| 18 | 5412188:GBV352-01 | P1-D6 | PFC_Water_Low_FOSAA.m | WS#5412188_FOSAA_18.d | Sample | | As Method | - |
| 19 | IB | P1-C7 | PFC_Water_Low_FOSAA.m | WS#5412188_FOSAA_19.d | Sample | | As Method | - |
| 20 | 5412188:GBV353-01 | P1-D7 | PFC_Water_Low_FOSAA.m | WS#5412188_FOSAA_20.d | Sample | | As Method | - |
| 21 | 5412188:GBV354-01:10x | P1-D8 | PFC_Water_Low_FOSAA.m | WS#5412188_FOSAA_21.d | Sample | | As Method | - |
| 22 | IB | P1-C7 | PFC_Water_Low_FOSAA.m | WS#5412188_FOSAA_22.d | Sample | | As Method | - |
| 23 | CCV | P1-C4 | PFC_Water_Low_FOSAA.m | WS#5412188_FOSAA_23.d | ConCal | STD 4 | As Method | - |

## FINAL INJECTION SEQUENCE

| Sample | | | | | |
|---|---|---|---|---|---|
| Name | Comment | Acq. Date-Time | Acq. Method File | Data File | Pos. |
| STD 1 | - | 2018/02/27 1:07 PM | PFC_Water_Low.m | WS#5412188_B_02.d | P1-C1 |
| STD 2 | - | 2018/02/27 1:12 PM | PFC_Water_Low.m | WS#5412188_B_03.d | P1-C2 |
| STD 3 | - | 2018/02/27 1:17 PM | PFC_Water_Low.m | WS#5412188_B_04.d | P1-C3 |
| STD 4 | - | 2018/02/27 1:21 PM | PFC_Water_Low.m | WS#5412188_B_05.d | P1-C4 |
| STD 5 | - | 2018/02/27 1:26 PM | PFC_Water_Low.m | WS#5412188_B_06.d | P1-C5 |
| STD 6 | - | 2018/02/27 1:31 PM | PFC_Water_Low.m | WS#5412188_B_07.d | P1-C6 |
| IB | - | 2018/02/27 1:36 PM | PFC_Water_Low.m | WS#5412188_B_08.d | P1-C7 |
| ICV | - | 2018/02/27 1:41 PM | PFC_Water_Low.m | WS#5412188_B_09.d | P1-C8 |
| ISC | - | 2018/02/27 1:57 PM | PFC_Water_Low.m | WS#5412188_B_10.d | P1-C1 |
| 5412188:BLANK | - | 2018/02/27 2:02 PM | PFC_Water_Low.m | WS#5412188_B_11.d | P1-C9 |
| 5412188:SPIKE | - | 2018/02/27 2:07 PM | PFC_Water_Low.m | WS#5412188_B_12.d | P1-D1 |
| 5412188:SPIKE:D1 | Reinjected to confirm analyte recovery | 2018/02/27 2:12 PM | PFC_Water_Low.m | WS#5412188_B_13.d | P1-D2 |
| 5412188:GBV350-01:10x | - | 2018/02/27 2:16 PM | PFC_Water_Low.m | WS#5412188_B_14.d | P1-D3 |
| IB | - | 2018/02/27 2:21 PM | PFC_Water_Low.m | WS#5412188_B_15.d | P1-C7 |
| 5412188:GBV351-01 | - | 2018/02/27 2:26 PM | PFC_Water_Low.m | WS#5412188_B_16.d | P1-D4 |
| 5412188:GBV352-01:10x | Not used | 2018/02/27 2:31 PM | PFC_Water_Low.m | WS#5412188_B_17.d | P1-D5 |
| 5412188:GBV352-01 | - | 2018/02/27 2:36 PM | PFC_Water_Low.m | WS#5412188_B_18.d | P1-D6 |
| IB | - | 2018/02/27 2:41 PM | PFC_Water_Low.m | WS#5412188_B_19.d | P1-C7 |
| 5412188:GBV353-01 | - | 2018/02/27 2:46 PM | PFC_Water_Low.m | WS#5412188_B_20.d | P1-D7 |
| 5412188:GBV354-01:10x | - | 2018/02/27 2:51 PM | PFC_Water_Low.m | WS#5412188_B_21.d | P1-D8 |
| IB | - | 2018/02/27 2:56 PM | PFC_Water_Low.m | WS#5412188_B_22.d | P1-C7 |
| CCV | - | 2018/02/27 3:01 PM | PFC_Water_Low.m | WS#5412188_B_23.d | P1-C4 |
| ISC | - | 2018/02/27 3:52 PM | PFC_Water_Low.m | WS#5412188_B_24.d | P1-C1 |
| 5412188:SPIKE:D1 | Reinjection, reported | 2018/02/27 4:00 PM | PFC_Water_Low.m | WS#5412188_B_25.d | P1-D2 |
| CCV | - | 2018/02/27 4:05 PM | PFC_Water_Low.m | WS#5412188_B_26.d | P1-C4 |

## FINAL INJECTION SEQUENCE

| Sample | | | | | |
|---|---|---|---|---|---|
| Name | Comment | Acq. Date-Time | Acq. Method File | Data File | Pos. |
| STD 1 | - | 2018/02/27 4:39 AM | PFC_Water_Low_FOSAA.m | WS#5412188_FOSAA_02.d | P1-C1 |
| STD 2 | - | 2018/02/27 4:41 AM | PFC_Water_Low_FOSAA.m | WS#5412188_FOSAA_03.d | P1-C2 |
| STD 3 | - | 2018/02/27 4:44 AM | PFC_Water_Low_FOSAA.m | WS#5412188_FOSAA_04.d | P1-C3 |
| STD 4 | - | 2018/02/27 4:46 AM | PFC_Water_Low_FOSAA.m | WS#5412188_FOSAA_05.d | P1-C4 |
| STD 5 | - | 2018/02/27 4:49 AM | PFC_Water_Low_FOSAA.m | WS#5412188_FOSAA_06.d | P1-C5 |
| STD 6 | - | 2018/02/27 4:51 AM | PFC_Water_Low_FOSAA.m | WS#5412188_FOSAA_07.d | P1-C6 |
| IB | - | 2018/02/27 4:54 AM | PFC_Water_Low_FOSAA.m | WS#5412188_FOSAA_08.d | P1-C7 |
| ICV | - | 2018/02/27 4:56 AM | PFC_Water_Low_FOSAA.m | WS#5412188_FOSAA_09.d | P1-C8 |
| ISC | - | 2018/02/27 4:58 AM | PFC_Water_Low_FOSAA.m | WS#5412188_FOSAA_10.d | P1-C1 |
| 5412188:BLANK | - | 2018/02/27 5:01 AM | PFC_Water_Low_FOSAA.m | WS#5412188_FOSAA_11.d | P1-C9 |
| 5412188:SPIKE | - | 2018/02/27 5:03 AM | PFC_Water_Low_FOSAA.m | WS#5412188_FOSAA_12.d | P1-D1 |
| 5412188:SPIKE:D1 | - | 2018/02/27 5:06 AM | PFC_Water_Low_FOSAA.m | WS#5412188_FOSAA_13.d | P1-D2 |
| 5412188:GBV350-01:10x | - | 2018/02/27 5:08 AM | PFC_Water_Low_FOSAA.m | WS#5412188_FOSAA_14.d | P1-D3 |
| IB | - | 2018/02/27 5:10 AM | PFC_Water_Low_FOSAA.m | WS#5412188_FOSAA_15.d | P1-C7 |
| 5412188:GBV351-01 | - | 2018/02/27 5:13 AM | PFC_Water_Low_FOSAA.m | WS#5412188_FOSAA_16.d | P1-D4 |
| 5412188:GBV352-01:10x | Not used | 2018/02/27 5:15 AM | PFC_Water_Low_FOSAA.m | WS#5412188_FOSAA_17.d | P1-D5 |
| 5412188:GBV352-01 | - | 2018/02/27 5:18 AM | PFC_Water_Low_FOSAA.m | WS#5412188_FOSAA_18.d | P1-D6 |
| IB | - | 2018/02/27 5:20 AM | PFC_Water_Low_FOSAA.m | WS#5412188_FOSAA_19.d | P1-C7 |
| 5412188:GBV353-01 | - | 2018/02/27 5:22 AM | PFC_Water_Low_FOSAA.m | WS#5412188_FOSAA_20.d | P1-D7 |
| 5412188:GBV354-01:10x | - | 2018/02/27 5:25 AM | PFC_Water_Low_FOSAA.m | WS#5412188_FOSAA_21.d | P1-D8 |
| IB | - | 2018/02/27 5:27 AM | PFC_Water_Low_FOSAA.m | WS#5412188_FOSAA_22.d | P1-C7 |
| CCV | - | 2018/02/27 5:30 AM | PFC_Water_Low_FOSAA.m | WS#5412188_FOSAA_23.d | P1-C4 |

## INJECTION INTERNAL STANDARD PEAK AREAS

| Sample Name | Analyte | 13C6-PFHxA | 13C9-PFDA |
|---|---|---|---|
| | Mass labeled IS | STD 4 | STD 4 |
| | IS Area | 22133 | 25329 |
| | | IS Peak Area | IS Peak Area |
| STD 1 | | 23118 | 27510 |
| STD 2 | | 21245 | 25642 |
| STD 3 | | 23984 | 29535 |
| STD 4 | | 22133 | 25329 |
| STD 5 | | 23050 | 28850 |
| STD 6 | | 21853 | 25997 |
| IB | | 23454 | 29125 |
| ICV | | 25768 | 30429 |
| ISC | | 23606 | 29016 |
| 5410178:BLANK | | 23209 | 28413 |
| 5410178:SPIKE | | 21178 | 25614 |
| 5410178:SPIKE:D1 | | 23363 | 28328 |
| 5410178:GBV345-01 | | 21332 | 27416 |
| 5410178:GBV346-01 | | 24667 | 29817 |
| 5410178:GBV347-01 | | 25740 | 32643 |
| 5410178:GBV348-01 | | 24967 | 30015 |
| 5410178:GBV349-01:10x | | 26150 | 32520 |
| 5410178:GBV349-01 | | 25290 | 30125 |
| IB | | 23749 | 29605 |
| CCV | | 22063 | 27791 |

## INJECTION INTERNAL STANDARD PEAK AREAS

| Sample Name | Analyte | 13C9-PFDA |
|---|---|---|
| | Mass labeled IS | STD 4 |
| | IS Area | 19426 |
| | | IS Peak Area |
| STD 1 | | 19378 |
| STD 2 | | 18764 |
| STD 3 | | 21971 |
| STD 4 | | 19426 |
| STD 5 | | 21460 |
| STD 6 | | 19504 |
| IB | | 22186 |
| ICV | | 22698 |
| ISC | | 21463 |
| 5410178:BLANK | | 21974 |
| 5410178:SPIKE | | 19800 |
| 5410178:SPIKE:D1 | | 22217 |
| 5410178:GBV345-01 | | 20951 |
| 5410178:GBV346-01 | | 23739 |
| 5410178:GBV347-01 | | 25287 |
| 5410178:GBV348-01 | | 23633 |
| 5410178:GBV349-01:10x | | 25292 |
| 5410178:GBV349-01 | | 23778 |
| IB | | 23328 |
| CCV | | 20901 |

## INJECTION INTERNAL STANDARD PEAK AREAS

| Sample Name | Analyte | 13C6-PFHxA | 13C6-PFHxA | 13C9-PFDA | 13C9-PFDA |
|---|---|---|---|---|---|
| | Mass labeled IS | STD 4 | ISC/CCV | STD 4 | ISC/CCV |
| | IS Area | 31264 | 37375 | 38264 | 42905 |
| | | IS Peak Area | IS Peak Area | IS Peak Area | IS Peak Area |
| STD 1 | | 35446 | | 41836 | |
| STD 2 | | 29796 | | 35683 | |
| STD 3 | | 31917 | | 38219 | |
| STD 4 | | 31264 | | 38264 | |
| STD 5 | | 30279 | | 35645 | |
| STD 6 | | 29288 | | 33940 | |
| IB | | 31445 | | 37273 | |
| ICV | | 28962 | | 35009 | |
| ISC | | 36178 | | 42855 | |
| 5412188:BLANK | | 30908 | | 34891 | |
| 5412188:SPIKE | | 30023 | | 34110 | |
| 5412188:SPIKE:D1 | | 38181 | | 44883 | |
| 5412188:GBV350-01:10x | | 33310 | | 41490 | |
| IB | | 33232 | | 38020 | |
| 5412188:GBV351-01 | | 34821 | | 39875 | |
| 5412188:GBV352-01:10x | | 33872 | | 39496 | |
| 5412188:GBV352-01 | | 27565 | | 33315 | |
| IB | | 31125 | | 38015 | |
| 5412188:GBV353-01 | | 28213 | | 33355 | |
| 5412188:GBV354-01:10x | | 30186 | | 36409 | |
| IB | | 32635 | | 39107 | |
| CCV | | 33127 | | 37914 | |
| **ISC** | | | 37375 | | 42905 |
| 5412188:SPIKE:D1 | | | 38026 | | 41792 |
| CCV | | | 33996 | | 38214 |

## INJECTION INTERNAL STANDARD PEAK AREAS

| Sample Name | Analyte | 13C9-PFDA |
|---|---|---|
| | Mass labeled IS | STD 4 |
| | IS Area | 25442 |
| | | IS Peak Area |
| STD 1 | | 27647 |
| STD 2 | | 25053 |
| STD 3 | | 26021 |
| STD 4 | | 25442 |
| STD 5 | | 24594 |
| STD 6 | | 23798 |
| IB | | 25745 |
| ICV | | 24262 |
| ISC | | 27998 |
| 5412188:BLANK | | 25419 |
| 5412188:SPIKE | | 23793 |
| 5412188:SPIKE:D1 | | 28594 |
| 5412188:GBV350-01:10x | | 26493 |
| IB | | 25638 |
| 5412188:GBV351-01 | | 27020 |
| 5412188:GBV352-01:10x | | 25493 |
| 5412188:GBV352-01 | | 21738 |
| IB | | 25044 |
| 5412188:GBV353-01 | | 21903 |
| 5412188:GBV354-01:10x | | 23598 |
| IB | | 25397 |
| CCV | | 24937 |

SIGMA-ALDRICH®

sigma-aldrich.com

3050 Spruce Street, Saint Louis, MO 63103, USA
Website: www.sigmaaldrich.com
Email USA: techserv@sial.com
Outside USA: eurtechserv@sial.com

# Certificate of Analysis

Product Name:
Methanol - for HPLC, ≥99.9%

| | |
|---|---|
| **Product Number:** | **34860** |
| **Batch Number:** | **SHBJ5451** |
| Brand: | SIGALD |
| CAS Number: | 67-56-1 |
| MDL Number: | MFCD00004595 |
| Formula: | CH4O |
| Formula Weight: | 32.04 g/mol |
| Quality Release Date: | 27 SEP 2017 |
| Expiration Date: | SEP 2022 |

$CH_3OH$

Rec'd: 2
2017/11/20
4 x 4 L
LC grade

| Test | Specification | Result |
|---|---|---|
| Appearance (Color) | Colorless | Colorless |
| Appearance (Form) | Liquid | Liquid |
| UV Absorbance 400nm | ≤ 0.01 | < 0.01 |
| UV Absorbance 280nm | ≤ 0.01 | < 0.01 |
| UV Absorbance 260nm | ≤ 0.04 | < 0.01 |
| UV Absorbance 240nm | ≤ 0.10 | 0.02 |
| UV Absorbance 235nm | ≤ 0.10 | 0.03 |
| UV Absorbance 230nm | ≤ 0.20 | 0.05 |
| UV Absorbance 220nm | ≤ 0.30 | 0.11 |
| UV Absorbance 210nm | ≤ 0.60 | 0.28 |
| UV Absorbance 205nm | ≤ 1.00 | 0.65 |
| Fluorescence 254nm | ≤ 1.0 ppb | < 0.1 ppb |
| Fluorescence 365nm | ≤ 1.0 ppb | 0.1 ppb |
| Purity (GC) | ≥ 99.90 % | 100.00 % |
| Color Test | ≤ 10 APHA | < 10 APHA |
| Water (by Karl Fischer) | ≤ 0.03 % | < 0.01 % |
| Residue on Evaporation | ≤ 0.0005 % | 0.0001 % |
| Expiration Date Period 1800 Days | ---------- | ---------- |

Sigma-Aldrich warrants, that at the time of the quality release or subsequent retest date this product conformed to the information contained in this publication. The current Specification sheet may be available at Sigma-Aldrich.com. For further inquiries, please contact Technical Service. Purchaser must determine the suitability of the product for its particular use. See reverse side of invoice or packing slip for additional terms and conditions of sale.

3050 Spruce Street, Saint Louis, MO 63103, USA
Website: www.sigmaaldrich.com
Email USA: techserv@sial.com
Outside USA: eurtechserv@sial.com

# Certificate of Analysis

**Product Number:** **34860**
**Batch Number:** **SHBJ5451**

Michael Grady, Manager
Quality Control
Sheboygan Falls, WI US

Sigma-Aldrich warrants, that at the time of the quality release or subsequent retest date this product conformed to the information contained in this publication. The current Specification sheet may be available at Sigma-Aldrich.com. For further inquiries, please contact Technical Service. Purchaser must determine the suitability of the product for its particular use. See reverse side of invoice or packing slip for additional terms and conditions of sale.

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Website: www.sigmaaldrich.com
Email USA: techserv@sial.com
Outside USA: eurtechserv@sial.com

# Certificate of Analysis

Rec'd: 2017/12/28
By: [illegible]
HPLC - M.L.
8 x 4 L

Product Name:
Methanol - for HPLC, ≥99.9%

$CH_3OH$

| | |
|---|---|
| Product Number: | 34860 |
| Batch Number: | SHBJ0339 |
| Brand: | SIGALD |
| CAS Number: | 67-56-1 |
| MDL Number: | MFCD00004595 |
| Formula: | CH4O |
| Formula Weight: | 32.04 g/mol |
| Quality Release Date: | 30 OCT 2017 |
| Expiration Date: | OCT 2022 |

| Test | Specification | Result |
|---|---|---|
| Appearance (Color) | Colorless | Colorless |
| Appearance (Form) | Liquid | Liquid |
| UV Absorbance 400nm | ≤ 0.01 | 0.01 |
| UV Absorbance 280nm | ≤ 0.01 | < 0.01 |
| UV Absorbance 260nm | ≤ 0.04 | < 0.01 |
| UV Absorbance 240nm | ≤ 0.10 | 0.03 |
| UV Absorbance 235nm | ≤ 0.10 | 0.04 |
| UV Absorbance 230nm | ≤ 0.20 | 0.07 |
| UV Absorbance 220nm | ≤ 0.30 | 0.14 |
| UV Absorbance 210nm | ≤ 0.60 | 0.33 |
| UV Absorbance 205nm | ≤ 1.00 | 0.68 |
| Fluorescence 254nm | ≤ 1.0 ppb | < 0.1 ppb |
| Fluorescence 365nm | ≤ 1.0 ppb | < 0.1 ppb |
| Purity (GC) | ≥ 99.90 % | 100.00 % |
| Color Test | ≤ 10 APHA | < 5 APHA |
| Water (by Karl Fischer) | ≤ 0.03 % | < 0.01 % |
| Residue on Evaporation | ≤ 0.0005 % | < 0.0001 % |
| Expiration Date Period 1800 Days | | |

Sigma-Aldrich warrants, that at the time of the quality release or subsequent retest date this product conformed to the information tained in this publication. The current Specification sheet may be available at Sigma-Aldrich.com. For further inquiries, please contact hnical Service. Purchaser must determine the suitability of the product for its particular use. See reverse side of invoice or packing slip for additional terms and conditions of sale.

Version Number: 1

LOV 2018/02/16
8 x 4L

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Website: www.sigmaaldrich.com
Email USA: techserv@sial.com
Outside USA: eurtechserv@sial.com

# Certificate of Analysis

Product Name:
Methanol - for HPLC, ≥99.9%

$CH_3OH$

| | |
|---|---|
| **Product Number:** | **34860** |
| **Batch Number:** | **SHBJ8485** |
| Brand: | SIGALD |
| CAS Number: | 67-56-1 |
| MDL Number: | MFCD00004595 |
| Formula: | CH4O |
| Formula Weight: | 32.04 g/mol |
| Quality Release Date: | 23 JAN 2018 |
| Expiration Date: | DEC 2022 |

| Test | Specification | Result |
|---|---|---|
| Appearance (Color) | Colorless | Colorless |
| Appearance (Form) | Liquid | Liquid |
| UV Absorbance 400nm | ≤ 0.01 | < 0.01 |
| UV Absorbance 280nm | ≤ 0.01 | < 0.01 |
| UV Absorbance 260nm | ≤ 0.04 | 0.01 |
| UV Absorbance 240nm | ≤ 0.10 | 0.03 |
| UV Absorbance 235nm | ≤ 0.10 | 0.04 |
| UV Absorbance 230nm | ≤ 0.20 | 0.06 |
| UV Absorbance 220nm | ≤ 0.30 | 0.14 |
| UV Absorbance 210nm | ≤ 0.60 | 0.31 |
| UV Absorbance 205nm | ≤ 1.00 | 0.62 |
| Fluorescence 254nm | ≤ 1.0 ppb | < 0.1 ppb |
| Fluorescence 365nm | ≤ 1.0 ppb | < 0.1 ppb |
| Purity (GC) | ≥ 99.90 % | 100.00 % |
| Color Test | ≤ 10 APHA | < 5 APHA |
| Water (by Karl Fischer) | ≤ 0.03 % | < 0.01 % |
| Residue on Evaporation | ≤ 0.0005 % | < 0.0001 % |
| Expiration Date Period 1800 Days | ---------- | ---------- |

Sigma-Aldrich warrants, that at the time of the quality release or subsequent retest date this product conformed to the information contained in this publication. The current Specification sheet may be available at Sigma-Aldrich.com. For further inquiries, please contact Technical Service. Purchaser must determine the suitability of the product for its particular use. See reverse side of invoice or packing slip for additional terms and conditions of sale.

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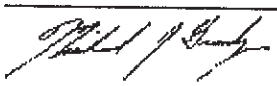
Website: www.sigmaaldrich.com
Email USA: techserv@sial.com
Outside USA: eurtechserv@sial.com

# Certificate of Analysis

**Product Number:** 34860
**Batch Number:** SHBJ8485



Michael Grady, Manager
Quality Control
Sheboygan Falls, WI US

Sigma-Aldrich warrants, that at the time of the quality release or subsequent retest date this product conformed to the information contained in this publication. The current Specification sheet may be available at Sigma-Aldrich.com. For further inquiries, please contact Technical Service. Purchaser must determine the suitability of the product for its particular use. See reverse side of invoice or packing slip for additional terms and conditions of sale.

Fisher Scientific

1 Reagent Lane
Fair Lawn, NJ 07410
201.796.7100 tel
201.796.1329 fax

# Certificate of Analysis

Fisher Scientific's Quality System has been found to conform to Quality Management System Standard ISO9001:2008 standard by SAI Global Certificate Number CERT - 0090918

This is to certify that units of the lot number below were tested and found to comply with the specifications of the grade listed. Certain data have been supplied by third parties. Fisher Scientific expressly disclaims all warranties, expressed or implied, including the implied warranties of merchantability and fitness for a particular purpose. Certain products (USP/FCC/NF/EP/BP/JP grades) are sold for use in food, drug, or medical device manufacturing. Fisher does not claim regulatory coverage under 21 CFR nor maintain DMF's with the FDA. The following are the actual analytical results obtained:

| | | | |
|---|---|---|---|
| Catalog Number | S23 | Quality Test / Release Date 7/20/2017 | |
| Lot Number | 176085 | | |
| Description | SAND, OTTAWA | | |
| Country of Origin | United States | * Suggested Retest Date | Jul-2022 |

| Result name | Units | Specifications | Test Value |
|---|---|---|---|
| APPEARANCE | | REPORT | Colorless to yellow brown beads |
| IDENTIFICATION | PASS/FAIL | = PASS TEST | PASS TEST |
| MESH SIZE | PASS/FAIL | = PASS TEST | PASS TEST |




Teresa Bailey-Wyche

Quality Assurance Specialist - Certificate of Analysis Fair Lawn

Note: The data listed is valid for all package sizes of this lot of this product, expressed as a extension of this catalog number listed above. If there are any questions with this certificate, please call Chemical Services at (800) 227-8701.
*Based on suggested storage condition.

Linda . 2017/09/21

Received 2017/09/21( 1x 3kg ):lya
Received 2017/09/21 1 bottle- CYN Preprocessing
Received 2017/09/28 8 bottles- CYN Preprocessing
Received 2017/10/16 3 bottles- CYN Preprocessing
Received 2017/11/02 1 bottle - Lakhvir Preprocessing

# REAGENT PREPARATION FORM

Reagent # 287 Replaced Reagent # 280 Analyst: GSZ

Reagent Name: 0.3% NH4OH in MeOH Preparation date: 2018/01/12 Expiry date: Daily

Final Volume: 250mL Oven No. : — Temp. : — Final Conc.: 0.3 : 99.7 v/v

Balance ID: — Pipette/Syringe/Cylinder ID: N31477F Storage: —

| CHEMICAL NAME | VOLUME/ WEIGHT | DATE RECEIVED | DATE OPENED | SUPPLIER | LOT NUMBER | EXPIRY DATE |
|---|---|---|---|---|---|---|
| NH4OH | 0.75 mL | 2017/08/15 | 2017/12/22 | Fisher | 166631 | 2020/01/31 |
| MeOH | 249.25mL | 2018/01/09 | 2018/01/12 | Sigma | SHBJ5451 | 2022/09/30 |
| | | | | | | |
| | | | GSZ 2018/01/12 | | | |
| | | | | | | |

NOTES: 250mL Class A Vol. Cylinder (3026)

Reagent # 288 Replaced Reagent # 279 Analyst: SSV

Reagent Name: 0.2% NH4OH in MeOH Preparation date: 2018/01/12 Expiry date: Daily

Final Volume: 250mL Oven No. : — Temp. : — Final Conc.: 0.2 : 99.8 v/v

Balance ID: — Pipette/Syringe/Cylinder ID: N31477F Storage: —

| CHEMICAL NAME | VOLUME/ WEIGHT | DATE RECEIVED | DATE OPENED | SUPPLIER | LOT NUMBER | EXPIRY DATE |
|---|---|---|---|---|---|---|
| NH4OH | 0.5mL | 2017/08/15 | 2017/12/22 | Fisher | 166631 | 2020/01/31 |
| MeOH | 249.5mL | 2018/01/09 | 2018/01/12 | Sigma | SHBJ 5451 | 2022/09/30 |
| | | | | | | |
| | | | | | | |
| | | | SSV 2018/01/12 | | | |

NOTES: 250 mL class A vol. cylinder # 3026

1 Reagent Lane
Fair Lawn, NJ 07410
201.796.7100 tel
201.796.1329 fax

# Certificate of Analysis

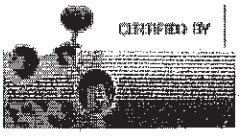
Fisher Scientific Quality System has been found to conform to Quality Management System Standard ISO9001:2008 standard by SAI Global Certificate Number CERT - 0000018.

This is to certify that units of the lot number below were tested and found to comply with the specifications of the grade listed. Certain data have been supplied by third parties. Fisher Scientific expressly disclaims all warranties, expressed or implied, including the implied warranties of merchantability and fitness for a particular purpose. Certain products (USP/FCC/NF/EP/BP/JP grades) are sold for use in food, drug, or medical device manufacturing. Fisher does not claim regulatory coverage under 21 CFR not maintain DMF's with the FDA. The following are the actual analytical results obtained.

| | | | |
|---|---|---|---|
| Catalog Number | A669 | Quality Test / Release Date | 1/17/2017 |
| Lot Number | 166631 | Expiration Date | Jan/20 |
| Description | AMMONIUM HYDROXIDE, CERTIFIED A.C.S. PLUS | | |
| Country of Origin | United States | | |
| Chemical Origin | Inorganic-non animal | | |

| | |
|---|---|
| BSE/TSE Comment | This product does not contain and is not manufactured with raw material ingredients derived from any animal products, including countries where Bovine Spongiform Encephalopathy (BSE) is known to exist. |
| Chemical Comment | This product is free from genetically modified substances and is gluten free. |

| Result name | Units | Specifications | Test Value |
|---|---|---|---|
| APPEARANCE | | REPORT | Colorless and free from suspended matter |
| ALUMINUM | ppm | <= 0.3 | 0.012 |
| ARSENIC AND ANTIMONY | ppm | <= 0.05 | <0.050 |
| ASSAY | w/w % | Inclusive Between 28.0 - 30.0 | 29.5 |
| BORON (B) | ppm | <= 0.1 | 0.001 |
| CALCIUM (Ca) | ppm | <= 0.3 | 0.008 |
| CARBON DIOXIDE | % | <= 0.002 | 0.0020 |
| CHLORIDE | ppm | <= 0.5 | <0.50 |
| CHROMIUM (Cr) | ppm | <= 0.2 | 0.001 |
| COPPER (Cu) | ppm | <= 0.1 | 0.001 |
| GOLD (Au) | ppm | <= 0.3 | 0.001 |
| HEAVY METALS (as Pb) | ppm | <= 0.5 | <0.5 |
| IDENTIFICATION | PASS/FAIL | = PASS TEST | PASS TEST |
| IRON (Fe) | ppm | <= 0.1 | 0.001 |
| LEAD (Pb) | ppm | <= 0.2 | 0.001 |
| MAGNESIUM (Mg) | ppm | <= 0.3 | 0.044 |
| MANGANESE (Mn) | ppm | <= 0.2 | 0.001 |
| NICKEL (Ni) | ppm | <= 0.1 | 0.001 |
| NITRATE (NO3) | ppm | <= 2 | <2.0 |
| PHOSPHATE (PO4) | ppm | <= 0.4 | <0.40 |
| POTASSIUM (K) | ppm | <= 0.3 | 0.002 |
| RESIDUE AFTER IGNITION | ppm | <= 3 | 3.00 |
| SODIUM (Na) | ppm | = Report | 0.015 |
| SUBSTANCES REDUCING KMNO4 | PASS/FAIL | = PASS TEST | PASS TEST |
| SULFATE (SO4) | ppm | <= 2 | <2.0 |
| TIN (Sn) | ppm | <= 0.3 | 0.001 |
| TITANIUM (Ti) | ppm | <= 0.3 | 0.001 |
| ZINC (Zn) | ppm | <= 0.3 | 0.003 |






Quality Assurance Specialist - Certificate of Analysis BPF

Note: The data listed is valid for all package sizes of this lot of this product, expressed as a extension of this catalog number listed above. If there are any questions with this certificate, please call Chemical Services at (800) 227-8701.
*Based on suggested storage condition.

Date Received: 2017.08.15 - 1 bottle -HPLC

SIGMA-ALDRICH®

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3050 Spruce Street, Saint Louis, MO 63103, USA
Website: www.sigmaaldrich.com
Email USA: techserv@sial.com
Outside USA: eurtechserv@sial.com

# Certificate of Analysis

Product Name:
Methanol - for HPLC, ≥99.9%

$CH_3OH$

| | |
|---|---|
| Product Number: | 34860 |
| Batch Number: | SHBJ5451 |
| Brand: | SIGALD |
| CAS Number: | 67-56-1 |
| MDL Number: | MFCD00004695 |
| Formula: | CH4O |
| Formula Weight: | 32.04 g/mol |
| Quality Release Date: | 27 SEP 2017 |
| Expiration Date: | SEP 2022 |

Rec'd: 2
2017/11/20
4 x 4 L
LC pump

| Test | Specification | Result |
|---|---|---|
| Appearance (Color) | Colorless | Colorless |
| Appearance (Form) | Liquid | Liquid |
| UV Absorbance 400nm | ≤ 0.01 | < 0.01 |
| UV Absorbance 280nm | ≤ 0.01 | < 0.01 |
| UV Absorbance 260nm | ≤ 0.04 | < 0.01 |
| UV Absorbance 240nm | ≤ 0.10 | 0.02 |
| UV Absorbance 235nm | ≤ 0.10 | 0.03 |
| UV Absorbance 230nm | ≤ 0.20 | 0.05 |
| UV Absorbance 220nm | ≤ 0.30 | 0.11 |
| UV Absorbance 210nm | ≤ 0.60 | 0.28 |
| UV Absorbance 205nm | ≤ 1.00 | 0.65 |
| Fluorescence 254nm | ≤ 1.0 ppb | < 0.1 ppb |
| Fluorescence 365nm | ≤ 1.0 ppb | 0.1 ppb |
| Purity (GC) | ≥ 99.90 % | 100.00 % |
| Color Test | ≤ 10 APHA | < 10 APHA |
| Water (by Karl Fischer) | ≤ 0.03 % | < 0.01 % |
| Residue on Evaporation | ≤ 0.0005 % | 0.0001 % |
| Expiration Date Period 1800 Days | | |

Sigma-Aldrich warrants, that at the time of the quality release or subsequent retest date this product conformed to the information contained in this publication. The current Specification sheet may be available at Sigma-Aldrich.com. For further inquiries, please contact Technical Service. Purchaser must determine the suitability of the product for its particular use. See reverse side of invoice or packing slip for additional terms and conditions of sale.

Version Number: 1

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Website: www.sigmaaldrich.com
Email USA: techserv@sial.com
Outside USA: eurtechserv@sial.com

# Certificate of Analysis

Product Number: 34886
Batch Number: SHBJ5451

Michael Gredy, Manager
Quality Control
Sheboygan Falls, WI US

Sigma-Aldrich warrants, that at the time of the quality release or subsequent retest date this product conformed to the information contained in this publication. The current Specification sheet may be available at Sigma-Aldrich.com. For further inquiries, please contact Technical Service. Purchaser must determine the suitability of the product for its particular use. See reverse side of invoice or packing slip for additional terms and conditions of sale.



Date Received: 2017/11/10 4x4L
Date Received: 2017/11/27 4x4L
Date Received: 2017/12/01 4x4L
Date Received: 2017/12/04 4x4L
Date Received: 2017/12/07 4x4L
Date Received: 2017/12/09 4x4L
Date Received: 2017/12/12 4x4L
Date Received: 2017/12/16 4x4L
Date Received: 2017/12/17 4x4L
Date Received: 2017/12/19 4x4L
Date Received: 2018/01/04 4x4L
Date Received: 2018/01/06 4x4L
Date Received: 2018/01/09 4x4L
Date Received: 2018/01/19 4x4L
Date Received: 2018/02/07 4x4L

# REAGENT PREPARATION FORM

Reagent # 327 Replaced Reagent # 287 Analyst: LR

Reagent Name: 0.3% NH4OH in MeOH Preparation date: 2018/01/30 Expiry date: Daily

Final Volume: 100 ml Oven No. : — Temp. : — Final Conc.: 0.3-99.7 v/v

Balance ID: — Pipette/Syringe/Cylinder ID: J4343461 Storage: Shelf

| CHEMICAL NAME | VOLUME/ WEIGHT | DATE RECEIVED | DATE OPENED | SUPPLIER | LOT NUMBER | EXPIRY DATE |
|---|---|---|---|---|---|---|
| NH4OH | 0.3 ml | 2018/01/09 | 2018/01/25 | Fisher | 172996 | 2020/08/31 |
| MeOH | 99.7 ml | 2018/01/19 | 2018/01/30 | Sigma | SHBJ5451 | 2022/09/30 |
| | | | | | | |
| | | | | 2018/01/30 LR | | |
| | | | | | | |

NOTES: Cylinder # 6394

Reagent # 328 Replaced Reagent # 323 Analyst: DMB

Reagent Name: 0.2% NH4OH in MeOH Preparation date: 2018/01/30 Expiry date: Daily

Final Volume: 1L Oven No. : — Temp. : — Final Conc.: 0.2: 99.8 v/v

Balance ID: — Pipette/Syringe/Cylinder ID: N3M77F Storage: —

| CHEMICAL NAME | VOLUME/ WEIGHT | DATE RECEIVED | DATE OPENED | SUPPLIER | LOT NUMBER | EXPIRY DATE |
|---|---|---|---|---|---|---|
| NH4OH | 2ml | 2018/01/09 | 2018/01/25 | Fisher | 172996 | 2020/08/31 |
| MeOH | 998mL | 2018/01/19 | 2018/01/30 | Sigma | SHBJ5451 | 2022/09/30 |
| | | | | | | |
| | | | | | | |
| | 2018/01/30 | | | | | |

NOTES: 1L cylinder # 5553



DO NOT WRITE BENEATH ANY INSERTS OR PLACE ANY INSERTS ON TOP OF ANY RAW DATA ENTERED ON THIS PAGE. INITIAL AND DATE ALL ENTRIES, CORRECTIONS AND INSERTS. INCLUDE ALL RELEVANT TRACEABLE REFERENCES ON ALL INSERTS

Fisher Scientific
1 Reagent Lane
Fair Lawn, NJ 07410
201.796.7100 tel
201.796.1329 fax

# Certificate of Analysis

Fisher Scientific Quality System has been found to conform to Quality Management System Standard ISO/IEC 9001:2008 standard by SAI Global Certification Number QMS 11000116

This is to certify that units of this lot number below were tested and found to comply with the specifications of the grade listed. Certain data have been supplied by third parties. Fisher Scientific expressly disclaims all warranties, expressed or implied, including the implied warranties of merchantability and fitness for a particular purpose. Certain products (ASTM, CAP/ACMG, Optima, or product) are sold for use without, and is not all Certain manufacturing Fisher does not claim acceptable coverage under 21 CFR Part 820/ISO 13485 with this lot. The Scientific and clinical analytical results obtained

| | | | |
|---|---|---|---|
| Catalog Number | A669 | Quality Test / Release Date | 6/24/2017 |
| Lot Number | 172396 | Expiration Date | Aug/2020 |
| Description | AMMONIUM HYDROXIDE, CERTIFIED A.C.S. PLUS | | |
| Country of Origin | United States | | |
| Chemical Origin | Inorganic-non animal | | |

| | |
|---|---|
| BSE/TSE Comment | This product does not contain and is not manufactured with raw material ingredients derived from any animal products, including countries where Bovine Spongiform Encephalopathy (BSE) is known to exist. |
| Chemical Comment | This product is free from genetically modified substances and is gluten free. |

| Test Name | Units | Specifications | Test Value |
|---|---|---|---|
| APPEARANCE | | REPORT | COLORLESS AND FREE FROM SUSPENDED MATTER |
| ALUMINUM | ppm | -= 5.3 | 0.002 |
| ARSENIC AND ANTIMONY | ppm | -= 5.05 | <0.050 |
| ASSAY | w/w % | Inclusive Between 28.0 - 30.0 | 29.2 |
| BORON (B) | ppm | -= 5.1 | 0.001 |
| CALCIUM (Ca) | ppm | -= 5.3 | 0.008 |
| CARBON DIOXIDE | % | -= 5.052 | <0.0021 |
| CHLORIDE | ppm | -= 5.5 | <0.50 |
| CHROMIUM (Cr) | ppm | -= 5.2 | 0.001 |
| COPPER (Cu) | ppm | -= 5.1 | 0.001 |
| GOLD (Au) | ppm | -= 5.3 | 0.001 |
| HEAVY METALS (as Pb) | ppm | -= 5.5 | <0.5 |
| IRON (Fe) | ppm | -= 5.1 | 0.001 |
| LEAD (Pb) | ppm | -= 5.2 | 0.001 |
| MAGNESIUM (Mg) | ppm | -= 5.3 | 0.001 |
| MANGANESE (Mn) | ppm | -= 5.2 | 0.001 |
| NICKEL (Ni) | ppm | -= 5.1 | 0.001 |
| NITRATE (NO3) | ppm | -= 2 | <2.0 |
| PHOSPHATE (PO4) | ppm | -= 5.4 | <5.40 |
| POTASSIUM (K) | ppm | -= 5.3 | 0.002 |
| RESIDUE AFTER IGNITION | ppm | -= 3 | <3.00 |
| SODIUM (Na) | ppm | = Report | 0.005 |
| SUBSTANCES REDUCING KMNO4 | PASS/FAIL | = PASS TEST | PASS TEST |
| SULFATE (SO4) | ppm | -= 2 | <2.0 |
| TIN (Sn) | ppm | -= 5.3 | 0.001 |
| TITANIUM (Ti) | ppm | -= 5.3 | 0.001 |
| ZINC (Zn) | ppm | -= 5.3 | 0.003 |

Quality Assurance Specialist - Certificate of Analysis EPF

Note: The data listed is valid for all package sizes of this lot of this product, unless noted as a subdivision of this catalog number listed above. If there are any questions with this certificate, please see Chemical Services at (800) 926-6161 Revised lot supported always considered

Date Received: 2017/12/28-RAZ-P2B
Date Received: 2018/01/09-lov-HPLC 1X500ml

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Website: www.sigmaaldrich.com
Email USA: techserv@sial.com
Outside USA: eurtechserv@sial.com

# Certificate of Analysis

Product Name:
Methanol - for HPLC, ≥99.9%

$CH_3OH$

| | |
|---|---|
| **Product Number:** | **34860** |
| **Batch Number:** | **SHBJ5451** |
| Brand: | SIGALD |
| CAS Number: | 67-56-1 |
| MDL Number: | MFCD00004595 |
| Formula: | CH4O |
| Formula Weight: | 32.04 g/mol |
| Quality Release Date: | 27 SEP 2017 |
| Expiration Date: | SEP 2022 |

Rec'd: 9
2017/11/20
4 x 4 L
LC samp

| Test | Specification | Result |
|---|---|---|
| Appearance (Color) | Colorless | Colorless |
| Appearance (Form) | Liquid | Liquid |
| UV Absorbance 400nm | ≤ 0.01 | < 0.01 |
| UV Absorbance 280nm | ≤ 0.01 | < 0.01 |
| UV Absorbance 260nm | ≤ 0.04 | < 0.01 |
| UV Absorbance 240nm | ≤ 0.10 | 0.02 |
| UV Absorbance 235nm | ≤ 0.10 | 0.03 |
| UV Absorbance 230nm | ≤ 0.20 | 0.05 |
| UV Absorbance 220nm | ≤ 0.30 | 0.11 |
| UV Absorbance 210nm | ≤ 0.60 | 0.28 |
| UV Absorbance 205nm | ≤ 1.00 | 0.65 |
| Fluorescence 254nm | ≤ 1.0 ppb | < 0.1 ppb |
| Fluorescence 365nm | ≤ 1.0 ppb | 0.1 ppb |
| Purity (GC) | ≥ 99.90 % | **100.00 %** |
| Color Test | ≤ 10 APHA | < 10 APHA |
| Water (by Karl Fischer) | ≤ 0.03 % | < 0.01 % |
| Residue on Evaporation | ≤ 0.0005 % | **0.0001 %** |
| Expiration Date Period 1800 Days | ---------- | ---------- |

Sigma-Aldrich warrants, that at the time of the quality release or subsequent retest date this product conformed to the information contained in this publication. The current Specification sheet may be available at Sigma-Aldrich.com. For further inquiries, please contact Technical Service. Purchaser must determine the suitability of the product for its particular use. See reverse side of invoice or packing slip for additional terms and conditions of sale.

Version Number: 1

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Website: www.sigmaaldrich.com
Email USA: techserv@sial.com
Outside USA: eurtechserv@sial.com

# Certificate of Analysis

Product Number: 34860
Batch Number: SHBJ5451

Michael Grady, Manager
Quality Control
Sheboygan Falls, WI US

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Date Received: 2017/11/10 4x4L
Date Received: 2017/11/27 4x4L
Date Received: 2017/12/01 4x4L
Date Received: 2017/12/04 4x4L
Date Received: 2017/12/07 4x4L
Date Received: 2017/12/09 4x4L
Date Received: 2017/12/12 4x4L
Date Received: 2017/12/16 4x4L
Date Received: 2017/12/17 4x4L
Date Received: 2017/12/19 4x4L
Date Received: 2018/01/04 4x4L
Date Received: 2018/01/06 4x4L
Date Received: 2018/01/09 4x4L
Date Received: 2018/01/19 4x4L

# REAGENT PREPARATION FORM

Reagent # 331 Replaced Reagent # 327 Analyst: GSZ

Reagent Name: 0.3% $NH_4OH$ in MeOH Preparation date: 2018/01/31 Expiry date: Daily

Final Volume: 100ml Oven No. : — Temp. : — Final Conc.: 0.3 : 99.7 v/v

Balance ID: — Pipette/Syringe/Cylinder ID: V434346 Storage: —

| CHEMICAL NAME | VOLUME/ WEIGHT | DATE RECEIVED | DATE OPENED | SUPPLIER | LOT NUMBER | EXPIRY DATE |
|---|---|---|---|---|---|---|
| $NH_4OH$ | 0.3 ml | 2018/01/09 | 2018/01/25 | Fisher | 172996 | 2020/08/31 |
| MeOH | 99.7 ml | 2018/01/19 | 2018/01/30 | Sigma | SHBJ5451 | 2022/09/30 |
| | | | GSZ, 2018/01/31 | | | |
| | | | | | | |
| | | | | | | |

NOTES: 100ml Class A Vol. Cylinder (6394)

Reagent # 332 Replaced Reagent # 325 Analyst: SSV

Reagent Name: FMOC Preparation date: 2018/01/31 Expiry date: Daily

Final Volume: ~~25ml~~ 50ml Oven No. : SSV 2018/01/31 Temp. : Final Conc.:

Balance ID: FC-1 Pipette/Syringe/Cylinder ID: 0603 Storage: Shelf

| CHEMICAL NAME | VOLUME/ WEIGHT | DATE RECEIVED | DATE OPENED | SUPPLIER | LOT NUMBER | EXPIRY DATE |
|---|---|---|---|---|---|---|
| FMOC | 0.0752g | 2017/04/06 | 2018/01/09 | Aldrich | WXBC3138V | 2022/04/06 |
| ACN | 50ml | 2017/09/20 | 2018/01/09 | Fisher | 172966 | 2022/05/31 |
| | | | | | | |
| | | | | | | |
| | | | SSV 2018/01/31 | | | |

NOTES:

DO NOT WRITE BENEATH ANY INSERTS OR PLACE ANY INSERTS ON TOP OF ANY RAW DATA ENTERED ON THIS PAGE. INITIAL AND DATE ALL ENTRIES, CORRECTIONS AND INSERTS. INCLUDE ALL RELEVANT TRACEABLE REFERENCES ON ALL INSERTS.
ONLY CLASS A GLASSWARE IS USED FOR THE PREPARATION OF REAGENTS WHEN APPLICABLE.

Fisher Scientific
1 Reagent Lane
Fair Lawn, NJ 07410
201.796.7100 tel
201.796.1329 fax

# Certificate of Analysis

Fisher Scientific Quality System has been found to conform to Quality Management System Standard ISO/IEC 9001:2008 standards by SAI Global Certification Number QMS - 004018

This is to certify that units of the lot number below were tested and found to comply with the specifications of this grade listed. Certain data have been supplied by third parties. Fisher Scientific expressly disclaims all warranties, expressed or implied, including the implied warranties of merchantability and fitness for a particular purpose. Certain products (specifically CLIA waived kits) are sold for use in clinical, waived, or medical tests manufactured by Fisher does not assume responsibility for usage under CLIA or medical laws within the U.S.A. This warranty and the stated analytical results contained

| | | | |
|---|---|---|---|
| Catalog Number | A669 | Quality Test / Release Date | 6/24/2017 |
| Lot Number | 172396 | Expiration Date | Aug/2020 |
| Description | AMMONIUM HYDROXIDE, CERTIFIED A.C.S. PLUS | | |
| Country of Origin | United States | | |
| Chemical Origin | Inorganic-non animal | | |
| BSE/TSE Comment | This product does not contain and is not manufactured with raw material ingredients derived from any animal products, including countries where Bovine Spongiform Encephalopathy (BSE) is known to exist. | | |
| Chemical Comment | This product is free from genetically modified substances and is gluten free. | | |

| Test Name | Units | Specifications | Test Value |
|---|---|---|---|
| APPEARANCE | | REPORT | COLORLESS AND FREE FROM SUSPENDED MATTER |
| ALUMINUM | ppm | -= 5.3 | 0.002 |
| ARSENIC AND ANTIMONY | ppm | -= 5.05 | -0.050 |
| ASSAY | w/w % | Inclusive Between 28.0 - 30.0 | 29.2 |
| BORON (B) | ppm | -= 5.1 | 0.001 |
| CALCIUM (Ca) | ppm | -= 5.3 | 0.003 |
| CARBON DIOXIDE | % | -= 5.002 | -0.0123 |
| CHLORIDE | ppm | -= 5.5 | -5.53 |
| CHROMIUM (Cr) | ppm | -= 5.2 | 0.001 |
| COPPER (Cu) | ppm | -= 5.1 | 0.001 |
| GOLD (Au) | ppm | -= 5.3 | 0.001 |
| HEAVY METALS (as Pb) | ppm | -= 5.5 | -0.5 |
| IRON (Fe) | ppm | -= 5.1 | 0.001 |
| LEAD (Pb) | ppm | -= 5.2 | 0.001 |
| MAGNESIUM (Mg) | ppm | -= 5.3 | 0.001 |
| MANGANESE (Mn) | ppm | -= 5.2 | 0.001 |
| NICKEL (Ni) | ppm | -= 5.1 | 0.001 |
| NITRATE (NO3) | ppm | -= 2 | -2.0 |
| PHOSPHATE (PO4) | ppm | -= 5.4 | -0.40 |
| POTASSIUM (K) | ppm | -= 5.3 | 0.002 |
| RESIDUE AFTER IGNITION | ppm | -= 3 | -3.00 |
| SODIUM (Na) | ppm | = Report | 0.005 |
| SUBSTANCES REDUCING KMNO4 | PASS/FAIL | = PASS TEST | PASS TEST |
| SULFATE (SO4) | ppm | -= 2 | -2.0 |
| TIN (Sn) | ppm | -= 5.3 | 0.001 |
| TITANIUM (Ti) | ppm | -= 5.3 | 0.001 |
| ZINC (Zn) | ppm | -= 5.3 | 0.003 |

Quality Assurance Specialist - Certificate of Analysis EPF

Note: The data listed is valid for all package sizes of this lot of this product, unless noted on a subsequent line of the catalog number listed above. If there are any questions with this certificate, please call Customer Service at (800) 926-4161.
Toward 4th supported always confident

Date Received: 2017/12/28-RAZ-P2B
Date Received: 2018/01/09-lov-HPLC 1X500ml

SIGMA-ALDRICH®

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Email USA: techserv@sial.com
Outside USA: eurtechserv@sial.com

# Certificate of Analysis

Product Name:
Methanol - for HPLC, ≥99.9%

$CH_3OH$

| | |
|---|---|
| Product Number: | 34860 |
| Batch Number: | SHBJ5451 |
| Brand: | SIGALD |
| CAS Number: | 67-56-1 |
| MDL Number: | MFCD00004595 |
| Formula: | CH4O |
| Formula Weight: | 32.04 g/mol |
| Quality Release Date: | 27 SEP 2017 |
| Expiration Date: | SEP 2022 |

Rec'd: 9
2017/11/20
4 x 4 L
LC pump

| Test | Specification | Result |
|---|---|---|
| Appearance (Color) | Colorless | Colorless |
| Appearance (Form) | Liquid | Liquid |
| UV Absorbance 400nm | ≤ 0.01 | < 0.01 |
| UV Absorbance 280nm | ≤ 0.01 | < 0.01 |
| UV Absorbance 260nm | ≤ 0.04 | < 0.01 |
| UV Absorbance 240nm | ≤ 0.10 | 0.02 |
| UV Absorbance 235nm | ≤ 0.10 | 0.03 |
| UV Absorbance 230nm | ≤ 0.20 | 0.05 |
| UV Absorbance 220nm | ≤ 0.30 | 0.11 |
| UV Absorbance 210nm | ≤ 0.60 | 0.28 |
| UV Absorbance 205nm | ≤ 1.00 | 0.65 |
| Fluorescence 254nm | ≤ 1.0 ppb | < 0.1 ppb |
| Fluorescence 365nm | ≤ 1.0 ppb | 0.1 ppb |
| Purity (GC) | ≥ 99.90 % | 100.00 % |
| Color Test | ≤ 10 APHA | < 10 APHA |
| Water (by Karl Fischer) | ≤ 0.03 % | < 0.01 % |
| Residue on Evaporation | ≤ 0.0005 % | 0.0001 % |
| Expiration Date Period 1300 Days | | |

Sigma-Aldrich warrants, that at the time of the quality release or subsequent retest date this product conformed to the information contained in this publication. The current Specification sheet may be available at Sigma-Aldrich.com. For further inquiries, please contact Technical Service. Purchaser must determine the suitability of the product for its particular use. See reverse side of invoice or packing slip for additional terms and conditions of sale.

Version Number: 1

SIGMA-ALDRICH

sigma-aldrich.com

3050 Spruce Street, Saint Louis, MO 63103, USA
Website: www.sigmaaldrich.com
Email USA: techserv@sial.com
Outside USA: eurtechserv@sial.com

# Certificate of Analysis

Product Number: 34860
Batch Number: SHBJ5451

Michael Grady, Manager
Quality Control
Sheboygan Falls, WI US

Sigma-Aldrich warrants, that at the time of the quality release or subsequent retest date this product conformed to the information contained in this publication. The current Specification sheet may be available at Sigma-Aldrich.com. For further inquiries, please contact Technical Service. Purchaser must determine the suitability of the product for its particular use. See reverse side of invoice or packing slip for additional terms and conditions of sale.



Date Received: 2017/11/10 4x4L
Date Received: 2017/11/27 4x4L
Date Received: 2017/12/01 4x4L
Date Received: 2017/12/04 4x4L
Date Received: 2017/12/07 4x4L
Date Received: 2017/12/09 4x4L
Date Received: 2017/12/12 4x4L
Date Received: 2017/12/16 4x4L
Date Received: 2017/12/17 4x4L
Date Received: 2017/12/19 4x4L
Date Received: 2018/01/04 4x4L
Date Received: 2018/01/06 4x4L
Date Received: 2018/01/09 4x4L
Date Received: 2018/01/19 4x4L

# REAGENT PREPARATION FORM

Reagent # 355 Replaced Reagent # 350 Analyst: 652

Reagent Name: 0.3% NH4OH in MeOH Preparation date: 2018/02/12 Expiry date: Daily

Final Volume: 250ml Oven No. : — Temp. : — Final Conc.: 0.3 : 99.7 v/v

Balance ID: — Pipette/Syringe/Cylinder ID: J434346 Storage: —

| CHEMICAL NAME | VOLUME/ WEIGHT | DATE RECEIVED | DATE OPENED | SUPPLIER | LOT NUMBER | EXPIRY DATE |
|---|---|---|---|---|---|---|
| NH4OH | 0.75 mL | 2018/01/09 | 2018/01/25 | Fisher | 172996 | 2020/07/31 |
| MeOH | 249.25 mL | 2018/02/07 | 2018/02/09 | Sigma | SHBJ5495 | 2022/09/30 |
| | | | | | | |
| | | 652, 2018/02/12 | | | | |
| | | | | | | |

NOTES: 250ml Class A Vol. Cylinder (3026)

Reagent # 356 Replaced Reagent # _____ Analyst: JB

Reagent Name: FMOC Preparation date: 2018/02/12 Expiry date: Daily

Final Volume: _____ Oven No. : _____ Temp. : _____ Final Conc.: _____

Balance ID: _____ Pipette/Syringe/Cylinder ID: _____ Storage: _____

| CHEMICAL NAME | VOLUME/ WEIGHT | DATE RECEIVED | DATE OPENED | SUPPLIER | LOT NUMBER | EXPIRY DATE |
|---|---|---|---|---|---|---|
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |

NOTES:

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ONLY CLASS A GLASSWARE IS USED FOR THE PREPARATION OF REAGENTS WHEN APPLICABLE.

Fisher Scientific
1 Reagent Lane
Fair Lawn, NJ 07410
201.796.7100 tel
201.796.1329 fax

# Certificate of Analysis

| | | | |
|---|---|---|---|
| Catalog Number | A669 | Quality Test / Release Date | 8/24/2017 |
| Lot Number | 172386 | Expiration Date | Aug/2020 |
| Description | AMMONIUM HYDROXIDE, CERTIFIED A.C.S. PLUS | | |
| Country of Origin | United States | | |
| Chemical Origin | Inorganic-non animal | | |
| BSE/TSE Comment | This product does not contain and is not manufactured with raw material ingredients derived from any animal products, including countries where Bovine Spongiform Encephalopathy (BSE) is known to exist. | | |
| Chemical Comment | This product is free from genetically modified substances and is gluten free. | | |

| Test Name | Units | Specifications | Test Value |
|---|---|---|---|
| APPEARANCE | | REPORT | COLORLESS AND FREE FROM SUSPENDED MATTER |
| ALUMINUM | ppm | <= 5.3 | 0.002 |
| ARSENIC AND ANTIMONY | ppm | <= 5.05 | <0.050 |
| ASSAY | wt/ % | Inclusive Between 28.0 - 30.0 | 29.2 |
| BORON (B) | ppm | <= 5.1 | 0.001 |
| CALCIUM (Ca) | ppm | <= 5.3 | 0.008 |
| CARBON DIOXIDE | % | <= 5.052 | <0.0020 |
| CHLORIDE | ppm | <= 5.5 | <0.50 |
| CHROMIUM (Cr) | ppm | <= 5.2 | 0.001 |
| COPPER (Cu) | ppm | <= 5.1 | 0.001 |
| GOLD (Au) | ppm | <= 5.3 | 0.001 |
| HEAVY METALS (as Pb) | ppm | <= 5.5 | <0.5 |
| IRON (Fe) | ppm | <= 5.1 | 0.001 |
| LEAD (Pb) | ppm | <= 5.2 | 0.001 |
| MAGNESIUM (Mg) | ppm | <= 5.3 | 0.001 |
| MANGANESE (Mn) | ppm | <= 5.2 | 0.001 |
| NICKEL (Ni) | ppm | <= 5.1 | 0.001 |
| NITRATE (NO3) | ppm | <= 2 | <2.0 |
| PHOSPHATE (PO4) | ppm | <= 5.4 | <0.40 |
| POTASSIUM (K) | ppm | <= 5.3 | 0.002 |
| RESIDUE AFTER IGNITION | ppm | <= 3 | <3.00 |
| SODIUM (Na) | ppm | = Report | 0.005 |
| SUBSTANCES REDUCING KMNO4 | PASS/FAIL | = PASS TEST | PASS TEST |
| SULFATE (SO4) | ppm | <= 2 | <2.0 |
| TIN (Sn) | ppm | <= 5.3 | 0.001 |
| TITANIUM (Ti) | ppm | <= 5.3 | 0.001 |
| ZINC (Zn) | ppm | <= 5.3 | 0.003 |

Quality Assurance Specialist - Certificate of Analysis EPF

Note: The data listed is valid for all package sizes of this lot of this product, unless noted in a subversion of this catalog number listed above. If there are any questions with this certificate, please call Customer Service at (800)766-7000. Trained QA supported always on-duty.

Date Received: 2017/12/28-RAZ-P2B
Date Received: 2018/01/09-lov-HPLC 1X500ml

SIGMA-ALDRICH®

sigma-aldrich.com

3050 Spruce Street, Saint Louis, MO 63103, USA
Website: www.sigmaaldrich.com
Email USA: techserv@sial.com
Outside USA: eurtechserv@sial.com

# Certificate of Analysis

Product Name:
Methanol - for HPLC, ≥99.9%

| | |
|---|---|
| **Product Number:** | **34860** |
| **Batch Number:** | **SHBJ5451** |
| Brand: | SIGALD |
| CAS Number: | 67-56-1 |
| MDL Number: | MFCD00004595 |
| Formula: | CH4O |
| Formula Weight: | 32.04 g/mol |
| Quality Release Date: | 27 SEP 2017 |
| Expiration Date: | SEP 2022 |

$CH_3OH$

Rec'd: 2017/11/20
4 x 4 L
LC pump

| Test | Specification | Result |
|---|---|---|
| Appearance (Color) | Colorless | Colorless |
| Appearance (Form) | Liquid | Liquid |
| UV Absorbance 400nm | ≤ 0.01 | < 0.01 |
| UV Absorbance 280nm | ≤ 0.01 | < 0.01 |
| UV Absorbance 260nm | ≤ 0.04 | < 0.01 |
| UV Absorbance 240nm | ≤ 0.10 | 0.02 |
| UV Absorbance 235nm | ≤ 0.10 | 0.03 |
| UV Absorbance 230nm | ≤ 0.20 | 0.05 |
| UV Absorbance 220nm | ≤ 0.30 | 0.11 |
| UV Absorbance 210nm | ≤ 0.60 | 0.28 |
| UV Absorbance 205nm | ≤ 1.00 | 0.65 |
| Fluorescence 254nm | ≤ 1.0 ppb | < 0.1 ppb |
| Fluorescence 365nm | ≤ 1.0 ppb | 0.1 ppb |
| Purity (GC) | ≥ 99.90 % | 100.00 % |
| Color Test | ≤ 10 APHA | < 10 APHA |
| Water (by Karl Fischer) | ≤ 0.03 % | < 0.01 % |
| Residue on Evaporation | ≤ 0.0005 % | 0.0001 % |
| Expiration Date Period 1800 Days | | |

Sigma-Aldrich warrants, that at the time of the quality release or subsequent retest date this product conformed to the information contained in this publication. The current Specification sheet may be available at Sigma-Aldrich.com. For further inquiries, please contact Technical Service. Purchaser must determine the suitability of the product for its particular use. See reverse side of invoice or packing slip for additional terms and conditions of sale.

Version Number: 1

SIGMA-ALDRICH®

sigma-aldrich.com

3050 Spruce Street, Saint Louis, MO 63103, USA
Website: www.sigmaaldrich.com
Email USA: techserv@sial.com
Outside USA: eurtechserv@sial.com

# Certificate of Analysis

Product Number: 34860
Batch Number: SHBJ5451

Michael Grady, Manager
Quality Control
Sheboygan Falls, WI US

Sigma-Aldrich warrants, that at the time of the quality release or subsequent retest date this product conformed to the information contained in this publication. The current Specification sheet may be available at Sigma-Aldrich.com. For further inquiries, please contact Technical Service. Purchaser must determine the suitability of the product for its particular use. See reverse side of invoice or packing slip for additional terms and conditions of sale.



Date Received: 2017/11/10 4x4L
Date Received: 2017/11/27 4x4L
Date Received: 2017/12/01 4x4L
Date Received: 2017/12/04 4x4L
Date Received: 2017/12/07 4x4L
Date Received: 2017/12/09 4x4L
Date Received: 2017/12/12 4x4L
Date Received: 2017/12/16 4x4L
Date Received: 2017/12/17 4x4L
Date Received: 2017/12/19 4x4L
Date Received: 2018/01/04 4x4L
Date Received: 2018/01/06 4x4L
Date Received: 2018/01/09 4x4L
Date Received: 2018/01/19 4x4L
Date Received: 2018/02/07 4x4L

# REAGENT PREPARATION FORM

Reagent # 365 Replaced Reagent # 363 Analyst: SSV

Reagent Name: 0.2% $NH_4OH$ Preparation date: 2018/02/16 Expiry date: Daily

Final Volume: 1L Oven No. : — Temp. : — Final Conc.: 0.2% 99.8 v/v

Balance ID: — Pipette/Syringe/Cylinder ID: I47987G Storage: —

| CHEMICAL NAME | VOLUME/ WEIGHT | DATE RECEIVED | DATE OPENED | SUPPLIER | LOT NUMBER | EXPIRY DATE |
|---|---|---|---|---|---|---|
| $NH_4OH$ | 2mL | 2018/01/09 | 2018/01/25 | Fisher | 172996 | 2020/08/31 |
| meoh | 998mL | 2018/01/31 | 2018/02/16 | sigma | SHBJ7527 | 2022/11/30 |
| | | | | | | |
| | | | | SSV | | |
| | | | 2018/02/16 | | | |

NOTES: 1L cylinder # 5553

Reagent # 366 Replaced Reagent # 362 Analyst: LR

Reagent Name: DNPH Soln Preparation date: 2018/02/16 Expiry date: Daily

Final Volume: 10ml Oven No. : — Temp. : — Final Conc.: See Below

Balance ID: FC-1 Pipette/Syringe/Cylinder ID: K55191G Storage: —

| CHEMICAL NAME | VOLUME/ WEIGHT | DATE RECEIVED | DATE OPENED | SUPPLIER | LOT NUMBER | EXPIRY DATE |
|---|---|---|---|---|---|---|
| DNPH | 0.0501g | 2016/07/15 | 2016/07/15 | Spectrum | ZEK0212 | 2022/08/31 |
| ACN | 10ml | 2017/09/20 | 2018/01/09 | Fisher | 172966 | 2022/05/31 |
| | | | | | | |
| | | | | LR | | |
| | | | 2018/02/16 | | | |

NOTES:



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ONLY CLASS A GLASSWARE IS USED FOR THE PREPARATION OF REAGENTS WHEN APPLICABLE.

Fisher Scientific
1 Reagent Lane
Fair Lawn, NJ 07410
201.796.7100 tel
201.796.1329 fax

# Certificate of Analysis

Fisher Scientific Supply Systems has been found to conform to Quality Management System Standard ISO/IEC/EN 9001:2008 accredited by SAI Global Certification Number QMS 13 - 000518

We hereby certify that units of this lot number have been tested and found to comply with the specifications of this grade listed. Certain data have been supplied by third parties. Fisher Scientific expressly disclaims all warranties, expressed or implied, including the implied warranties of merchantability and fitness for a particular purpose. Certain products, including in vitro diagnostic products, are sold for research use only, and not for use in diagnostic procedures, drug, or medical device manufacturing. Please direct any claims regarding coverage under 21 CFR non-exempt LIMS with the FDA. The following are the actual analytical results obtained.

| | | | |
|---|---|---|---|
| Catalog Number | A669 | Quality Test / Release Date | 6/24/2017 |
| Lot Number | 172996 | Expiration Date | Aug/2020 |
| Description | AMMONIUM HYDROXIDE, CERTIFIED A.C.S. PLUS | | |
| Country of Origin | United States | | |
| Chemical Origin | Inorganic-non animal | | |

| | |
|---|---|
| BSE/TSE Comment | This product does not contain and is not manufactured with raw material ingredients derived from any animal products, including countries where Bovine Spongiform Encephalopathy (BSE) is known to exist. |
| Chemical Comment | This product is free from genetically modified substances and is gluten free. |

| Test Name | Units | Specifications | Test Value |
|---|---|---|---|
| APPEARANCE | | REPORT | COLORLESS AND FREE FROM SUSPENDED MATTER |
| ALUMINUM | ppm | -<= 5.3 | 0.002 |
| ARSENIC AND ANTIMONY | ppm | -<= 5.05 | -0.050 |
| ASSAY | Wt/ % | Inclusive Between 28.0 - 30.0 | 29.2 |
| BORON (B) | ppm | -<= 5.1 | 0.001 |
| CALCIUM (Ca) | ppm | -<= 5.3 | 0.008 |
| CARBON DIOXIDE | % | -<= 0.052 | -0.0020 |
| CHLORIDE | ppm | -<= 5.5 | -0.50 |
| CHROMIUM (Cr) | ppm | -<= 5.2 | 0.001 |
| COPPER (Cu) | ppm | -<= 5.1 | 0.001 |
| GOLD (Au) | ppm | -<= 5.3 | 0.001 |
| HEAVY METALS (as Pb) | ppm | -<= 5.5 | -0.5 |
| IRON (Fe) | ppm | -<= 5.1 | 0.001 |
| LEAD (Pb) | ppm | -<= 5.2 | 0.001 |
| MAGNESIUM (Mg) | ppm | -<= 5.3 | 0.001 |
| MANGANESE (Mn) | ppm | -<= 5.2 | 0.001 |
| NICKEL (Ni) | ppm | -<= 5.1 | 0.001 |
| NITRATE (NO3) | ppm | -<= 2 | -2.0 |
| PHOSPHATE (PO4) | ppm | -<= 5.4 | -5.40 |
| POTASSIUM (K) | ppm | -<= 5.3 | 0.002 |
| RESIDUE AFTER IGNITION | ppm | -<= 3 | -3.00 |
| SODIUM (Na) | ppm | = Report | 0.005 |
| SUBSTANCES REDUCING KMNO4 | PASS/FAIL | = PASS TEST | PASS TEST |
| SULFATE (SO4) | ppm | -<= 2 | -2.0 |
| TIN (Sn) | ppm | -<= 5.3 | 0.001 |
| TITANIUM (Ti) | ppm | -<= 5.3 | 0.001 |
| ZINC (Zn) | ppm | -<= 5.3 | 0.003 |

Quality Assurance Specialist - Certificate of Analysis IRPF

Note: The date listed is valid for all package sizes of this lot of this product, unless noted as a extension of the existing number listed above. If there are any questions with this certificate, please call Chemical Services at (800) 227-6701
*Stored at suggested storage conditions

Date Received: 2017/12/28-RAZ-P2B
Date Received: 2018/01/09-lov-HPLC 1X500ml

SIGMA-ALDRICH

sigma-aldrich.com

3050 Spruce Street, Saint Louis, MO 63103, USA
Website: www.sigmaaldrich.com
Email USA: techserv@sial.com
Outside USA: eurtechserv@sial.com

# Certificate of Analysis

Product Name:
Methanol - for HPLC, ≥99.9%

| | |
|---|---|
| Product Number: | 34860 |
| Batch Number: | SHBJ7527 |
| Brand: | SIGALD |
| CAS Number: | 67-56-1 |
| MDL Number: | MFCD00004595 |
| Formula: | CH4O |
| Formula Weight: | 32.04 g/mol |
| Quality Release Date: | 18 DEC 2017 |
| Expiration Date: | NOV 2022 |

$CH_3OH$

HPLC
3Bottles
2018/01/31
E. G

| Test | Specification | Result |
|---|---|---|
| Appearance (Color) | Colorless | Colorless |
| Appearance (Form) | Liquid | Liquid |
| UV Absorbance 400nm | ≤ 0.01 | < 0.01 |
| UV Absorbance 280nm | ≤ 0.01 | < 0.01 |
| UV Absorbance 260nm | ≤ 0.04 | 0.01 |
| UV Absorbance 240nm | ≤ 0.10 | 0.03 |
| UV Absorbance 235nm | ≤ 0.10 | 0.05 |
| UV Absorbance 230nm | ≤ 0.20 | 0.07 |
| UV Absorbance 220nm | ≤ 0.30 | 0.14 |
| UV Absorbance 210nm | ≤ 0.60 | 0.33 |
| UV Absorbance 205nm | ≤ 1.00 | 0.84 |
| Fluorescence 254nm | ≤ 1.0 ppb | < 0.1 ppb |
| Fluorescence 365nm | ≤ 1.0 ppb | < 0.1 ppb |
| Purity (GC) | ≥ 99.90 % | 99.94 % |
| Color Test | ≤ 10 APHA | < 5 APHA |
| Water (by Karl Fischer) | ≤ 0.03 % | < 0.01 % |
| Residue on Evaporation | ≤ 0.0005 % | 0.0001 % |
| Expiration Date Period 1800 Days | | |

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Version Number: 1

# REAGENT PREPARATION FORM

Reagent # 369 Replaced Reagent # 268 Analyst: DM3

Reagent Name: 0.2% NH4OH Preparation date: 2018/04/20 Expiry date: daily

Final Volume: 1L Oven No. : – Temp. : – Final Conc.: 0.2 : 99.8 v/v

Balance ID: – Pipette/Syringe/Cylinder ID: J43434G Storage: –

| CHEMICAL NAME | VOLUME/ WEIGHT | DATE RECEIVED | DATE OPENED | SUPPLIER | LOT NUMBER | EXPIRY DATE |
|---|---|---|---|---|---|---|
| NH4OH | 2mL | 2018/01/09 | 2018/01/25 | Fisher | 172996 | 2020/07/31 |
| MeOH | 998mL | 2018/02/07 | 2018/02/20 | Sigma | SHBJ5451 | 2022/04/30 |
| | | | | | | |
| | | 2018/04/20 DM3 | | | | |
| | | | | | | |

NOTES: 1L cylinder # 5553

Reagent # 370 Replaced Reagent # 358 Analyst: DM3 2018/04/20

Reagent Name: 2% Formic Acid Preparation date: 2018/04/20 Expiry date: ~~2.98 v/v~~ daily DM3 2018/04/20 DM3 2018/04/20

Final Volume: 1L Oven No. : – Temp. : – Final Conc.: 2.98 v/v

Balance ID: – Pipette/Syringe/Cylinder ID: K551916 Storage: Shelf

| CHEMICAL NAME | VOLUME/ WEIGHT | DATE RECEIVED | DATE OPENED | SUPPLIER | LOT NUMBER | EXPIRY DATE |
|---|---|---|---|---|---|---|
| Formic Acid | 20mL | 2018/08/15 | 2018/11/07 | Sigma | SHBJ1624 | 2018/05/31 |
| LCMS H2O | 980mL | 2018/03/31 | 2018/02/20 | Fisher | 57292 | 2018/10/31 |
| | | | | | | |
| | | | | | | |
| | | 2018/04/20 | DM3 | | | |

NOTES: 1L cylinder # 5553



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SIGMA-ALDRICH

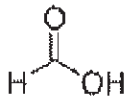
sigma-aldrich.com

3050 Spruce Street, Saint Louis, MO 63103, USA
Website: www.sigmaaldrich.com
Email USA: techserv@sial.com
Outside USA: eurtechserv@sial.com

# Certificate of Analysis

Product Name:
Formic acid - reagent grade, ≥95%

| | |
|---|---|
| Product Number: | F0507 |
| Batch Number: | SHBJ1624 |
| Brand: | SIGALD |
| CAS Number: | 64-18-6 |
| MDL Number: | MFCD00003207 |
| Formula: | CH2O2 |
| Formula Weight: | 46.03 g/mol |
| Quality Release Date: | 24 MAY 2017 |
| Expiration Date: | MAY 2018 |



| Test | Specification | Result |
|---|---|---|
| Appearance (Turbidity) | Clear | Clear |
| Appearance (Color) | Colorless to Very Faint Yellow | Very Faint Yellow |
| Appearance (Form) | Liquid | Liquid |
| Proton NMR Spectrum | Conforms to Structure | Conforms |
| Solvent Content | ≤ 1.0 % | < 0.5 % |
| Acetic Acid by NMR | | |
| Water (by Karl Fischer) | 2.0 - 2.5 % | 2.1 % |
| Titration with NaOH | ≥ 95.0 % | 97.2 % |
| Expiration Date Period | ---------- | ---------- |
| 1 Year | | |

Michael Grady, Manager
Quality Control
Sheboygan Falls, WI US

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Date Received:2017/08/11-SSB-1 bottle-P2A
Date Received:2017/08/25 -SSB-1 bottle-P2A
Date Received:2017/08/29-SSB-1 bottle-P2A
Date Received:2017/12/07-SSB-1 bottle-P2A

## Certificate of Analysis

MilliporeSigma

Date of Release: 10/27/2017

Name: Water
OmniSolv® For LC/MS

Item No: WX0001-1, WX0001-6, WX0001-901

Lot / Batch No: 57297

Country of Origin: USA

| Characteristic | Requirement | | Results | Units |
|---|---|---|---|---|
| | Min. | Max. | | |
| Expiration date | | | 31-OCT-2018 | |
| Evaporation residue | | 1 | < 0.5 | ppm |
| Filtered through 0.2 µm filter | | | Passes test | |
| Fluorescence as quinine at 254 nm | | 1 | < 1 | ppb |
| Fluorescence as quinine at 365 nm | | 1 | < 1 | ppb |
| Gradient at 210 nm | | 2 | 0.22 | mAU |
| Gradient at 254 nm | | 0.5 | 0.09 | mAU |
| LC/MS Purity (4-nitrophenol) | | 50 | <50 | ppb |
| LC/MS Purity (reserpine) | | 50 | <50 | ppb |
| Meets criteria for LC/MS | | | Conforms | |
| UV Abs. at 205 nm | | 0.01 | < 0.001 | AU |
| UV Abs. at 210 nm | | 0.01 | < 0.001 | AU |
| UV Abs. at 220 nm | | 0.01 | < 0.001 | AU |
| UV Abs. at 230 nm | | 0.01 | < 0.001 | AU |
| UV Abs. at 240 nm | | 0.01 | < 0.001 | AU |
| UV Abs. at 250 nm | | 0.009 | < 0.001 | AU |
| UV Abs. at 270 nm | | 0.005 | < 0.001 | AU |
| UV Abs. at 400–280 nm | | 0.005 | < 0.001 | AU |
| UV Cut-off | | 190 | < 190 | nm |

Dr. Oliver Schramel
Quality Control Manager
This document has been produced electronically and is valid without a signature.

EMD Millipore Corporation, an affiliate of Merck KGaA, Darmstadt, Germany
290 Concord Road
Billerica, MA 01821
U.S.A.
The life science business of Merck KGaA, Darmstadt, Germany operates as MilliporeSigma in the U.S. and Canada.

Date Received: 2017/12/01 1 x 4L LCMS
Date Received: 2017/12/04 4 x 4L LCMS
Date Received: 2017/12/06 4 x 4L LCMS
Date Received: 2017/12/07 4 x 4L LCMS
Date Received: 2017/12/10 4 x 4L LCMS
Date Received: 2017/12/19 4 x 4L LCMS
Date Received: 2017.12.28 - 8 x 4L - HPLC
Date Received: 2017.12.29 - 8 x 4L - HPLC
Date Received: 2018.01.04 - 8 x 4L - HPLC
Date Received: 2018.01.19 - 8 x 4L - HPLC
Date Received: 2018.01.31 - 8 x 4L - HPLC
Date Received: 2018.02.07 - 4 x 4L - HPLC
Date Received: 2018.02.07 - 4 x 4L - HPLC
Date Received: 2018/02/12 4 x 4L LCMS KC
Date Received: 2018.02.14 - 4 x 4L - HPLC

# REAGENT PREPARATION FORM

Reagent # 371 Replaced Reagent # 361 Analyst: SAD

Reagent Name: $H_2O$:MeOH 60:40 Preparation date: 2018/02/20 Expiry date: 2018/04/20

Final Volume: 1L Oven No. : — Temp. : — Final Conc.: 60:40

Balance ID: — Pipette/Syringe/Cylinder ID: 5550 Storage: Shelf

| CHEMICAL NAME | VOLUME/ WEIGHT | DATE RECEIVED | DATE OPENED | SUPPLIER | LOT NUMBER | EXPIRY DATE |
|---|---|---|---|---|---|---|
| MeOH | 400ml | 2018/02/04 | 2018/2/20 | Sigma | SHBJ5451 | 2022/04/20 |
| $H_2O$ | 600ml | 2018/01/31 | 2018/2/20 | Omni | 57297 | 2018/10/31 |
| | | | | | | |
| | | | SAD | | | |
| | | | 2018/2/20 | | | |

NOTES:

Reagent # 372 Replaced Reagent # 356 Analyst: SAD

Reagent Name: FMOC Preparation date: 2018/2/21 Expiry date: Daily

Final Volume: 50 ml Oven No. : — Temp. : — Final Conc.: —

Balance ID: FC-1 Pipette/Syringe/Cylinder ID: — Storage: Shelf

| CHEMICAL NAME | VOLUME/ WEIGHT | DATE RECEIVED | DATE OPENED | SUPPLIER | LOT NUMBER | EXPIRY DATE |
|---|---|---|---|---|---|---|
| FMOC | 0.0750g | 2017/04/06 | 2018/2/09 | Aldrich | MKBC3138V | 2022/04/06 |
| ACN | 50ml | 2018/2/12 | 2018/2/12 | Fisher | 176083 | 2021/9/31 |
| | | | | | | |
| | | | | | | |
| | | SAD | 2018/2/21 | | | |

NOTES:

SIGMA-ALDRICH®

sigma-aldrich.com

3050 Spruce Street, Saint Louis, MO 63103, USA
Website: www.sigmaaldrich.com
Email USA: techserv@sial.com
Outside USA: eurtechserv@sial.com

# Certificate of Analysis

Product Name:
Methanol - for HPLC, ≥99.9%

| | |
|---|---|
| **Product Number:** | 34860 |
| **Batch Number:** | SHBJ5451 |
| Brand: | SIGALD |
| CAS Number: | 67-56-1 |
| MDL Number: | MFCD00004595 |
| Formula: | CH4O |
| Formula Weight: | 32.04 g/mol |
| Quality Release Date: | 27 SEP 2017 |
| Expiration Date: | SEP 2022 |

$CH_3OH$

Recd: j
2017/11/20
4 x 4 L
LC group

| Test | Specification | Result |
|---|---|---|
| Appearance (Color) | Colorless | Colorless |
| Appearance (Form) | Liquid | Liquid |
| UV Absorbance 400nm | ≤ 0.01 | < 0.01 |
| UV Absorbance 280nm | ≤ 0.01 | < 0.01 |
| UV Absorbance 260nm | ≤ 0.04 | < 0.01 |
| UV Absorbance 240nm | ≤ 0.10 | 0.02 |
| UV Absorbance 235nm | ≤ 0.10 | 0.03 |
| UV Absorbance 230nm | ≤ 0.20 | 0.05 |
| UV Absorbance 220nm | ≤ 0.30 | 0.11 |
| UV Absorbance 210nm | ≤ 0.60 | 0.28 |
| UV Absorbance 205nm | ≤ 1.00 | 0.65 |
| Fluorescence 254nm | ≤ 1.0 ppb | < 0.1 ppb |
| Fluorescence 365nm | ≤ 1.0 ppb | 0.1 ppb |
| Purity (GC) | ≥ 99.90 % | 100.00 % |
| Color Test | ≤ 10 APHA | < 10 APHA |
| Water (by Karl Fischer) | ≤ 0.03 % | < 0.01 % |
| Residue on Evaporation | ≤ 0.0005 % | 0.0001 % |
| Expiration Date Period 1800 Days | | |

Sigma-Aldrich warrants, that at the time of the quality release or subsequent retest date this product conformed to the information contained in this publication. The current Specification sheet may be available at Sigma-Aldrich.com. For further inquiries, please contact Technical Service. Purchaser must determine the suitability of the product for its particular use. See reverse side of invoice or packing slip for additional terms and conditions of sale.

Version Number: 1

SIGMA-ALDRICH®

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3050 Spruce Street, Saint Louis, MO 63103, USA
Website: www.sigmaaldrich.com
Email USA: techserv@sial.com
Outside USA: ourtechserv@sial.com

# Certificate of Analysis

Product Number: 34860
Batch Number: SHBJ5451

Michael Grady, Manager
Quality Control
Sheboygan Falls, WI US

Sigma-Aldrich warrants, that at the time of the quality release or subsequent retest date this product conformed to the information contained in this publication. The current Specification sheet may be available at Sigma-Aldrich.com. For further inquiries, please contact Technical Service. Purchaser must determine the suitability of the product for its particular use. See reverse side of invoice or packing slip for additional terms and conditions of sale.



Date Received: 2017/11/10 4x4L
Date Received: 2017/11/27 4x4L
Date Received: 2017/12/01 4x4L
Date Received: 2017/12/04 4x4L
Date Received: 2017/12/07 4x4L
Date Received: 2017/12/09 4x4L
Date Received: 2017/12/12 4x4L
Date Received: 2017/12/16 4x4L
Date Received: 2017/12/17 4x4L
Date Received: 2017/12/19 4x4L
Date Received: 2018/01/04 4x4L
Date Received: 2018/01/06 4x4L
Date Received: 2018/01/09 4x4L
Date Received: 2018/01/19 4x4L
Date Received: 2018/02/07 4x4L

## Certificate of Analysis

MilliporeSigma

Date of Release: 10/27/2017

Name: Water
OmniSolv®, For LC/MS

Item No: WX0001-1, WX0001-6, WX0001-901

Lot / Batch No: 57297

Country of Origin: USA

| Characteristic | Requirement | | Results | Units |
|---|---|---|---|---|
| | Min. | Max. | | |
| Expiration date | | | 31-OCT-2019 | |
| Evaporation residue | | 1 | < 0.5 | ppm |
| Filtered through 0.2 µm filter | | | Passes test | |
| Fluorescence as quinine at 254 nm | | 1 | < 1 | ppb |
| Fluorescence as quinine at 365 nm | | 1 | < 1 | ppb |
| Gradient at 210 nm | | 2 | 0.22 | mAU |
| Gradient at 254 nm | | 0.5 | 0.09 | mAU |
| LC/MS Purity (p-nitrophenol) | | 50 | <50 | ppb |
| LC/MS Purity (reserpine) | | 50 | <50 | ppb |
| Metals, suitable for LC/MS | | | Complies | |
| UV Abs. at 200 nm | | 0.01 | < 0.001 | AU |
| UV Abs. at 210 nm | | 0.01 | < 0.001 | AU |
| UV Abs. at 220 nm | | 0.01 | < 0.001 | AU |
| UV Abs. at 230 nm | | 0.01 | < 0.001 | AU |
| UV Abs. at 240 nm | | 0.01 | < 0.001 | AU |
| UV Abs. at 250 nm | | 0.003 | < 0.001 | AU |
| UV Abs. at 270 nm | | 0.005 | < 0.001 | AU |
| UV Abs. at 400-280 nm | | 0.005 | < 0.001 | AU |
| UV Cut-off | | 190 | <190 | nm |

Dr. Oliver Schramel
Quality Control Manager
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EMD Millipore Corporation, an affiliate of Merck KGaA, Darmstadt, Germany
290 Concord Road
Billerica, MA 01821
U.S.A.
The life science business of Merck KGaA, Darmstadt, Germany operates as MilliporeSigma in the U.S. and Canada.

Date Received: 2017/12/01 1 x 4L LCMS
Date Received: 2017/12/04 4 x 4L LCMS
Date Received: 2017/12/06 4 x 4L LCMS
Date Received: 2017/12/07 4 x 4L LCMS
Date Received: 2017/12/10 4 x 4L LCMS
Date Received: 2017/12/19 4 x 4L LCMS
Date Received: 2017.12.28 - 8 x 4L - HPLC
Date Received: 2017.12.29 - 8 x 4L - HPLC
Date Received: 2018.01.04 - 8 x 4L - HPLC
Date Received: 2018.01.19 - 8 x 4L - HPLC
Date Received: 2018.01.31 - 8 x 4L - HPLC
Date Received: 2018.02.07 - 4 x 4L - HPLC
Date Received: 2018.02.07 - 4 x 4L - HPLC
Date Received: 2018/02/12 4 x 4L LCMS KC
Date Received: 2018.02.14 - 4 x 4L - HPLC

# REAGENT PREPARATION FORM

Reagent # 377 Replaced Reagent # 370 Analyst: SSV

Reagent Name: 2% formic acid Preparation date: 2018/02/22 Expiry date: 2018/04/22

Final Volume: 1L Oven No. : — Temp. : — Final Conc.: 2:98 V/V

Balance ID: — Pipette/Syringe/Cylinder ID: K551916 Storage: Shelf

| CHEMICAL NAME | VOLUME/ WEIGHT | DATE RECEIVED | DATE OPENED | SUPPLIER | LOT NUMBER | EXPIRY DATE |
|---|---|---|---|---|---|---|
| formic acid | 20mL | 2017/08/25 | 2017/12/07 | Sigma | SHBJ1624 | 2018/05/31 |
| LCMS $H_2O$ | 980mL | 2018/02/14 | 2018/02/21 | OMNI | 57297 | 2018/10/31 |
| | | | | | | |
| | | | | | | |
| | | | 2018/02/22 SSV | | | |

NOTES: 1L Cylinder # 5553

Reagent # 378 Replaced Reagent # 282 Analyst: JD3

Reagent Name: Solution B (DP) Preparation date: 2018/02/22 Expiry date: 2019/02/22

Final Volume: 800ml Oven No. : — Temp. : — Final Conc.: —

Balance ID: — Pipette/Syringe/Cylinder ID: G243900G #20028W Storage: Shelf

| CHEMICAL NAME | VOLUME/ WEIGHT | DATE RECEIVED | DATE OPENED | SUPPLIER | LOT NUMBER | EXPIRY DATE |
|---|---|---|---|---|---|---|
| $DiH_2O$ | 800 ml | — | — | InHouse | — | — |
| 50% NaOH | 160 ml | 2017/10/25 | 2017/10/30 | VWE | 17F125004 | 2022/06/30 |
| | | | | | | |
| | | JD3 | 2018/02/22 | | | |
| | | | | | | |

NOTES:

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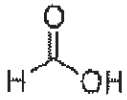
Website: www.sigmaaldrich.com
Email USA: techserv@sial.com
Outside USA: eurtechserv@sial.com

# Certificate of Analysis

Product Name:
Formic acid - reagent grade, ≥95%

| | |
|---|---|
| Product Number: | F0507 |
| Batch Number: | SHBJ1624 |
| Brand: | SIGALD |
| CAS Number: | 64-18-6 |
| MDL Number: | MFCD00003297 |
| Formula: | CH2O2 |
| Formula Weight: | 46.03 g/mol |
| Quality Release Date: | 24 MAY 2017 |
| Expiration Date: | MAY 2018 |



| Test | Specification | Result |
|---|---|---|
| Appearance (Turbidity) | Clear | Clear |
| Appearance (Color) | Colorless to Very Faint Yellow | Very Faint Yellow |
| Appearance (Form) | Liquid | Liquid |
| Proton NMR Spectrum | Conforms to Structure | Conforms |
| Solvent Content<br>Acetic Acid by NMR | ≤ 1.0 % | < 0.1 % |
| Water (by Karl Fischer) | 2.0 - 2.5 % | 2.1 % |
| Titration with NaOH | ≥ 95.0 % | 97.2 % |
| Expiration Date Period<br>1 Year | ---------- | ---------- |

Michael Grady, Manager
Quality Control
Sheboygan Falls, WI US

Sigma-Aldrich warrants, that at the time of the quality release or subsequent retest date this product conformed to the information contained in this publication. The current Specification sheet may be available at Sigma-Aldrich.com. For further inquiries, please contact Technical Service. Purchaser must determine the suitability of the product for its particular use. See reverse side of invoice or packing slip for additional terms and conditions of sale.

Date Received:2017/08/11-SSB-1 bottle-P2A
Date Received:2017/08/25 -SSB-1 bottle-P2A
Date Received:2017/08/29-SSB-1 bottle-P2A
Date Received:2017/12/07-SSB-1 bottle-P2A

## Certificate of Analysis

MilliPORE SIGMA

Date of Release: 10/2/2017

Name: Water
OmniSolv®: For LC/MS

Item No: WX0001-1, WX0001-6, WX0001-901

Lot / Batch No: 57237

Country of Origin: USA

| Characteristic | Requirement | | Results | Units |
|---|---|---|---|---|
| | Min. | Max. | | |
| Expiration date | | | 31-OCT-2019 | |
| Evaporation residue | | 1 | < 0.5 | ppm |
| Filtered through 0.2 µm filter | | | Passes test | |
| Fluorescence as quinine at 254 nm | | 1 | < 1 | ppb |
| Fluorescence as quinine at 365 nm | | 1 | < 1 | ppb |
| Gradient at 210 nm | | 2 | 0.02 | mAU |
| Gradient at 254 nm | | 0.5 | 0.00 | mAU |
| LC/MS Purity (p-Dichlorobenzol) | | 50 | <50 | ppb |
| LC/MS Purity (reserpine) | | 50 | <50 | ppb |
| Metals, suitable for LC/MS | | | Conforms | |
| UV Abs. at 200 nm | | 0.01 | < 0.001 | AU |
| UV Abs. at 210 nm | | 0.01 | < 0.001 | AU |
| UV Abs. at 220 nm | | 0.01 | < 0.001 | AU |
| UV Abs. at 230 nm | | 0.01 | < 0.001 | AU |
| UV Abs. at 240 nm | | 0.01 | < 0.001 | AU |
| UV Abs. at 250 nm | | 0.005 | < 0.001 | AU |
| UV Abs. at 270 nm | | 0.005 | < 0.001 | AU |
| UV Abs. at 400–210 nm | | 0.005 | < 0.001 | AU |
| UV Cut-off | | 190 | < 190 | nm |

Dr. Oliver Schrimpe
Quality Control Manager
This document has been produced electronically and is valid without a signature.

EMD Millipore Corporation, an affiliate of Merck KGaA, Darmstadt, Germany
290 Concord Road
Billerica, MA 01821
U.S.A.
The life science business of Merck KGaA, Darmstadt, Germany operates as MilliporeSigma in the U.S. and Canada.

Date Received: 2017/12/01 1 x 4L LCMS
Date Received: 2017/12/04 4 x 4L LCMS
Date Received: 2017/12/06 4 x 4L LCMS
Date Received: 2017/12/07 4 x 4L LCMS
Date Received: 2017/12/10 4 x 4L LCMS
Date Received: 2017/12/19 4 x 4L LCMS
Date Received: 2017.12.28 - 8 x 4L - HPLC
Date Received: 2017.12.29 - 8 x 4L - HPLC
Date Received: 2018.01.04 - 8 x 4L - HPLC
Date Received: 2018.01.19 - 8 x 4L - HPLC
Date Received: 2018.01.31 - 8 x 4L - HPLC
Date Received: 2018.02.07 - 4 x 4L - HPLC
Date Received: 2018.02.07 - 4 x 4L - HPLC
Date Received: 2018/02/12 4 x 4L LCMS KC
Date Received: 2018.02.14 - 4 x 4L - HPLC

# REAGENT PREPARATION FORM

Reagent # 379 Replaced Reagent # 283 Analyst: JD3

Reagent Name: Solution C (PP) Preparation date: 2018/02/22 Expiry date: 2019/02/22 JD3 2018/02/22

Final Volume: 1L Oven No. : — Temp. : — Final Conc.: 70:30 (V/V)

Balance ID: — Pipette/Syringe/Cylinder ID: #20028W Storage: shelf

| CHEMICAL NAME | VOLUME/ WEIGHT | DATE RECEIVED | DATE OPENED | SUPPLIER | LOT NUMBER | EXPIRY DATE |
|---|---|---|---|---|---|---|
| MeOH | 700ml | 2018/02/16 | 2018/02/22 | Sigma | SHBJ8485 | 2022/12/30 |
| 6N HCl | 300ml | PRLRE 104 | | 398 | | |
| | | JD3 | 2018/02/22 | | | |

NOTES:

Reagent # 380 Replaced Reagent # 371 Analyst: JD3

Reagent Name: 60:40 ($H_2O$:MeOH) Preparation date: 2018/02/22 Expiry date: 2018/02/22

Final Volume: 1L Oven No. : — Temp. : — Final Conc.: 60:40 (V/V)

Balance ID: — Pipette/Syringe/Cylinder ID: #5553 Storage: Shelf

| CHEMICAL NAME | VOLUME/ WEIGHT | DATE RECEIVED | DATE OPENED | SUPPLIER | LOT NUMBER | EXPIRY DATE |
|---|---|---|---|---|---|---|
| MeOH | 400ml | 2018/02/16 | 2018/02/22 | Sigma | SHBJ8485 | 2022/12/30 |
| $H_2O$ | 600ml | 2018/02/14 | 2018/02/21 | Omni | ST2917 | 2018/10/31 |
| | | JD3 | 2018/02/22 | | | |

NOTES:



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LOV 2018/02/16
8 x 4L

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Website: www.sigmaaldrich.com
Email USA: techserv@sial.com
Outside USA: eurtechserv@sial.com

# Certificate of Analysis

Product Name:
Methanol - for HPLC, ≥99.9%

| | |
|---|---|
| **Product Number:** | **34860** |
| **Batch Number:** | **SHBJ8486** |
| Brand: | SIGALD |
| CAS Number: | 67-56-1 |
| MDL Number: | MFCD00004595 |
| Formula: | CH4O |
| Formula Weight: | 32.04 g/mol |
| Quality Release Date: | 23 JAN 2018 |
| Expiration Date: | DEC 2022 |

$CH_3OH$

| Test | Specification | Result |
|---|---|---|
| Appearance (Color) | Colorless | Colorless |
| Appearance (Form) | Liquid | Liquid |
| UV Absorbance 400nm | ≤ 0.01 | < 0.01 |
| UV Absorbance 280nm | ≤ 0.01 | < 0.01 |
| UV Absorbance 260nm | ≤ 0.04 | 0.01 |
| UV Absorbance 240nm | ≤ 0.10 | 0.03 |
| UV Absorbance 235nm | ≤ 0.10 | 0.04 |
| UV Absorbance 230nm | ≤ 0.20 | 0.06 |
| UV Absorbance 220nm | ≤ 0.30 | 0.14 |
| UV Absorbance 210nm | ≤ 0.60 | 0.31 |
| UV Absorbance 205nm | ≤ 1.00 | 0.62 |
| Fluorescence 254nm | ≤ 1.0 ppb | < 0.1 ppb |
| Fluorescence 365nm | ≤ 1.0 ppb | < 0.1 ppb |
| Purity (GC) | ≥ 99.90 % | 100.00 % |
| Color Test | ≤ 10 APHA | < 5 APHA |
| Water (by Karl Fischer) | ≤ 0.03 % | < 0.01 % |
| Residue on Evaporation | ≤ 0.0005 % | < 0.0001 % |
| Expiration Date Period 1800 Days | | |

Sigma-Aldrich warrants, that at the time of the quality release or subsequent retest date this product conformed to the information contained in this publication. The current Specification sheet may be available at Sigma-Aldrich.com. For further inquiries, please contact Technical Service. Purchaser must determine the suitability of the product for its particular use. See reverse side of invoice or packing slip for additional terms and conditions of sale.

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Website: www.sigmaaldrich.com
Email USA: techserv@sial.com
Outside USA: eurtechserv@sial.com

# Certificate of Analysis

**Product Number:** 34860
**Batch Number:** SHBJ8485

Michael Grady, Manager
Quality Control
Sheboygan Falls, WI US

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Version Number: 1

## Certificate of Analysis

MilliporeSigma

Date of Release: 10/27/2017

Name: Water
OmniSolv®, For LC/MS

Item No: WX0001-1, WX0001-6, WX0001-901

Lot / Batch No: 57297

Country of Origin: USA

| Characteristic | Requirement | | Results | Units |
|---|---|---|---|---|
| | Min. | Max. | | |
| Expiration date | | | 31-OCT-2019 | |
| Evaporation residue | | 1 | < 0.5 | ppm |
| Filtered through 0.2 µm filter | | | Passes test | |
| Fluorescence as quinine at 334 nm | | 1 | < 1 | ppb |
| Fluorescence as quinine at 365 nm | | 1 | < 1 | ppb |
| Gradient at 210 nm | | 2 | 0.22 | mAU |
| Gradient at 254 nm | | 0.5 | 0.09 | mAU |
| LC/MS Purity (2-Butoxyethanol) | | 50 | <50 | ppb |
| LC/MS Purity (reserpine) | | 50 | <50 | ppb |
| Matrix, suitable for LC/MS | | | Conforms | |
| UV Abs. at 205 nm | | 0.01 | < 0.001 | AU |
| UV Abs. at 210 nm | | 0.01 | < 0.001 | AU |
| UV Abs. at 220 nm | | 0.01 | < 0.001 | AU |
| UV Abs. at 230 nm | | 0.01 | < 0.001 | AU |
| UV Abs. at 240 nm | | 0.01 | < 0.001 | AU |
| UV Abs. at 250 nm | | 0.009 | < 0.001 | AU |
| UV Abs. at 270 nm | | 0.005 | < 0.001 | AU |
| UV Abs. at 400–410 nm | | 0.005 | < 0.001 | AU |
| UV Cut-off | | 190 | < 190 | nm |

Dr. Oliver Schrüfer
Quality Control Manager
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290 Concord Road
Billerica, MA 01821
U.S.A.
The life science business of Merck KGaA, Darmstadt, Germany operates as MilliporeSigma in the U.S. and Canada.

Date Received: 2017/12/01 1 x 4L LCMS
Date Received: 2017/12/04 4 x 4L LCMS
Date Received: 2017/12/06 4 x 4L LCMS
Date Received: 2017/12/07 4 x 4L LCMS
Date Received: 2017/12/10 4 x 4L LCMS
Date Received: 2017/12/19 4 x 4L LCMS
Date Received: 2017.12.28 - 8 x 4L - HPLC
Date Received: 2017.12.29 - 8 x 4L - HPLC
Date Received: 2018.01.04 - 8 x 4L - HPLC
Date Received: 2018.01.19 - 8 x 4L - HPLC
Date Received: 2018.01.31 - 8 x 4L - HPLC
Date Received: 2018.02.07 - 4 x 4L - HPLC
Date Received: 2018.02.07 - 4 x 4L - HPLC
Date Received: 2018/02/12 4 x 4L LCMS KC
Date Received: 2018.02.14 - 4 x 4L - HPLC

# REAGENT PREPARATION FORM

Reagent # 381 Replaced Reagent # PRLRE 104 - 96 Analyst: GSZ

Reagent Name: SALINIZING SOLUTION Preparation date: 2018/02/22 Expiry date: 2019/02/22

Final Volume: 1L Oven No. : — Temp. : — Final Conc.: 9:1 v/v (Toluene : DCDMS)

Balance ID: — Pipette/Syringe/Cylinder ID: 1L Vol. Cylinder ~~Class A (3026)~~ Storage: Shelf

| CHEMICAL NAME | VOLUME/ WEIGHT | DATE RECEIVED | DATE OPENED | SUPPLIER | LOT NUMBER | EXPIRY DATE |
|---|---|---|---|---|---|---|
| DICHLORODIMETHYLSILANE | 100mL | 2017/10/30 | 2018/02/22 | Aldrich | BCBH8051V | 2022/10/30 |
| TOLUENE | 900mL | 2018/02/22 | 2018/02/22 | Caledon | 102536 ~~102356~~ GSZ 2018/02/22 | 2019/02/22 |
| | | | | | | |
| | | | GSZ, 2018/02/22 | | | |
| | | | | | | |

NOTES:

Reagent # 382 Replaced Reagent # 375 Analyst: LR

Reagent Name: 0.2% NH4OH Preparation date: 2018/02/23 Expiry date: Daily

Final Volume: 1L Oven No. : — Temp. : — Final Conc.: 0.2 : 99.8 v/v

Balance ID: — Pipette/Syringe/Cylinder ID: K39732F Storage: Shelf

| CHEMICAL NAME | VOLUME/ WEIGHT | DATE RECEIVED | DATE OPENED | SUPPLIER | LOT NUMBER | EXPIRY DATE |
|---|---|---|---|---|---|---|
| MeOH | 998mL | 2018/02/16 | 2018/02/22 | Signma | SHB38485 | 2022/12/30 |
| NH4OH | 2mL | 2018/01/09 | 2018/01/25 | Fisher | 172996 | 2020/08/31 |
| | | | | | | |
| | | | | 2018/02/23 LR | | |
| | | | | | | |

NOTES: 1L volumetric Cylinder # 5553



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LOV 2018/02/16
8 x 4L

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Website: www.sigmaaldrich.com
Email USA: techserv@sial.com
Outside USA: eurtechserv@sial.com

# Certificate of Analysis

Product Name:
Methanol - for HPLC, ≥99.9%

| | |
|---|---|
| **Product Number:** | **34860** |
| **Batch Number:** | **SHBJ8486** |
| Brand: | SIGALD |
| CAS Number: | 67-56-1 |
| MDL Number: | MFCD00004595 |
| Formula: | CH4O |
| Formula Weight: | 32.04 g/mol |
| Quality Release Date: | 23 JAN 2018 |
| Expiration Date: | DEC 2022 |

$CH_3OH$

| Test | Specification | Result |
|---|---|---|
| Appearance (Color) | Colorless | Colorless |
| Appearance (Form) | Liquid | Liquid |
| UV Absorbance 400nm | ≤ 0.01 | < 0.01 |
| UV Absorbance 280nm | ≤ 0.01 | < 0.01 |
| UV Absorbance 260nm | ≤ 0.04 | 0.01 |
| UV Absorbance 240nm | ≤ 0.10 | 0.03 |
| UV Absorbance 235nm | ≤ 0.10 | 0.04 |
| UV Absorbance 230nm | ≤ 0.20 | 0.06 |
| UV Absorbance 220nm | ≤ 0.30 | 0.14 |
| UV Absorbance 210nm | ≤ 0.60 | 0.31 |
| UV Absorbance 205nm | ≤ 1.00 | 0.62 |
| Fluorescence 254nm | ≤ 1.0 ppb | < 0.1 ppb |
| Fluorescence 366nm | ≤ 1.0 ppb | < 0.1 ppb |
| Purity (GC) | ≥ 99.90 % | 100.00 % |
| Color Test | ≤ 10 APHA | < 5 APHA |
| Water (by Karl Fischer) | ≤ 0.03 % | < 0.01 % |
| Residue on Evaporation | ≤ 0.0005 % | < 0.0001 % |
| Expiration Date Period 1800 Days | | |

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Website: www.sigmaaldrich.com
Email USA: techserv@sial.com
Outside USA: eurtechserv@sial.com

# Certificate of Analysis

**Product Number:** 34860
**Batch Number:** SHBJ8486

Michael Grady, Manager
Quality Control
Sheboygan Falls, WI US

Sigma-Aldrich warrants, that at the time of the quality release or subsequent retest date this product conformed to the information contained in this publication. The current Specification sheet may be available at Sigma-Aldrich.com. For further inquiries, please contact Technical Service. Purchaser must determine the suitability of the product for its particular use. See reverse side of invoice or packing slip for additional terms and conditions of sale.

Version Number: 1

Fisher Scientific
1 Reagent Lane
Fair Lawn, NJ 07410
201.796.7100 tel
201.796.1329 fax

# Certificate of Analysis

Fisher Scientific Quality Systems have been found in conformance to Quality Management Systems Standard ISO/IEC 9001 standards by SAI Global Certification Number QEAR - 1000018

This is to certify that units of this lot number have been tested and found to comply with the specifications of the grade listed. Certain data have been verified by Fisher Scientific. Fisher Scientific expressly disclaims all warranties, expressed or implied, including the implied warranties of merchantability and fitness for a particular purpose. Certain products (specifically those labeled "For R&D Use Only") are sold for use in product, drug, or medical device manufacturing. Fisher does not make representations concerning whether such use is permissible or authorized under 21 CFR or other applicable laws, or with the FDA. The following are the actual analytical results obtained.

| | | | |
|---|---|---|---|
| Catalog Number | A669 | Quality Test / Release Date | 6/24/2017 |
| Lot Number | 173996 | Expiration Date | Aug/2020 |
| Description | AMMONIUM HYDROXIDE, CERTIFIED A.C.S. PLUS | | |
| Country of Origin | United States | | |
| Chemical Origin | Inorganic-non animal | | |

| | |
|---|---|
| BSE/TSE Comment | This product does not contain and is not manufactured with raw material ingredients derived from any animal products, including countries where Bovine Spongiform Encephalopathy (BSE) is known to exist. |
| Chemical Comment | This product is free from genetically modified substances and is gluten free. |

| Result Name | Units | Specification | Test Value |
|---|---|---|---|
| APPEARANCE | | REPORT | COLORLESS AND FREE FROM SUSPENDED MATTER |
| ALUMINUM | ppm | -= 5.3 | 0.002 |
| ARSENIC AND ANTIMONY | ppm | -= 5.05 | <0.050 |
| ASSAY | Wt% | Inclusive Between 25.0 - 30.0 | 29.2 |
| BORON (B) | ppm | -= 5.1 | 0.001 |
| CALCIUM (Ca) | ppm | -= 5.3 | 0.003 |
| CARBON DIOXIDE | % | -= 5.052 | <0.0126 |
| CHLORIDE | ppm | -= 5.5 | <0.50 |
| CHROMIUM (Cr) | ppm | -= 5.2 | 0.001 |
| COPPER (Cu) | ppm | -= 5.1 | 0.001 |
| GOLD (Au) | ppm | -= 5.3 | 0.001 |
| HEAVY METALS (as Pb) | ppm | -= 5.5 | <0.5 |
| IRON (Fe) | ppm | -= 5.1 | 0.001 |
| LEAD (Pb) | ppm | -= 5.2 | 0.001 |
| MAGNESIUM (Mg) | ppm | -= 5.3 | 0.001 |
| MANGANESE (Mn) | ppm | -= 5.2 | 0.001 |
| NICKEL (Ni) | ppm | -= 5.1 | 0.001 |
| NITRATE (NO3) | ppm | -= 2 | <2.0 |
| PHOSPHATE (PO4) | ppm | -= 5.4 | <0.40 |
| POTASSIUM (K) | ppm | -= 5.3 | 0.002 |
| RESIDUE AFTER IGNITION | ppm | -= 5 | <3.00 |
| SODIUM (Na) | ppm | = Report | 0.005 |
| SUBSTANCES REDUCING KMNO4 | PASS/FAIL | = PASS TEST | PASS TEST |
| SULFATE (SO4) | ppm | -= 2 | <2.0 |
| TIN (Sn) | ppm | -= 5.3 | 0.001 |
| TITANIUM (Ti) | ppm | -= 5.3 | 0.001 |
| ZINC (Zn) | ppm | -= 5.3 | 0.003 |

Quality Assurance Specialist - Certificate of Analysis SPF

Note: The data listed is valid for 60 package sizes of this lot of this product, unless otherwise noted in a conformance of the catalog number listed above. If there are any questions with this certificate, please call Technical Services at (800) 227-4701.
*Tested for suggested storage condition

Date Received: 2017/12/28-RAZ-P2B
Date Received: 2018/01/09-lov-HPLC 1X500ml

## REAGENT PREPARATION FORM

SOLUTION # 280 REAGENT NAME: 20 mM Ammonium acetate

ANALYST: KCl DATE PREPARED: 2018/02/06 EXPIRY DATE: 2018/04/06

STORAGE: RT BALANCE ID: MS204S PIPET/SYRINGE ID: -

| CHEMICAL NAME | VOLUME/ WEIGHT | DATE RECEIVED | DATE OPENED | SUPPLIER | LOT NUMBER | EXPIRY DATE |
|---|---|---|---|---|---|---|
| Ammonium acetate | 6.1658g | 2017/08/03 | 2017/09/18 | Sigma | BCBT4732 | 2019/01/30 |
| Water | 4L | 2017/12/06 | 2018/02/06 | Millipore | 57297 | 2018/10/31 |
| | | | | | | |
| | | | | | | |
| | | KC 2018/02/06 | | | | |

NOTES:

SOLUTION # 281 REAGENT NAME: 20 mM Ammonium Acetate

ANALYST: [illegible] DATE PREPARED: 2018/02/09 EXPIRY DATE: 2018/04/10

STORAGE: RT BALANCE ID: AB02 PIPET/SYRINGE ID:

| CHEMICAL NAME | VOLUME/ WEIGHT | DATE RECEIVED | DATE OPENED | SUPPLIER | LOT NUMBER | EXPIRY DATE |
|---|---|---|---|---|---|---|
| Ammonium Acetate | 3.0804g | 2017/08/03 | 2017/09/18 | Sigma | BCBT4732 | 2019/01/30 |
| LCMS Water | 2L | 2017/12/28 | 2018/02/09 | (Omni Solv) EMD Millipore | 57297 | 2018/10/31 |
| | | | | | | |
| | | | | | | |
| | [illegible] 2018/02/09 | | | | | |

NOTES:



ONLY CLASS A GLASSWARE IS USED FOR THE PREPARATION OF REAGENTS WHEN APPLICABLE.
RT = Room Temperature

SIGMA-ALDRICH

3050 Spruce Street, Saint Louis, MO 63103 USA
Email USA: techserv@sial.com Outside USA: eurtechserv@sial.com

# Certificate of Analysis

| | |
|---|---|
| **Product Name:** | AMMONIUM ACETATE reagent grade, >= 98 % |
| **Product Number:** | A7262 |
| **Batch Number:** | BCBT4732 |
| **Brand:** | Sigma-Aldrich |
| **CAS Number:** | 631-61-8 |
| **Formula:** | $CH_3CO_2NH_4$ |
| **Formula Weight:** | 77.08 |
| **Storage Temperature:** | 2-8 C |
| **Quality Release Date:** | 16 JAN 2017 |
| **Recommended Retest Date:** | JAN 2019 |

| TEST | SPECIFICATION | RESULT |
|---|---|---|
| APPEARANCE (COLOR) | WHITE | WHITE |
| APPEARANCE (FORM) | MOIST CRYSTALS | MOIST CRYSTALS |
| TITRATION | ≥ 98 % | 99.6 % |
| TITRATION (METHOD) | TITRATION WITH NAOH | TITRATION WITH NAOH |
| SOLUBILITY (COLOR) | COLORLESS | COLORLESS |
| SOLUBILITY (TURBIDITY) | CLEAR | CLEAR |
| SOLUBILITY (METHOD) | 1 G/ML, H2O | 1 G/ML, H2O |

Claudia Geitner

Dr. Claudia Geitner
Manager Quality Control
Buchs, Switzerland

Rec'd: j
20 17/08/03
1 X 500 g
LC group
Storage: FD

Sigma-Aldrich warrants that at the time of the quality release or subsequent retest date this product conformed to the information contained in this publication. The current specification sheet may be available at Sigma-Aldrich.com. For further inquiries, please contact Technical Service. Purchaser must determine the suitability of the product for its particular use. See reverse side of invoice or packing slip for additional terms and conditions of sale.

## Certificate of Analysis

MilliporeSigma

Date of Release: 10/27/2017

Name: Water
OmniSolvent For LC/MS

Item No: WX0001-1, WX0001-3, WX0001-901

Lot / Batch No: 57297

Country of Origin: USA

| Characteristic | Requirement | | Results | Units |
|---|---|---|---|---|
| | Min. | Max. | | |
| #Expiration date | | | 31-OCT-2018 | |
| Evaporation residue | | 1 | < 0.5 | ppm |
| Filtered through 0.2 µm filter | | | Passes test | |
| Fluorescence as quinine at 254 nm | | 1 | < 1 | ppb |
| Fluorescence as quinine at 365 nm | | 1 | < 1 | ppb |
| Gradient at 210 nm | | 2 | 0.22 | mAU |
| Gradient at 254 nm | | 0.5 | 0.09 | mAU |
| LC/MS Purity (n-nitrophenol) | | 50 | <50 | ppb |
| LC/MS Purity (reserpine) | | 50 | <50 | ppb |
| Metals, sulfate for LC/MS | | | Conforms | |
| UV Abs. at 200 nm | | 0.01 | < 0.001 | AU |
| UV Abs. at 210 nm | | 0.01 | < 0.001 | AU |
| UV Abs. at 220 nm | | 0.01 | < 0.001 | AU |
| UV Abs. at 230 nm | | 0.01 | < 0.001 | AU |
| UV Abs. at 240 nm | | 0.01 | < 0.001 | AU |
| UV Abs. at 250 nm | | 0.005 | < 0.001 | AU |
| UV Abs. at 270 nm | | 0.005 | < 0.001 | AU |
| UV Abs. at 400-200 nm | | 0.005 | < 0.001 | AU |
| UV Cut-off | | 190 | < 190 | nm |

Dr. Oliver Schramel
Quality Control Manager
This document has been produced electronically and is valid without a signature.

EMD Millipore Corporation, an affiliate of Merck KGaA, Darmstadt, Germany
290 Concord Road
Billerica, MA 01821
U.S.A.
The life science business of Merck KGaA, Darmstadt, Germany operates as MilliporeSigma in the U.S. and Canada.

Date Received: 2017/12/01 1 x 4L LCMS
Date Received: 2017/12/04 4 x 4L LCMS
Date Received: 2017/12/06 4 x 4L LCMS
Date Received: 2017/12/07 4 x 4L LCMS
Date Received: 2017/12/10 4 x 4L LCMS
Date Received: 2017/12/19 4 x 4L LCMS
Date Received: 2017.12.28 - 8 x 4L - HPLC
Date Received: 2017.12.29 - 8 x 4L - HPLC
Date Received: 2018.01.04 - 8 x 4L - HPLC
Date Received: 2018.01.19 - 8 x 4L - HPLC
Date Received: 2018.01.31 - 8 x 4L - HPLC
Date Received: 2018.02.07 - 4 x 4L - HPLC
Date Received: 2018.02.07 - 4 x 4L - HPLC

Maxxam

CAM FCD-00595/1
FSRE: 18 PG: 145

## REAGENT PREPARATION FORM

SOLUTION # 290 REAGENT NAME: 50:50 MeOH : ACN

ANALYST: RE DATE PREPARED: 2018/02/23 EXPIRY DATE: 2018/04/23

STORAGE: RT BALANCE ID: - PIPET/SYRINGE ID: -

| CHEMICAL NAME | VOLUME/ WEIGHT | DATE RECEIVED | DATE OPENED | SUPPLIER | LOT NUMBER | EXPIRY DATE |
|---|---|---|---|---|---|---|
| Methanol | 500 mL | 2018/01/09 | 2018/01/30 | Fisher | 171027 | 2022/05/31 |
| Acetonitrile | 500 mL | 2018/02/14 | 2018/02/15 | Fisher | 197305 | 2022/12/31 |
| | | | | | | |
| | | RE 2018/02/23 | | | | |
| | | | | | | |

NOTES:

SOLUTION # 291 REAGENT NAME: 50:50 - MeOH:$H_2O$

ANALYST: LKH DATE PREPARED: 2018/02/26 EXPIRY DATE: 2018/04/26

STORAGE: BALANCE ID: - PIPET/SYRINGE ID: -

| CHEMICAL NAME | VOLUME/ WEIGHT | DATE RECEIVED | DATE OPENED | SUPPLIER | LOT NUMBER | EXPIRY DATE |
|---|---|---|---|---|---|---|
| Methanol | 100mL | 2018/01/15 | 2018/02/21 | Fisher | 173206TF | 2022/09/30 |
| RODI water | 100 mL | - | - | in-house | - | - |
| | | | | | | |
| | | | | LKH | | |
| | | | | 2018/02/26 | | |

NOTES:



ONLY CLASS A GLASSWARE IS USED FOR THE PREPARATION OF REAGENTS WHEN APPLICABLE.
RT = Room Temperature

Fisher Scientific

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# Certificate of Analysis

Fisher Scientific's Quality System has been found to conform to Quality Management System Standard ISO9001:2008 standard by SAI Global Certificate Number CERT - 0000918

This is to certify that units of the lot number below were tested and found to comply with the specifications of the grade listed. Certain data have been supplied by third parties. Fisher Scientific expressly disclaims all warranties, expressed or implied, including the implied warranties of merchantability and fitness for a particular purpose. Certain products (USP/FCC/NF/EP/BP/JP grades) are sold for use in food, drug, or medical device manufacturing. Fisher does not claim regulatory coverage under 21 CFR nor maintain DMF's with the FDA. The following are the actual analytical results obtained:

| | | | |
|---|---|---|---|
| Catalog Number | A454 | Quality Test / Release Date | 5/16/2017 |
| Lot Number | 171027 | | |
| Description | METHANOL, OPTIMA, A.C.S. | | |
| Country of Origin | Trinidad | * Suggested Retest Date | May-2022 |
| Chemical Origin | Organic - synthetic | | |
| BSE/TSE Comment | No animal products are used as starting raw material ingredients, or used in processing, including lubricants, processing aids, or any other material that might migrate to the finished product. | | |

Rec'd: r
2017/08/21
4x4L

| Result name | Units | Specifications | Test Value |
|---|---|---|---|
| APPEARANCE | | REPORT | CLEAR, COLORLESS LIQUID |
| ASSAY | % | >= 99.9 | 99.9 |
| CARBONYL COMPOUNDS | % | <= 0.001 | 0.0006 |
| COLOR | APHA | <= 5 | 5 |
| EVAPORATION RESIDUE | ppm | <= 1 | 0.4 |
| FLUORESCENCE BACKGROUND | ppb | <= 1 | <1 |
| IDENTIFICATION | PASS/FAIL | = PASS TEST | PASS TEST |
| LC GRADIENT SUITABILITY | PASS/FAIL | = PASS TEST | PASS TEST |
| OPTICAL ABS AT 205 NM | ABSORBANCE UNITS | <= 1.00 | 0.83 |
| OPTICAL ABS AT 220 NM | ABSORBANCE UNITS | <= 0.23 | 0.23 |
| OPTICAL ABS AT 230 NM | ABSORBANCE UNITS | <= 0.11 | 0.10 |
| OPTICAL ABS AT 254 NM | ABSORBANCE UNITS | <= 0.01 | 0.010 |
| REFRACTIVE INDEX @ 25 DEG C | | Inclusive Between 1.3260 - 1.3300 | 1.3264 |
| SOLUBILITY IN WATER | PASS/FAIL | = PASS TEST | PASS TEST |
| SUBSTANCES DARKENED BY H2SO4 | PASS/FAIL | = PASS TEST | PASS TEST |
| SUBSTANCES REDUCING KMNO4 | PASS/FAIL | = PASS TEST | PASS TEST |
| TITRATABLE ACID | mEq/g | <= 0.0003 | 0.00020 |
| TITRATABLE BASE | mEq/g | <= 0.0002 | 0.00003 |
| WATER (H2O) | % | <= 0.07 | 0.01 |



CERTIFIED BY

Teresa Bailey-Wayne

Quality Assurance Specialist - Certificate of Analysis BPF

Note: The data listed is valid for all package sizes of this lot of this product, expressed as a extension of this catalog number listed above. If there are any questions with this certificate, please call Chemical Services at (800) 227-8701.
*Based on suggested storage condition.

Date Received: 2017.09.01- 4 bottles - P2A
Date Received:2017/10/17-4 x 4L - LC
Date Received: 2017/10/19-JT- 2 bottles-P1
Date Received: 2017/11/23-PBE-1x4L
Date Received: 2018/01/09-ML-4x4L
Date Received: 2018.01.10 - 4 x 4L - HPLC Main Lab

ThermoFisher
SCIENTIFIC

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# Certificate of Analysis

Thermo Fisher Scientific Quality System has been found in compliance to Quality Management System Standard ISO 9001:2008 when audited by SAI Global Certification Services CERT - 0050218

This is to certify that all the information below were tested and found to comply with the specifications of the goods listed. Certain data may have been supplied by third parties. Thermo Fisher Scientific expressly disclaims all warranties, conditions or implied terms (including the implied warranties of merchantability and fitness for a particular purpose). Certain products (UltraPure, OmniPur, Ampuled, Sure/Seal, Acroseal, Redi-Dri, Redi-Sol, Redi-Mix, Redi-Mag, Redi-Buf, Redi-Met, Redi-Pak, Pre-Mixed Solutions, Pre-Weighed Solutions, Pre-Dissolved Solutions, Pre-Measured Solutions, Pre-Poured Plates, Pre-Made Media, Pre-Made Buffers, Pre-Made Reagents, Pre-Made Stains, Pre-Made Indicators, Pre-Made Dyes, Pre-Made Fixatives, Pre-Made Mounting Media, Pre-Made Embedding Media, Pre-Made Cryoprotectants, Pre-Made Antifreeze, Pre-Made Coolants, Pre-Made Lubricants, Pre-Made Cutting Fluids, Pre-Made Grinding Fluids, Pre-Made Polishing Fluids, Pre-Made Etching Fluids, Pre-Made Developing Fluids, Pre-Made Fixing Fluids, Pre-Made Clearing Fluids, Pre-Made Dehydrating Fluids, Pre-Made Infiltrating Fluids, Pre-Made Embedding Fluids, Pre-Made Sectioning Fluids, Pre-Made Staining Fluids, Pre-Made Mounting Fluids, Pre-Made Coverslipping Fluids, Pre-Made Labeling Fluids, Pre-Made Archiving Fluids, Pre-Made Disposal Fluids, Pre-Made Waste Fluids, Pre-Made Recycling Fluids, Pre-Made Reclamation Fluids, Pre-Made Remediation Fluids, Pre-Made Containment Fluids, Pre-Made Spill Control Fluids, Pre-Made Emergency Response Fluids, Pre-Made Safety Fluids, Pre-Made Training Fluids, Pre-Made Documentation Fluids, Pre-Made Record Keeping Fluids, Pre-Made Reporting Fluids, Pre-Made Auditing Fluids, Pre-Made Inspection Fluids, Pre-Made Maintenance Fluids, Pre-Made Calibration Fluids, Pre-Made Verification Fluids, Pre-Made Validation Fluids, Pre-Made Qualification Fluids, Pre-Made Certification Fluids, Pre-Made Accreditation Fluids, Pre-Made Compliance Fluids, Pre-Made Regulatory Fluids, Pre-Made Standard Fluids, Pre-Made Specification Fluids, Pre-Made Quality Fluids, Pre-Made Assurance Fluids, Pre-Made Control Fluids, Pre-Made Improvement Fluids, Pre-Made Corrective Fluids, Pre-Made Preventive Fluids, Pre-Made Action Fluids, Pre-Made Plan Fluids, Pre-Made Do Fluids, Pre-Made Check Fluids, Pre-Made Act Fluids, Pre-Made Cycle Fluids, Pre-Made Loop Fluids, Pre-Made Feedback Fluids, Pre-Made Input Fluids, Pre-Made Output Fluids, Pre-Made Process Fluids, Pre-Made System Fluids, Pre-Made Control Fluids, Pre-Made Monitoring Fluids, Pre-Made Measurement Fluids, Pre-Made Analysis Fluids, Pre-Made Interpretation Fluids, Pre-Made Reporting Fluids, Pre-Made Documentation Fluids, Pre-Made Record Keeping

# Certificate of Analysis

Date of Release: 10/27/2017

Name: Water
OmniSolv®, For LC/MS

Item No: WX0001...1, WX0001...6, WX0001...901

Lot / Batch No: 57297

Country of Origin: USA

| Characteristic | Requirement | | Results | Units |
|---|---|---|---|---|
| | Min. | Max. | | |
| #Expiration date | | | 31-OCT-2019 | |
| Evaporative residue | | 1 | < 0.5 | ppm |
| Filtered through 0.2 µm filter | | | Passes test | |
| Fluorescence as quinine at 254 nm | | 1 | < 1 | ppb |
| Fluorescence as quinine at 365 nm | | 1 | < 1 | ppb |
| Gradient at 210 nm | | 2 | 0.22 | mAU |
| Gradient at 254 nm | | 0.5 | 0.09 | mAU |
| LC/MS Purity (p-nitrophenol) | | 50 | <50 | ppb |
| LC/MS Purity (reserpine) | | 50 | <50 | ppb |
| Metals, suitable for LC/MS | | | Conforms | |
| UV Abs. at 200 nm | | 0.01 | < 0.001 | AU |
| UV Abs. at 210 nm | | 0.01 | < 0.001 | AU |
| UV Abs. at 220 nm | | 0.01 | < 0.001 | AU |
| UV Abs. at 230 nm | | 0.01 | < 0.001 | AU |
| UV Abs. at 240 nm | | 0.01 | < 0.001 | AU |
| UV Abs. at 250 nm | | 0.005 | < 0.001 | AU |
| UV Abs. at 270 nm | | 0.005 | < 0.001 | AU |
| UV Abs. at 400–250 nm | | 0.005 | < 0.001 | AU |
| UV Cut-off | | 190 | <190 | nm |

Dr. Oliver Schrunk

Quality Control Manager
This document has been produced electronically and is valid without a signature.

EMD Millipore Corporation, an affiliate of Merck KGaA, Darmstadt, Germany
290 Concord Road
Billerica, MA 01821
U.S.A.
The life science business of Merck KGaA, Darmstadt, Germany operates as MilliporeSigma in the U.S. and Canada.

Date Received: 2017/12/01 1 x 4L LCMS
Date Received: 2017/12/06 4 x 4L LCMS

PRLST 142 PG. 172

## PREPARATION OF STANDARDS OF INTERMEDIARY CONCENTRATION

Solution No.: I-5297 Date: 2018/01/30 Expiry Date: 2019/01/30 Discard Date: —

Replaces Solution No.: I-5244 Replaced by Solution: _____ Chemist: LaV

Compound(s)/Solution Name: Comp: PFC working soln A

Number of Parent Solution(s): See attached sheet

Concentration of Parent Solution(s): See attached sheet (mg, ug)/mL

Aliquot of Parent Solution(s): See attached Sheet mL / uL

Pippette/Syringe ID N31477F (1ml)

Dilution Solvent: 0.3% NH4OH in MeOH Dilution Volume: 25 mL

Final Concentration(s): 1.0 (mg, ug)/mL

Solution derivatized (as methyl ester): — As Other (specify): —

Solution Contains Surrogate Compounds: — For mix refer to table on page: —

Solution used for: PFC Volumetric Flask: 25 ml Class A 5640
(identify by serial number or other unique ID)

Solvent Supplier: See PRLRE108-327 Lot No.: See PRLRE108-327

Date Opened: See PRLRE108-327

Storage Location: F2-11 One time Use, Not Stored: —

Ampule Supplier: Wellington Date Opened: —

Mix Name: —

Catalogue No.: — Ampule expiry Date: See attached sheet

Lot No.: See attached Sheet

Date Received: See attached Sheet

Notes/Comments:

I-5297 (PRLST 142 Pg. 172)

| Compound Name | ID# | Conc. (ug/mL) | Vol.. of Stock standard (uL) | Final Conc. (ug/mL) | Exp. date |
|---|---|---|---|---|---|
| PFBA | S4269-1 | 50 | 500 | 1 | 2022/05/29 |
| L-PFBS | S4269-2 | 44.2 | 565 | 1 | 2022/09/21 |
| PFPeA | S4269-3 | 50 | 500 | 1 | 2022/06/14 |
| PFHxA | S4269-4 | 50 | 500 | 1 | 2022/09/27 |
| br-PFHxSk | S4269-5 | 45.5 | 549 | 1 | 2022/01/04 |
| PFHpA | S4269-6 | 50 | 500 | 1 | 2021/12/02 |
| L-PFHpS | S4269-7 | 47.6 | 525 | 1 | 2022/09/01 |
| PFOA | S4269-8 | 50 | 500 | 1 | 2022/02/17 |
| brPFOSK | S4269-9 | 46.4 | 540 | 1 | 2022/01/12 |
| PFNA | S4269-10 | 50 | 500 | 1 | 2022/07/20 |
| PFDA | S4269-11 | 50 | 500 | 1 | 2022/05/29 |
| L-PFDS | S4269-12 | 48.2 | 518 | 1 | 2022/02/17 |
| PFUdA | S4269-13 | 50 | 500 | 1 | 2022/09/21 |
| PFDoA | S4269-14 | 50 | 500 | 1 | 2022/05/29 |
| PFTrDA | S4269-15 | 50 | 500 | 1 | 2022/05/02 |
| PFTeDA | S4269-16 | 50 | 500 | 1 | 2022/09/21 |
| PFOSA (FOSA-I) | S4269-17 | 50 | 500 | 1 | 2022/09/01 |
| N-MeFOSA-M | S4269-18 | 50 | 500 | 1 | 2022/07/05 |
| N-EtFOSA-M | S4269-19 | 50 | 500 | 1 | 2022/07/05 |
| N-MeFOSE-M | S4269-20 | 50 | 500 | 1 | 2022/04/24 |
| N-EtFOSE-M | S4269-21 | 50 | 500 | 1 | 2022/04/24 |
| N-MeFOSAA | S4269-22 | 50 | 500 | 1 | 2022/01/11 |
| N-EtFOSAA | S4269-23 | 50 | 500 | 1 | 2022/01/11 |
| 6:2FTS | S4269-24 | 47.4 | 528 | 1 | 2022/04/20 |
| 8:2FTS | S4269-25 | 47.9 | 522 | 1 | 2021/12/12 |

No writting on bottom Page

La, 2018/01/30

PRLST 133 PG 150

## PREPARATION OF CONCENTRATED STOCK STANDARDS

Solution No.: S-4269 Date: 2018/01/03 Expiry Date: See Below Discard Date: _____

Replaces Solution: _____ Replaced by Solution: _____ Chemist: Lav

S-4269 (PRLST133 p. 150)

| Solution ID# | Compound Name | Lot# | Received date | Exp. date | Replaces Solution | Replaced by Solution | Conc. (ug/mL) | Solvent | Storage |
|---|---|---|---|---|---|---|---|---|---|
| S4269-1 | PFBA | PFBA0517 | 2017/11/30 | 2022/05/29 | S4240-1 | | 50 | MeOH | FZ-11 |
| S4269-2 | L-PFBS | LPFBS0917 | 2017/11/30 | 2022/09/21 | S4240-2 | | 44.2 | MeOH | FZ-11 |
| S4269-3 | PFPeA | PFPeA0617 | 2017/11/30 | 2022/06/14 | S4240-3 | | 50 | MeOH | FZ-11 |
| S4269-4 | PFHxA | PFHxA0917 | 2017/11/30 | 2022/09/27 | S4240-4 | | 50 | MeOH | FZ-11 |
| S4269-5 | br-PFHxSk | brPFHxSK0117 | 2017/11/30 | 2022/01/04 | S4240-5 | | 45.5 | MeOH | FZ-11 |
| S4269-6 | PFHpA | PFHpA1216 | 2017/11/30 | 2021/12/02 | S4240-6 | | 50 | MeOH | FZ-11 |
| S4269-7 | L-PFHpS | LPFHpS0817 | 2017/11/30 | 2022/09/01 | S4240-7 | | 47.6 | MeOH | FZ-11 |
| S4269-8 | PFOA | PFOA0217 | 2017/09/26 | 2022/02/17 | S4240-8 | | 50 | MeOH | FZ-11 |
| S4269-9 | brPFOSK | brPFOSK0117 | 2017/11/30 | 2022/01/12 | S4240-9 | | 46.4 | MeOH | FZ-11 |
| S4269-10 | PFNA | PFNA0717 | 2017/11/30 | 2022/07/20 | S4240-10 | | 50 | MeOH | FZ-11 |
| S4269-11 | PFDA | PFDA0517 | 2017/11/30 | 2022/05/29 | S4240-11 | | 50 | MeOH | FZ-11 |
| S4269-12 | L-PFDS | LPFDS0217 | 2017/11/30 | 2022/02/17 | S4240-12 | | 48.2 | MeOH | FZ-11 |
| S4269-13 | PFUdA | PFUdA0917 | 2017/11/30 | 2022/09/21 | S4240-13 | | 50 | MeOH | FZ-11 |
| S4269-14 | PFDoA | PFDoA0517 | 2017/11/30 | 2022/05/29 | S4240-14 | | 50 | MeOH | FZ-11 |
| S4269-15 | PFTrDA | PFTrDA0517 | 2017/11/30 | 2022/05/02 | S4240-15 | | 50 | MeOH | FZ-11 |
| S4269-16 | PFTeDA | PFTeDA0917 | 2017/11/30 | 2022/09/21 | S4240-16 | | 50 | MeOH | FZ-11 |
| S4269-17 | PFOSA (FOSA-I) | FOSA08171 | 2017/11/30 | 2022/09/01 | S4240-17 | | 50 | IPA | FD-59 |
| S4269-18 | N-MeFOSA-M | NMeFOSA0717M | 2017/11/30 | 2022/07/05 | S4240-18 | | 50 | MeOH | FZ-11 |
| S4269-19 | N-EtFOSA-M | NEtFOSA0717M | 2017/11/30 | 2022/07/05 | S4240-19 | | 50 | MeOH | FZ-11 |
| S4269-20 | N-MeFOSE-M | NMeFOSE0417M | 2017/11/30 | 2022/04/24 | S4240-20 | | 50 | MeOH | FZ-11 |
| S4269-21 | N-EtFOSE-M | NEtFOSE0417M | 2017/11/30 | 2022/04/24 | S4240-21 | | 50 | MeOH | FZ-11 |
| S4269-22 | N-MeFOSAA | NMeFOSAA0117 | 2017/11/30 | 2022/01/11 | S4240-22 | | 50 | MeOH | FD-59 |
| S4269-23 | N-EtFOSAA | NEtFOSAA0117 | 2017/11/30 | 2022/01/11 | S4240-23 | | 50 | MeOH | FD-59 |
| S4269-24 | 6:2FTS | 62FTS0417 | 2017/11/30 | 2022/04/20 | S4240-24 | | 47.4 | MeOH | FD-59 |
| S4269-25 | 8:2FTS | 82FTS1216 | 2017/11/30 | 2021/12/12 | S4240-25 | | 47.9 | MeOH | FD-59 |
| Date Opened (All compounds): 2018/01/03 | | | Supplier (All compounds) : Wellington | | | | Chemist: Lav | | |

No writting on bottom Page

Lav, 2018/01/03

_____
(specify model and serial no.)

Solvent Used: _____

Solvent Supplier: _____ Lot No(s).: _____

Date Opened: _____

Storage Location / Conditions: _____

Notes/Comments _____

# WELLINGTON LABORATORIES

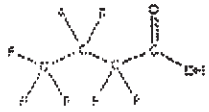
## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** PFBA
**COMPOUND:** Perfluoro-n-butanoic acid

**LOT NUMBER:** PFBA0517

**STRUCTURE:**

**CAS #:** 375-22-4



**MOLECULAR FORMULA:** $C_4HF_7O_2$
**CONCENTRATION:** 50 ± 2.5 µg/ml

**MOLECULAR WEIGHT:** 214.04
**SOLVENT(S):** Methanol
Water (<1%)

**CHEMICAL PURITY:** >98%
**LAST TESTED:** 05/29/2017
**EXPIRY DATE:** 05/29/2022
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

**DOCUMENTATION/ DATA ATTACHED:**

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

657 2017/11/30
2 ampules

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

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Certified By: _____ Date: 05/30/2017
E.G. Chittim, General Manager

*Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA*
*519-822-2436 • Fax: 519-822-2849 • info@well-labs.com*

WELLINGTON LABORATORIES

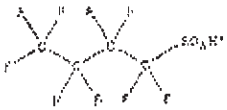
# CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** L-PFBS

**COMPOUND:** Potassium perfluoro-1-butanesulfonate

**LOT NUMBER:** LPFBS0917

**STRUCTURE:**



**CAS #:** 29420-49-3

**MOLECULAR FORMULA:** $C_4F_9SO_3K$

**CONCENTRATION:** 50.0 ± 2.5 µg/ml (K salt)
44.2 ± 2.2 µg/ml (PFBS anion)

**CHEMICAL PURITY:** >98%

**LAST TESTED:** 09/21/2017

**EXPIRY DATE:** 09/21/2022

**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

**MOLECULAR WEIGHT:** 338.19

**SOLVENT(S):** Methanol

**DOCUMENTATION/ DATA ATTACHED:**

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

652 2017/11/30
2 nongrates

**ADDITIONAL INFORMATION:**

- See page 2 for further details.

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Certified By: _____ Date: 09/22/2017
B.G. Chilton, General Manager

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WELLINGTON LABORATORIES

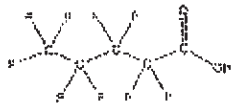
# CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** PFPeA
**COMPOUND:** Perfluoro-n-pentanoic acid

**LOT NUMBER:** PFPeA0617

**STRUCTURE:**

**CAS #:** 2706-90-3



**MOLECULAR FORMULA:** $C_5HF_9O_2$
**CONCENTRATION:** 50 ± 2.5 µg/ml

**MOLECULAR WEIGHT:** 264.05
**SOLVENT(S):** Methanol
Water (<1%)

**CHEMICAL PURITY:** >98%
**LAST TESTED:** 06/14/2017
**EXPIRY DATE:** 06/14/2022
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

2017/08/30 GGZ

**DOCUMENTATION/ DATA ATTACHED:**

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.
- Contains ~ 0.3% of Perfluoro-n-heptanoic acid (PFHpA) and ~ 0.2% of $C_5H_7F_9O_2$ (hydrido - derivative) as measured by $^{19}F$ NMR

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Certified By: _____ Date: 06/16/2017
B.G. Chittim, General Manager

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Date Received: 2017.11.30 - 2 ampoules - HPLC

WELLINGTON LABORATORIES

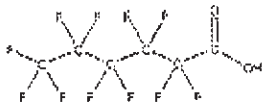
# CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** PFHxA
**COMPOUND:** Perfluoro-n-hexanoic acid

**LOT NUMBER:** PFHxA0017

**STRUCTURE:**

**CAS #:** 307-24-4



**MOLECULAR FORMULA:** $C_6HF_{11}O_2$
**CONCENTRATION:** 50 ± 2.5 µg/ml

**MOLECULAR WEIGHT:** 314.05
**SOLVENT(S):** Methanol
Water (<1%)

**CHEMICAL PURITY:** >98%
**LAST TESTED:** (mm/dd/yy) 09/27/2017
**EXPIRY DATE:** (mm/dd/yy) 09/27/2022
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

**DOCUMENTATION/ DATA ATTACHED:**

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

GSZ 2017/11/30
2 ampules

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.
- Contains ~ 1.0% of branched isomers.

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Certified By: _____ Date: 11/01/2017
B.G. Chittim, General Manager

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WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

# br-PFHxSK

**Potassium Perfluorohexanesulfonate**
**Solution/Mixture of Linear and**
**Branched Isomers**

| | |
|---|---|
| PRODUCT CODE: | br-PFHxSK |
| LOT NUMBER: | brPFHxSK0117 |
| CONCENTRATION: | 50.0 ± 2.5 µg/ml (total potassium salt) |
| | 45.5 ± 2.3 µg/ml (total PFHxS anion) |
| SOLVENT(S): | Methanol |
| DATE PREPARED: | 01/03/2017 |
| LAST TESTED: | 01/04/2017 |
| EXPIRY DATE: | 01/04/2022 |
| RECOMMENDED STORAGE: | Store ampoule in a cool, dark place |

DESCRIPTION:

The chemical purity has been determined to be ≥98% perfluorohexanesulfonate linear and branched isomers. The full name, structure and percent composition for each of the identified isomeric components are given in Table A.

DOCUMENTATION/ DATA ATTACHED:

Table A: Isomeric Components and Percent Composition by $^{19}$F-NMR
Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS Data (SIR)
Figure 3: LC/MS/MS Data (Selected MRM Transitions)

652 2017/01/30
Z. ampoules

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains ~ 0.5% of perfluoro-1-pentanesulfonate and ~ 0.2% of perfluoro-1-octanesulfonate.
- CAS#: 3871-99-6 (for linear isomer; potassium salt).

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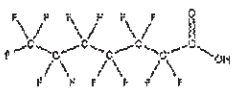
WELLINGTON LABORATORIES

# CERTIFICATE OF ANALYSIS
## DOCUMENTATION

**PRODUCT CODE:** PFHpA
**COMPOUND:** Perfluoro-n-heptanoic acid

**LOT NUMBER:** PFHpA1216

**STRUCTURE:**



**CAS #:** 375-85-9

Received from
2016-12-16
2 x 1.2 mL
FZ-11

| | | | |
|---|---|---|---|
| **MOLECULAR FORMULA:** | $C_7HF_{13}O_2$ | **MOLECULAR WEIGHT:** | 364.06 |
| **CONCENTRATION:** | 50 ± 2.5 µg/ml | **SOLVENT(S):** | Methanol<br>Water (<1%) |
| **CHEMICAL PURITY:** | >98% | | |
| **LAST TESTED:** | 12/02/2016 | | |
| **EXPIRY DATE:** | 12/02/2021 | | |
| **RECOMMENDED STORAGE:** | Store ampoule in a cool, dark place | | |

**DOCUMENTATION/ DATA ATTACHED:**

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

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Certified By: B.G. Griffith Date: 12/12/2016

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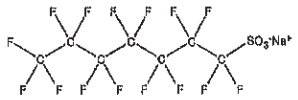
Received 2016/12/23 1 x 1.2mL MMN FZ-11
Received 2016/12/29 1 x 1.2mL MMN FZ-11
Received 2017/05/25 2 x 1.2mL MMN FZ-11
Received 2017/05/29 2 x 1.2mL MMN FZ-11
Date Received: 2017/06/02-DMZ-1.2ml-FD
Date Received: 2017/08/09 1X1.2ml HPLC
Received 2016/12/23 1 x 1.2mL MMN FZ-11
Received 2016/12/29 1 x 1.2mL MMN FZ-11
Received 2017/05/25 2 x 1.2mL MMN FZ-11
Received 2017/05/29 2 x 1.2mL MMN FZ-11
Date Received: 2017/06/02-DMZ-1.2ml-FD
Date Received: 2017/08/09 1X1.2ml HPLC
Date Received: 2017/08/30 1X1.2ml HPLC
Date received 2017/09/26 1x2 ampules HPLC
DATE RECEIVED 2017/09/12 2 ampules HPLC
Date Received: 2017.11.30 - 2 ampoules - HPLC

# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

| | | | |
|---|---|---|---|
| **PRODUCT CODE:** | L-PFHpS | **LOT NUMBER:** | LPFHpS0817 |
| **COMPOUND:** | Sodium perfluoro-1-heptanesulfonate | | |
| **STRUCTURE:** | | **CAS #:** | Not available |



| | | | |
|---|---|---|---|
| **MOLECULAR FORMULA:** | $C_7F_{15}SO_3Na$ | **MOLECULAR WEIGHT:** | 472.10 |
| **CONCENTRATION:** | 50.0 ± 2.5 µg/ml (Na salt)<br>47.6 ± 2.4 µg/ml (PFHpS anion) | **SOLVENT(S):** | Methanol |
| **CHEMICAL PURITY:** | >98% | | |
| **LAST TESTED:** (mm/dd/yyyy) | 09/01/2017 | | |
| **EXPIRY DATE:** (mm/dd/yyyy) | 09/01/2022 | | |
| **RECOMMENDED STORAGE:** | Store ampoule in a cool, dark place | | |

**DOCUMENTATION/ DATA ATTACHED:**

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

1x2 ampules
GSZ 2017/09/26

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- Contains ~ 0.2% of L-PFHxS ($C_6F_{13}SO_3Na$) and ~ 0.1% of L-PFOS ($C_8F_{17}SO_3Na$).

***FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE***

**Certified By:** _____ **Date:** 09/07/2017 (mm/dd/yyyy)
B.G. Chittim, General Manager

*Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA*
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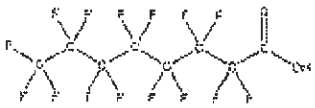
Date Received: 2017/11/30 1x2 ampoules - HPLC

WELLINGTON LABORATORIES

# CERTIFICATE OF ANALYSIS
## DOCUMENTATION

| | | | |
|---|---|---|---|
| **PRODUCT CODE:** | PFOA | **LOT NUMBER:** | PFOA0217 |
| **COMPOUND:** | Perfluoro-n-octanoic acid | | |
| **STRUCTURE:** | | **CAS #:** | 335-67-1 |



| | | | |
|---|---|---|---|
| **MOLECULAR FORMULA:** | $C_8HF_{15}O_2$ | **MOLECULAR WEIGHT:** | 414.07 |
| **CONCENTRATION:** | 50 ± 2.5 µg/mL | **SOLVENT(S):** | Methanol<br>Water (<1%) |
| **CHEMICAL PURITY:** | >98% | | |
| **LAST TESTED:** | 02/17/2017 | | |
| **EXPIRY DATE:** | 02/17/2022 | | |
| **RECOMMENDED STORAGE:** | Store ampoule in a cool, dark place | | |

**DOCUMENTATION/ DATA ATTACHED:**

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2. LC/MS/MS Data (Selected MRM Transitions)

Received: 2017/06/02
DMZ, 1.2mL x 1
Fridge

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

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Certified By: B.G. Chittim  Date: 02/22/2017

*Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA*
*519-822-2435 • Fax: 519-822-2849 • info@well-labs.com*

date recieved:2017/05/29 1.2x1 - HPLC
date recieved:2017/05/29 1.2x1 - HPLC
Date Received:2017/06/02-1.2 x 1-HPLC
date recieved:2017/08/09 1.2x1 - HPLC
date recieved:2017/08/30 1.2x1 - HPLC
date received 2017/09/26 1x4 ampules HPLC
date received 2017/09/12 2 ampules HPLC
date received 2017/09/26 2 ampules HPLC

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

# br-PFOSK

**Potassium Perfluorooctanesulfonate Solution/Mixture of Linear and Branched Isomers**

| | |
|---|---|
| PRODUCT CODE: | br-PFOSK |
| LOT NUMBER: | brPFOSK0117 |
| CONCENTRATION: | 50 ± 2.5 µg/ml (total potassium salt) |
| | 46.4 ± 2.3 µg/ml (total PFOS anion) |
| SOLVENT(S): | Methanol |
| DATE PREPARED: | 01/03/2017 |
| LAST TESTED: | 01/12/2017 |
| EXPIRY DATE: | 01/12/2022 |
| RECOMMENDED STORAGE: | Store ampoule in a cool, dark place |

DESCRIPTION:

The chemical purity has been determined to be ≥98% perfluorooctanesulfonate linear and branched isomers. The full name, structure and percent composition for each of the isomeric components are given in Table A.

DOCUMENTATION/ DATA ATTACHED:

Table A: Isomeric Components and Percent Composition by $^{19}$F-NMR
Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS Data (SIR)
Figure 3: LC/MS/MS Data (Selected MRM Transitions)

Received: 6/7/06/02
DM2, 1.2 mL x 1
Fridge

ADDITIONAL INFORMATION:

- See page 2 for further details.
- A 5-point calibration curve was generated using linear PFOS (potassium salt) and mass-labelled PFOS as an internal standard to enable quantitation of br-PFOSK using isotopic dilution.
- CAS#: 2795-39-3 (for linear isomer, potassium salt).

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*519-822-2436 • Fax: 519-822-2849 • info@well-labs.com*

date recieved:2017/05/29 1.2x1- HPLC
date received: 2017/08/09 1 ampule HPLC
date received: 2017/08/30 1 ampule HPLC
date eceived: 2017/09/26 1.2x1ampule HPLC
date received 2017/09/12 2 ampules
Date Received: 2017.11.30 - 2 ampoules -HPLC

Ampoule: 2 TRW
Date received: 2017/01/12

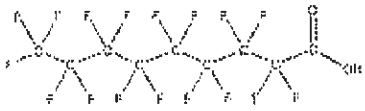
# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** PFNA
**COMPOUND:** Perfluoro-n-nonanoic acid

**LOT NUMBER:** PFNA0717

**STRUCTURE:**



**CAS #:** 375-95-1

**MOLECULAR FORMULA:** $C_9HF_{17}O_2$
**CONCENTRATION:** 50 ± 2.5 ug/ml

**MOLECULAR WEIGHT:** 464.08
**SOLVENT(S):** Methanol
Water (<1%)

**CHEMICAL PURITY:** >98%
**LAST TESTED:** 07/20/2017
**EXPIRY DATE:** 07/20/2022
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

**DOCUMENTATION/ DATA ATTACHED:**

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.
- Contains ~ 0.1% of perfluoro-n-octanoic acid (PFOA), < 0.1% of perfluoro-n-heptanoic acid (PFHpA), and < 0.1% of perfluoro-n-undecanoic acid (PFUdA).

***FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE***

**Certified By:** B.G. Chittim, General Manager **Date:** 07/24/2017

*Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA*
*519-822-2436 • Fax: 519-822-2849 • info@well-labs.com*

Form 27, Issued 2016.11.30
Revised 4, Revised 2017.03.09

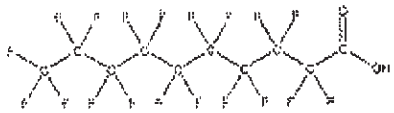


Date Received: 2017.11.30 - 2 ampoules - HPLC

# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS
DOCUMENTATION

| | | | |
|---|---|---|---|
| **PRODUCT CODE:** | PFDA | **LOT NUMBER:** | PFDA0517 |
| **COMPOUND:** | Perfluoro-n-decanoic acid | | |
| **STRUCTURE:** | | **CAS #:** | 335-76-2 |



| | | | |
|---|---|---|---|
| **MOLECULAR FORMULA:** | $C_{10}HF_{19}O_2$ | **MOLECULAR WEIGHT:** | 514.08 |
| **CONCENTRATION:** | 50 ± 2.5 µg/ml | **SOLVENT(S):** | Methanol<br>Water (<1%) |
| **CHEMICAL PURITY:** | >98% | | |
| **LAST TESTED:** (mm/dd/yyyy) | 05/26/2017 | | |
| **EXPIRY DATE:** (mm/dd/yyyy) | 05/26/2022 | | |
| **RECOMMENDED STORAGE:** | Store ampoule in a cool, dark place | | |

1 ampoule
2017/06/20 GS2

**DOCUMENTATION/DATA ATTACHED:**

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.
- Contains ~ 0.2% of perfluoro-n-nonanoic acid (PFNA).

***FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE***

Certified By: _____ Date: 06/30/2017 (mm/dd/yyyy)
B.G. Chittim, General Manager

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Date Received: 2017.11.30 - 2 ampoules - HPLC

WELLINGTON LABORATORIES

# CERTIFICATE OF ANALYSIS DOCUMENTATION

| | | | |
|---|---|---|---|
| **PRODUCT CODE:** | L-PFDS | **LOT NUMBER:** | LPFDS0217 |
| **COMPOUND:** | Sodium perfluoro-1-decanesulfonate | | |
| **STRUCTURE:** |  | **CAS #:** | 2806-15-7 |
| **MOLECULAR FORMULA:** | $C_{10}F_{21}SO_3Na$ | **MOLECULAR WEIGHT:** | 622.13 |
| **CONCENTRATION:** | 50.0 ± 2.5 µg/ml (Na salt)<br>48.2 ± 2.4 µg/ml (PFDS anion) | **SOLVENT(S):** | Methanol |
| **CHEMICAL PURITY:** | >98% | | |
| **LAST TESTED:** | 02/17/2017 | | |
| **EXPIRY DATE:** | 02/17/2022 | | |
| **RECOMMENDED STORAGE:** | Store ampoule in a cool, dark place | | |

**DOCUMENTATION/ DATA ATTACHED:**

Figure 1. LC/MS Data (TIC and Mass Spectrum)
Figure 2. LC/MS/MS Data (Selected MRM Transitions)

Date received
2017/05/10
11 2 Ampules
HPLC
SS V

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- Contains ~ 0.9% of sodium perfluoro-1-dodecanesulfonate (L-PFDoS).

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Certified By: B.G. Chittim Date: 02/22/2017

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*519-822-2436 • Fax: 519-822-2849 • info@well-labs.com*



Received 2017/05/25 2 x 1.2mL MMN FZ-11
Received 2017/05/29 2 x 1.2mL MMN FZ-11
Date REceived: 2017/06/02-DMZ-1.2ml-FD
date received: 2017/08/30 1 ampule HPLC
DATE RECEIVED: 2017/09/26 1X2 AMPULES HPLC
Date Received: 2017.11.30 - 2 ampoules - HPLC

WELLINGTON LABORATORIES

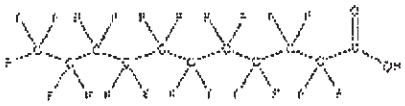
# CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** PFUdA
**COMPOUND:** Perfluoro-n-undecanoic acid

**LOT NUMBER:** PFUdA0917

**STRUCTURE:**

**CAS #:** 2058-94-8



**MOLECULAR FORMULA:** $C_2HF_nO_2$
**CONCENTRATION:** 50 ± 2.5 µg/ml

**MOLECULAR WEIGHT:** 564.09
**SOLVENT(S):** Methanol
Water (<1%)

**CHEMICAL PURITY:** >98%
**LAST TESTED:** 09/21/2017
**EXPIRY DATE:** 09/21/2022
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

**DOCUMENTATION/ DATA ATTACHED:**

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

GSE 2017/11/30
2 AMPOULES

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

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**Certified By:** _____ **Date:** 09/22/2017
B.G. Chittim, General Manager

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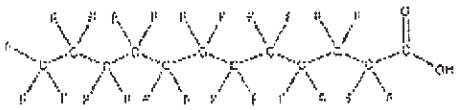
Ampoule 2 TRW
Date received: 2017/09/22

# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** PFDoA
**COMPOUND:** Perfluoro-n-dodecanoic acid
**LOT NUMBER:** PFDoA0517

**STRUCTURE:**
**CAS #:** 307-55-1



**MOLECULAR FORMULA:** $C_{12}HF_{23}O_2$
**CONCENTRATION:** 50 ± 2.5 µg/ml
**MOLECULAR WEIGHT:** 614.10
**SOLVENT(S):** Methanol
Water (<1%)

**CHEMICAL PURITY:** >98%
**LAST TESTED:** 05/29/2017
**EXPIRY DATE:** 05/29/2022
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

**DOCUMENTATION/ DATA ATTACHED:**

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

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Certified By: _____ Date: 05/30/2017
B.G. Chittim, General Manager

*Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA*
*519-822-2436 • Fax: 519-822-2649 • info@well-labs.com*

Form 6.27, Issue 2004-11-15
Published & Revised 2017-03-06



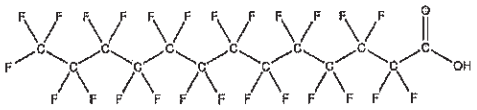
Date Received: 2017.11.30 - 2 ampoules - HPLC

Date Received: 2017.08.30 - 1 ampoule - HPLC

WELLINGTON LABORATORIES

# CERTIFICATE OF ANALYSIS
## DOCUMENTATION

| | | | |
|---|---|---|---|
| **PRODUCT CODE:** | PFTrDA | **LOT NUMBER:** | PFTrDA0517 |
| **COMPOUND:** | Perfluoro-n-tridecanoic acid | | |
| **STRUCTURE:** | | **CAS #:** | 72629-94-8 |



| | | | |
|---|---|---|---|
| **MOLECULAR FORMULA:** | $C_{13}HF_{25}O_2$ | **MOLECULAR WEIGHT:** | 664.11 |
| **CONCENTRATION:** | 50 ± 2.5 µg/ml | **SOLVENT(S):** | Methanol<br>Water (<1%) |
| **CHEMICAL PURITY:** | >98% | | |
| **LAST TESTED:** (mm/dd/yyyy) | 05/02/2017 | | |
| **EXPIRY DATE:** (mm/dd/yyyy) | 05/02/2022 | | |
| **RECOMMENDED STORAGE:** | Store ampoule in a cool, dark place | | |

HPLC ①
2017/08/09

**DOCUMENTATION/ DATA ATTACHED:**

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.
- Contains ~ 0.1% of PFUdA ($C_{11}HF_{21}O_2$), ~ 0.4% of PFDoA ($C_{12}HF_{23}O_2$), and ~ 0.1% of PFTeDA ($C_{14}HF_{27}O_2$).

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**Certified By:** _____ **Date:** 05/04/2017 (mm/dd/yyyy)
B.G. Chittim, General Manager

*Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA*
*519-822-2436 • Fax: 519-822-2849 • info@well-labs.com*



Received 2017/05/29 1 x 1.2mL HPLC
Received 2017/08/09 1 x 1.2mL HPLC
Received 2017/08/30 1 x 1.2mL HPLC
Received 2017/09/26 1 x 2 ampules HPLC
Received 2017/09/12 2 ampules HPLC
Date Received: 2017.11.30 - 2 ampoules - HPLC

WELLINGTON LABORATORIES

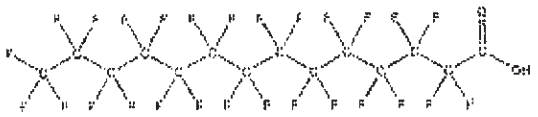
# CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** PFTeDA
**COMPOUND:** Perfluoro-n-tetradecanoic acid

**LOT NUMBER:** PFTeDA0917

**STRUCTURE:**

**CAS #:** 376-06-7



**MOLECULAR FORMULA:** $C_{14}HF_{27}O_2$
**CONCENTRATION:** 50 ± 2.5 µg/ml

**MOLECULAR WEIGHT:** 714.11
**SOLVENT(S):** Methanol
Water (<1%)

**CHEMICAL PURITY:** >98%
**LAST TESTED:** 09/21/2017
**EXPIRY DATE:** 09/21/2022
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

**DOCUMENTATION/ DATA ATTACHED:**

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

GSZ 2017/11/30
2 ampules

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.
- Contains ~ 0.2% of PFDoA ($C_{12}HF_{23}O_2$) and ~ 0.2% of PFPeDA ($C_{15}HF_{31}O_2$).

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Certified By: _____ Date: 09/21/2017
B.G. Chatim, General Manager

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WELLINGTON LABORATORIES

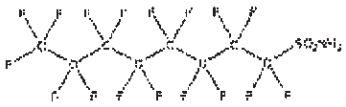
# CERTIFICATE OF ANALYSIS
## DOCUMENTATION

**PRODUCT CODE:** FOSA-I
**COMPOUND:** Perfluoro-1-octanesulfonamide

**LOT NUMBER:** FOSA08171

**STRUCTURE:**

**CAS #:** 754-91-6



**MOLECULAR FORMULA:** $C_8H_2F_{17}NO_2S$
**CONCENTRATION:** 50 ± 2.5 µg/ml
**CHEMICAL PURITY:** >98%
**LAST TESTED:** (mm/dd/yyyy) 09/01/2017
**EXPIRY DATE:** (mm/dd/yyyy) 09/01/2022
**RECOMMENDED STORAGE:** Refrigerate ampoule

**MOLECULAR WEIGHT:** 499.14
**SOLVENT(S):** Isopropanol

**DOCUMENTATION/ DATA ATTACHED:**

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

**ADDITIONAL INFORMATION:**

- See page 2 for further details.

652 2017/11/30
2 ampoules

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Certified By: _____ Date: 09/14/2017
S.C. Chittim, General Manager

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WELLINGTON LABORATORIES

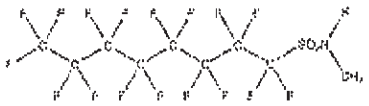
# CERTIFICATE OF ANALYSIS
## DOCUMENTATION

**PRODUCT CODE:** N-MeFOSA-M
**COMPOUND:** N-methylperfluoro-1-octanesulfonamide

**LOT NUMBER:** NMeFOSA0717M

**STRUCTURE:**

**CAS #:** 31506-32-8



**MOLECULAR FORMULA:** $C_9H_5F_{17}NO_2S$
**CONCENTRATION:** 50 ± 2.5 µg/ml
**CHEMICAL PURITY:** >98%
**LAST TESTED:** 07/05/2017
**EXPIRY DATE:** 07/05/2022
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

**MOLECULAR WEIGHT:** 513.17
**SOLVENT(S):** Methanol

**DOCUMENTATION/ DATA ATTACHED:**

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

1 ampoule
2017/08/30 GSZ

**ADDITIONAL INFORMATION:**

- See page 2 for further details.

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Certified By: _____ Date: 07/10/2017
B.G. Chittim, General Manager

*Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA*
*519-822-2436 • Fax: 519-822-2849 • info@well-labs.com*

Date received: 2017/11/30 1 ampoule - HPLC

# WELLINGTON LABORATORIES

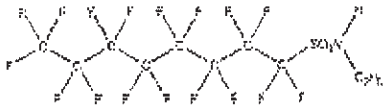
## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** N-EtFOSA-M
**COMPOUND:** N-ethylperfluoro-1-octanesulfonamide

**LOT NUMBER:** NEtFOSA0717M

**STRUCTURE:**

**CAS #:** 4151-50-2



**MOLECULAR FORMULA:** $C_{10}H_5F_{17}NO_2S$
**CONCENTRATION:** 50 ± 2.5 µg/ml
**CHEMICAL PURITY:** >98%
**LAST TESTED:** 07/05/2017
**EXPIRY DATE:** 07/05/2022
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

**MOLECULAR WEIGHT:** 527.20
**SOLVENT(S):** Methanol

**DOCUMENTATION/ DATA ATTACHED:**

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

1 ampoule
2017/08/30 642

**ADDITIONAL INFORMATION:**

- See page 2 for further details.

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Certified By: _____ Date: 07/18/2017
B.G. Chittim, General Manager

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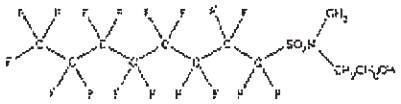
Date Received: 2017.11.30 - 1 ampoule - HPLC

WELLINGTON LABORATORIES

# CERTIFICATE OF ANALYSIS DOCUMENTATION

| | | | |
|---|---|---|---|
| **PRODUCT CODE:** | N-MeFOSE-M | **LOT NUMBER:** | NMeFOSE0417M |
| **COMPOUND:** | 2-(N-methylperfluoro-1-octanesulfonamido)-ethanol | | |
| **STRUCTURE:** | | **CAS #:** | 24448-09-7 |



| | | | |
|---|---|---|---|
| **MOLECULAR FORMULA:** | $C_{11}H_8F_{17}NO_3S$ | **MOLECULAR WEIGHT:** | 557.22 |
| **CONCENTRATION:** | 50 ± 2.5 µg/ml | **SOLVENT(S):** | Methanol |
| **CHEMICAL PURITY:** | >98% | | |
| **LAST TESTED:** | 04/24/2017 (HRGC/LRMS) | | |
| | 04/21/2017 (LC/MS) | | |
| **EXPIRY DATE:** | 04/24/2022 | | |
| **RECOMMENDED STORAGE:** | Store ampoule in a cool, dark place | | |

**DOCUMENTATION/ DATA ATTACHED:**

Figure 1: HRGC/LRMS Data (TIC and Mass Spectrum)
Figure 2: LC/MS Data (TIC and Mass Spectrum)
Figure 3: LC/MS/MS Data (Selected MRM Transitions)

Received: 2017/06/02
DM2 1:2 mL X 1
[illegible]

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- In order to see the molecular ion (adduct free), the LC mobile phase should be free of ammonium acetate buffer.

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Certified By: _____ Date: 06/05/2017
B.G. Chittim, General Manager

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*519-822-2436 • Fax: 519-822-2849 • info@well-labs.com*



date recieved: 2017/05/29 1x1.2 HPLC
date recieved: 2017/06/02 1x1.2 HPLC
date recieved: 2017/08/09 1x1.2 HPLC
date recieved: 2017/08/30 1x1.2 HPLC
date received: 2017/09/26 1x1.2 HPLC
Date Received: 2017.08.09 - 1 ampoule - HPLC
Date Received: 2017.11.30 - 2 ampoules - HPLC

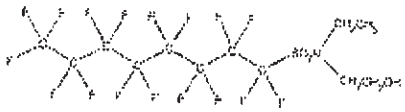
WELLINGTON LABORATORIES

# CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** N-EtFOSE-M
**COMPOUND:** 2-(N-ethylperfluoro-1-octanesulfonamido)-ethanol
**LOT NUMBER:** NEtFOSE04175

**STRUCTURE:**

**CAS #:** 1691-99-2



**MOLECULAR FORMULA:** $C_{12}H_{10}F_{17}NO_3S$
**MOLECULAR WEIGHT:** 571.25
**CONCENTRATION:** 50 ± 2.5 µg/mL
**SOLVENT(S):** Methanol
**CHEMICAL PURITY:** >98%
**LAST TESTED:** 04/24/2017 (HRGC/LRMS)
04/21/2017 (LC/MS)
**EXPIRY DATE:** 04/24/2022
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

**DOCUMENTATION/ DATA ATTACHED:**

Figure 1: HRGC/LRMS Data (TIC and Mass Spectrum)
Figure 2: LC/MS Data (TIC and Mass Spectrum)
Figure 3: LC/MS/MS Data (Selected MRM Transitions)

Received: 2017/06/02
DMZ, 1.2 mL x 1
Fridge

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- In order to see the molecular ion (adduct free), the LC mobile phase should be free of ammonium acetate buffer

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Certified By: _____ Date: 04/26/2017
B.G. Cebbis, General Manager

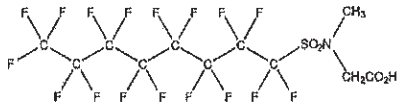
*Wellington Laboratories Inc., 345 Southgate Dr, Guelph ON N1G 3M5 CANADA*
*519-822-2436 • Fax: 519-822-2849 • info@well-labs.com*

date recieved:2017/05/29 1x1.2 HPLC
date recieved:2017/08/09 1x1.2 HPLC
date recieved:2017/08/30 1x1.2 HPLC
date received:2017/08/09 1x1.2 HPLC
date received: 2017/09/26 1x1.2 HPLC
Date received: 2017.08.09 - 1 ampoule - HPLC
Date Received: 2017.11.30 - 2 ampoules - HPLC

WELLINGTON LABORATORIES

# CERTIFICATE OF ANALYSIS
## DOCUMENTATION

| | | | |
|---|---|---|---|
| **PRODUCT CODE:** | N-MeFOSAA | **LOT NUMBER:** | NMeFOSAA0117 |
| **COMPOUND:** | N-methylperfluoro-1-octanesulfonamidoacetic acid | | |
| **STRUCTURE:** | | **CAS #:** | 2355-31-9 |



| | | | |
|---|---|---|---|
| **MOLECULAR FORMULA:** | $C_{11}H_9F_{17}NO_4S$ | **MOLECULAR WEIGHT:** | 571.21 |
| **CONCENTRATION:** | 50 ± 2.5 µg/ml | **SOLVENT(S):** | Methanol<br>Water (<1%) |
| **CHEMICAL PURITY:** | >98% | | |
| **LAST TESTED:** (mm/dd/yyyy) | 01/11/2017 | | |
| **EXPIRY DATE:** (mm/dd/yyyy) | 01/11/2022 | | |
| **RECOMMENDED STORAGE:** | Refrigerate ampoule | | |

**DOCUMENTATION/ DATA ATTACHED:**

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

178 LC(1) 2016.8.15

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent the conversion of the acetic acid molety to the methyl ester.

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**Certified By:** B.G. Chittim **Date:** 01/12/2017 (mm/dd/yyyy)

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*519-822-2436 • Fax: 519-822-2849 • Info@well-labs.com*



Received date 2017/05/25 1 x 1.2mL HPLC
Received date 2017/08/09 1 x 1.2mL HPLC
Received date 2017/08/30 1 x 1.2mL HPLC
RECEIVED DATE: 2017/09/26 1X1.2 mL HPLC
received date 2017-09-12 2 ampules HPLC
Date Received: 2017.11.30 - 2 ampoules - HPLC

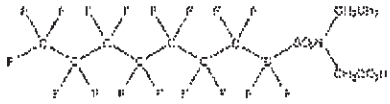
Ampoule: 2 TRW
Date received: 2017/09/12

# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** N-EtFOSAA
**LOT NUMBER:** NEtFOSAA0117
**COMPOUND:** N-ethylperfluoro-1-octanosulfonamidoacetic acid

**STRUCTURE:**
**CAS #:** 2991-50-6



**MOLECULAR FORMULA:** $C_{12}H_8F_{17}NO_4S$
**MOLECULAR WEIGHT:** 585.23
**CONCENTRATION:** 50 ± 2.5 µg/ml
**SOLVENT(S):** Methanol
Water (<1%)

**CHEMICAL PURITY:** >98%
**LAST TESTED:** 01/11/2017
**EXPIRY DATE:** 01/11/2022
**RECOMMENDED STORAGE:** Refrigerate ampoule

**DOCUMENTATION/ DATA ATTACHED:**

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent the conversion of the acetic acid moiety to the methyl ester.

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Certified By: B.G. Chittim
Date: 01/12/2017

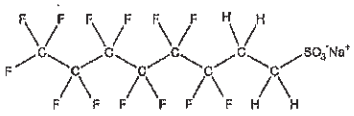
*Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA*
*519-822-2436 • Fax: 519-822-2849 • info@well-labs.com*

Received : 20170525HPLC,
RECEIVED:2017/09/26 HPLC
Date Received: 2017.08.09 - 1 ampoule - HPLC
Date Received: 2017.11.30 - 2 ampoules - HPLC

WELLINGTON LABORATORIES

# CERTIFICATE OF ANALYSIS
## DOCUMENTATION

| | | | |
|---|---|---|---|
| **PRODUCT CODE:** | 6:2FTS | **LOT NUMBER:** | 62FTS0417 |
| **COMPOUND:** | Sodium 1H,1H,2H,2H-perfluorooctane sulfonate | | |
| **STRUCTURE:** | | **CAS #:** | Not available |



| | | | |
|---|---|---|---|
| **MOLECULAR FORMULA:** | $C_8H_4F_{13}SO_3Na$ | **MOLECULAR WEIGHT:** | 450.15 |
| **CONCENTRATION:** | 50.0 ± 2.5 µg/ml (Na salt) | **SOLVENT(S):** | Methanol |
| | 47.4 ± 2.4 µg/ml (6:2FTS anion) | | |
| **CHEMICAL PURITY:** | >98% | | |
| **LAST TESTED:** (mm/dd/yyyy) | 04/20/2017 | | |
| **EXPIRY DATE:** (mm/dd/yyyy) | 04/20/2022 | | |
| **RECOMMENDED STORAGE:** | Refrigerate ampoule | | |

**DOCUMENTATION/ DATA ATTACHED:**

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

**ADDITIONAL INFORMATION:**

- See page 2 for further details.

***FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE***

**Certified By:** _____ **Date:** 04/24/2017 (mm/dd/yyyy)
B.G. Chittim, General Manager

*Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA*
*519-822-2436 • Fax: 519-822-2849 • info@well-labs.com*



Date Recieved: 2017/05/25 1x1.2 HPLC
Date Recieved: 2017/08/09 1x1.2 HPLC
Date Recieved: 2017/08/30 1x1.2 HPLC
Date Recieved: 2017/09/26 1x1.2 HPLC
Date Recieved: 2017/11/30 1x1.2 HPLC

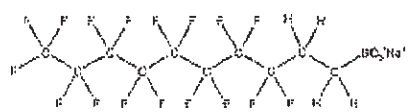
WELLINGTON LABORATORIES

# CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** 8:2FTS **LOT NUMBER:** 82FTS1218

**COMPOUND:** Sodium 1H,1H,2H,2H-perfluorodecane sulfonate

**STRUCTURE:** **CAS #:** Not available



**MOLECULAR FORMULA:** $C_{10}H_4F_{17}SO_3Na$ **MOLECULAR WEIGHT:** 650.16

**CONCENTRATION:** 50.0 ± 2.5 µg/ml (Na salt) **SOLVENT(S):** Methanol

47.9 ± 2.4 µg/ml (8:2FTS anion)

**CHEMICAL PURITY:** >98%

**LAST TESTED:** 12/12/2016

**EXPIRY DATE:** 12/12/2021

**RECOMMENDED STORAGE:** Refrigerate ampoule

Date received 2017/03/10 # 2 Ampules HPLC SSV

**DOCUMENTATION/ DATA ATTACHED:**

Figure 1: LC/MS Data (TIC and Mass Spectrum)

Figure 2: LC/MS/MS Data (Selected MRM Transitions)

**ADDITIONAL INFORMATION:**

- See page 2 for further details.

***FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE***

Certified By: B.G. Chittim Date: 12/21/2016

*Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA*
*519-822-2436 • Fax: 519-822-2849 • info@well-labs.com*

Received 2017/05/25 2 x 1.2mL MMN FD-59
Received 2017/05/29 2 x 1.2mL MMN FD-59
Received 2017/08/09 2 x 1.2mL MMN FD-59
Received 2017/08/30 2 x 1.2mL MMN FD-59
Received 2017/09/26 2 x 1.2nL HPLC
Date Received: 2017.11.30 - 2 ampoules - HPLC

## PREPARATION OF STANDARDS OF INTERMEDIARY CONCENTRATION

Solution No.: I-5299 Date: 2018/01/31 Expiry Date: 2019/01/31 Discard Date: ____

Replaces Solution No.: I-5239 Replaced by Solution: ____ Chemist: GSZ

Compound(s)/Solution Name: PFC SECOND SOURCE SPIKING SOLUTION A

Number of Parent Solution(s): See attached sheet

Concentration of Parent Solution(s): See attached sheet (mg, ug)/mL

Aliquot of Parent Solution(s): See attached sheet mL / uL

Pippette/Syringe ID J434346 (1mL)

Dilution Solvent: 0.3% NH4OH in MeOH Dilution Volume: 25 mL

Final Concentration(s): 1.C (mg, ug)/mL

Solution derivatized (as methyl ester): - As Other (specify): -

Solution Contains Surrogate Compounds: - For mix refer to table on page: -

Solution used for: PFC Volumetric Flask: 25ml Class A (5640)
(identify by serial number or other unique ID)

Solvent Supplier: See PRLRE 108-331 Lot No.: See PRLRE 108-331

Date Opened: See PRLRE 108-331

Storage Location: F211 One time Use, Not Stored: -

Ampule Supplier: Wellington Date Opened: See attached sheet

Mix Name: -

Catalogue No.: - Ampule expiry Date: See attached sheet

Lot No.: See attached sheet

Date Received: See attached sheet

Notes/Comments:

I-5299 (PRLST 140-174)

| Compound Name | ID# | Conc. (ug/mL) | Vol.. of Stock standard (uL) | Final Conc. (ug/mL) | Exp. date |
|---|---|---|---|---|---|
| PFBA | S4261-1 | 50 | 500 | 1 | 2022/05/29 |
| L-PFBS | S4261-2 | 44.2 | 565 | 1 | 2022/09/21 |
| PFPeA | S4261-3 | 50 | 500 | 1 | 2022/06/14 |
| PFHxA | S4261-4 | 50 | 500 | 1 | 2022/09/27 |
| br-PFHxSk | S4261-5 | 45.5 | 549 | 1 | 2022/01/04 |
| PFHpA | S4261-6 | 50 | 500 | 1 | 2021/12/02 |
| L-PFHpS | S4261-7 | 47.6 | 525 | 1 | 2022/09/01 |
| PFOA | S4261-8 | 50 | 500 | 1 | 2022/02/17 |
| brPFOSK | S4261-9 | 46.4 | 540 | 1 | 2022/01/12 |
| PFNA | S4261-10 | 50 | 500 | 1 | 2022/07/20 |
| PFDA | S4261-11 | 50 | 500 | 1 | 2022/05/29 |
| L-PFDS | S4261-12 | 48.2 | 518 | 1 | 2022/02/17 |
| PFUdA | S4261-13 | 50 | 500 | 1 | 2022/09/21 |
| PFDoA | S4261-14 | 50 | 500 | 1 | 2022/05/29 |
| PFTrDA | S4261-15 | 50 | 500 | 1 | 2022/05/02 |
| PFTeDA | S4261-16 | 50 | 500 | 1 | 2022/09/21 |
| PFOSA (FOSA-I) | S4261-17 | 50 | 500 | 1 | 2022/09/01 |
| N-MeFOSA-M | S4261-18 | 50 | 500 | 1 | 2022/07/05 |
| N-EtFOSA-M | S4261-19 | 50 | 500 | 1 | 2022/07/05 |
| N-MeFOSE-M | S4261-20 | 50 | 500 | 1 | 2022/04/24 |
| N-EtFOSE-M | S4261-21 | 50 | 500 | 1 | 2022/04/24 |
| N-MeFOSAA | S4261-22 | 50 | 500 | 1 | 2022/01/11 |
| N-EtFOSAA | S4261-23 | 50 | 500 | 1 | 2022/01/11 |
| 6:2FTS | S4261-24 | 47.4 | 528 | 1 | 2022/04/20 |
| 8:2FTS | S4261-25 | 47.9 | 522 | 1 | 2021/12/12 |

No writing on bottom page.

GSZ, 2018/01/31

PRLST 133 PG 145

## PREPARATION OF CONCENTRATED STOCK STANDARDS

Solution No.: S-4261 Date: 2017/12/15 Expiry Date: See Below Discard Date: _____

Replaces Solution: _____ Replaced by Solution: _____ Chemist: GSZ

S-4261 (PRLST 133 p. 145)

| Solution ID# | Compound Name | Lot# | Received date | Exp. date | Replaces Solution | Replaced by Solution | Conc. (ug/mL) | Solvent | Storage |
|---|---|---|---|---|---|---|---|---|---|
| S4261-1 | PFBA | PFBA0517 | 2017/11/30 | 2022/05/29 | S4240-1 | | 50 | MeOH | FZ-11 |
| S4261-2 | L-PFBS | LPFBS0917 | 2017/11/30 | 2022/09/21 | S4240-2 | | 44.2 | MeOH | FZ-11 |
| S4261-3 | PFPeA | PFPeA0617 | 2017/11/30 | 2022/06/14 | S4240-3 | | 50 | MeOH | FZ-11 |
| S4261-4 | PFHxA | PFHxA0917 | 2017/11/30 | 2022/09/27 | S4240-4 | | 50 | MeOH | FZ-11 |
| S4261-5 | br-PFHxSk | brPFHxSK0117 | 2017/11/30 | 2022/01/04 | S4240-5 | | 45.5 | MeOH | FZ-11 |
| S4261-6 | PFHpA | PFHpA1216 | 2017/11/30 | 2021/12/02 | S4240-6 | | 50 | MeOH | FZ-11 |
| S4261-7 | L-PFHpS | LPFHpS0817 | 2017/11/30 | 2022/09/01 | S4240-7 | | 47.6 | MeOH | FZ-11 |
| S4261-8 | PFOA | PFOA0217 | 2017/09/26 | 2022/02/17 | S4240-8 | | 50 | MeOH | FZ-11 |
| S4261-9 | brPFOSK | brPFOSK0117 | 2017/11/30 | 2022/01/12 | S4240-9 | | 46.4 | MeOH | FZ-11 |
| S4261-10 | PFNA | PFNA0717 | 2017/11/30 | 2022/07/20 | S4240-10 | | 50 | MeOH | FZ-11 |
| S4261-11 | PFDA | PFDA0517 | 2017/11/30 | 2022/05/29 | S4240-11 | | 50 | MeOH | FZ-11 |
| S4261-12 | L-PFDS | LPFDS0217 | 2017/11/30 | 2022/02/17 | S4240-12 | | 48.2 | MeOH | FZ-11 |
| S4261-13 | PFUdA | PFUdA0917 | 2017/11/30 | 2022/09/21 | S4240-13 | | 50 | MeOH | FZ-11 |
| S4261-14 | PFDoA | PFDoA0517 | 2017/11/30 | 2022/05/29 | S4240-14 | | 50 | MeOH | FZ-11 |
| S4261-15 | PFTrDA | PFTrDA0517 | 2017/11/30 | 2022/05/02 | S4240-15 | | 50 | MeOH | FZ-11 |
| S4261-16 | PFTeDA | PFTeDA0917 | 2017/11/30 | 2022/09/21 | S4240-16 | | 50 | MeOH | FZ-11 |
| S4261-17 | PFOSA (FOSA-I) | FOSA08171 | 2017/11/30 | 2022/09/01 | S4240-17 | | 50 | IPA | FD-59 |
| S4261-18 | N-MeFOSA-M | NMeFOSA0717M | 2017/11/30 | 2022/07/05 | S4240-18 | | 50 | MeOH | FZ-11 |
| S4261-19 | N-EtFOSA-M | NEtFOSA0717M | 2017/11/30 | 2022/07/05 | S4240-19 | | 50 | MeOH | FZ-11 |
| S4261-20 | N-MeFOSE-M | NMeFOSE0417M | 2017/11/30 | 2022/04/24 | S4240-20 | | 50 | MeOH | FZ-11 |
| S4261-21 | N-EtFOSE-M | NEtFOSE0417M | 2017/11/30 | 2022/04/24 | S4240-21 | | 50 | MeOH | FZ-11 |
| S4261-22 | N-MeFOSAA | NMeFOSAA0117 | 2017/11/30 | 2022/01/11 | S4240-22 | | 50 | MeOH | FD-59 |
| S4261-23 | N-EtFOSAA | NEtFOSAA0117 | 2017/11/30 | 2022/01/11 | S4240-23 | | 50 | MeOH | FD-59 |
| S4261-24 | 6:2FTS | 62FTS0417 | 2017/11/30 | 2022/04/20 | S4240-24 | | 47.4 | MeOH | FD-59 |
| S4261-25 | 8:2FTS | 82FTS1216 | 2017/11/30 | 2021/12/12 | S4240-25 | | 47.9 | MeOH | FD-59 |
| Date Opened (All compounds): 2017/12/15 | | | Supplier (All compounds) : Wellington | | | | Chemist: GSZ | | |

No writing on bottom page.

GSZ, 2017/12/15

Solvent Used: _____

Solvent Supplier: _____ Lot No(s).: _____

Date Opened: _____

Storage Location / Conditions: GSZ, 2017/12/15

Notes/Comments



DO NOT WRITE BENEATH ANY INSERTS ON THIS PAGE. DO NOT PLACE ANY INSERTS ON TOP OF ANY RAW DATA ENTERED ON THIS PAGE. INITIAL AND DATE ALL INSERTS. LOGBOOK, PAGE AND APPROPRIATE SOLUTION NUMBER REFERENCES MUST BE WRITTEN ON ALL INSERTS.

WELLINGTON LABORATORIES

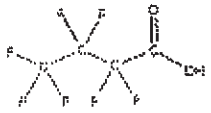
# CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** PFBA
**COMPOUND:** Perfluoro-n-butanoic acid

**LOT NUMBER:** PFBA0517

**STRUCTURE:**

**CAS #:** 375-22-4



**MOLECULAR FORMULA:** $C_4HF_7O_2$
**CONCENTRATION:** 50 ± 2.5 µg/ml

**MOLECULAR WEIGHT:** 214.04
**SOLVENT(S):** Methanol
Water (<1%)

**CHEMICAL PURITY:** >98%
**LAST TESTED:** 05/29/2017
**EXPIRY DATE:** 05/29/2022
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

**DOCUMENTATION/ DATA ATTACHED:**

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

697 2017/11/30
2 ampoules

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

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Certified By: _____ Date: 05/30/2017
B.G. Chittim, General Manager

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WELLINGTON LABORATORIES

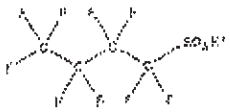
# CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** L-PFBS

**COMPOUND:** Potassium perfluoro-1-butanesulfonate

**LOT NUMBER:** LPFBS0017

**STRUCTURE:**



**CAS #:** 29420-49-3

**MOLECULAR FORMULA:** $C_4F_9SO_3K$

**CONCENTRATION:** 50.0 ± 2.5 µg/ml (K salt)
44.2 ± 2.2 µg/ml (PFBS anion)

**CHEMICAL PURITY:** >98%

**LAST TESTED:** 09/21/2017

**EXPIRY DATE:** 09/21/2022

**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

**MOLECULAR WEIGHT:** 338.19

**SOLVENT(S):** Methanol

**DOCUMENTATION/ DATA ATTACHED:**

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

662 2017/11/30
2 nongrules

**ADDITIONAL INFORMATION:**

- See page 2 for further details.

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Certified By: _____ Date: 09/22/2017
B.G. Chilton, General Manager

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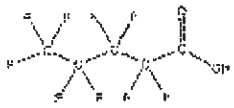
# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS
DOCUMENTATION

| | | | |
|---|---|---|---|
| **PRODUCT CODE:** | PFPeA | **LOT NUMBER:** | PFPeA0617 |
| **COMPOUND:** | Perfluoro-n-pentanoic acid | | |
| **STRUCTURE:** | | **CAS #:** | 2706-90-3 |



| | | | |
|---|---|---|---|
| **MOLECULAR FORMULA:** | $C_5HF_9O_2$ | **MOLECULAR WEIGHT:** | 264.05 |
| **CONCENTRATION:** | 50 ± 2.5 µg/ml | **SOLVENT(S):** | Methanol<br>Water (<1%) |
| **CHEMICAL PURITY:** | >98% | | |
| **LAST TESTED:** | 06/14/2017 | | |
| **EXPIRY DATE:** | 06/14/2022 | | |
| **RECOMMENDED STORAGE:** | Store ampoule in a cool, dark place | | |

1 ampoule
2017/06/30 692

**DOCUMENTATION/ DATA ATTACHED:**

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.
- Contains ~ 0.3% of Perfluoro-n-heptanoic acid (PFHpA) and ~ 0.2% of $C_5H_2F_8O_2$ (hydride - derivative) as measured by $^{19}F$ NMR

*FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE*

Certified By: _____ Date: 06/16/2017
B.G. Chittim, General Manager

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Date Received: 2017.11.30 - 2 ampoules - HPLC

WELLINGTON LABORATORIES

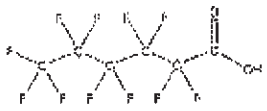
# CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** PFHxA
**COMPOUND:** Perfluoro-n-hexanoic acid

**LOT NUMBER:** PFHxA0917

**STRUCTURE:**

**CAS #:** 307-24-4



**MOLECULAR FORMULA:** $C_6HF_{11}O_2$
**CONCENTRATION:** 50 ± 2.5 µg/ml

**MOLECULAR WEIGHT:** 314.05
**SOLVENT(S):** Methanol
Water (<1%)

**CHEMICAL PURITY:** >98%
**LAST TESTED:** 09/27/2017
**EXPIRY DATE:** 09/27/2022
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

**DOCUMENTATION/ DATA ATTACHED:**

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

GSZ 2017/11/30
2 ampules

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.
- Contains ~ 1.0% of branched isomers.

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**Certified By:** _____ **Date:** 11/01/2017
B.G. Chittim, General Manager

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Revision#4 Revised 2017-05-05

WELLINGTON LABORATORIES

# CERTIFICATE OF ANALYSIS DOCUMENTATION

## br-PFHxSK

**Potassium Perfluorohexanesulfonate Solution/Mixture of Linear and Branched Isomers**

| | |
|---|---|
| **PRODUCT CODE:** | br-PFHxSK |
| **LOT NUMBER:** | brPFHxSK0117 |
| **CONCENTRATION:** | 50.0 ± 2.5 µg/ml (total potassium salt) |
| | 45.5 ± 2.3 µg/ml (total PFHxS anion) |
| **SOLVENT(S):** | Methanol |
| **DATE PREPARED:** | 01/03/2017 |
| **LAST TESTED:** | 01/04/2017 |
| **EXPIRY DATE:** | 01/04/2022 |
| **RECOMMENDED STORAGE:** | Store ampoule in a cool, dark place |

**DESCRIPTION:**

The chemical purity has been determined to be ≥98% perfluorohexanesulfonate linear and branched isomers. The full name, structure and percent composition for each of the identified isomeric components are given in Table A.

**DOCUMENTATION/ DATA ATTACHED:**

Table A: Isomeric Components and Percent Composition by $^{19}$F-NMR
Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS Data (SIR)
Figure 3: LC/MS/MS Data (Selected MRM Transitions)

652 2017/11/30
2. ampoules

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- Contains ~ 0.5% of perfluoro-1-pentanesulfonate and ~ 0.2% of perfluoro-1-octanesulfonate.
- CAS#: 3871-99-6 (for linear isomer; potassium salt).

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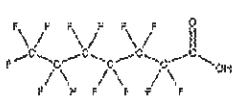
WELLINGTON LABORATORIES

# CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** PFHpA
**COMPOUND:** Perfluoro-n-heptanoic acid

**LOT NUMBER:** PFHpA1216

**STRUCTURE:**



**CAS #:** 375-85-9

Received 2016-12-16 2x1.2ml FZ-11

**MOLECULAR FORMULA:** $C_7HF_{13}O_2$
**CONCENTRATION:** 50 ± 2.5 µg/ml

**MOLECULAR WEIGHT:** 364.06
**SOLVENT(S):** Methanol
Water (<1%)

**CHEMICAL PURITY:** >98%
**LAST TESTED:** 12/02/2016
**EXPIRY DATE:** 12/02/2021
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

**DOCUMENTATION/ DATA ATTACHED:**

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

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Certified By: B.G. Chittim  Date: 12/12/2016

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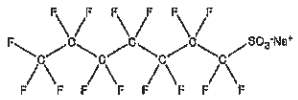
Received 2016/12/23 1 x 1.2mL MMN FZ-11
Received 2016/12/29 1 x 1.2mL MMN FZ-11
Received 2017/05/25 2 x 1.2mL MMN FZ-11
Received 2017/05/29 2 x 1.2mL MMN FZ-11
Date Received: 2017/06/02-DMZ-1.2ml-FD
Date Received: 2017/08/09 1X1.2ml HPLC
Received 2016/12/23 1 x 1.2mL MMN FZ-11
Received 2016/12/29 1 x 1.2mL MMN FZ-11
Received 2017/05/25 2 x 1.2mL MMN FZ-11
Received 2017/05/29 2 x 1.2mL MMN FZ-11
Date Received: 2017/06/02-DMZ-1.2ml-FD
Date Received: 2017/08/09 1X1.2ml HPLC
Date Received: 2017/08/30 1X1.2ml HPLC
Date received 2017/09/26 1x2 ampules HPLC
DATE RECEIVED 2017/09/12 2 ampules HPLC
Date Received: 2017.11.30 - 2 ampoules - HPLC

WELLINGTON LABORATORIES

# CERTIFICATE OF ANALYSIS
## DOCUMENTATION

| | | | |
|---|---|---|---|
| **PRODUCT CODE:** | L-PFHpS | **LOT NUMBER:** | LPFHpS0817 |
| **COMPOUND:** | Sodium perfluoro-1-heptanesulfonate | | |
| **STRUCTURE:** | | **CAS #:** | Not available |



| | | | |
|---|---|---|---|
| **MOLECULAR FORMULA:** | $C_7F_{15}SO_3Na$ | **MOLECULAR WEIGHT:** | 472.10 |
| **CONCENTRATION:** | 50.0 ± 2.5 µg/ml (Na salt)<br>47.6 ± 2.4 µg/ml (PFHpS anion) | **SOLVENT(S):** | Methanol |
| **CHEMICAL PURITY:** | >98% | | |
| **LAST TESTED:** (mm/dd/yyyy) | 09/01/2017 | | |
| **EXPIRY DATE:** (mm/dd/yyyy) | 09/01/2022 | | |
| **RECOMMENDED STORAGE:** | Store ampoule in a cool, dark place | | |

**DOCUMENTATION/ DATA ATTACHED:**

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

1 x 2 ampules
GSZ 2017/09/26

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- Contains ~ 0.2% of L-PFHxS ($C_6F_{13}SO_3Na$) and ~ 0.1% of L-PFOS ($C_8F_{17}SO_3Na$).

***FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE***

**Certified By:** _____ **Date:** 09/07/2017 (mm/dd/yyyy)
B.G. Chittim, General Manager

*Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA*
*519-822-2436 • Fax: 519-822-2849 • info@well-labs.com*

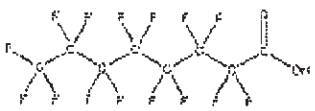


Date Received: 2017/11/30 1x2 ampoules - HPLC

WELLINGTON LABORATORIES

# CERTIFICATE OF ANALYSIS
## DOCUMENTATION

| | | | |
|---|---|---|---|
| **PRODUCT CODE:** | PFOA | **LOT NUMBER:** | PFOA0217 |
| **COMPOUND:** | Perfluoro-n-octanoic acid | | |
| **STRUCTURE:** | | **CAS #:** | 335-67-1 |



| | | | |
|---|---|---|---|
| **MOLECULAR FORMULA:** | $C_8HF_{15}O_2$ | **MOLECULAR WEIGHT:** | 414.07 |
| **CONCENTRATION:** | 50 ± 2.5 µg/mL | **SOLVENT(S):** | Methanol<br>Water (<1%) |
| **CHEMICAL PURITY:** | >98% | | |
| **LAST TESTED:** | 02/17/2017 | | |
| **EXPIRY DATE:** | 02/17/2022 | | |
| **RECOMMENDED STORAGE:** | Store ampoule in a cool, dark place | | |

**DOCUMENTATION/ DATA ATTACHED:**

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2. LC/MS/MS Data (Selected MRM Transitions)

Received: 2017/06/02
DMS, 1.2mL x 1
Fridge

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

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Certified By: B.G. Griffin  Date: 02/22/2017

*Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA*
*519-822-2435 • Fax: 519-822-2849 • info@well-labs.com*

date recieved:2017/05/29 1.2x1 - HPLC
date recieved:2017/05/29 1.2x1 - HPLC
Date Received:2017/06/02-1.2 x 1-HPLC
date recieved:2017/08/09 1.2x1 - HPLC
date recieved:2017/08/30 1.2x1 - HPLC
date received 2017/09/26 1x4 ampules HPLC
date received 2017/09/12 2 ampules HPLC
date received 2017/09/26 2 ampules HPLC

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

## br-PFOSK

**Potassium Perfluorooctanesulfonate**
**Solution/Mixture of Linear and**
**Branched Isomers**

| | |
|---|---|
| PRODUCT CODE: | br-PFOSK |
| LOT NUMBER: | brPFOSK011? |
| CONCENTRATION: | 50 ± 2.5 µg/ml (total potassium salt) |
| | 46.4 ± 2.3 µg/ml (total PFOS anion) |
| SOLVENT(S): | Methanol |
| DATE PREPARED: | 01/08/2017 |
| LAST TESTED: | 01/12/2017 |
| EXPIRY DATE: | 01/12/2022 |
| RECOMMENDED STORAGE: | Store ampoule in a cool, dark place |

DESCRIPTION:

The chemical purity has been determined to be ≥98% perfluorooctanesulfonate linear and branched isomers. The full name, structure and percent composition for each of the isomeric components are given in Table A.

DOCUMENTATION/ DATA ATTACHED:

Table A: Isomeric Components and Percent Composition by $^{19}$F-NMR
Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS Data (SIR)
Figure 3: LC/MS/MS Data (Selected MRM Transitions)

Received: 2017/06/02
DM2, 1.2 mL x 1
Fridge

ADDITIONAL INFORMATION:

- See page 2 for further details.
- A 5-point calibration curve was generated using linear PFOS (potassium salt) and mass-labelled PFOS as an internal standard to enable quantitation of br-PFOSK using isotopic dilution.
- CAS#: 2795-39-3 (for linear isomer, potassium salt).

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*519-822-2436 • Fax: 519-822-2849 • info@well-labs.com*

date recieved:2017/05/29 1.2x1- HPLC
date received: 2017/08/09 1 ampule HPLC
date received: 2017/08/30 1 ampule HPLC
date eceived: 2017/09/26 1.2x1ampule HPLC
date received 2017/09/12 2 ampules
Date Received: 2017.11.30 - 2 ampoules -HPLC

Ampoule: 2 TRW
Date received: 2017/01/12

# WELLINGTON LABORATORIES

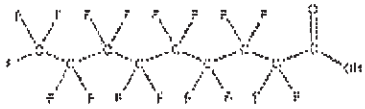
## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** PFNA
**COMPOUND:** Perfluoro-n-nonanoic acid

**LOT NUMBER:** PFNA0717

**STRUCTURE:**

**CAS #:** 375-95-1



**MOLECULAR FORMULA:** $C_9HF_{17}O_2$
**CONCENTRATION:** 50 ± 2.5 ug/ml

**MOLECULAR WEIGHT:** 464.08
**SOLVENT(S):** Methanol
Water (<1%)

**CHEMICAL PURITY:** >98%
**LAST TESTED:** 07/20/2017
**EXPIRY DATE:** 07/20/2022
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

**DOCUMENTATION/ DATA ATTACHED:**

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.
- Contains ~ 0.1% of perfluoro-n-octanoic acid (PFOA), < 0.1% of perfluoro-n-heptanoic acid (PFHpA), and < 0.1% of perfluoro-n-undecanoic acid (PFUdA).

***FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE***

**Certified By:** R.G. Chitim, General Manager

**Date:** 07/24/2017

*Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA*
*519-822-2436 • Fax: 519-822-2849 • info@well-labs.com*

Revised 27 issued 2016.11.10
Revised 4, Revised 2017.09.09



Date Received: 2017.11.30 - 2 ampoules - HPLC

WELLINGTON LABORATORIES

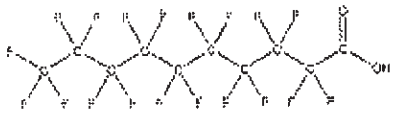
# CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** PFDA
**COMPOUND:** Perfluoro-n-decanoic acid

**LOT NUMBER:** PFDA0517

**STRUCTURE:**

**CAS #:** 335-76-2



**MOLECULAR FORMULA:** $C_{10}HF_{19}O_2$
**CONCENTRATION:** 50 ± 2.5 µg/ml

**MOLECULAR WEIGHT:** 514.08
**SOLVENT(S):** Methanol
Water (<1%)

**CHEMICAL PURITY:** >96%
**LAST TESTED:** 05/29/2017
**EXPIRY DATE:** 05/29/2022
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

**DOCUMENTATION/ DATA ATTACHED:**

1 ampoule
2017/06/30 GSZ

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.
- Contains ~ 0.2% of perfluoro-n-nonanoic acid (PFNA).

*FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE*

Certified By: _____ Date: 05/30/2017
B G. Chittim, General Manager

*Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA*
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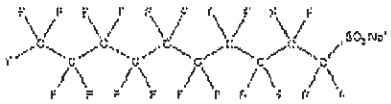
Date Received: 2017.11.30 - 2 ampoules - HPLC

# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** L-PFDS
**COMPOUND:** Sodium perfluoro-1-decanesulfonate
**LOT NUMBER:** LPFDS0217

**STRUCTURE:**



**CAS #:** 2806-15-7

**MOLECULAR FORMULA:** $C_{10}F_{11}SO_2Na$
**CONCENTRATION:** 50.0 ± 2.5 µg/ml (Na salt)
48.2 ± 2.4 µg/ml (PFDS anion)
**CHEMICAL PURITY:** >98%
**LAST TESTED:** 02/17/2017
**EXPIRY DATE:** 02/17/2022
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

**MOLECULAR WEIGHT:** 622.13
**SOLVENT(S):** Methanol

**DOCUMENTATION/ DATA ATTACHED:**

Figure 1. LC/MS Data (TIC and Mass Spectrum)
Figure 2. LC/MS/MS Data (Selected MRM Transitions)

Date received 2017/05/10 # 2 Ampules HPLC SSV

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- Contains ~ 0.9% of sodium perfluoro-1-dodecanesulfonate (L-PFDoS).

***FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE***

Certified By: B.G. Chittim  Date: 02/22/2017

*Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA*
*519-822-2436 • Fax: 519-822-2849 • info@well-labs.com*

Form 27, Issued 2006-11-15
Revised 2015-03-24

LPFDS0217 11 of 11
rev5

Received 2017/05/25 2 x 1.2mL MMN FZ-11
Received 2017/05/29 2 x 1.2mL MMN FZ-11
Date REceived: 2017/06/02-DMZ-1.2ml-FD
date received: 2017/08/30 1 ampule HPLC
DATE RECEIVED: 2017/09/26 1X2 AMPULES HPLC
Date Received: 2017.11.30 - 2 ampoules - HPLC

WELLINGTON LABORATORIES

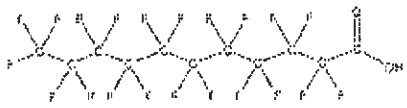
# CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** PFUdA
**COMPOUND:** Perfluoro-n-undecanoic acid

**LOT NUMBER:** PFUdA0917

**STRUCTURE:**

**CAS #:** 2058-94-8



**MOLECULAR FORMULA:** $C_{11}HF_{21}O_2$
**CONCENTRATION:** 50 ± 2.5 µg/ml

**MOLECULAR WEIGHT:** 564.09
**SOLVENT(S):** Methanol
Water (<1%)

**CHEMICAL PURITY:** >98%
**LAST TESTED:** 09/21/2017
**EXPIRY DATE:** 09/21/2022
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

**DOCUMENTATION/ DATA ATTACHED:**

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

GSE 2017/11/30
2 AMPOULES

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

***FOR LABORATORY USE ONLY; NOT FOR HUMAN OR DRUG USE***

Certified By: _____ Date: 09/22/2017
B.G. Chittim, General Manager

*Wellington Laboratories Inc., 345 Southgate Dr, Guelph ON N1G 3M5 CANADA*
*519-822-2436 • Fax: 519-822-2649 • info@well-labs.com*

Form#37, Issued 2004-11-10
Revised#6, Revised 2017-03-09

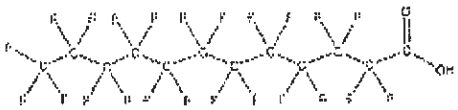
Ampoule 2 TRW
Date received: 2017/09/22

# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** PFDoA
**COMPOUND:** Perfluoro-n-dodecanoic acid
**LOT NUMBER:** PFDoA0517

**STRUCTURE:**
**CAS #:** 307-55-1



**MOLECULAR FORMULA:** $C_{12}HF_{23}O_2$
**CONCENTRATION:** 50 ± 2.5 µg/ml
**MOLECULAR WEIGHT:** 614.10
**SOLVENT(S):** Methanol
Water (<1%)

**CHEMICAL PURITY:** >98%
**LAST TESTED:** 05/28/2017
**EXPIRY DATE:** 05/29/2022
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

**DOCUMENTATION/ DATA ATTACHED:**

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

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Certified By: _____ Date: 05/30/2017
B.G. Chittim, General Manager

*Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA*
*519-822-2436 • Fax: 519-822-2849 • info@well-labs.com*

Form 2.2, Issued 2006-11-16
Published & Revised 2017-03-06



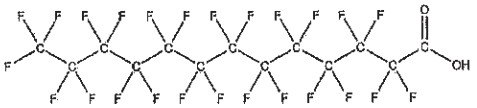
Date Received: 2017.11.30 - 2 ampoules - HPLC

Date Received: 2017.08.30 - 1 ampoule - HPLC

WELLINGTON LABORATORIES

# CERTIFICATE OF ANALYSIS
## DOCUMENTATION

| | | | |
|---|---|---|---|
| **PRODUCT CODE:** | PFTrDA | **LOT NUMBER:** | PFTrDA0517 |
| **COMPOUND:** | Perfluoro-n-tridecanoic acid | | |
| **STRUCTURE:** | | **CAS #:** | 72629-94-8 |



| | | | |
|---|---|---|---|
| **MOLECULAR FORMULA:** | $C_{13}HF_{25}O_2$ | **MOLECULAR WEIGHT:** | 664.11 |
| **CONCENTRATION:** | 50 ± 2.5 µg/ml | **SOLVENT(S):** | Methanol<br>Water (<1%) |
| **CHEMICAL PURITY:** | >98% | | |
| **LAST TESTED:** (mm/dd/yyyy) | 05/02/2017 | | |
| **EXPIRY DATE:** (mm/dd/yyyy) | 05/02/2022 | | |
| **RECOMMENDED STORAGE:** | Store ampoule in a cool, dark place | | |

HPLC ☐
2017/08/09

**DOCUMENTATION/ DATA ATTACHED:**

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.
- Contains ~ 0.1% of PFUdA ($C_{11}HF_{21}O_2$), ~ 0.4% of PFDoA ($C_{12}HF_{23}O_2$), and ~ 0.1% of PFTeDA ($C_{14}HF_{27}O_2$).

***FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE***

**Certified By:** _____ **Date:** 05/04/2017 (mm/dd/yyyy)
B.G. Chittim, General Manager

*Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA*
*519-822-2436 • Fax: 519-822-2849 • info@well-labs.com*

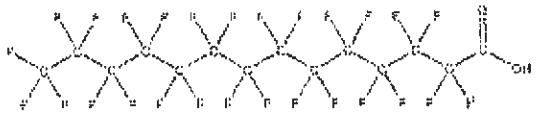


Received 2017/05/29 1 x 1.2mL HPLC
Received 2017/08/09 1 x 1.2mL HPLC
Received 2017/08/30 1 x 1.2mL HPLC
Received 2017/09/26 1 x 2 ampules HPLC
Received 2017/09/12 2 ampules HPLC
Date Received: 2017.11.30 - 2 ampoules - HPLC

WELLINGTON LABORATORIES

# CERTIFICATE OF ANALYSIS DOCUMENTATION

| | | | |
|---|---|---|---|
| **PRODUCT CODE:** | PFTeDA | **LOT NUMBER:** | PFTeDA0917 |
| **COMPOUND:** | Perfluoro-n-tetradecanoic acid | | |
| **STRUCTURE:** | | **CAS #:** | 376-06-7 |



| | | | |
|---|---|---|---|
| **MOLECULAR FORMULA:** | $C_{14}HF_{27}O_2$ | **MOLECULAR WEIGHT:** | 714.11 |
| **CONCENTRATION:** | 50 ± 2.5 µg/ml | **SOLVENT(S):** | Methanol<br>Water (<1%) |
| **CHEMICAL PURITY:** | >98% | | |
| **LAST TESTED:** | 09/21/2017 | | |
| **EXPIRY DATE:** | 09/21/2022 | | |
| **RECOMMENDED STORAGE:** | Store ampoule in a cool, dark place | | |

**DOCUMENTATION/ DATA ATTACHED:**

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

652 2017/11/30
2. ampules

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the perfluoroalkyl acid to the methyl ester.
- Contains ~ 0.2% of PFDoA ($C_{12}HF_{23}O_2$) and ~ 0.2% of PFPeDA ($C_{15}HF_{29}O_2$).

***FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE***

**Certified By:** _____ **Date:** 09/21/2017
B.G. Chittim, General Manager

*Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA*
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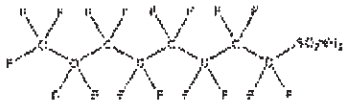
WELLINGTON LABORATORIES

# CERTIFICATE OF ANALYSIS DOCUMENTATION

| | | | |
|---|---|---|---|
| **PRODUCT CODE:** | FOSA-I | **LOT NUMBER:** | FOSA08171 |
| **COMPOUND:** | Perfluoro-1-octanesulfonamide | | |
| **STRUCTURE:** | | **CAS #:** | 754-91-6 |



| | | | |
|---|---|---|---|
| **MOLECULAR FORMULA:** | $C_8H_2F_{17}NO_2S$ | **MOLECULAR WEIGHT:** | 499.14 |
| **CONCENTRATION:** | 50 ± 2.5 µg/ml | **SOLVENT(S):** | Isopropanol |
| **CHEMICAL PURITY:** | >98% | | |
| **LAST TESTED:** | 09/01/2017 | | |
| **EXPIRY DATE:** | 09/01/2022 | | |
| **RECOMMENDED STORAGE:** | Refrigerate ampoule | | |

**DOCUMENTATION/ DATA ATTACHED:**

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

**ADDITIONAL INFORMATION:**

- See page 2 for further details.

652 2017/11/30
2 ampoules

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Certified By: _____ Date: 09/14/2017
S.C. Chitem, General Manager

*Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA*
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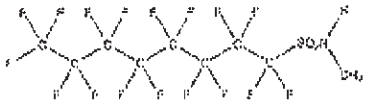
WELLINGTON LABORATORIES

# CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** N-MeFOSA-M
**COMPOUND:** N-methylperfluoro-1-octanesulfonamide

**LOT NUMBER:** NMeFOSA0717M

**STRUCTURE:**



**CAS #:** 31506-32-8

**MOLECULAR FORMULA:** $C_9H_7F_{17}NO_2S$
**CONCENTRATION:** 50 ± 2.5 µg/ml
**CHEMICAL PURITY:** >98%
**LAST TESTED:** 07/05/2017
**EXPIRY DATE:** 07/05/2022
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

**MOLECULAR WEIGHT:** 513.17
**SOLVENT(S):** Methanol

**DOCUMENTATION/ DATA ATTACHED:**

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

1 ampoule
2017/08/30 GSZ

**ADDITIONAL INFORMATION:**

- See page 2 for further details.

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Certified By: _____ Date: 07/10/2017
B.G. Chittim, General Manager

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*519-822-2436 • Fax: 519-822-2849 • info@well-labs.com*

Date received: 2017/11/30 1 ampoule - HPLC

# WELLINGTON LABORATORIES

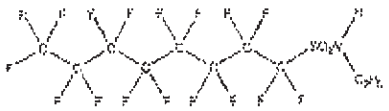
## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** N-EtFOSA-M
**COMPOUND:** N-ethylperfluoro-1-octanesulfonamide

**LOT NUMBER:** NEtFOSA0717M

**STRUCTURE:**

**CAS #:** 4151-50-2



**MOLECULAR FORMULA:** $C_{10}H_5F_{17}NO_2S$
**CONCENTRATION:** 50 ± 2.5 µg/ml
**CHEMICAL PURITY:** >98%
**LAST TESTED:** 07/05/2017
**EXPIRY DATE:** 07/05/2022
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

**MOLECULAR WEIGHT:** 527.20
**SOLVENT(S):** Methanol

**DOCUMENTATION/ DATA ATTACHED:**

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

1 ampoule
2017/08/30 642

**ADDITIONAL INFORMATION:**

- See page 2 for further details.

***FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE***

Certified By: _____ Date: 07/18/2017
B.G. Chittim, General Manager

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Form 27, Issue 2004-11-10
Copyright 4, Revised 2017-02-06

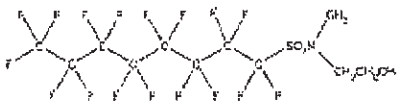
NEtFOSA0717M 11 of 41

Date Received: 2017.11.30 - 1 ampoule - HPLC

WELLINGTON LABORATORIES

# CERTIFICATE OF ANALYSIS
## DOCUMENTATION

| | | | |
|---|---|---|---|
| **PRODUCT CODE:** | N-MeFOSE-M | **LOT NUMBER:** | NMeFOSE0417M |
| **COMPOUND:** | 2-(N-methylperfluoro-1-octanesulfonamido)-ethanol | | |
| **STRUCTURE:** | | **CAS #:** | 24448-09-7 |



| | | | |
|---|---|---|---|
| **MOLECULAR FORMULA:** | $C_{11}H_8F_{17}NO_3S$ | **MOLECULAR WEIGHT:** | 557.22 |
| **CONCENTRATION:** | 50 ± 2.5 µg/ml | **SOLVENT(S):** | Methanol |
| **CHEMICAL PURITY:** | >98% | | |
| **LAST TESTED:** | 04/24/2017 (HRGC/LRMS) | | |
| | 04/21/2017 (LC/MS) | | |
| **EXPIRY DATE:** | 04/24/2022 | | |
| **RECOMMENDED STORAGE:** | Store ampoule in a cool, dark place | | |

**DOCUMENTATION/ DATA ATTACHED:**

Figure 1: HRGC/LRMS Data (TIC and Mass Spectrum)
Figure 2: LC/MS Data (TIC and Mass Spectrum)
Figure 3. LC/MS/MS Data (Selected MRM Transitions)

received: 2017/06/02
DMSO: 1.2 mL X 1
[illegible]

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- In order to see the molecular ion (adduct free), the LC mobile phase should be free of ammonium acetate buffer.

***FOR LABORATORY USE ONLY. NOT FOR HUMAN OR DRUG USE***

Certified By: _____ Date: 06/05/2017
B.G. Chittim, General Manager

*Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA*
*519-822-2436 • Fax: 519-822-2849 • info@well-labs.com*



date recieved: 2017/05/29 1x1.2 HPLC
date recieved: 2017/06/02 1x1.2 HPLC
date recieved: 2017/08/09 1x1.2 HPLC
date recieved: 2017/08/30 1x1.2 HPLC
date received: 2017/09/26 1x1.2 HPLC
Date Received: 2017.08.09 - 1 ampoule - HPLC
Date Received: 2017.11.30 - 2 ampoules - HPLC

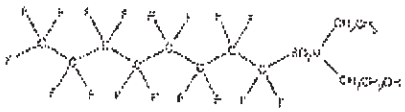
WELLINGTON LABORATORIES

# CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** N-EtFOSE-M
**COMPOUND:** 2-(N-ethylperfluoro-1-octanesulfonamido)-ethanol
**LOT NUMBER:** NEtFOSE041705

**STRUCTURE:**

**CAS #:** 1691-99-2



**MOLECULAR FORMULA:** $C_{10}H_6F_{17}NO_3S$
**CONCENTRATION:** 50 ± 2.5 µg/mL
**CHEMICAL PURITY:** >98%
**LAST TESTED:** 04/24/2017 (HRGC/LRMS)
04/21/2017 (LC/MS)
**EXPIRY DATE:** 04/04/2022
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

**MOLECULAR WEIGHT:** 571.25
**SOLVENT(S):** Methanol

**DOCUMENTATION/ DATA ATTACHED:**

Figure 1: HRGC/LRMS Data (TIC and Mass Spectrum)
Figure 2: LC/MS Data (TIC and Mass Spectrum)
Figure 3: LC/MS/MS Data (Selected MRM Transitions)

Received: 2017/06/02
QMS, 1.2 mL x 1
Fridge.

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- In order to see the molecular ion (adduct free), the LC mobile phase should be free of ammonium acetate buffer

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**Certified By:** _____ **Date:** 04/26/2017
B.G. Chittim, Operations Manager

*Wellington Laboratories Inc., 345 Southgate Dr, Guelph ON N1G 3M5 CANADA*
*519-822-2436 • Fax: 519-822-2849 • info@well-labs.com*

date recieved:2017/05/29 1x1.2 HPLC
date recieved:2017/08/09 1x1.2 HPLC
date recieved:2017/08/30 1x1.2 HPLC
date received:2017/08/09 1x1.2 HPLC
date received: 2017/09/26 1x1.2 HPLC
Date received: 2017.08.09 - 1 ampoule - HPLC
Date Received: 2017.11.30 - 2 ampoules - HPLC

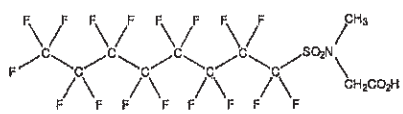
WELLINGTON LABORATORIES

# CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** N-MeFOSAA **LOT NUMBER:** NMeFOSAA0117

**COMPOUND:** N-methylperfluoro-1-octanesulfonamidoacetic acid

**STRUCTURE:** **CAS #:** 2355-31-9



**MOLECULAR FORMULA:** $C_{11}H_9F_{17}NO_4S$ **MOLECULAR WEIGHT:** 571.21

**CONCENTRATION:** 50 ± 2.5 µg/ml **SOLVENT(S):** Methanol
Water (<1%)

**CHEMICAL PURITY:** >98%

**LAST TESTED:** (mm/dd/yyyy) 01/11/2017

**EXPIRY DATE:** (mm/dd/yyyy) 01/11/2022

**RECOMMENDED STORAGE:** Refrigerate ampoule

**DOCUMENTATION/ DATA ATTACHED:**

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

17PLC(1) 2017.8.09

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent the conversion of the acetic acid molety to the methyl ester.

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**Certified By:** B.G. Chittim **Date:** 01/12/2017 (mm/dd/yyyy)

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*Form#:27, Issued 2004-11-10*
*Revision#:3, Revised 2016-03-24*

NMeFOSAA0117 (1 of 4)
rev0

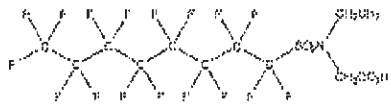
Received date 2017/05/25 1 x 1.2mL HPLC
Received date 2017/08/09 1 x 1.2mL HPLC
Received date 2017/08/30 1 x 1.2mL HPLC
RECEIVED DATE: 2017/09/26 1X1.2 mL HPLC
received date 2017-09-12 2 ampules HPLC
Date Received: 2017.11.30 - 2 ampoules - HPLC

Ampoule: 2 TBD
Date received: 20170912

# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS
DOCUMENTATION

| | | | |
|---|---|---|---|
| **PRODUCT CODE:** | N-EtFOSAA | **LOT NUMBER:** | NEtFOSAA0117 |
| **COMPOUND:** | N-ethylperfluoro-1-octanesulfonamidoacetic acid | | |
| **STRUCTURE:** | | **CAS #:** | 2991-50-6 |



| | | | |
|---|---|---|---|
| **MOLECULAR FORMULA:** | $C_{12}H_8F_{17}NO_4S$ | **MOLECULAR WEIGHT:** | 585.23 |
| **CONCENTRATION:** | 50 ± 2.5 µg/ml | **SOLVENT(S):** | Methanol<br>Water (<1%) |
| **CHEMICAL PURITY:** | >98% | | |
| **LAST TESTED:** | 01/11/2017 | | |
| **EXPIRY DATE:** | 01/11/2022 | | |
| **RECOMMENDED STORAGE:** | Refrigerate ampoule | | |

**DOCUMENTATION/ DATA ATTACHED:**

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent the conversion of the acetic acid moiety to the methyl ester.

***FOR LABORATORY USE ONLY; NOT FOR HUMAN OR DRUG USE***

**Certified By:** B.G. Chittim **Date:** 01/12/2017

*Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA*
*519-822-2436 • Fax: 519-822-2849 • info@well-labs.com*

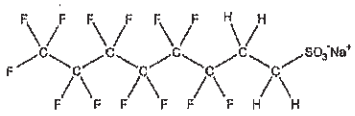


Received : 20170525HPLC,
RECEIVED:2017/09/26 HPLC
Date Received: 2017.08.09 - 1 ampoule - HPLC
Date Received: 2017.11.30 - 2 ampoules - HPLC

WELLINGTON LABORATORIES

# CERTIFICATE OF ANALYSIS
## DOCUMENTATION

| | | | |
|---|---|---|---|
| **PRODUCT CODE:** | 6:2FTS | **LOT NUMBER:** | 62FTS0417 |
| **COMPOUND:** | Sodium 1H,1H,2H,2H-perfluorooctane sulfonate | | |
| **STRUCTURE:** | | **CAS #:** | Not available |



| | | | |
|---|---|---|---|
| **MOLECULAR FORMULA:** | $C_8H_4F_{13}SO_3Na$ | **MOLECULAR WEIGHT:** | 450.15 |
| **CONCENTRATION:** | 50.0 ± 2.5 µg/ml (Na salt) | **SOLVENT(S):** | Methanol |
| | 47.4 ± 2.4 µg/ml (6:2FTS anion) | | |
| **CHEMICAL PURITY:** | >98% | | |
| **LAST TESTED:** (mm/dd/yyyy) | 04/20/2017 | | |
| **EXPIRY DATE:** (mm/dd/yyyy) | 04/20/2022 | | |
| **RECOMMENDED STORAGE:** | Refrigerate ampoule | | |

**DOCUMENTATION/ DATA ATTACHED:**

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

**ADDITIONAL INFORMATION:**

- See page 2 for further details.

***FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE***

**Certified By:** _____ **Date:** 04/24/2017 (mm/dd/yyyy)
B.G. Chittim, General Manager

*Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA*
*519-822-2436 • Fax: 519-822-2849 • info@well-labs.com*



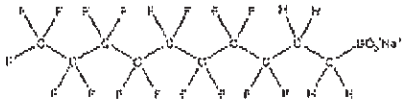
Date Recieved: 2017/05/25 1x1.2 HPLC
Date Recieved: 2017/08/09 1x1.2 HPLC
Date Recieved: 2017/08/30 1x1.2 HPLC
Date Recieved: 2017/09/26 1x1.2 HPLC
Date Recieved: 2017/11/30 1x1.2 HPLC

WELLINGTON LABORATORIES

# CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** 8:2FTS **LOT NUMBER:** 82FTS1216
**COMPOUND:** Sodium 1H,1H,2H,2H-perfluorodecane sulfonate

**STRUCTURE:** **CAS #:** Not available



**MOLECULAR FORMULA:** $C_8H_3F_{13}SO_3Na$ **MOLECULAR WEIGHT:** 550.16
**CONCENTRATION:** 50.0 ± 2.5 µg/ml (Na salt) **SOLVENT(S):** Methanol
47.9 ± 2.4 µg/ml (8:2FTS anion)
**CHEMICAL PURITY:** >98%
**LAST TESTED:** 12/12/2016
**EXPIRY DATE:** 12/12/2021
**RECOMMENDED STORAGE:** Refrigerate ampoule

Date received
2017/03/10
# 2 Ampoules
HPLC
SSV

**DOCUMENTATION/ DATA ATTACHED:**

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

**ADDITIONAL INFORMATION:**

- See page 2 for further details.

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Certified By: B.G. Chittim Date: 12/21/2016

*Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA*
*519-822-2436 • Fax: 519-822-2849 • info@well-labs.com*



Received 2017/05/25 2 x 1.2mL MMN FD-59
Received 2017/05/29 2 x 1.2mL MMN FD-59
Received 2017/08/09 2 x 1.2mL MMN FD-59
Received 2017/08/30 2 x 1.2mL MMN FD-59
Received 2017/09/26 2 x 1.2nL HPLC
Date Received: 2017.11.30 - 2 ampoules - HPLC

144 PG 98

# PREPARATION OF SURROGATE / INTERNAL STANDARD SPIKING SOLUTION

Solution No.: SI-6770 Prep'n Date: 2018/01/12 Expiry Date: 2018/06/20 Discard Date:
Replaces Solution No.: SI-6716 Replaced by Solution: Chemist: GSZ
Sol'n. Name: INJ. F.S.
Solution Used As: Internal Std: / Surrogate Spike:
Spike Volume: 20 uL or mL (for I.S. uL per mL) For Instrument/Analysis: LCMS/MS
Solvent(s): 0.3% NH4OH in MeOH Supplier(s): See PRIRE 108-287 Lot No(s).: See PRIRE 108-287
Date Solvent Opened: See PRIRE 108-287
Volumetric Flask Used: 100mL Class A (5640) Syringe ID: Pizzette M41011F
Storage Location and Conditions: FZ11
Ampule supplier; Mix Name; Catalogue No.; Lot No.; Date Rec'd.; Date Opened, Ampule Expiry Date:

| Compound | Parent Solution No. | Parent Solution Conc'n. (ug/mL) | Aliquot Volume (mL/uL) | Dilution Volume (mL) | Final Conc'n. ng/mL (ug/mL) | Absolute Amount Spiked (ug / ng) |
|---|---|---|---|---|---|---|
| 13C9 PFDA | S-4194 | 50 | 200 | 100 | 100 | — |
| 13C6 PFHxA | S-4195 | 50 | 200 | 100 | 100 | — |

GSZ 2018/01/12

Notes:

DPG 2018/01/16

Solution No.: SI-6771 Prep'n Date: 2018/01/16 Expiry Date: 2018/03/08 Discard Date: —
Replaces Solution No.: SI-6703 Replaced by Solution: — Chemist: DPG
Sol'n. Name: 2,3 Dibromopropionic Acid Surrogate
Solution Used As: Internal Std: — Surrogate Spike: ✓
Spike Volume: 80 uL or mL (for I.S. uL per mL) For Instrument/Analysis: GC-ECD
Solvent(s): MTBE Supplier(s): Fisher Lot No(s).: 161432
Date Solvent Opened: 2017/05/15
Volumetric Flask Used: 5630 [10ml] Class A Syringe ID: 579089-2
Storage Location and Conditions: FD-135 [1°C to 6°C]
Ampule supplier; Mix Name; Catalogue No.; Lot No.; Date Rec'd.; Date Opened, Ampule Expiry Date:

| Compound | Parent Solution No. | Parent Solution Conc'n. (ug/mL) | Aliquot Volume (mL/uL) | Dilution Volume (mL) | Final Conc'n. (ug/mL) | Absolute Amount Spiked (ug / ng) |
|---|---|---|---|---|---|---|
| 2,3 Dibromopropionic Acid | T-5091 | 1000 | 100 | 10 | 10 | — |

DPG 2018/01/16

Notes:



DO NOT WRITE BENEATH ANY INSERTS ON THIS PAGE. DO NOT PLACE ANY INSERTS ON TOP OF ANY RAW DATA ENTERED ON THE LOGBOOK, PAGE AND APPROPRIATE SOLUTION NUMBER

PRLST 133 PG 108

## PREPARATION OF CONCENTRATED STOCK STANDARDS

Solution No.: S-4194 Date: 2017/09/18 Expiry Date: 2018/06/20 Discard Date: _____

Replaces Solution: S-4142 Replaced by Solution: _____ Chemist: GSZ

Compound: $^{13}C_9$ PFDA Purity: _____

Date Received: 2017/06/09 Expiry Date: 2018/06/20 Lot No.: SCID-014

Supplier: CIL

Date Opened: 2017/09/18

Final Gross Weight: – g/mg Dilution Volume: – mL

Tare Weight* : – g/mg Volumetric Flask: –

Net Weight: – g/mg **Concentration:** 50 (ug/mL) mg/mL

Adjusted Net Weight** : – mg Solvent(s): MeOH

Balance Used: –
(specify model and serial no.)

Solvent Used: –

Solvent Supplier: – Lot No(s).: –

Date Opened: –

Storage Location / Conditions: FZ 11

Notes/Comments
Received as solution in ampule.

---

Solution No.: S-4195 Date: 2017/09/18 Expiry Date: 2020/09/30 Discard Date: _____

Replaces Solution: S-4143 Replaced by Solution: _____ Chemist: GSZ

Compound: $^{13}C_6$ PFHxA Purity: _____

Date Received: 2017/06/09 Expiry Date: 2020/09/30 Lot No.: SDAA-004

Supplier: CIL

Date Opened: 2017/09/18

Final Gross Weight: – g/mg Dilution Volume: – mL

Tare Weight* : – g/mg Volumetric Flask: –

Net Weight: – g/mg **Concentration:** 50 ug/mL

Adjusted Net Weight** : – mg Solvent(s): MeOH

Balance Used: –
(specify model and serial no.)

Solvent Used: –

Solvent Supplier: – Lot No(s).: –

Date Opened: –

Storage Location / Conditions: FZ 11

Notes/Comments
Received as solution in ampule.

Cambridge Isotope Laboratories, Inc.

# Certificate of Analysis

Quality Standards:
ISO Guide 34 • ISO/IEC 17025 • ISO 13485 • cGMP

| | |
|---|---|
| **Product Name:** (Isotopic Label & Declaration Specification) | PERFLUORODECANOIC ACID (13C9, 99%) 50 UG/ML IN METHANOL |
| **Lot Number:** | SCID-014 |
| **Catalog Number:** | CLM-8172-S |

## Product Information

| | |
|---|---|
| Chemical Purity Specification: | ≥ 98% |
| Labeled CAS Number: | NA |
| Unlabeled CAS Number: | 335-76-2 |
| MW*: | 523.02 |
| Chemical Formula: | CF3(*CF2)8*CO2H |
| Storage: | Store at room temperature away from light and moisture. |
| Stability: | See storage and expiration date. |

## Certification

Cambridge Isotope Laboratories, Inc. guarantees that this material meets or exceeds the specifications stated. Absolute identity as well as chemical and isotopic purities are assured by the use of unambiguous synthetic routes and multiple chemical analyses wherever possible. Results are representative of QC testing at time of release from Quality Control unless otherwise stated.

Volumetric measurements were made with Class A glassware. Gravimetry is traceable to the NIST through calibrated balances and certified, calibrated, standard weights. The calibrations are traceable to the NIST under Test No. 822/270236-04. The calibrations also meet specifications outlined in ISO 9001, ISO/IEC 17025, ANSI/NCSL Z540-1-1994, NCR Document 10CFR50 Appendix B, and applicable subdocuments.

This COA references the bulk catalog number before packaging. The COA also applies to the CIL finished good catalog number. Some possible packaging sizes and their corresponding suffix are -1.2, -1, -0.5, -1.0, or -0.1.

* *For isotopically labeled compounds. MW listed is for the fully enriched product.*

Approved by: T. J. Eckersley

Timothy J. Eckersley, Ph.D., Quality Review

## Quality Control Tests and Results

| | |
|---|---|
| QC Release Date | 06/20/2008 |
| Expiration Date | 06/20/2018 |
| Concentration Based on Gravimetry | 50.0 µg/mL |
| Chemical Purity of Neat Material(s) | >98% |
| LC/MS for Concentration | 46.2 ± 6.4 µg/mL (k=2) |

Received June 20 in 01/15 1x 1.2mL RT

50 Frontage Road, Andover, MA 01810-5413 USA • 1 800 322 1174 (North America) • 1 978 749 8000 (International) • isotope.com

Date Received:2016.8.17 - 1 x 1.2mL - HPLC
Date Received: 2016.09.14 -HPLC - 1 x 1.2ml
Date Received: 2016/11/22 1x 1.2ml MMN HPLC
Date Received:2017.02.15 - 1 x 1mL - HPLC (MMN)
Date received: 2017/06/09 - 1x1.2ml - HPLC

Cambridge Isotope Laboratories, Inc.

# Certificate of Analysis

**Quality Standards:**
ISO Guide 34 • ISO/IEC 17025 • ISO 13485 • cGMP

| | |
|---|---|
| **Product Name:** (Isotopic Label & Enrichment Specification) | PERFLUOROHEXANOIC ACID, SODIUM SALT (13C6, 99%) 50 UG/ML IN METHANOL |
| **Lot Number:** | SDAA-004 |
| **Catalog Number:** | CLM-8340-S |

## Product Information

| | |
|---|---|
| Chemical Purity Specification: | ≥ 98% |
| MW*: *For unequally labeled compounds, MW listed is for the fully enriched product. | 320.00 |
| Labeled CAS Number: | NA |
| Unlabeled CAS Number: | 307-24-4 |
| Chemical Formula: | *CF3(*CF2)4*COOH |
| Storage: | Store at room temperature away from light and moisture. |
| Stability: | See storage and expiration date. |

Received from 2016/05/20 1x1.2ml RT

## Certification

Cambridge Isotope Laboratories, Inc. guarantees that this material meets or exceeds the specifications stated. Absolute identity as well as chemical and isotopic purities are assured by the use of unambiguous synthetic routes and multiple chemical analyses whenever possible. Results are representative of QC testing at time of release from Quality Control unless otherwise stated.

Volumetric measurements were made with Class A glassware. Gravimetry is traceable to the NIST through calibrated balances and certified, calibrated, standard weights. The calibrations are traceable to the NIST under Test No. 822/270236-04. The calibrations also meet specifications outlined in ISO 9001, ISO/IEC 17025, ANSI/NSCL Z540-1-1994, NCR Document 10CFR50 Appendix B, and applicable subdocuments.

This COA references the bulk catalog number before packaging. The COA also applies to the CIL finished good catalog number. Some possible packaging sizes and their corresponding suffix are -1.2, -1, -0.5, -10, or -0.1.

Approved by: T. J. Eckersley
Timothy J. Eckersley, Ph.D., Quality Review

## Quality Control Tests and Results

| | |
|---|---|
| QC Release Date | 9/30/2010 |
| Expiration Date | 9/30/2020 |
| Concentration Based on Gravimetry | 50.4 µg/mL |
| Chemical Purity of Neat Material(s) | 99.2% |
| LC/MS for Concentration | 47.1 ± 2.6 µg/mL (k=2) |

50 Frontage Road, Andover, MA 01810-6413 USA • 1 800 322 1174 (North America) • 1 978 749 8000 (International) • isotope.com

Date Received: 2016/08/17 1x 1.2ml MMN HPLC
Date Received: 2016/09/14 1x 1.2ml MMN HPLC
Date Received: 2016/11/22 1x 1.2ml MMN HPLC
Date Received: 2017.02.15 - 1 x 1mL - HPLC (MMN)
Date Received: 2017.06.09 - 1 x 1.2ml - HPLC

144 PG 114

## PREPARATION OF SURROGATE / INTERNAL STANDARD SPIKING SOLUTION

Solution No.: SI-6801 Prep'n Date: 2018/02/12 Expiry Date: 2021/09/30 Discard Date: _____
Replaces Solution No.: SI-6763 Replaced by Solution: _____ Chemist: GSZ
Sol'n. Name: PFC INTERNAL STD SPIKING SOLUTION
Solution Used As: Internal Std: ✓ Surrogate Spike: _____
Spike Volume: — uL or mL (for I.S. uL per mL) For Instrument/Analysis: LCMS/MS
Solvent(s): 0.3% NH4OH in MeOH Supplier(s): See PRLRE 108-355 Lot No(s).: See PRLRE 108-355
Date Solvent Opened: See PRLRE 108-355
Volumetric Flask Used: 200 mL Class A (5640) Syringe ID: Hamilton MA1011F/J434346
Storage Location and Conditions: FZ-11
Ampule supplier; Mix Name; Catalogue No.; Lot No.; Date Rec'd.; Date Opened, Ampule Expiry Date: See attached sheet

SI-6801 (PRLST 144 p. 114)

| Compound Name | ID# | Conc. (ug/mL) | Vol.. of Stock standard (uL) | Dilution volume (mL) | Final Conc. (ng/mL) | Exp. date |
|---|---|---|---|---|---|---|
| MPFBA | S4290-1 | 50 | 200 | 200 | 50 | 2022/04/12 |
| M5PFPeA | S4290-2 | 50 | 200 | 200 | 50 | 2022/07/20 |
| MPFHxA | S4290-3 | 50 | 200 | 200 | 50 | 2022/10/27 |
| MPFHxS | S4290-4 | 50 | 200 | 200 | 50 | 2022/02/17 |
| M4PFHpA | S4290-5 | 50 | 200 | 200 | 50 | 2022/05/03 |
| MPFOA | S4290-6 | 50 | 200 | 200 | 50 | 2022/10/17 |
| MPFOS | S4290-7 | 50 | 200 | 200 | 50 | 2022/10/17 |
| MPFNA | S4290-8 | 50 | 200 | 200 | 50 | 2021/09/30 |
| MPFDA | S4290-9 | 50 | 200 | 200 | 50 | 2022/07/13 |
| MPFUdA | S4290-10 | 50 | 200 | 200 | 50 | 2021/11/22 |
| MPFDoA | S4290-11 | 50 | 200 | 200 | 50 | 2022/05/23 |
| M2PFTeDA | S4290-12 | 50 | 200 | 200 | 50 | 2022/11/30 |
| MPFOSA | S4290-13 | 50 | 200 | 200 | 50 | 2022/10/11 |
| D3-N-MeFOSAA | S4290-14 | 50 | 200 | 200 | 50 | 2022/05/19 |
| D5-N-EtFOSAA | S4290-15 | 50 | 200 | 200 | 50 | 2021/11/22 |
| D-N-MeFOSA-M | S4290-16 | 50 | 500 | 200 | 125 | 2022/04/20 |
| D-N-EtFOSA-M | S4290-17 | 50 | 500 | 200 | 125 | 2022/10/11 |
| D7-N-MeFOSE-M | S4290-18 | 50 | 500 | 200 | 125 | 2022/10/13 |
| D9-N-EtFOSE-M | S4290-19 | 50 | 500 | 200 | 125 | 2022/10/13 |
| M2-6:2FTS | S4290-20 | 50 | 500 | 200 | 125 | 2022/02/17 |
| M2-8:2FTS | S4290-21 | 50 | 500 | 200 | 125 | 2022/07/05 |

No writing on bottom gauge.

GSZ, 2018/02/12

Notes:



DO NOT WRITE BENEATH ANY INSERTS ON THIS PAGE. DO NOT PLACE ANY INSERTS ON TOP OF ANY RAW DATA ENTERED ON THIS PAGE. INITIAL AND DATE ALL INSERTS. LOGBOOK, PAGE AND APPROPRIATE SOLUTION NUMBER REFERENCES MUST BE WRITTEN ON ALL INSERTS.

PRLST 133 PG 163

## PREPARATION OF CONCENTRATED STOCK STANDARDS

Solution No.: S-4290 Date: 2018/02/12 Expiry Date: See Below Discard Date: _____

Replaces Solution: _____ Replaced by Solution: _____ Chemist: GSZ

S-4290 (PRLST 133 pg. 163)

| Solution ID# | Compound Name | Lot# | Received date | Exp. date | Replaces Solution | Replaced by Solution | Conc (ug/mL) | Solvent | Storage |
|---|---|---|---|---|---|---|---|---|---|
| S4290-1 | MPFBA | MPFBA0417 | 2017/12/06 | 2022/04/12 | S4250-1 | | 50 | MeOH | FZ-11 |
| S4290-2 | M5PFPeA | M5PFPeA0717 | 2017/12/06 | 2022/07/20 | S4250-2 | | 50 | MeOH | FZ-11 |
| S4290-3 | MPFHxA | MPFHxA1017 | 2017/12/06 | 2022/10/27 | S4255-1 | | 50 | MeOH | FZ11 |
| S4290-4 | MPFHxS | MPFHxS0217 | 2017/12/06 | 2022/02/17 | S4250-3 | | 50 | MeOH | FZ-11 |
| S4290-5 | M4PFHpA | M4PFHpA0517 | 2017/12/06 | 2022/05/03 | S4250-4 | | 50 | MeOH | FZ-11 |
| S4290-6 | MPFOA | MPFOA1017 | 2017/12/06 | 2022/10/17 | S4250-5 | | 50 | MeOH | FZ-11 |
| S4290-7 | MPFOS | MPFOS1017 | 2017/12/06 | 2022/10/17 | S4250-6 | | 50 | MeOH | FZ-11 |
| S4290-8 | MPFNA | MPFNA0916 | 2017/12/06 | 2021/09/30 | S4250-7 | | 50 | MeOH | FZ-11 |
| S4290-9 | MPFDA | MPFDA0717 | 2017/12/06 | 2022/07/13 | S4250-8 | | 50 | MeOH | FZ-11 |
| S4290-10 | MPFUdA | MPFUdA1116 | 2017/12/06 | 2021/11/22 | S4242-1 | | 50 | MeOH | FZ11 |
| S4290-11 | MPFDoA | MPFDoA0517 | 2017/12/06 | 2022/05/23 | S4250-9 | | 50 | MeOH | FZ-11 |
| S4290-12 | M2PFTeDA | M2PFTeDA1117 | 2017/12/06 | 2022/11/30 | S4250-10 | | 50 | MeOH | FZ-11 |
| S4290-13 | MPFOSA | M8FOSA1017I | 2017/12/06 | 2022/10/11 | S4250-11 | | 50 | IPA | FD-59 |
| S4290-14 | D3-N-MeFOSAA | d3NMeFOSAA0517 | 2017/10/25 | 2022/05/19 | S4260-1 | | 50 | MeOH | FD59 |
| S4290-15 | D5-N-EtFOSAA | d5NEtFOSAA1116 * | 2017/10/25 | 2021/11/22 | S4260-2 | | 50 | MeOH | FD59 |
| S4290-16 | D-N-MeFOSA-M | dNMeFOSA0417M | 2017/12/06 | 2022/04/20 | S4255-2 | | 50 | MeOH | FZ11 |
| S4290-17 | D-N-EtFOSA-M | dNEtFOSA1017M | 2017/12/06 | 2022/10/11 | S4255-3 | | 50 | MeOH | FZ11 |
| S4290-18 | D7-N-MeFOSE-M | d7NMeFOSE1017M | 2017/12/06 | 2022/10/13 | S4255-4 | | 50 | MeOH | FZ11 |
| S4290-19 | D9-N-EtFOSE-M | d9NEtFOSE1017M | 2017/12/06 | 2022/10/13 | S4255-5 | | 50 | MeOH | FZ11 |
| S4290-20 | M2-6:2FTS | M262FTS0217 | 2017/12/06 | 2022/02/17 | S4255-6 | | 50 | MeOH | FD59 |
| S4290-21 | M2-8:2FTS | M282FTS0717 | 2017/12/06 | 2022/07/05 | S4255-7 | | 50 | MeOH | FD59 |
| Date opened (All compounds): 2018/02/12 | | | Supplier: Wellington | | | Chemist: GSZ | | | |

No writing on bottom page. * d5NEtFOSAA1116 GSZ 2018/02/16 GSZ, 2018/02/12

Solution No.: _____ Date: _____ Expiry Date: _____ Discard Date: _____

Replaces Solution: _____ Replaced by Solution: _____ Chemist: _____

Compound: _____ Purity: _____

Date Received: _____ Expiry Date: _____ Lot No.: _____

Supplier: _____

Date Opened: _____

Final Gross Weight: _____ g/mg Dilution Volume: _____ mL

Tare Weight* : _____ g/mg Volumetric Flask: _____

Net Weight: _____ g/mg **Concentration:** _____ ug/mL

Adjusted Net Weight** : _____ mg Solvent(s): _____

Balance Used: _____

(specify model and serial no.)

Solvent Used: _____

Solvent Supplier: _____ Lot No(s).: _____

Date Opened: _____

Storage Location / Conditions: _____

Notes/Comments

OK 10 2018/02/13



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# WELLINGTON LABORATORIES

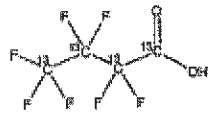
## CERTIFICATE OF ANALYSIS
### DOCUMENTATION

**PRODUCT CODE:** MPFBA
**COMPOUND:** Perfluoro-n-[1,2,3,4-$^{13}C_4$]butanoic acid

**LOT NUMBER:** MPFBA0417

**STRUCTURE:**

**CAS #:** Not available



**MOLECULAR FORMULA:** $^{13}C_4HF_7O_2$
**CONCENTRATION:** 50 ± 2.5 µg/ml

**MOLECULAR WEIGHT:** 218.01
**SOLVENT(S):** Methanol
Water (<1%)

**CHEMICAL PURITY:** >98%
**LAST TESTED:** (mm/dd/yyyy) 04/12/2017
**EXPIRY DATE:** (mm/dd/yyyy) 04/12/2022
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

**ISOTOPIC PURITY:** ≥99% $^{13}C$ (1,2,3,4-$^{13}C_4$)

1 ampoule
2017/10/25 652

**DOCUMENTATION/ DATA ATTACHED:**

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

*FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE*

Certified By: B.G. Chittim, General Manager  Date: 04/20/2017 (mm/dd/yyyy)

*Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA*
*519-822-2436 • Fax: 519-822-2849 • info@well-labs.com*

Form 4-27, Issued 2004-11-10
Revision 4, Revised 2017-03-06

MPFBA0417 (1 of 4)
rev0

Date Received: 2017.09.07 - 1 ampoule - HPLC
Date Received: 2017.12.06 - 1 ampoule - HPLC

Date Received: 2018.01.16 - 1 ampoule - HPLC

Date received: 2017/09/07 RW Ampoule: 1

# WELLINGTON LABORATORIES

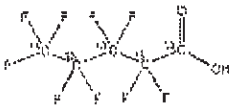
## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** M5PFPeA
**COMPOUND:** Perfluoro-n-[$^{13}C_5$]pentanoic acid

**LOT NUMBER:** M5PFPeA0717

**STRUCTURE:**

**CAS #:** Not available



**MOLECULAR FORMULA:** $^{13}C_5HF_9O_2$
**CONCENTRATION:** 50 ± 2.5 µg/ml

**MOLECULAR WEIGHT:** 269.01
**SOLVENT(S):** Methanol
Water (<1%)

**CHEMICAL PURITY:** >98%
**LAST TESTED:** 07/20/2017
**EXPIRY DATE:** 07/20/2022
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

**ISOTOPIC PURITY:** ≥98% $^{13}C$ ($^{13}C_5$)

**DOCUMENTATION/ DATA ATTACHED:**

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.
- Contains < 0.1% of perfluoro-n-pentanoic acid.

***FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE***

Certified By: _____ Date: 07/26/2017
B.G. Chittim, General Manager

*Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA*
*519-822-2436 • Fax: 519-822-2849 • info@well-labs.com*

Date Received: 2017.10.25 - 1 ampoule - HPLC
Date Received: 2017.12.06 - 1 ampoule - HPLC
Date Received: 2018.01.16 - 1 ampoule -HPLC

Maxxam Analytics 360 of 681

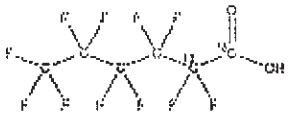
# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** MPFHxA
**COMPOUND:** Perfluoro-n-[1,2-$^{13}C_2$]hexanoic acid

**LOT NUMBER:** MPFHxA1017

**STRUCTURE:**



**CAS #:** Not available

2018/01/16
1 ampoule
E.G

**MOLECULAR FORMULA:** $^{13}C_2{}^{12}C_4HF_9O_2$
**CONCENTRATION:** 50 ± 2.5 µg/ml
**CHEMICAL PURITY:** >98%
**LAST TESTED:** 10/27/2017
**EXPIRY DATE:** 10/27/2022
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

**MOLECULAR WEIGHT:** 316.04
**SOLVENT(S):** Methanol
Water (<1%)
**ISOTOPIC PURITY:** ≥99% $^{13}C$ (1,2-$^{13}C_2$)

**DOCUMENTATION/ DATA ATTACHED:**

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.
- Contains < 0.1% of perfluoro-n-hexanoic acid and < 0.3% of perfluoro-n-octanoic acid.

***FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE***

**Certified By:** _____ **Date:** 10/30/2017
B.G. Chittim, General Manager

*Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA*
*519-822-2436 • Fax: 519-822-2849 • info@well-labs.com*

Form 17, Issued 2021-11-10
Revision 4, Revised 2017-03-06



Date Received: 2017.12.06 - 1 ampoule - HPLC

WELLINGTON LABORATORIES

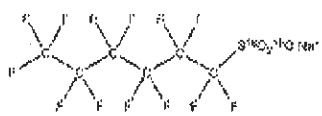
# CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** MPFHxS

**LOT NUMBER:** MPFHxS0217

**COMPOUND:** Sodium perfluoro-1-hexane[$^{18}O_2$]sulfonate

**STRUCTURE:**



**CAS #:** Not available

**MOLECULAR FORMULA:** $C_6F_{13}S^{18}O_2{}^{18}ONa$

**MOLECULAR WEIGHT:** 425.10

**CONCENTRATION:** 50.0 ± 2.5 µg/mL (Na salt)
47.3 ± 2.4 µg/mL (MPFHxS anion)

**SOLVENT(S):** Methanol

**CHEMICAL PURITY:** >98%

**ISOTOPIC PURITY:** >94% ($^{18}O_2$)

**LAST TESTED:** 02/17/2017

**EXPIRY DATE:** 02/17/2022

**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

F2
1 ampoule
HPLC
2017/05/02
JPB3

**DOCUMENTATION/ DATA ATTACHED:**

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- The response factor for MPFHxS ($C_6F_{13}S^{18}O_2{}^{18}O^-$) has been observed to be up to 10% lower than for PFHxS ($C_6F_{13}S^{18}O_3^-$) when both compounds are injected together. This difference may vary between instruments.
- Contains ~ 1.0% of sodium perfluoro-1-octane[$^{18}O_2$]sulfonate ($^{18}O_2$-PFOS).
- Due to the isotopic purity of the starting material ($^{18}O_2$ >94%), MPFHxS contains ~ 0.3% of PFHxS. This value agrees with the theoretical percent relative abundance that is expected based on the stated isotopic purity.

***FOR LABORATORY USE ONLY; NOT FOR HUMAN OR DRUG USE***

Certified By: B.G. Chittim  Date: 03/02/2017

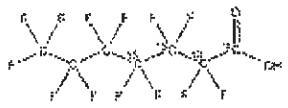
*Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA*
*519-822-2436 • Fax: 519-822-2049 • info@well-labs.com*

Date received 2017/09/07 1 ampoule HPLC
Date received 2017/10/25 1 ampoule HPLC
Date Received: 2017.10.25 - 1 ampoule - HPLC
Date Received: 2017.12.06 - 1 ampoule - HPLC
Date Received: 2018.01.16 - 1 ampoule - HPLC

WELLINGTON LABORATORIES

# CERTIFICATE OF ANALYSIS
## DOCUMENTATION

| | | | |
|---|---|---|---|
| **PRODUCT CODE:** | M4PFHpA | **LOT NUMBER:** | M4PFHpA0517 |
| **COMPOUND:** | Perfluoro-n-[1,2,3,4-$^{13}C_4$]heptanoic acid | | |
| **STRUCTURE:** | | **CAS #:** | Not available |



| | | | |
|---|---|---|---|
| **MOLECULAR FORMULA:** | $^{13}C_4{}^{12}C_3HF_{13}O_2$ | **MOLECULAR WEIGHT:** | 368.03 |
| **CONCENTRATION:** | 50 ± 2.5 µg/ml | **SOLVENT(S):** | Methanol<br>Water (<1%) |
| **CHEMICAL PURITY:** | >98% | **ISOTOPIC PURITY:** | ≥99% $^{13}C$<br>(1,2,3,4-$^{13}C_4$) |
| **LAST TESTED:** | 05/03/2017 | | |
| **EXPIRY DATE:** | 05/03/2022 | | |
| **RECOMMENDED STORAGE:** | Store ampoule in a cool, dark place | | |

**DOCUMENTATION/ DATA ATTACHED:**

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

1 ampoule
2017/10/26 652-

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

*FOR LABORATORY USE ONLY. NOT FOR HUMAN OR DRUG USE*

Certified By: _____ Date: 05/11/2017
B.G. Chittim, General Manager

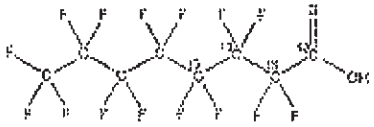
*Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA*
*519-822-2436 • Fax: 519-822-2849 • info@well-labs.com*

Date Received: 2017.09.07 - 1 ampoule - HPLC
Date Received: 2017.12.06 - 1 ampoule - HPLC
Date Received: 2018.01.16 - 1 ampoule - HPLC

# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS
DOCUMENTATION

| | | | |
|---|---|---|---|
| **PRODUCT CODE:** | MPFOA | **LOT NUMBER:** | MPFOA1017 |
| **COMPOUND:** | Perfluoro-n-[1,2,3,4-$^{13}C_4$]octanoic acid | | |
| **STRUCTURE:** | | **CAS #:** | Not available |



2018/01/16
1 ampoule
EG

| | | | |
|---|---|---|---|
| **MOLECULAR FORMULA:** | $^{13}C_4{}^{12}C_4HF_{15}O_2$ | **MOLECULAR WEIGHT:** | 418.04 |
| **CONCENTRATION:** | 50 ± 2.5 µg/mL | **SOLVENT(S):** | Methanol<br>Water (<1%) |
| **CHEMICAL PURITY:** | >98% | **ISOTOPIC PURITY:** | ≥99% $^{13}C$<br>(1,2,3,4-$^{13}C_4$) |
| **LAST TESTED:** | 10/17/2017 | | |
| **EXPIRY DATE:** | 10/17/2022 | | |
| **RECOMMENDED STORAGE:** | Store ampoule in a cool, dark place | | |

**DOCUMENTATION/ DATA ATTACHED:**

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.
- Contains ~ 0.1% of native perfluoro-n-octanoic acid (PFOA).

***FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE***

**Certified By:** _____ **Date:** 10/18/2017
B.D. Chittim, General Manager

*Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA*
*519-822-2436 • Fax: 519-822-2849 • info@well-labs.com*

Form:CA, Report: MPFOA-1017
Revision 4, Revised 2017-03-30

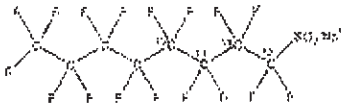
MPFOA1017 (1,2,3,4-13C4) 4 of 4

Date Received: 2017.12.06 - 1 ampoule - HPLC

WELLINGTON LABORATORIES

# CERTIFICATE OF ANALYSIS DOCUMENTATION

| | | | |
|---|---|---|---|
| PRODUCT CODE: | MPFOS | LOT NUMBER: | MPFOS1017 |
| COMPOUND: | Sodium perfluoro-1-[1,2,3,4-$^{13}C_4$]octanesulfonate | | |
| STRUCTURE: | | CAS #: | Not available |



| | | | |
|---|---|---|---|
| MOLECULAR FORMULA: | $^{13}C_4{}^{12}C_4F_{17}SO_3Na$ | MOLECULAR WEIGHT: | 526.08 |
| CONCENTRATION: | 50.0 ± 2.5 ug/ml (Na salt)<br>47.8 ± 2.4 ug/ml (MPFOS anion) | SOLVENT(S): | Methanol |
| CHEMICAL PURITY: | >98% | ISOTOPIC PURITY: | ≥99% $^{13}C$ ($1,2,3,4\text{-}^{13}C_4$) |
| LAST TESTED: | 10/17/2017 | | |
| EXPIRY DATE: | 10/17/2022 | | |
| RECOMMENDED STORAGE: | Store ampoule in a cool, dark place | | |

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

Pamgeeta
2017/10/25 652

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains ~ 0.4% Sodium perfluoro-1-[1,2,3-$^{13}C_3$]heptanesulfonate.

*FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE*

Certified By: _____ Date: 10/18/2017
B.G. Chittim, General Manager

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*519-822-2436 • Fax: 519-822-2849 • info@well-labs.com*



Date Received: 2017.12.06 - 1 ampoule - HPLC

Date Received: 2018.01.16 - 1 ampoule - HPLC

# WELLINGTON LABORATORIES

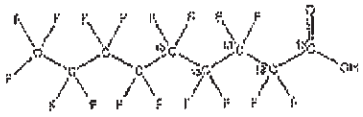
## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** MPFNA
**COMPOUND:** Perfluoro-n-[1,2,3,4,5-$^{13}C_5$]nonanoic acid

**LOT NUMBER:** MPFNA0916

**STRUCTURE:**

**CAS #:** Not available



**MOLECULAR FORMULA:** $^{13}C_5{}^{12}C_4HF_{17}O_2$
**CONCENTRATION:** 50 ± 2.5 pg/ml

**MOLECULAR WEIGHT:** 469.04
**SOLVENT(S):** Methanol
Water (<1%)

**CHEMICAL PURITY:** >98%
**LAST TESTED:** 09/30/2016
**EXPIRY DATE:** 09/30/2021
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

**ISOTOPIC PURITY:** ≥99% $^{13}C$ (1,2,3,4,5-$^{13}C_5$)

Received
2016-12-12
1x1.2 mL
F2-11

**DOCUMENTATION/ DATA ATTACHED:**

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

*FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE*

Certified By: B.G. Chilum  Date: 10/11/2016 (mm/dd/yyyy)

*Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA*
*519-822-2436 • Fax: 519-822-2849 • info@well-labs.com*

Form#27, Issued 2004-11-10
Revision#3, Revised 2015-03-24

MPFNA0916 (1 of 4)
rev0

Received date: 2017/02/22 2x1.2 mL MZ
Received date: 2017/05/02 1x1.2 mL ssv
Received date: 2017/05/31 2x1.2 mL ssv
Received date: 2017/09/07 2x1.2 mL TRW
Received date: 2017/10/25 2x1.2 mL
Date Received: 2017.12.06 - 1 ampoule - HPLC

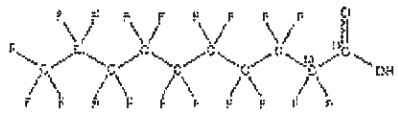
WELLINGTON LABORATORIES

# CERTIFICATE OF ANALYSIS
## DOCUMENTATION

**PRODUCT CODE:** MPFDA
**COMPOUND:** Perfluoro-n-[1,2-$^{13}C_2$]decanoic acid

**LOT NUMBER:** MPFDA071717

**STRUCTURE:**



**CAS #:** Not available

2.0 mL/D1 / 1G
1 x ampoule
2.6

| | | | |
|---|---|---|---|
| **MOLECULAR FORMULA:** | $^{13}C_2{}^{12}C_8HF_{17}O_2$ | **MOLECULAR WEIGHT:** | 516.07 |
| **CONCENTRATION:** | 50 ± 2.5 µg/ml | **SOLVENT(S):** | Methanol<br>Water (<1%) |
| **CHEMICAL PURITY:** | >98% | **ISOTOPIC PURITY:** | ≥99% $^{13}C$<br>($1,2\text{-}^{13}C_2$) |
| **LAST TESTED:** (mm/dd/yyyy) | 07/13/2017 | | |
| **EXPIRY DATE:** (mm/dd/yyyy) | 07/13/2022 | | |
| **RECOMMENDED STORAGE:** | Store ampoule in a cool, dark place | | |

**DOCUMENTATION/ DATA ATTACHED:**

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.
- Contains < 0.1% of $^{13}C_2$-PFNA.

***FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE***

**Certified By:** _____ **Date:** 07/14/2017 (mm/dd/yyyy)
B.C. Chittim, General Manager

*Wellington Laboratories Inc., 345 Southgate Dr, Guelph ON N1G 3M5 CANADA*
*519-822-2436 • Fax: 519-822-2849 • info@well-labs.com*

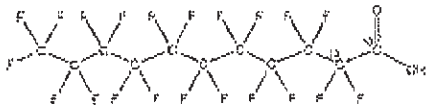


Date Received: 2017.12.06 - 1 ampoule - HPLC

WELLINGTON LABORATORIES

# CERTIFICATE OF ANALYSIS
## DOCUMENTATION

| | | | |
|---|---|---|---|
| PRODUCT CODE: | MPFUdA | LOT NUMBER: | MPFUdA1116 |
| COMPOUND: | Perfluoro-n-[1,2-$^{13}C_2$]undecanoic acid | | |
| STRUCTURE: | | CAS #: | Not available |



| | | | |
|---|---|---|---|
| MOLECULAR FORMULA: | $^{13}C_2{}^{12}C_9HF_{21}O_2$ | MOLECULAR WEIGHT: | 566.08 |
| CONCENTRATION: | 50 ± 2.5 pg/ml | SOLVENT(S): | Methanol<br>Water (<1%) |
| CHEMICAL PURITY: | >98% | ISOTOPIC PURITY: | ≥99% $^{13}C$ |
| LAST TESTED: | 11/22/2016 | | ($1,2\text{-}^{13}C_2$) |
| EXPIRY DATE: | 11/22/2021 | | |
| RECOMMENDED STORAGE: | Store ampoule in a cool, dark place | | |

Received 2017/12/22.
2 x 1.2 mL (TZ-1)

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.
- Presence of $1\text{-}^{13}C_1$-PFUdA (~1%; see Figure 2), $2\text{-}^{13}C_1$-PFUdA (~1%), and PFUdA (~0.2%; see Figure 2) are due to the isotopic purity of the $^{13}C$-precursor.

*FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE*

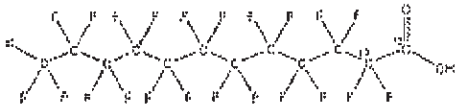
Certified By: B.G. Chittim Date: 12/07/2016

*Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA*
*519-822-2436 • Fax: 519-822-2849 • info@well-labs.com*

Received 2017/05/02 2x1.2 mL HPLC
Date Received: 2017.05.02 - 1 x 1.2ml - HPLC
Date Received: 2017.06.29 - 1 x 1.2ml - HPLC
Date Received: 2017.09/07 - 1 x 1.2ml - HPLC
Date Received: 2017.02/22 - 1 x 1.2ml - HPLC
Date Received: 2017.12.06 - 1 ampoule - HPLC
Date Received: 2018.01.16 - 1 ampoule - HPLC

# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS
DOCUMENTATION

| | | | |
|---|---|---|---|
| PRODUCT CODE: | MPFDoA | LOT NUMBER: | MPFDoA0517 |
| COMPOUND: | Perfluoro-n-[1,2-$^{13}C_2$]dodecanoic acid | | |
| STRUCTURE: |  | CAS #: | Not available |
| MOLECULAR FORMULA: | $^{13}C_2{}^{12}C_{10}HF_{23}O_2$ | MOLECULAR WEIGHT: | 616.08 |
| CONCENTRATION: | 50 ± 2.5 µg/ml | SOLVENT(S): | Methanol<br>Water (<1%) |
| CHEMICAL PURITY: | >98% | ISOTOPIC PURITY: | ≥99% $^{13}C$ (1,2-$^{13}C_2$) |
| LAST TESTED: | 05/23/2017 | | |
| EXPIRY DATE: | 05/23/2022 | | |
| RECOMMENDED STORAGE: | Store ampoule in a cool, dark place | | |

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

transfer
2017/09/25, 052

ADDITIONAL INFORMATION:

- See page 2 for further details
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

*FOR LABORATORY USE ONLY; NOT FOR HUMAN OR DRUG USE*

Certified By: _____ Date: 05/26/2017
S.G. Chittim, General Manager

*Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA*
*519-822-2436 • Fax: 519-822-2849 • info@well-labs.com*



Date Received: 2017.09.07 - 1 ampoule - HPLC
Date Received: 2017.12.06 - 1 ampoule - HPLC
Date Received: 2018.01.16 - 1 ampoule - HPLC

# WELLINGTON LABORATORIES

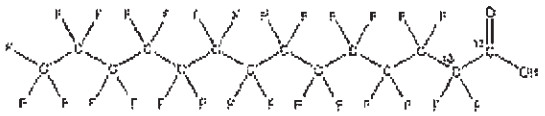
## CERTIFICATE OF ANALYSIS
### DOCUMENTATION

**PRODUCT CODE:** M2PFTeDA
**COMPOUND:** Perfluoro-n-[1,2-$^{13}C_2$]tetradecanoic acid

**LOT NUMBER:** M2PFTeDA1117

**STRUCTURE:**

**CAS #:** Not available



2018/01/16
1 ampoule
E. G

**MOLECULAR FORMULA:** $^{13}C_2{}^{13}C_{12}HF_{27}O_2$
**CONCENTRATION:** 50 ± 2.5 µg/ml

**MOLECULAR WEIGHT:** 716.10
**SOLVENT(S):** Methanol
Water (<1%)

**CHEMICAL PURITY:** >98%
**LAST TESTED:** 11/30/2017
**EXPIRY DATE:** 11/30/2022
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

**ISOTOPIC PURITY:** ≥99% $^{13}C$ (1,2-$^{13}C_2$)

**DOCUMENTATION/ DATA ATTACHED:**

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

***FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE***

Certified By: _____ Date: 12/01/2017
B.G. Chittim, General Manager

*Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA*
*519-822-2436 • Fax: 519-822-2849 • info@well-labs.com*

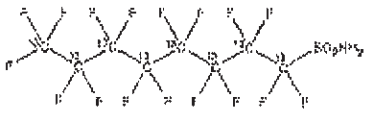
Form# 21, Issued 2004-11-30
Revision 4, Revised 2017-03-06

M2PFTeDA1117 (1 of 4)
rev0

Date Received: 2017.12.06 - 1 ampoule - HPLC

WELLINGTON LABORATORIES

# CERTIFICATE OF ANALYSIS DOCUMENTATION

| | | | |
|---|---|---|---|
| **PRODUCT CODE:** | M8FOSA-I | **LOT NUMBER:** | M8FOSA1017I |
| **COMPOUND:** | Perfluoro-1-[$^{13}C_8$]octanesulfonamide | | |
| **STRUCTURE:** |  | **CAS #:** | Not available |

20180116
1 ampoule
4.6

| | | | |
|---|---|---|---|
| **MOLECULAR FORMULA:** | $^{13}C_8H_2F_{17}NO_2S$ | **MOLECULAR WEIGHT:** | 507.09 |
| **CONCENTRATION:** | 50 ± 2.5 µg/ml | **SOLVENT(S):** | Isopropanol |
| **CHEMICAL PURITY:** | >98% | **ISOTOPIC PURITY:** | ≥99% $^{13}C$ ($^{13}C_8$) |
| **LAST TESTED:** | 10/11/2017 | | |
| **EXPIRY DATE:** | 10/11/2022 | | |
| **RECOMMENDED STORAGE:** | Refrigerate ampoule | | |

**DOCUMENTATION/ DATA ATTACHED:**

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- Contains ~ 1.1% of perfluoro-1-[$^{13}C_8$]octanesulfonamide and ~ 0.01% of perfluoro-1-[$^{13}C_7$]heptanesulfonamide.

***FOR LABORATORY USE ONLY; NOT FOR HUMAN OR DRUG USE***

Certified By: _____ Date: 10/20/2017
S.O. Childs, General Manager

*Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA*
*519-822-2436 • Fax: 519-822-2849 • info@well-labs.com*

Form 07 Issued 2004-11-19
Revised 4, Revised 2017-03-06



Date Received: 2017.12.06 - 1 ampoule - HPLC

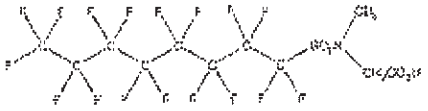
Ampoule: 1 TRW
Date received: 2017/09/12

WELLINGTON LABORATORIES

# CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** d3-N-MeFOSAA
**LOT NUMBER:** d3NMeFOSAA0517
**COMPOUND:** N-methyl-d3-perfluoro-1-octanesulfonamidoacetic acid

**STRUCTURE:**



**CAS #:** Not available

**MOLECULAR FORMULA:** $C_{10}D_3H_2F_{17}NO_4S$
**MOLECULAR WEIGHT:** 574.23
**CONCENTRATION:** 50 ± 2.5 µg/ml
**SOLVENT(S):** Methanol
Water (<1%)
**CHEMICAL PURITY:** >98%
**ISOTOPIC PURITY:** ≥98% $^2H_3$
**LAST TESTED:** 05/19/2017
**EXPIRY DATE:** 05/19/2022
**RECOMMENDED STORAGE:** Refrigerate ampoule

**DOCUMENTATION/ DATA ATTACHED:**

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent the conversion of the acetic acid moiety to the methyl ester.

*FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE*

Certified By: _____ Date: 05/31/2017
B. G. Chittim, General Manager

*Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA*
*519-822-2436 • Fax: 519-822-2849 • info@well-labs.com*

Revision 27, Issued 2016-11-10
Revision 4, Revised 2017-03-16



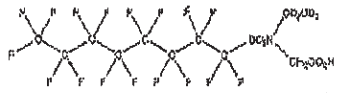
Date Received: 2017.10.25 - 1 ampoules - HPLC

WELLINGTON LABORATORIES

# CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** d5-N-EtFOSAA **LOT NUMBER:** d5NEtFOSAA1116
**COMPOUND:** N-ethyl-d5-perfluoro-1-octanesulfonamidoacetic acid

**STRUCTURE:** **CAS #:** Not available



**MOLECULAR FORMULA:** $C_{10}D_4H_5F_{17}NO_4S$ **MOLECULAR WEIGHT:** 590.26
**CONCENTRATION:** 50 ± 2.5 µg/ml **SOLVENT(S):** Methanol
Water (<1%)
**CHEMICAL PURITY:** >98% **ISOTOPIC PURITY:** ≥98% $^{2}H_{4}$
**LAST TESTED:** 11/22/2016
**EXPIRY DATE:** 11/22/2021
**RECOMMENDED STORAGE:** Refrigerate ampoule

Received 2016/12/16 17 1.2 ml FD-59

**DOCUMENTATION/ DATA ATTACHED:**

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent the conversion of the acetic acid moiety to the methyl ester.

*FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE*

Certified By: B.G. Chittim Date: 12/01/2016

*Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA*
*519-822-2436 • Fax: 519-822-2849 • info@well-labs.com*

Form 22, Issued 2014-12-10
Revision 3, Revised 2016-03-24

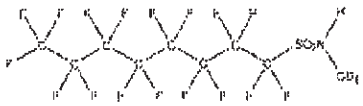


Date Received: 2017/10/25 2x1.2 ml

WELLINGTON LABORATORIES

# CERTIFICATE OF ANALYSIS
## DOCUMENTATION

| | | | |
|---|---|---|---|
| **PRODUCT CODE:** | d-N-MeFOSA-M | **LOT NUMBER:** | dNMeFOSA0417M |
| **COMPOUND:** | N-methyl-$d_3$-perfluoro-1-octanesulfonamide | | |
| **STRUCTURE:** | | **CAS #:** | Not available |



| | | | |
|---|---|---|---|
| **MOLECULAR FORMULA:** | $C_9D_3HF_{17}NO_2S$ | **MOLECULAR WEIGHT:** | 516.19 |
| **CONCENTRATION:** | 50 ± 2.5 µg/ml | **SOLVENT(S):** | Methanol |
| **CHEMICAL PURITY:** | >98% | **ISOTOPIC PURITY:** | ≥98% $^2H_3$ |
| **LAST TESTED:** | 04/20/2017 | | |
| **EXPIRY DATE:** | 04/20/2022 | | |
| **RECOMMENDED STORAGE:** | Store ampoule in a cool, dark place | | |

Fz
2 ampoule
HPLC
2017/06/29
DPS

**DOCUMENTATION/ DATA ATTACHED:**

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

**ADDITIONAL INFORMATION:**

- See page 2 for further details.

*FOR LABORATORY USE ONLY; NOT FOR HUMAN OR DRUG USE*

**Certified By:** _____ **Date:** 04/24/2017
S.G. Collins, General Manager

*Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA*
*519-822-2436 • Fax: 519-822-2849 • info@well-labs.com*

Received date 2017/07/21 2 x 1.2mL HPLC
Received date 2017/08/09 1 x 1.2mL HPLC
Received date 2017/09/07 1 x 1.2mL HPLC
RECEIVED: 2017/09/27 1X2 AMPULES HPLC
Date Received: 2017.10.25 - 1 ampoule - HPLC
RECEIVED: 2017/11/07 1 x 1.2ml HPLC
RECEIVED: 2017/11/07 1 x 1.2ml HPLC
Date Received: 2017.12.06 - 1 ampoule - HPLC

# WELLINGTON LABORATORIES

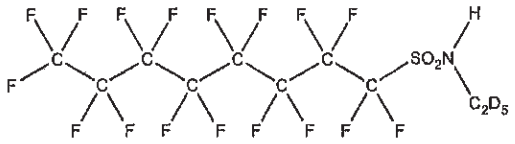
# CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** d-N-EtFOSA-M
**COMPOUND:** N-ethyl-$d_5$-perfluoro-1-octanesulfonamide

**LOT NUMBER:** dNEtFOSA1017M

**STRUCTURE:**

**CAS #:** Not available



| | | | |
|---|---|---|---|
| **MOLECULAR FORMULA:** | $C_{10}D_5HF_{17}NO_2S$ | **MOLECULAR WEIGHT:** | 532.23 |
| **CONCENTRATION:** | 50 ± 2.5 µg/ml | **SOLVENT(S):** | Methanol |
| **CHEMICAL PURITY:** | >98% | **ISOTOPIC PURITY:** | ≥98% $^2H_5$ |
| **LAST TESTED:** (mm/dd/yyyy) | 10/11/2017 | | |
| **EXPIRY DATE:** (mm/dd/yyyy) | 10/11/2022 | | |
| **RECOMMENDED STORAGE:** | Store ampoule in a cool, dark place | | |

**DOCUMENTATION/ DATA ATTACHED:**

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

Date received
2017/12/06
2 Ampules

**ADDITIONAL INFORMATION:**

- See page 2 for further details.

***FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE***

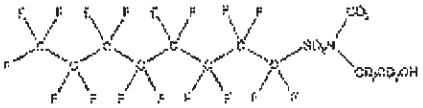
**Certified By:** _____ **Date:** 11/06/2017 (mm/dd/yyyy)
B.G. Chittim, General Manager

*Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA*
*519-822-2436 • Fax: 519-822-2849 • info@well-labs.com*

WELLINGTON LABORATORIES

# CERTIFICATE OF ANALYSIS
## DOCUMENTATION

| | | | |
|---|---|---|---|
| **PRODUCT CODE:** | d7-N-MeFOSE-M | **LOT NUMBER:** | d7NMeFOSE1617M |
| **COMPOUND:** | 2-(N-methyl-d3-perfluoro-1-octanesulfonamido)ethan-d4-ol | | |
| **STRUCTURE:** | | **CAS #:** | Not available |



| | | | |
|---|---|---|---|
| **MOLECULAR FORMULA:** | $C_{11}D_7HF_{17}NO_3S$ | **MOLECULAR WEIGHT:** | 564.27 |
| **CONCENTRATION:** | 50 ± 2.5 µg/ml | **SOLVENT(S):** | Methanol |
| **CHEMICAL PURITY:** | >98% | **ISOTOPIC PURITY:** | ≥98% $^2H_7$ |
| **LAST TESTED:** (mm/dd/yyyy) | 10/13/2017 (HRGC/LRMS)<br>10/12/2017 (LC/MS) | | |
| **EXPIRY DATE:** (mm/dd/yyyy) | 10/13/2022 | | |
| **RECOMMENDED STORAGE:** | Store ampoule in a cool, dark place | | |

1 Ampoule
HPLC
2017/11/07

**DOCUMENTATION/ DATA ATTACHED:**

Figure 1: HRGC/LRMS Data (TIC and Mass Spectrum)
Figure 2: LC/MS Data (TIC and Mass Spectrum)
Figure 3: LC/MS/MS Data (Selected MRM Transitions)

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- In order to see the molecular ion (adduct free), the LC mobile phase should be free of ammonium acetate buffer.

***FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE***

**Certified By:** _____ **Date:** 11/03/2017 (mm/dd/yyyy)
B.C. Chittim, General Manager

*Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA*
*519-822-2436 • Fax: 519-822-2849 • info@well-labs.com*

Created 07, Revised 2014-11-14
Updated by KE, Revised 2017-03-08

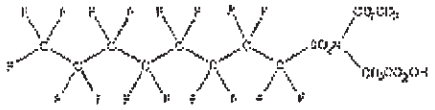
d7NMeFOSE1617M (1 of 4)
rev 0

Date Received: 2017.12.06 - 1 ampoule - HPLC
Date Received: 2018.01.16 - 1 ampoule - HPLC

WELLINGTON LABORATORIES

# CERTIFICATE OF ANALYSIS DOCUMENTATION

| | | | |
|---|---|---|---|
| **PRODUCT CODE:** | d9-N-EtFOSE-M | **LOT NUMBER:** | d9NEtFOSE1017M |
| **COMPOUND:** | 2-(N-ethyl-d5-perfluoro-1-octanesulfonamido)ethan-d4-ol | | |
| **STRUCTURE:** | | **CAS #:** | Not available |



| | | | |
|---|---|---|---|
| **MOLECULAR FORMULA:** | $C_{12}D_9HF_{17}NO_3S$ | **MOLECULAR WEIGHT:** | 580.31 |
| **CONCENTRATION:** | 50 ± 2.5 µg/ml | **SOLVENT(S):** | Methanol |
| **CHEMICAL PURITY:** | >98% | **ISOTOPIC PURITY:** | ≥98% $^{2}H_5$ |
| **LAST TESTED:** | 10/13/2017 (HRGC/LRMS) | | |
| | 10/12/2017 (LC/MS) | | |
| **EXPIRY DATE:** | 10/13/2022 | | |
| **RECOMMENDED STORAGE:** | Store ampoule in a cool, dark place | | |

1 Ampoule
HPLC
Jan 11/18

**DOCUMENTATION/ DATA ATTACHED:**

Figure 1: HRGC/LRMS Data (TIC and Mass Spectrum)
Figure 2: LC/MS Data (TIC and Mass Spectrum)
Figure 3: LC/MS/MS Data (Selected MRM Transitions)

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- In order to see the molecular ion (adduct free), the LC mobile phase should be free of ammonium acetate buffer.
- Contains ~ 1.2% of N-ethyl-d5-perfluoro-1-octanesulfonamide.

***FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE***

**Certified By:** _____ **Date:** 10/18/2017
S.G. Gaglim, General Manager

*Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA*
*519-822-2436 • Fax: 519-822-2849 • info@well-labs.com*

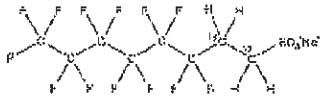


Date Received: 2017.12.06 - 1 ampoule - HPLC
Date Received: 2018.01.16 - 1 ampoule - HPLC

WELLINGTON LABORATORIES

# CERTIFICATE OF ANALYSIS
## DOCUMENTATION

| | | | |
|---|---|---|---|
| **PRODUCT CODE:** | M2-6:2FTS | **LOT NUMBER:** | M262FTS0217 |
| **COMPOUND:** | Sodium 1H,1H,2H,2H-perfluoro-[1,2-$^{13}C_2$]octane sulfonate | | |
| **STRUCTURE:** | | **CAS #:** | Not available |



| | | | |
|---|---|---|---|
| **MOLECULAR FORMULA:** | $^{13}C_2{}^{12}C_6H_4F_{13}SO_3Na$ | **MOLECULAR WEIGHT:** | 452.13 |
| **CONCENTRATION:** | 50.0 ± 2.5 µg/mL (Na salt)<br>47.5 ± 2.4 µg/mL (M2-6:2FTS anion) | **SOLVENT(S):** | Methanol |
| **CHEMICAL PURITY:** | >98% | **ISOTOPIC PURITY:** | ≥99% $^{13}C$ ($1,2\text{-}^{13}C_2$) |
| **LAST TESTED:** | 02/17/2017 | | |
| **EXPIRY DATE:** | 02/17/2022 | | |
| **RECOMMENDED STORAGE:** | Refrigerate ampoule | | |

HPLC 2017/05/01 2x1.2 mL

**DOCUMENTATION/ DATA ATTACHED:**

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- The native 6:2FTS contains 4.22% of $^{34}S$ (due to natural isotopic abundance) therefore both native 6:2FTS and M2-6:2FTS will produce signals in the m/z 429 to m/z 409 channel during SRM analysis. We recommend using the m/z 429 to m/z 81 transition to monitor for M2-6:2FTS during quantitative analysis as it will be free of any native contribution (see Figure 2).

***FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE***

**Certified By:** _____ **Date:** 02/24/2017
B.G. Chittim

*Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA*
*519-822-2435 • Fax: 519-822-2849 • info@well-labs.com*

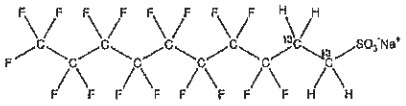


Date Recieved:2017/05/02 2x1.2ml HPLC
Date Recieved:2017/06/29 2x1.2ml HPLC
Received date 2017/07/21 2 x 1.2mL HPLC
Received date 2017/09/07 1 x 1.2mL HPLC
Received date:2017/09/27 1x2 ampules HPLC
Received date:2017/10/25 1x2 ampules HPLC
Received date:2017/11/07 1x2 ampules HPLC
Date Received: 2017.11.07 - 1 ampule - HPLC
Date Received: 2017.12.06 - 2 ampoule - HPLC
Date Received: 2018.01.16 -1 ampoule - HPLC

WELLINGTON LABORATORIES

# CERTIFICATE OF ANALYSIS
## DOCUMENTATION

| | | | |
|---|---|---|---|
| **PRODUCT CODE:** | M2-8:2FTS | **LOT NUMBER:** | M282FTS0717 |
| **COMPOUND:** | Sodium 1H,1H,2H,2H-perfluoro-[1,2-$^{13}C_2$]decane sulfonate | | |
| **STRUCTURE:** | | **CAS #:** | Not available |



| | | | |
|---|---|---|---|
| **MOLECULAR FORMULA:** | $^{13}C_2{}^{12}C_6H_4F_{17}SO_3Na$ | **MOLECULAR WEIGHT:** | 552.15 |
| **CONCENTRATION:** | 50.0 ± 2.5 µg/ml (Na salt) | **SOLVENT(S):** | Methanol |
| | 47.9 ± 2.4 µg/ml (M2-8:2FTS anion) | | |
| **CHEMICAL PURITY:** | >98% | **ISOTOPIC PURITY:** | ≥99% $^{13}C$ |
| **LAST TESTED:** (mm/dd/yyyy) | 07/05/2017 | | ($1,2\text{-}^{13}C_2$) |
| **EXPIRY DATE:** (mm/dd/yyyy) | 07/05/2022 | | |
| **RECOMMENDED STORAGE:** | Refrigerate ampoule | | |

2 ampules x 1.2 mL
HPLC
2017/07/21
FDS

**DOCUMENTATION/ DATA ATTACHED:**

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- The native 8:2FTS contains 4.22% of $^{34}S$ (due to natural isotopic abundance) therefore both native 8:2FTS and M2-8:2FTS will produce signals in the m/z 529 to m/z 509 channel during SRM analysis. We recommend using the m/z 529 to m/z 81 transition to monitor for M2-8:2FTS during quantitative analysis as it will be free of any native contribution (see Figure 2).

***FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE***

**Certified By:** _____ **Date:** 07/07/2017 (mm/dd/yyyy)
B.G. Chittim, General Manager

*Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA*
*519-822-2436 • Fax: 519-822-2849 • info@well-labs.com*



Date Recieved: 2017/07/21 2x1.2ml HPLC
Date Recieved: 2017/09/07 1x1.2ml HPLC
Received date: 2017/09/27 1x2 ampules HPLC
Received date: 2017/10/25 1x2 ampules HPLC
Date Received: 2017.11.07 - 1 ampule - HPLC
Date Received: 2018.01.16 -1 ampoule- HPLC
Date Received: 2017.12.06 - 2 ampoules - HPLC

# PREPARATION OF SPIKING STANDARD SOLUTION

**Solution No.:** SK-7377 Prep'n Date: 2018/01/30 Expiry Date: 2019/01/30 Discard Date: —

Replaces Solution No.: SK-7277 Replaced by Solution: _____ Chemist: LaV

Solution Name: Comp. PFC working Sol'n C Solvent(s): 0.3% NH4OH in MeOH

Solvent Supplier(s): Aldrich Solvent Lot No(s): See PRLRE108-327

Date Opened: See PRLRE108-327

Volumetric Flask Used: 25 mL Class A (5640) Volume: 25 mL **Spike Volume:** — uL / mL*

Syringe ID: Pipette K39876F

Storage Location and Conditions: F2-11

For extended mix of compounds, refer to table on: —

| Compound | Parent Solution No. | Parent Solution Conc'n. (ug/mL) | Aliquot Volume (uL / mL)* | Final Conc'n. (ug/mL) | Absolute Amount Spiked (ug / ng)* |
|---|---|---|---|---|---|
| Comp. PFC working Sol'n A | I-5297 | 1 | 2.5 | 100 ng/ml | — |
| | | | | 2018/01/30 | |

Notes:

---

**Solution No.:** SK-7378 Prep'n Date: 2018/01/30 Expiry Date: 2018/04/07 Discard Date: 2018/04/08

Replaces Solution No.: SK-7088 Replaced by Solution: — Chemist: K

Solution Name: Glyphosate Solvent(s): LC-MS Grade Water

Solvent Supplier(s): EMD Millipore Corp. Solvent Lot No(s): 57297

Date Opened: 2018/01/29

Volumetric Flask Used: Class A (#5640) Volume: 50 mL **Spike Volume:** — uL / mL*

Syringe ID: G434346

Storage Location and Conditions: FD-59

For extended mix of compounds, refer to table on: —

| Compound | Parent Solution No. | Parent Solution Conc'n. (ug/mL) | Aliquot Volume (uL / mL)* | Final Conc'n. (ug/mL) | Absolute Amount Spiked (ug / ng)* |
|---|---|---|---|---|---|
| N-(Phosphonomethyl) glycine | S4212 | 3264 µg/ml | 0.383 | 25 µg/ml | — |
| | | | K | 2018/01/30 | |

Notes: Second source (for spiking and ICV)

K 2018/01/30

* = Specify Units



Do not write beneath any inserts or place any inserts on top of any raw data entered on this page. Initial and date all entries, corrections and inserts. Include ALL relevant traceable references on ALL inserts.

# TUNE CHECK

**Instrument:** Agilent 6470 LC/MS/MS

**Instrument Serial Number:** SG1611G001

**Maxxam Instrument Identification:** LCMS04

**Mass Calibration Performed:** July 7, 2017

**Tune Check Performed:** July 10 & 11, 2017


Mass Assignment Reference Table ____ Page 2

Analyte Precursor Ion Verification ____ Page 4

Analyte Product Ion Verification ____ Page 31

Extracted and Injection Internal Standard Precursor Ion Verification ____ Page 59

Extracted and Injection Internal Standard Product Ion Verification ____ Page 83


Reviewed by:

Adam Robinson, Supervisor – Liquid Chromatography

July 12 /2017
Date

Maxxam
A Bureau Veritas Group Company

Maxxam Analytics

# Mass Assignments – Analytes, Extracted Internal Standards and Injection Internal Standards

| Compound | Abbreviation | Precursor Ion (m/z) | Precursor Ion Formula | Quant Ion (m/z) | Quantitation Ion Formula | Confirmation Ion (m/z) | Confirmation Ion Formula |
|---|---|---|---|---|---|---|---|
| **Native Analytes** | | | | | | | |
| Perfluorobutanoic acid | PFBA | 212.9 | $[CF_3(CF_2)_2CO_2]^-$ | 169.0 | $[CF_3(CF_2)_2]^-$ | [1] N/A | N/A |
| Perfluorobutanesulfonate | PFBS | 298.9 | $[CF_3(CF_2)_3SO_3]^-$ | 79.9 | $[SO_3]^-$ | 98.9 | $[FSO_3]^-$ |
| Perfluoropentanoic acid | PFPeA | 262.9 | $[CF_3(CF_2)_3CO_2]^-$ | 218.9 | $[CF_3(CF_2)_3]^-$ | [1] N/A | N/A |
| Perfluorohexanoic acid | PFHxA | 313.0 | $[CF_3(CF_2)_4CO_2]^-$ | 269.0 | $[CF_3(CF_2)_4]^-$ | 119.0 | $[CF_3(CF_2)]^-$ |
| Perfluorohexanesulfonate | PFHxS | 398.9 | $[CF_3(CF_2)_5SO_3]^-$ | 79.9 | $[SO_3]^-$ | 98.9 | $[FSO_3]^-$ |
| Perfluoroheptanoic acid | PFHpA | 363.0 | $[CF_3(CF_2)_5CO_2]^-$ | 319.0 | $[CF_3(CF_2)_5]^-$ | 169.2 | $[CF_3(CF_2)_2]^-$ |
| Perfluoroheptanesulfonate | PFHpS | 448.9 | $[CF_3(CF_2)_6SO_3]^-$ | 79.9 | $[SO_3]^-$ | 99.0 | $[FSO_3]^-$ |
| Perfluorooctanoic acid | PFOA | 413.1 | $[CF_3(CF_2)_6CO_2]^-$ | 369.0 | $[CF_3(CF_2)_6]^-$ | 169.0 | $[CF_3(CF_2)_2]^-$ |
| Perfluorooctanesulfonate | PFOS | 498.8 | $[CF_3(CF_2)_7SO_3]^-$ | 79.9 | $[SO_3]^-$ | 98.9 | $[FSO_3]^-$ |
| Perfluorononanoic acid | PFNA | 462.9 | $[CF_3(CF_2)_7CO_2]^-$ | 419.0 | $[CF_3(CF_2)_7]^-$ | 219.1 | $[CF_3(CF_2)_3]^-$ |
| Perfluorodecanoic acid | PFDA | 513.0 | $[CF_3(CF_2)_8CO_2]^-$ | 469.1 | $[CF_3(CF_2)_8]^-$ | 218.9 | $[CF_3(CF_2)_3]^-$ |
| Perfluorodecanesulfonate | PFDS | 598.9 | $[CF_3(CF_2)_9SO_3]$- | 79.9 | $[SO_3]^-$ | 98.8 | $[FSO_3]^-$ |
| Perfluoroundecanoic acid | PFUnA | 562.9 | $[CF_3(CF_2)_9CO_2]^-$ | 519.0 | $[CF_3(CF_2)_9]^-$ | 269.2 | $[CF_3(CF_2)_4]^-$ |
| Perfluorododecanoic acid | PFDoA | 612.9 | $[CF_3(CF_2)_{10}CO_2]^-$ | 569.0 | $[CF_3(CF_2)_{10}]^-$ | 319.0 | $[CF_3(CF_2)_5]^-$ |
| Perfluorotridecanoic acid | PFTrDA | 663.0 | $[CF_3(CF_2)_{11}CO_2]^-$ | 619.0 | $[CF_3(CF_2)_{11}]^-$ | 318.9 | $[CF_3(CF_2)_5]^-$ |
| Perfluorotetradecanoic acid | PFTeDA | 713.0 | $[CF_3(CF_2)_{12}CO_2]^-$ | 669.0 | $[CF_3(CF_2)_{12}]^-$ | 319.2 | $[CF_3(CF_2)_5]^-$ |
| Perfluorooctane sulfonamide | PFOSA | 497.9 | $[CF_3(CF_2)_7SO_2NH]^-$ | 78.0 | $[SO_2N]^-$ | 478.0 | $[(CF_2)_8SO_2N]^-$ |
| N-methylperfluorooctane sulfonamide | MeFOSA | 511.9 | $[CF_3(CF_2)_7SO_2N(CH_3)]^-$ | 169.0 | $[CF_3(CF_2)_2]^-$ | 219.0 | $[CF_3(CF_2)_3]^-$ |
| N-ethylperfluorooctane sulfonamide | EtFOSA | 526.0 | $[CF_3(CF_2)_7SO_2N(C_2H_5)]^-$ | 169.0 | $[CF_3(CF_2)_2]^-$ | 219.0 | $[CF_3(CF_2)_3]^-$ |
| N-methylperfluorooctane sulfonamidoethanol | MeFOSE | 616.0 | $[CF_3(CF_2)_7SO_2N(CH_3)C_2H_4OH{\cdot}CH_3CO_2]^-$ | 59.0 | $[CH_3CO_2]^-$ | [1] N/A | N/A |
| N-ethylperfluorooctane sulfonamidoethanol | EtFOSE | 630.0 | $[CF_3(CF_2)_7SO_2N(C_2H_5)C_2H_4OH{\cdot}CH_3CO_2]^-$ | 59.0 | $[CH_3CO_2]^-$ | [1] N/A | N/A |
| N-methylperfluorooctanesufonamidoacetic acid | MeFOSAA | 570.1 | $[CF_3(CF_2)_7SO_2N(CH_3)CH_2CO_2]^-$ | 419.1 | $[CF_3(CF_2)_7]^-$ | 483.0 | $[CF_3(CF_2)_7SO_2]^-$ |
| N-ethylperfluorooctanesufonamidoacetic acid | EtFOSAA | 584.1 | $[CF_3(CF_2)_7SO_2N(CH_2CH_3)CH_2CO_2]^-$ | 419.1 | $[CF_3(CF_2)_7]^-$ | 483.0 | $[CF_3(CF_2)_7SO_2]^-$ |
| 6:2 Fluorotelomersulfonate | 6:2FTS | 427.0 | $[CF_3(CF_2)_5CH_2CH_2SO_3]^-$ | 407.0 | $[CF_3(CF_2)_4CFCHCH_2SO_3]^-$ | 80.9 | $[SO_2OH]^-$ |
| 8:2 Fluorotelomersulfonate | 8:2FTS | 526.9 | $[CF_3(CF_2)_7CH_2CH_2SO_3]^-$ | 507.0 | $[CF_3(CF_2)_6CFCHCH_2SO_3]^-$ | 80.9 | $[SO_2OH]^-$ |
| **Mass-labeled Extracted Internal Standards** | | | | | | | |
| $^{13}C_4$-Perfluorobutanoic acid | MPFBA | 216.9 | $[^{13}CF_3(^{13}CF_2)_2{}^{13}CO_2]^-$ | 172.0 | $[^{13}CF_3(^{13}CF_2)_2]^-$ | N/A | N/A |

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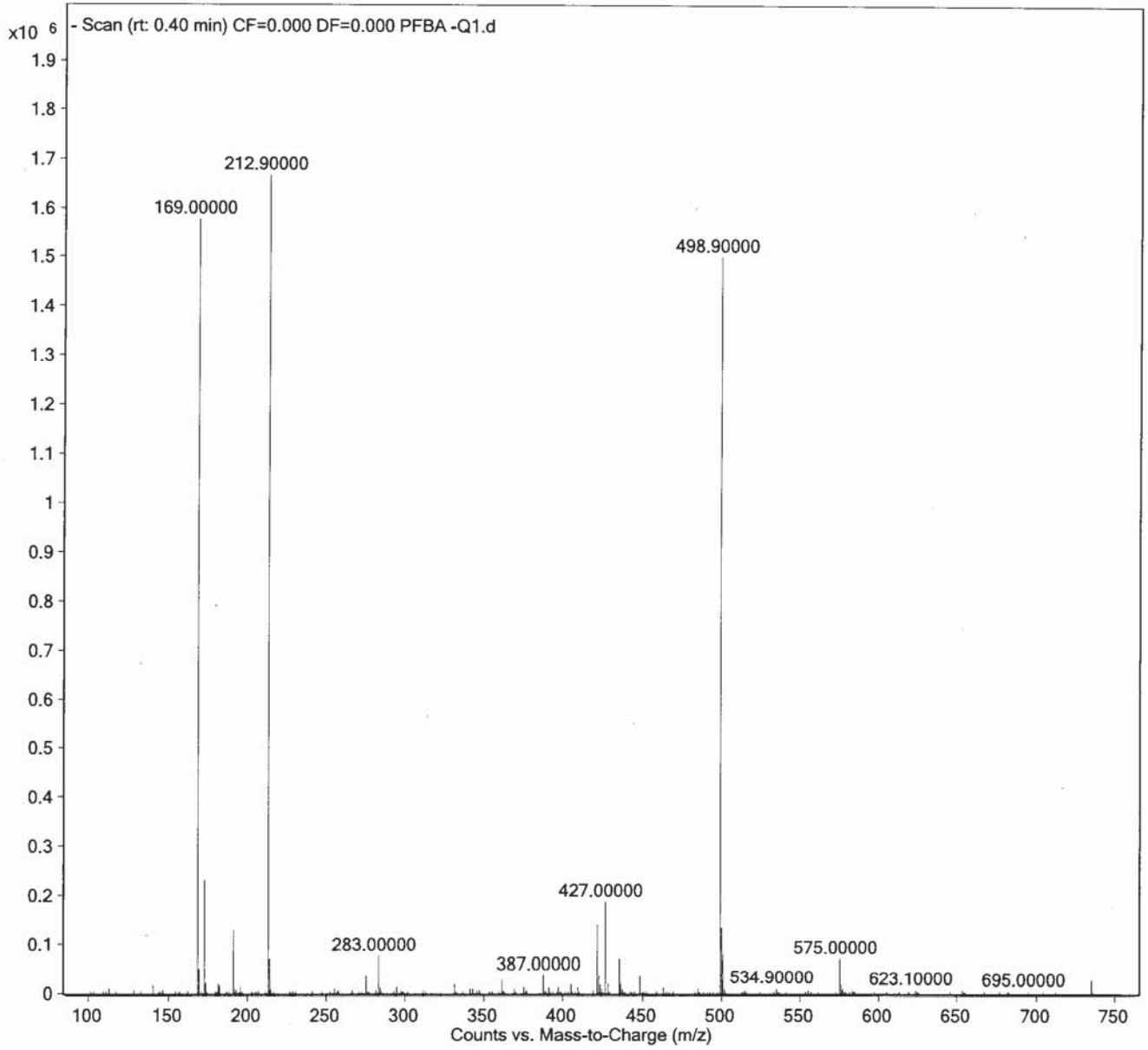
| Compound | Abbreviation | Precursor Ion (m/z) | Precursor Ion Formula | Quant Ion (m/z) | Quantitation Ion Formula | Confirmation Ion (m/z) | Confirmation Ion Formula |
|---|---|---|---|---|---|---|---|
| $^{13}C_5$-Perfluoropentanoic acid | MPFPeA | 267.9 | $[^{13}CF_3(^{13}CF_2)_3{}^{13}CO_2]^-$ | 223.0 | $[^{13}CF_3(^{13}CF_2)_3]^-$ | N/A | N/A |
| $^{13}C_2$-Perfluorohexanoic acid | MPFHxA | 314.9 | $[CF_3(CF_2)_3(^{13}CF_2){}^{13}CO_2]^-$ | 270.0 | $[CF_3(CF_2)_3{}^{13}CF_2]^-$ | N/A | N/A |
| $^{18}O_2$-Perfluorohexanesulfonate | MPFHxS | 402.9 | $[CF_3(CF_2)_5S(^{18}O)_2O]^-$ | 84.0 | $[S(^{18}O)_2O]^-$ | N/A | N/A |
| $^{13}C_4$-Perfluoroheptanoic acid | MPFHpA | 366.9 | $[CF_3CF_2(^{13}CF_2)_3{}^{13}CO_2]^-$ | 322.0 | $[CF_3CF_2(^{13}CF_2)_4]^-$ | N/A | N/A |
| $^{13}C_4$-Perfluorooctanoic acid | MPFOA | 416.9 | $[CF_3(CF_2)_3(^{13}CF_2)_3{}^{13}CO_2]^-$ | 372.0 | $[CF_3(CF_2)_3(^{13}CF_2)_3]^-$ | N/A | N/A |
| $^{13}C_4$-Perfluorooctanesulfonate | MPFOS | 502.9 | $[CF_3(CF_2)_3(^{13}CF_2)_4SO_3]^-$ | 79.9 | $[SO_3]^-$ | N/A | N/A |
| $^{13}C_5$-Perfluorononanoic acid | MPFNA | 467.9 | $[CF_3(CF_2)_3(^{13}CF_2)_4{}^{13}CO_2]^-$ | 423.0 | $[CF_3(CF_2)_3(^{13}CF_2)_4]^-$ | N/A | N/A |
| $^{13}C_2$-Perfluorodecanoic acid | MPFDA | 514.9 | $[CF_3(CF_2)_7(^{13}CF_2){}^{13}CO_2]^-$ | 470.0 | $[CF_3(CF_2)_7{}^{13}CF_2]^-$ | N/A | N/A |
| $^{13}C_2$-Perfluoroundecanoic acid | MPFUnA | 564.9 | $[CF_3(CF_2)_8(^{13}CF_2){}^{13}CO_2]^-$ | 520.0 | $[CF_3(CF_2)_8{}^{13}CF_2]^-$ | N/A | N/A |
| $^{13}C_2$-Perfluorododecanoic acid | MPFDoA | 614.9 | $[CF_3(CF_2)_9(^{13}CF_2){}^{13}CO_2]^-$ | 570.0 | $[CF_3(CF_2)_9{}^{13}CF_2]^-$ | N/A | N/A |
| $^{13}C_2$-Perfluorotetradecanoic acid | MPFTeDA | 714.9 | $[CF_3(CF_2)_{12}(^{13}CF_2){}^{13}CO_2]^-$ | 669.9 | $[CF_3(CF_2)_{12}]^-$ | N/A | N/A |
| $^{13}C_8$-Perfluorooctane sulfonamide | MPFOSA | 505.8 | $[^{13}CF_3(^{13}CF_2)_7SO_2NH]^-$ | 77.9 | $[SO_2N]^-$ | N/A | N/A |
| N-methyl-$d_3$-perfluorooctanesulfonamide | $D_3$-MeFOSA | 514.9 | $[CF_3(CF_2)_7SO_2N(CD_3)]^-$ | 168.9 | $[CF_3(CF_2)_2]^-$ | N/A | N/A |
| N-ethyl-$d_5$-perfluorooctanesulfonamide | $D_5$-EtFOSA | 531.0 | $[CF_3(CF_2)_7SO_2N(C_2D_5)]^-$ | 168.9 | $[CF_3(CF_2)_2]^-$ | N/A | N/A |
| N-methyl-$d_3$-perfluorooctanesulfonamidoethanol-$d_4$ | $D_7$-MeFOSE | 623.1 | $[CF_3(CF_2)_7SO_2N(CD_3)CD_2CD_2OH \cdot CH_3CO_2]^-$ | 59.0 | $[CH_3CO_2]^-$ | N/A | N/A |
| N-ethyl-$d_5$-perfluorooctanesulfonamidoethanol-$d_4$ | $D_9$-EtFOSE | 639.1 | $[CF_3(CF_2)_7SO_2N(CD_2CD_3)CD_2CD_2OH \cdot CH_3CO_2]^-$ | 59.0 | $[CH_3CO_2]^-$ | N/A | N/A |
| N-methyl-$d_3$-perfluorooctanesulfonamidoacetic acid | $D_3$-MeFOSAA | 573.1 | $[CF_3(CF_2)_7SO_2N(CD_3)CH_2CO_2]^-$ | 419.1 | $[CF_3(CF_2)_7]^-$ | N/A | N/A |
| N-ethyl-$d_5$-perfluorooctanesulfonamidoacetic acid | $D_5$-EtFOSAA | 589.2 | $[CF_3(CF_2)_7SO_2N(CD_2CD_3)CH_2CO_2]^-$ | 419.0 | $[CF_3(CF_2)_7]^-$ | N/A | N/A |
| $^{13}C_2$-Fluorotelomersulfonate (6:2) | M2-6:2FTS | 429.0 | $[CF_3(CF_2)_5(^{13}CH_2)_2SO_3]^-$ | 80.9 | $[SO_2OH]^-$ | N/A | N/A |
| $^{13}C_2$-Fluorotelomersulfonate (8:2) | M2-8:2FTS | 528.9 | $[CF_3(CF_2)_7(^{13}CH_2)_2SO_3]^-$ | 80.9 | $[SO_2OH]^-$ | N/A | N/A |
| **Injection Internal Standards** | | | | | | | |
| $^{13}C_6$-Perfluorohexanoic acid | $^{13}C_6$-PFHxA | 318.9 | $[^{13}CF_3(^{13}CF_2)_4{}^{13}CO_2]^-$ | 274.0 | $[^{13}CF_3(^{13}CF_2)_4]^-$ | N/A | N/A |
| $^{13}C_9$-Perfluorodecanoic acid | $^{13}C_9$-PFDA | 521.9 | $[CF_3(^{13}CF_2)_8{}^{13}CO_2]^-$ | 477.1 | $[CF_3(^{13}CF_2)_8]^-$ | N/A | N/A |

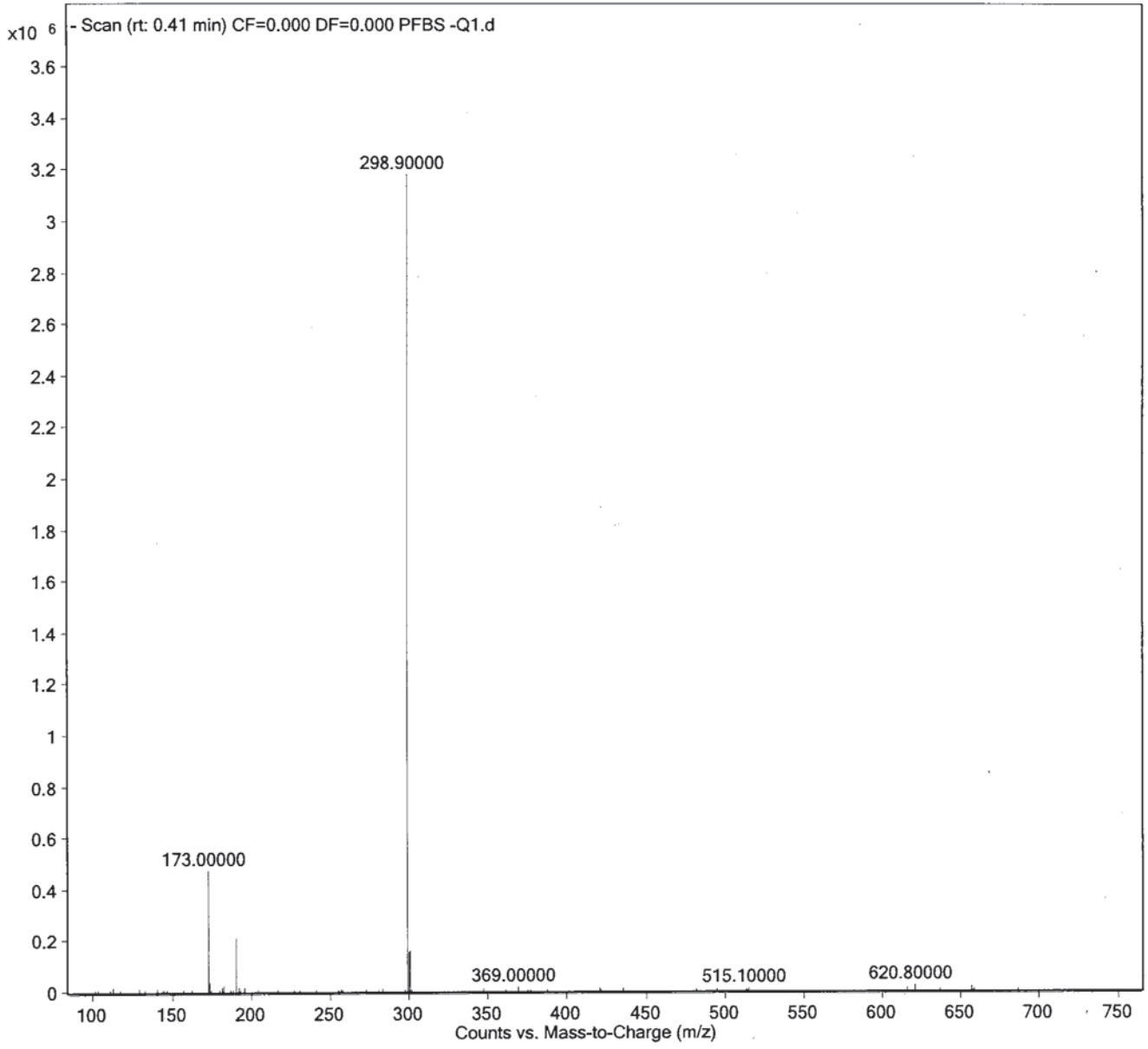
# Analyte Precursor Ion Verification

| | | | | | |
|---|---|---|---|---|---|
| **Sample Name** | PFBA -Q1 | **Position** | P1-A1 | **Instrument Name** | LCMS04 |
| **User Name** | M_G | **Inj Vol** | 10 | **InjPosition** | |
| **Sample Type** | Sample | **IRM Calibration Status** | Not Applicable | **Data Filename** | PFBA -Q1.d |
| **ACQ Method** | PFC_MassVerification-Q1.m | **Comment** | | **Acquired Time** | 2017/07/10 4:37:04 PM |



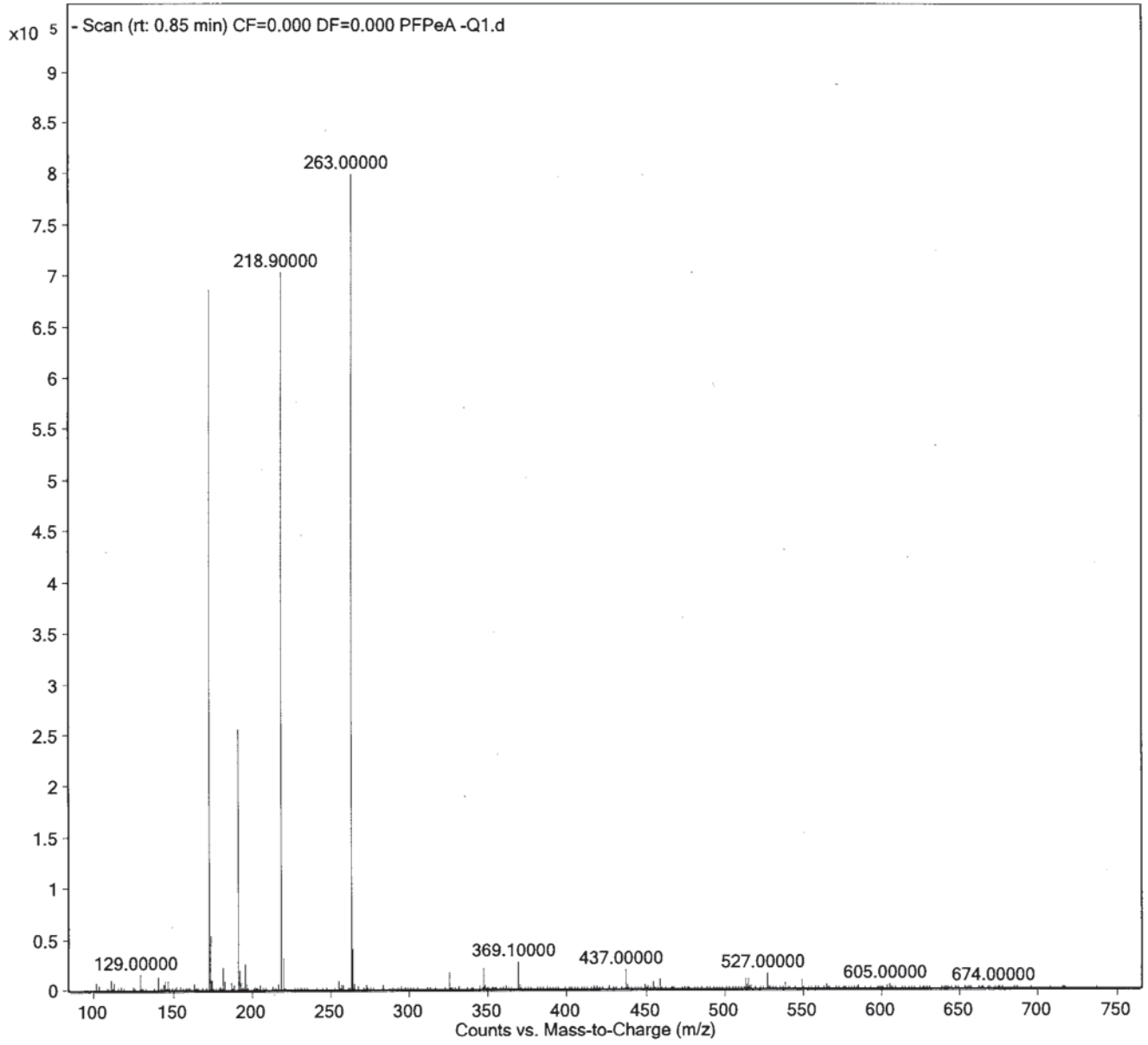

MaxXam Analytics

| | | | | | |
|---|---|---|---|---|---|
| **Sample Name** | PFBS -Q1 | **Position** | P1-A2 | **Instrument Name** | LCMS04 |
| **User Name** | M_G | **Inj Vol** | 10 | **InjPosition** | |
| **Sample Type** | Sample | **IRM Calibration Status** | Not Applicable | **Data Filename** | PFBS -Q1.d |
| **ACQ Method** | PFC_MassVerification-Q1.m | **Comment** | | **Acquired Time** | 2017/07/10 4:42:36 PM |



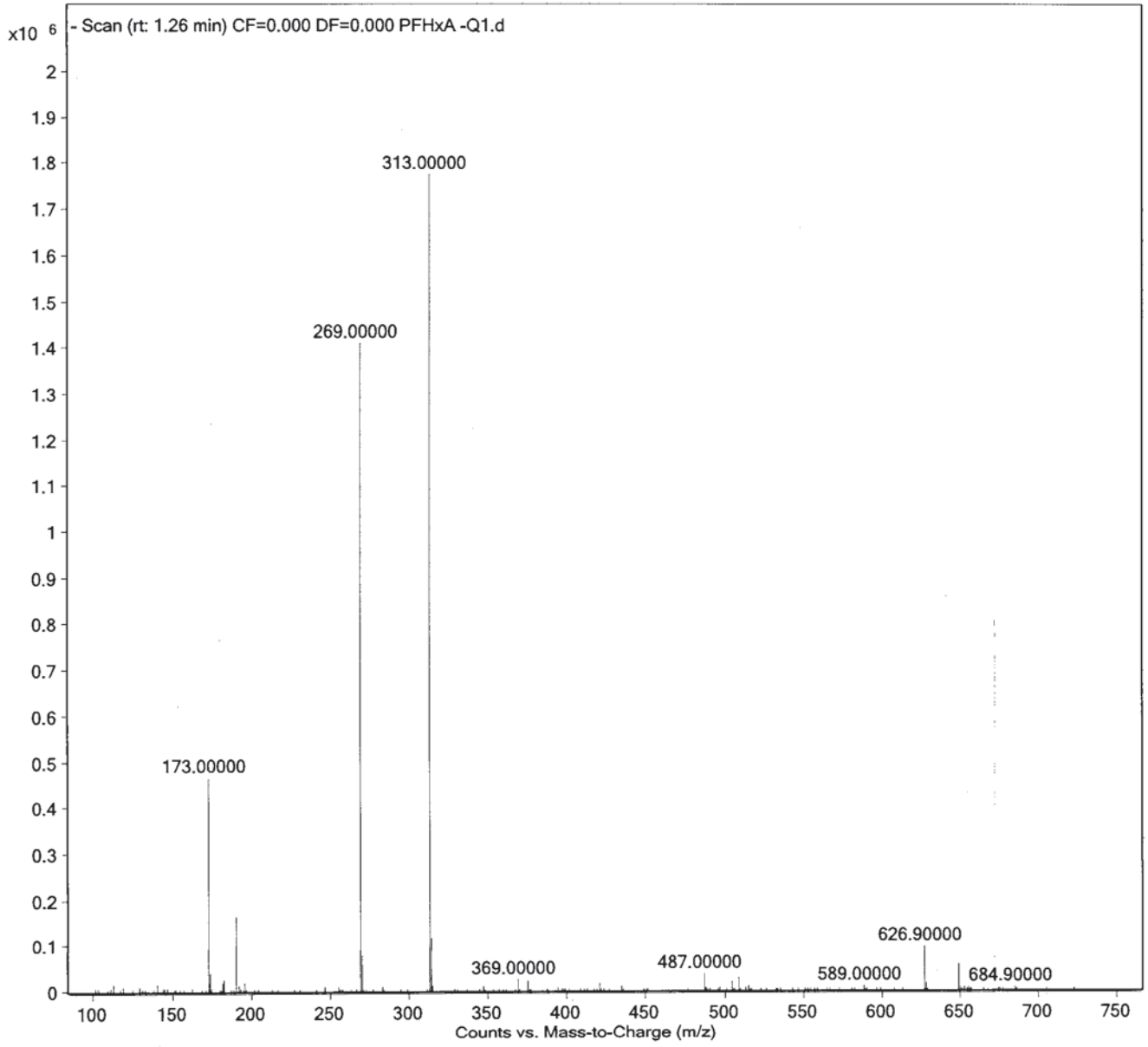

SGS AXYS Analytics

| | | | | | |
|---|---|---|---|---|---|
| **Sample Name** | PFPeA -Q1 | **Position** | P1-A3 | **Instrument Name** | LCMS04 |
| **User Name** | M_G | **Inj Vol** | 10 | **InjPosition** | |
| **Sample Type** | Sample | **IRM Calibration Status** | Not Applicable | **Data Filename** | PFPeA -Q1.d |
| **ACQ Method** | PFC_MassVerification-Q1.m | **Comment** | | **Acquired Time** | 2017/07/10 4:48:06 PM |



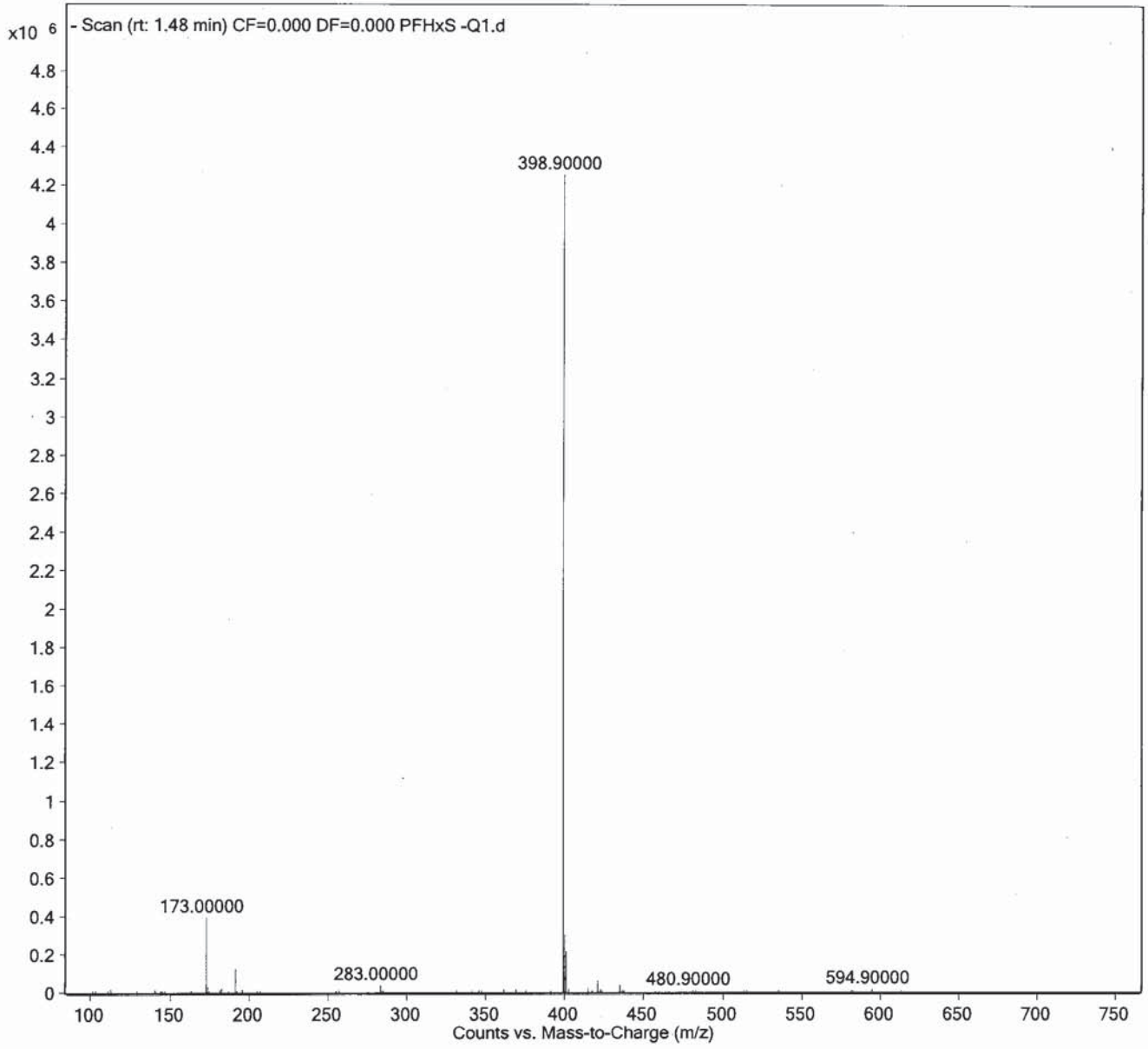

MaxXam Analytics

| | | | | | |
|---|---|---|---|---|---|
| **Sample Name** | PFHxA -Q1 | **Position** | P1-A4 | **Instrument Name** | LCMS04 |
| **User Name** | M_G | **Inj Vol** | 10 | **InjPosition** | |
| **Sample Type** | Sample | **IRM Calibration Status** | Not Applicable | **Data Filename** | PFHxA -Q1.d |
| **ACQ Method** | PFC_MassVerification-Q1.m | **Comment** | | **Acquired Time** | 2017/07/10 4:53:36 PM |




Maxxam Analytics

| | | | | | |
|---|---|---|---|---|---|
| **Sample Name** | PFHxS -Q1 | **Position** | P1-A5 | **Instrument Name** | LCMS04 |
| **User Name** | M_G | **Inj Vol** | 10 | **InjPosition** | |
| **Sample Type** | Sample | **IRM Calibration Status** | Not Applicable | **Data Filename** | PFHxS -Q1.d |
| **ACQ Method** | PFC_MassVerification-Q1.m | **Comment** | | **Acquired Time** | 2017/07/10 4:59:06 PM |




Maxxam Analytics

| | | | | | |
|---|---|---|---|---|---|
| **Sample Name** | PFHpA-Q1 | **Position** | P1-A6 | **Instrument Name** | LCMS04 |
| **User Name** | M_G | **Inj Vol** | 10 | **InjPosition** | |
| **Sample Type** | Sample | **IRM Calibration Status** | Not Applicable | **Data Filename** | PFHpA-Q1.d |
| **ACQ Method** | PFC_MassVerification-Q1.m | **Comment** | | **Acquired Time** | 2017/07/10 5:04:36 PM |

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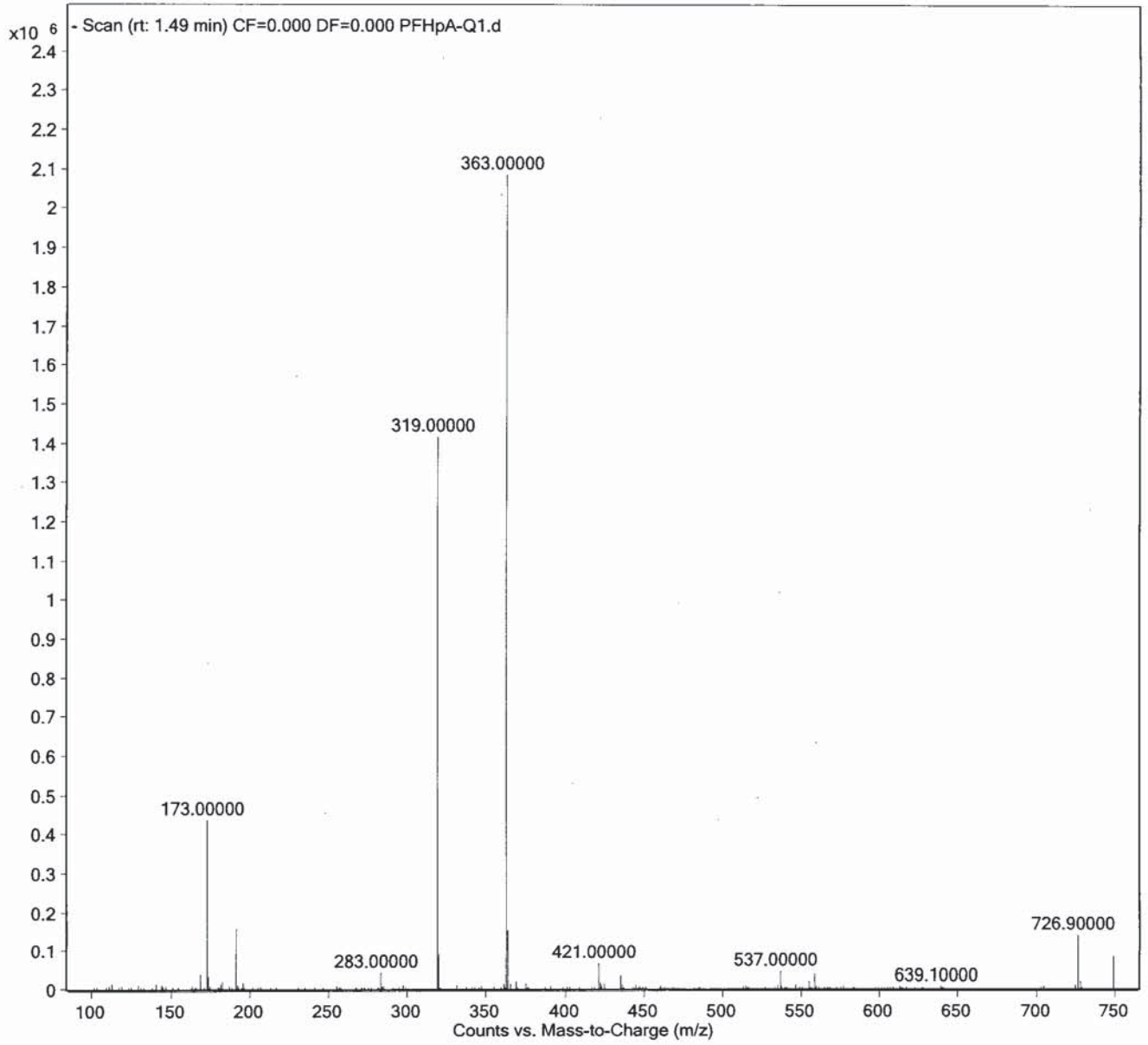
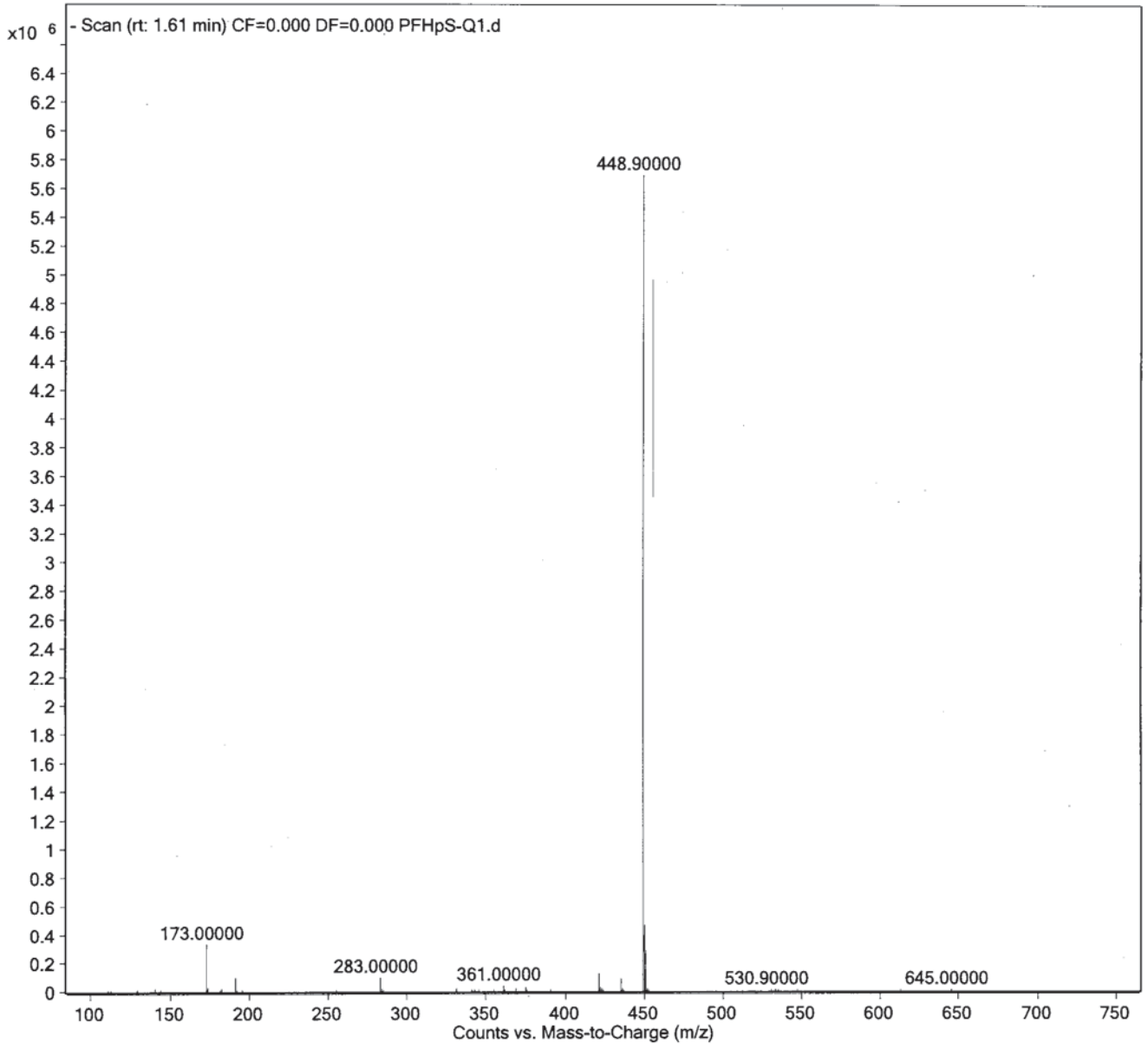


| | | | | | |
|---|---|---|---|---|---|
| **Sample Name** | PFHpS-Q1 | **Position** | P1-A7 | **Instrument Name** | LCMS04 |
| **User Name** | M_G | **Inj Vol** | 10 | **InjPosition** | |
| **Sample Type** | Sample | **IRM Calibration Status** | Not Applicable | **Data Filename** | PFHpS-Q1.d |
| **ACQ Method** | PFC_MassVerification-Q1.m | **Comment** | | **Acquired Time** | 2017/07/10 5:10:06 PM |




Maxxam Analytics

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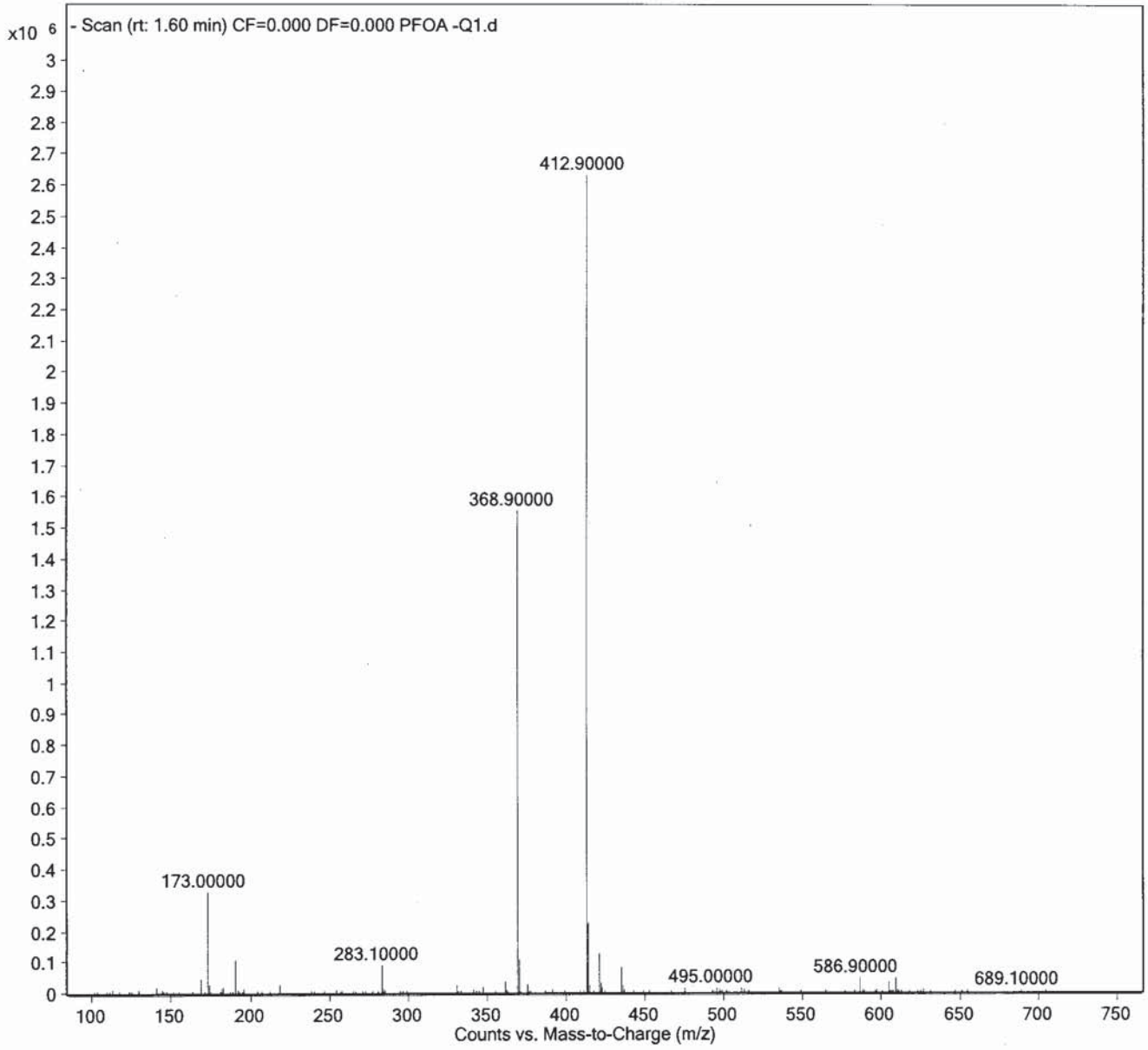
|---|---|---|---|---|---|
| **Sample Name** | PFOA -Q1 | **Position** | P1-A8 | **Instrument Name** | LCMS04 |
| **User Name** | M_G | **Inj Vol** | 10 | **InjPosition** | |
| **Sample Type** | Sample | **IRM Calibration Status** | Not Applicable | **Data Filename** | PFOA -Q1.d |
| **ACQ Method** | PFC_MassVerification-Q1.m | **Comment** | | **Acquired Time** | 2017/07/10 5:15:38 PM |




Maxxam Analytics

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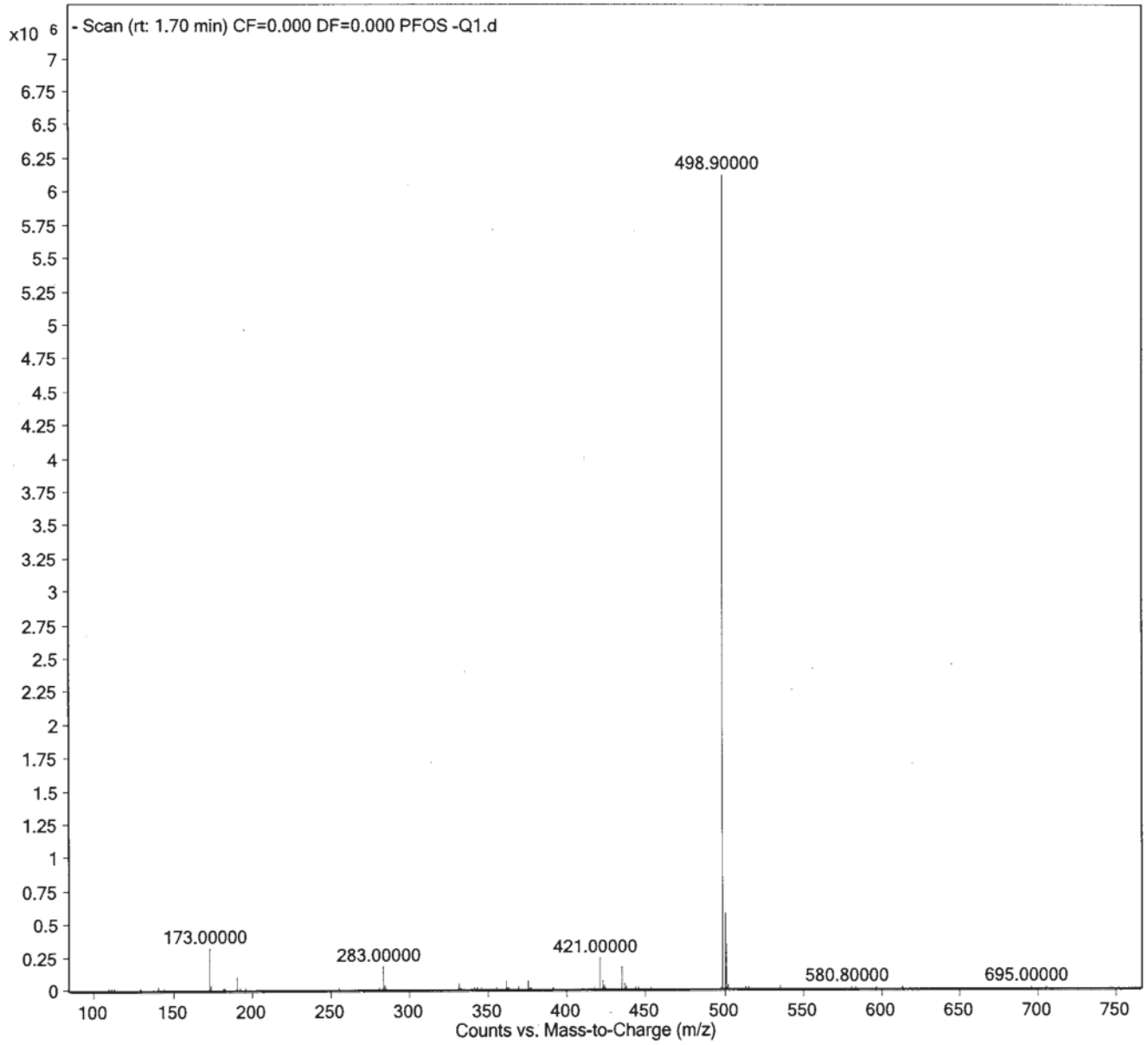
|---|---|---|---|---|---|
| **Sample Name** | PFOS -Q1 | **Position** | P1-A9 | **Instrument Name** | LCMS04 |
| **User Name** | M_G | **Inj Vol** | 10 | **InjPosition** | |
| **Sample Type** | Sample | **IRM Calibration Status** | Not Applicable | **Data Filename** | PFOS -Q1.d |
| **ACQ Method** | PFC_MassVerification-Q1.m | **Comment** | | **Acquired Time** | 2017/07/10 5:21:10 PM |




MaxXam Analytics

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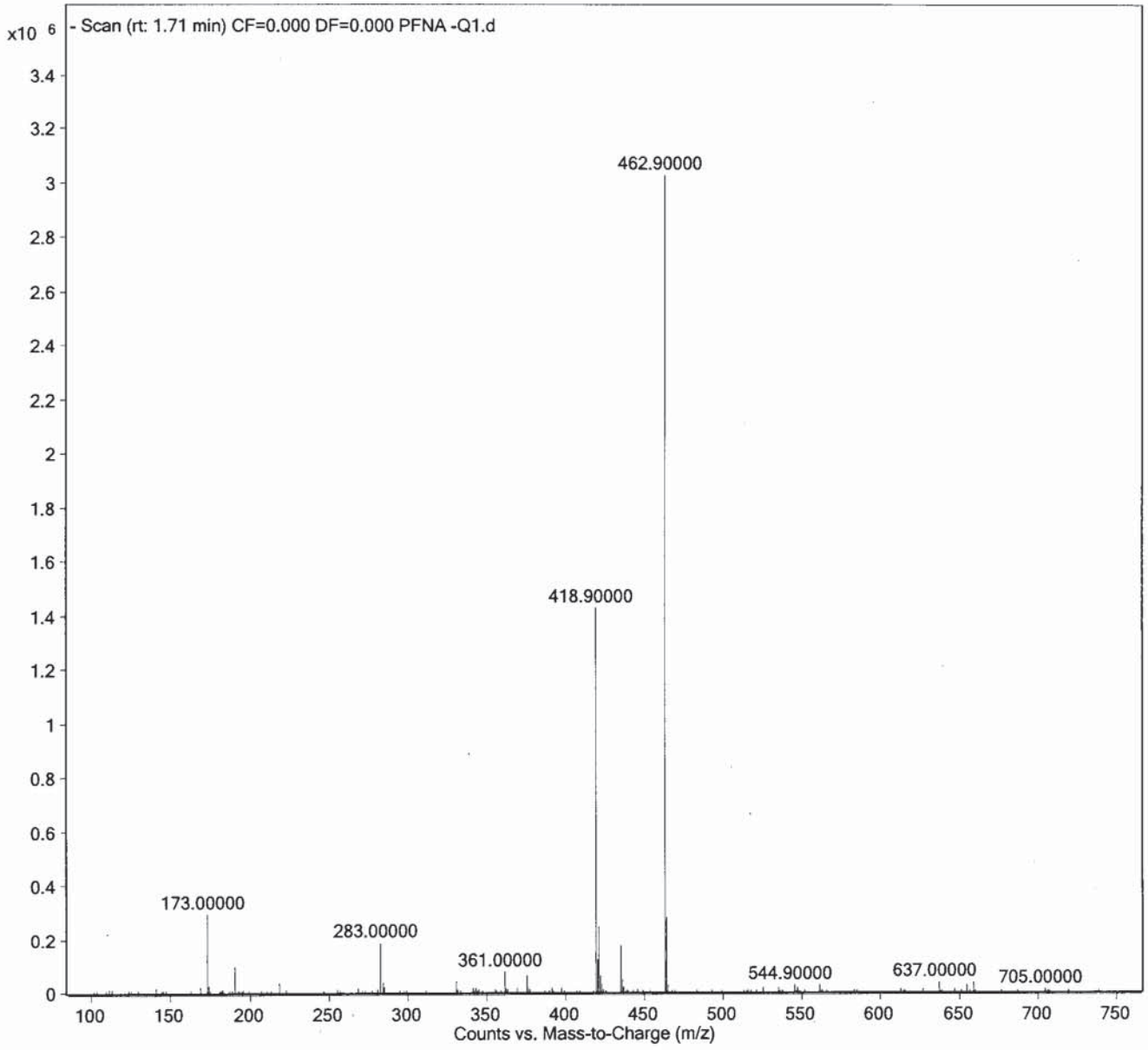
|---|---|---|---|---|---|
| **Sample Name** | PFNA -Q1 | **Position** | P1-B1 | **Instrument Name** | LCMS04 |
| **User Name** | M_G | **Inj Vol** | 10 | **InjPosition** | |
| **Sample Type** | Sample | **IRM Calibration Status** | Not Applicable | **Data Filename** | PFNA -Q1.d |
| **ACQ Method** | PFC_MassVerification-Q1.m | **Comment** | | **Acquired Time** | 2017/07/10 5:26:42 PM |




Jaakam Analytics

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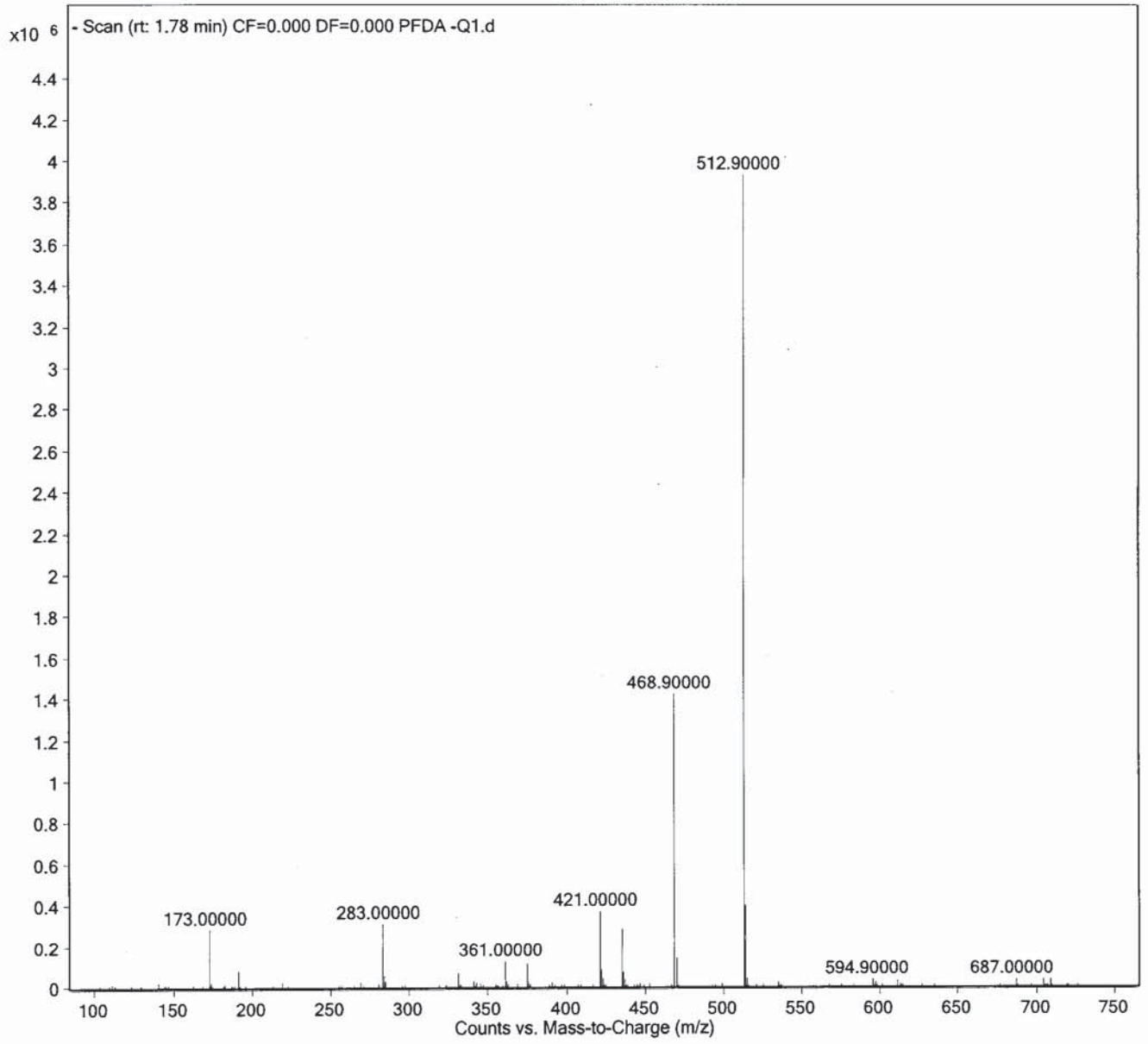
|---|---|---|---|---|---|
| **Sample Name** | PFDA -Q1 | **Position** | P1-B2 | **Instrument Name** | LCMS04 |
| **User Name** | M_G | **Inj Vol** | 10 | **InjPosition** | |
| **Sample Type** | Sample | **IRM Calibration Status** | Not Applicable | **Data Filename** | PFDA -Q1.d |
| **ACQ Method** | PFC_MassVerification-Q1.m | **Comment** | | **Acquired Time** | 2017/07/10 5:32:12 PM |




MaxXam Analytics

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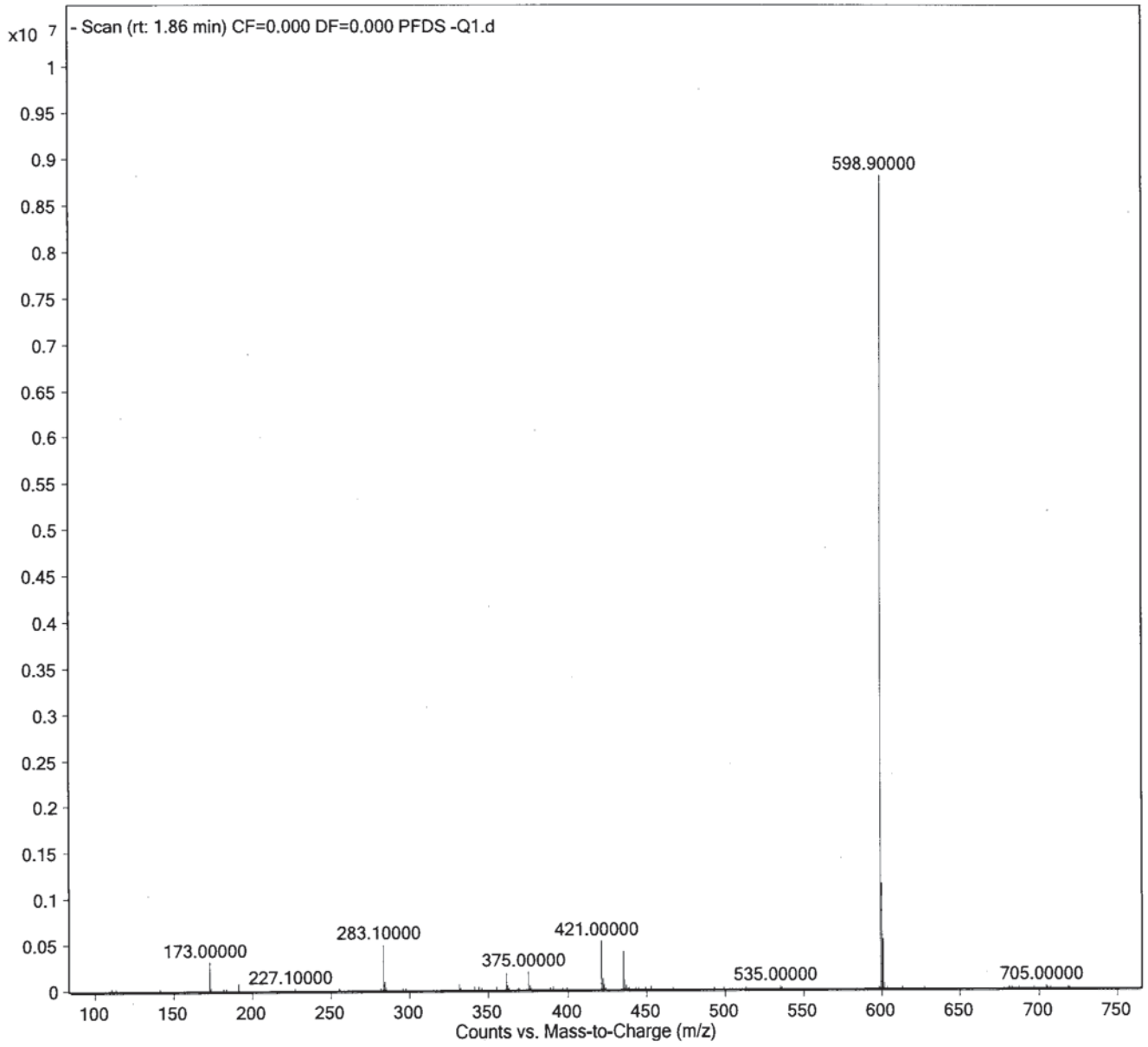
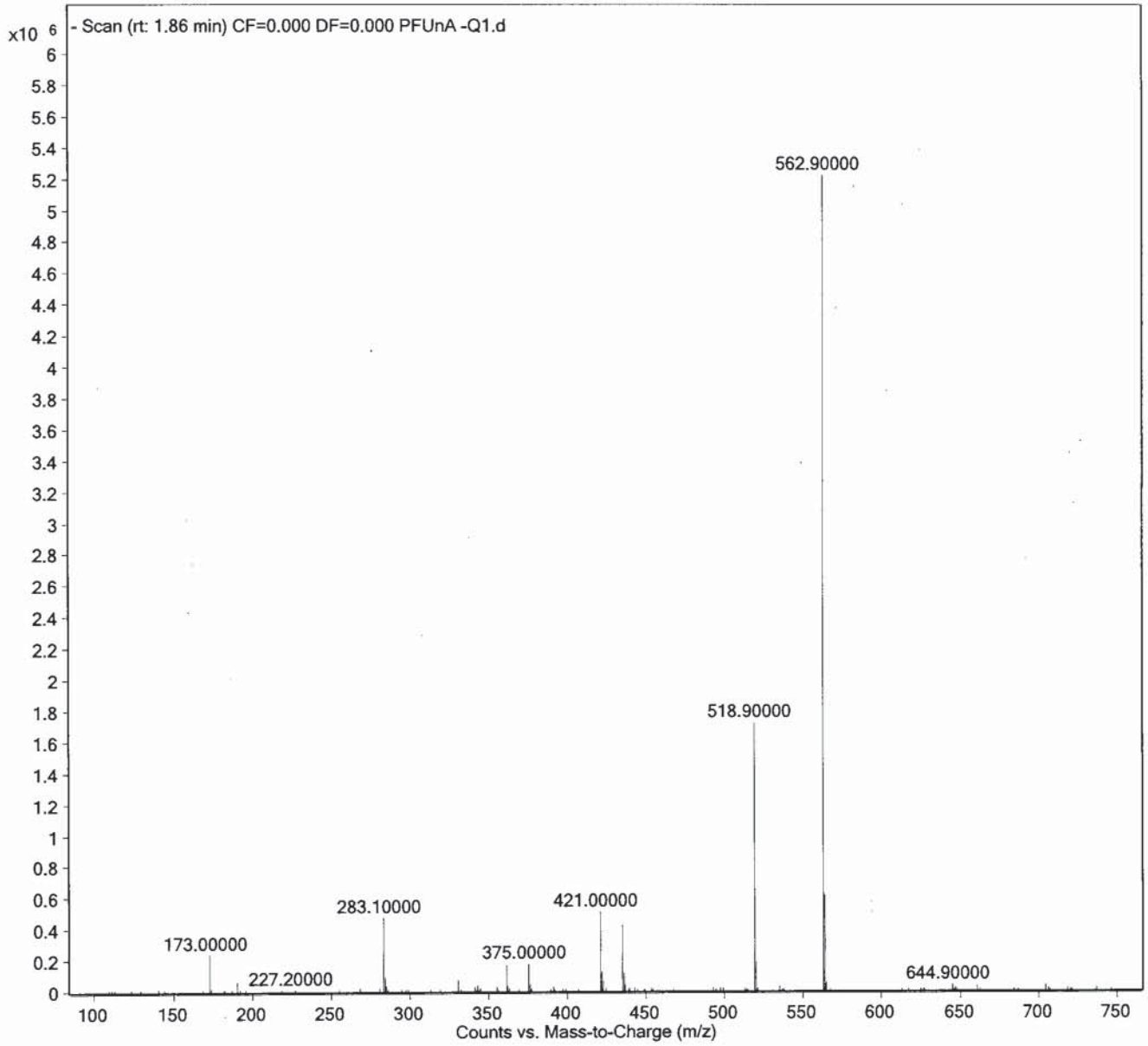
|---|---|---|---|---|---|
| **Sample Name** | PFDS -Q1 | **Position** | P1-B3 | **Instrument Name** | LCMS04 |
| **User Name** | M_G | **Inj Vol** | 10 | **InjPosition** | |
| **Sample Type** | Sample | **IRM Calibration Status** | Not Applicable | **Data Filename** | PFDS -Q1.d |
| **ACQ Method** | PFC_MassVerification-Q1.m | **Comment** | | **Acquired Time** | 2017/07/10 5:37:42 PM |

Maxxam Analytics

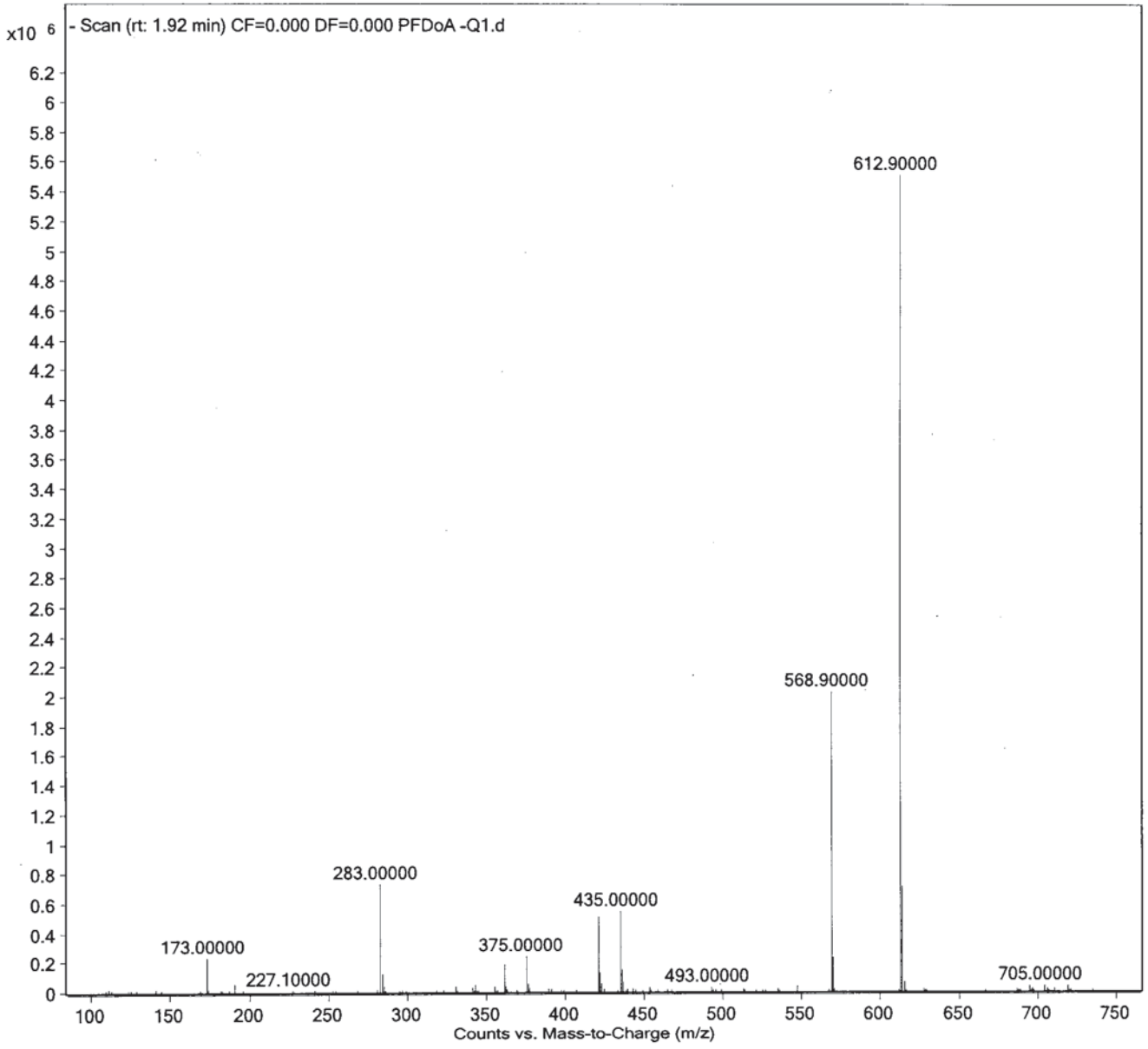


| | | | | | |
|---|---|---|---|---|---|
| **Sample Name** | PFUnA -Q1 | **Position** | P1-B4 | **Instrument Name** | LCMS04 |
| **User Name** | M_G | **Inj Vol** | 10 | **InjPosition** | |
| **Sample Type** | Sample | **IRM Calibration Status** | Not Applicable | **Data Filename** | PFUnA -Q1.d |
| **ACQ Method** | PFC_MassVerification-Q1.m | **Comment** | | **Acquired Time** | 2017/07/10 5:43:12 PM |




Jaxam Analytics

| | | | | | |
|---|---|---|---|---|---|
| **Sample Name** | PFDoA -Q1 | **Position** | P1-B5 | **Instrument Name** | LCMS04 |
| **User Name** | M_G | **Inj Vol** | 10 | **InjPosition** | |
| **Sample Type** | Sample | **IRM Calibration Status** | Not Applicable | **Data Filename** | PFDoA -Q1.d |
| **ACQ Method** | PFC_MassVerification-Q1.m | **Comment** | | **Acquired Time** | 2017/07/10 5:48:42 PM |




Jaxam Analytics

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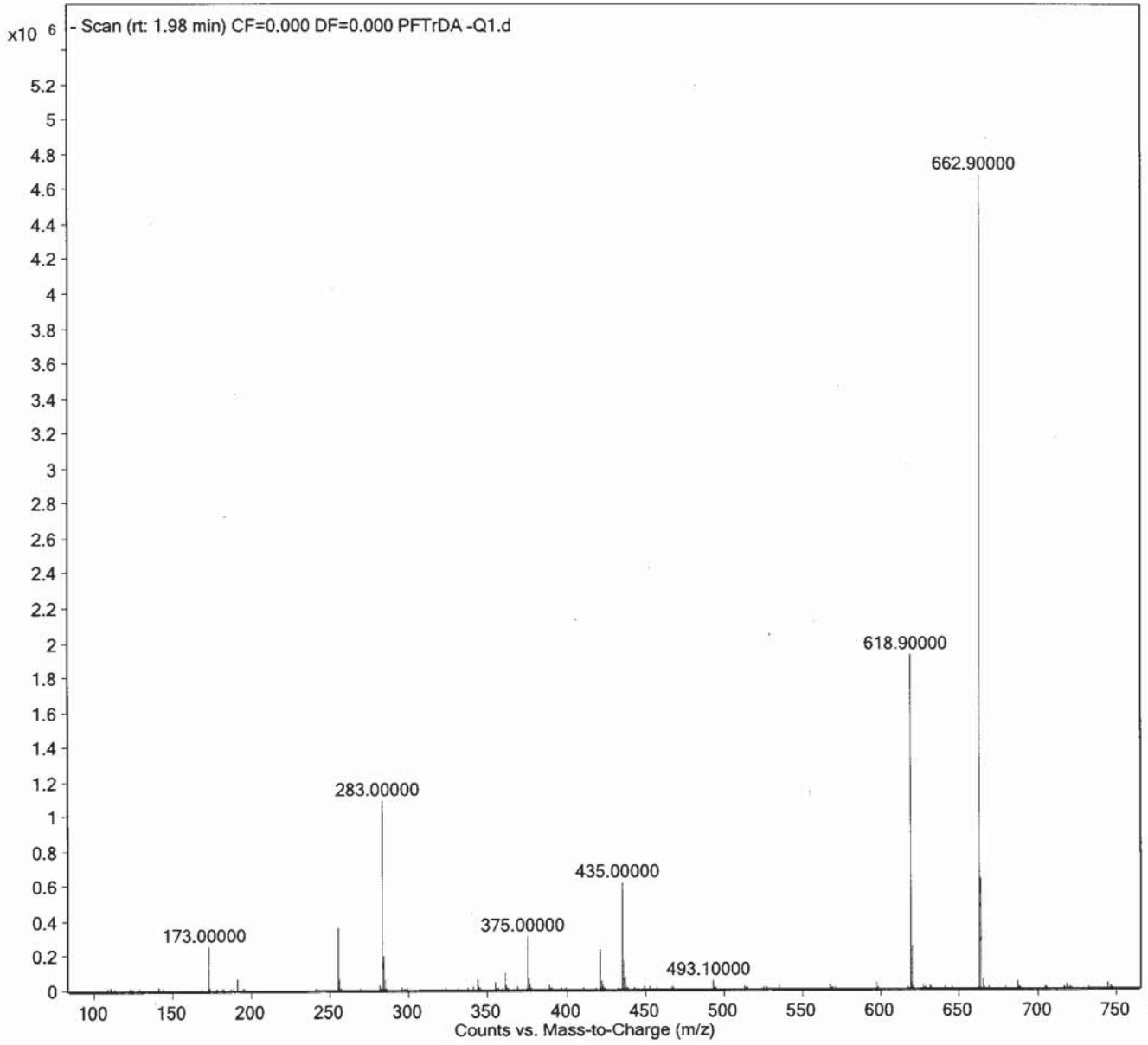
|---|---|---|---|---|---|
| **Sample Name** | PFTrDA -Q1 | **Position** | P1-B6 | **Instrument Name** | LCMS04 |
| **User Name** | M_G | **Inj Vol** | 10 | **InjPosition** | |
| **Sample Type** | Sample | **IRM Calibration Status** | Not Applicable | **Data Filename** | PFTrDA -Q1.d |
| **ACQ Method** | PFC_MassVerification-Q1.m | **Comment** | | **Acquired Time** | 2017/07/10 5:54:12 PM |




Jaakam Analytics

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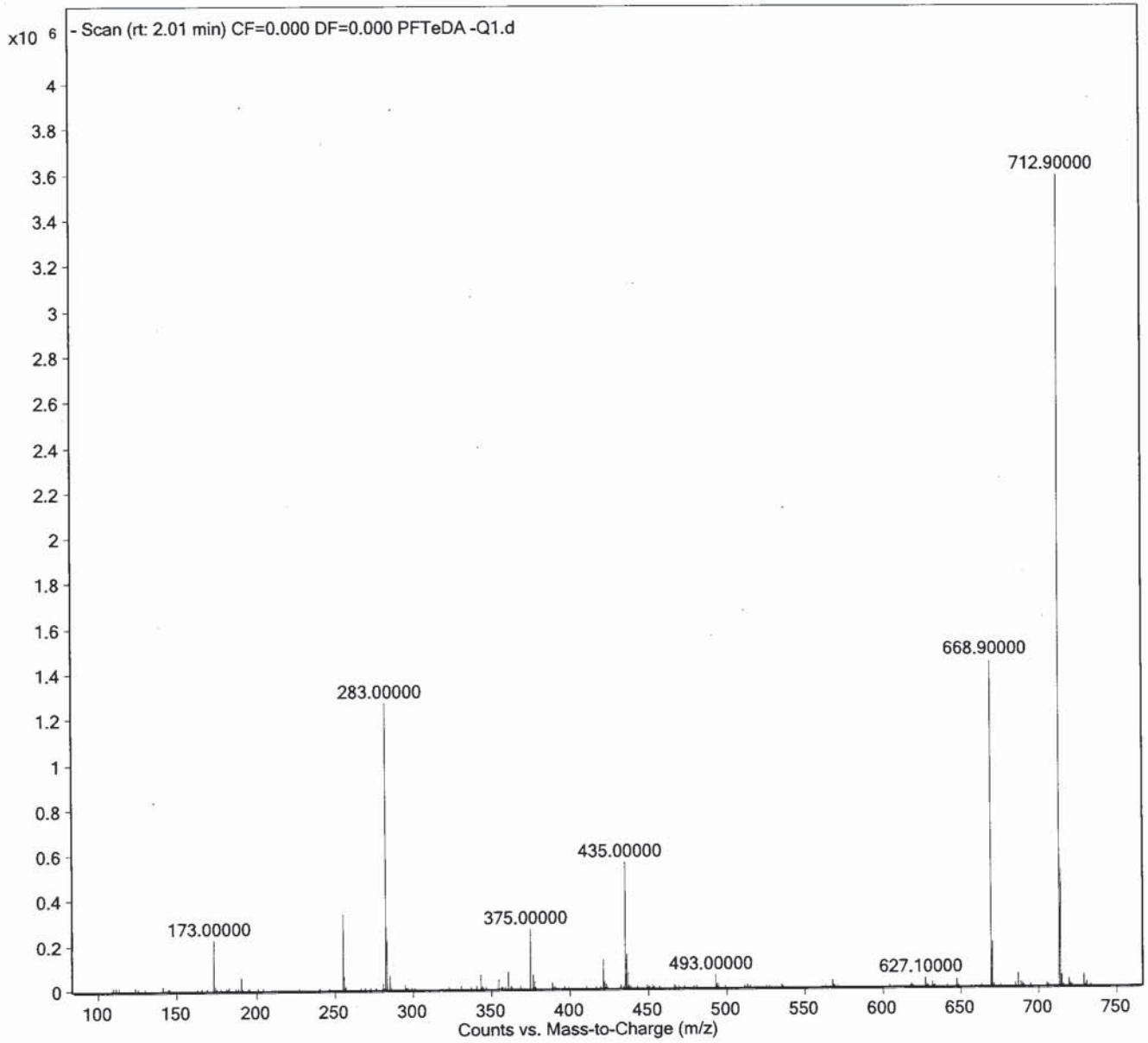
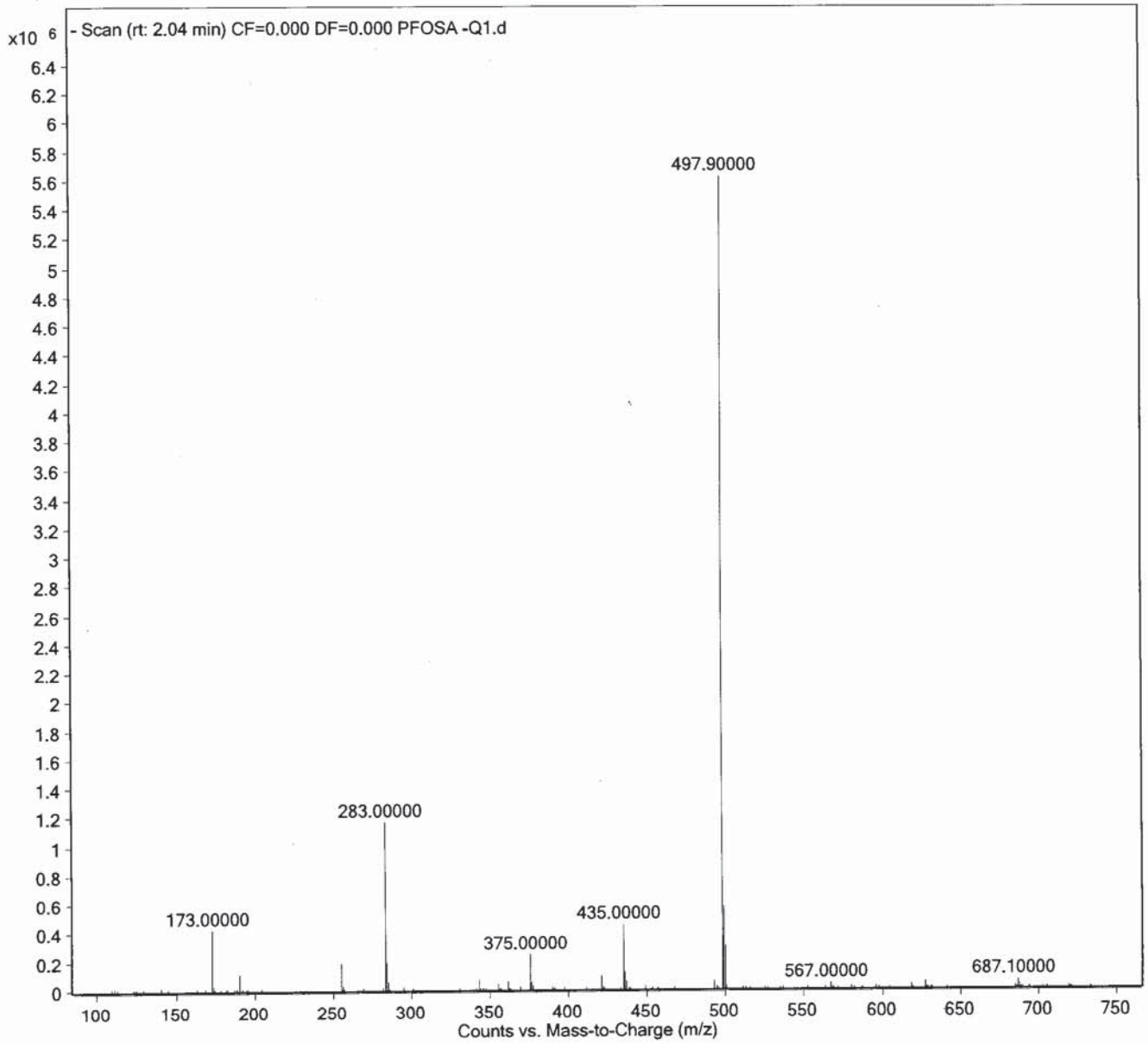
|---|---|---|---|---|---|
| **Sample Name** | PFTeDA -Q1 | **Position** | P1-B7 | **Instrument Name** | LCMS04 |
| **User Name** | M_G | **Inj Vol** | 10 | **InjPosition** | |
| **Sample Type** | Sample | **IRM Calibration Status** | Not Applicable | **Data Filename** | PFTeDA -Q1.d |
| **ACQ Method** | PFC_MassVerification-Q1.m | **Comment** | | **Acquired Time** | 2017/07/10 5:59:42 PM |



| | | | | | |
|---|---|---|---|---|---|
| **Sample Name** | PFOSA -Q1 | **Position** | P1-B8 | **Instrument Name** | LCMS04 |
| **User Name** | M_G | **Inj Vol** | 10 | **InjPosition** | |
| **Sample Type** | Sample | **IRM Calibration Status** | Not Applicable | **Data Filename** | PFOSA -Q1.d |
| **ACQ Method** | PFC_MassVerification-Q1.m | **Comment** | | **Acquired Time** | 2017/07/10 6:05:13 PM |




SaiKam Analytics

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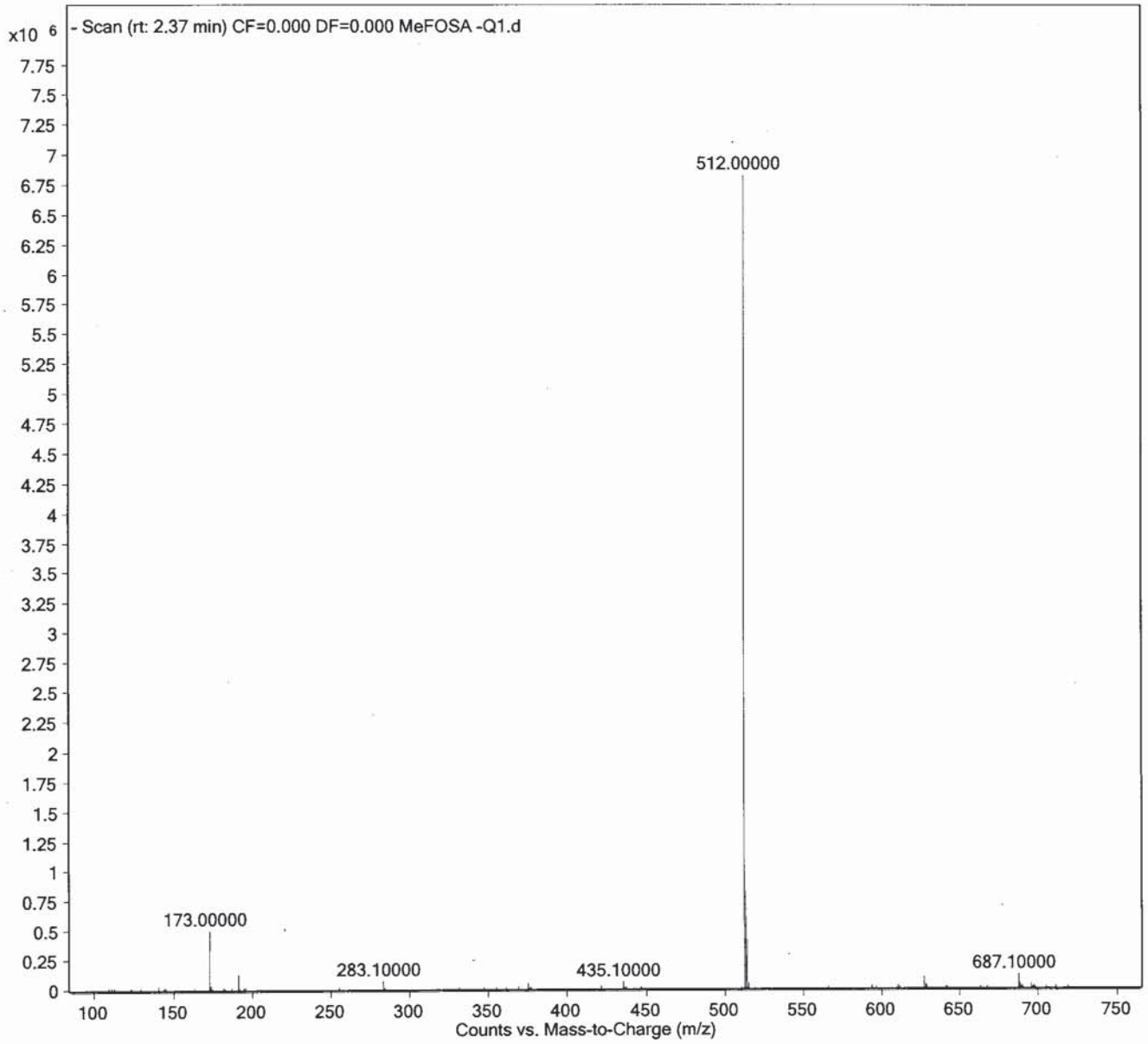
|---|---|---|---|---|---|
| **Sample Name** | MeFOSA -Q1 | **Position** | P1-B9 | **Instrument Name** | LCMS04 |
| **User Name** | M_G | **Inj Vol** | 10 | **InjPosition** | |
| **Sample Type** | Sample | **IRM Calibration Status** | Not Applicable | **Data Filename** | MeFOSA -Q1.d |
| **ACQ Method** | PFC_MassVerification-Q1.m | **Comment** | | **Acquired Time** | 2017/07/10 6:10:45 PM |




MaxXam Analytics

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|---|---|---|---|---|---|
| **Sample Name** | EtFOSA -Q1 | **Position** | P1-C1 | **Instrument Name** | LCMS04 |
| **User Name** | M_G | **Inj Vol** | 10 | **InjPosition** | |
| **Sample Type** | Sample | **IRM Calibration Status** | Not Applicable | **Data Filename** | EtFOSA -Q1.d |
| **ACQ Method** | PFC_MassVerification-Q1.m | **Comment** | | **Acquired Time** | 2017/07/10 6:16:16 PM |

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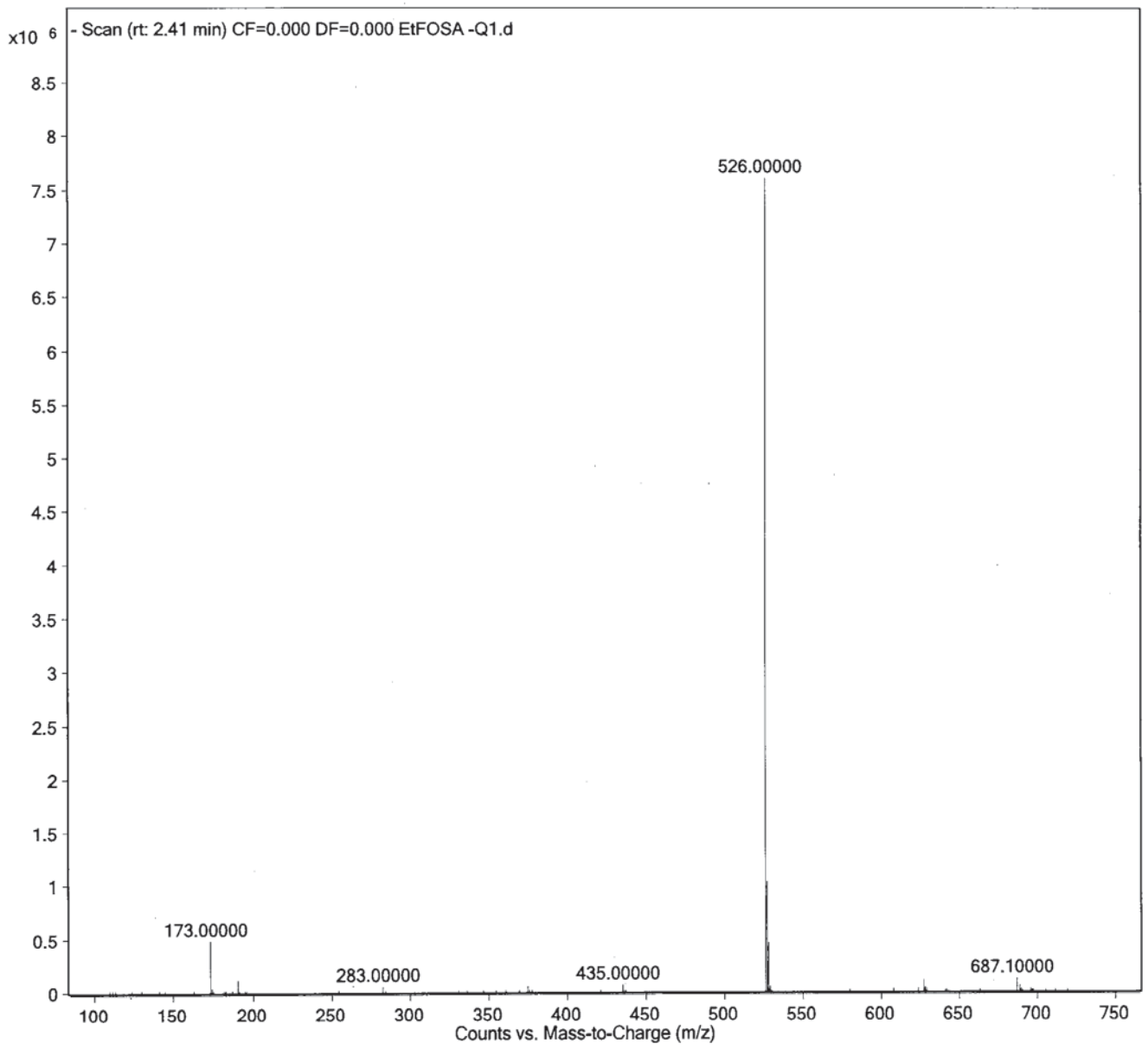

| | | | | | |
|---|---|---|---|---|---|
| **Sample Name** | MeFOSE -Q1 | **Position** | P1-C2 | **Instrument Name** | LCMS04 |
| **User Name** | M_G | **Inj Vol** | 10 | **InjPosition** | |
| **Sample Type** | Sample | **IRM Calibration Status** | Not Applicable | **Data Filename** | MeFOSE -Q1.d |
| **ACQ Method** | PFC_MassVerification-Q1.m | **Comment** | | **Acquired Time** | 2017/07/10 6:21:46 PM |

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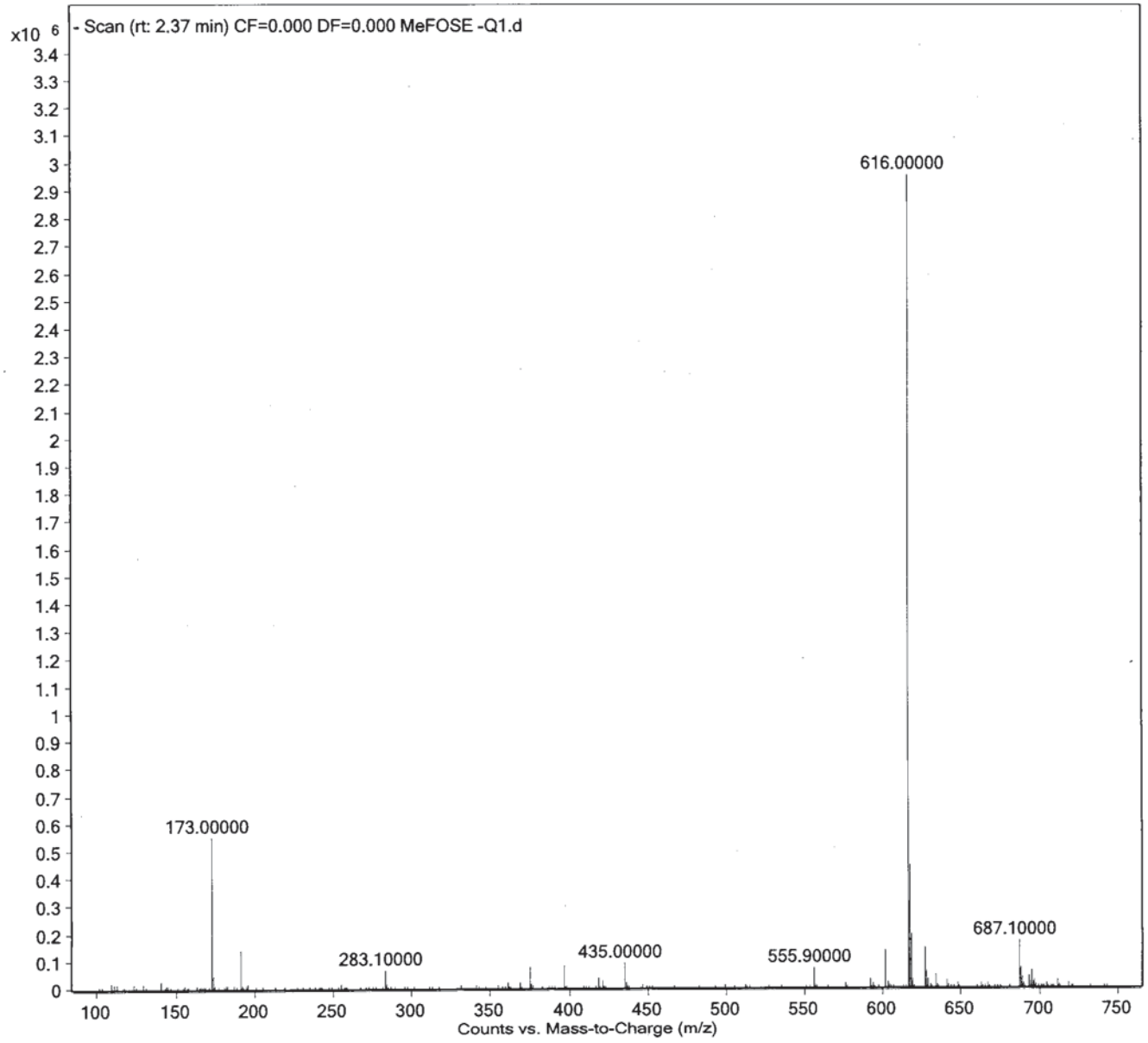
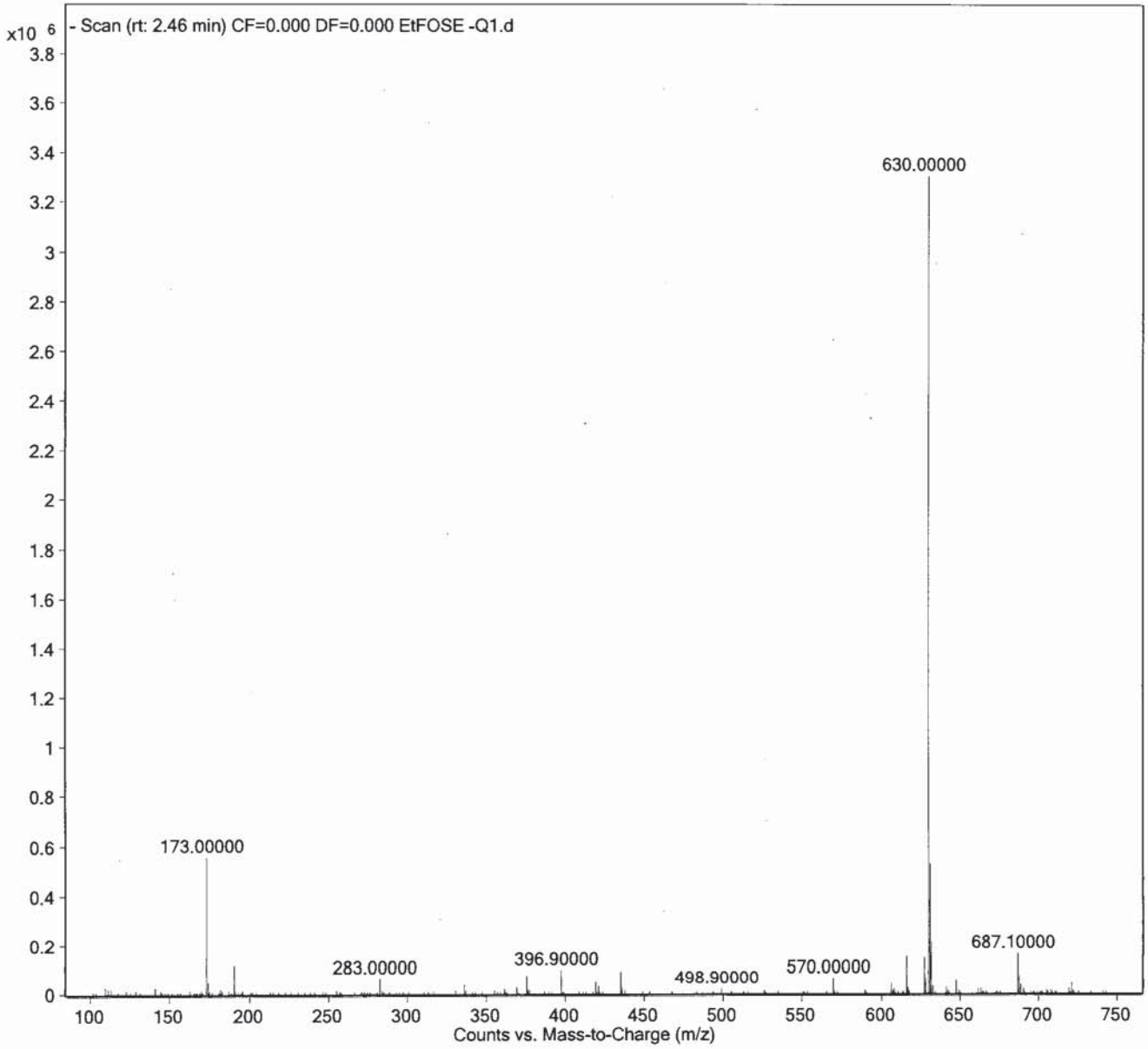


| | | | | | |
|---|---|---|---|---|---|
| **Sample Name** | EtFOSE -Q1 | **Position** | P1-C3 | **Instrument Name** | LCMS04 |
| **User Name** | M_G | **Inj Vol** | 10 | **InjPosition** | |
| **Sample Type** | Sample | **IRM Calibration Status** | Not Applicable | **Data Filename** | EtFOSE -Q1.d |
| **ACQ Method** | PFC_MassVerification-Q1.m | **Comment** | | **Acquired Time** | 2017/07/10 6:27:16 PM |

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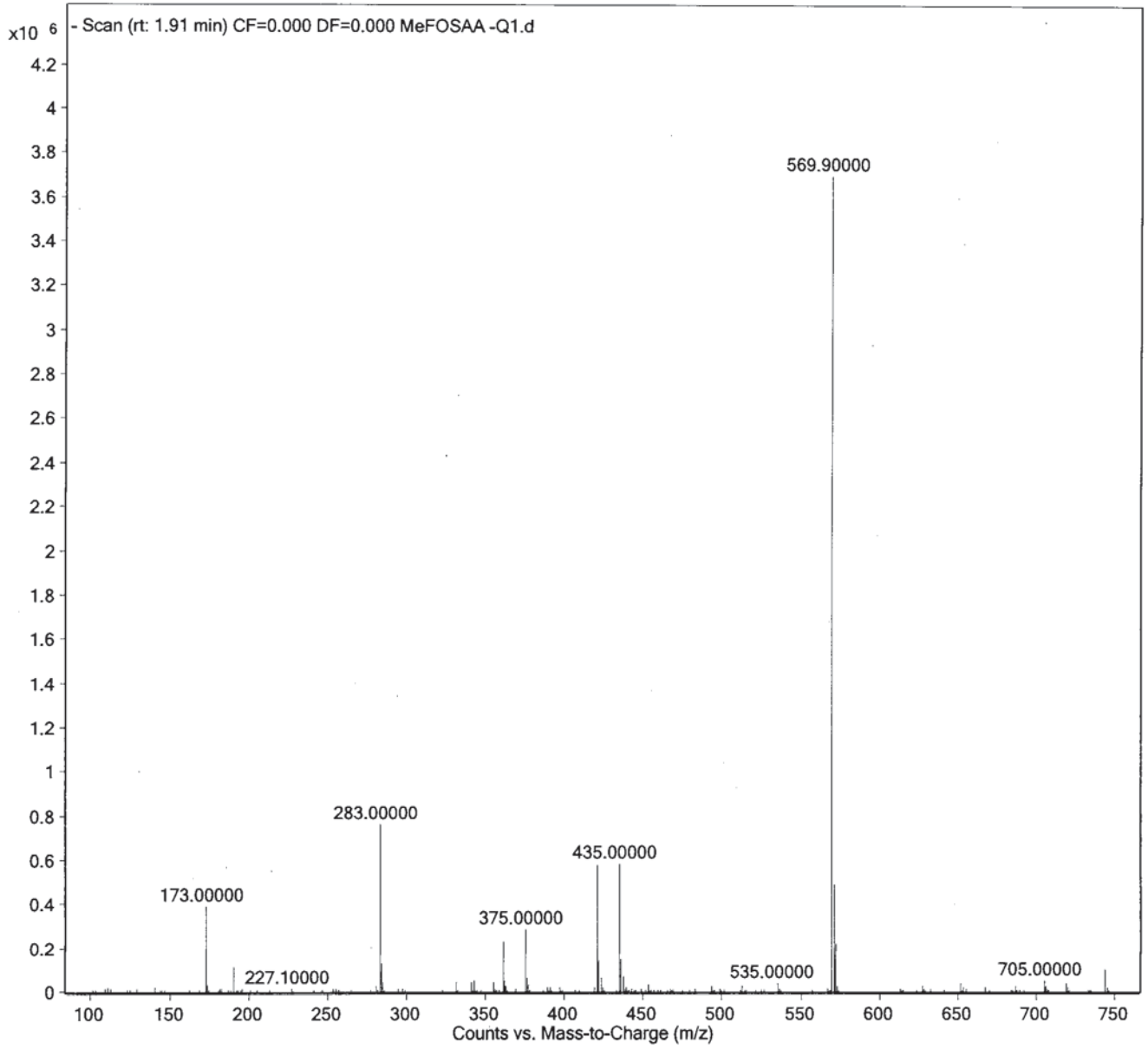
|---|---|---|---|---|---|
| **Sample Name** | MeFOSAA -Q1 | **Position** | P1-C4 | **Instrument Name** | LCMS04 |
| **User Name** | M_G | **Inj Vol** | 10 | **InjPosition** | |
| **Sample Type** | Sample | **IRM Calibration Status** | Not Applicable | **Data Filename** | MeFOSAA -Q1.d |
| **ACQ Method** | PFC_MassVerification-Q1.m | **Comment** | | **Acquired Time** | 2017/07/10 6:32:46 PM |

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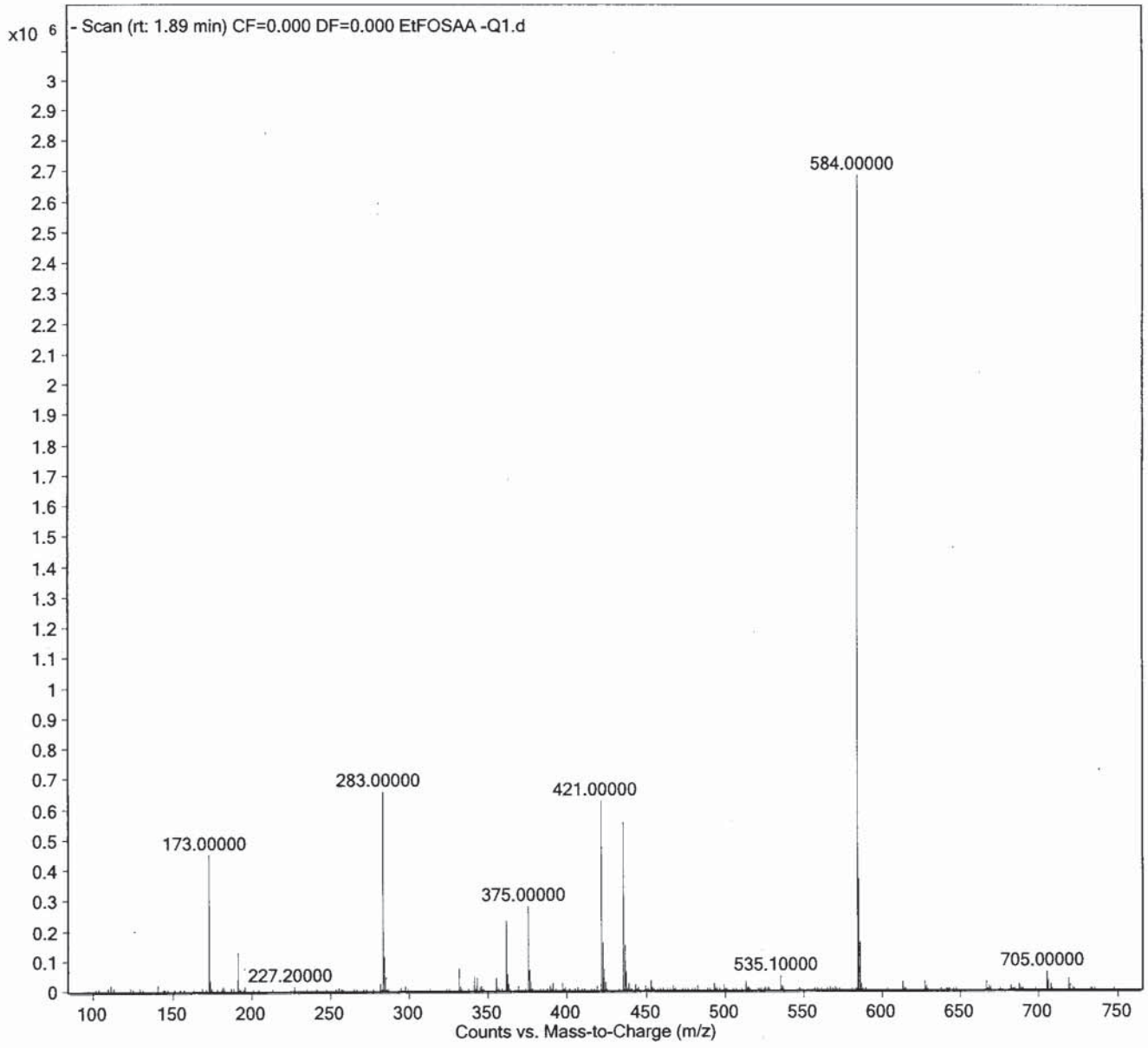
|---|---|---|---|---|---|
| **Sample Name** | EtFOSAA -Q1 | **Position** | P1-C5 | **Instrument Name** | LCMS04 |
| **User Name** | M_G | **Inj Vol** | 10 | **InjPosition** | |
| **Sample Type** | Sample | **IRM Calibration Status** | Not Applicable | **Data Filename** | EtFOSAA -Q1.d |
| **ACQ Method** | PFC_MassVerification-Q1.m | **Comment** | | **Acquired Time** | 2017/07/10 6:38:16 PM |



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|---|---|---|---|---|---|
| **Sample Name** | 6:2FTS -Q1 | **Position** | P1-C6 | **Instrument Name** | LCMS04 |
| **User Name** | M_G | **Inj Vol** | 10 | **InjPosition** | |
| **Sample Type** | Sample | **IRM Calibration Status** | Not Applicable | **Data Filename** | 62FTS -Q1.d |
| **ACQ Method** | PFC_MassVerification-Q1.m | **Comment** | | **Acquired Time** | 2017/07/10 6:43:46 PM |

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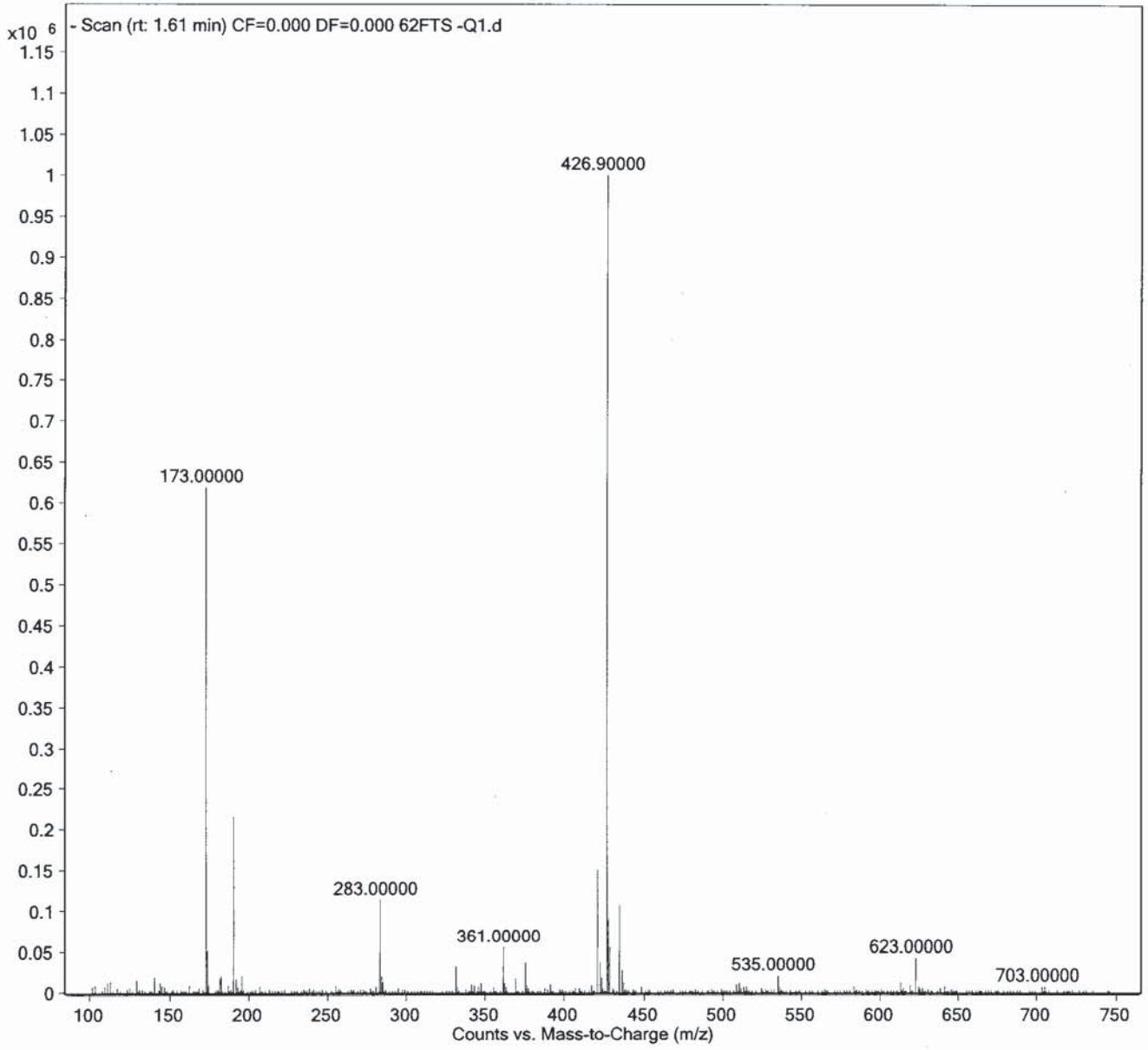
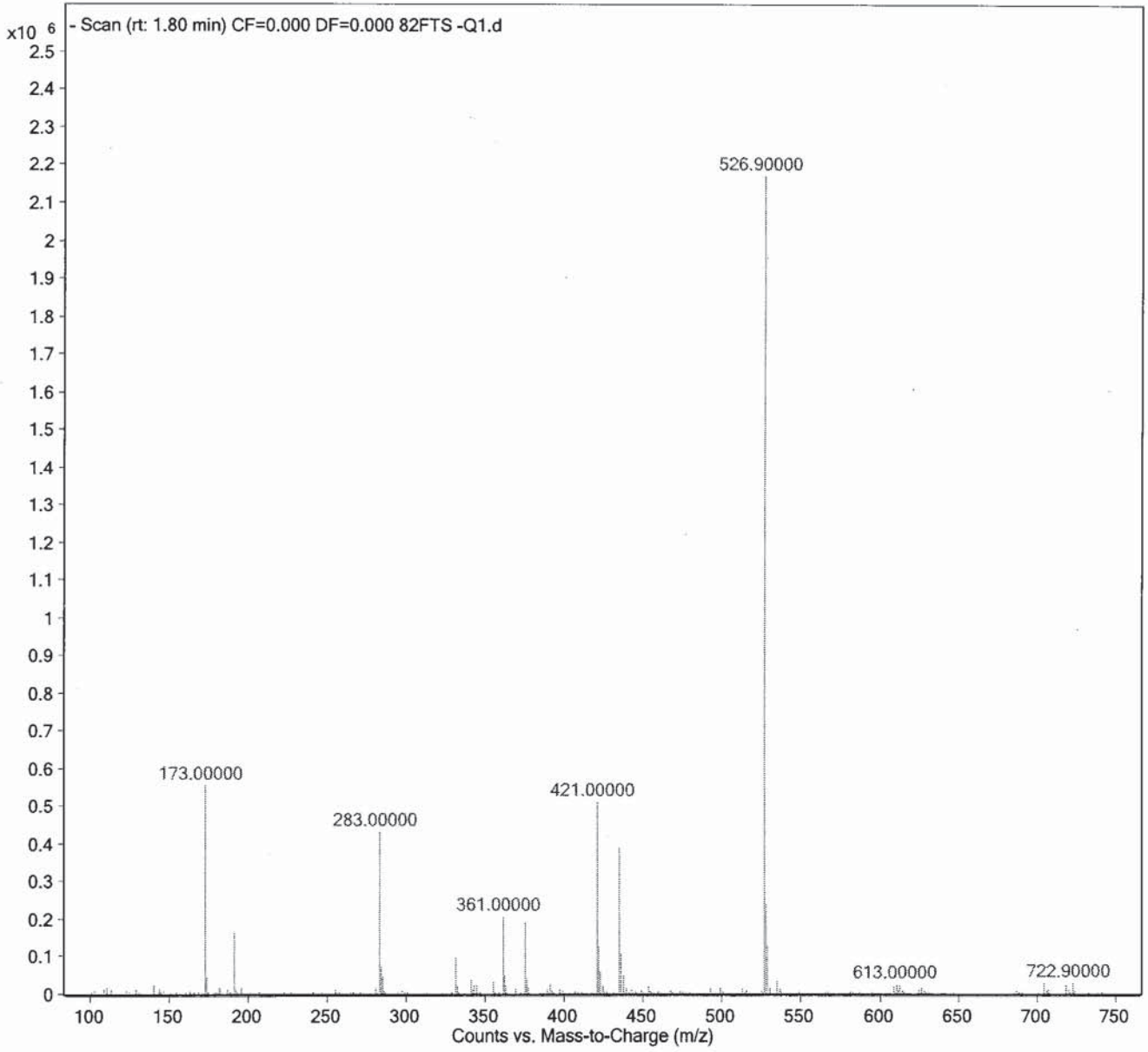


| | | | | | |
|---|---|---|---|---|---|
| **Sample Name** | 8:2FTS -Q1 | **Position** | P1-C7 | **Instrument Name** | LCMS04 |
| **User Name** | M_G | **Inj Vol** | 10 | **InjPosition** | |
| **Sample Type** | Sample | **IRM Calibration Status** | Not Applicable | **Data Filename** | 82FTS -Q1.d |
| **ACQ Method** | PFC_MassVerification-Q1.m | **Comment** | | **Acquired Time** | 2017/07/10 6:49:16 PM |

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# Worklist Report

Agilent Technologies

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**Instrument Name:** LCMS04 **Worklist Path:** D:\MassHunter\Worklists\PFCs\PFAS_MASSVER_170710.wkl

**Operator Name:** M_G
**Run Type:** Standard Start
**Part of Method to Run:** Acquisition Only
**Execution of Acquisition-DA:** Synchronous
**Acquisition Method Path:** D:\MassHunter\Acquisition Method
**DA Method Path:** D:\MassHunter\methods
**Data File Path:** D:\MassHunter\data\Mass Verification\20170710
**Pre-Worklist Script:** ---
**Post-Worklist Script:** ---
**Acquisition Clean Up Script:** ---
**Overlapped Injection:** Yes
**Clear Sample Selection After Run:** Yes
**Wait Time for Ready(Min):** 10
**Threshold Disk Value(GB):** 10
**Comment:** ---
**Plate Barcode:** None

**Worklist Table**

| | Sample Name | Sample Position | Method | Data File | Sample Type | Inj Vol (µl) | Sample Group |
|---|---|---|---|---|---|---|---|
| 1 | PFBA -Q1 | P1-A1 | PFC_MassVerification-Q1.m | PFBA -Q1.d | Sample | As Method | PFAS-Q1 |
| 2 | PFBS -Q1 | P1-A2 | PFC_MassVerification-Q1.m | PFBS -Q1.d | Sample | As Method | PFAS-Q1 |
| 3 | PFPeA -Q1 | P1-A3 | PFC_MassVerification-Q1.m | PFPeA -Q1.d | Sample | As Method | PFAS-Q1 |
| 4 | PFHxA -Q1 | P1-A4 | PFC_MassVerification-Q1.m | PFHxA -Q1.d | Sample | As Method | PFAS-Q1 |
| 5 | PFHxS -Q1 | P1-A5 | PFC_MassVerification-Q1.m | PFHxS -Q1.d | Sample | As Method | PFAS-Q1 |
| 6 | PFHpA-Q1 | P1-A6 | PFC_MassVerification-Q1.m | PFHpA-Q1.d | Sample | As Method | PFAS-Q1 |
| 7 | PFHpS-Q1 | P1-A7 | PFC_MassVerification-Q1.m | PFHpS-Q1.d | Sample | As Method | PFAS-Q1 |
| 8 | PFOA -Q1 | P1-A8 | PFC_MassVerification-Q1.m | PFOA -Q1.d | Sample | As Method | PFAS-Q1 |
| 9 | PFOS -Q1 | P1-A9 | PFC_MassVerification-Q1.m | PFOS -Q1.d | Sample | As Method | PFAS-Q1 |

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# Worklist Report

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| | Sample Name | Sample Position | Method | Data File | Sample Type | Inj Vol (µl) | Sample Group |
|---|---|---|---|---|---|---|---|
| 10 | PFNA -Q1 | P1-B1 | PFC_MassVerification-Q1.m | PFNA -Q1.d | Sample | As Method | PFAS-Q1 |
| 11 | PFDA -Q1 | P1-B2 | PFC_MassVerification-Q1.m | PFDA -Q1.d | Sample | As Method | PFAS-Q1 |
| 12 | PFDS -Q1 | P1-B3 | PFC_MassVerification-Q1.m | PFDS -Q1.d | Sample | As Method | PFAS-Q1 |
| 13 | PFUnA -Q1 | P1-B4 | PFC_MassVerification-Q1.m | PFUnA -Q1.d | Sample | As Method | PFAS-Q1 |
| 14 | PFDoA -Q1 | P1-B5 | PFC_MassVerification-Q1.m | PFDoA -Q1.d | Sample | As Method | PFAS-Q1 |
| 15 | PFTrDA -Q1 | P1-B6 | PFC_MassVerification-Q1.m | PFTrDA -Q1.d | Sample | As Method | PFAS-Q1 |
| 16 | PFTeDA -Q1 | P1-B7 | PFC_MassVerification-Q1.m | PFTeDA -Q1.d | Sample | As Method | PFAS-Q1 |
| 17 | PFOSA -Q1 | P1-B8 | PFC_MassVerification-Q1.m | PFOSA -Q1.d | Sample | As Method | PFAS-Q1 |
| 18 | MeFOSA -Q1 | P1-B9 | PFC_MassVerification-Q1.m | MeFOSA -Q1.d | Sample | As Method | PFAS-Q1 |
| 19 | EtFOSA -Q1 | P1-C1 | PFC_MassVerification-Q1.m | EtFOSA -Q1.d | Sample | As Method | PFAS-Q1 |
| 20 | MeFOSE -Q1 | P1-C2 | PFC_MassVerification-Q1.m | MeFOSE -Q1.d | Sample | As Method | PFAS-Q1 |
| 21 | EtFOSE -Q1 | P1-C3 | PFC_MassVerification-Q1.m | EtFOSE -Q1.d | Sample | As Method | PFAS-Q1 |
| 22 | MeFOSAA -Q1 | P1-C4 | PFC_MassVerification-Q1.m | MeFOSAA -Q1.d | Sample | As Method | PFAS-Q1 |
| 23 | EtFOSAA -Q1 | P1-C5 | PFC_MassVerification-Q1.m | EtFOSAA -Q1.d | Sample | As Method | PFAS-Q1 |
| 24 | 6:2FTS -Q1 | P1-C6 | PFC_MassVerification-Q1.m | 62FTS -Q1.d | Sample | As Method | PFAS-Q1 |
| 25 | 8:2FTS -Q1 | P1-C7 | PFC_MassVerification-Q1.m | 82FTS -Q1.d | Sample | As Method | PFAS-Q1 |

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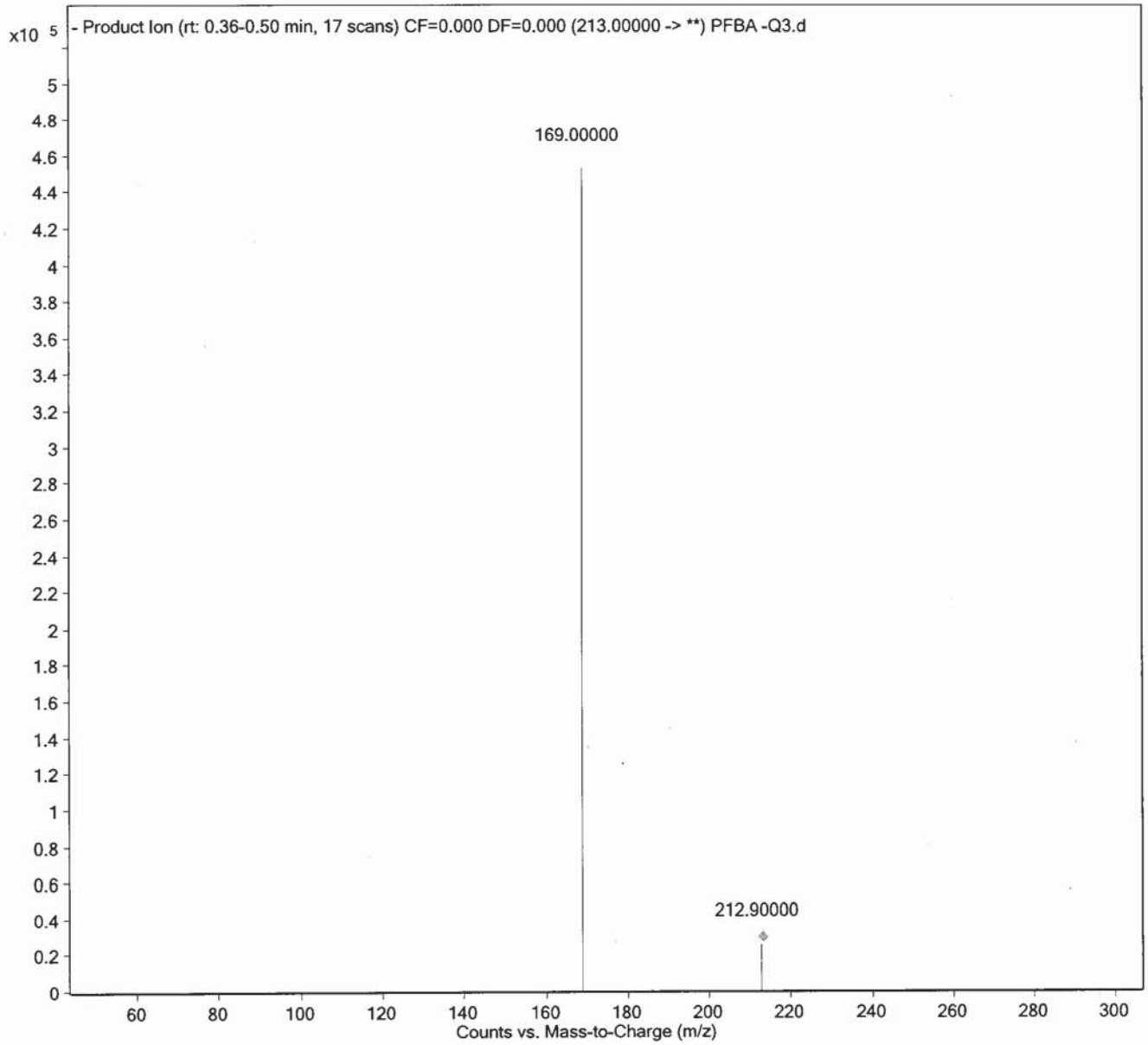
# Analyte Product Ion Verification

| | | | | | |
|---|---|---|---|---|---|
| **Sample Name** | PFBA -Q3 | **Position** | P1-A1 | **Instrument Name** | LCMS04 |
| **User Name** | M_G | **Inj Vol** | 10 | **InjPosition** | |
| **Sample Type** | Sample | **IRM Calibration Status** | Not Applicable | **Data Filename** | PFBA -Q3.d |
| **ACQ Method** | PFC_MassVerification-PFBA-Q3.m | **Comment** | | **Acquired Time** | 2017/07/10 6:54:46 PM |




SaanAm Analytics

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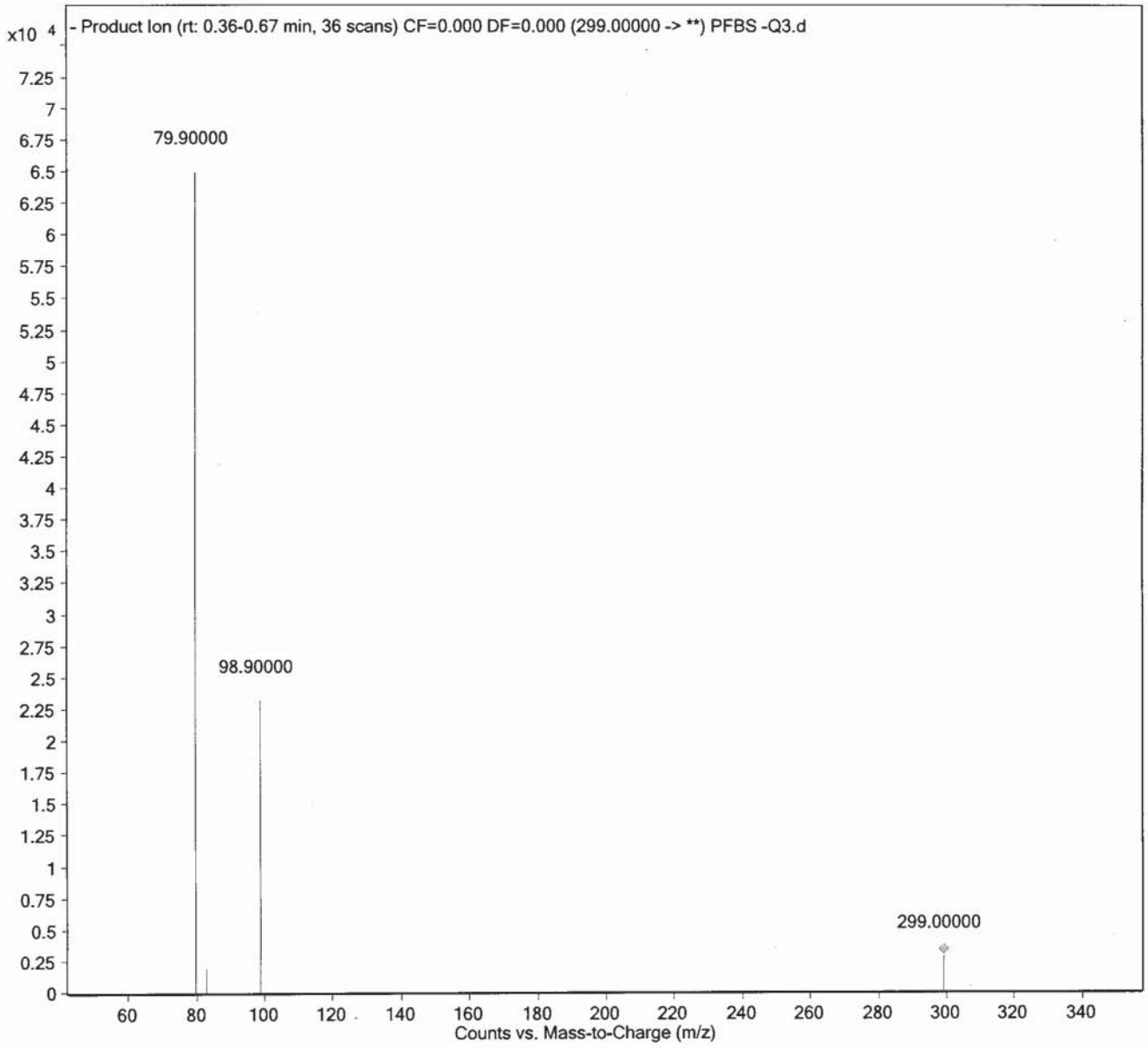
|---|---|---|---|---|---|
| **Sample Name** | PFBS -Q3 | **Position** | P1-A2 | **Instrument Name** | LCMS04 |
| **User Name** | M_G | **Inj Vol** | 10 | **InjPosition** | |
| **Sample Type** | Sample | **IRM Calibration Status** | Not Applicable | **Data Filename** | PFBS -Q3.d |
| **ACQ Method** | PFC_MassVerification-PFBS-Q3.m | **Comment** | | **Acquired Time** | 2017/07/10 7:00:16 PM |




Maxxam Analytics

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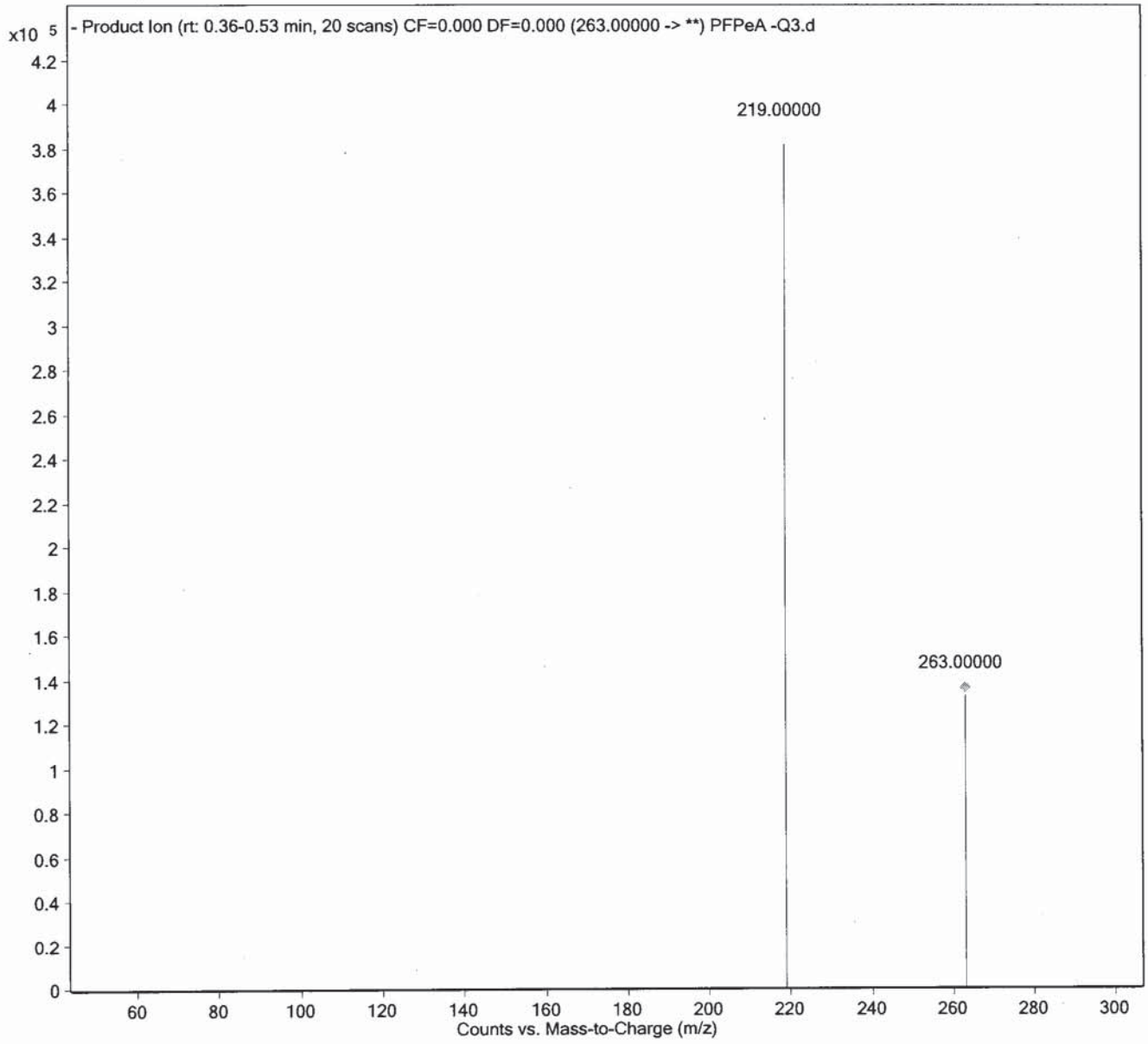
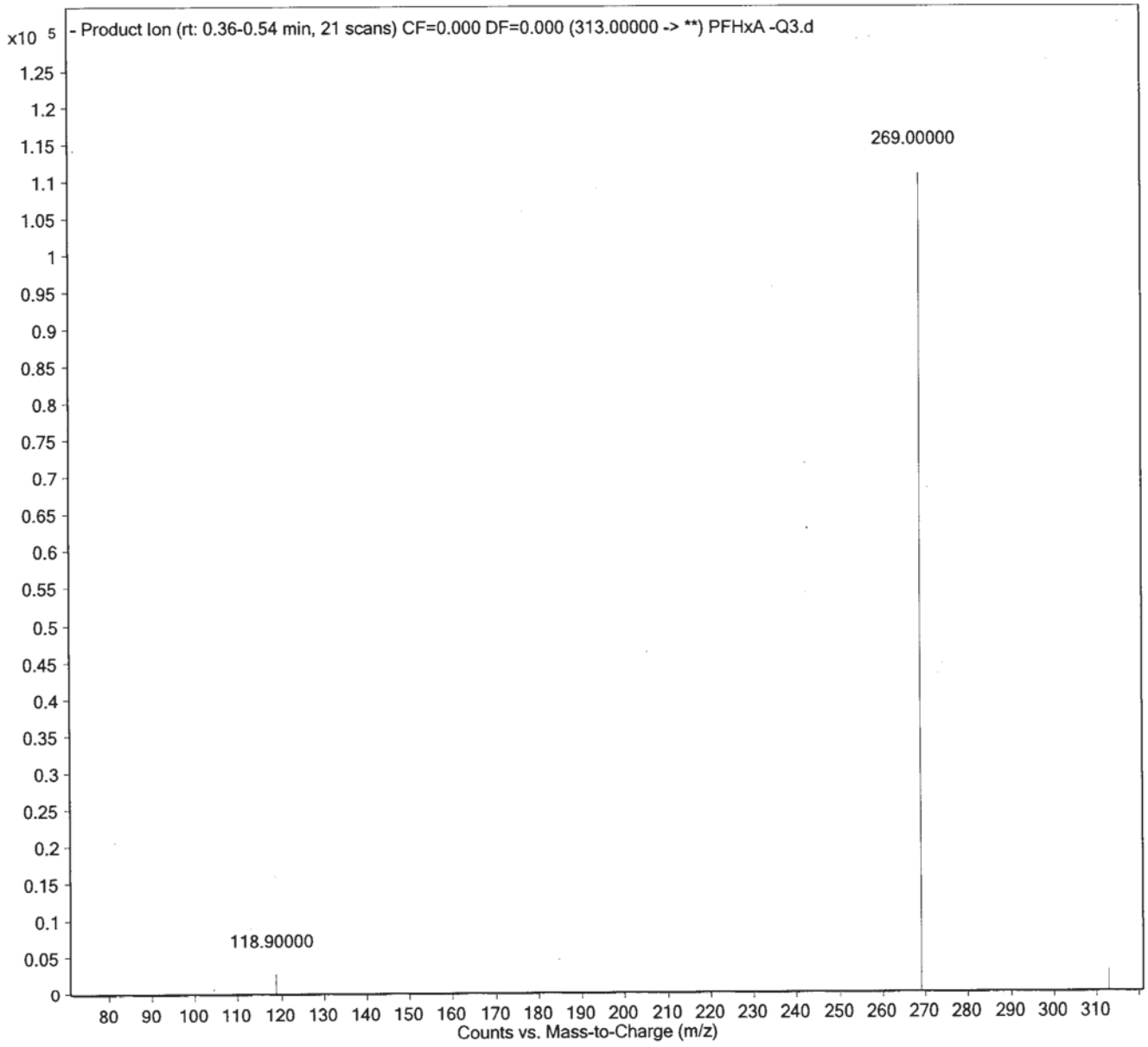
|---|---|---|---|---|---|
| **Sample Name** | PFPeA -Q3 | **Position** | P1-A3 | **Instrument Name** | LCMS04 |
| **User Name** | M_G | **Inj Vol** | 10 | **InjPosition** | |
| **Sample Type** | Sample | **IRM Calibration Status** | Not Applicable | **Data Filename** | PFPeA -Q3.d |
| **ACQ Method** | PFC_MassVerification-PFPeA-Q3.m | **Comment** | | **Acquired Time** | 2017/07/10 7:05:46 PM |



| | | | | | |
|---|---|---|---|---|---|
| **Sample Name** | PFHxA -Q3 | **Position** | P1-A4 | **Instrument Name** | LCMS04 |
| **User Name** | M_G | **Inj Vol** | 10 | **InjPosition** | |
| **Sample Type** | Sample | **IRM Calibration Status** | Not Applicable | **Data Filename** | PFHxA -Q3.d |
| **ACQ Method** | PFC_MassVerification-PFHxA-Q3.m | **Comment** | | **Acquired Time** | 2017/07/10 7:11:16 PM |




SaxKam Analytics

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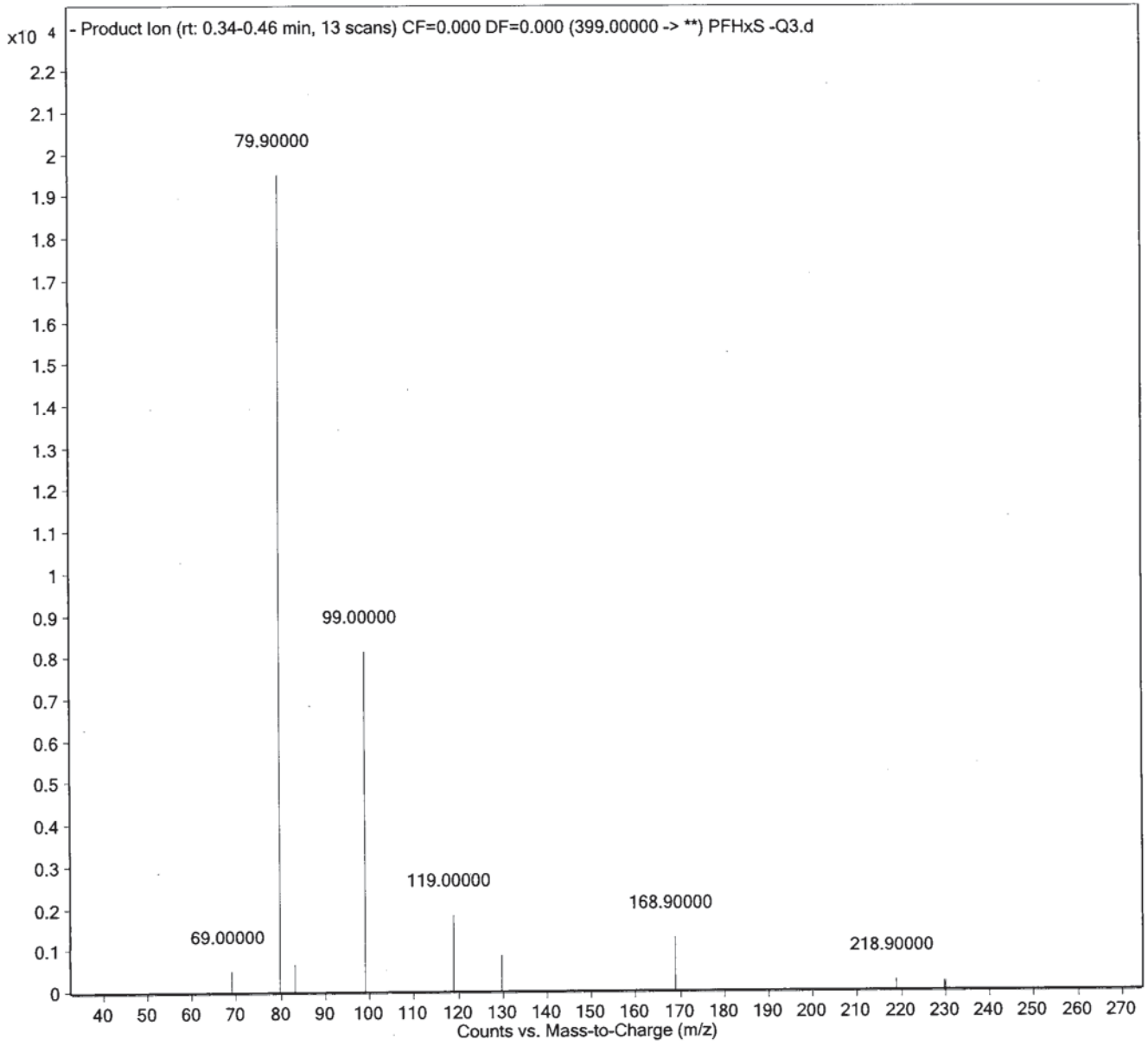
|---|---|---|---|---|---|
| **Sample Name** | PFHxS -Q3 | **Position** | P1-A5 | **Instrument Name** | LCMS04 |
| **User Name** | M_G | **Inj Vol** | 10 | **InjPosition** | |
| **Sample Type** | Sample | **IRM Calibration Status** | Not Applicable | **Data Filename** | PFHxS -Q3.d |
| **ACQ Method** | PFC_MassVerification-PFHxS-Q3.m | **Comment** | | **Acquired Time** | 2017/07/10 7:16:46 PM |




SaxKam Analytics

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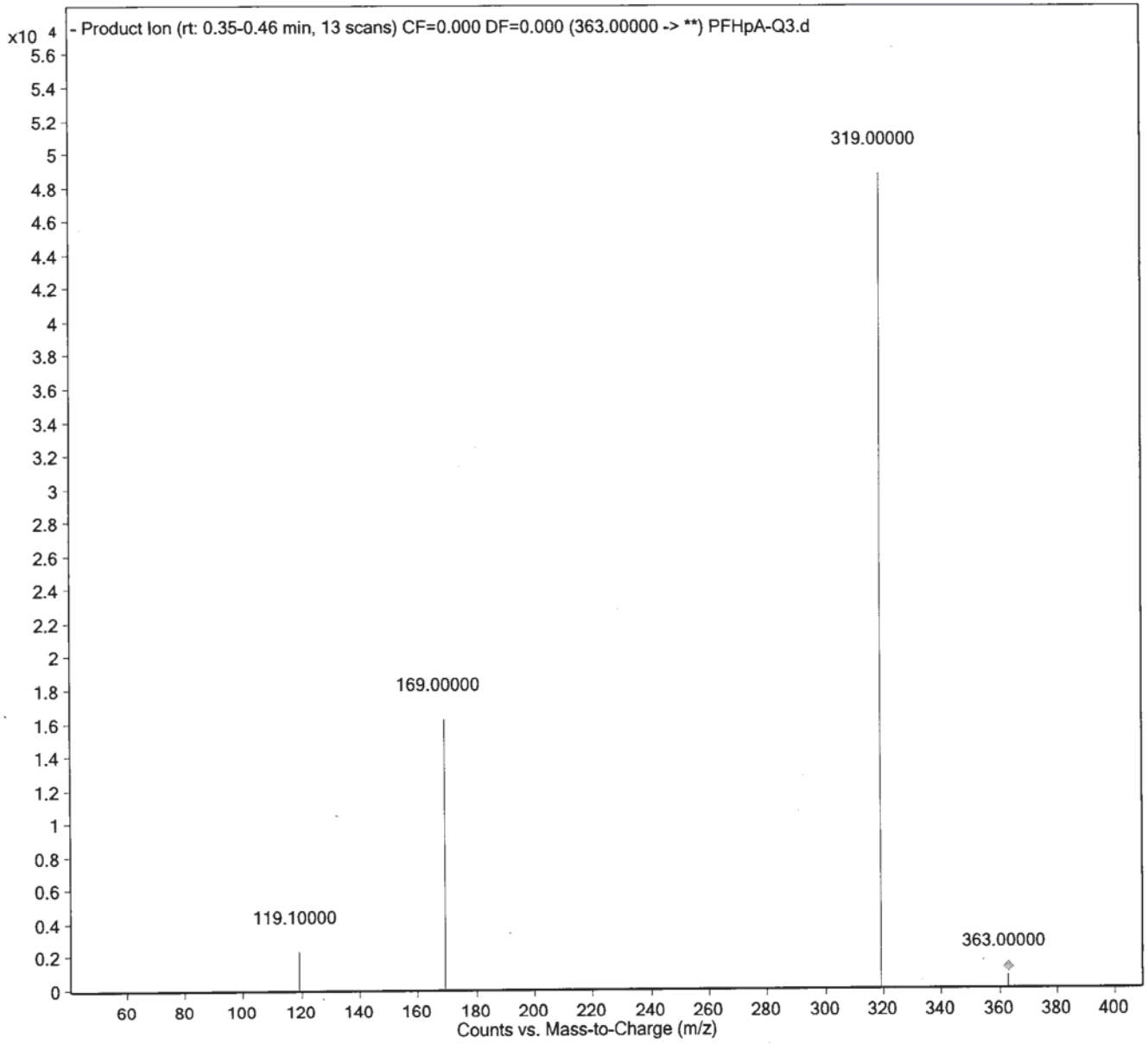
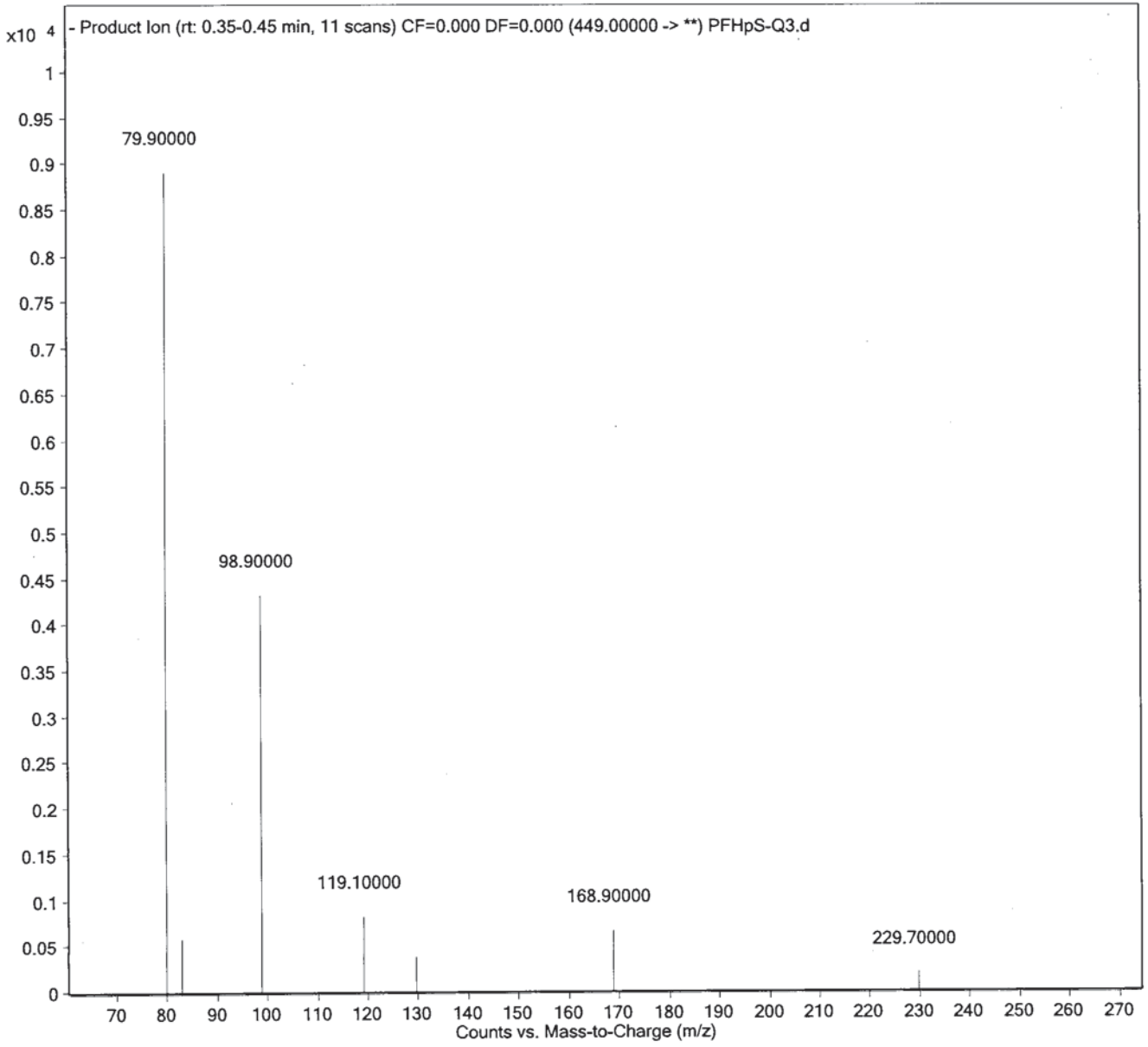
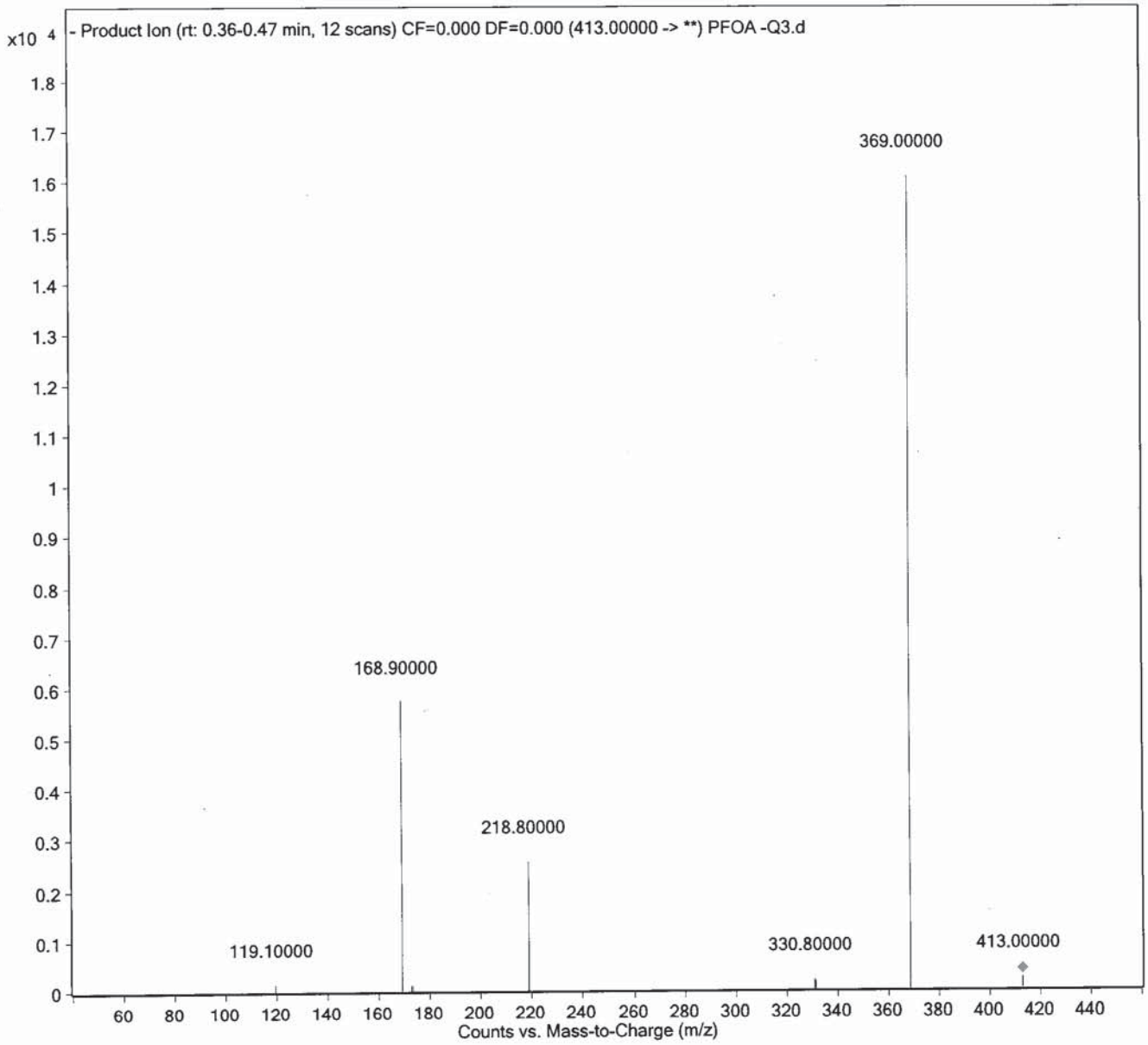
|---|---|---|---|---|---|
| **Sample Name** | PFHpA-Q3 | **Position** | P1-A6 | **Instrument Name** | LCMS04 |
| **User Name** | M_G | **Inj Vol** | 10 | **InjPosition** | |
| **Sample Type** | Sample | **IRM Calibration Status** | Not Applicable | **Data Filename** | PFHpA-Q3.d |
| **ACQ Method** | PFC_MassVerification-PFHpA-Q3.m | **Comment** | | **Acquired Time** | 2017/07/10 7:22:16 PM |



| | | | | | |
|---|---|---|---|---|---|
| **Sample Name** | PFHpS-Q3 | **Position** | P1-A7 | **Instrument Name** | LCMS04 |
| **User Name** | M_G | **Inj Vol** | 10 | **InjPosition** | |
| **Sample Type** | Sample | **IRM Calibration Status** | Not Applicable | **Data Filename** | PFHpS-Q3.d |
| **ACQ Method** | PFC_MassVerification-PFHpS-Q3.m | **Comment** | | **Acquired Time** | 2017/07/10 7:27:47 PM |



| | | | | | |
|---|---|---|---|---|---|
| **Sample Name** | PFOA -Q3 | **Position** | P1-A8 | **Instrument Name** | LCMS04 |
| **User Name** | M_G | **Inj Vol** | 10 | **InjPosition** | |
| **Sample Type** | Sample | **IRM Calibration Status** | Not Applicable | **Data Filename** | PFOA -Q3.d |
| **CQ Method** | PFC_MassVerification-PFOA-Q3.m | **Comment** | | **Acquired Time** | 2017/07/10 7:33:19 PM |




Saxcam Analytics

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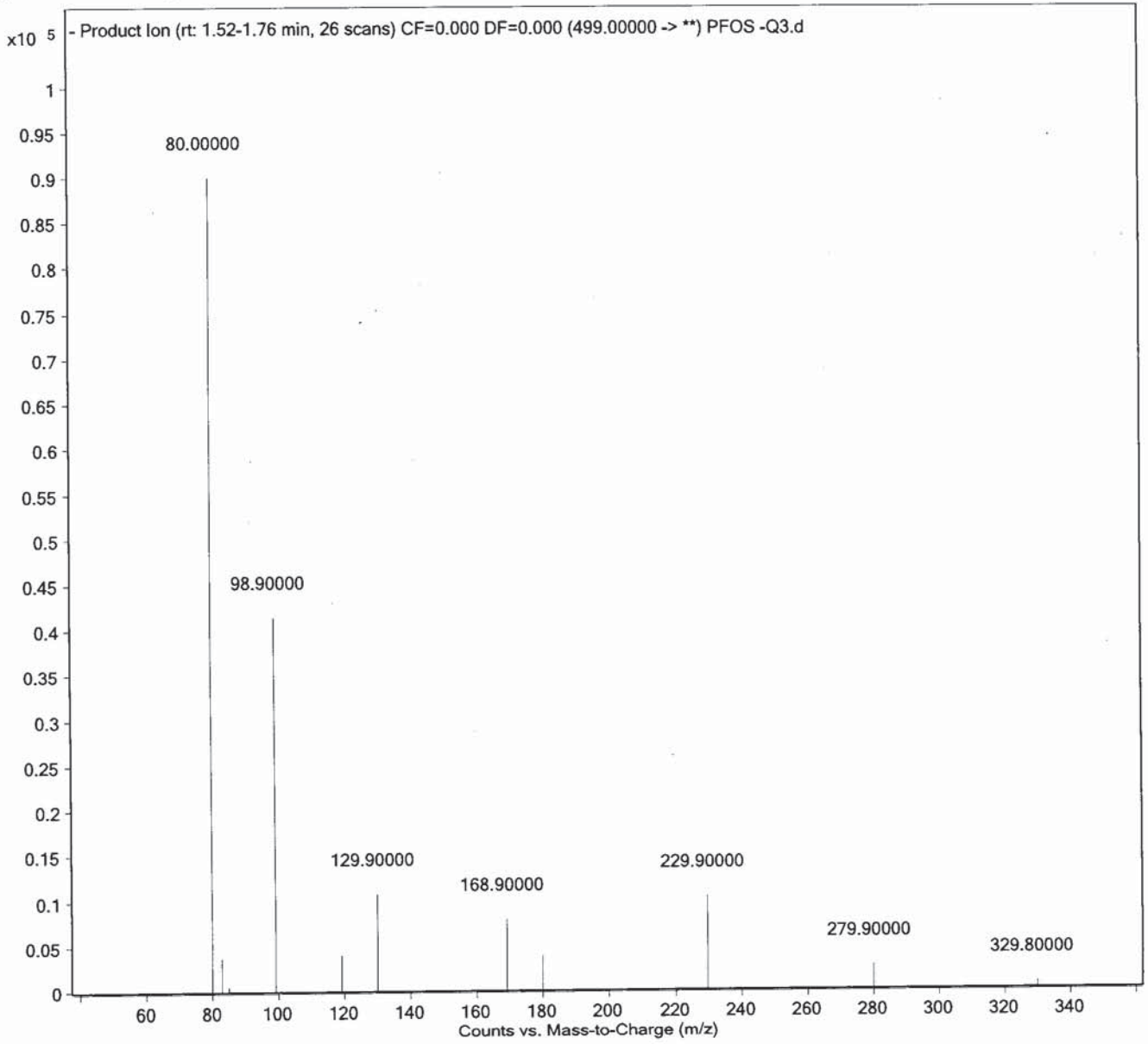
|---|---|---|---|---|---|
| **Sample Name** | PFOS -Q3 | **Position** | P1-A9 | **Instrument Name** | LCMS04 |
| **User Name** | M_G | **Inj Vol** | 10 | **InjPosition** | |
| **Sample Type** | Sample | **IRM Calibration Status** | Not Applicable | **Data Filename** | PFOS -Q3.d |
| **CQ Method** | PFC_MassVerification-PFOS-Q3.m | **Comment** | | **Acquired Time** | 2017/07/10 7:38:51 PM |




Maxxam Analytics

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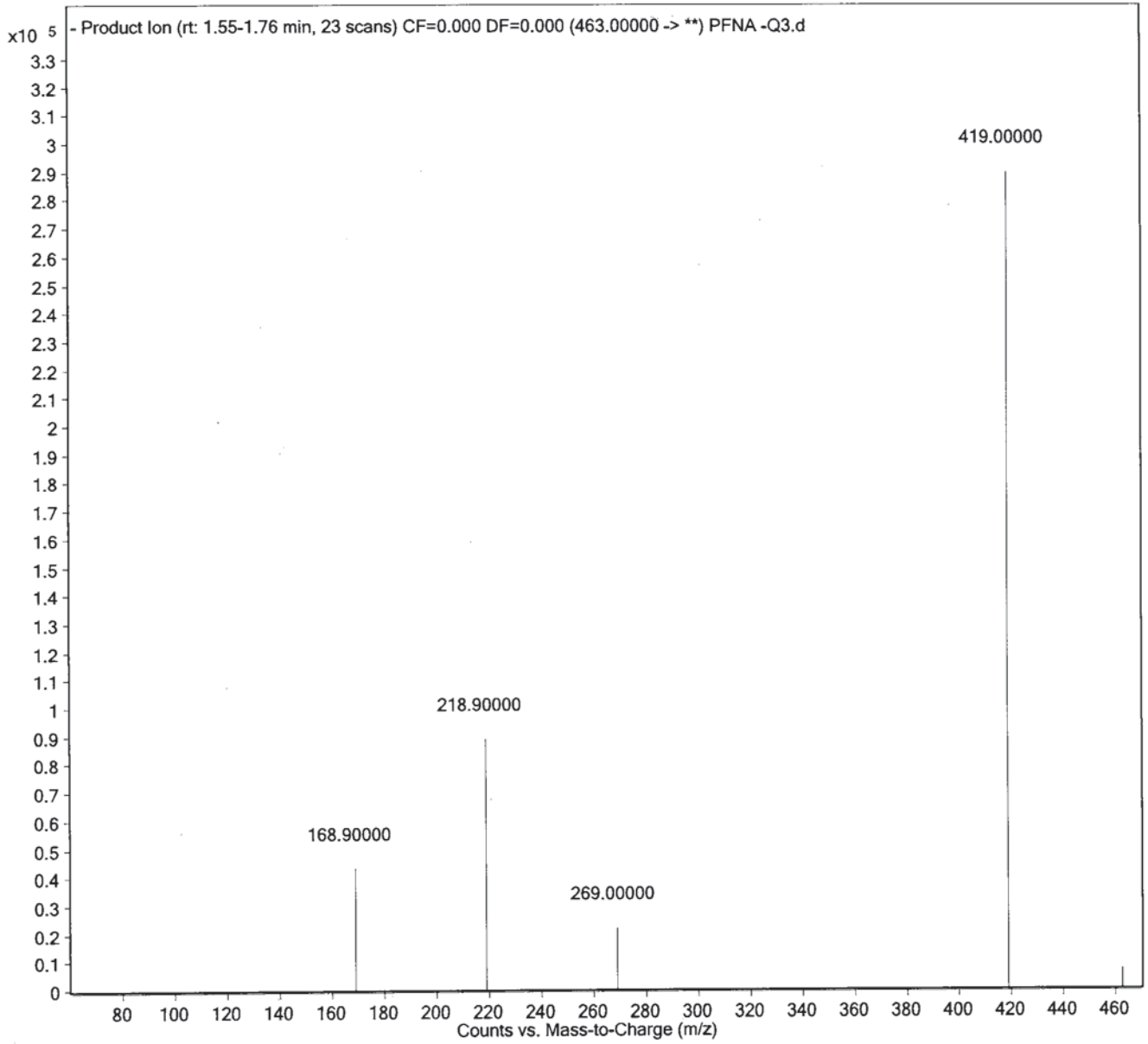
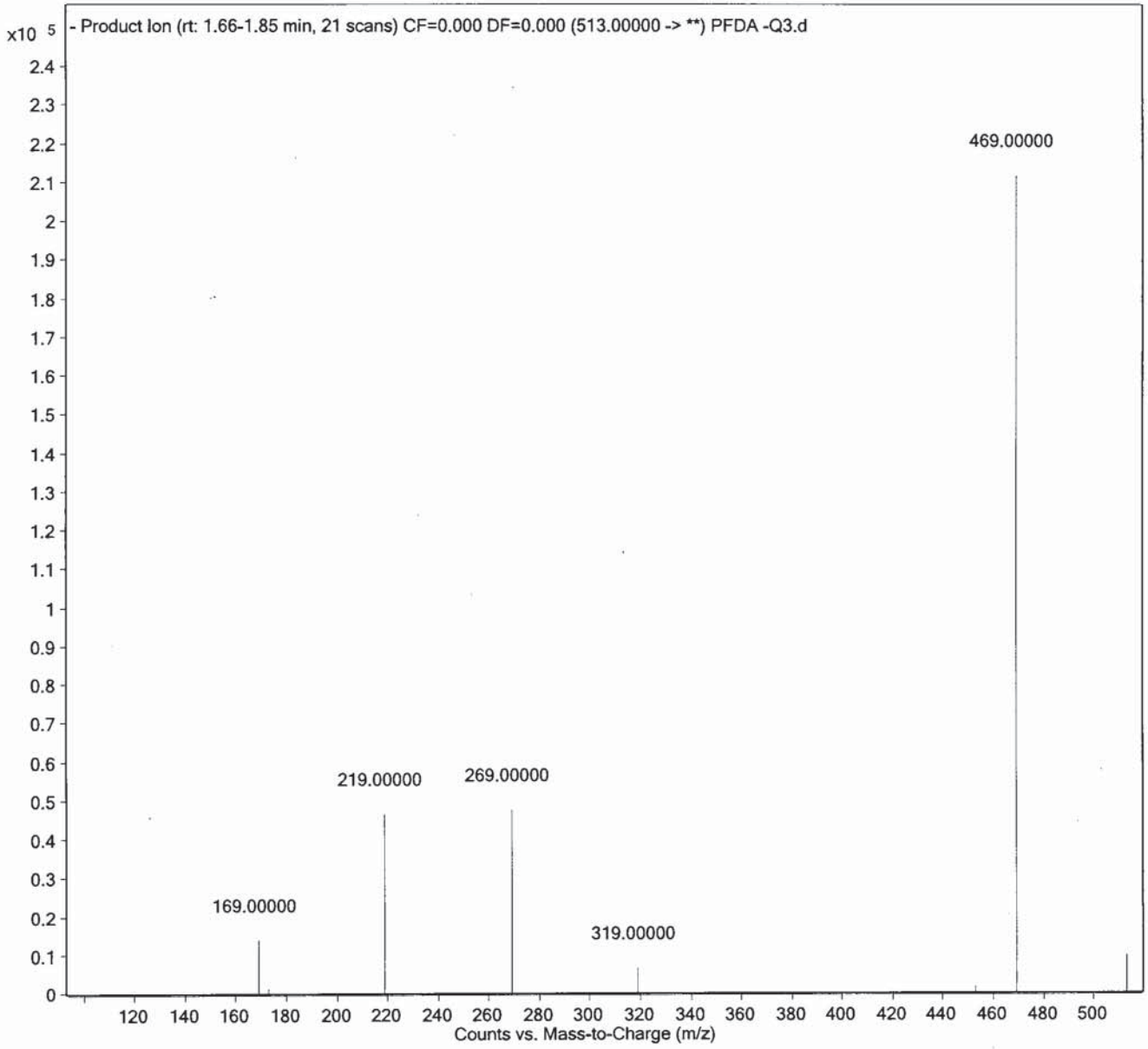
|---|---|---|---|---|---|
| **Sample Name** | PFNA -Q3 | **Position** | P1-B1 | **Instrument Name** | LCMS04 |
| **User Name** | M_G | **Inj Vol** | 10 | **InjPosition** | |
| **Sample Type** | Sample | **IRM Calibration Status** | Not Applicable | **Data Filename** | PFNA -Q3.d |
| **CQ Method** | PFC_MassVerification-PFNA-Q3.m | **Comment** | | **Acquired Time** | 2017/07/10 7:44:22 PM |

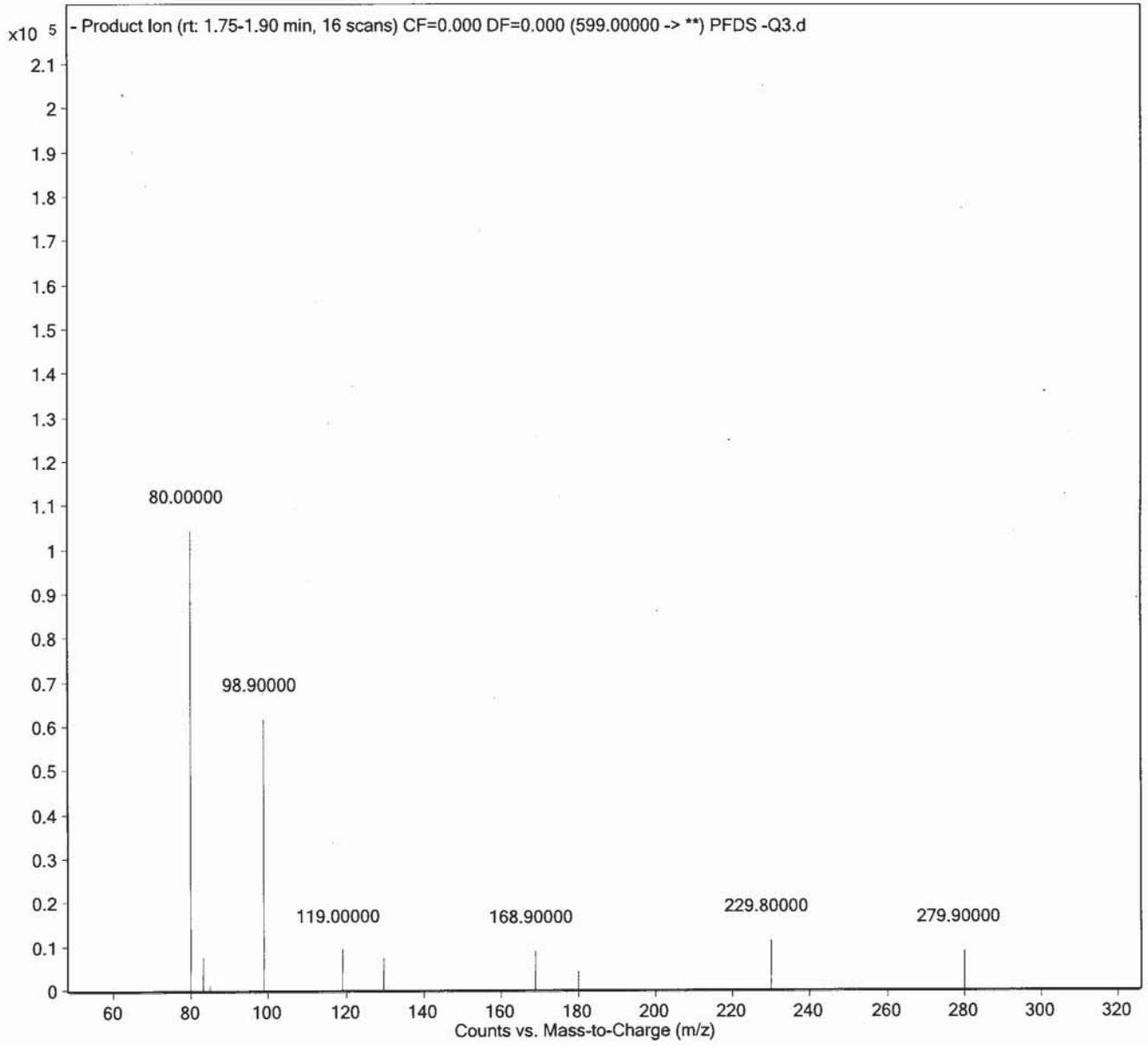


| | | | | | |
|---|---|---|---|---|---|
| **Sample Name** | PFDA -Q3 | **Position** | P1-B2 | **Instrument Name** | LCMS04 |
| **User Name** | M_G | **Inj Vol** | 10 | **InjPosition** | |
| **Sample Type** | Sample | **IRM Calibration Status** | Not Applicable | **Data Filename** | PFDA -Q3.d |
| **ACQ Method** | PFC_MassVerification-PFDA-Q3.m | **Comment** | | **Acquired Time** | 2017/07/10 7:49:52 PM |



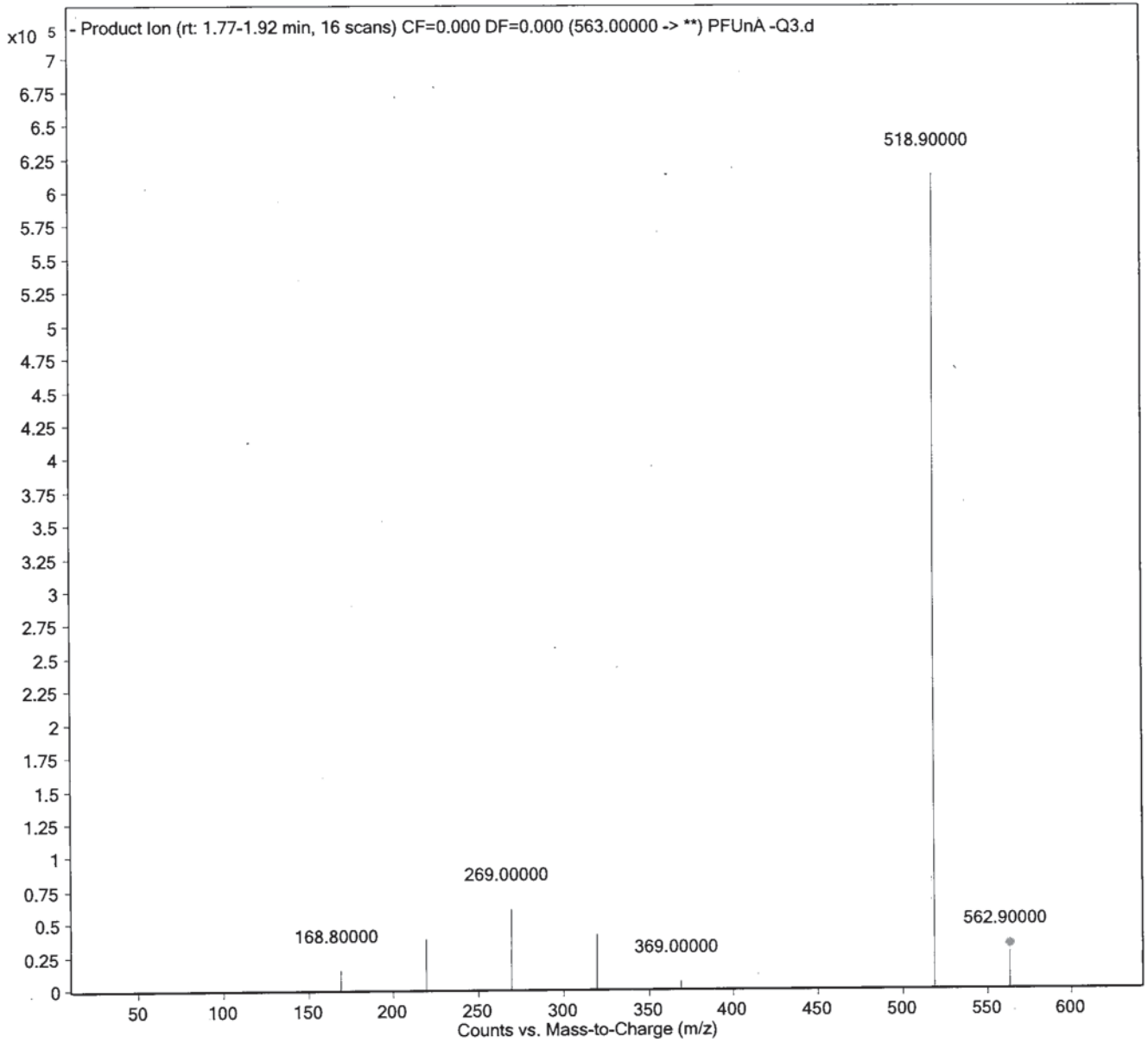

Jaxam Analytics

| | | | | | |
|---|---|---|---|---|---|
| **Sample Name** | PFDS -Q3 | **Position** | P1-B3 | **Instrument Name** | LCMS04 |
| **User Name** | M_G | **Inj Vol** | 10 | **InjPosition** | |
| **Sample Type** | Sample | **IRM Calibration Status** | Not Applicable | **Data Filename** | PFDS -Q3.d |
| **ACQ Method** | PFC_MassVerification-PFDS-Q3.m | **Comment** | | **Acquired Time** | 2017/07/10 7:55:22 PM |




Alaskan Analytics

| | | | | | |
|---|---|---|---|---|---|
| **Sample Name** | PFUnA -Q3 | **Position** | P1-B4 | **Instrument Name** | LCMS04 |
| **User Name** | M_G | **Inj Vol** | 10 | **InjPosition** | |
| **Sample Type** | Sample | **IRM Calibration Status** | Not Applicable | **Data Filename** | PFUnA -Q3.d |
| **ACQ Method** | PFC_MassVerification-PFUnA-Q3.m | **Comment** | | **Acquired Time** | 2017/07/10 8:00:52 PM |




Maxxam Analytics

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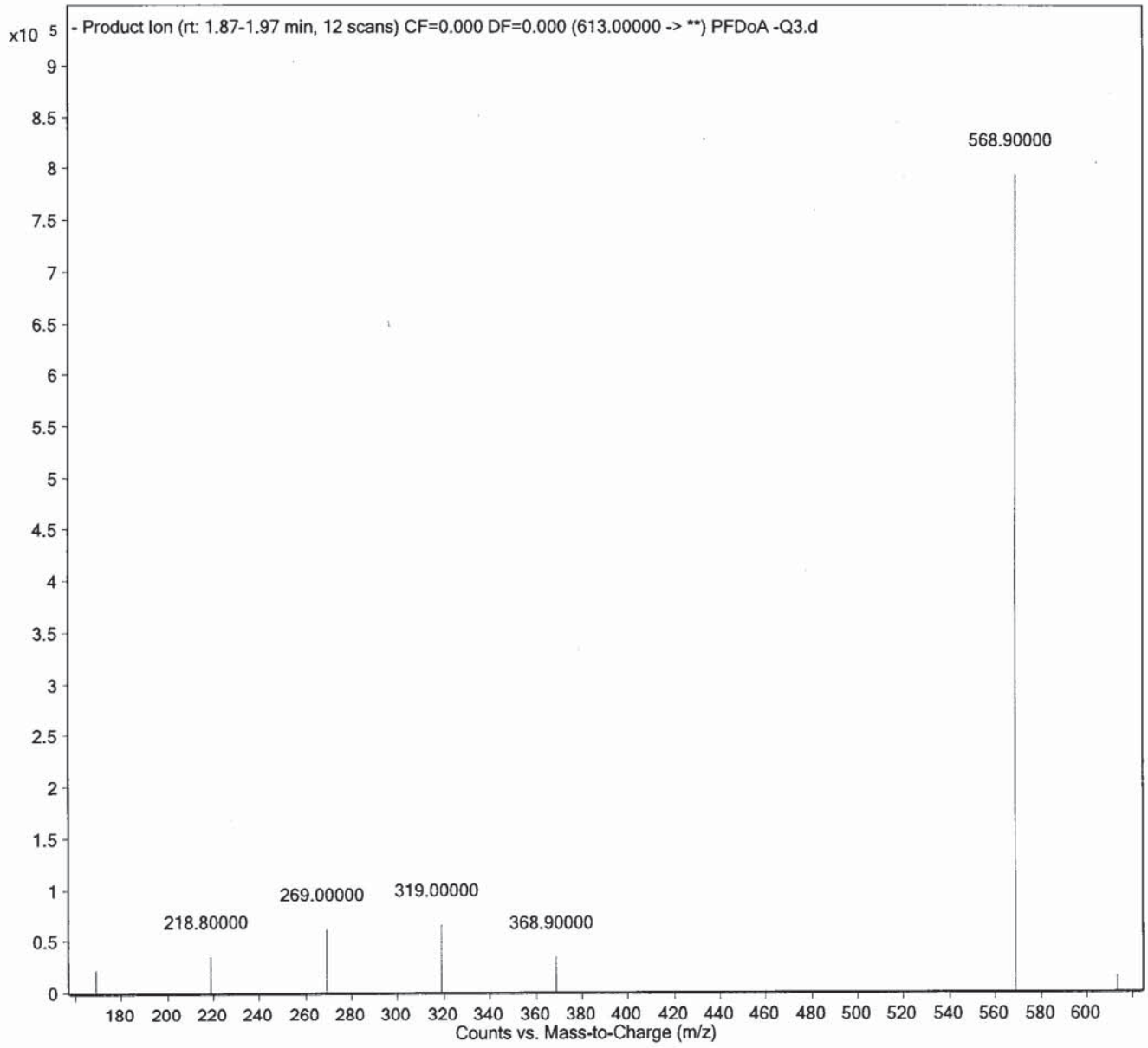
|---|---|---|---|---|---|
| **Sample Name** | PFDoA -Q3 | **Position** | P1-B5 | **Instrument Name** | LCMS04 |
| **User Name** | M_G | **Inj Vol** | 10 | **InjPosition** | |
| **Sample Type** | Sample | **IRM Calibration Status** | Not Applicable | **Data Filename** | PFDoA -Q3.d |
| **ACQ Method** | PFC_MassVerification-PFDoA-Q3.m | **Comment** | | **Acquired Time** | 2017/07/10 8:06:23 PM |




Eurofins Eaton Analytics

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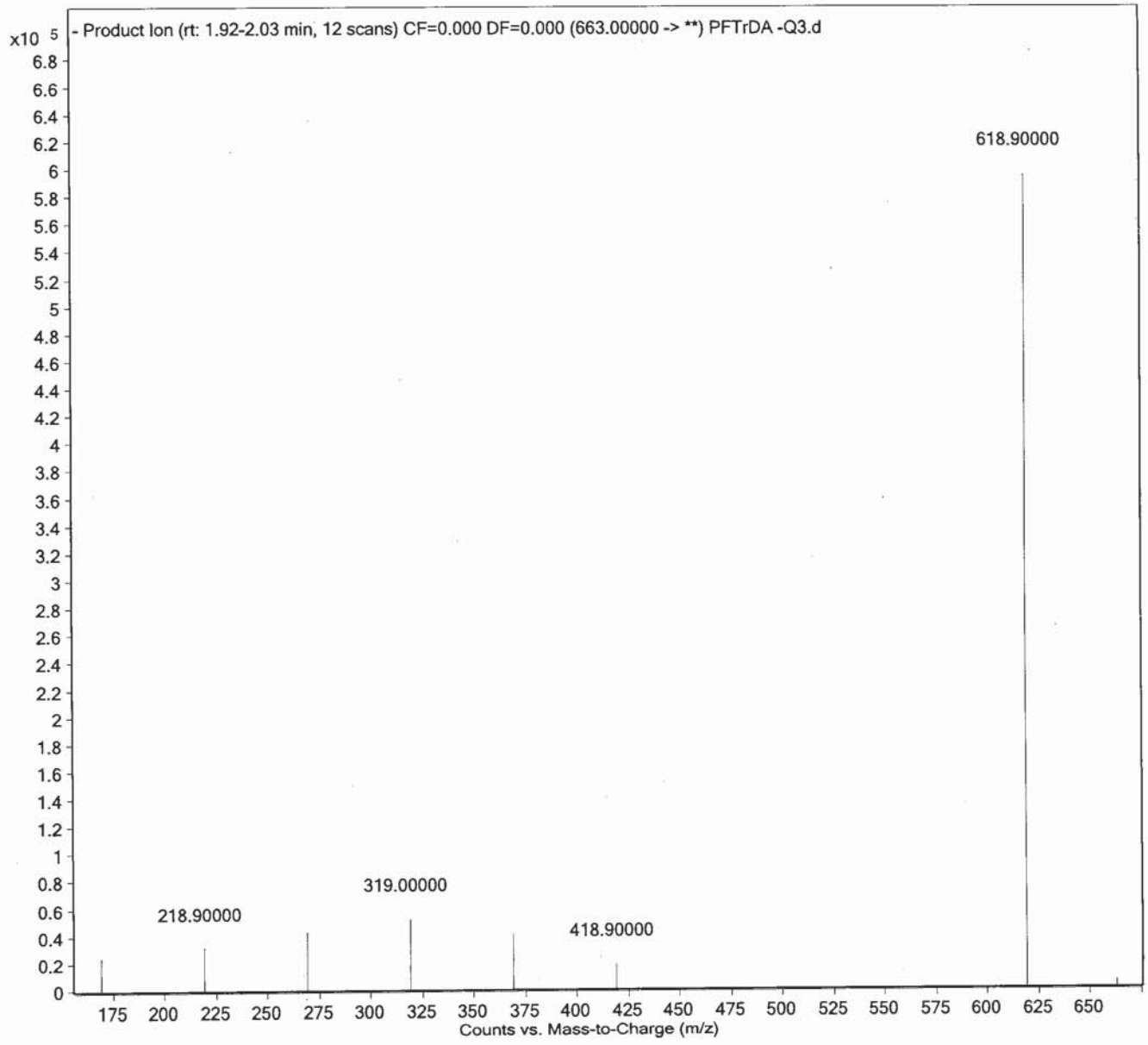
|---|---|---|---|---|---|
| **Sample Name** | PFTrDA -Q3 | **Position** | P1-B6 | **Instrument Name** | LCMS04 |
| **User Name** | M_G | **Inj Vol** | 10 | **InjPosition** | |
| **Sample Type** | Sample | **IRM Calibration Status** | Not Applicable | **Data Filename** | PFTrDA -Q3.d |
| **ACQ Method** | PFC_MassVerification-PFTrDA-Q3.m | **Comment** | | **Acquired Time** | 2017/07/10 8:11:53 PM |




Maxxam Analytics

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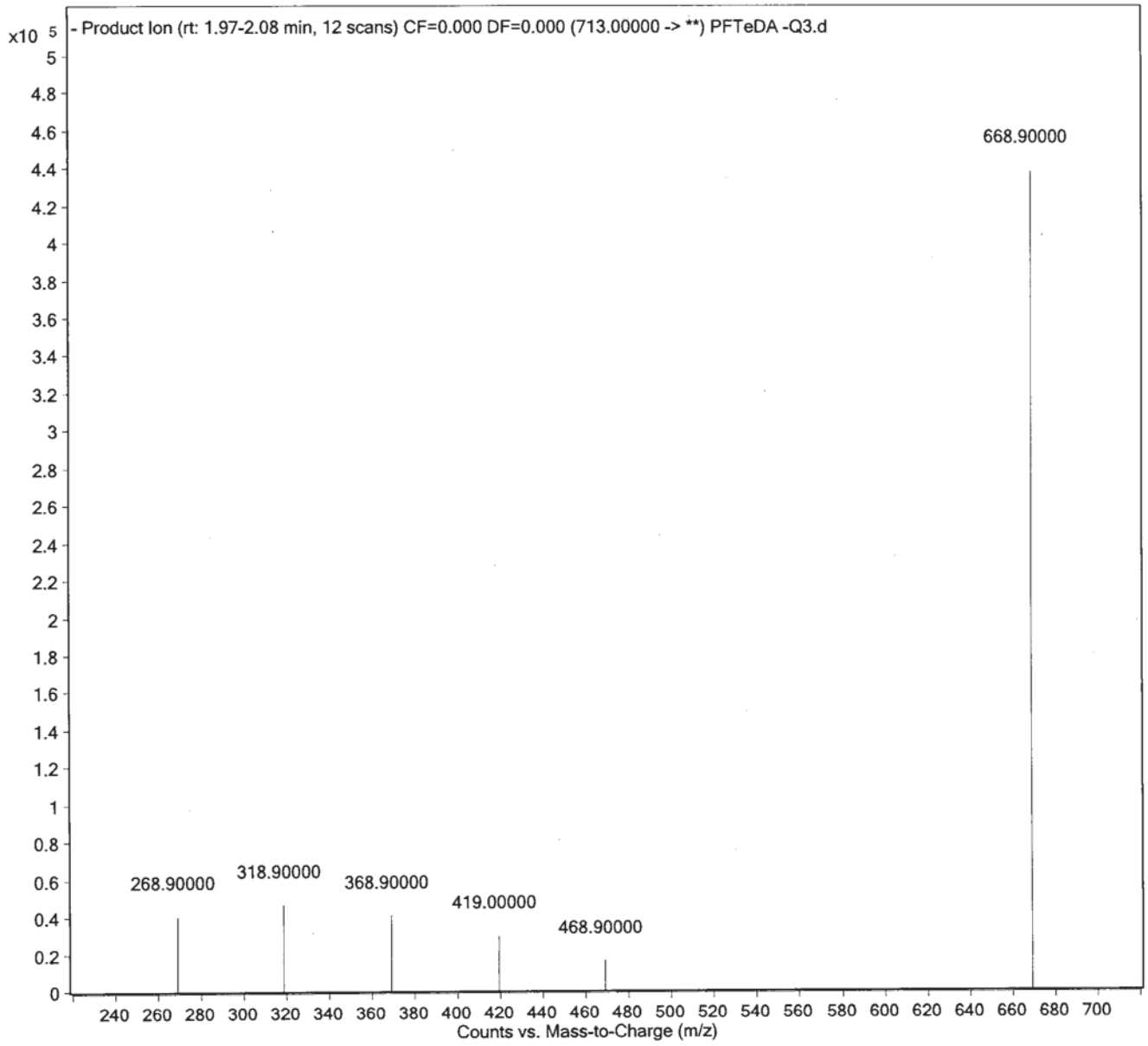
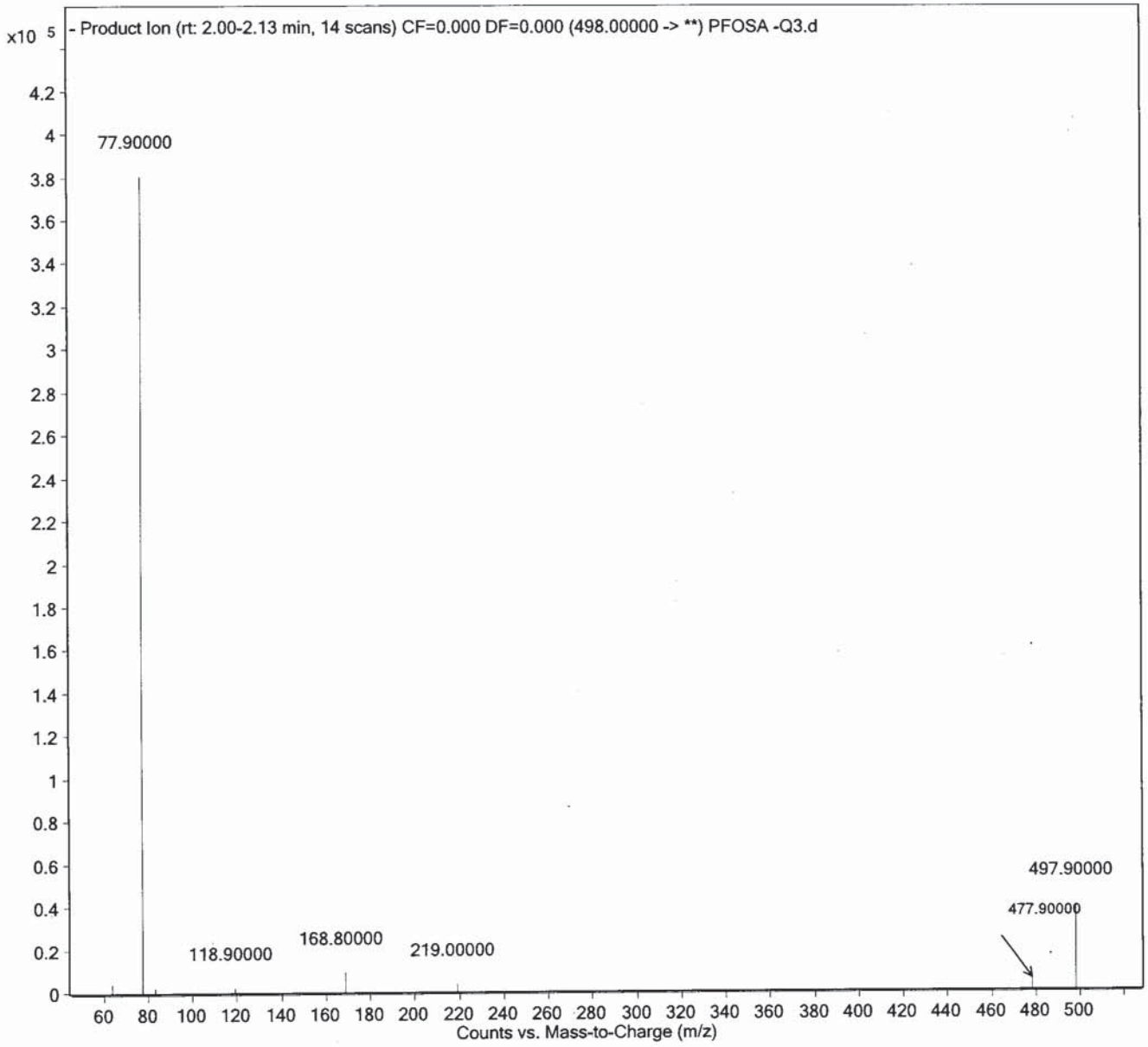
|---|---|---|---|---|---|
| **Sample Name** | PFTeDA -Q3 | **Position** | P1-B7 | **Instrument Name** | LCMS04 |
| **User Name** | M_G | **Inj Vol** | 10 | **InjPosition** | |
| **Sample Type** | Sample | **IRM Calibration Status** | Not Applicable | **Data Filename** | PFTeDA -Q3.d |
| **ACQ Method** | PFC_MassVerification-PFTeDA-Q3.m | **Comment** | | **Acquired Time** | 2017/07/10 8:17:23 PM |



| | | | | | |
|---|---|---|---|---|---|
| **Sample Name** | PFOSA -Q3 | **Position** | P1-B8 | **Instrument Name** | LCMS04 |
| **User Name** | M_G | **Inj Vol** | 10 | **InjPosition** | |
| **Sample Type** | Sample | **IRM Calibration Status** | Not Applicable | **Data Filename** | PFOSA -Q3.d |
| **CQ Method** | PFC_MassVerification-PFOSA-Q3.m | **Comment** | | **Acquired Time** | 2017/07/10 8:22:55 PM |




Maxxam Analytics

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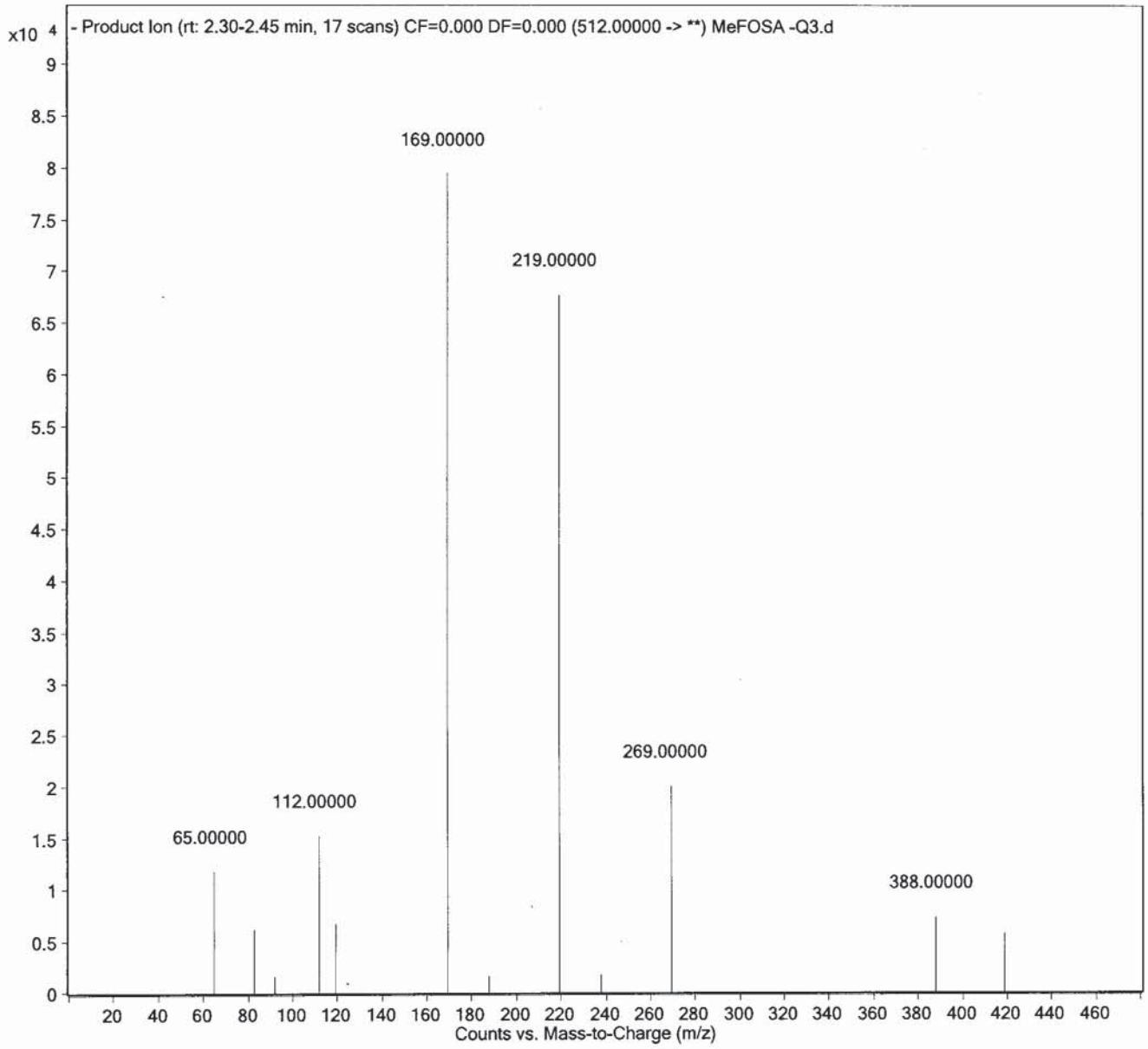
|---|---|---|---|---|---|
| **Sample Name** | MeFOSA -Q3 | **Position** | P1-B9 | **Instrument Name** | LCMS04 |
| **User Name** | M_G | **Inj Vol** | 10 | **InjPosition** | |
| **Sample Type** | Sample | **IRM Calibration Status** | Not Applicable | **Data Filename** | MeFOSA -Q3.d |
| **ACQ Method** | PFC_MassVerification-MeFOSA-Q3.m | **Comment** | | **Acquired Time** | 2017/07/10 8:28:25 PM |




Maxxam Analytics

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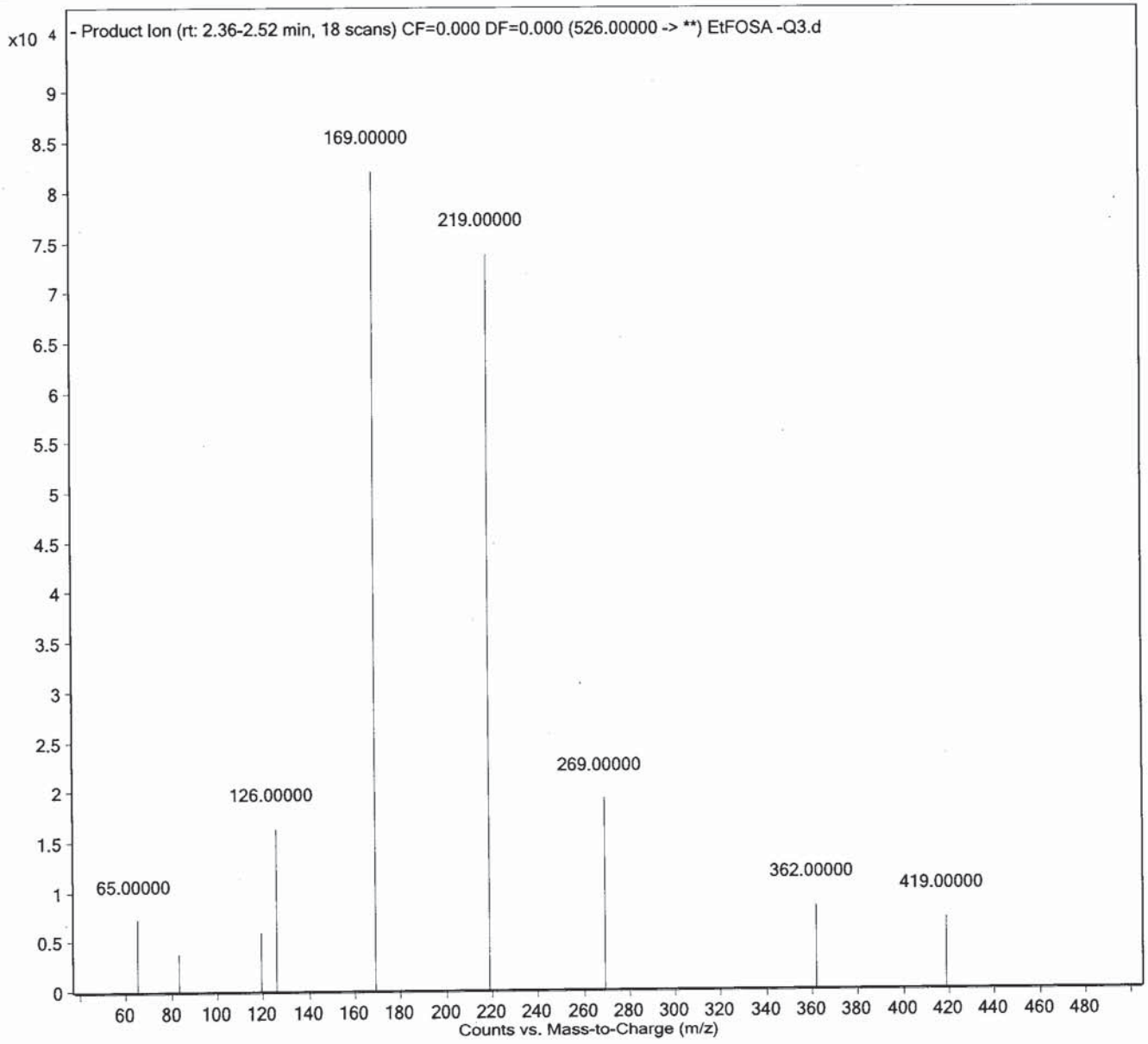
|---|---|---|---|---|---|
| **Sample Name** | EtFOSA -Q3 | **Position** | P1-C1 | **Instrument Name** | LCMS04 |
| **User Name** | M_G | **Inj Vol** | 10 | **InjPosition** | |
| **Sample Type** | Sample | **IRM Calibration Status** | Not Applicable | **Data Filename** | EtFOSA -Q3.d |
| **CQ Method** | PFC_MassVerification-EtFOSA-Q3.m | **Comment** | | **Acquired Time** | 2017/07/10 8:33:57 PM |




Maxxam Analytics

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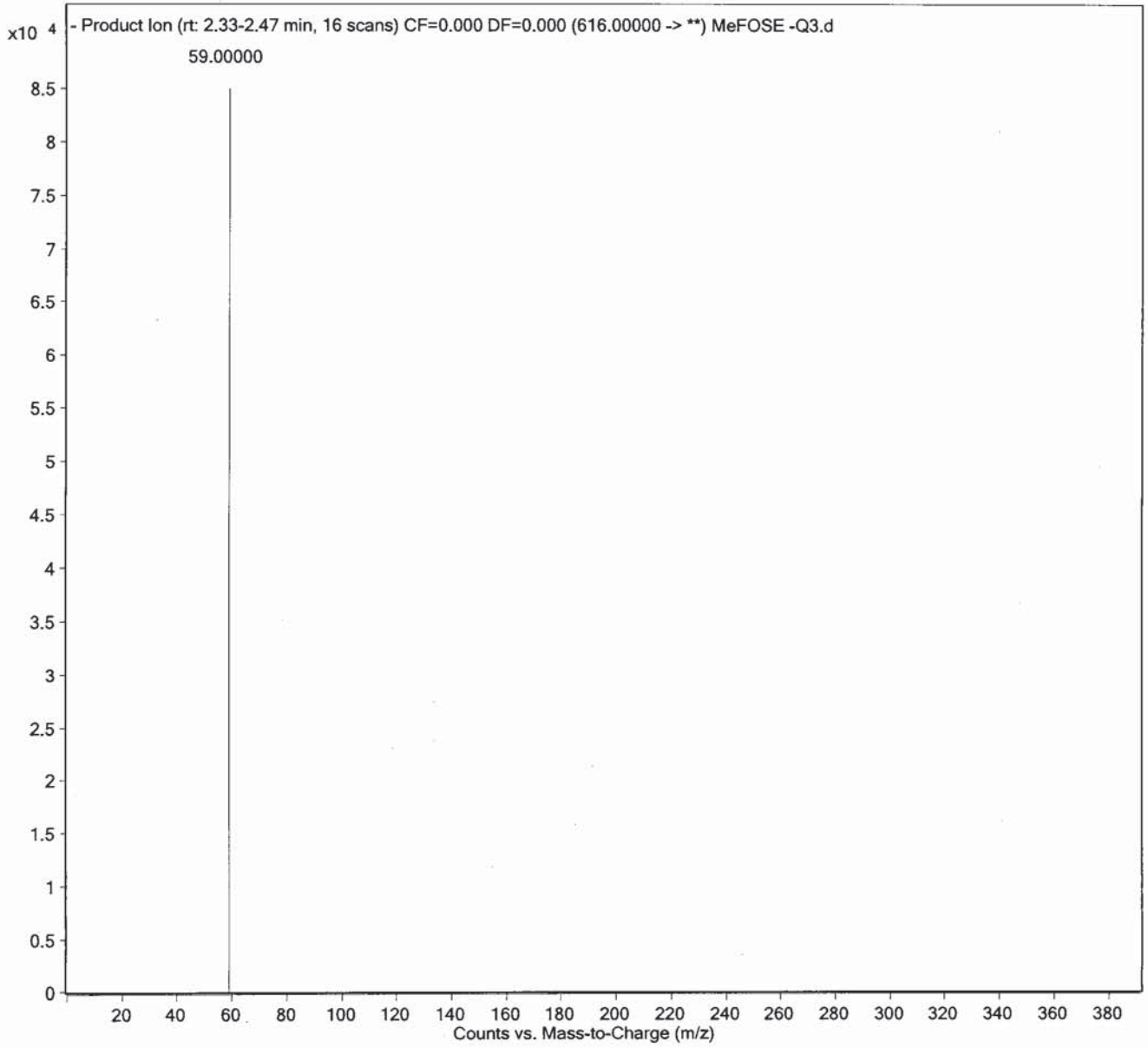
|---|---|---|---|---|---|
| **Sample Name** | MeFOSE -Q3 | **Position** | P1-C2 | **Instrument Name** | LCMS04 |
| **User Name** | M_G | **Inj Vol** | 10 | **InjPosition** | |
| **Sample Type** | Sample | **IRM Calibration Status** | Not Applicable | **Data Filename** | MeFOSE -Q3.d |
| **ACQ Method** | PFC_MassVerification-MeFOSE-Q3.m | **Comment** | | **Acquired Time** | 2017/07/10 8:39:26 PM |




Maxxam Analytics

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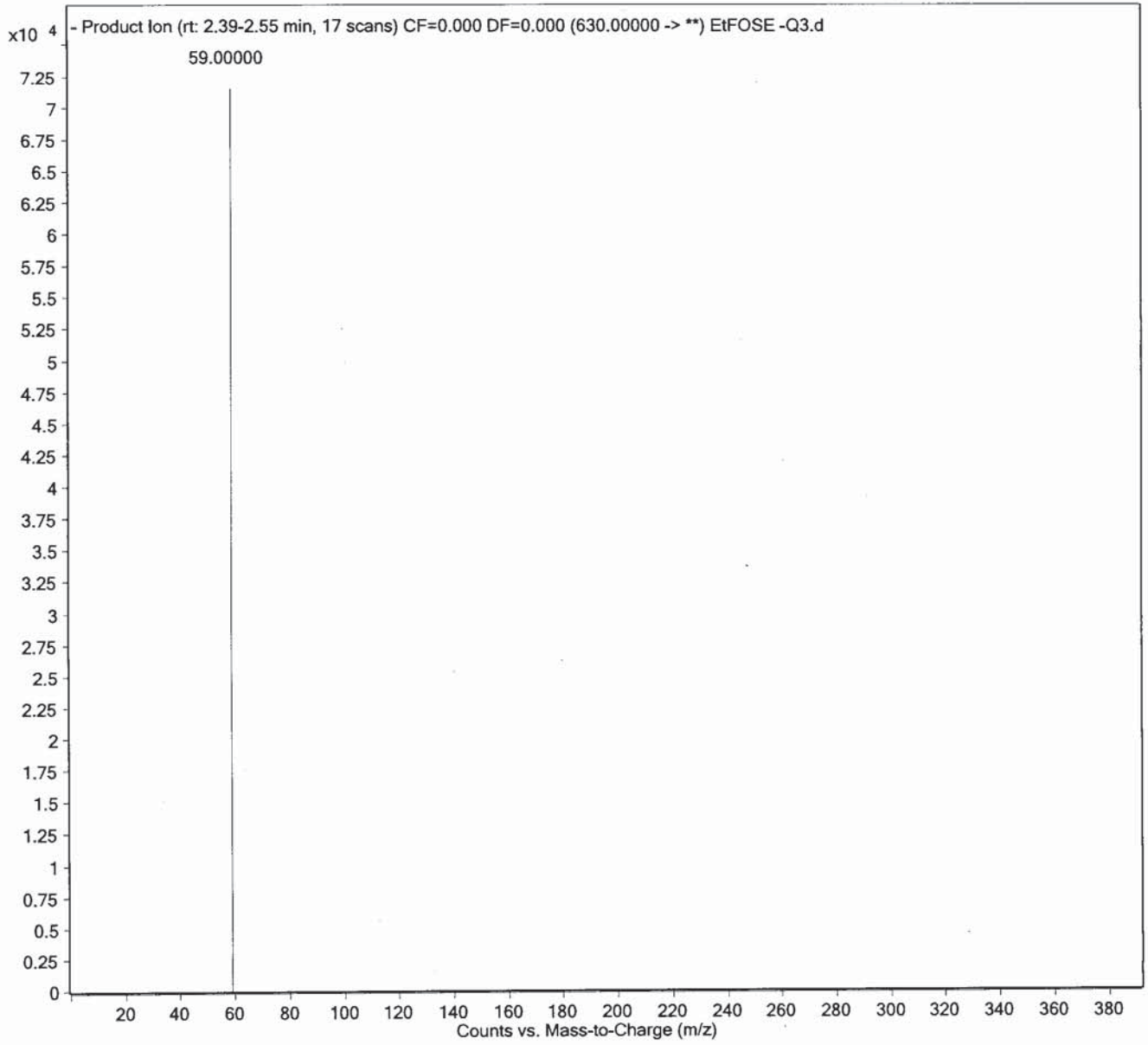
|---|---|---|---|---|---|
| **Sample Name** | EtFOSE -Q3 | **Position** | P1-C3 | **Instrument Name** | LCMS04 |
| **User Name** | M_G | **Inj Vol** | 10 | **InjPosition** | |
| **Sample Type** | Sample | **IRM Calibration Status** | Not Applicable | **Data Filename** | EtFOSE -Q3.d |
| **ACQ Method** | PFC_MassVerification-EtFOSE-Q3.m | **Comment** | | **Acquired Time** | 2017/07/10 8:44:57 PM |




SAIAM Analytics

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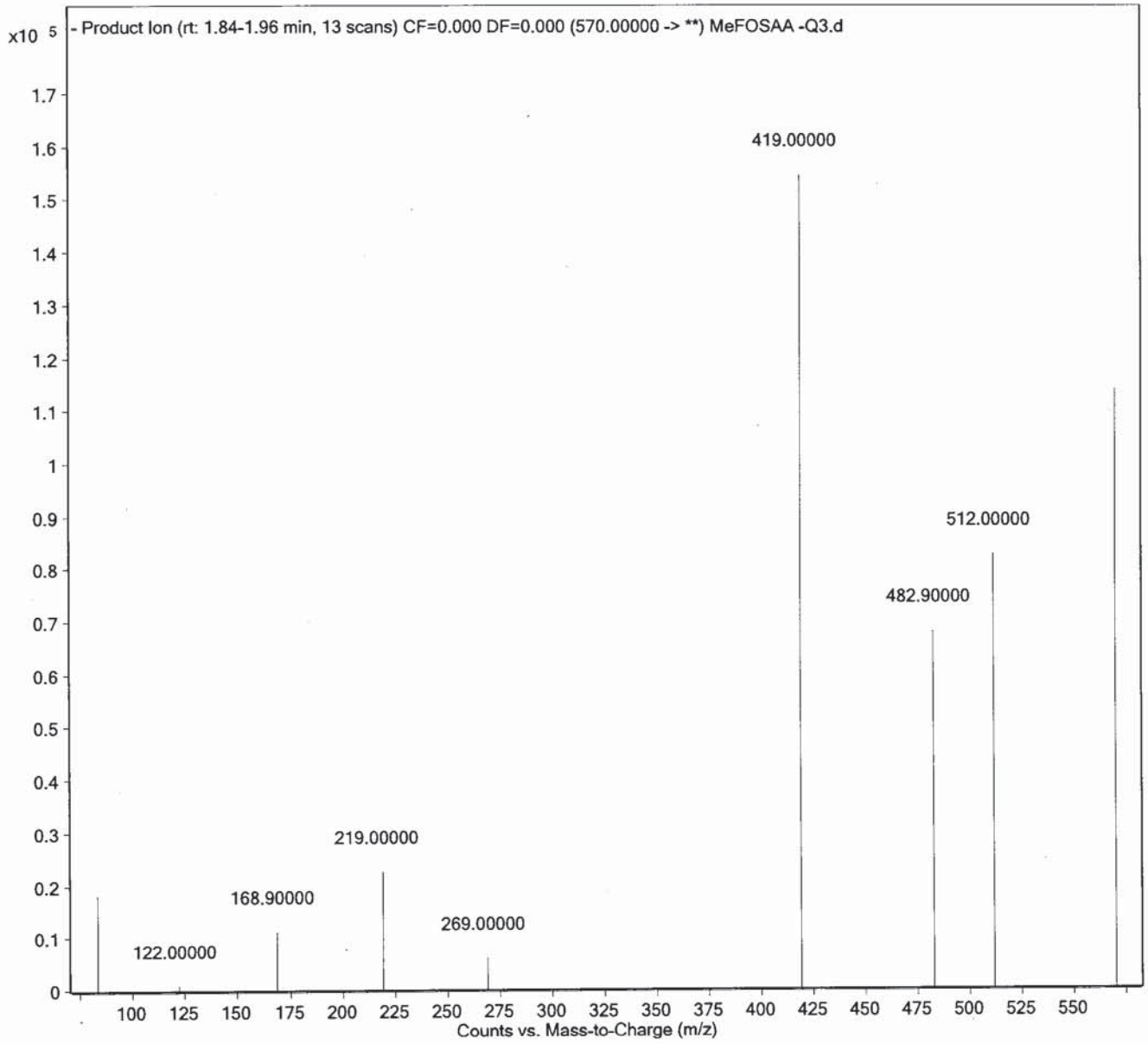
|---|---|---|---|---|---|
| **Sample Name** | MeFOSAA -Q3 | **Position** | P1-C4 | **Instrument Name** | LCMS04 |
| **User Name** | M_G | **Inj Vol** | 10 | **InjPosition** | |
| **Sample Type** | Sample | **IRM Calibration Status** | Not Applicable | **Data Filename** | MeFOSAA -Q3.d |
| **ACQ Method** | PFC_MassVerification-MeFOSAA-Q3.m | **Comment** | | **Acquired Time** | 2017/07/10 8:50:27 PM |




SaxAm Analytics

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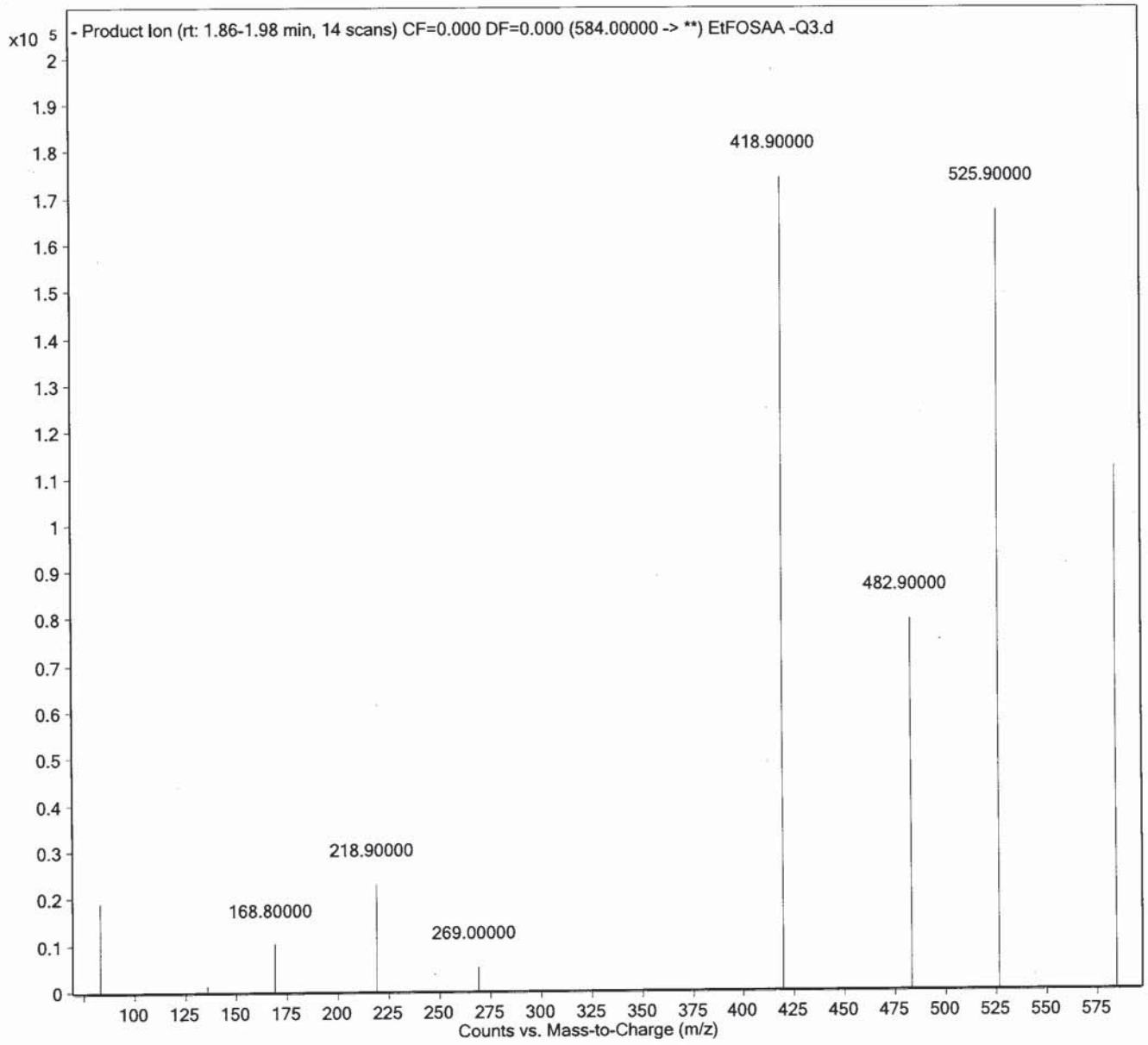
|---|---|---|---|---|---|
| **Sample Name** | EtFOSAA -Q3 | **Position** | P1-C5 | **Instrument Name** | LCMS04 |
| **User Name** | M_G | **Inj Vol** | 10 | **InjPosition** | |
| **Sample Type** | Sample | **IRM Calibration Status** | Not Applicable | **Data Filename** | EtFOSAA -Q3.d |
| **ACQ Method** | PFC_MassVerification-EtFOSAA-Q3.m | **Comment** | | **Acquired Time** | 2017/07/10 8:55:57 PM |




Maxxam Analytics

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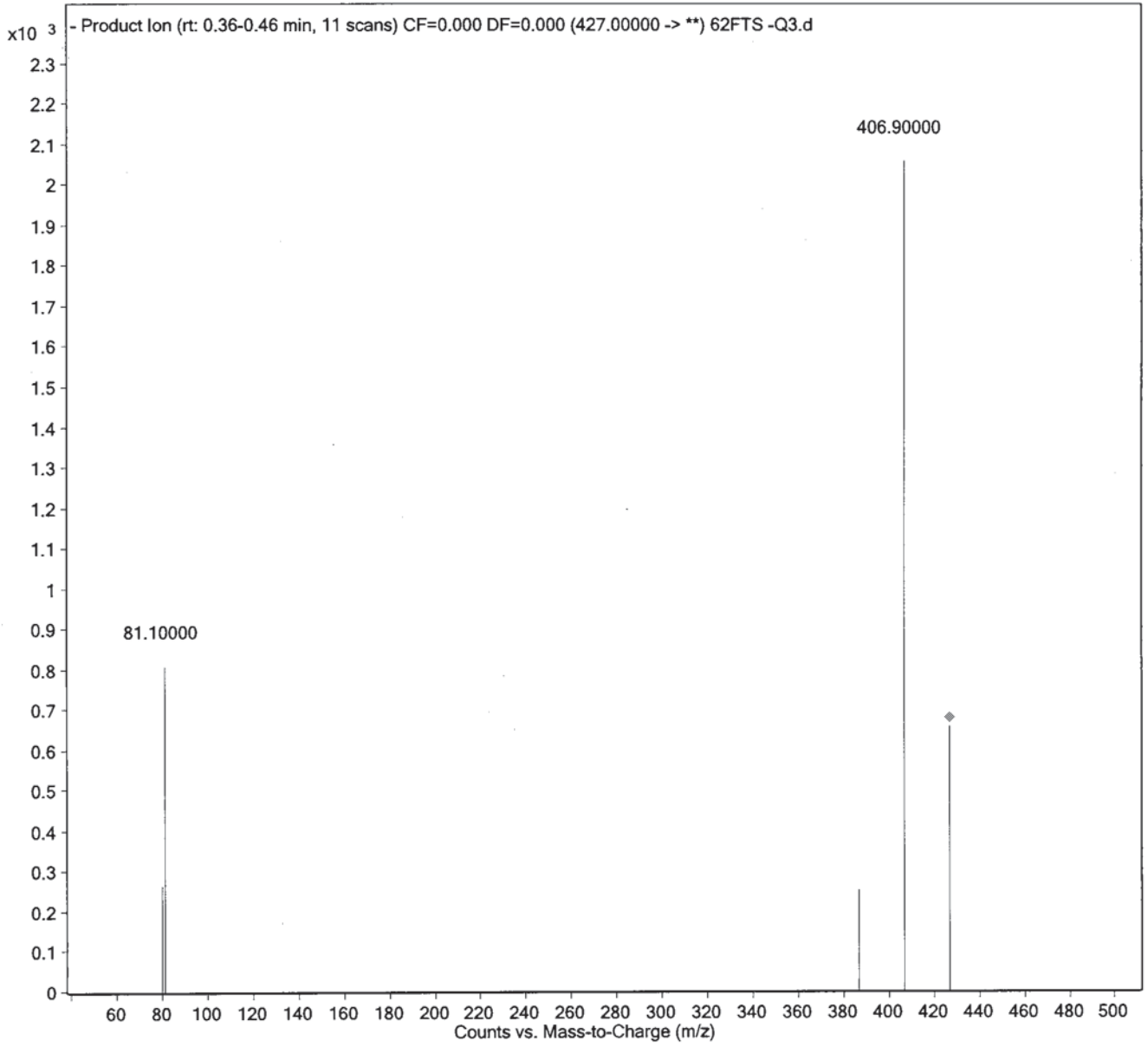
|---|---|---|---|---|---|
| **Sample Name** | 6:2FTS -Q3 | **Position** | P1-C6 | **Instrument Name** | LCMS04 |
| **User Name** | M_G | **Inj Vol** | 10 | **InjPosition** | |
| **Sample Type** | Sample | **IRM Calibration Status** | Not Applicable | **Data Filename** | 62FTS -Q3.d |
| **ACQ Method** | PFC_MassVerification-6-2FTS-Q3.m | **Comment** | | **Acquired Time** | 2017/07/10 9:01:27 PM |




SGS AXYS Analytics

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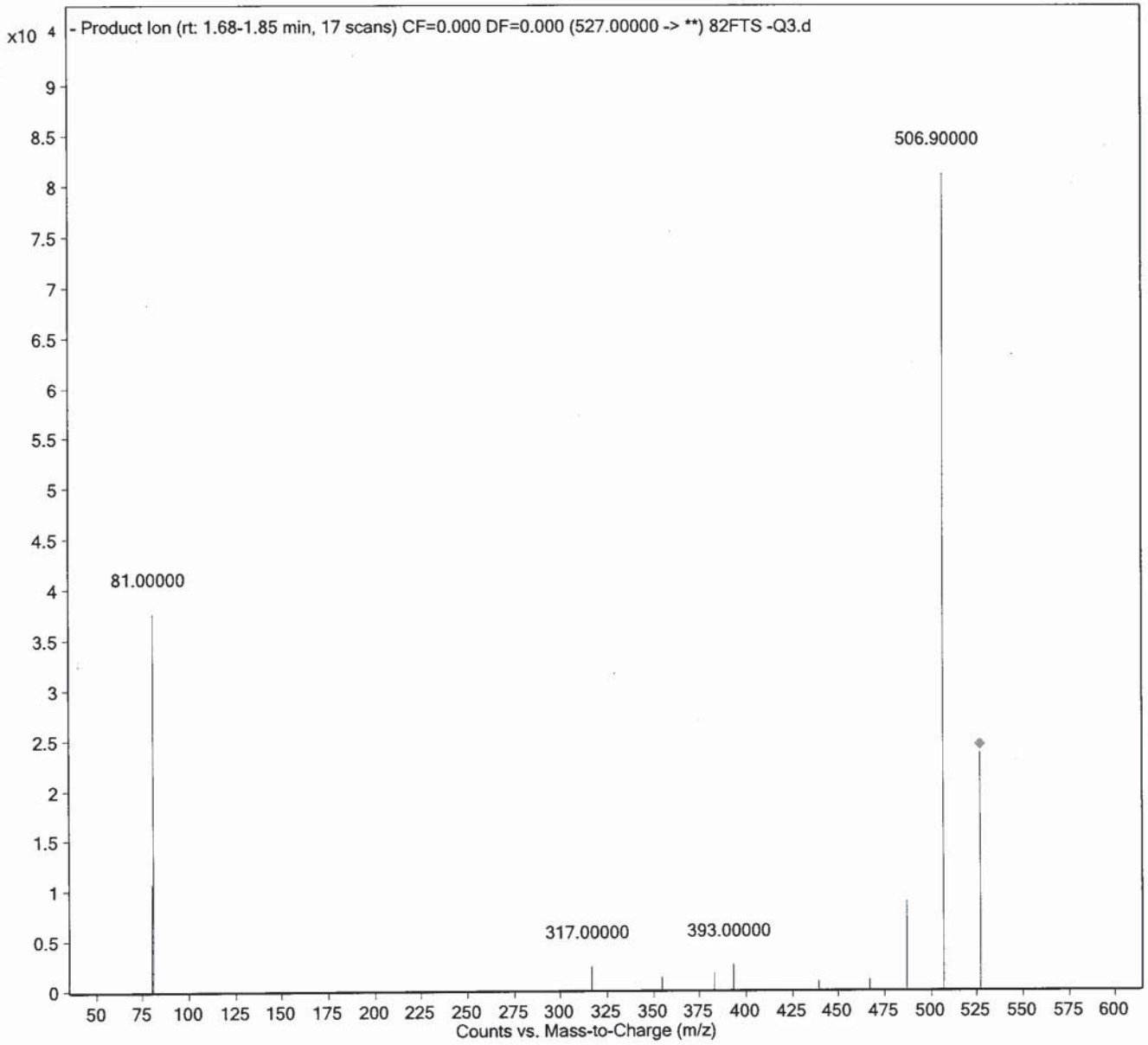
|---|---|---|---|---|---|
| **Sample Name** | 8:2FTS -Q3 | **Position** | P1-C7 | **Instrument Name** | LCMS04 |
| **User Name** | M_G | **Inj Vol** | 10 | **InjPosition** | |
| **Sample Type** | Sample | **IRM Calibration Status** | Not Applicable | **Data Filename** | 82FTS -Q3.d |
| **ACQ Method** | PFC_MassVerification-8-2FTS-Q3.m | **Comment** | | **Acquired Time** | 2017/07/10 9:06:57 PM |




Maxxam Analytics

# Worklist Report

Agilent Technologies

Maxxam Analytics

**Instrument Name:** LCMS04 **Worklist Path:** D:\MassHunter\Worklists\PFCs\PFAS_MASSVER_170710_Q3.wkl

**Operator Name:** M_G
**Run Type:** Standard Start
**Part of Method to Run:** Acquisition Only
**Execution of Acquisition-DA:** Synchronous
**Acquisition Method Path:** D:\MassHunter\Acquisition Method
**DA Method Path:** D:\MassHunter\methods
**Data File Path:** D:\MassHunter\data\Mass Verification\20170710_Q3
**Pre-Worklist Script:** ---
**Post-Worklist Script:** ---
**Acquisition Clean Up Script:** ---
**Overlapped Injection:** Yes
**Clear Sample Selection After Run:** Yes
**Wait Time for Ready(Min):** 10
**Threshold Disk Value(GB):** 10
**Comment:** ---

**Plate Barcode:**

| Plate | Barcode |
|---|---|
| P1 | |

**Worklist Table**

| | Sample Name | Sample Position | Method | Data File | Sample Type | Inj Vol (µl) | Sample Group |
|---|---|---|---|---|---|---|---|
| 1 | PFBA -Q3 | P1-A1 | PFC_MassVerification-PFBA-Q3.m | PFBA -Q3.d | Sample | As Method | PFAS-Q3 |
| 2 | PFBS -Q3 | P1-A2 | PFC_MassVerification-PFBS-Q3.m | PFBS -Q3.d | Sample | As Method | PFAS-Q3 |
| 3 | PFPeA -Q3 | P1-A3 | PFC_MassVerification-PFPeA-Q3.m | PFPeA -Q3.d | Sample | As Method | PFAS-Q3 |
| 4 | PFHxA -Q3 | P1-A4 | PFC_MassVerification-PFHxA-Q3.m | PFHxA -Q3.d | Sample | As Method | PFAS-Q3 |
| 5 | PFHxS -Q3 | P1-A5 | PFC_MassVerification-PFHxS-Q3.m | PFHxS -Q3.d | Sample | As Method | PFAS-Q3 |
| 6 | PFHpA-Q3 | P1-A6 | PFC_MassVerification-PFHpA-Q3.m | PFHpA-Q3.d | Sample | As Method | PFAS-Q3 |
| 7 | PFHpS-Q3 | P1-A7 | PFC_MassVerification-PFHpS-Q3.m | PFHpS-Q3.d | Sample | As Method | PFAS-Q3 |
| 8 | PFOA -Q3 | P1-A8 | PFC_MassVerification-PFOA-Q3.m | PFOA -Q3.d | Sample | As Method | PFAS-Q3 |
| 9 | PFOS -Q3 | P1-A9 | PFC_MassVerification-PFOS-Q3.m | PFOS -Q3.d | Sample | As Method | PFAS-Q3 |

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| | Sample Name | Sample Position | Method | Data File | Sample Type | Inj Vol (µl) | Sample Group |
|---|---|---|---|---|---|---|---|
| 10 | PFNA -Q3 | P1-B1 | PFC_MassVerification-PFNA-Q3.m | PFNA -Q3.d | Sample | As Method | PFAS-Q3 |
| 11 | PFDA -Q3 | P1-B2 | PFC_MassVerification-PFDA-Q3.m | PFDA -Q3.d | Sample | As Method | PFAS-Q3 |
| 12 | PFDS -Q3 | P1-B3 | PFC_MassVerification-PFDS-Q3.m | PFDS -Q3.d | Sample | As Method | PFAS-Q3 |
| 13 | PFUnA -Q3 | P1-B4 | PFC_MassVerification-PFUnA-Q3.m | PFUnA -Q3.d | Sample | As Method | PFAS-Q3 |
| 14 | PFDoA -Q3 | P1-B5 | PFC_MassVerification-PFDoA-Q3.m | PFDoA -Q3.d | Sample | As Method | PFAS-Q3 |
| 15 | PFTrDA -Q3 | P1-B6 | PFC_MassVerification-PFTrDA-Q3.m | PFTrDA -Q3.d | Sample | As Method | PFAS-Q3 |
| 16 | PFTeDA -Q3 | P1-B7 | PFC_MassVerification-PFTeDA-Q3.m | PFTeDA -Q3.d | Sample | As Method | PFAS-Q3 |
| 17 | PFOSA -Q3 | P1-B8 | PFC_MassVerification-PFOSA-Q3.m | PFOSA -Q3.d | Sample | As Method | PFAS-Q3 |
| 18 | MeFOSA -Q3 | P1-B9 | PFC_MassVerification-MeFOSA-Q3.m | MeFOSA -Q3.d | Sample | As Method | PFAS-Q3 |
| 19 | EtFOSA -Q3 | P1-C1 | PFC_MassVerification-EtFOSA-Q3.m | EtFOSA -Q3.d | Sample | As Method | PFAS-Q3 |
| 20 | MeFOSE -Q3 | P1-C2 | PFC_MassVerification-MeFOSE-Q3.m | MeFOSE -Q3.d | Sample | As Method | PFAS-Q3 |
| 21 | EtFOSE -Q3 | P1-C3 | PFC_MassVerification-EtFOSE-Q3.m | EtFOSE -Q3.d | Sample | As Method | PFAS-Q3 |
| 22 | MeFOSAA -Q3 | P1-C4 | PFC_MassVerification-MeFOSAA-Q3.m | MeFOSAA -Q3.d | Sample | As Method | PFAS-Q3 |
| 23 | EtFOSAA -Q3 | P1-C5 | PFC_MassVerification-EtFOSAA-Q3.m | EtFOSAA -Q3.d | Sample | As Method | PFAS-Q3 |
| 24 | 6:2FTS -Q3 | P1-C6 | PFC_MassVerification-6-2FTS-Q3.m | 62FTS -Q3.d | Sample | As Method | PFAS-Q3 |
| 25 | 8:2FTS -Q3 | P1-C7 | PFC_MassVerification-8-2FTS-Q3.m | 82FTS -Q3.d | Sample | As Method | PFAS-Q3 |

Maxxam Analytics

# Extracted and Injection Internal Standard Precursor Ion Verification

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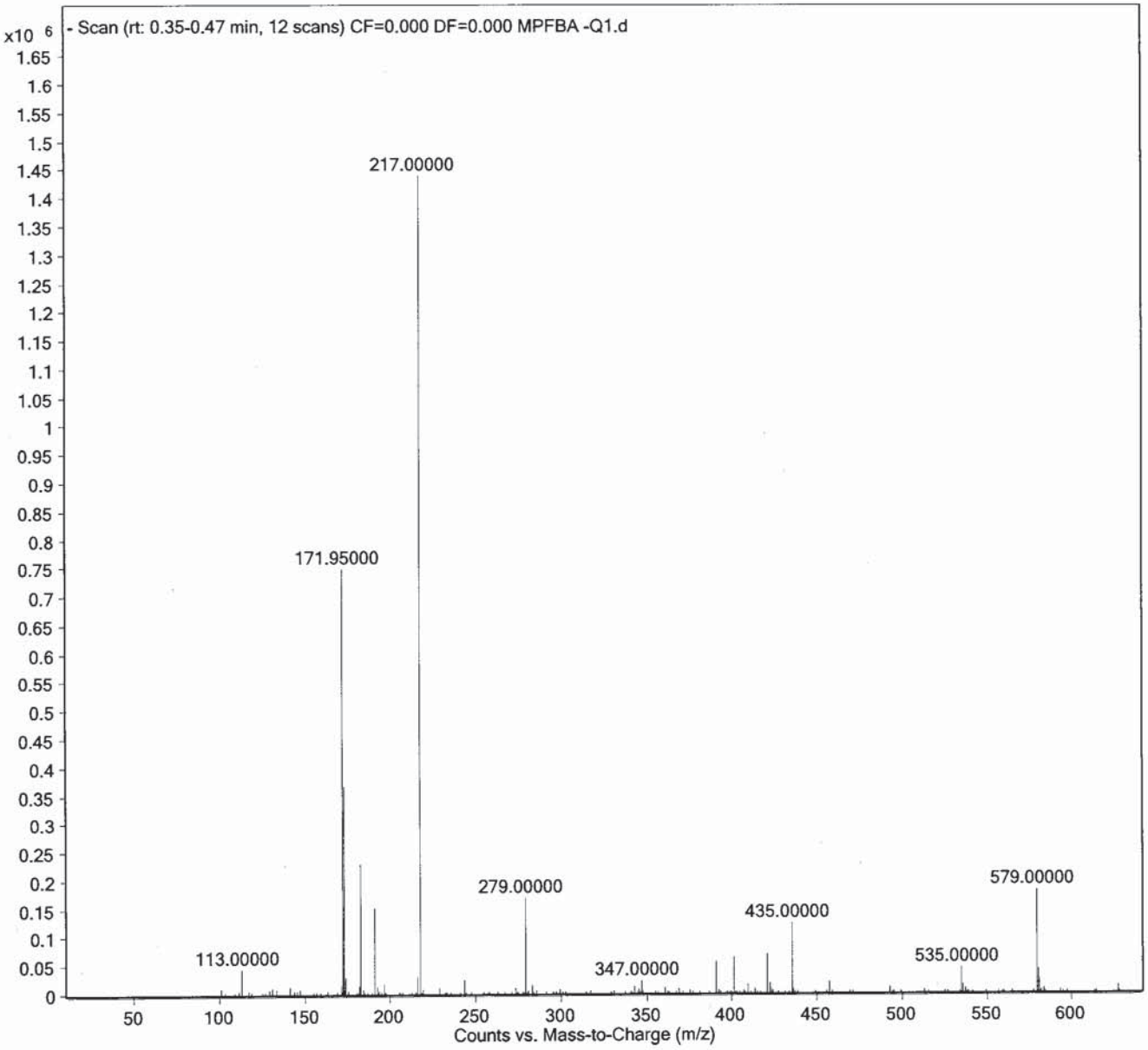
|---|---|---|---|---|---|
| **Sample Name** | MPFBA | **Position** | P2-A1 | **Instrument Name** | LCMS04 |
| **User Name** | AD | **Inj Vol** | 10 | **InjPosition** | |
| **Sample Type** | Sample | **IRM Calibration Status** | Not Applicable | **Data Filename** | MPFBA -Q1.d |
| **ACQ Method** | PFC_MassVerification-Q1.m | **Comment** | | **Acquired Time** | 2017/07/11 1:00:45 PM |




SanKam Analytics

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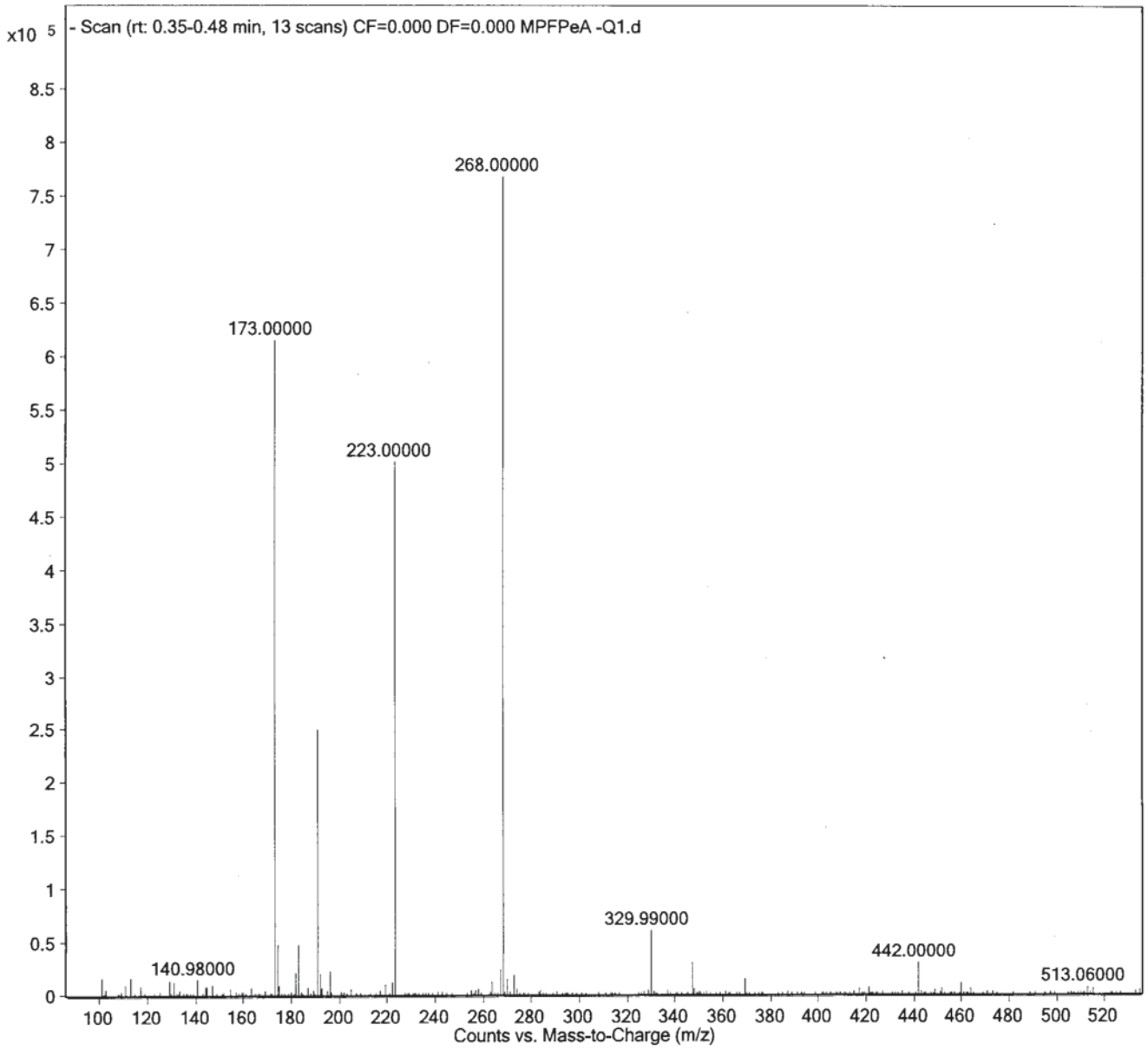
|---|---|---|---|---|---|
| **Sample Name** | MPFPeA | **Position** | P2-A2 | **Instrument Name** | LCMS04 |
| **User Name** | AD | **Inj Vol** | 10 | **InjPosition** | |
| **Sample Type** | Sample | **IRM Calibration Status** | Not Applicable | **Data Filename** | MPFPeA -Q1.d |
| **Acq Method** | PFC_MassVerification-Q1.m | **Comment** | | **Acquired Time** | 2017/07/11 1:06:18 PM |

Alpha Analytics



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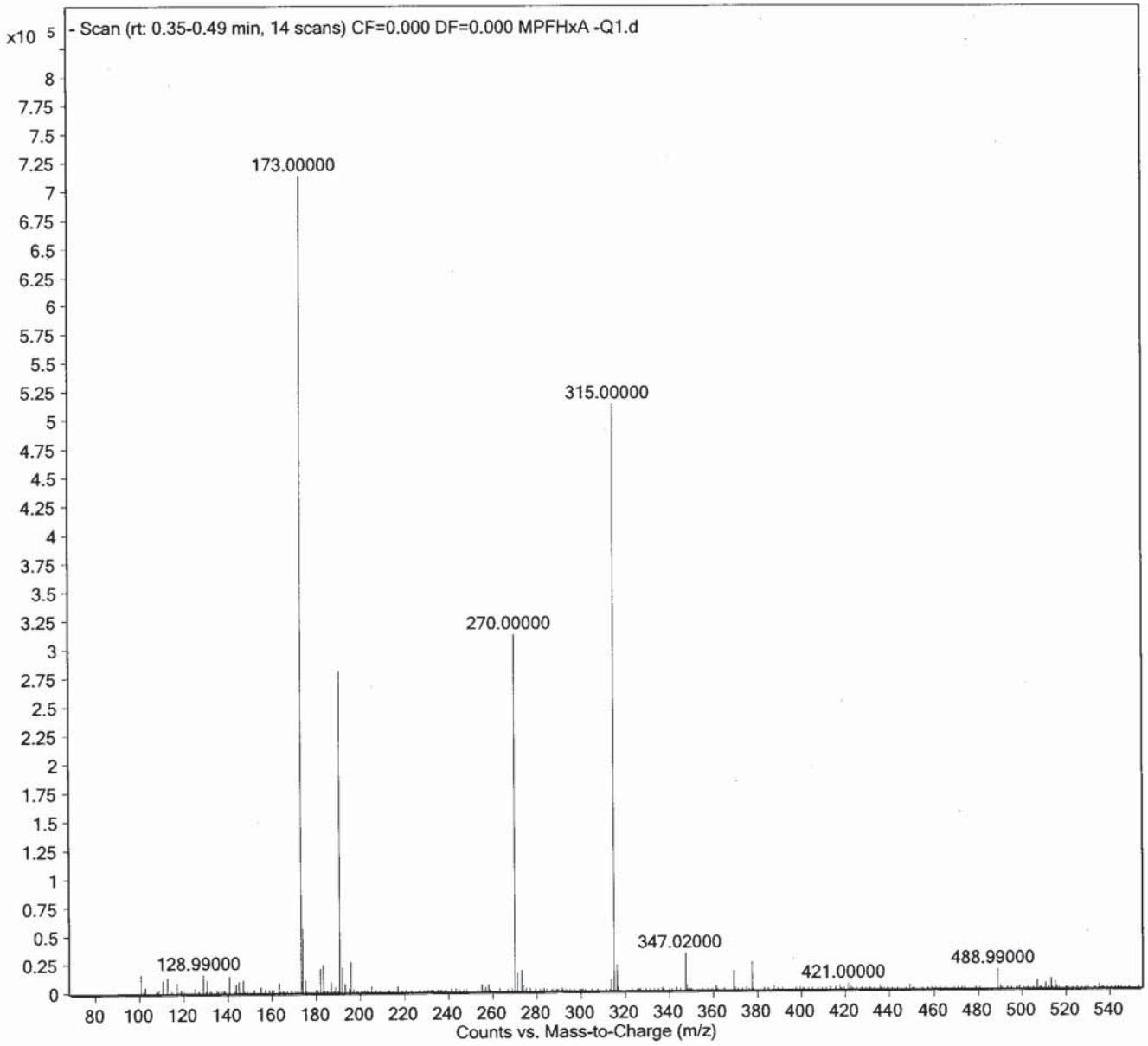
|---|---|---|---|---|---|
| **Sample Name** | MPFHxA | **Position** | P2-A3 | **Instrument Name** | LCMS04 |
| **User Name** | AD | **Inj Vol** | 10 | **InjPosition** | |
| **Sample Type** | Sample | **IRM Calibration Status** | Not Applicable | **Data Filename** | MPFHxA -Q1.d |
| **AcQ Method** | PFC_MassVerification-Q1.m | **Comment** | | **Acquired Time** | 2017/07/11 1:11:48 PM |




Maxxam Analytics

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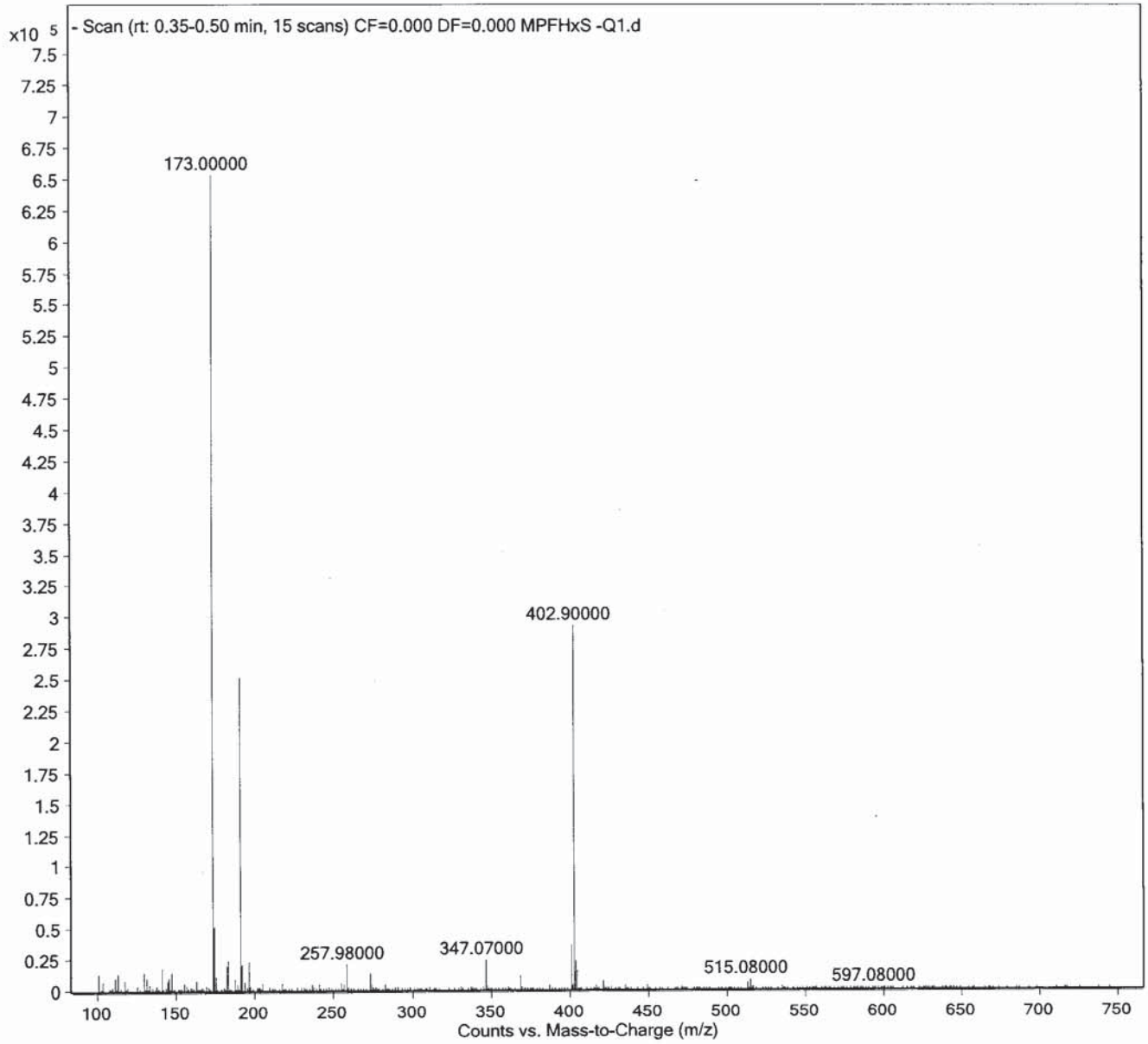
|---|---|---|---|---|---|
| **Sample Name** | MPFHxS | **Position** | P2-A4 | **Instrument Name** | LCMS04 |
| **User Name** | AD | **Inj Vol** | 10 | **InjPosition** | |
| **Sample Type** | Sample | **IRM Calibration Status** | Not Applicable | **Data Filename** | MPFHxS -Q1.d |
| **ACQ Method** | PFC_MassVerification-Q1.m | **Comment** | | **Acquired Time** | 2017/07/11 1:17:18 PM |



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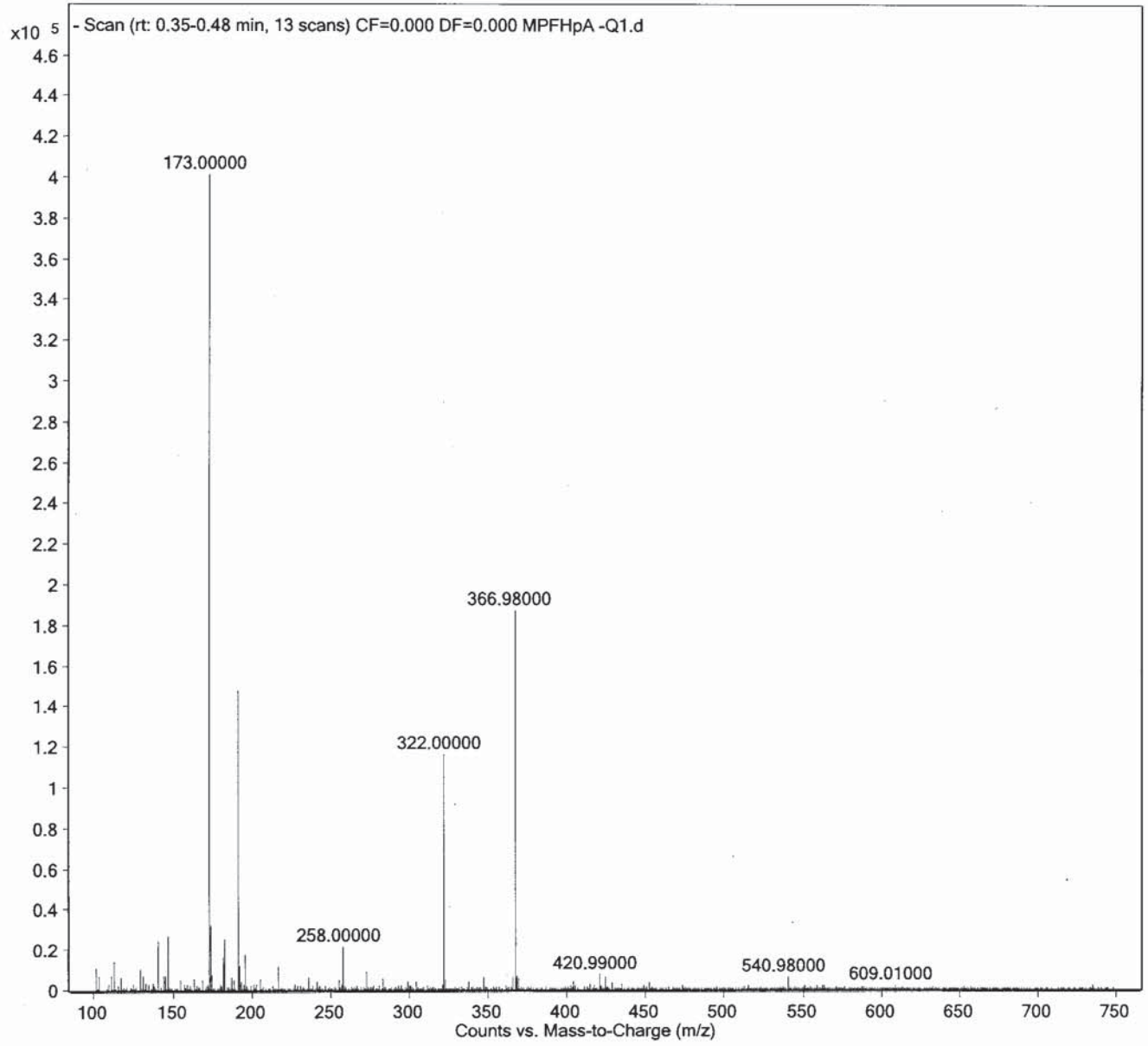
|---|---|---|---|---|---|
| **Sample Name** | MPFHpA | **Position** | P2-A5 | **Instrument Name** | LCMS04 |
| **User Name** | AD | **Inj Vol** | 10 | **InjPosition** | |
| **Sample Type** | Sample | **IRM Calibration Status** | Not Applicable | **Data Filename** | MPFHpA -Q1.d |
| **ACQ Method** | PFC_MassVerification-Q1.m | **Comment** | | **Acquired Time** | 2017/07/11 1:22:48 PM |




MaxXam Analytics

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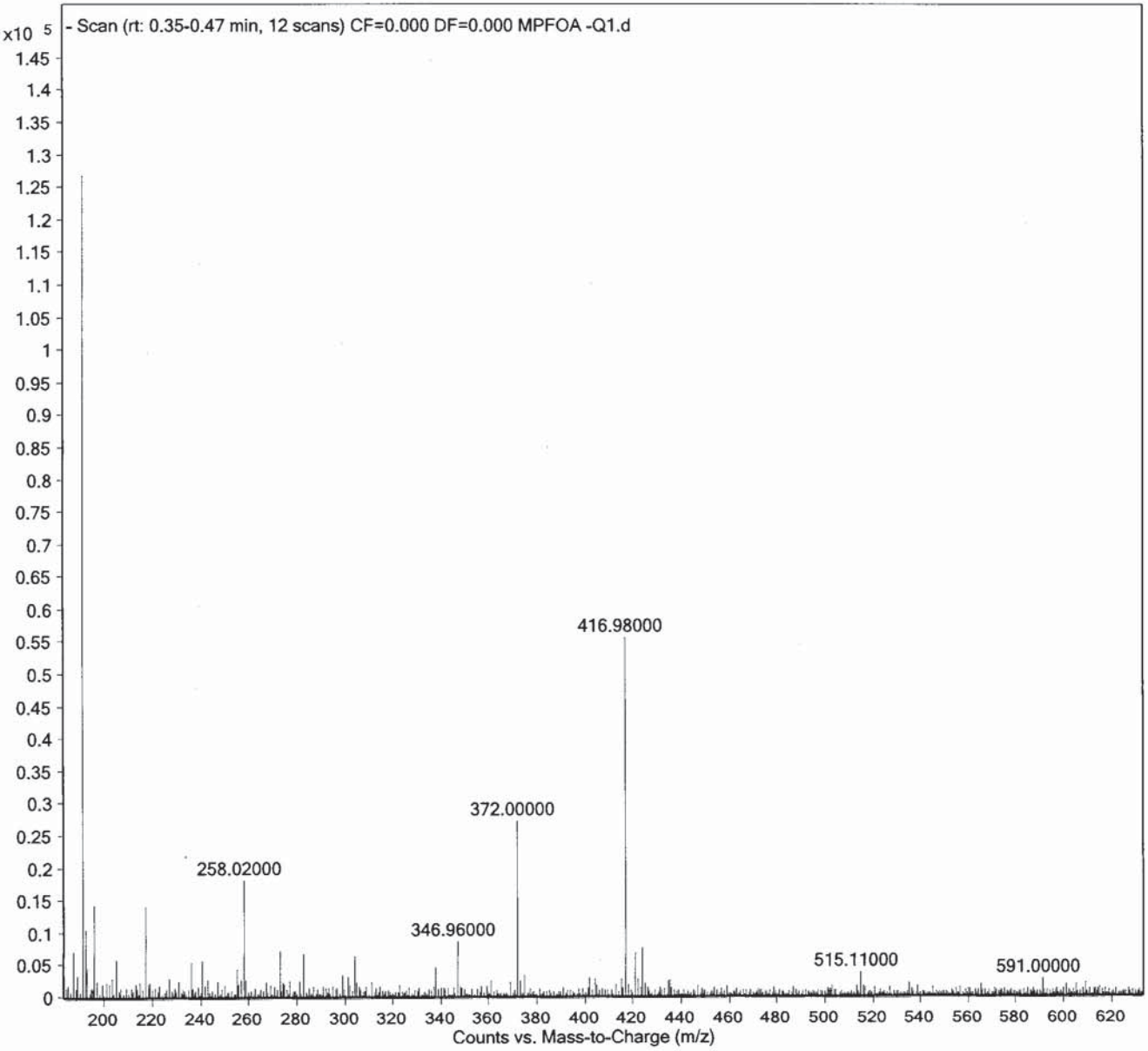
|---|---|---|---|---|---|
| **Sample Name** | MPFOA | **Position** | P2-A6 | **Instrument Name** | LCMS04 |
| **User Name** | AD | **Inj Vol** | 10 | **InjPosition** | |
| **Sample Type** | Sample | **IRM Calibration Status** | Not Applicable | **Data Filename** | MPFOA -Q1.d |
| **ACQ Method** | PFC_MassVerification-Q1.m | **Comment** | | **Acquired Time** | 2017/07/11 1:28:18 PM |




SanAm Analytics

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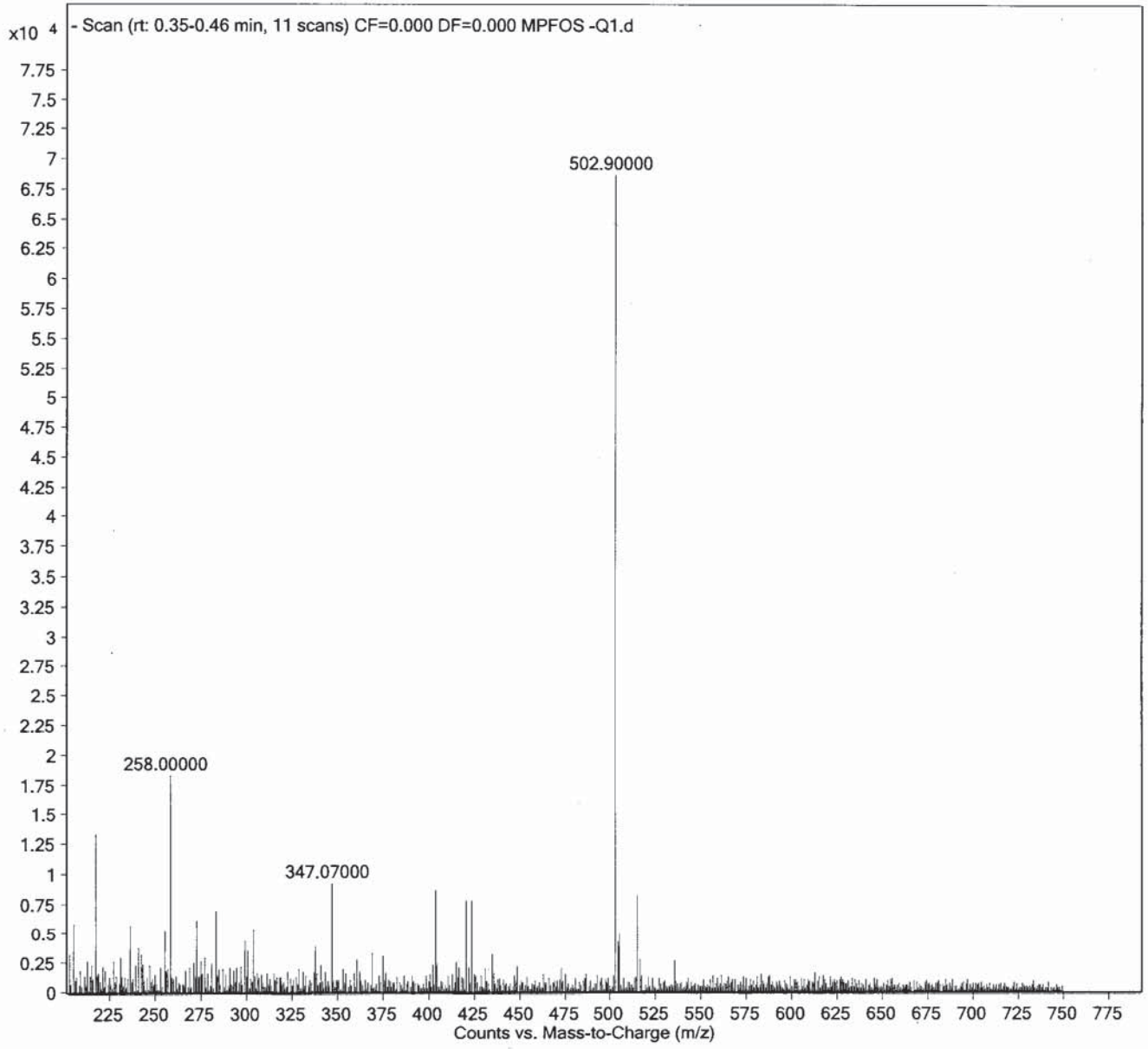
|---|---|---|---|---|---|
| **Sample Name** | MPFOS | **Position** | P2-A7 | **Instrument Name** | LCMS04 |
| **User Name** | AD | **Inj Vol** | 10 | **InjPosition** | |
| **Sample Type** | Sample | **IRM Calibration Status** | Not Applicable | **Data Filename** | MPFOS -Q1.d |
| **ACQ Method** | PFC_MassVerification-Q1.m | **Comment** | | **Acquired Time** | 2017/07/11 1:33:49 PM |




Maxxam Analytics

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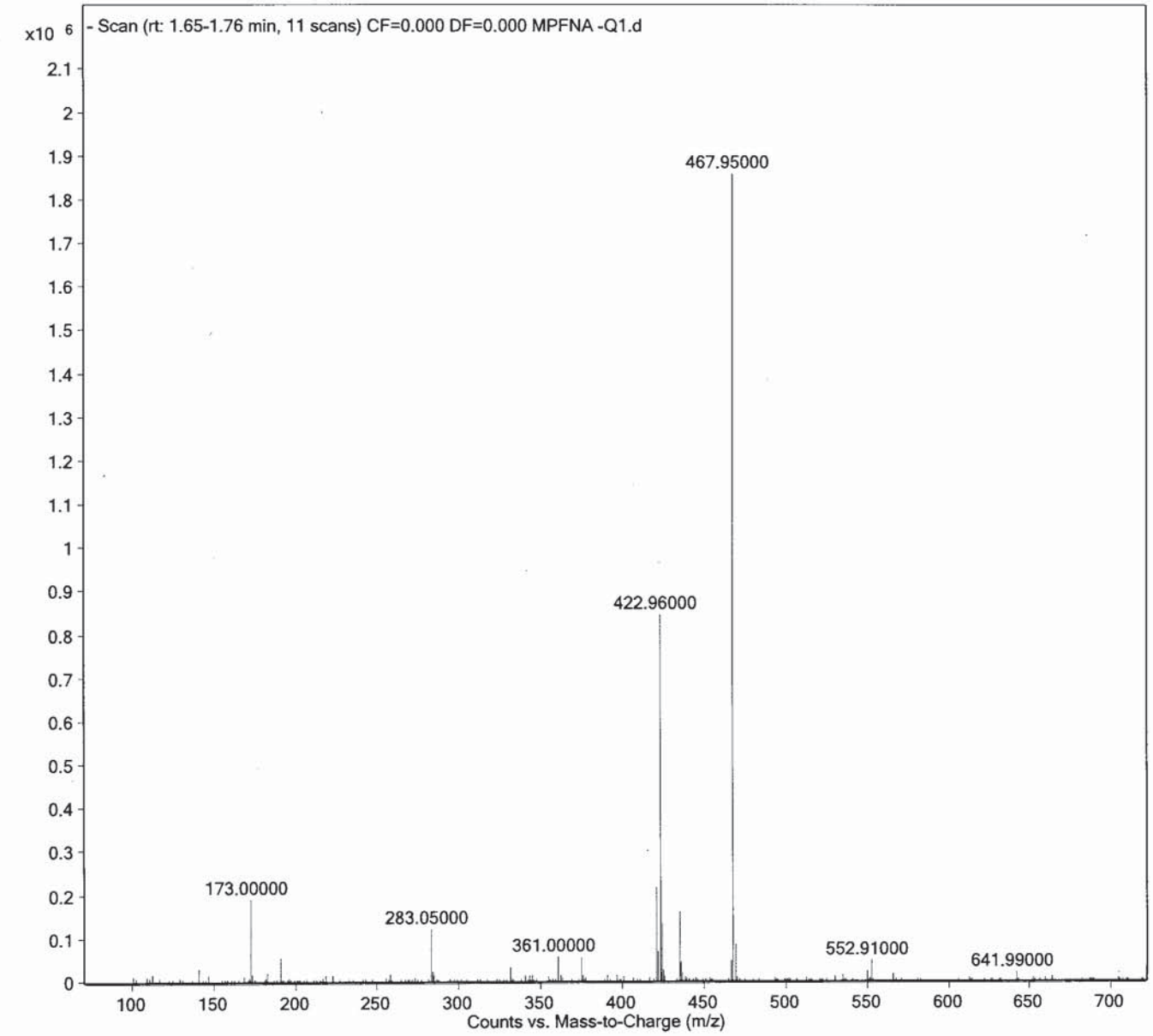
|---|---|---|---|---|---|
| **Sample Name** | MPFNA | **Position** | P2-A8 | **Instrument Name** | LCMS04 |
| **User Name** | AD | **Inj Vol** | 10 | **InjPosition** | |
| **Sample Type** | Sample | **IRM Calibration Status** | Not Applicable | **Data Filename** | MPFNA -Q1.d |
| **ACQ Method** | PFC_MassVerification-Q1.m | **Comment** | | **Acquired Time** | 2017/07/11 1:39:21 PM |




Alaxam Analytics

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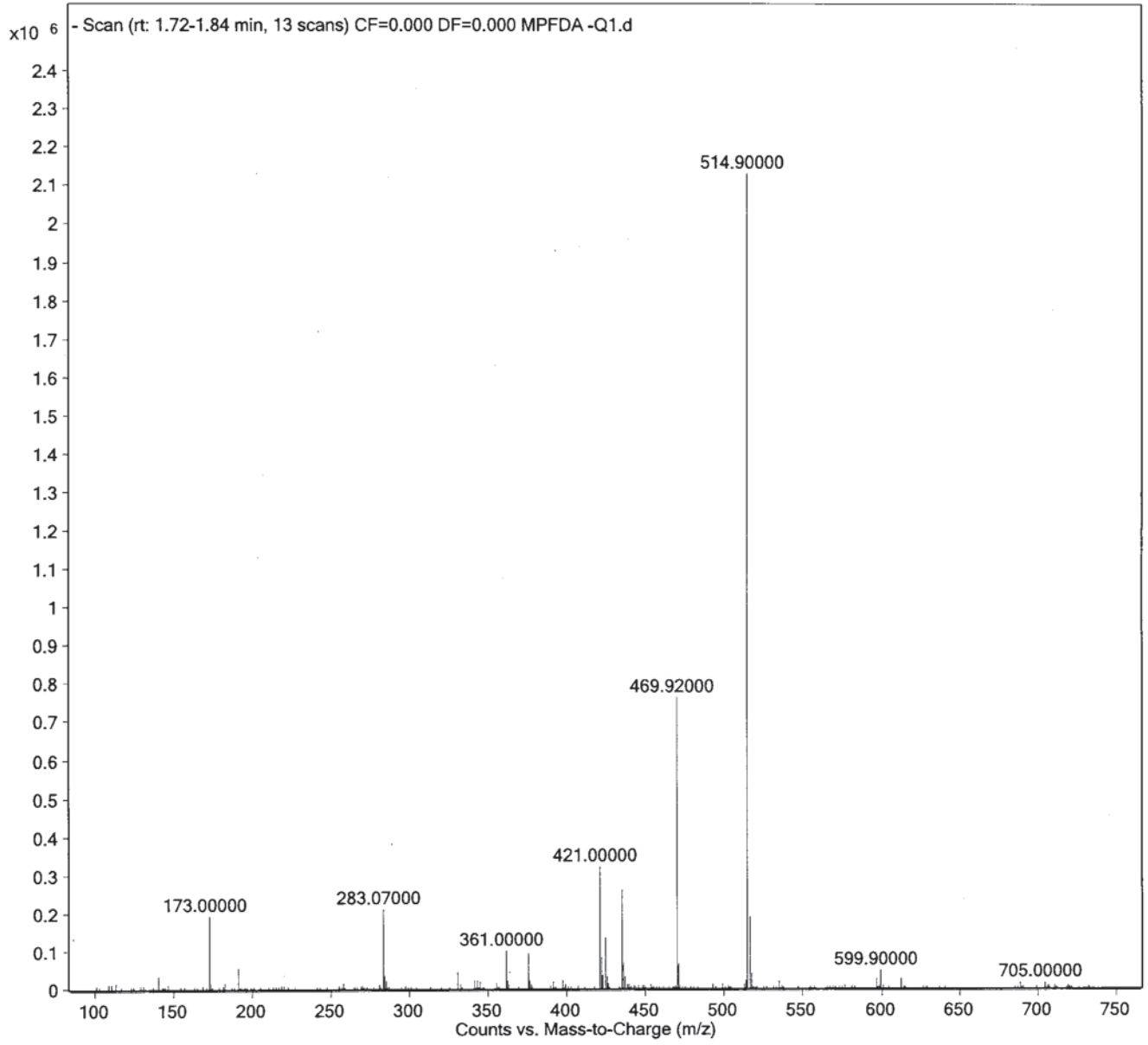
|---|---|---|---|---|---|
| **Sample Name** | MPFDA | **Position** | P2-A9 | **Instrument Name** | LCMS04 |
| **User Name** | AD | **Inj Vol** | 10 | **InjPosition** | |
| **Sample Type** | Sample | **IRM Calibration Status** | Not Applicable | **Data Filename** | MPFDA -Q1.d |
| **ACQ Method** | PFC_MassVerification-Q1.m | **Comment** | | **Acquired Time** | 2017/07/11 1:44:52 PM |




Alaskan Analytics

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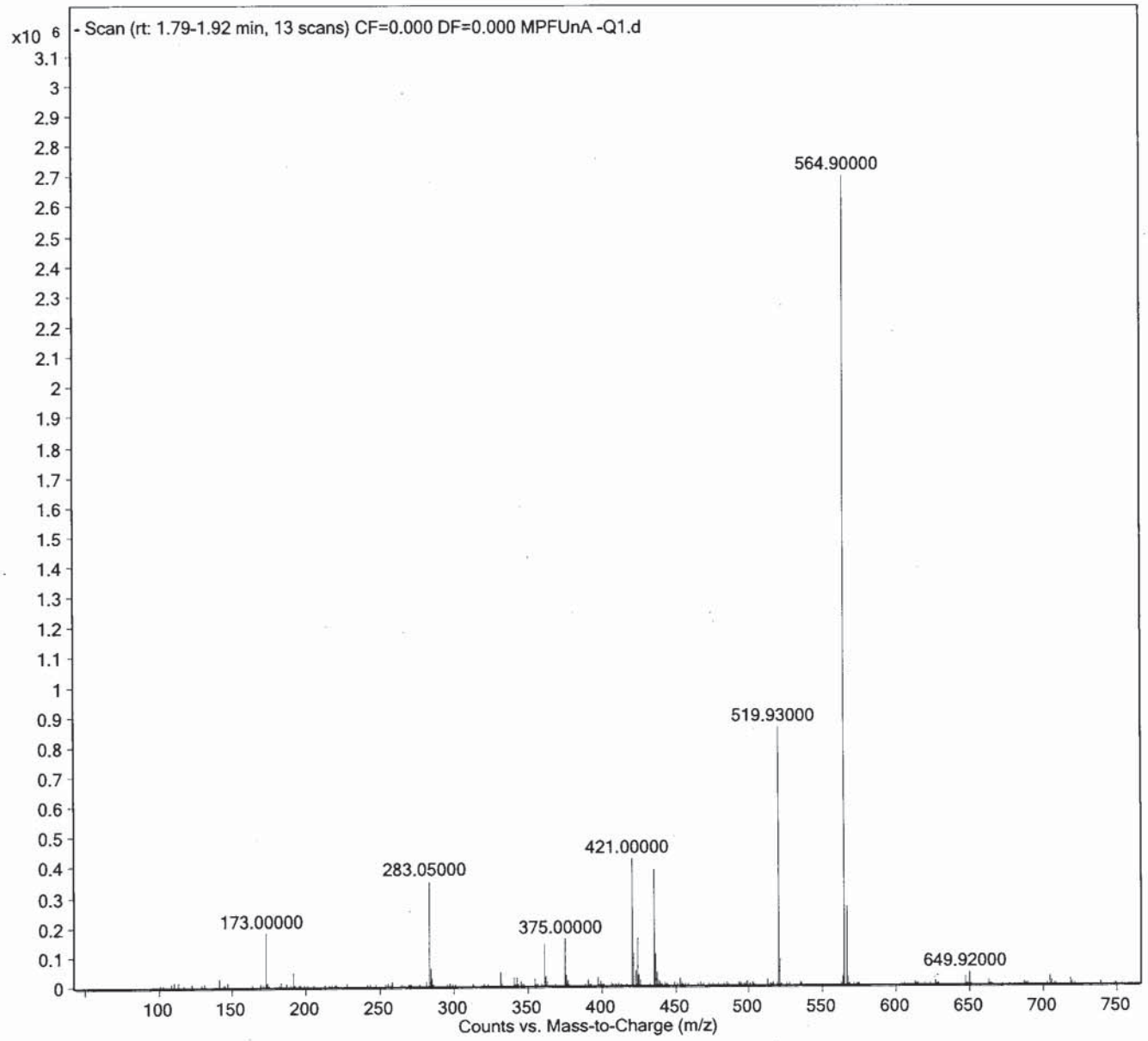
|---|---|---|---|---|---|
| **Sample Name** | MPFUnA | **Position** | P2-B1 | **Instrument Name** | LCMS04 |
| **User Name** | AD | **Inj Vol** | 10 | **InjPosition** | |
| **Sample Type** | Sample | **IRM Calibration Status** | Not Applicable | **Data Filename** | MPFUnA -Q1.d |
| **ACQ Method** | PFC_MassVerification-Q1.m | **Comment** | | **Acquired Time** | 2017/07/11 1:50:23 PM |

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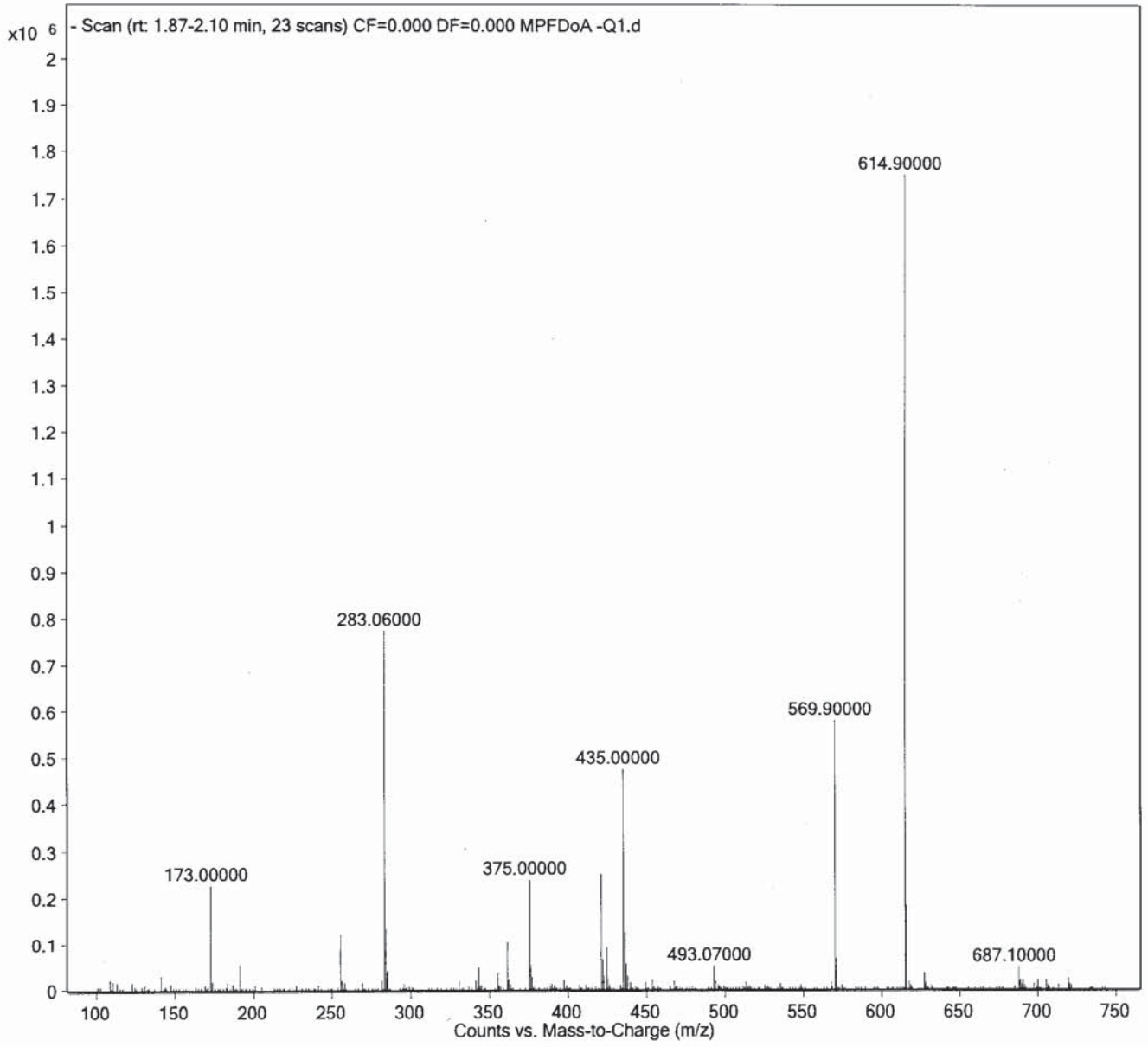
|---|---|---|---|---|---|
| **Sample Name** | MPFDoA | **Position** | P2-B2 | **Instrument Name** | LCMS04 |
| **User Name** | AD | **Inj Vol** | 10 | **InjPosition** | |
| **Sample Type** | Sample | **IRM Calibration Status** | Not Applicable | **Data Filename** | MPFDoA -Q1.d |
| **ACQ Method** | PFC_MassVerification-Q1.m | **Comment** | | **Acquired Time** | 2017/07/11 1:55:53 PM |




Alcami Analytics

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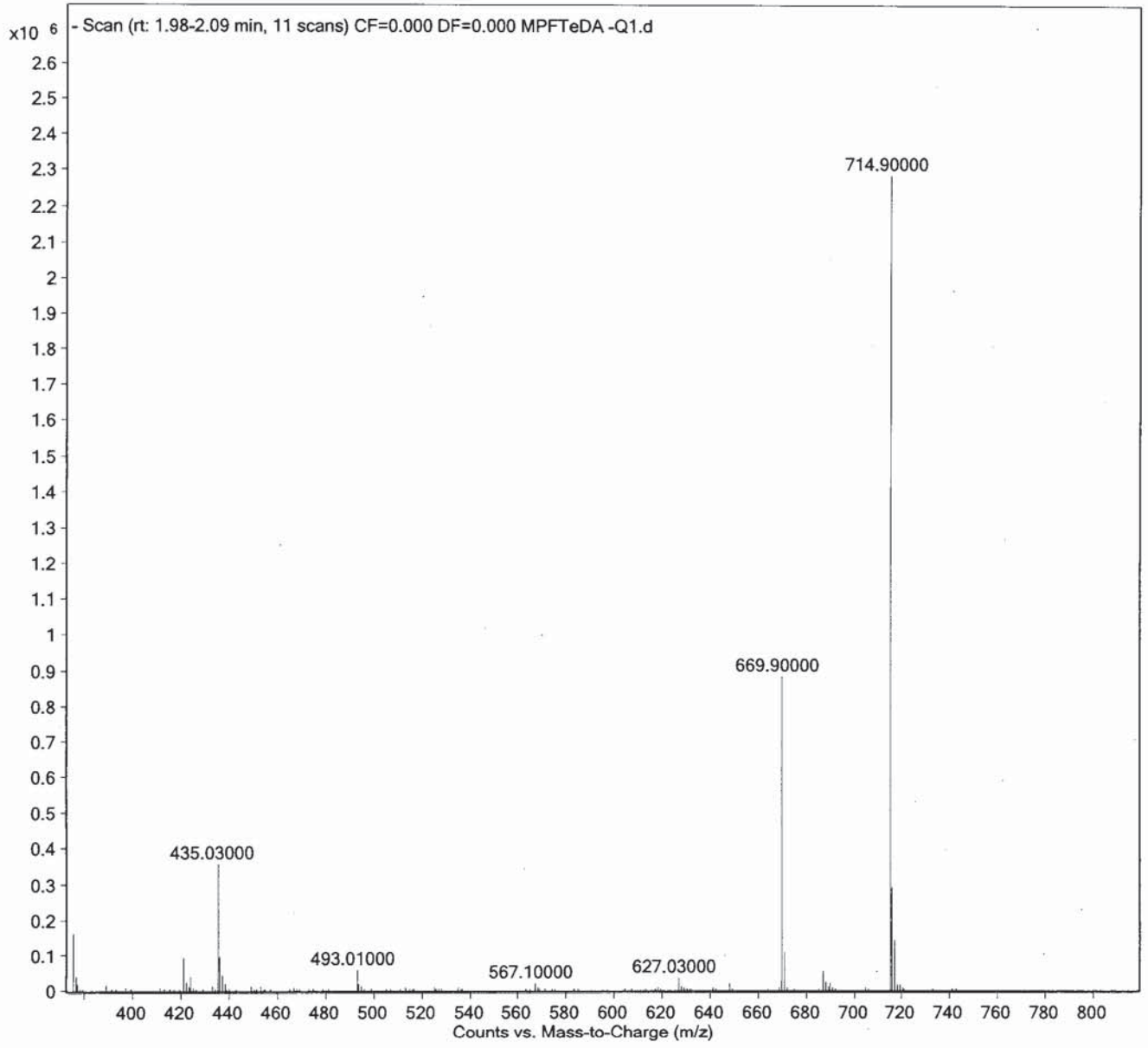
|---|---|---|---|---|---|
| **Sample Name** | MPFTeDA | **Position** | P2-B3 | **Instrument Name** | LCMS04 |
| **User Name** | AD | **Inj Vol** | 10 | **InjPosition** | |
| **Sample Type** | Sample | **IRM Calibration Status** | Not Applicable | **Data Filename** | MPFTeDA -Q1.d |
| **ACQ Method** | PFC_MassVerification-Q1.m | **Comment** | | **Acquired Time** | 2017/07/11 2:01:23 PM |




Alaxam Analytics

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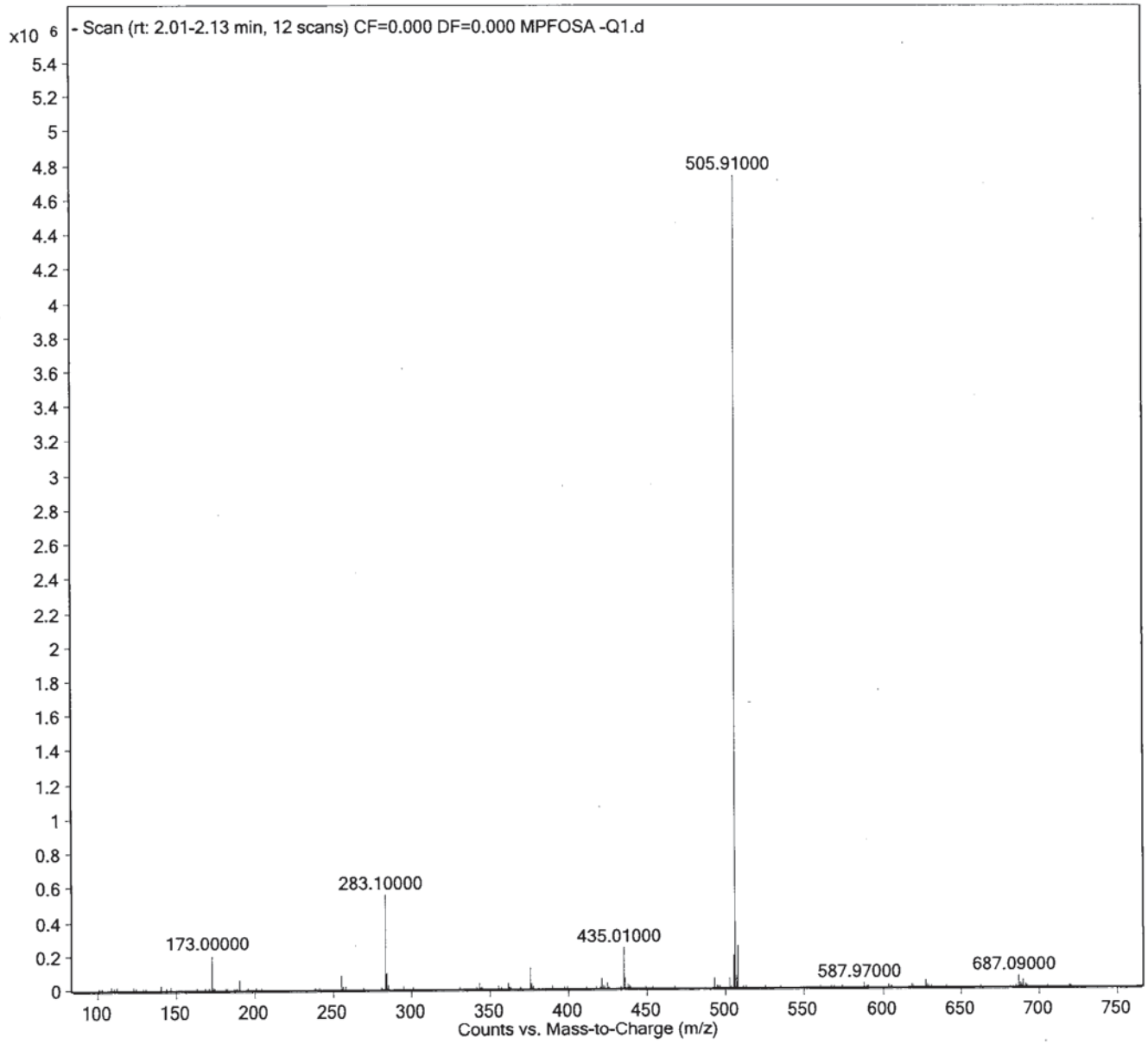
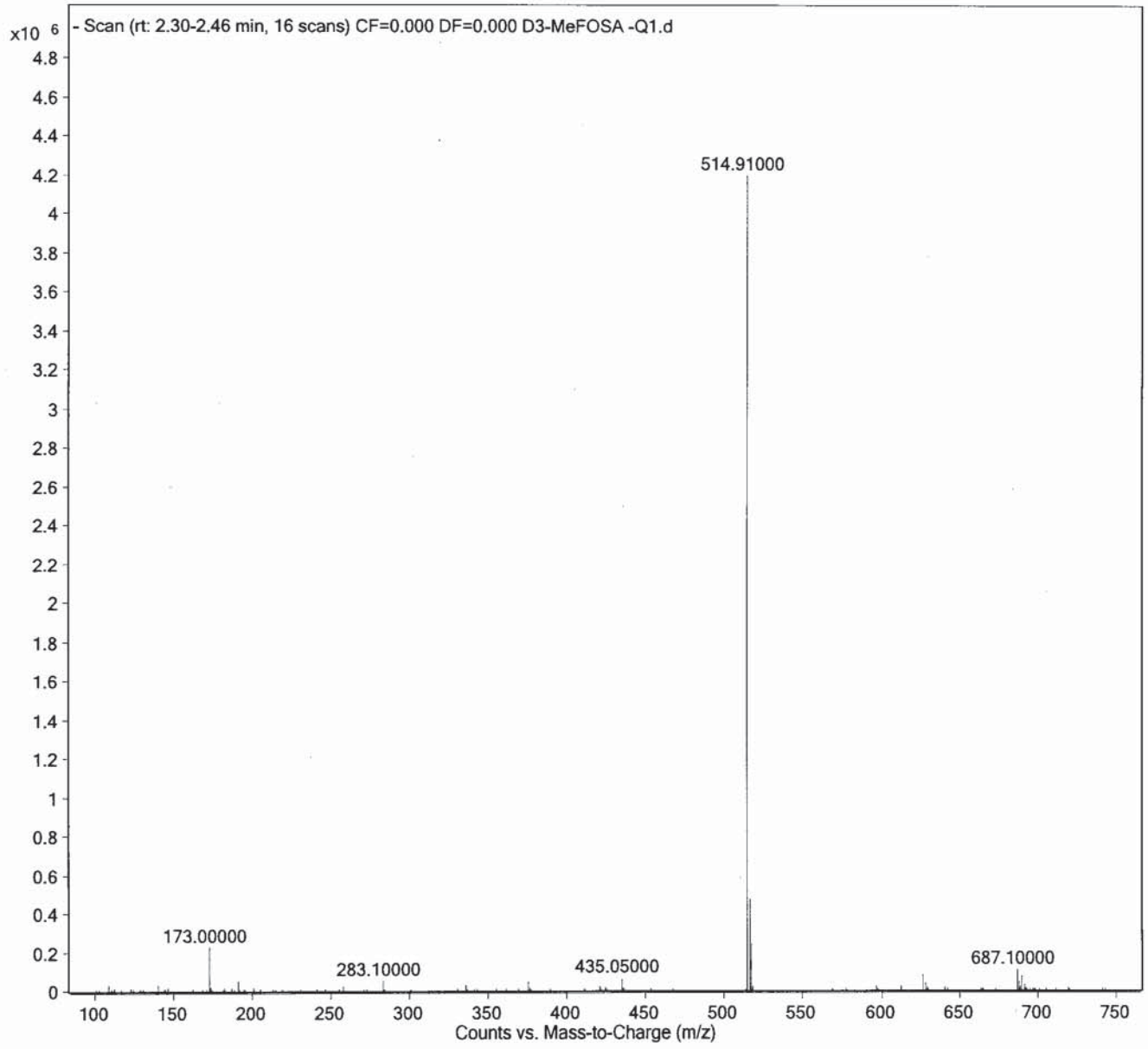
|---|---|---|---|---|---|
| **Sample Name** | MPFOSA | **Position** | P2-B4 | **Instrument Name** | LCMS04 |
| **User Name** | AD | **Inj Vol** | 10 | **InjPosition** | |
| **Sample Type** | Sample | **IRM Calibration Status** | Not Applicable | **Data Filename** | MPFOSA -Q1.d |
| **ACQ Method** | PFC_MassVerification-Q1.m | **Comment** | | **Acquired Time** | 2017/07/11 2:06:53 PM |



| | | | | | |
|---|---|---|---|---|---|
| **Sample Name** | D3-MeFOSA | **Position** | P2-B5 | **Instrument Name** | LCMS04 |
| **User Name** | AD | **Inj Vol** | 10 | **InjPosition** | |
| **Sample Type** | Sample | **IRM Calibration Status** | Not Applicable | **Data Filename** | D3-MeFOSA -Q1.d |
| **ACQ Method** | PFC_MassVerification-Q1.m | **Comment** | | **Acquired Time** | 2017/07/11 2:12:24 PM |




MaxXam Analytics

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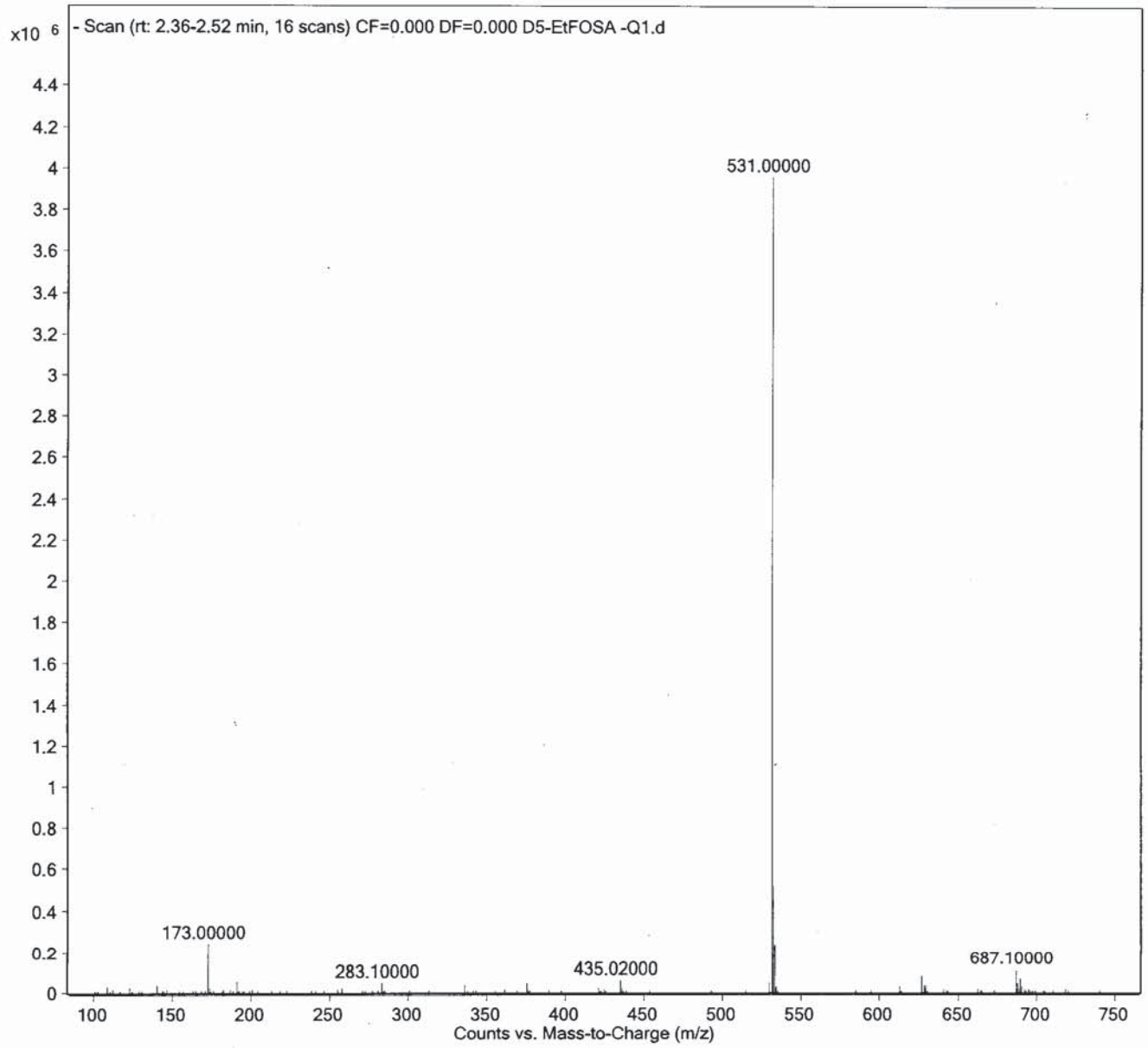
|---|---|---|---|---|---|
| **Sample Name** | D5-EtFOSA | **Position** | P2-B6 | **Instrument Name** | LCMS04 |
| **User Name** | AD | **Inj Vol** | 10 | **InjPosition** | |
| **Sample Type** | Sample | **IRM Calibration Status** | Not Applicable | **Data Filename** | D5-EtFOSA -Q1.d |
| **ACQ Method** | PFC_MassVerification-Q1.m | **Comment** | | **Acquired Time** | 2017/07/11 2:17:53 PM |




Maxam Analytics

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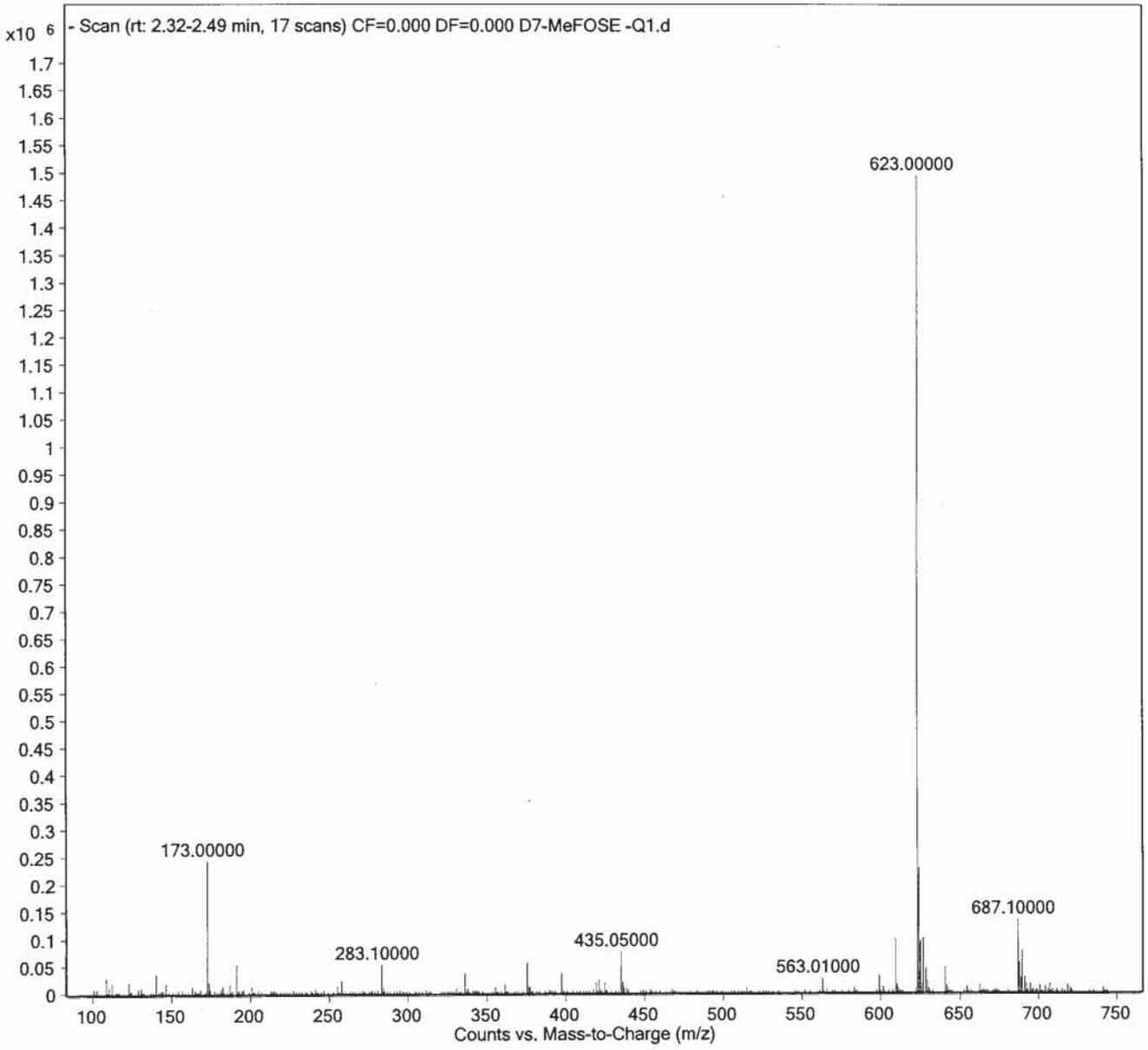
|---|---|---|---|---|---|
| **Sample Name** | D7-MeFOSE | **Position** | P2-B7 | **Instrument Name** | LCMS04 |
| **User Name** | AD | **Inj Vol** | 10 | **InjPosition** | |
| **Sample Type** | Sample | **IRM Calibration Status** | Not Applicable | **Data Filename** | D7-MeFOSE -Q1.d |
| **ACQ Method** | PFC_MassVerification-Q1.m | **Comment** | | **Acquired Time** | 2017/07/11 2:23:24 PM |




SGS AXYS Analytics

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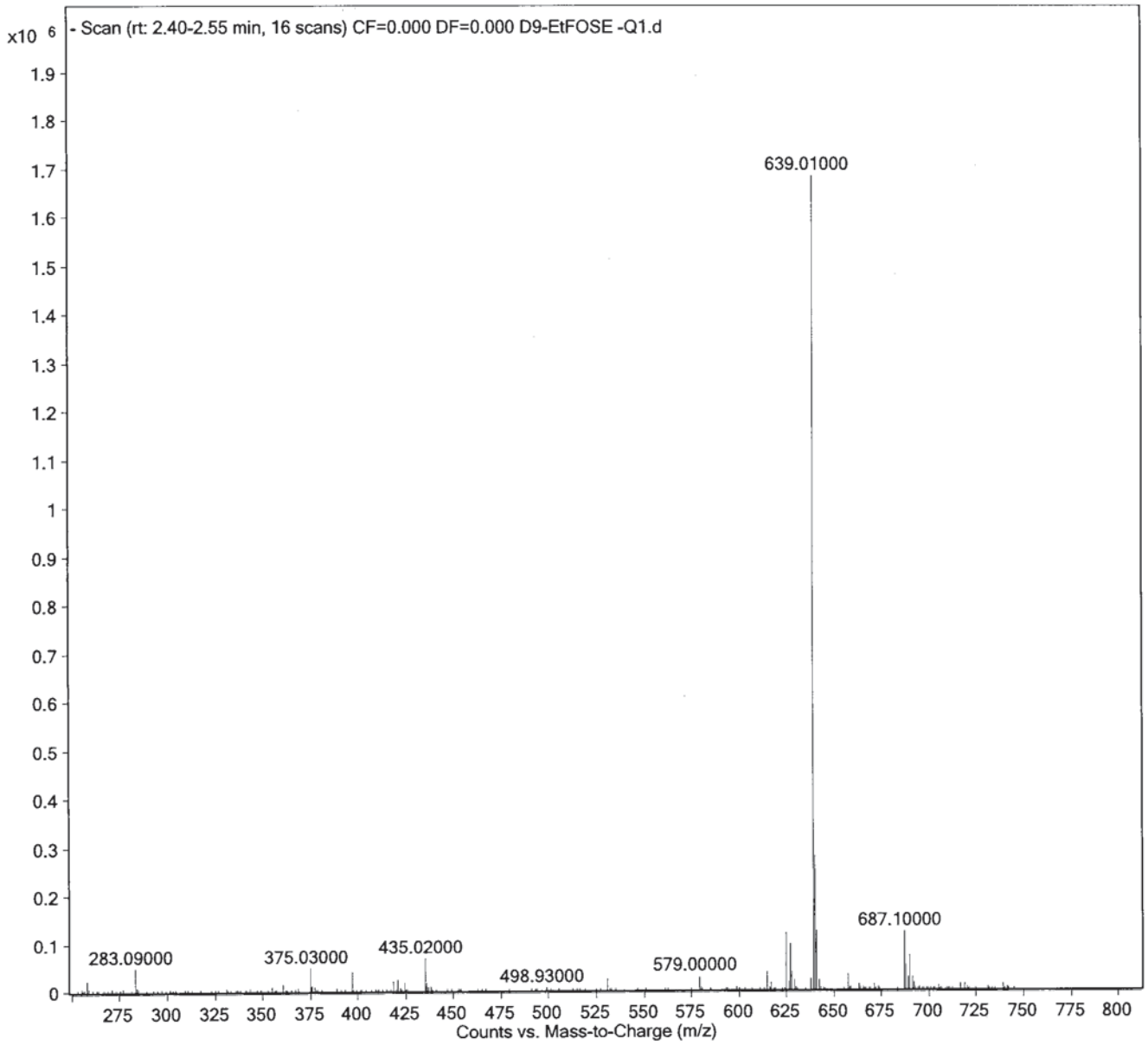
|---|---|---|---|---|---|
| **Sample Name** | D9-EtFOSE | **Position** | P2-B8 | **Instrument Name** | LCMS04 |
| **User Name** | AD | **Inj Vol** | 10 | **InjPosition** | |
| **Sample Type** | Sample | **IRM Calibration Status** | Not Applicable | **Data Filename** | D9-EtFOSE -Q1.d |
| **AcQ Method** | PFC_MassVerification-Q1.m | **Comment** | | **Acquired Time** | 2017/07/11 2:28:56 PM |




SafeAm Analytics

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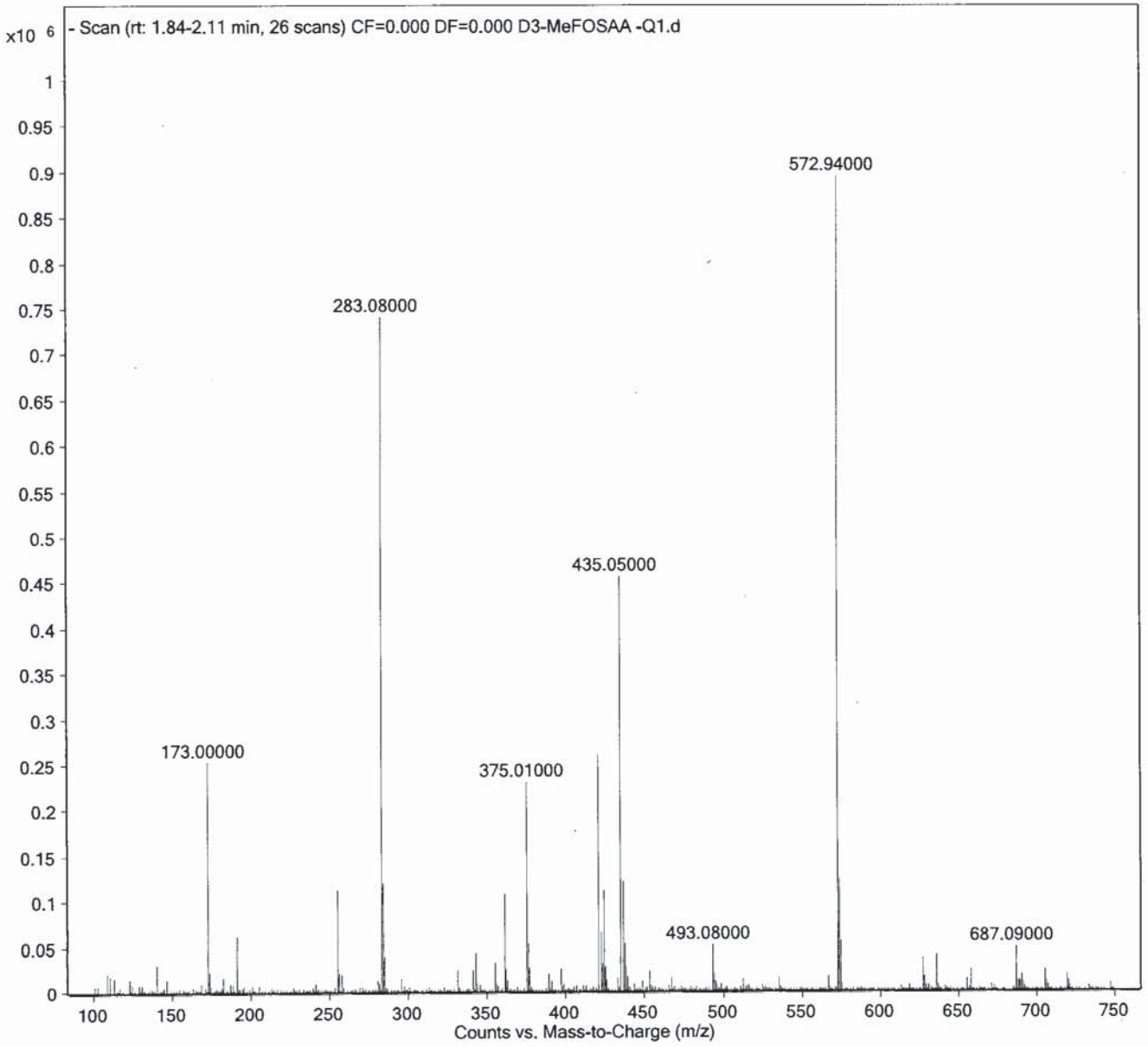
|---|---|---|---|---|---|
| **Sample Name** | D3-MeFOSAA | **Position** | P2-B9 | **Instrument Name** | LCMS04 |
| **User Name** | AD | **Inj Vol** | 10 | **InjPosition** | |
| **Sample Type** | Sample | **IRM Calibration Status** | Not Applicable | **Data Filename** | D3-MeFOSAA -Q1.d |
| **AcQ Method** | PFC_MassVerification-Q1.m | **Comment** | | **Acquired Time** | 2017/07/11 2:34:28 PM |




SGS AXYS Analytical

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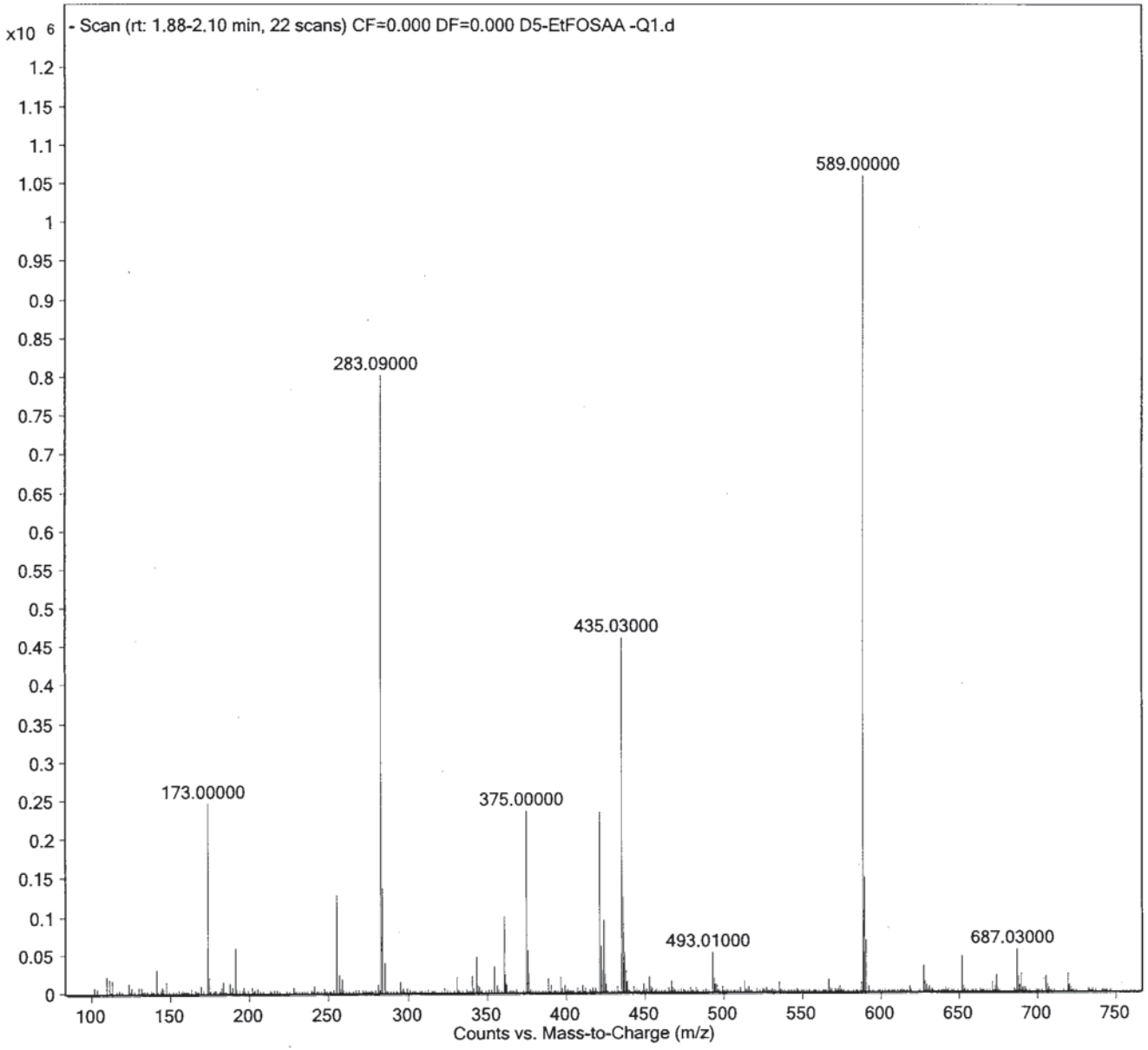
|---|---|---|---|---|---|
| **Sample Name** | D5-EtFOSAA | **Position** | P2-C1 | **Instrument Name** | LCMS04 |
| **User Name** | AD | **Inj Vol** | 10 | **InjPosition** | |
| **Sample Type** | Sample | **IRM Calibration Status** | Not Applicable | **Data Filename** | D5-EtFOSAA -Q1.d |
| **ACQ Method** | PFC_MassVerification-Q1.m | **Comment** | | **Acquired Time** | 2017/07/11 2:39:59 PM |




SGS AXAM Analytics

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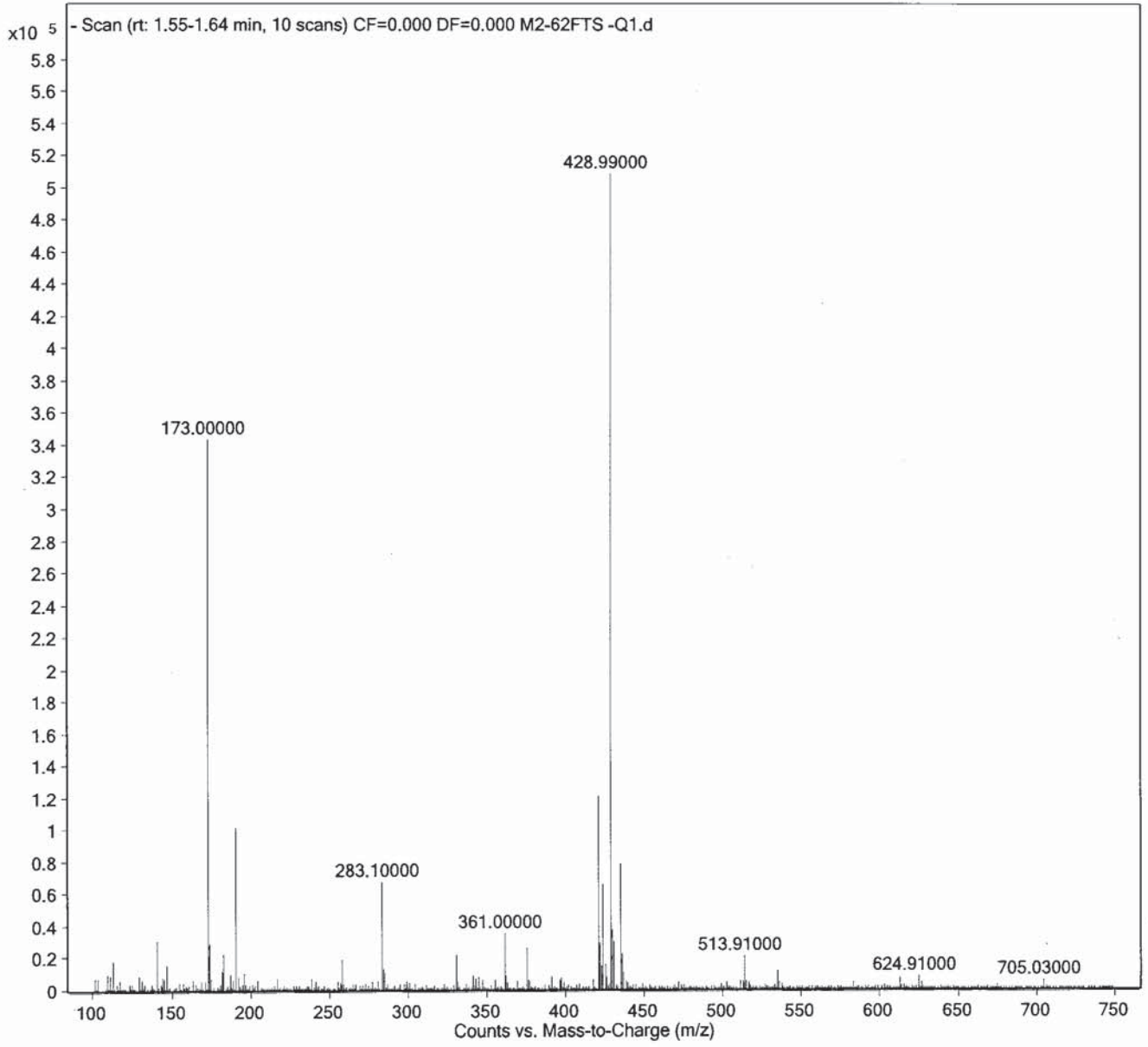
|---|---|---|---|---|---|
| **Sample Name** | M2-6:2FTS | **Position** | P2-C2 | **Instrument Name** | LCMS04 |
| **User Name** | AD | **Inj Vol** | 10 | **InjPosition** | |
| **Sample Type** | Sample | **IRM Calibration Status** | Not Applicable | **Data Filename** | M2-62FTS -Q1.d |
| **ACQ Method** | PFC_MassVerification-Q1.m | **Comment** | | **Acquired Time** | 2017/07/11 2:45:29 PM |




SGS AXYS Analytics

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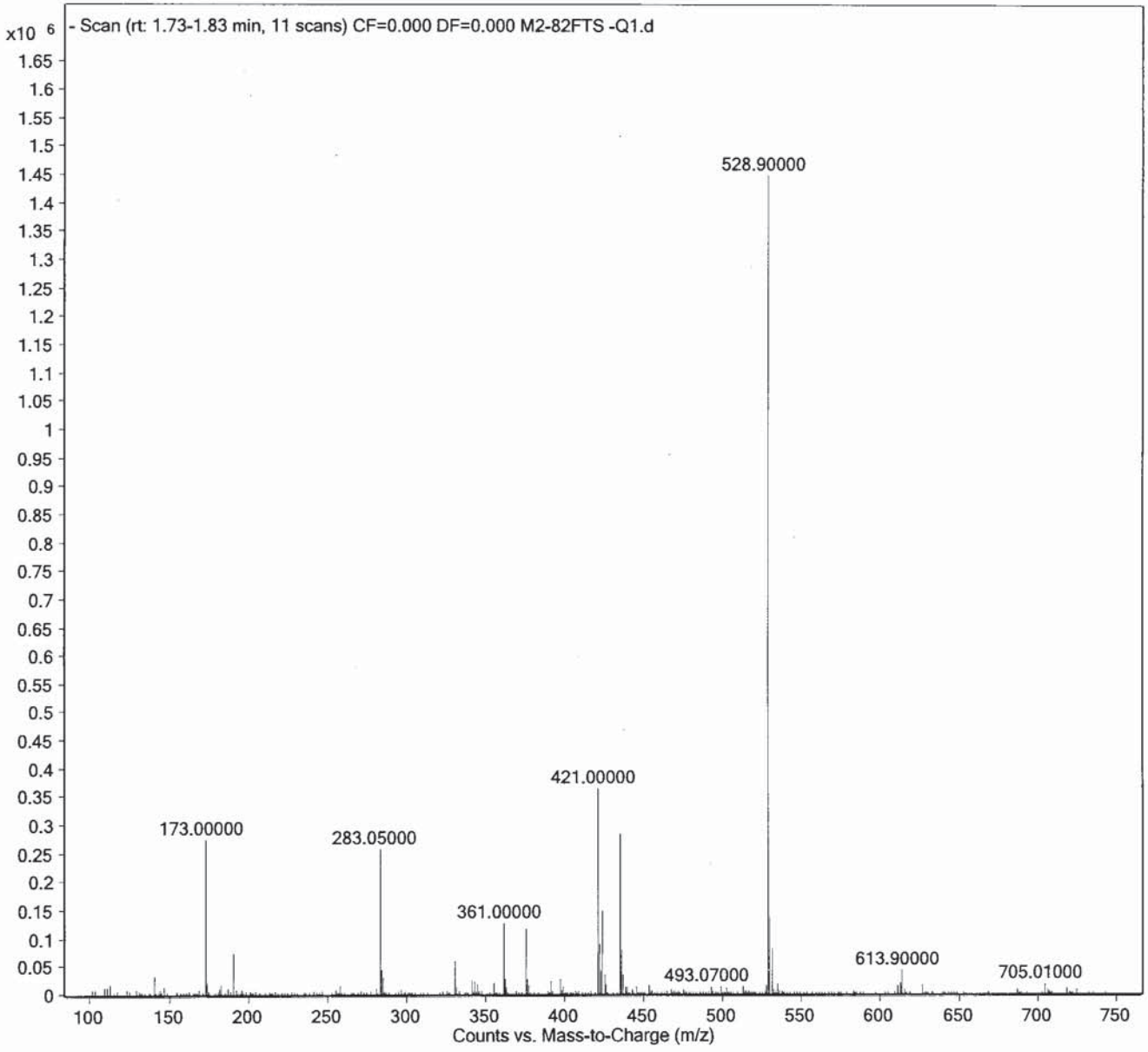
|---|---|---|---|---|---|
| **Sample Name** | M2-8:2FTS | **Position** | P2-C3 | **Instrument Name** | LCMS04 |
| **User Name** | AD | **Inj Vol** | 10 | **InjPosition** | |
| **Sample Type** | Sample | **IRM Calibration Status** | Not Applicable | **Data Filename** | M2-82FTS -Q1.d |
| **ACQ Method** | PFC_MassVerification-Q1.m | **Comment** | | **Acquired Time** | 2017/07/11 2:50:59 PM |




MaxAm Analytics

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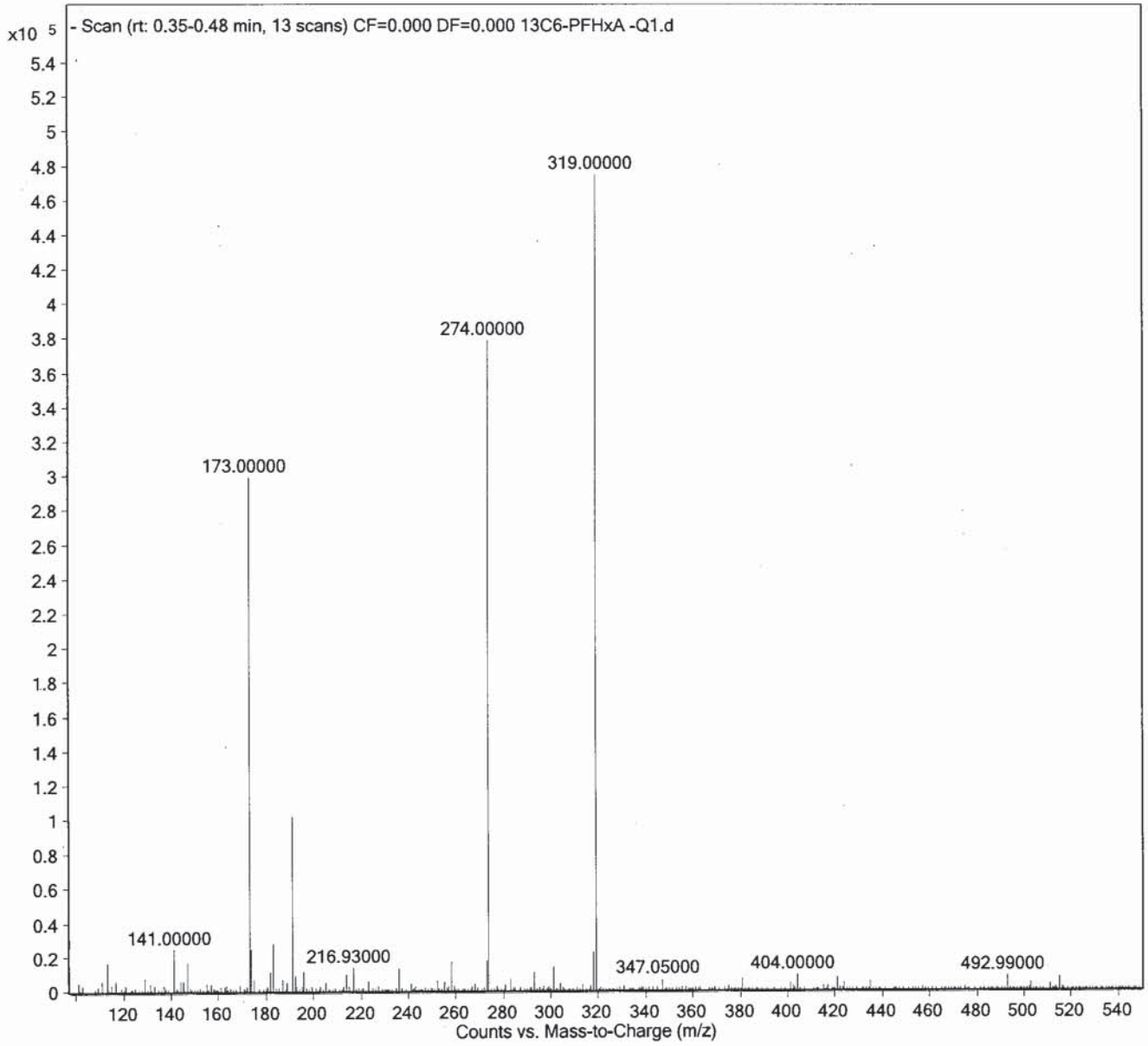
|---|---|---|---|---|---|
| **Sample Name** | 13C6-PFHxA | **Position** | P2-C4 | **Instrument Name** | LCMS04 |
| **User Name** | AD | **Inj Vol** | 10 | **InjPosition** | |
| **Sample Type** | Sample | **IRM Calibration Status** | Not Applicable | **Data Filename** | 13C6-PFHxA -Q1.d |
| **ACQ Method** | PFC_MassVerification-Q1.m | **Comment** | | **Acquired Time** | 2017/07/11 2:56:30 PM |




Alaska Analytics

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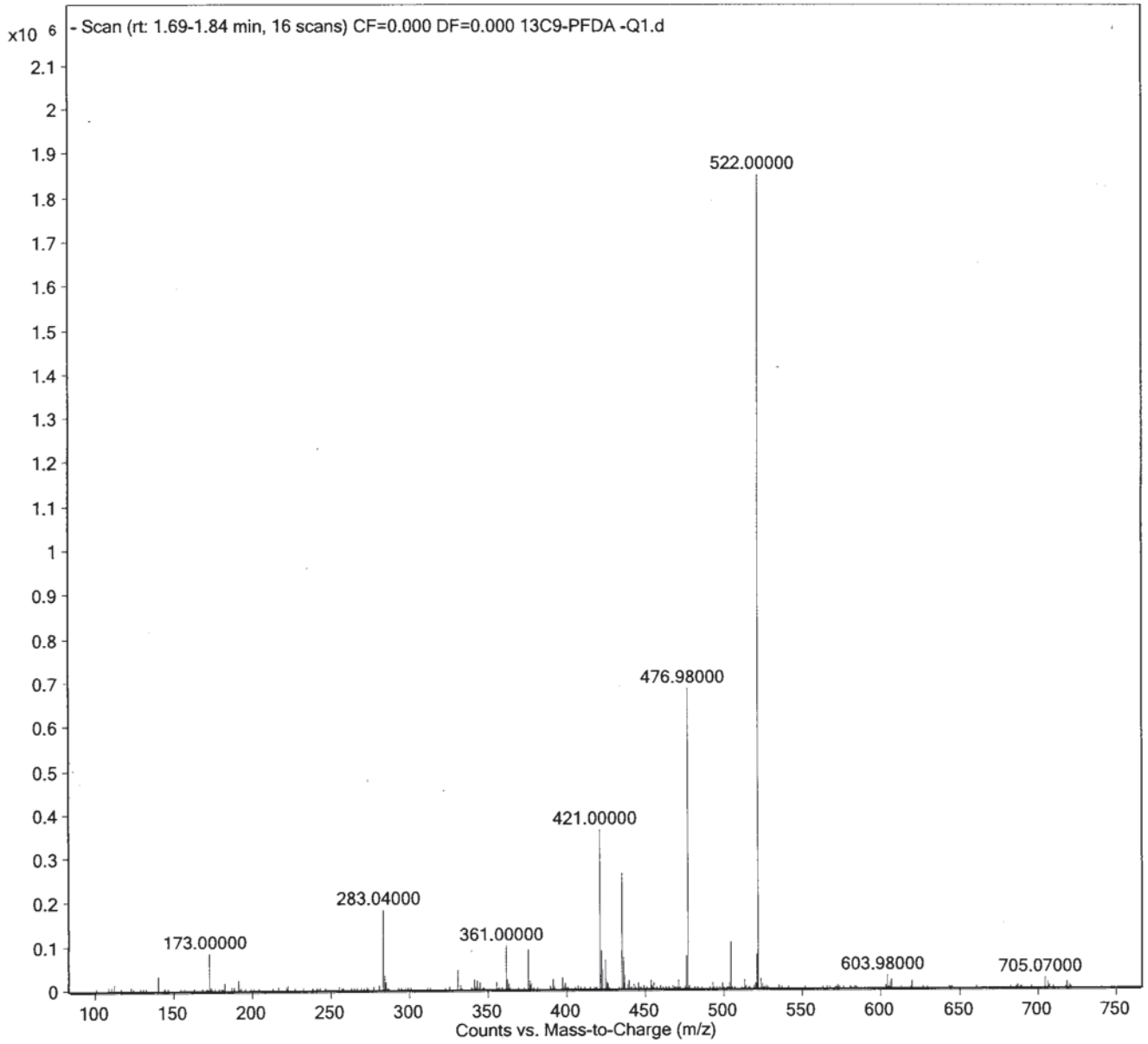
|---|---|---|---|---|---|
| **Sample Name** | 13C9-PFDA | **Position** | P2-C5 | **Instrument Name** | LCMS04 |
| **User Name** | AD | **Inj Vol** | 10 | **InjPosition** | |
| **Sample Type** | Sample | **IRM Calibration Status** | Not Applicable | **Data Filename** | 13C9-PFDA -Q1.d |
| **ACQ Method** | PFC_MassVerification-Q1.m | **Comment** | | **Acquired Time** | 2017/07/11 3:01:59 PM |




Saxam Analytics

# Extracted and Injection Internal Standard Product Ion Verification

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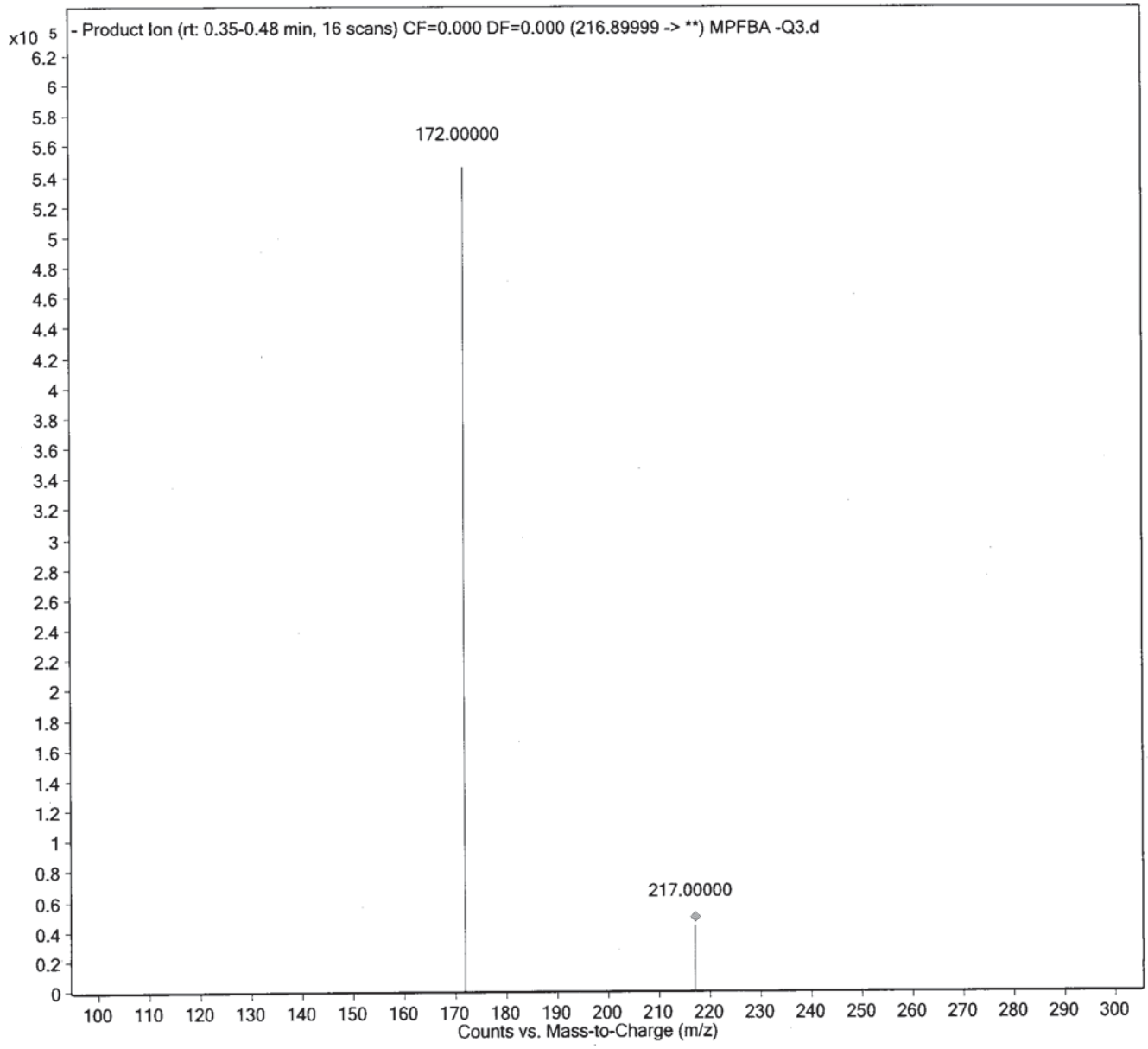
|---|---|---|---|---|---|
| **Sample Name** | MPFBA -Q3 | **Position** | P2-A1 | **Instrument Name** | LCMS04 |
| **User Name** | AD | **Inj Vol** | 10 | **InjPosition** | |
| **Sample Type** | Sample | **IRM Calibration Status** | Not Applicable | **Data Filename** | MPFBA -Q3.d |
| **ACQ Method** | PFC_MassVerification-MPFBA-Q3.m | **Comment** | | **Acquired Time** | 2017/07/11 3:07:29 PM |




Eurofins Eaton Analytics

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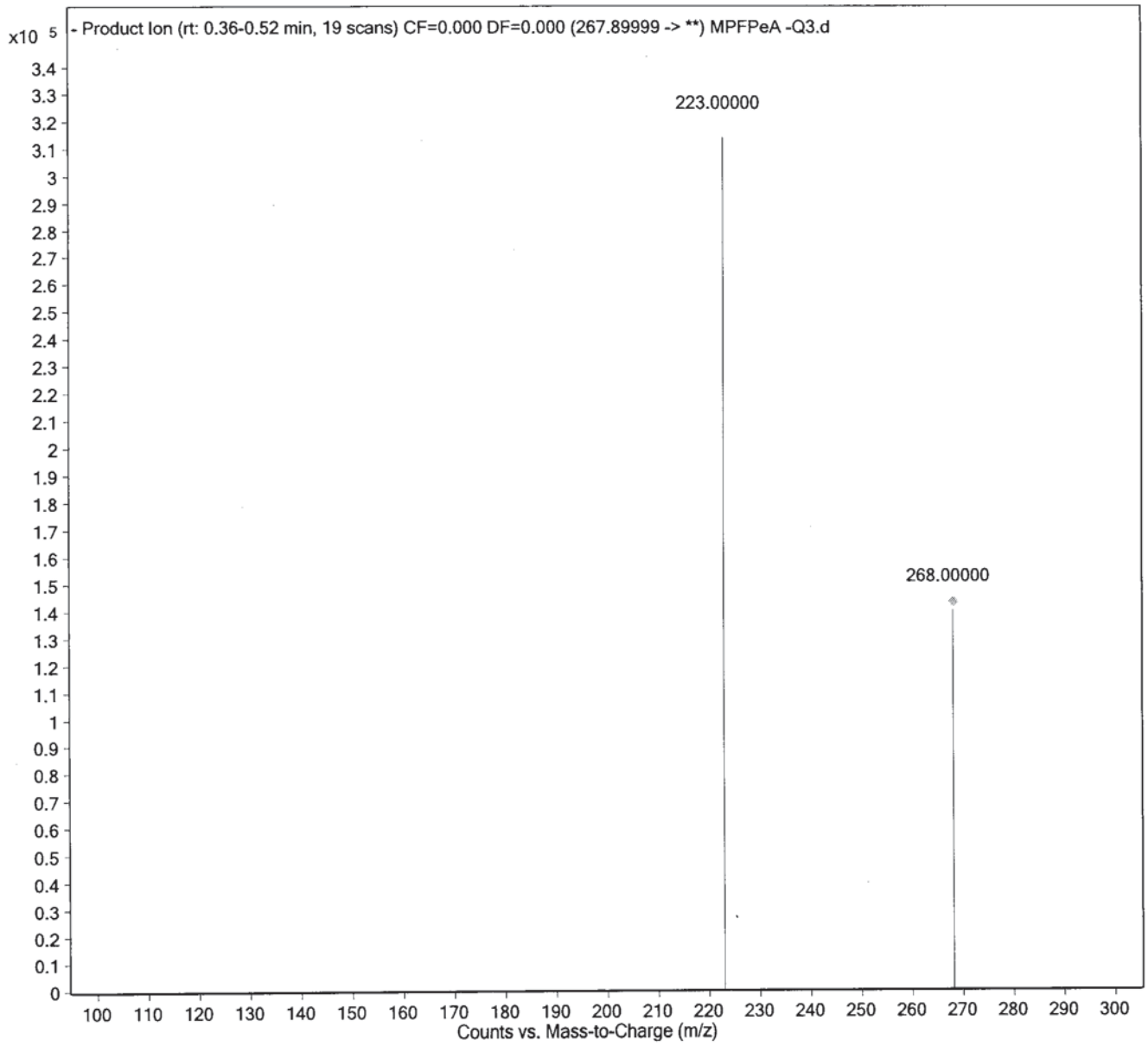
|---|---|---|---|---|---|
| **Sample Name** | MPFPeA -Q3 | **Position** | P2-A2 | **Instrument Name** | LCMS04 |
| **User Name** | AD | **Inj Vol** | 10 | **InjPosition** | |
| **Sample Type** | Sample | **IRM Calibration Status** | Not Applicable | **Data Filename** | MPFPeA -Q3.d |
| **ACQ Method** | PFC_MassVerification-MPFPeA-Q3.m | **Comment** | | **Acquired Time** | 2017/07/11 3:12:59 PM |




Maxxam Analytics

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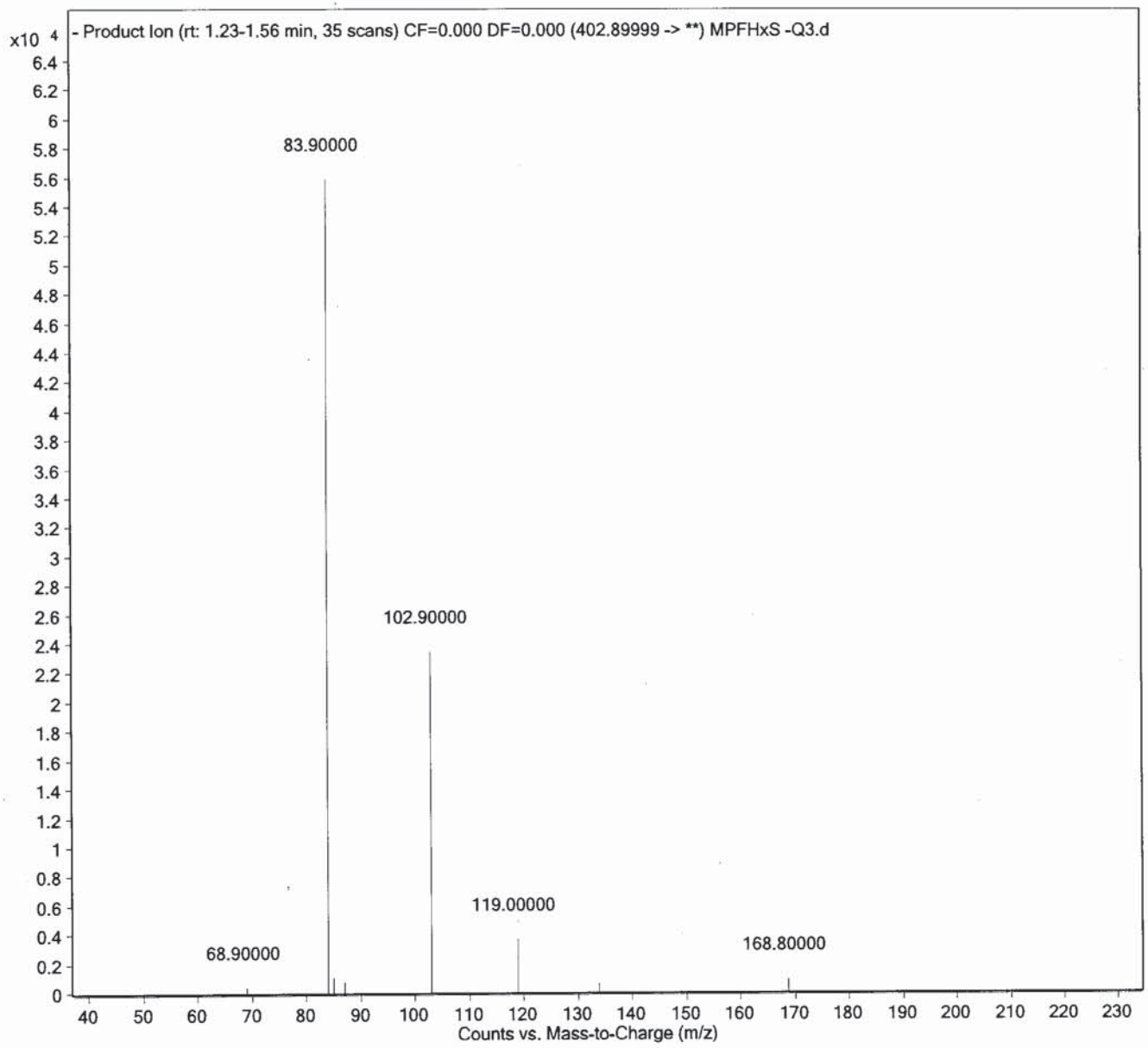
|---|---|---|---|---|---|
| **Sample Name** | MPFHxS -Q3 | **Position** | P2-A4 | **Instrument Name** | LCMS04 |
| **User Name** | AD | **Inj Vol** | 10 | **InjPosition** | |
| **Sample Type** | Sample | **IRM Calibration Status** | Not Applicable | **Data Filename** | MPFHxS -Q3.d |
| **ACQ Method** | PFC_MassVerification-MPFHxS-Q3.m | **Comment** | | **Acquired Time** | 2017/07/11 3:24:00 PM |




SaxAm Analytics

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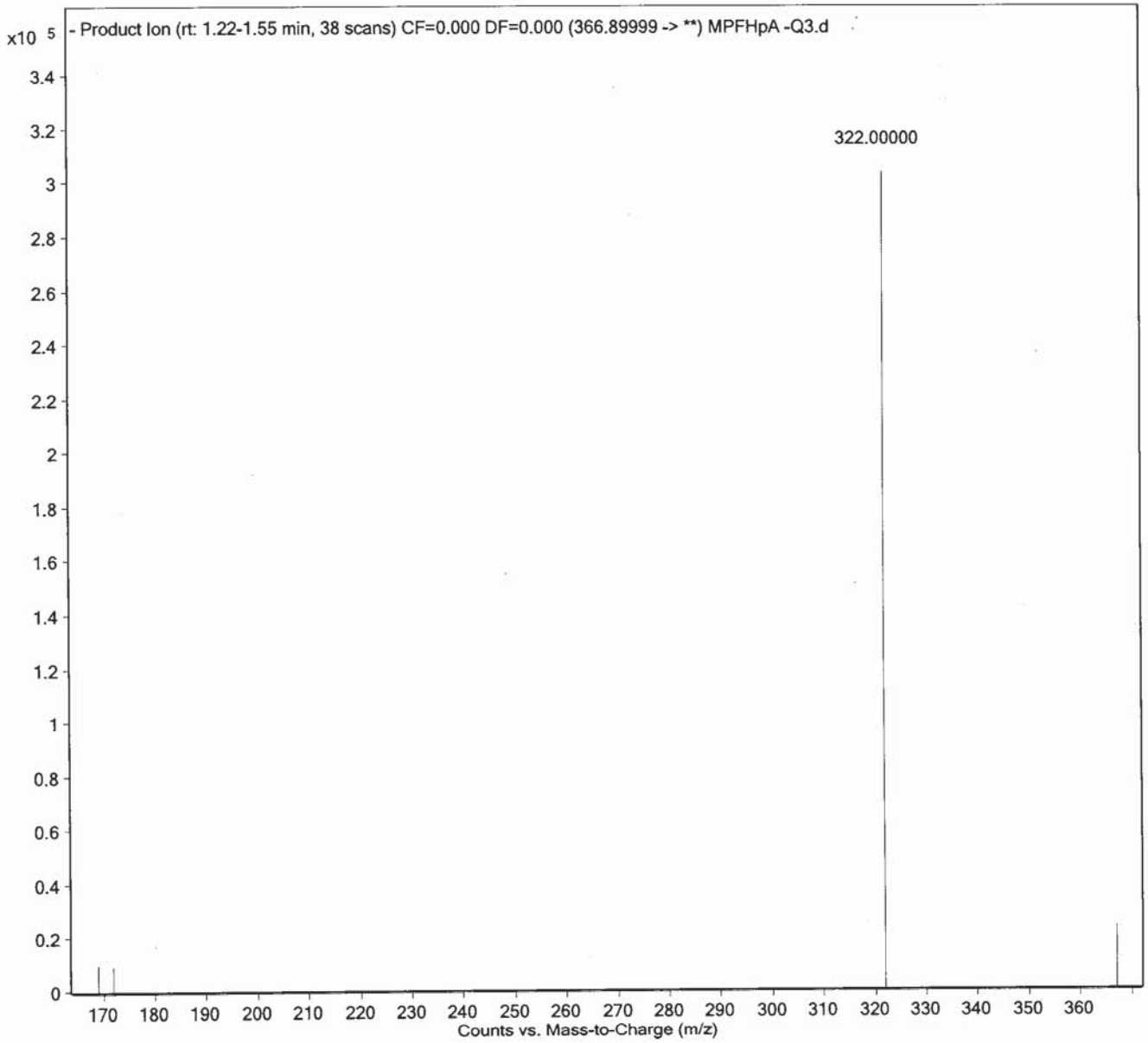
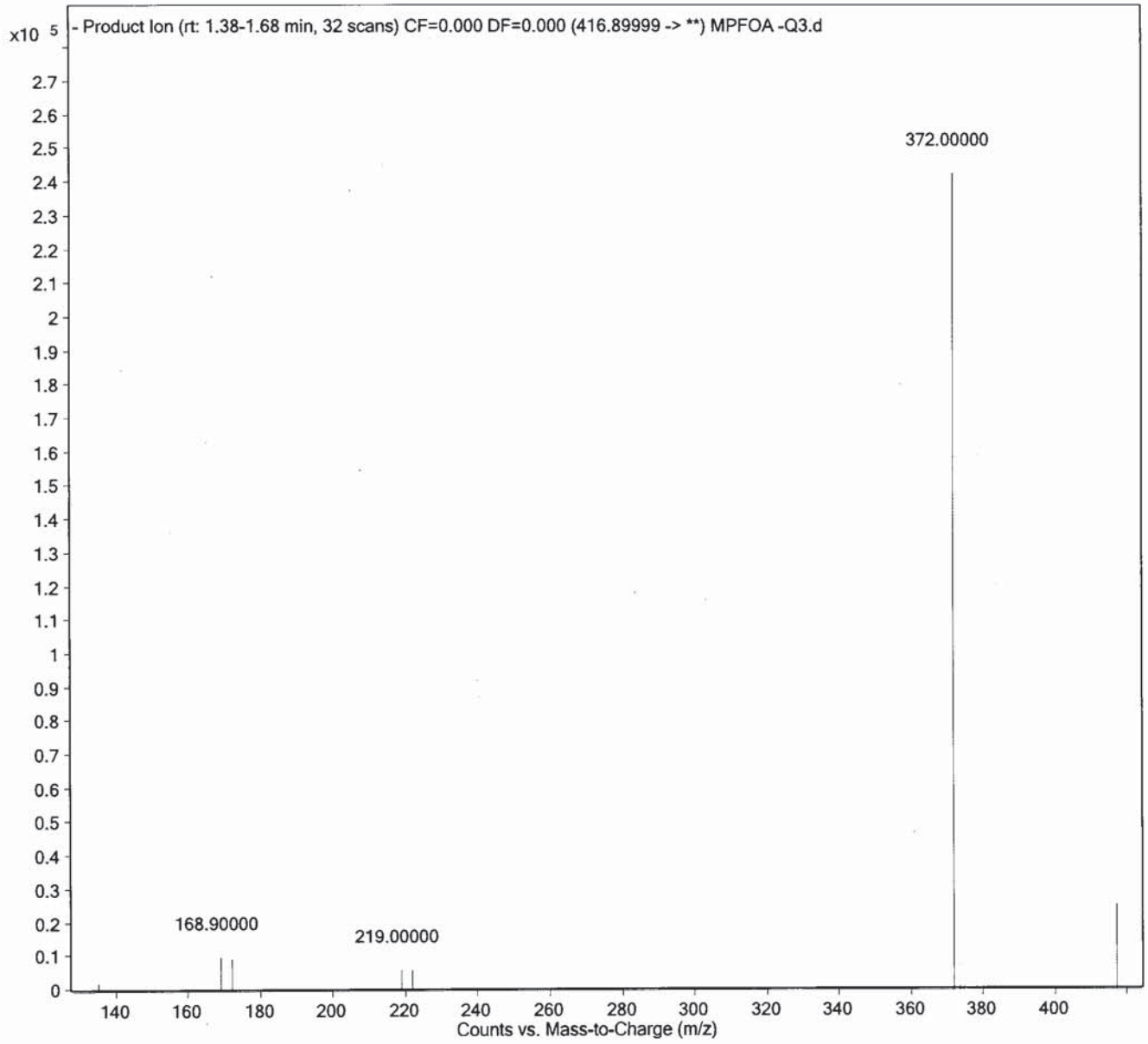
|---|---|---|---|---|---|
| **Sample Name** | MPFHpA -Q3 | **Position** | P2-A5 | **Instrument Name** | LCMS04 |
| **User Name** | AD | **Inj Vol** | 10 | **InjPosition** | |
| **Sample Type** | Sample | **IRM Calibration Status** | Not Applicable | **Data Filename** | MPFHpA -Q3.d |
| **ACQ Method** | PFC_MassVerification-MPFHpA-Q3.m | **Comment** | | **Acquired Time** | 2017/07/11 3:29:30 PM |



| | | | | | |
|---|---|---|---|---|---|
| **Sample Name** | MPFOA -Q3 | **Position** | P2-A6 | **Instrument Name** | LCMS04 |
| **User Name** | AD | **Inj Vol** | 10 | **InjPosition** | |
| **Sample Type** | Sample | **IRM Calibration Status** | Not Applicable | **Data Filename** | MPFOA -Q3.d |
| **ACQ Method** | PFC_MassVerification-MPFOA-Q3.m | **Comment** | | **Acquired Time** | 2017/07/11 3:35:00 PM |




SAExam Analytics

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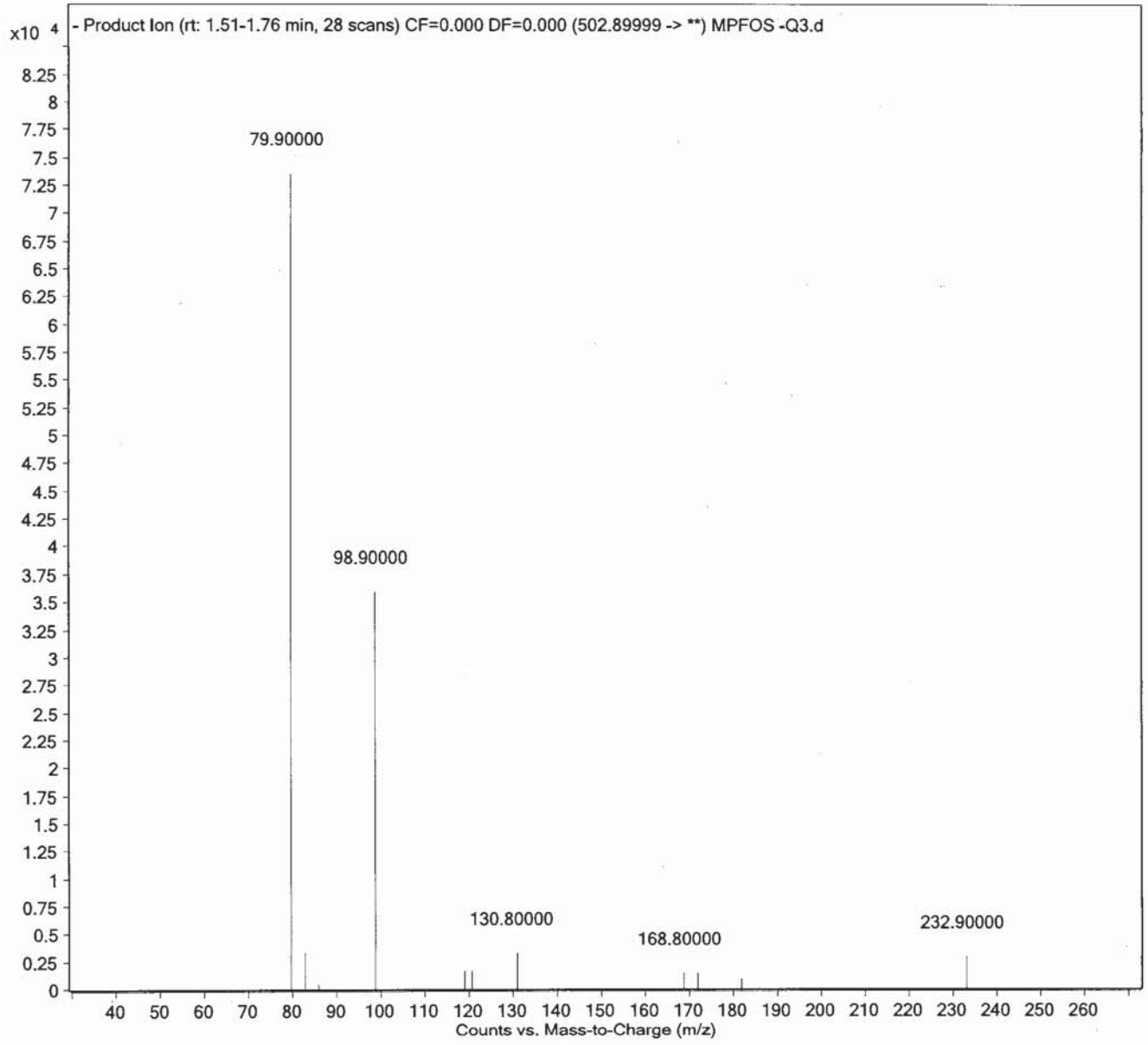
|---|---|---|---|---|---|
| **Sample Name** | MPFOS -Q3 | **Position** | P2-A7 | **Instrument Name** | LCMS04 |
| **User Name** | AD | **Inj Vol** | 10 | **InjPosition** | |
| **Sample Type** | Sample | **IRM Calibration Status** | Not Applicable | **Data Filename** | MPFOS -Q3.d |
| **ACQ Method** | PFC_MassVerification-MPFOS-Q3.m | **Comment** | | **Acquired Time** | 2017/07/11 3:40:32 PM |




SGS AXYS Analytics

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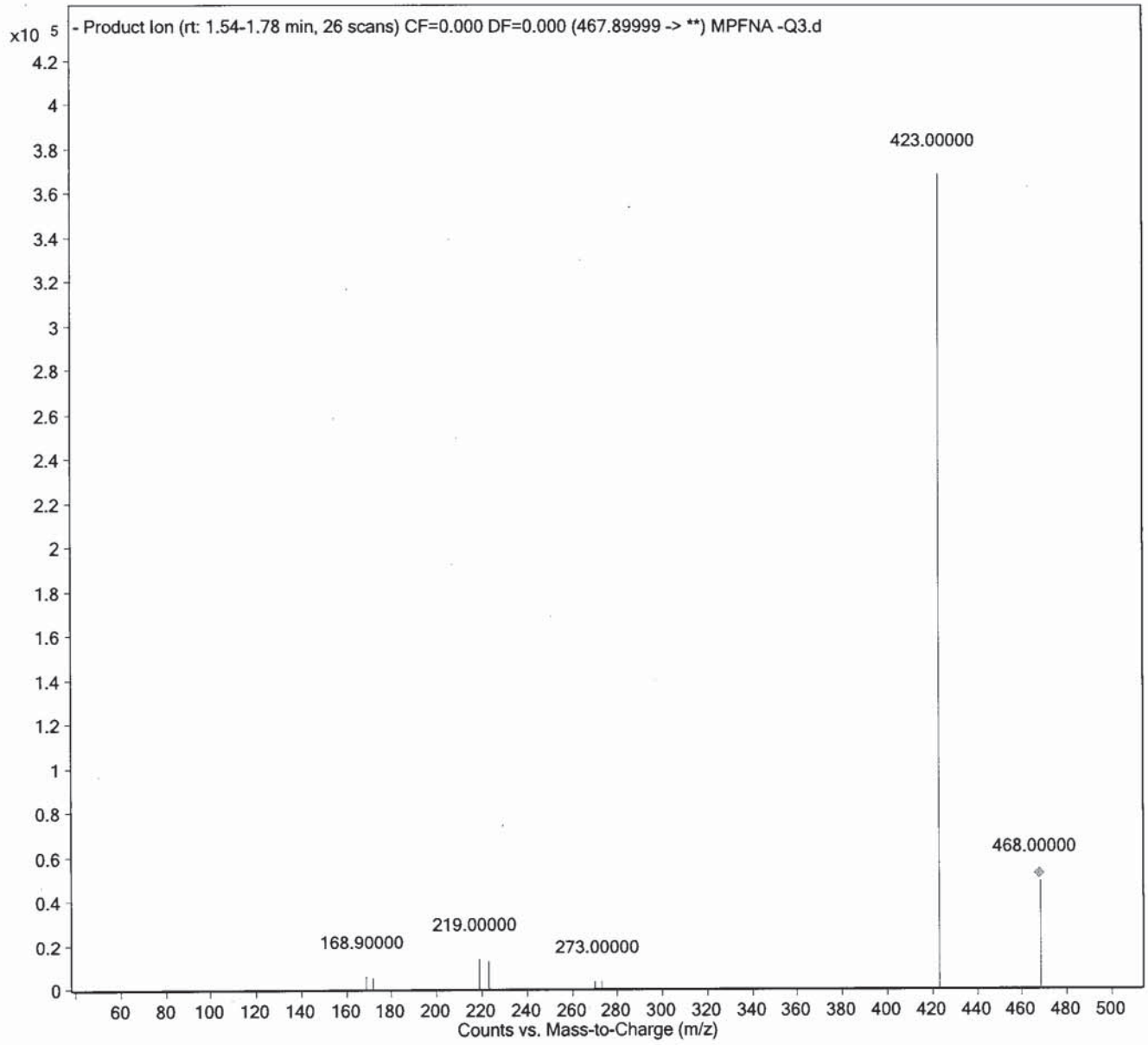
|---|---|---|---|---|---|
| **Sample Name** | MPFNA -Q3 | **Position** | P2-A8 | **Instrument Name** | LCMS04 |
| **User Name** | AD | **Inj Vol** | 10 | **InjPosition** | |
| **Sample Type** | Sample | **IRM Calibration Status** | Not Applicable | **Data Filename** | MPFNA -Q3.d |
| **ACQ Method** | PFC_MassVerification-MPFNA-Q3.m | **Comment** | | **Acquired Time** | 2017/07/11 3:46:04 PM |




SaTeam Analytics

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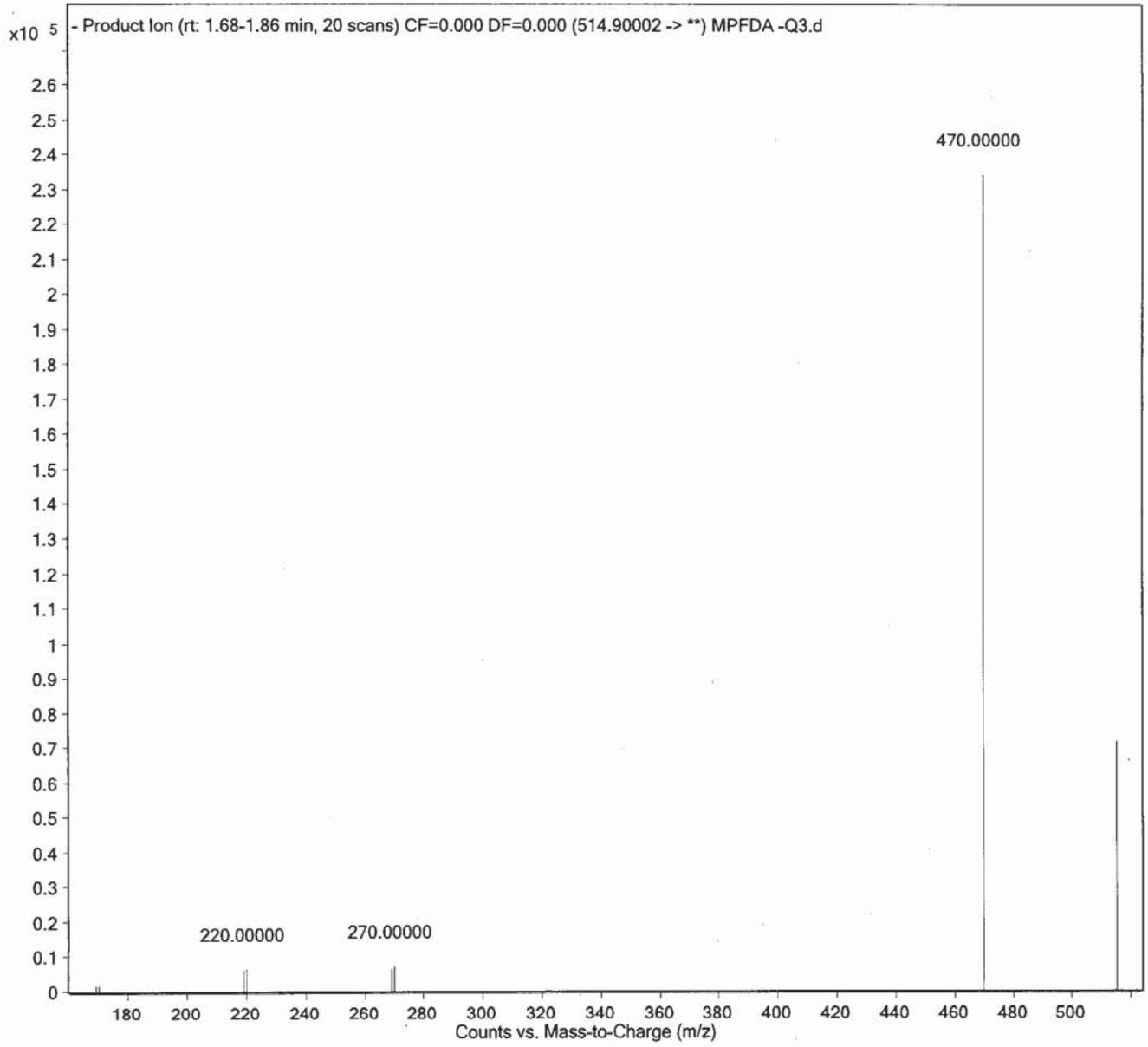
|---|---|---|---|---|---|
| **Sample Name** | MPFDA -Q3 | **Position** | P2-A9 | **Instrument Name** | LCMS04 |
| **User Name** | AD | **Inj Vol** | 10 | **InjPosition** | |
| **Sample Type** | Sample | **IRM Calibration Status** | Not Applicable | **Data Filename** | MPFDA -Q3.d |
| **ACQ Method** | PFC_MassVerification-MPFDA-Q3.m | **Comment** | | **Acquired Time** | 2017/07/11 3:51:36 PM |




SaraKam Analytics

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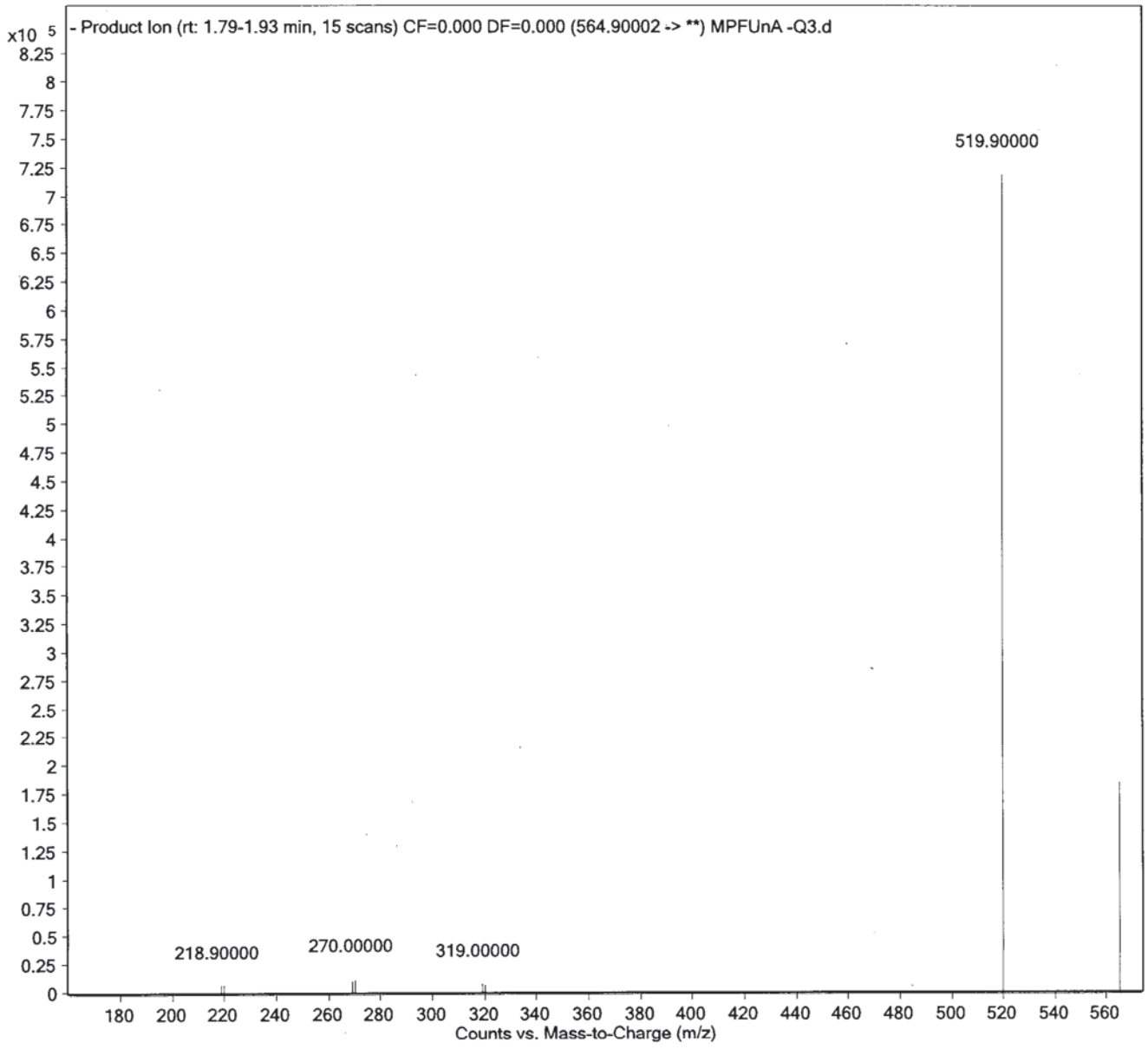
|---|---|---|---|---|---|
| **Sample Name** | MPFUnA -Q3 | **Position** | P2-B1 | **Instrument Name** | LCMS04 |
| **User Name** | AD | **Inj Vol** | 10 | **InjPosition** | |
| **Sample Type** | Sample | **IRM Calibration Status** | Not Applicable | **Data Filename** | MPFUnA -Q3.d |
| **ACQ Method** | PFC_MassVerification-MPFUnA-Q3.m | **Comment** | | **Acquired Time** | 2017/07/11 3:57:07 PM |




SaiKam Analytics

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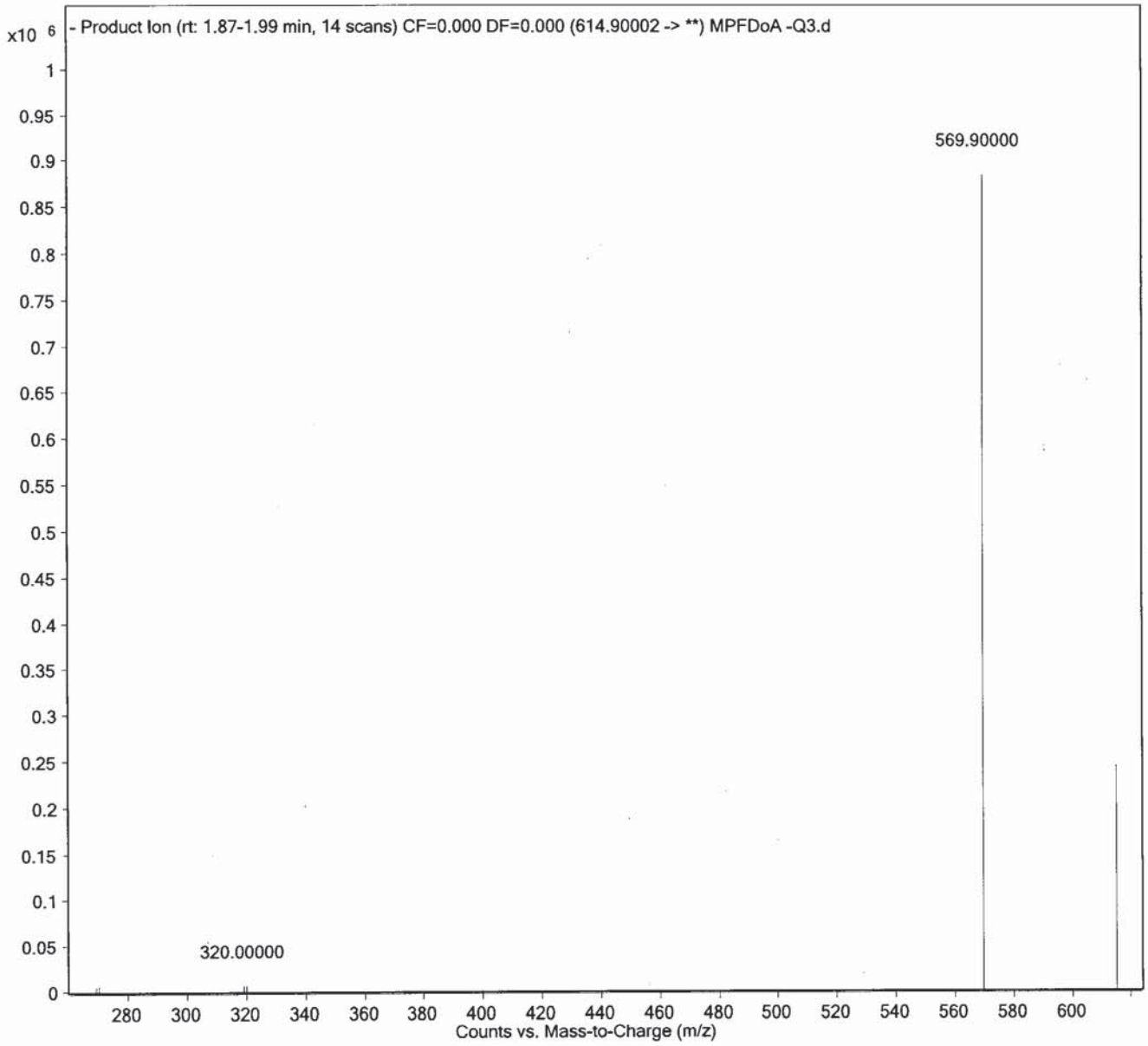
|---|---|---|---|---|---|
| **Sample Name** | MPFDoA -Q3 | **Position** | P2-B2 | **Instrument Name** | LCMS04 |
| **User Name** | AD | **Inj Vol** | 10 | **InjPosition** | |
| **Sample Type** | Sample | **IRM Calibration Status** | Not Applicable | **Data Filename** | MPFDoA -Q3.d |
| **ACQ Method** | PFC_MassVerification-MPFDoA-Q3.m | **Comment** | | **Acquired Time** | 2017/07/11 4:02:38 PM |




Saram Analytics

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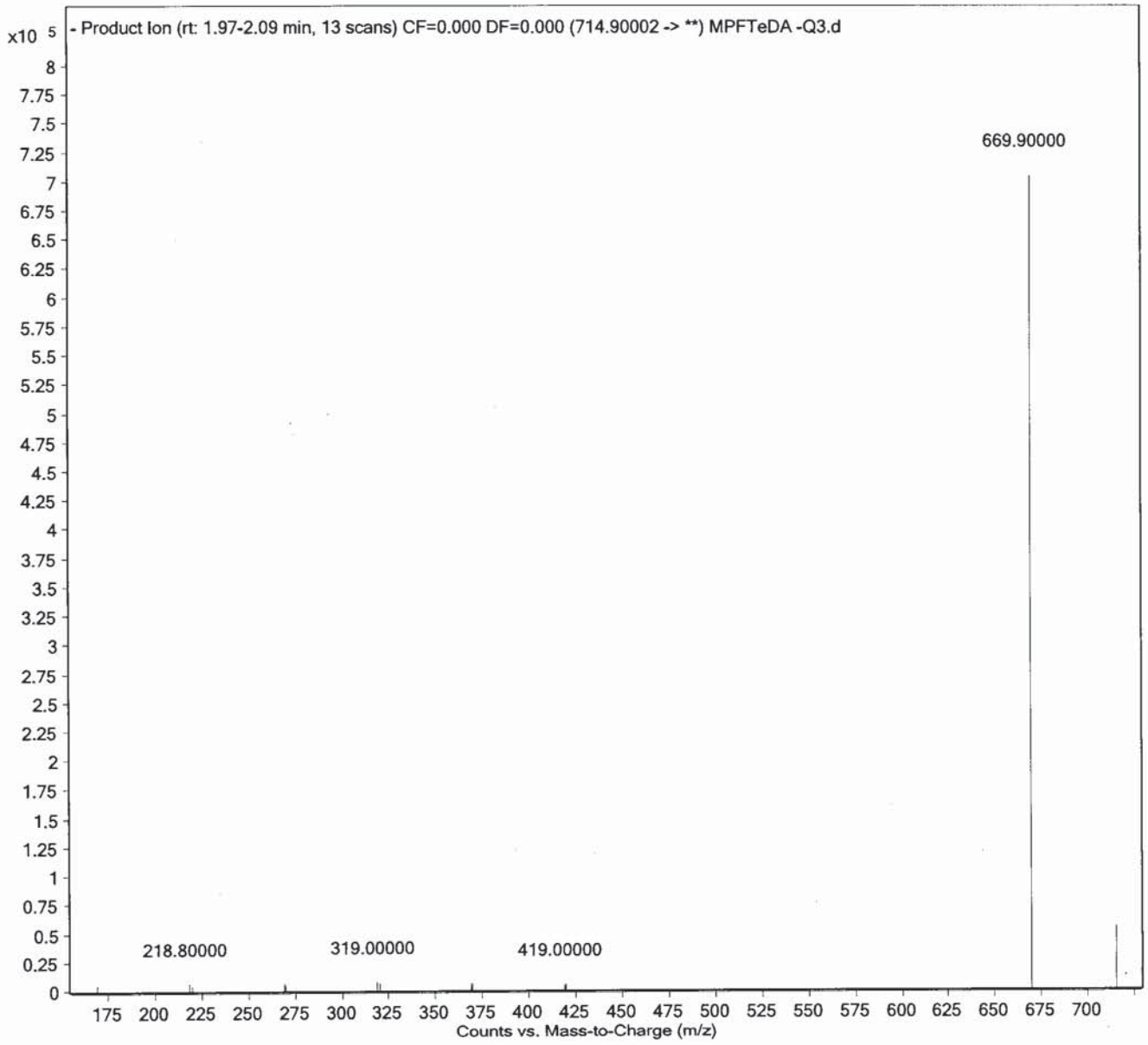
|---|---|---|---|---|---|
| **Sample Name** | MPFTeDA -Q3 | **Position** | P2-B3 | **Instrument Name** | LCMS04 |
| **User Name** | AD | **Inj Vol** | 10 | **InjPosition** | |
| **Sample Type** | Sample | **IRM Calibration Status** | Not Applicable | **Data Filename** | MPFTeDA -Q3.d |
| **ACQ Method** | PFC_MassVerification-MPFTeDA-Q3.m | **Comment** | | **Acquired Time** | 2017/07/11 4:08:08 PM |




SaTeam Analytics

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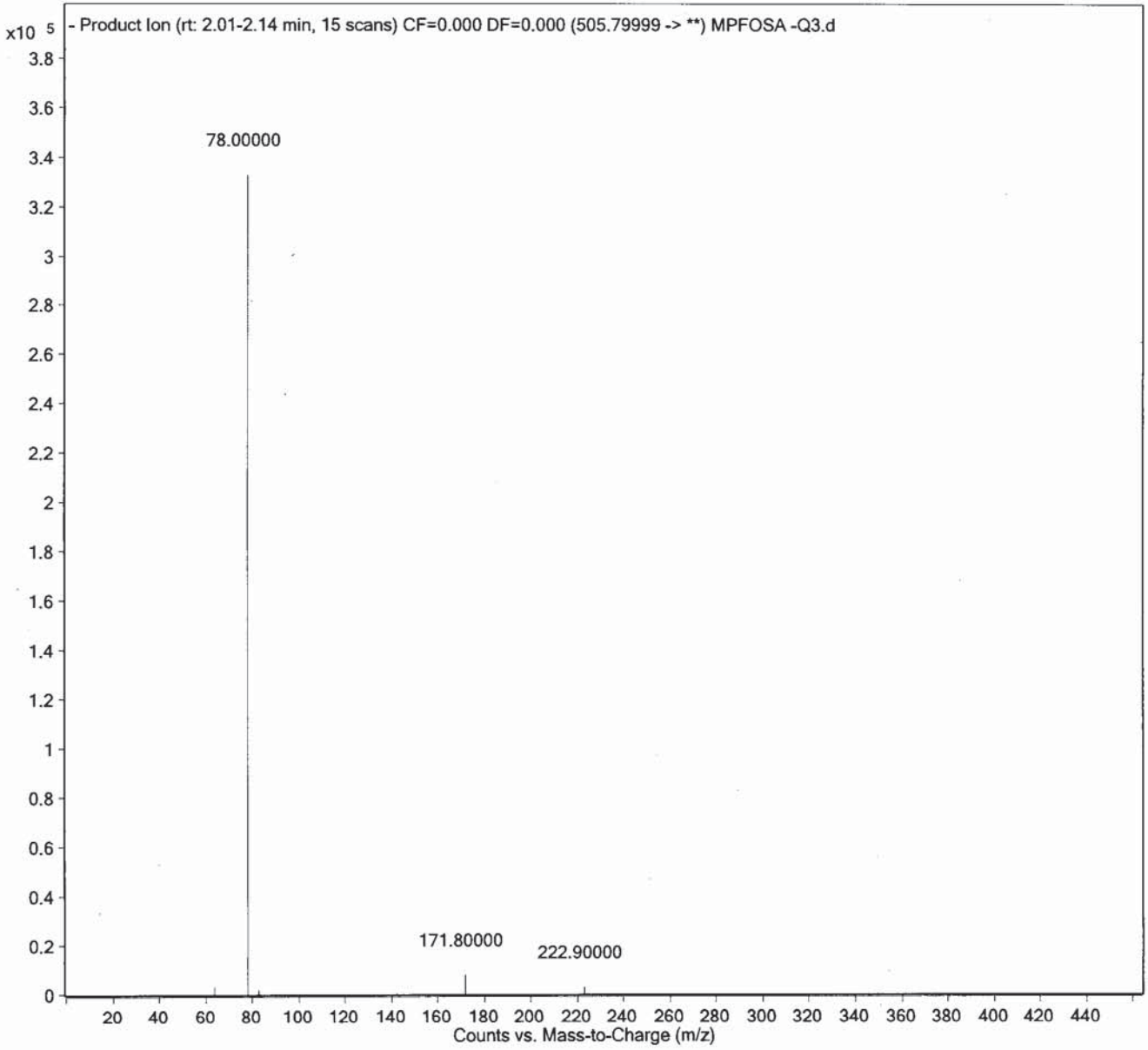
|---|---|---|---|---|---|
| **Sample Name** | MPFOSA -Q3 | **Position** | P2-B4 | **Instrument Name** | LCMS04 |
| **User Name** | AD | **Inj Vol** | 10 | **InjPosition** | |
| **Sample Type** | Sample | **IRM Calibration Status** | Not Applicable | **Data Filename** | MPFOSA -Q3.d |
| **ACQ Method** | PFC_MassVerification-MPFOSA-Q3.m | **Comment** | | **Acquired Time** | 2017/07/11 4:13:38 PM |




MaxAm Analytics

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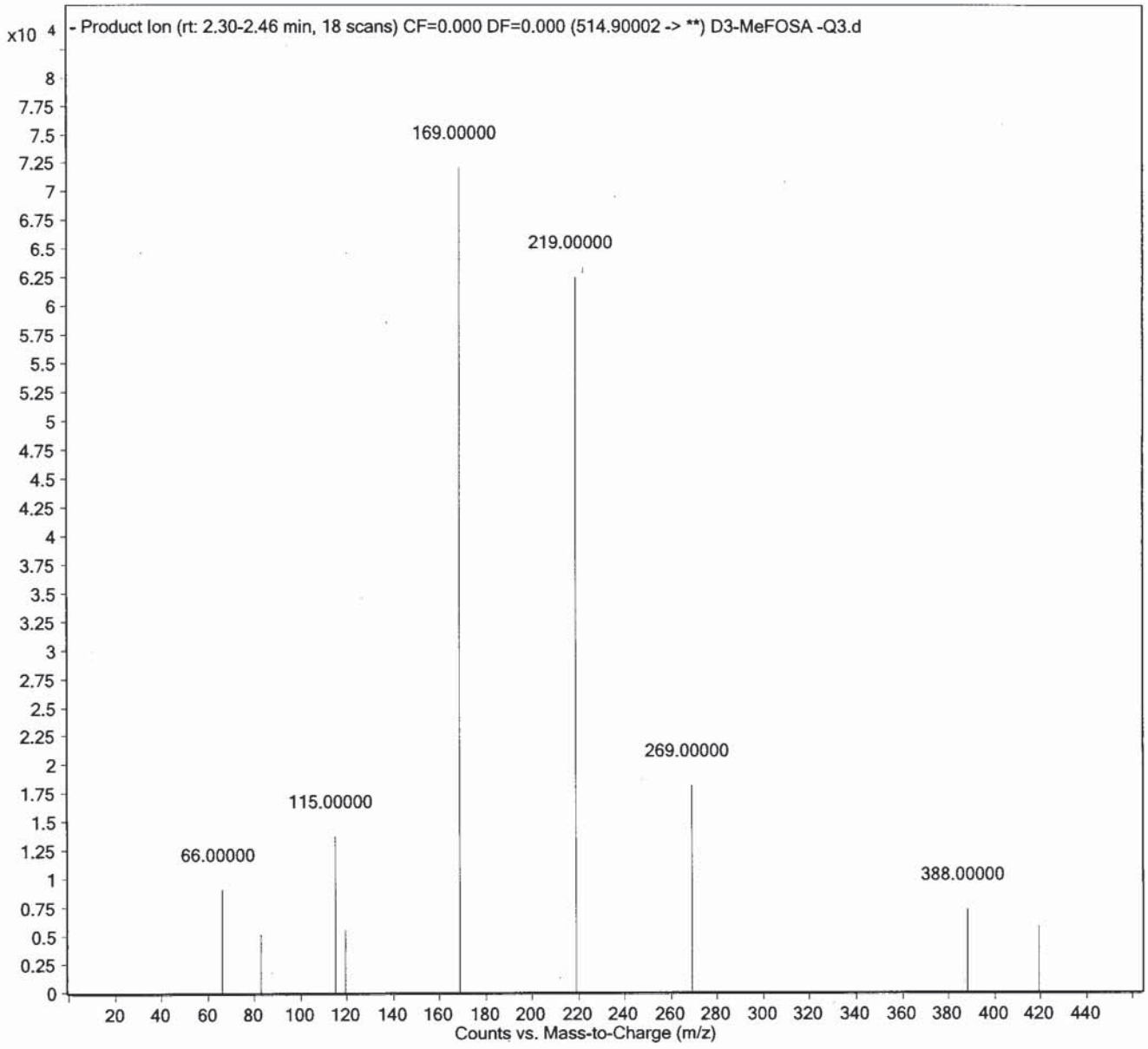
|---|---|---|---|---|---|
| **Sample Name** | D3-MeFOSA -Q3 | **Position** | P2-B5 | **Instrument Name** | LCMS04 |
| **User Name** | AD | **Inj Vol** | 10 | **InjPosition** | |
| **Sample Type** | Sample | **IRM Calibration Status** | Not Applicable | **Data Filename** | D3-MeFOSA -Q3.d |
| **ACQ Method** | PFC_MassVerification-D3-MeFOSA-Q3.m | **Comment** | | **Acquired Time** | 2017/07/11 4:19:08 PM |




SaTeam Analytics

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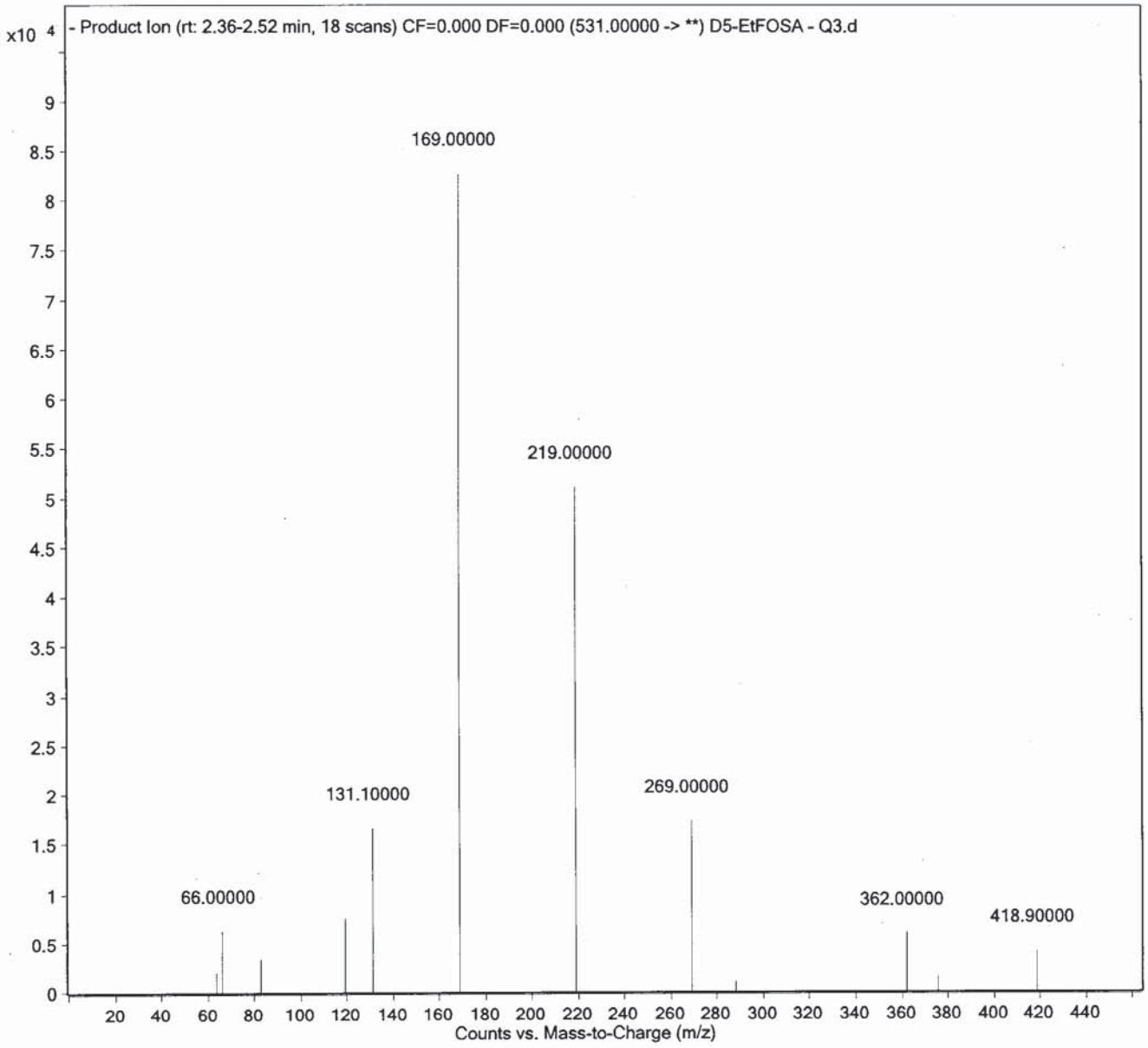
|---|---|---|---|---|---|
| **Sample Name** | D5-EtFOSA -Q3 | **Position** | P2-B6 | **Instrument Name** | LCMS04 |
| **User Name** | AD | **Inj Vol** | 10 | **InjPosition** | |
| **Sample Type** | Sample | **IRM Calibration Status** | Not Applicable | **Data Filename** | D5-EtFOSA - Q3.d |
| **ACQ Method** | PFC_MassVerification-D5-EtFOSA-Q3.m | **Comment** | | **Acquired Time** | 2017/07/11 4:24:38 PM |




SGS AXYS Analytics

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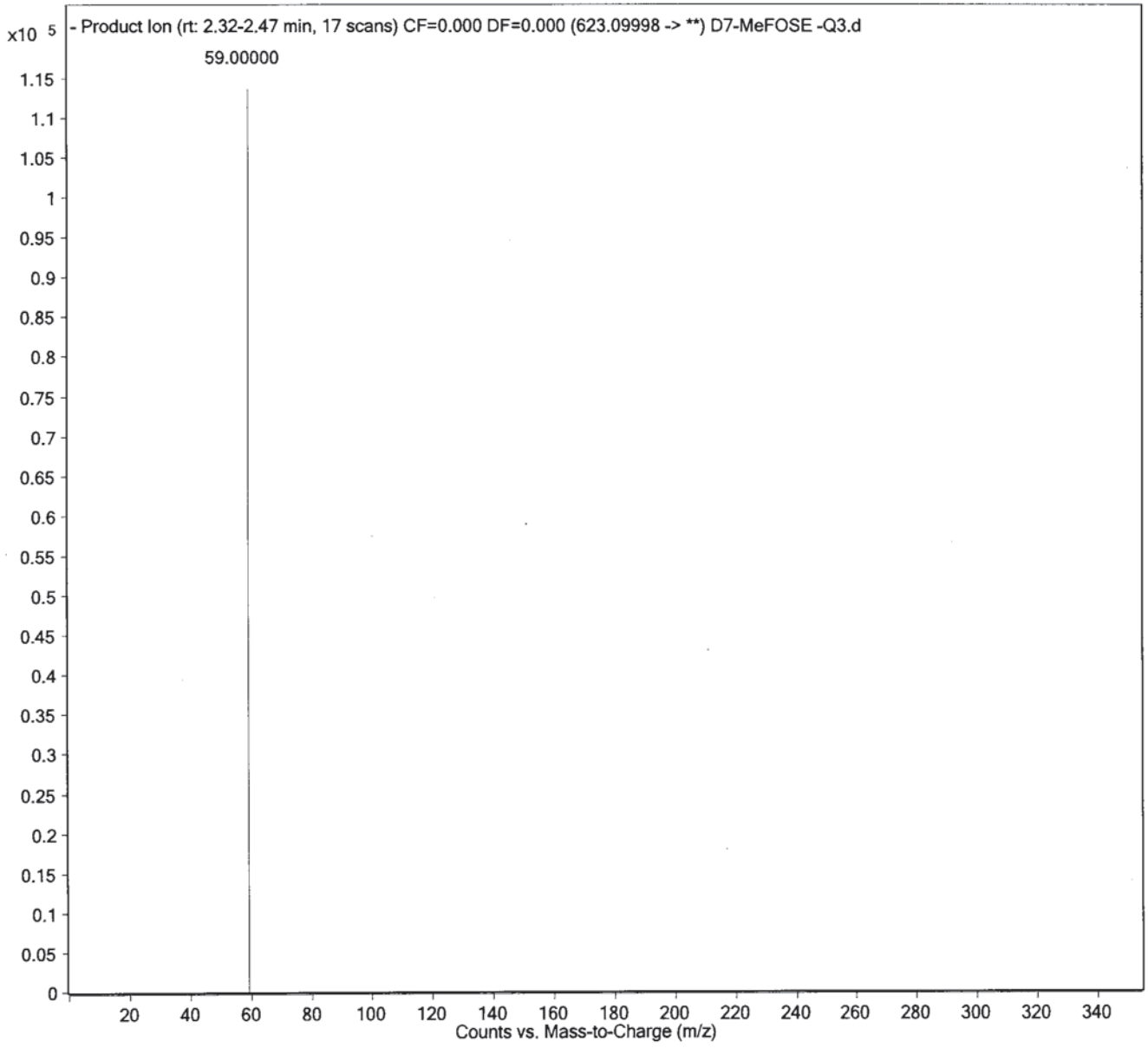
|---|---|---|---|---|---|
| **Sample Name** | D7-MeFOSE -Q3 | **Position** | P2-B7 | **Instrument Name** | LCMS04 |
| **User Name** | AD | **Inj Vol** | 10 | **InjPosition** | |
| **Sample Type** | Sample | **IRM Calibration Status** | Not Applicable | **Data Filename** | D7-MeFOSE -Q3.d |
| **ACQ Method** | PFC_MassVerification-D7-MeFOSE-Q3.m | **Comment** | | **Acquired Time** | 2017/07/11 4:30:08 PM |




Alaska Analytics

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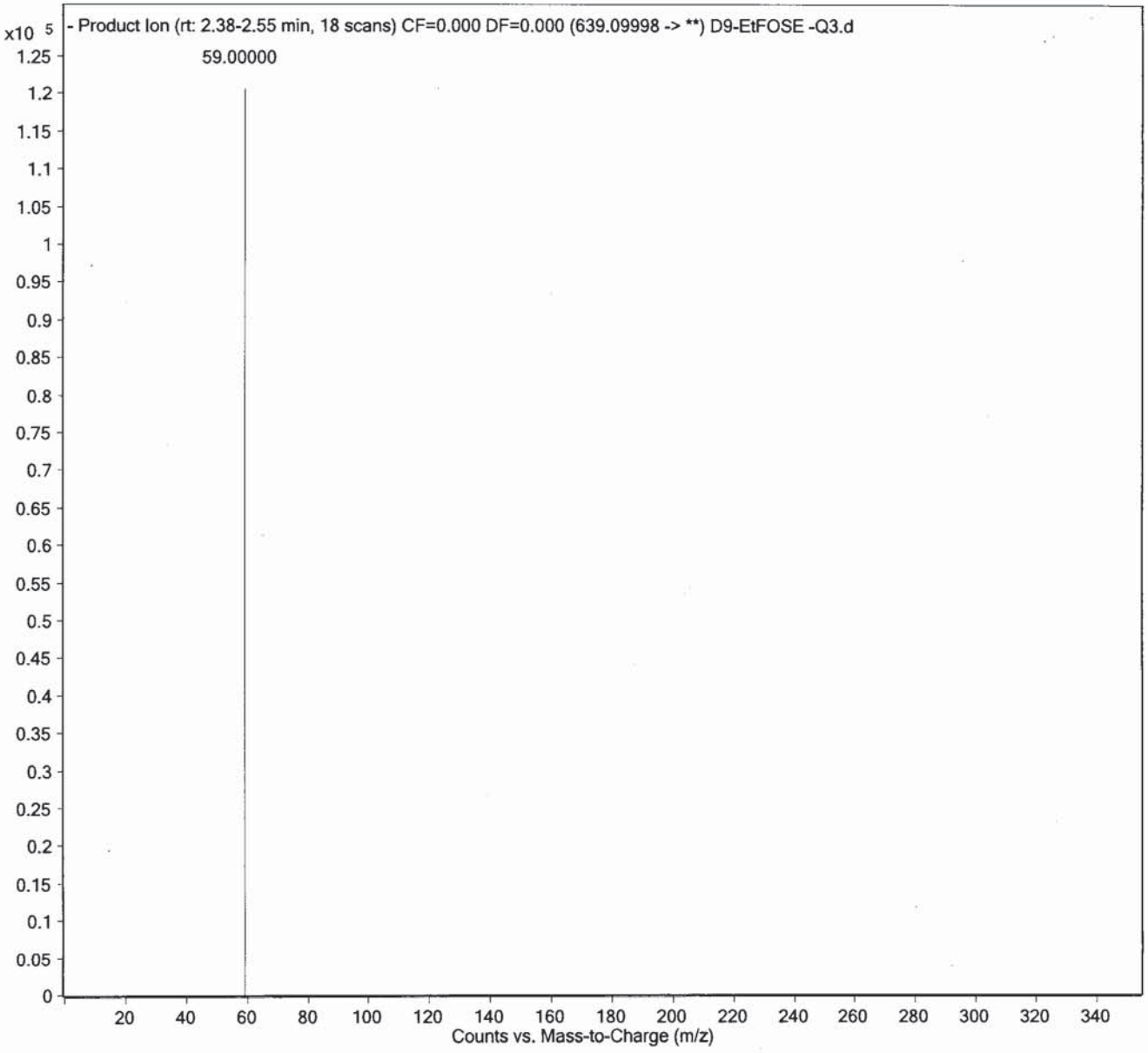
|---|---|---|---|---|---|
| **Sample Name** | D9-EtFOSE -Q3 | **Position** | P2-B8 | **Instrument Name** | LCMS04 |
| **User Name** | AD | **Inj Vol** | 10 | **InjPosition** | |
| **Sample Type** | Sample | **IRM Calibration Status** | Not Applicable | **Data Filename** | D9-EtFOSE -Q3.d |
| **ACQ Method** | PFC_MassVerification-D9-EtFOSE-Q3.m | **Comment** | | **Acquired Time** | 2017/07/11 4:35:38 PM |




Alaxam Analytics

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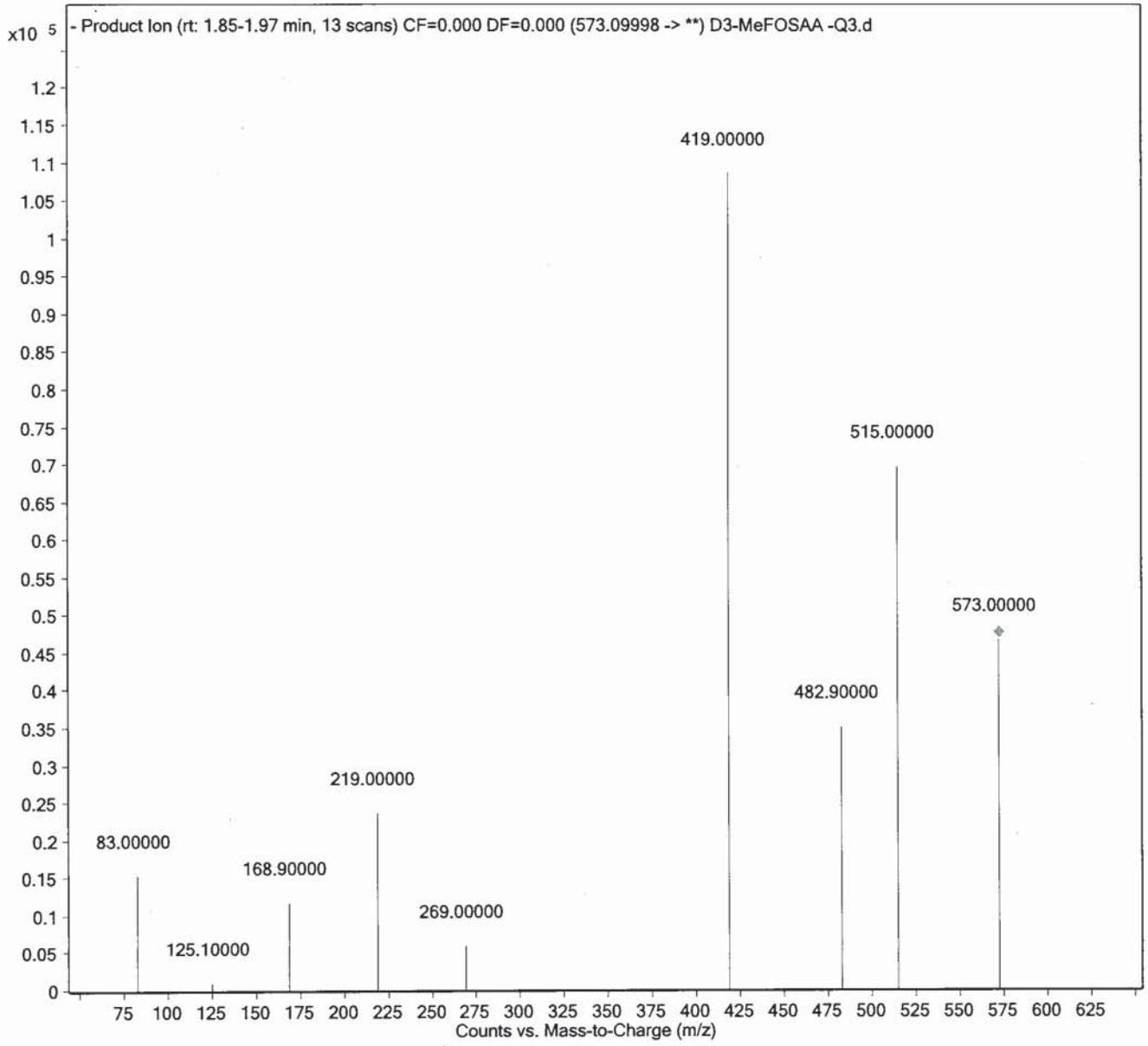
|---|---|---|---|---|---|
| **Sample Name** | D3-MeFOSAA -Q3 | **Position** | P2-B9 | **Instrument Name** | LCMS04 |
| **User Name** | AD | **Inj Vol** | 10 | **InjPosition** | |
| **Sample Type** | Sample | **IRM Calibration Status** | Not Applicable | **Data Filename** | D3-MeFOSAA -Q3.d |
| **ACQ Method** | PFC_MassVerification-D3-MeFOSAA-Q3.m | **Comment** | | **Acquired Time** | 2017/07/11 4:41:10 PM |




SGS AXYS Analytics

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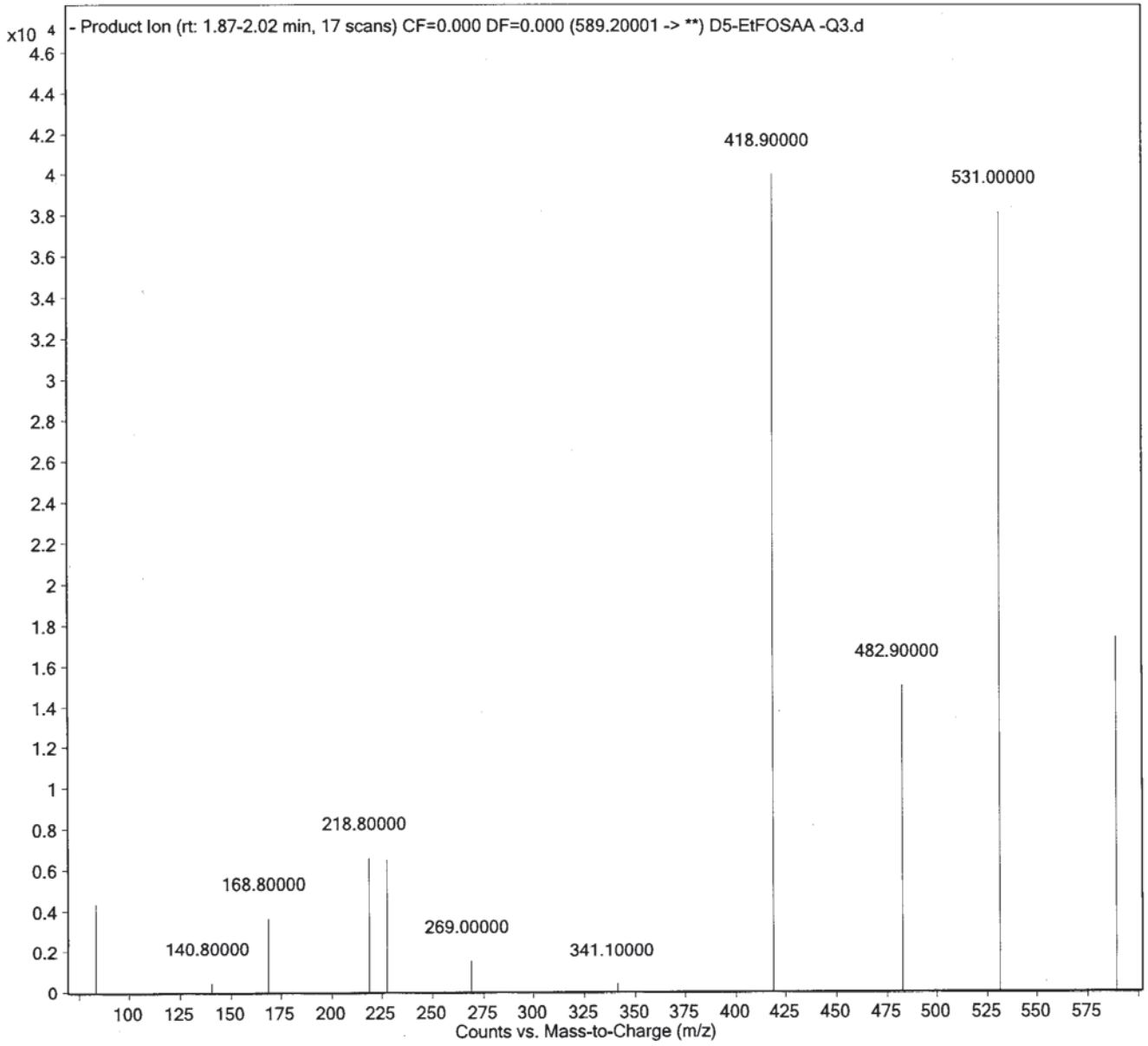
|---|---|---|---|---|---|
| **Sample Name** | D5-EtFOSAA -Q3 | **Position** | P2-C1 | **Instrument Name** | LCMS04 |
| **User Name** | AD | **Inj Vol** | 10 | **InjPosition** | |
| **Sample Type** | Sample | **IRM Calibration Status** | Not Applicable | **Data Filename** | D5-EtFOSAA -Q3.d |
| **ACQ Method** | PFC_MassVerification-D5-EtFOSAA-Q3.m | **Comment** | | **Acquired Time** | 2017/07/12 8:41:07 AM |




Alaxam Analytics

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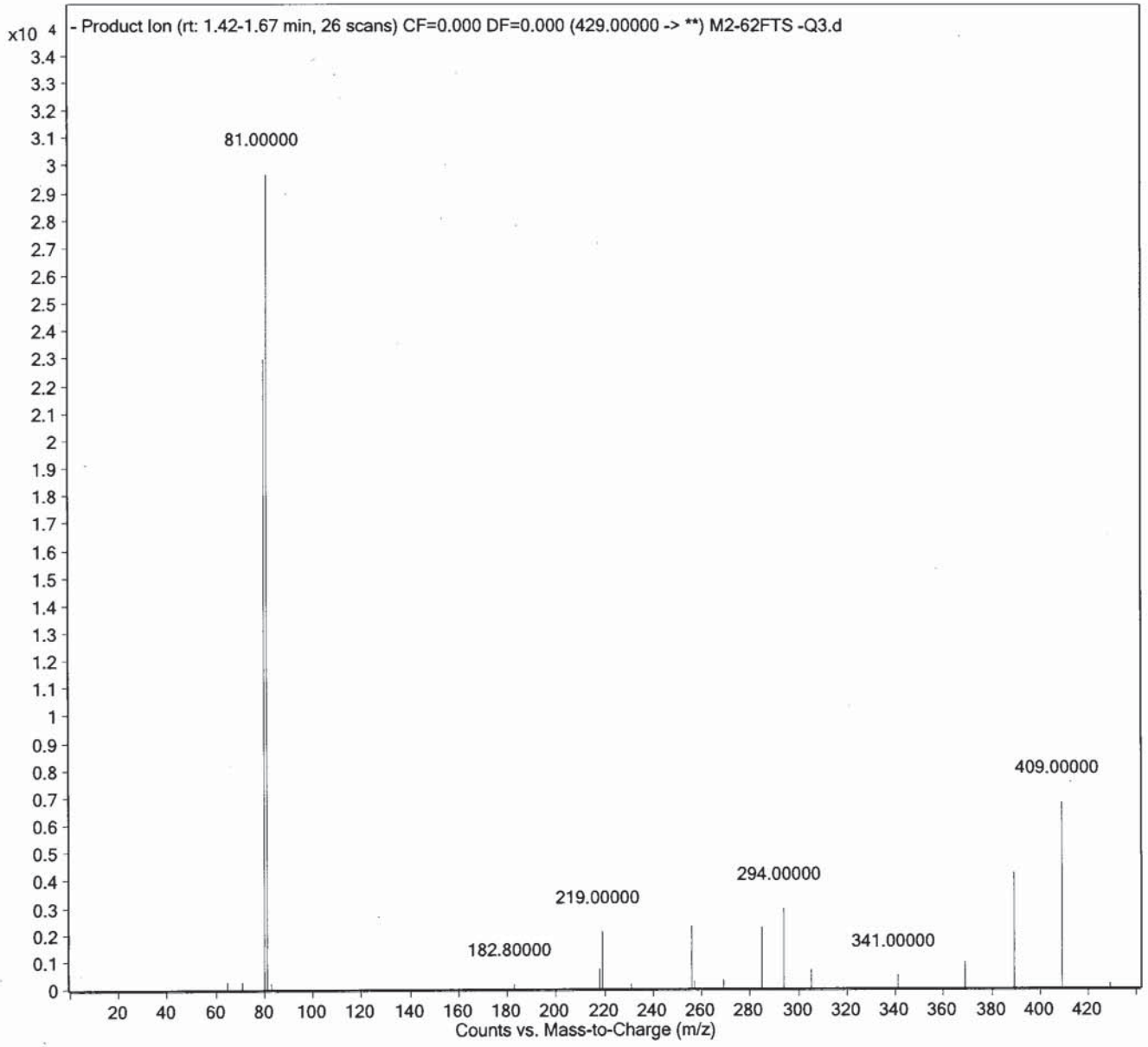
|---|---|---|---|---|---|
| **Sample Name** | M2-6:2FTS -Q3 | **Position** | P2-C2 | **Instrument Name** | LCMS04 |
| **User Name** | AD | **Inj Vol** | 10 | **InjPosition** | |
| **Sample Type** | Sample | **IRM Calibration Status** | Not Applicable | **Data Filename** | M2-62FTS -Q3.d |
| **ACQ Method** | PFC_MassVerification-M26-2FTS-Q3.m | **Comment** | | **Acquired Time** | 2017/07/11 4:52:12 PM |




Alaskan Analytics

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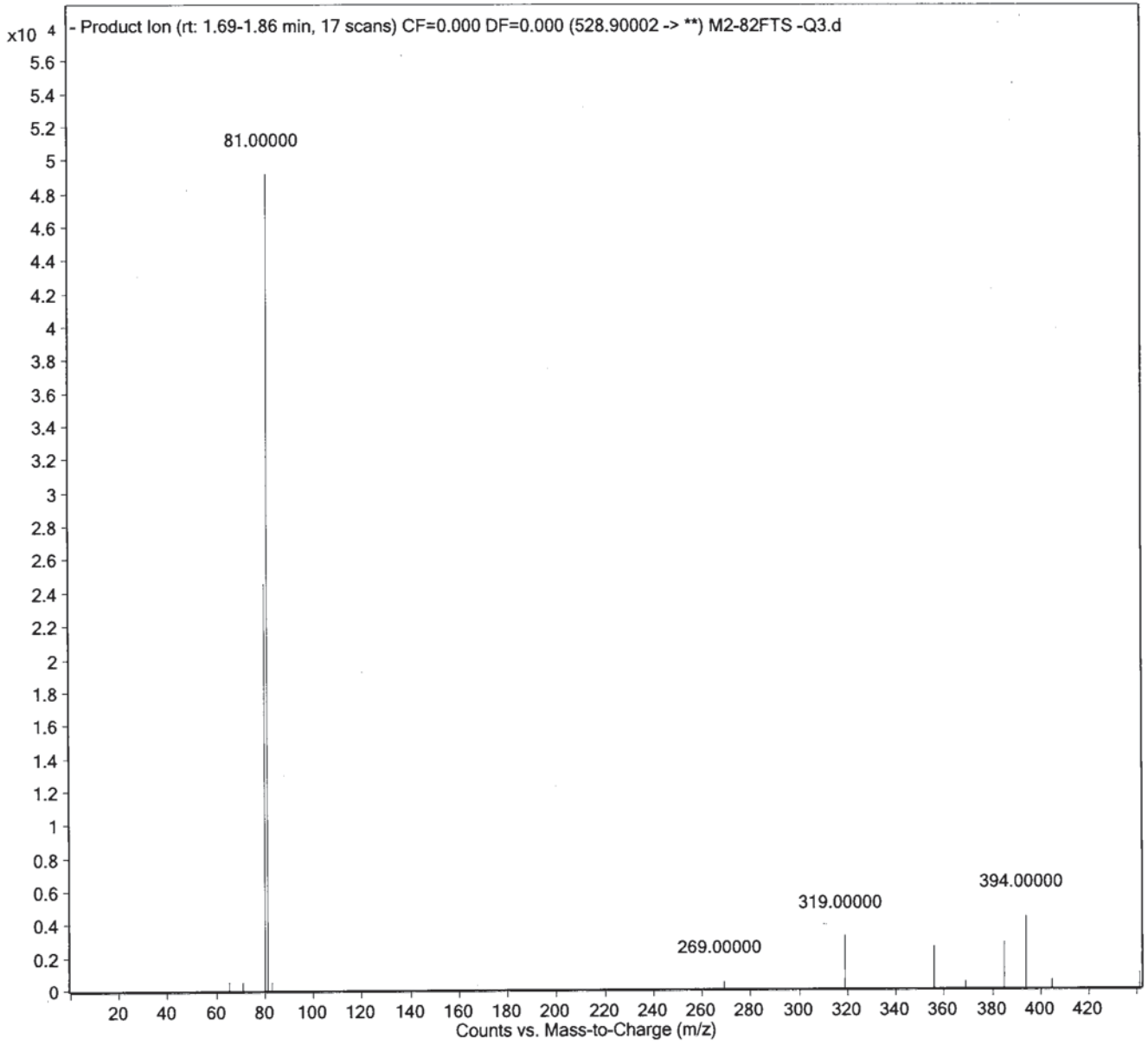
|---|---|---|---|---|---|
| **Sample Name** | M2-8:2FTS -Q3 | **Position** | P2-C3 | **Instrument Name** | LCMS04 |
| **User Name** | AD | **Inj Vol** | 10 | **InjPosition** | |
| **Sample Type** | Sample | **IRM Calibration Status** | Not Applicable | **Data Filename** | M2-82FTS -Q3.d |
| **ACQ Method** | PFC_MassVerification-M2-8-2FTS-Q3.m | **Comment** | | **Acquired Time** | 2017/07/11 4:57:42 PM |




SaxKam Analytics

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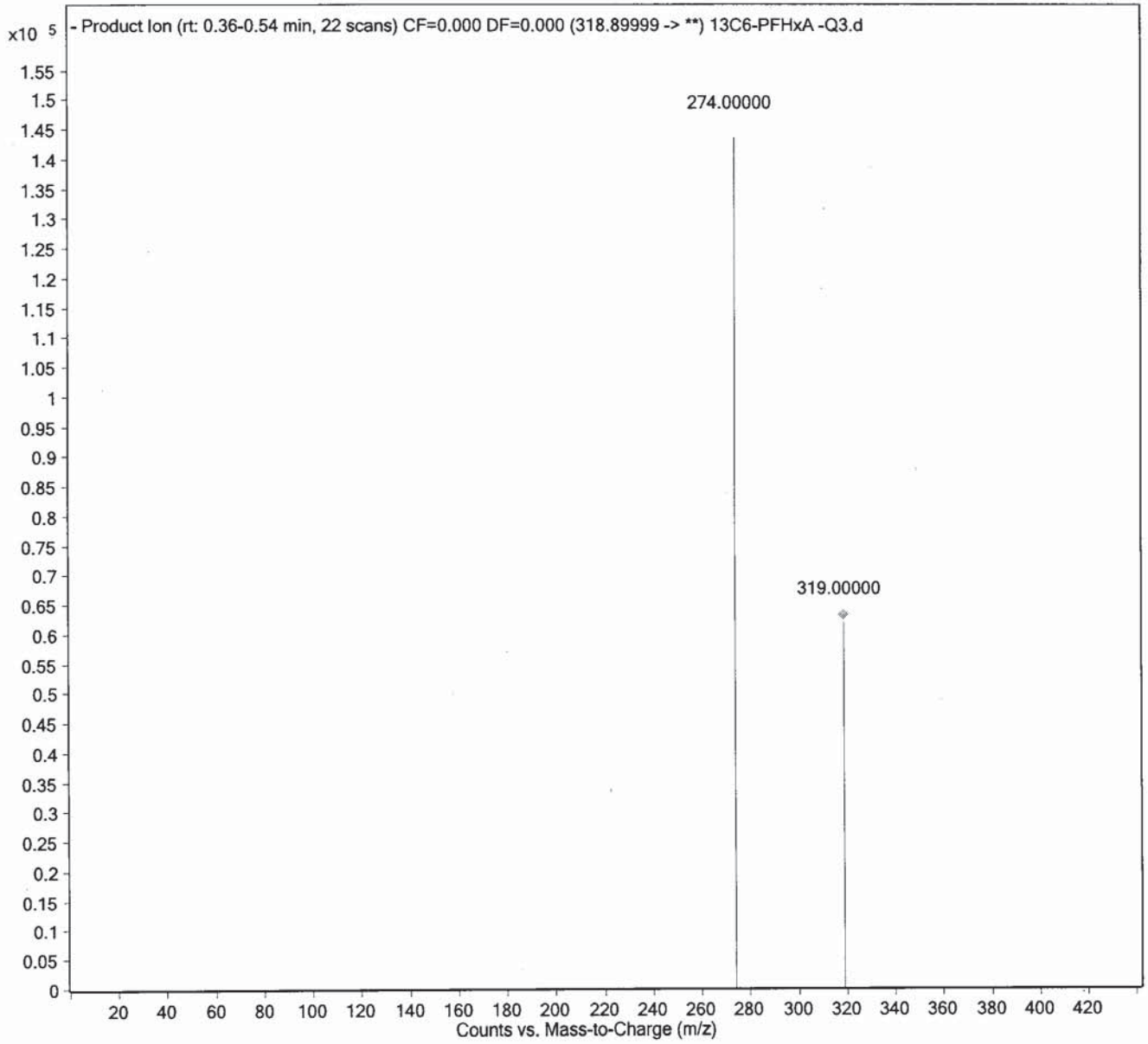
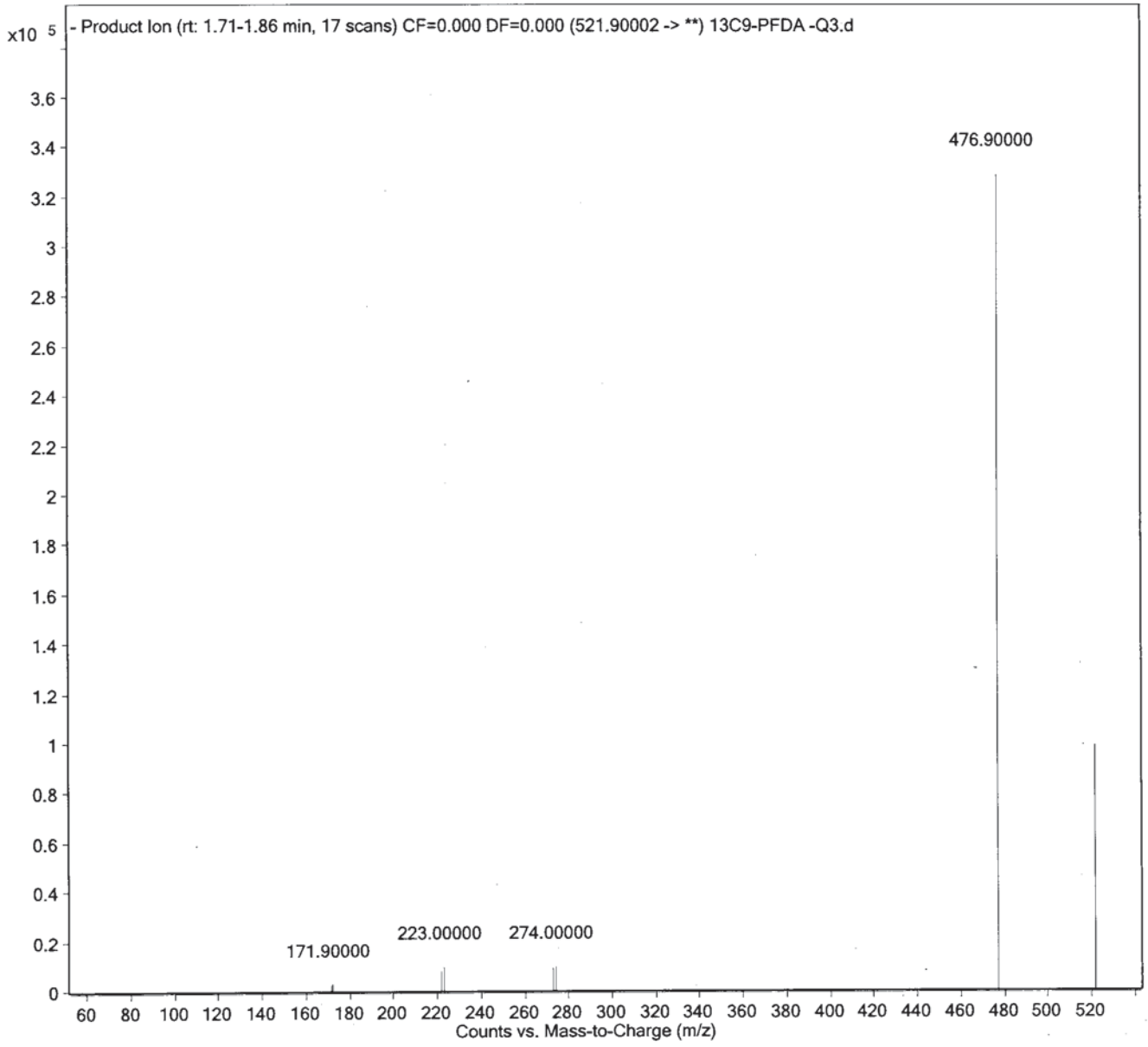
|---|---|---|---|---|---|
| **Sample Name** | 13C6-PFHxA -Q3 | **Position** | P2-C4 | **Instrument Name** | LCMS04 |
| **User Name** | AD | **Inj Vol** | 10 | **InjPosition** | |
| **Sample Type** | Sample | **IRM Calibration Status** | Not Applicable | **Data Filename** | 13C6-PFHxA -Q3.d |
| **ACQ Method** | PFC_MassVerification-13C6-PFHxA-Q3.m | **Comment** | | **Acquired Time** | 2017/07/11 5:03:12 PM |



| | | | | | |
|---|---|---|---|---|---|
| **Sample Name** | 13C9-PFDA -Q3 | **Position** | P2-C5 | **Instrument Name** | LCMS04 |
| **User Name** | AD | **Inj Vol** | 10 | **InjPosition** | |
| **Sample Type** | Sample | **IRM Calibration Status** | Not Applicable | **Data Filename** | 13C9-PFDA -Q3.d |
| **ACQ Method** | PFC_MassVerification-13C9-PFDA-Q3.m | **Comment** | | **Acquired Time** | 2017/07/11 5:08:42 PM |

Maxxam Analytics



# Worklist Report

Agilent Technologies

Maxxam Analytics

**Instrument Name:** LCMS04 **Worklist Path:** D:\MassHunter\Worklists\PFCs\PFAS_MASSVER_IS_170711.wkl

**Operator Name:** AD
**Run Type:** Standard Start
**Part of Method to Run:** Acquisition Only
**Execution of Acquisition-DA:** Synchronous
**Acquisition Method Path:** D:\MassHunter\Acquisition Method
**DA Method Path:** D:\MassHunter\methods
**Data File Path:** D:\MassHunter\data\Mass Verification\20170711_IS
**Pre-Worklist Script:** ---
**Post-Worklist Script:** ---
**Acquisition Clean Up Script:** ---
**Overlapped Injection:** Yes
**Clear Sample Selection After Run:** Yes
**Wait Time for Ready(Min):** 10
**Threshold Disk Value(GB):** 10
**Comment:** ---

**Plate Barcode:**

| Plate | Barcode |
|---|---|
| P1 | |

**Worklist Table**

| | Sample Name | Sample Position | Method | Data File | Sample Type | Inj Vol (µl) | Sample Group |
|---|---|---|---|---|---|---|---|
| 1 | MPFBA | P2-A1 | PFC_MassVerification-Q1.m | D:\MassHunter\Data\Mass Verification\20170711_IS\MPFBA -Q1.d | Sample | As Method | PFAS-Q1 |
| 2 | MPFPeA | P2-A2 | PFC_MassVerification-Q1.m | MPFPeA -Q1.d | Sample | As Method | PFAS-Q1 |
| 3 | MPFHxA | P2-A3 | PFC_MassVerification-Q1.m | MPFHxA -Q1.d | Sample | As Method | PFAS-Q1 |
| 4 | MPFHxS | P2-A4 | PFC_MassVerification-Q1.m | MPFHxS -Q1.d | Sample | As Method | PFAS-Q1 |
| 5 | MPFHpA | P2-A5 | PFC_MassVerification-Q1.m | MPFHpA -Q1.d | Sample | As Method | PFAS-Q1 |
| 6 | MPFOA | P2-A6 | PFC_MassVerification-Q1.m | MPFOA -Q1.d | Sample | As Method | PFAS-Q1 |
| 7 | MPFOS | P2-A7 | PFC_MassVerification-Q1.m | MPFOS -Q1.d | Sample | As Method | PFAS-Q1 |
| 8 | MPFNA | P2-A8 | PFC_MassVerification-Q1.m | MPFNA -Q1.d | Sample | As Method | PFAS-Q1 |

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Maxxam Analytics

| | Sample Name | Sample Position | Method | Data File | Sample Type | Inj Vol (µl) | Sample Group |
|---|---|---|---|---|---|---|---|
| 9 | MPFDA | P2-A9 | PFC_MassVerification-Q1.m | MPFDA -Q1.d | Sample | As Method | PFAS-Q1 |
| 10 | MPFUnA | P2-B1 | PFC_MassVerification-Q1.m | MPFUnA -Q1.d | Sample | As Method | PFAS-Q1 |
| 11 | MPFDoA | P2-B2 | PFC_MassVerification-Q1.m | MPFDoA -Q1.d | Sample | As Method | PFAS-Q1 |
| 12 | MPFTeDA | P2-B3 | PFC_MassVerification-Q1.m | MPFTeDA -Q1.d | Sample | As Method | PFAS-Q1 |
| 13 | MPFOSA | P2-B4 | PFC_MassVerification-Q1.m | MPFOSA -Q1.d | Sample | As Method | PFAS-Q1 |
| 14 | D3-MeFOSA | P2-B5 | PFC_MassVerification-Q1.m | D3-MeFOSA -Q1.d | Sample | As Method | PFAS-Q1 |
| 15 | D5-EtFOSA | P2-B6 | PFC_MassVerification-Q1.m | D5-EtFOSA -Q1.d | Sample | As Method | PFAS-Q1 |
| 16 | D7-MeFOSE | P2-B7 | PFC_MassVerification-Q1.m | D7-MeFOSE -Q1.d | Sample | As Method | PFAS-Q1 |
| 17 | D9-EtFOSE | P2-B8 | PFC_MassVerification-Q1.m | D9-EtFOSE -Q1.d | Sample | As Method | PFAS-Q1 |
| 18 | D3-MeFOSAA | P2-B9 | PFC_MassVerification-Q1.m | D3-MeFOSAA -Q1.d | Sample | As Method | PFAS-Q1 |
| 19 | D5-EtFOSAA | P2-C1 | PFC_MassVerification-Q1.m | D5-EtFOSAA -Q1.d | Sample | As Method | PFAS-Q1 |
| 20 | M2-6:2FTS | P2-C2 | PFC_MassVerification-Q1.m | M2-62FTS -Q1.d | Sample | As Method | PFAS-Q1 |
| 21 | M2-8:2FTS | P2-C3 | PFC_MassVerification-Q1.m | M2-82FTS -Q1.d | Sample | As Method | PFAS-Q1 |
| 22 | 13C6-PFHxA | P2-C4 | PFC_MassVerification-Q1.m | 13C6-PFHxA -Q1.d | Sample | As Method | PFAS-Q1 |
| 23 | 13C9-PFDA | P2-C5 | PFC_MassVerification-Q1.m | 13C9-PFDA -Q1.d | Sample | As Method | PFAS-Q1 |
| 24 | MPFBA -Q3 | P2-A1 | PFC_MassVerification-MPFBA-Q3.m | D:\MassHunter\Data\Mass Verification\20170711_IS\MPFBA -Q3.d | Sample | As Method | PFAS-Q3 |
| 25 | MPFPeA -Q3 | P2-A2 | PFC_MassVerification-MPFPeA-Q3.m | D:\MassHunter\Data\Mass Verification\20170711_IS\MPFPeA -Q3.d | Sample | As Method | PFAS-Q3 |
| 26 | MPFHxA -Q3 | P2-A3 | PFC_MassVerification-MPFHxA-Q3.m | D:\MassHunter\Data\Mass Verification\20170711_IS\MPFHxA -Q3.d | Sample | As Method | PFAS-Q3 |
| 27 | MPFHxS -Q3 | P2-A4 | PFC_MassVerification-MPFHxS-Q3.m | D:\MassHunter\Data\Mass Verification\20170711_IS\MPFHxS -Q3.d | Sample | As Method | PFAS-Q3 |
| 28 | MPFHpA -Q3 | P2-A5 | PFC_MassVerification-MPFHpA-Q3.m | D:\MassHunter\Data\Mass Verification\20170711_IS\MPFHpA -Q3.d | Sample | As Method | PFAS-Q3 |

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| | Sample Name | Sample Position | Method | Data File | Sample Type | Inj Vol (µl) | Sample Group |
|---|---|---|---|---|---|---|---|
| 29 | MPFOA -Q3 | P2-A6 | PFC_MassVerification-MPFOA-Q3.m | D:\MassHunter\Data\Mass Verification\20170711_IS\MPFOA -Q3.d | Sample | As Method | PFAS-Q3 |
| 30 | MPFOS -Q3 | P2-A7 | PFC_MassVerification-MPFOS-Q3.m | D:\MassHunter\Data\Mass Verification\20170711_IS\MPFOS -Q3.d | Sample | As Method | PFAS-Q3 |
| 31 | MPFNA -Q3 | P2-A8 | PFC_MassVerification-MPFNA-Q3.m | D:\MassHunter\Data\Mass Verification\20170711_IS\MPFNA -Q3.d | Sample | As Method | PFAS-Q3 |
| 32 | MPFDA -Q3 | P2-A9 | PFC_MassVerification-MPFDA-Q3.m | D:\MassHunter\Data\Mass Verification\20170711_IS\MPFDA -Q3.d | Sample | As Method | PFAS-Q3 |
| 33 | MPFUnA -Q3 | P2-B1 | PFC_MassVerification-MPFUnA-Q3.m | D:\MassHunter\Data\Mass Verification\20170711_IS\MPFUnA -Q3.d | Sample | As Method | PFAS-Q3 |
| 34 | MPFDoA -Q3 | P2-B2 | PFC_MassVerification-MPFDoA-Q3.m | D:\MassHunter\Data\Mass Verification\20170711_IS\MPFDoA -Q3.d | Sample | As Method | PFAS-Q3 |
| 35 | MPFTeDA -Q3 | P2-B3 | PFC_MassVerification-MPFTeDA-Q3.m | D:\MassHunter\Data\Mass Verification\20170711_IS\MPFTeDA -Q3.d | Sample | As Method | PFAS-Q3 |
| 36 | MPFOSA -Q3 | P2-B4 | PFC_MassVerification-MPFOSA-Q3.m | D:\MassHunter\Data\Mass Verification\20170711_IS\MPFOSA -Q3.d | Sample | As Method | PFAS-Q3 |
| 37 | D3-MeFOSA -Q3 | P2-B5 | PFC_MassVerification-D3-MeFOSA-Q3.m | D:\MassHunter\Data\Mass Verification\20170711_IS\D3-MeFOSA -Q3.d | Sample | As Method | PFAS-Q3 |
| 38 | D5-EtFOSA -Q3 | P2-B6 | PFC_MassVerification-D5-EtFOSA-Q3.m | D:\MassHunter\Data\Mass Verification\20170711_IS\D5-EtFOSA -Q3.d | Sample | As Method | PFAS-Q3 |
| 39 | D7-MeFOSE -Q3 | P2-B7 | PFC_MassVerification-D7-MeFOSE-Q3.m | D:\MassHunter\Data\Mass Verification\20170711_IS\D7-MeFOSE -Q3.d | Sample | As Method | PFAS-Q3 |
| 40 | D9-EtFOSE -Q3 | P2-B8 | PFC_MassVerification-D9-EtFOSE-Q3.m | D:\MassHunter\Data\Mass Verification\20170711_IS\D9-EtFOSE -Q3.d | Sample | As Method | PFAS-Q3 |
| 41 | D3-MeFOSAA -Q3 | P2-B9 | PFC_MassVerification-D3-MeFOSAA-Q3.m | D:\MassHunter\Data\Mass Verification\20170711_IS\D3-MeFOSAA -Q3.d | Sample | As Method | PFAS-Q3 |

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| | Sample Name | Sample Position | Method | Data File | Sample Type | Inj Vol (µl) | Sample Group |
|---|---|---|---|---|---|---|---|
| 42 | D5-EtFOSA -Q3 | P2-C1 | PFC_MassVerification-D5-EtFOSA-Q3.m | D:\MassHunter\Data\Mass Verification\20170711_IS\D5-EtFOSA -Q3.d | Sample | As Method | PFAS-Q3 |
| 43 | M2-6:2FTS -Q3 | P2-C2 | PFC_MassVerification-M26-2FTS-Q3.m | D:\MassHunter\Data\Mass Verification\20170711_IS\M2-62FTS -Q3.d | Sample | As Method | PFAS-Q3 |
| 44 | M2-8:2FTS -Q3 | P2-C3 | PFC_MassVerification-M2-8-2FTS-Q3.m | D:\MassHunter\Data\Mass Verification\20170711_IS\M2-82FTS -Q3.d | Sample | As Method | PFAS-Q3 |
| 45 | 13C6-PFHxA -Q3 | P2-C4 | PFC_MassVerification-13C6-PFHxA-Q3.m | D:\MassHunter\Data\Mass Verification\20170711_IS\13C6-PFHxA -Q3.d | Sample | As Method | PFAS-Q3 |
| 46 | 13C9-PFDA -Q3 | P2-C5 | PFC_MassVerification-13C9-PFDA-Q3.m | D:\MassHunter\Data\Mass Verification\20170711_IS\13C9-PFDA -Q3.d | Sample | As Method | PFAS-Q3 |
| 47 | SCP_InstrumentStandby() {MH_Acq_Scripts.exe} | | | | | | |



# 5. Initial Calibration

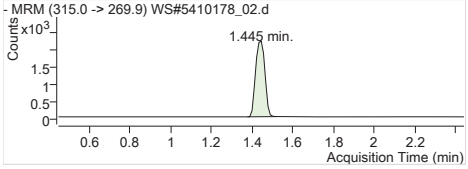
Maxxam Analytics International
6740 Campobello Rd
Mississauga, Ontario, Canada
L5N 2L8
1-800-668-0639
www.maxxamanalytics.com

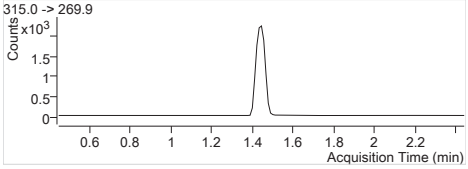
**Batch Path** T:\lcms4\PFC\20180223\WS#5410178\QuantResults\PFC_Water_Low_180223_WS#5410178_EToxics

| | | | |
|---|---|---|---|
| **Sample Name** | **STD 1** | **Instrument** | LCMS04 |
| **Data File** | WS#5410178_02.d | **Operator** | |
| **Sample Type** | Cal | **Dilution** | 1 |
| **Acq. Method** | PFC_Water_Low.m | **Position** | P1-A2 |
| **Acq. Date** | 2018/02/23 4:39:32 PM | **Injection Volume** | Per Method |
| **Sample Annotation** | - | | |

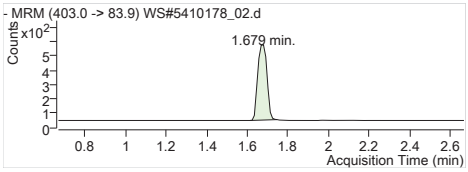
| ISTD Compounds | Response | RT | Target conc. | | |
|---|---|---|---|---|---|
| MPFHxA | 6945 | 1.44 | 1 µg/L | | |
| MPFHxS | 1672 | 1.68 | 1 µg/L | | |
| MPFHpA | 8498 | 1.70 | 1 µg/L | | |
| MPFOA | 8140 | 1.88 | 1 µg/L | | |
| MPFOS | 1807 | 1.97 | 1 µg/L | | |
| MPFNA | 7968 | 2.02 | 1 µg/L | | |
| MPFDA | 6269 | 2.14 | 1 µg/L | | |
| MPFUnA | 8648 | 2.23 | 1 µg/L | | |
| MPFDoA | 11097 | 2.32 | 1 µg/L | | |
| MPFTeDA | 10493 | 2.46 | 1 µg/L | | |
| 13C6-PFHxA IS | 23118 | 1.44 | 1 µg/L | | |
| 13C9-PFDA IS | 27510 | 2.13 | 1 µg/L | | |

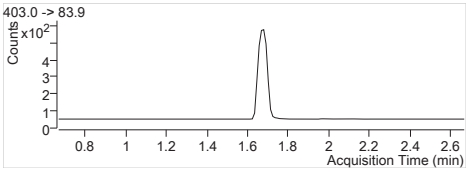
| Compound | Response | RT | Target Conc. | Calc. Conc. | Accuracy |
|---|---|---|---|---|---|
| PFBS 1 | 485 | 1.09 | 0.83 | 0.89 µg/L | 107.52 |
| PFHxA 1 | 2229 | 1.45 | 0.83 | 0.93 µg/L | 111.49 |
| PFHxS 1 | 490 | 1.67 | 0.83 | 0.87 µg/L | 105.14 |
| PFHpA 1 | 2296 | 1.70 | 0.83 | 0.91 µg/L | 110.18 |
| PFOA 1 | 2837 | 1.88 | 0.83 | 0.93 µg/L | 112.63 |
| PFOS 1 | 528 | 1.96 | 0.83 | 0.97 µg/L | 116.72 |
| PFNA 1 | 2364 | 2.03 | 0.83 | 0.90 µg/L | 108.19 |
| PFDA 1 | 2591 | 2.14 | 0.83 | 0.93 µg/L | 111.60 |
| PFUnA 1 | 2643 | 2.23 | 0.83 | 0.92 µg/L | 111.30 |
| PFDoA 1 | 3316 | 2.32 | 0.83 | 0.89 µg/L | 107.31 |
| PFTrDA 1 | 3748 | 2.40 | 0.83 | 0.89 µg/L | 107.61 |
| PFTeDA 1 | 3065 | 2.47 | 0.83 | 0.86 µg/L | 103.88 |
| 13C2-PFHxA | 6945 | 1.44 | 100.00 | 101.55 µg/L | 101.55 |
| 18O2-PFHxS | 1672 | 1.68 | 100.00 | 104.86 µg/L | 104.86 |
| 13C4-PFHpA | 8498 | 1.70 | 100.00 | 99.23 µg/L | 99.23 |
| 13C4-PFOA | 8140 | 1.88 | 100.00 | 96.01 µg/L | 96.01 |
| 13C4-PFOS | 1807 | 1.97 | 100.00 | 97.31 µg/L | 97.31 |
| 13C5-PFNA | 7968 | 2.02 | 100.00 | 96.66 µg/L | 96.66 |
| 13C2-PFDA | 6200 | 2.14 | 100.00 | 93.52 µg/L | 93.52 |
| 13C2-PFUnA | 8648 | 2.23 | 100.00 | 100.96 µg/L | 100.96 |
| 13C2-PFDoA | 11097 | 2.32 | 100.00 | 102.19 µg/L | 102.19 |
| 13C2-PFTeDA | 10642 | 2.46 | 100.00 | 92.87 µg/L | 92.87 |
| 13C6-PFHxA | 23118 | 1.44 | 100.00 | 102.46 µg/L | 102.46 |
| 13C9-PFDA | 27510 | 2.13 | 100.00 | 101.35 µg/L | 101.35 |



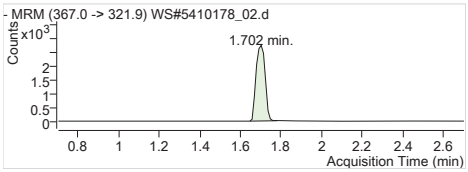



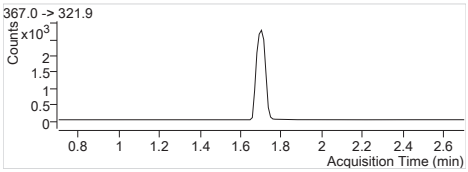

**MPFHxA** Internal Standard
RT (Exp. RT): 1.445 (1.445)
Concentration: 1 µg/L
Sample type: Calibration



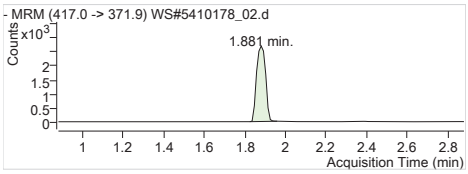



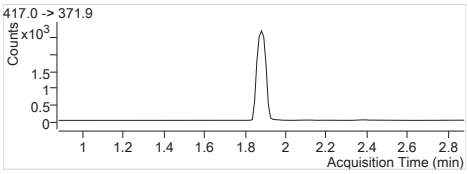

**MPFHxS** Internal Standard
RT (Exp. RT): 1.679 (1.668)
Concentration: 1 µg/L
Sample type: Calibration



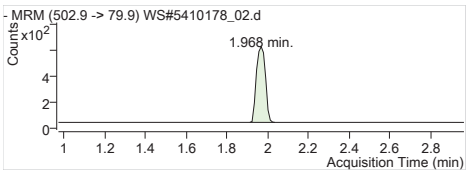



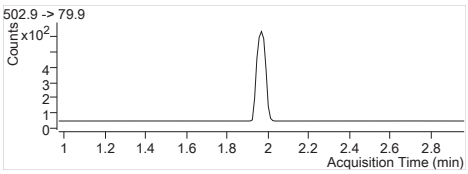

**MPFHpA** Internal Standard
RT (Exp. RT): 1.702 (1.702)
Concentration: 1 µg/L
Sample type: Calibration



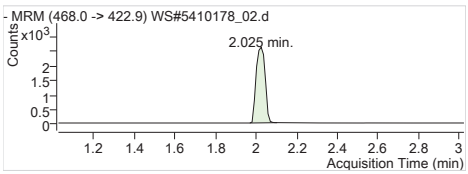



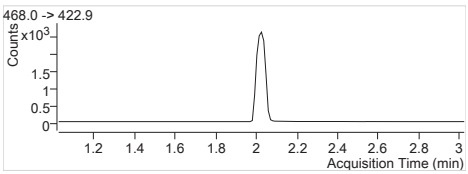

**MPFOA** Internal Standard
RT (Exp. RT): 1.881 (1.881)
Concentration: 1 µg/L
Sample type: Calibration



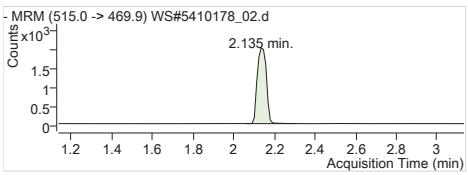



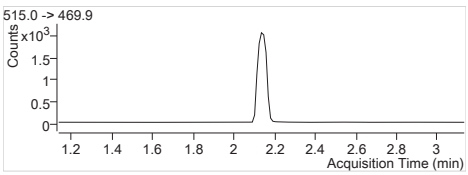

**MPFOS** Internal Standard
RT (Exp. RT): 1.968 (1.968)
Concentration: 1 µg/L
Sample type: Calibration



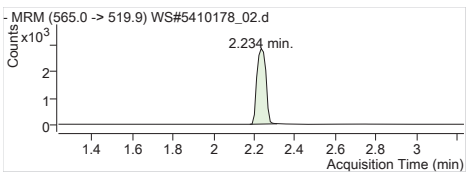



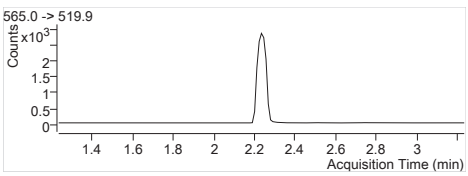

**MPFNA** Internal Standard
RT (Exp. RT): 2.025 (2.025)
Concentration: 1 µg/L
Sample type: Calibration



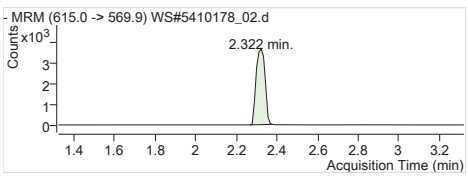



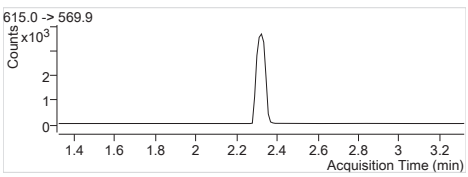

**MPFDA** Internal Standard
RT (Exp. RT): 2.135 (2.135)
Concentration: 1 µg/L
Sample type: Calibration



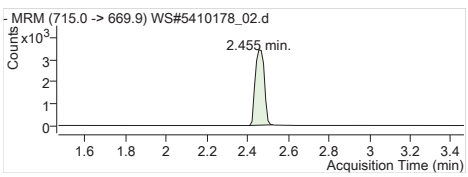



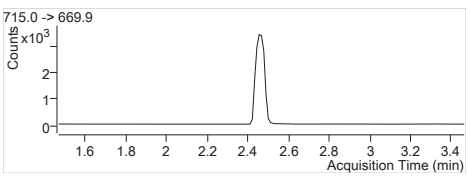

**MPFUnA** Internal Standard
RT (Exp. RT): 2.234 (2.234)
Concentration: 1 µg/L
Sample type: Calibration



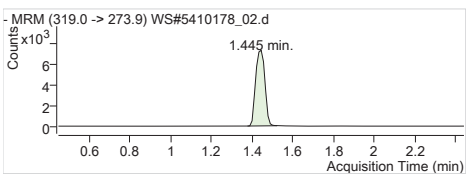



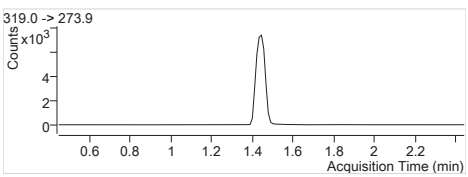

**MPFDoA** Internal Standard
RT (Exp. RT): 2.322 (2.322)
Concentration: 1 µg/L
Sample type: Calibration



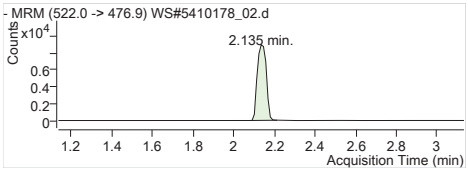



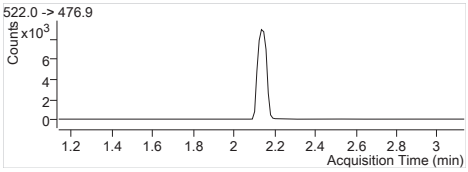

**MPFTeDA** Internal Standard
RT (Exp. RT): 2.455 (2.467)
Concentration: 1 µg/L
Sample type: Calibration



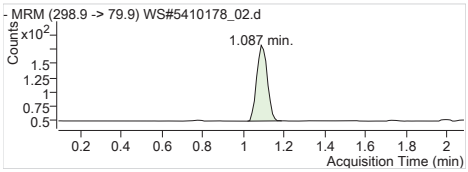



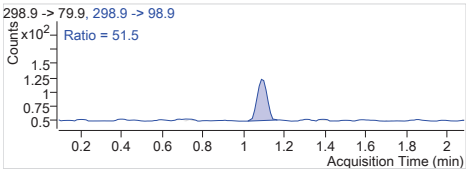

**13C6-PFHxA IS** Internal Standard
RT (Exp. RT): 1.445 (1.445)
Concentration: 1 µg/L
Sample type: Calibration



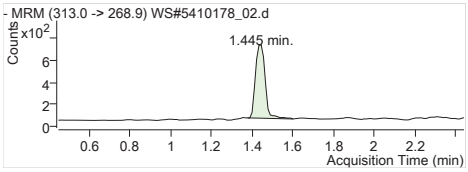



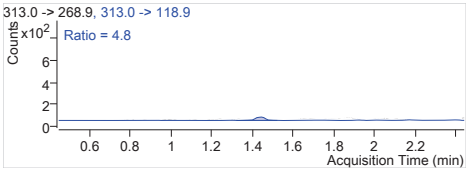

**13C9-PFDA IS** Internal Standard
RT (Exp. RT): 2.135 (2.135)
Concentration: 1 µg/L
Sample type: Calibration



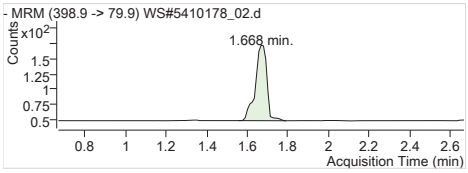



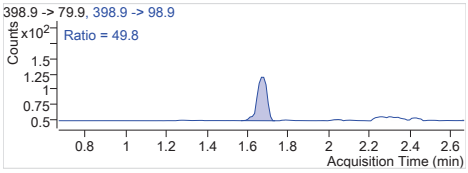

**PFBS 1** 298.9 -> 79.9
RT (Exp. RT): 1.087 (1.087)
Calc. conc. 0.89 µg/L
Area ratio: 0.29007
Sample type: Calibration



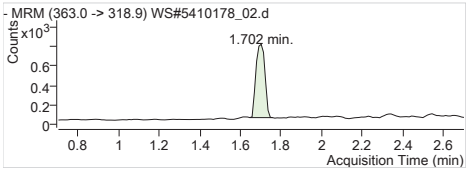



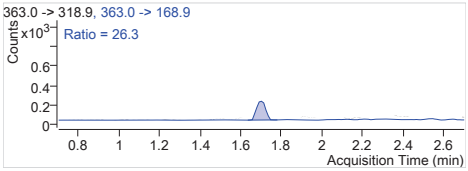

**PFHxA 1** 313.0 -> 268.9
RT (Exp. RT): 1.445 (1.445)
Calc. conc. 0.93 µg/L
Area ratio: 0.32095
Sample type: Calibration



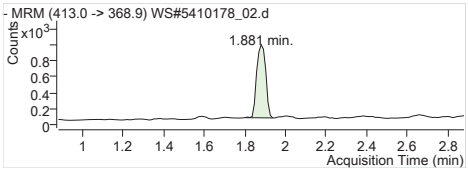



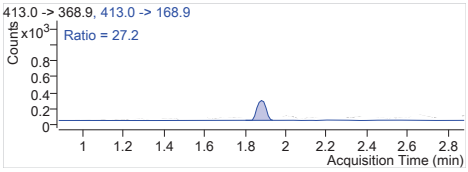

**PFHxS 1** 398.9 -> 79.9
RT (Exp. RT): 1.668 (1.668)
Calc. conc. 0.87 µg/L
Area ratio: 0.29306
Sample type: Calibration



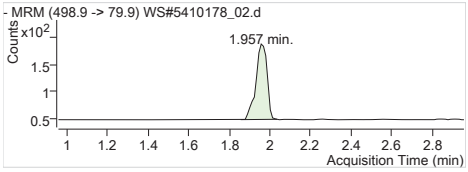



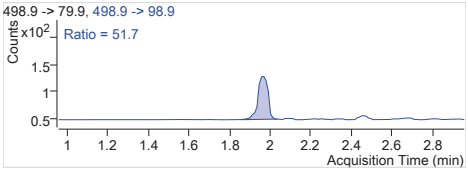

**PFHpA 1** 363.0 -> 318.9
RT (Exp. RT): 1.702 (1.702)
Calc. conc. 0.91 µg/L
Area ratio: 0.27018
Sample type: Calibration



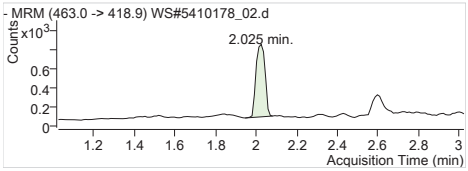



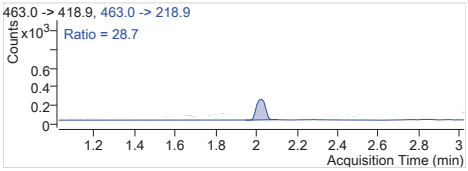

**PFOA 1** 413.0 -> 368.9
RT (Exp. RT): 1.881 (1.881)
Calc. conc. 0.93 µg/L
Area ratio: 0.34853
Sample type: Calibration



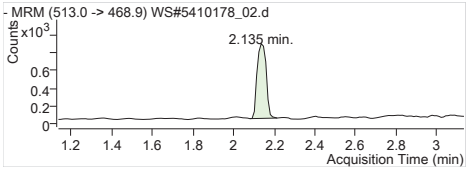



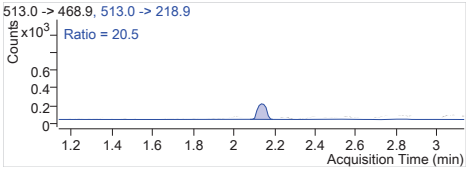

**PFOS 1** 498.9 -> 79.9
RT (Exp. RT): 1.957 (1.957)
Calc. conc. 0.97 µg/L
Area ratio: 0.29220
Sample type: Calibration



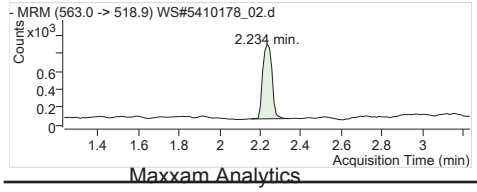



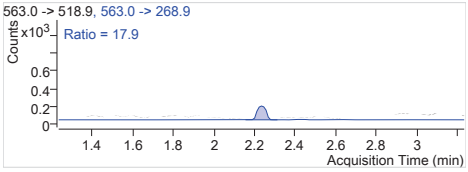

**PFNA 1** 463.0 -> 418.9
RT (Exp. RT): 2.025 (2.025)
Calc. conc. 0.90 µg/L
Area ratio: 0.29669
Sample type: Calibration



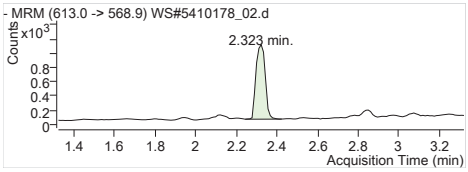



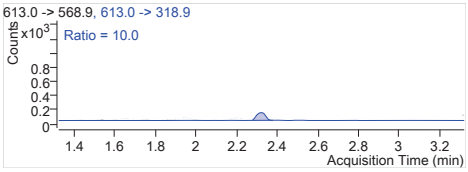

**PFDA 1** 513.0 -> 468.9
RT (Exp. RT): 2.135 (2.135)
Calc. conc. 0.93 µg/L
Area ratio: 0.41330
Sample type: Calibration



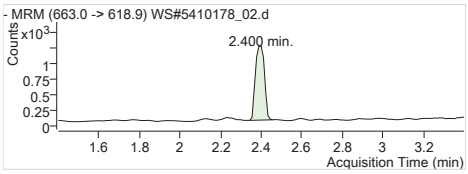



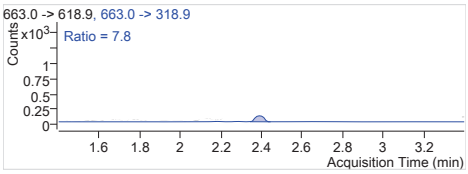

**PFUnA 1** 563.0 -> 518.9
RT (Exp. RT): 2.234 (2.234)
Calc. conc. 0.92 µg/L
Area ratio: 0.30562
Sample type: Calibration



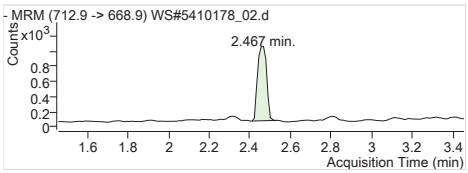



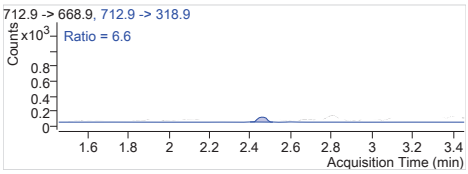

**PFDoA 1** 613.0 -> 568.9
RT (Exp. RT): 2.323 (2.323)
Calc. conc. 0.89 µg/L
Area ratio: 0.29882
Sample type: Calibration



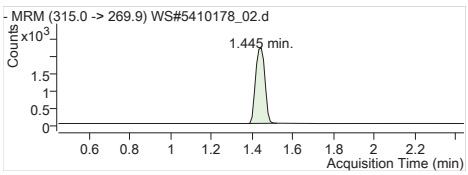



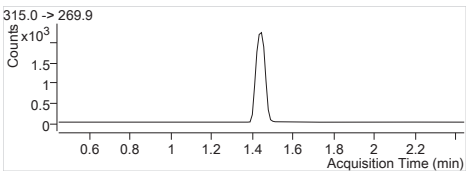

**PFTrDA 1** 663.0 -> 618.9
RT (Exp. RT): 2.400 (2.400)
Calc. conc. 0.89 µg/L
Area ratio: 0.35719
Sample type: Calibration



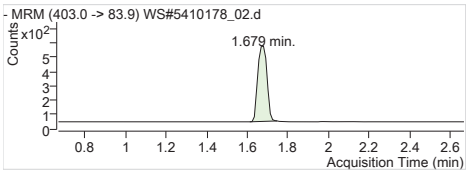



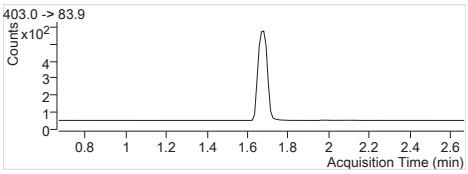

**PFTeDA 1** 712.9 -> 668.9
RT (Exp. RT): 2.467 (2.456)
Calc. conc. 0.86 µg/L
Area ratio: 0.29210
Sample type: Calibration



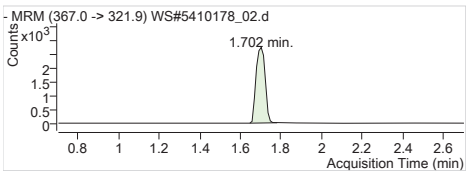



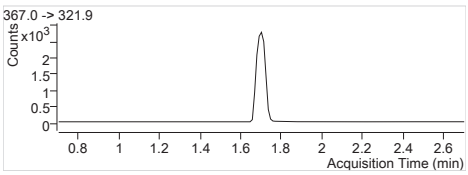

**13C2-PFHxA** 315.0 -> 269.9
RT (Exp. RT): 1.445 (1.445)
Calc. conc. 101.55 µg/L
Area ratio: 0.30042
Sample type: Calibration



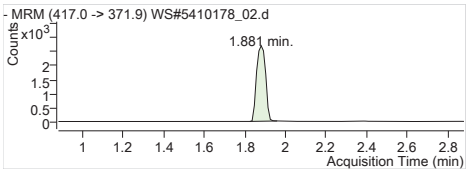



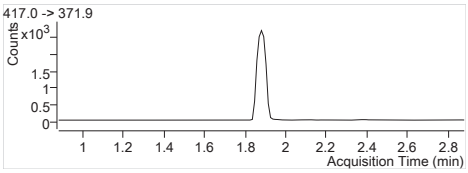

**18O2-PFHxS** 403.0 -> 83.9
RT (Exp. RT): 1.679 (1.668)
Calc. conc. 104.86 µg/L
Area ratio: 0.07232
Sample type: Calibration



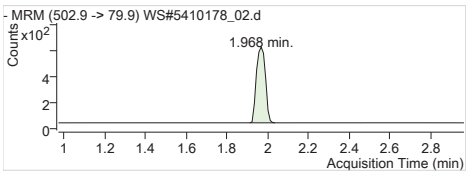



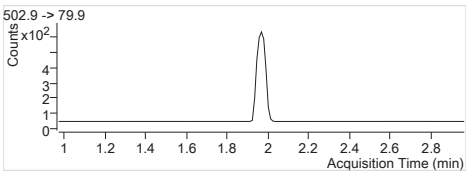

**13C4-PFHpA** 367.0 -> 321.9
RT (Exp. RT): 1.702 (1.702)
Calc. conc. 99.23 µg/L
Area ratio: 0.36759
Sample type: Calibration



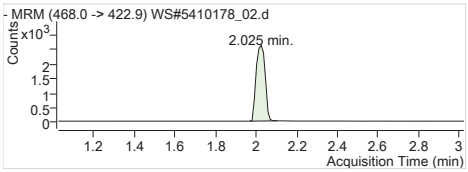



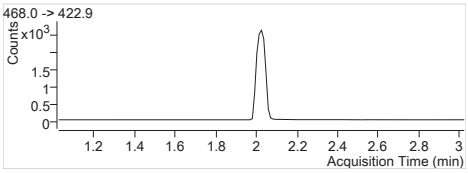

**13C4-PFOA** 417.0 -> 371.9
RT (Exp. RT): 1.881 (1.881)
Calc. conc. 96.01 µg/L
Area ratio: 0.35211
Sample type: Calibration



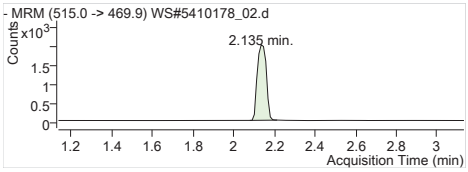



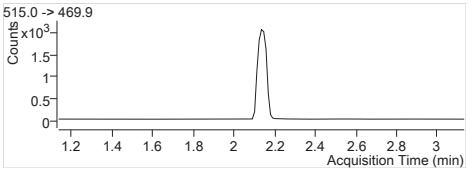

**13C4-PFOS** 502.9 -> 79.9
RT (Exp. RT): 1.968 (1.968)
Calc. conc. 97.31 µg/L
Area ratio: 0.07816
Sample type: Calibration



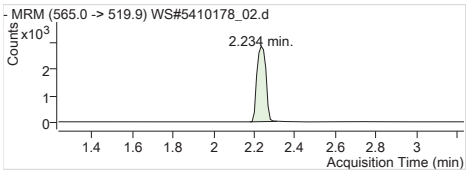



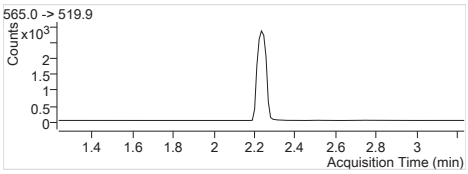

**13C5-PFNA** 468.0 -> 422.9
RT (Exp. RT): 2.025 (2.025)
Calc. conc. 96.66 µg/L
Area ratio: 0.34467
Sample type: Calibration



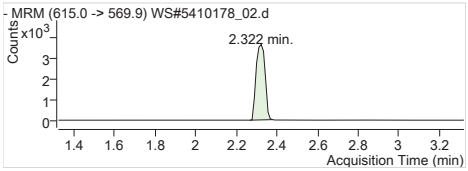



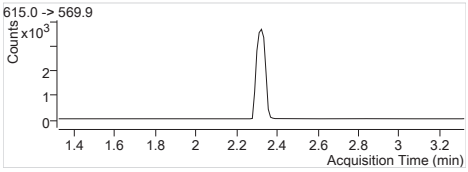

**13C2-PFDA** 515.0 -> 469.9
RT (Exp. RT): 2.135 (2.135)
Calc. conc. 93.52 µg/L
Area ratio: 0.22537
Sample type: Calibration



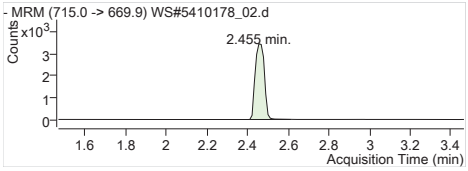



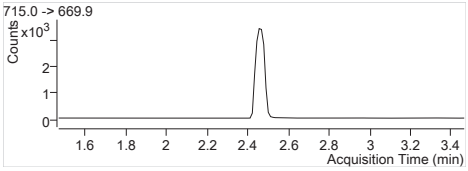

**13C2-PFUnA** 565.0 -> 519.9
RT (Exp. RT): 2.234 (2.234)
Calc. conc. 100.96 µg/L
Area ratio: 0.31436
Sample type: Calibration



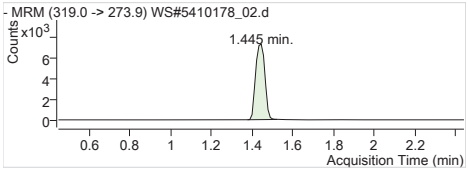



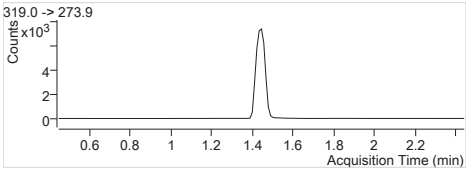

**13C2-PFDoA** 615.0 -> 569.9
RT (Exp. RT): 2.322 (2.322)
Calc. conc. 102.19 µg/L
Area ratio: 0.40338
Sample type: Calibration



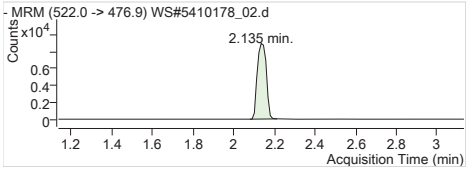



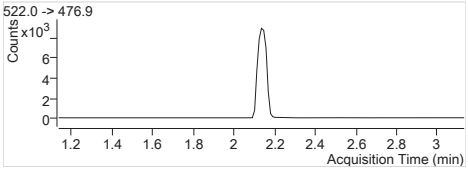

**13C2-PFTeDA** 715.0 -> 669.9
RT (Exp. RT): 2.455 (2.467)
Calc. conc. 92.87 µg/L
Area ratio: 0.38684
Sample type: Calibration




**13C6-PFHxA** 319.0 -> 273.9
RT (Exp. RT): 1.445 (1.445)
Calc. conc. 102.46 µg/L
Area ratio: 0
Sample type: Calibration



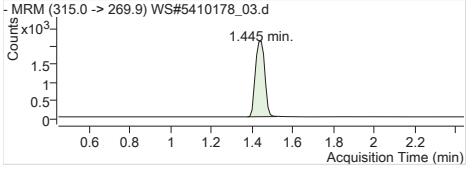

**13C9-PFDA** 522.0 -> 476.9
RT (Exp. RT): 2.135 (2.135)
Calc. conc. 101.35 µg/L
Area ratio: 0
Sample type: Calibration

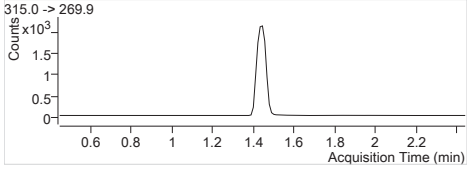
| | |
|---|---|
| **Batch Path** | T:\lcms4\PFC\20180223\WS#5410178\QuantResults\PFC_Water_Low_180223_WS#5410178_EToxics |

| | | | |
|---|---|---|---|
| **Sample Name** | **STD 2** | **Instrument** | LCMS04 |
| **Data File** | WS#5410178_03.d | **Operator** | |
| **Sample Type** | Cal | **Dilution** | 1 |
| **Acq. Method** | PFC_Water_Low.m | **Position** | P1-A3 |
| **Acq. Date** | 2018/02/23 4:44:28 PM | **Injection Volume** | Per Method |
| **Sample Annotation** | - | | |

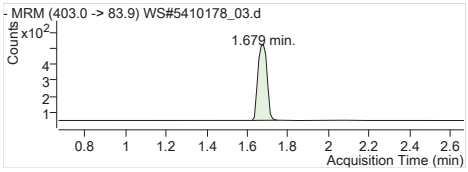
| ISTD Compounds | Response | RT | Target conc. | | |
|---|---|---|---|---|---|
| MPFHxA | 6747 | 1.44 | 1 µg/L | | |
| MPFHxS | 1485 | 1.68 | 1 µg/L | | |
| MPFHpA | 8670 | 1.70 | 1 µg/L | | |
| MPFOA | 8755 | 1.88 | 1 µg/L | | |
| MPFOS | 1887 | 1.97 | 1 µg/L | | |
| MPFNA | 8245 | 2.02 | 1 µg/L | | |
| MPFDA | 6772 | 2.14 | 1 µg/L | | |
| MPFUnA | 8337 | 2.23 | 1 µg/L | | |
| MPFDoA | 10551 | 2.32 | 1 µg/L | | |
| MPFTeDA | 11362 | 2.47 | 1 µg/L | | |
| 13C6-PFHxA IS | 21245 | 1.44 | 1 µg/L | | |
| 13C9-PFDA IS | 25642 | 2.13 | 1 µg/L | | |

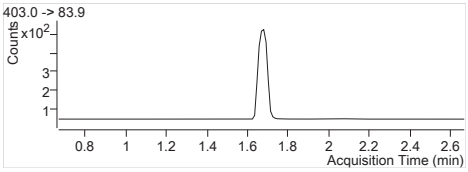
| Compound | Response | RT | Target Conc. | Calc. Conc. | Accuracy |
|---|---|---|---|---|---|
| PFBS 1 | 1042 | 1.09 | 1.70 | 1.77 µg/L | 103.88 |
| PFHxA 1 | 4087 | 1.45 | 1.70 | 1.63 µg/L | 95.63 |
| PFHxS 1 | 1070 | 1.67 | 1.70 | 1.78 µg/L | 104.49 |
| PFHpA 1 | 5158 | 1.70 | 1.70 | 1.69 µg/L | 99.14 |
| PFOA 1 | 6161 | 1.88 | 1.70 | 1.71 µg/L | 100.56 |
| PFOS 1 | 1058 | 1.96 | 1.70 | 1.65 µg/L | 97.28 |
| PFNA 1 | 5173 | 2.03 | 1.70 | 1.69 µg/L | 99.61 |
| PFDA 1 | 5140 | 2.14 | 1.70 | 1.59 µg/L | 93.24 |
| PFUnA 1 | 5480 | 2.23 | 1.70 | 1.70 µg/L | 100.01 |
| PFDoA 1 | 6958 | 2.32 | 1.70 | 1.72 µg/L | 101.32 |
| PFTrDA 1 | 8044 | 2.40 | 1.70 | 1.67 µg/L | 98.13 |
| PFTeDA 1 | 6688 | 2.47 | 1.70 | 1.64 µg/L | 96.62 |
| 13C2-PFHxA | 6747 | 1.44 | 100.00 | 107.35 µg/L | 107.35 |
| 18O2-PFHxS | 1485 | 1.68 | 100.00 | 101.34 µg/L | 101.34 |
| 13C4-PFHpA | 8670 | 1.70 | 100.00 | 110.17 µg/L | 110.17 |
| 13C4-PFOA | 8755 | 1.88 | 100.00 | 112.36 µg/L | 112.36 |
| 13C4-PFOS | 1887 | 1.97 | 100.00 | 110.57 µg/L | 110.57 |
| 13C5-PFNA | 8245 | 2.02 | 100.00 | 108.84 µg/L | 108.84 |
| 13C2-PFDA | 6715 | 2.14 | 100.00 | 108.66 µg/L | 108.66 |
| 13C2-PFUnA | 8337 | 2.23 | 100.00 | 104.42 µg/L | 104.42 |
| 13C2-PFDoA | 10551 | 2.32 | 100.00 | 104.24 µg/L | 104.24 |
| 13C2-PFTeDA | 11517 | 2.47 | 100.00 | 107.83 µg/L | 107.83 |
| 13C6-PFHxA | 21245 | 1.44 | 100.00 | 94.16 µg/L | 94.16 |
| 13C9-PFDA | 25642 | 2.13 | 100.00 | 94.47 µg/L | 94.47 |



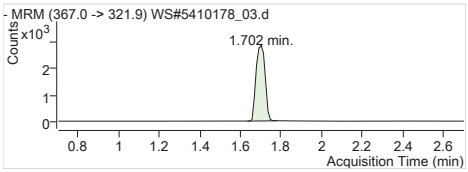



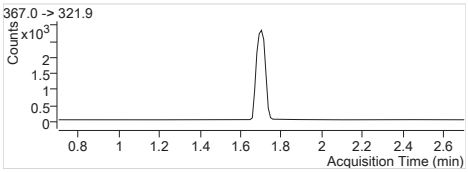

| | |
|---|---|
| **MPFHxA** | Internal Standard |
| RT (Exp. RT): | 1.445 (1.445) |
| Concentration: | 1 µg/L |
| Sample type: | Calibration |



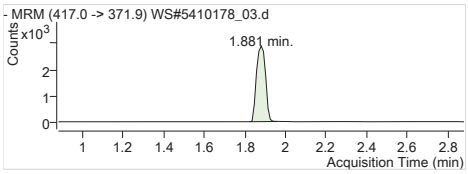



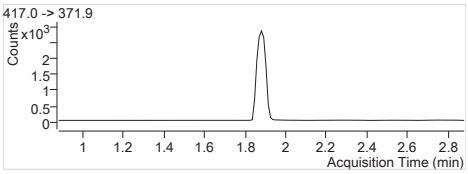

**MPFHxS** Internal Standard
RT (Exp. RT): 1.679 (1.668)
Concentration: 1 µg/L
Sample type: Calibration



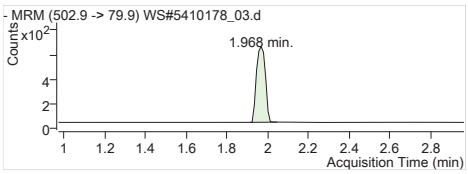



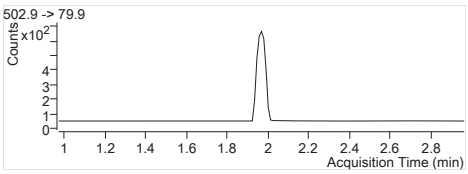

**MPFHpA** Internal Standard
RT (Exp. RT): 1.702 (1.702)
Concentration: 1 µg/L
Sample type: Calibration



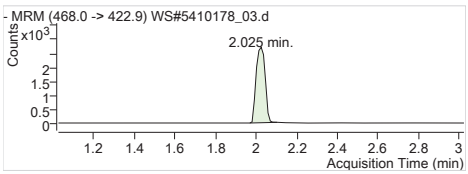



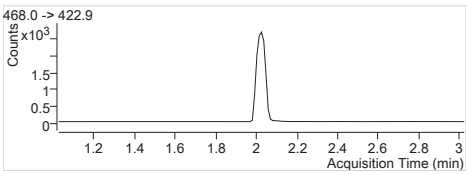

**MPFOA** Internal Standard
RT (Exp. RT): 1.881 (1.881)
Concentration: 1 µg/L
Sample type: Calibration



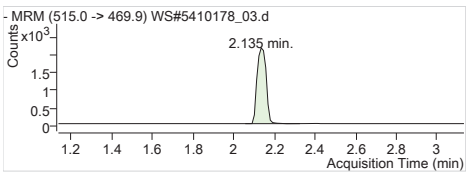



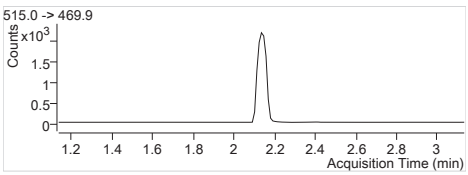

**MPFOS** Internal Standard
RT (Exp. RT): 1.968 (1.968)
Concentration: 1 µg/L
Sample type: Calibration



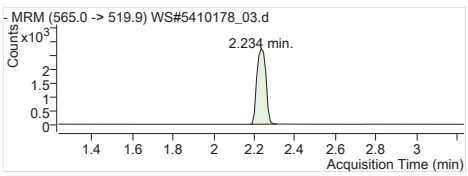



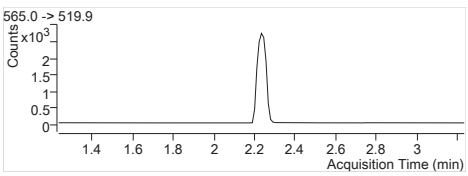

**MPFNA** Internal Standard
RT (Exp. RT): 2.025 (2.025)
Concentration: 1 µg/L
Sample type: Calibration



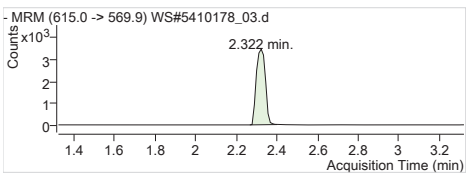



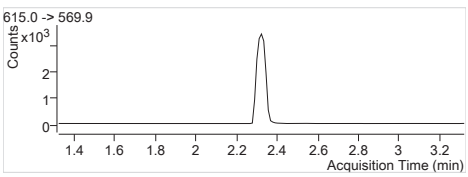

**MPFDA** Internal Standard
RT (Exp. RT): 2.135 (2.135)
Concentration: 1 µg/L
Sample type: Calibration



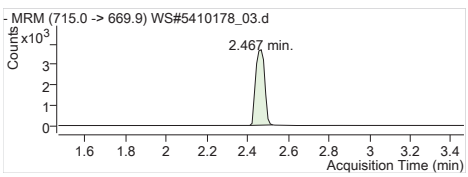



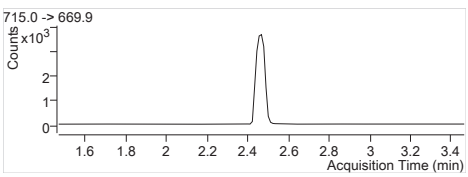

**MPFUnA** Internal Standard
RT (Exp. RT): 2.234 (2.234)
Concentration: 1 µg/L
Sample type: Calibration



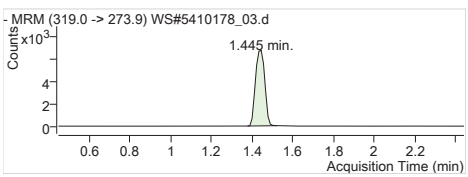



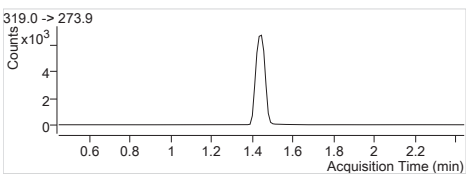

**MPFDoA** Internal Standard
RT (Exp. RT): 2.322 (2.322)
Concentration: 1 µg/L
Sample type: Calibration



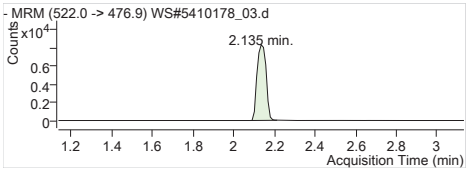



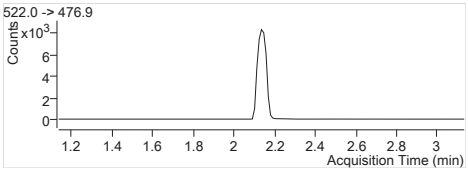

**MPFTeDA** Internal Standard
RT (Exp. RT): 2.467 (2.467)
Concentration: 1 µg/L
Sample type: Calibration



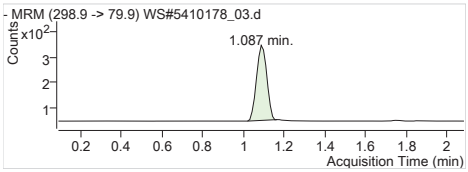



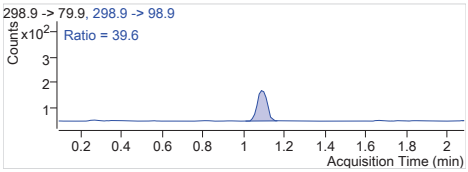

**13C6-PFHxA IS** Internal Standard
RT (Exp. RT): 1.445 (1.445)
Concentration: 1 µg/L
Sample type: Calibration



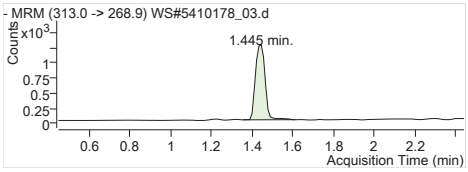



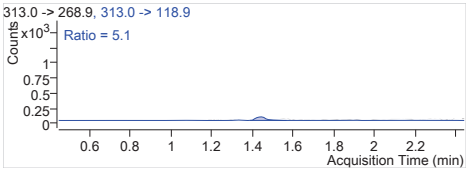

**13C9-PFDA IS** Internal Standard
RT (Exp. RT): 2.135 (2.135)
Concentration: 1 µg/L
Sample type: Calibration



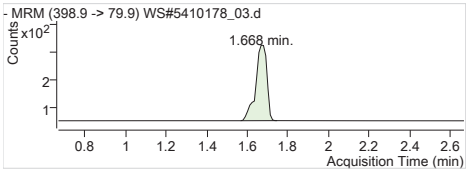



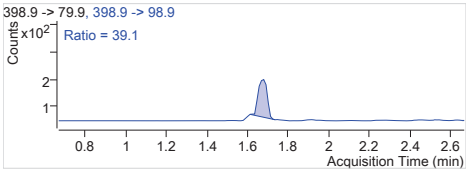

**PFBS 1** 298.9 -> 79.9
RT (Exp. RT): 1.087 (1.087)
Calc. conc. 1.77 µg/L
Area ratio: 0.70168
Sample type: Calibration



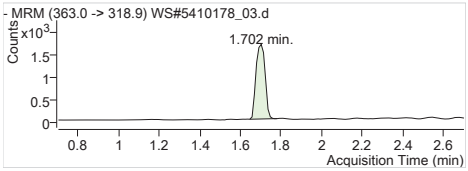



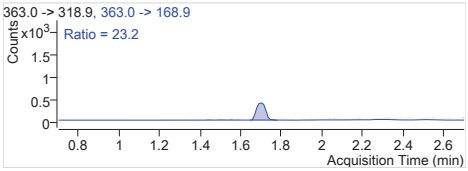

**PFHxA 1** 313.0 -> 268.9
RT (Exp. RT): 1.445 (1.445)
Calc. conc. 1.63 µg/L
Area ratio: 0.60575
Sample type: Calibration



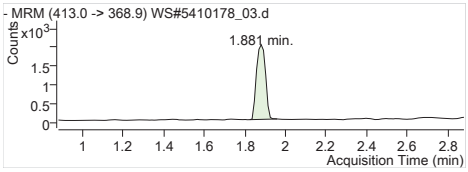



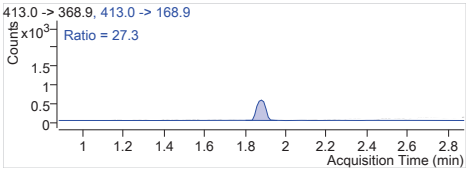

**PFHxS 1** 398.9 -> 79.9
RT (Exp. RT): 1.668 (1.668)
Calc. conc. 1.78 µg/L
Area ratio: 0.72054
Sample type: Calibration



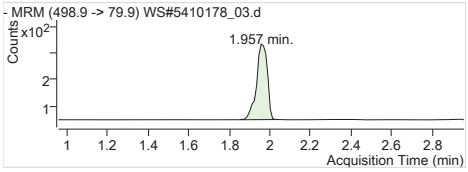



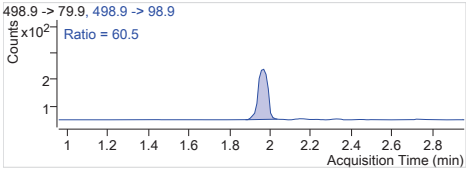

**PFHpA 1** 363.0 -> 318.9
RT (Exp. RT): 1.702 (1.702)
Calc. conc. 1.69 µg/L
Area ratio: 0.59493
Sample type: Calibration



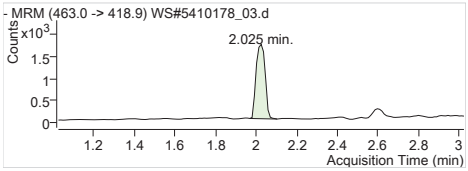



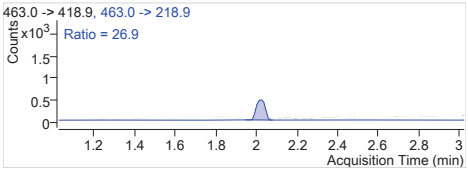

**PFOA 1** 413.0 -> 368.9
RT (Exp. RT): 1.881 (1.881)
Calc. conc. 1.71 µg/L
Area ratio: 0.70371
Sample type: Calibration



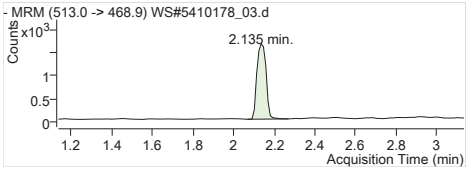



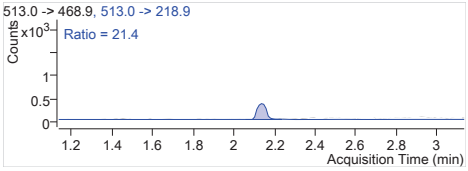

**PFOS 1** 498.9 -> 79.9
RT (Exp. RT): 1.957 (1.957)
Calc. conc. 1.65 µg/L
Area ratio: 0.56068
Sample type: Calibration



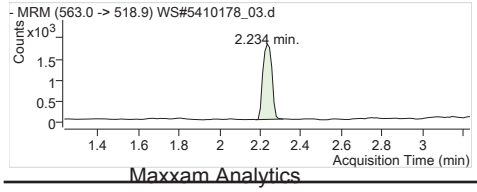



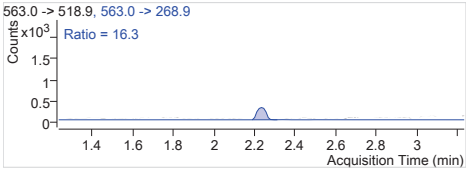

**PFNA 1** 463.0 -> 418.9
RT (Exp. RT): 2.025 (2.025)
Calc. conc. 1.69 µg/L
Area ratio: 0.62741
Sample type: Calibration



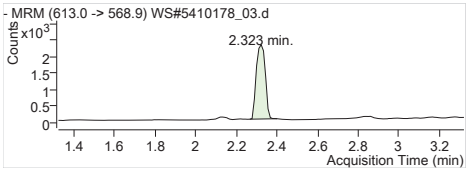



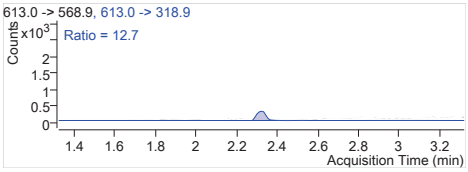

**PFDA 1** 513.0 -> 468.9
RT (Exp. RT): 2.135 (2.135)
Calc. conc. 1.59 µg/L
Area ratio: 0.75901
Sample type: Calibration



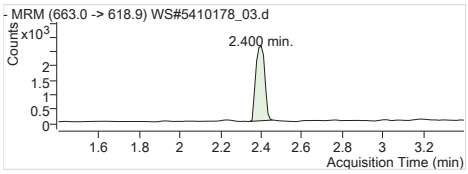



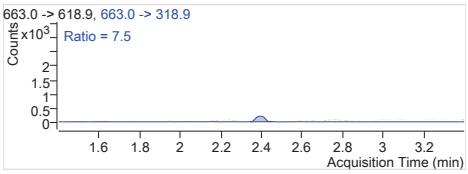

**PFUnA 1** 563.0 -> 518.9
RT (Exp. RT): 2.234 (2.234)
Calc. conc. 1.70 µg/L
Area ratio: 0.65731
Sample type: Calibration



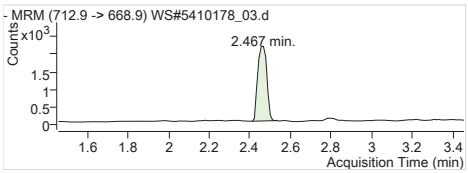



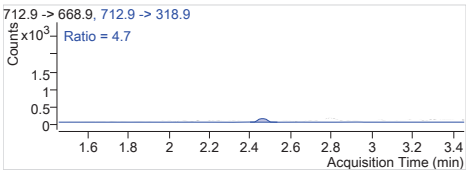

**PFDoA 1** 613.0 -> 568.9
RT (Exp. RT): 2.323 (2.323)
Calc. conc. 1.72 µg/L
Area ratio: 0.65946
Sample type: Calibration



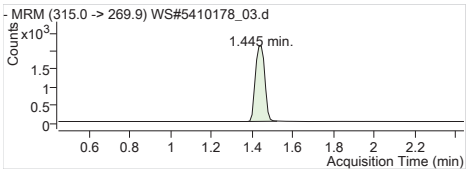



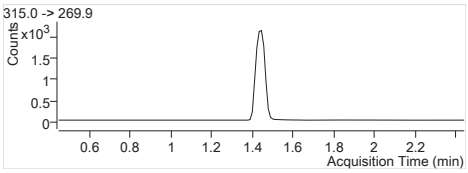

**PFTrDA 1** 663.0 -> 618.9
RT (Exp. RT): 2.400 (2.400)
Calc. conc. 1.67 µg/L
Area ratio: 0.70797
Sample type: Calibration



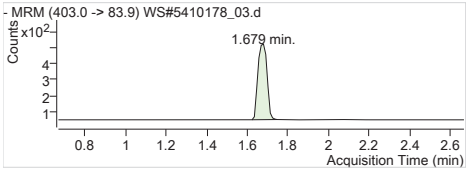



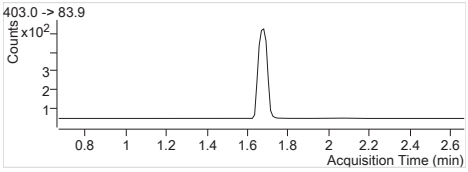

**PFTeDA 1** 712.9 -> 668.9
RT (Exp. RT): 2.467 (2.456)
Calc. conc. 1.64 µg/L
Area ratio: 0.58863
Sample type: Calibration



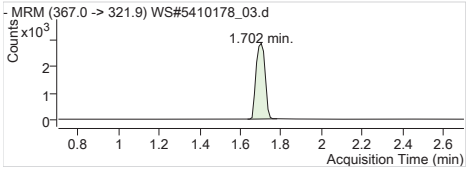



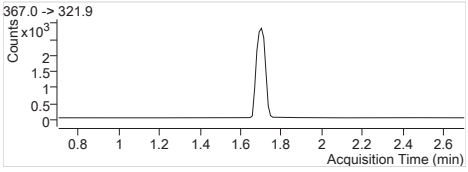

**13C2-PFHxA** 315.0 -> 269.9
RT (Exp. RT): 1.445 (1.445)
Calc. conc. 107.35 µg/L
Area ratio: 0.31758
Sample type: Calibration



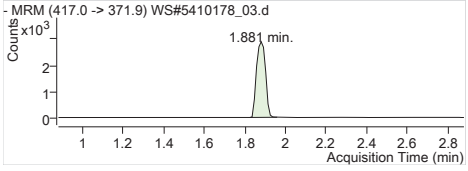



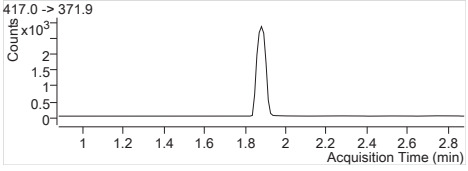

**18O2-PFHxS** 403.0 -> 83.9
RT (Exp. RT): 1.679 (1.668)
Calc. conc. 101.34 µg/L
Area ratio: 0.06990
Sample type: Calibration



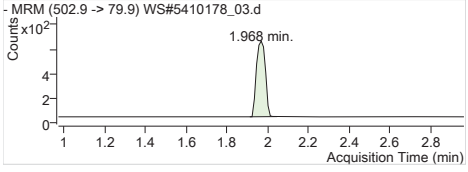



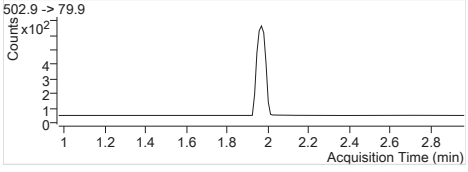

**13C4-PFHpA** 367.0 -> 321.9
RT (Exp. RT): 1.702 (1.702)
Calc. conc. 110.17 µg/L
Area ratio: 0.40810
Sample type: Calibration



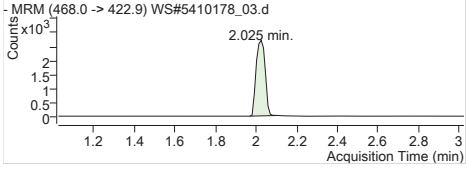



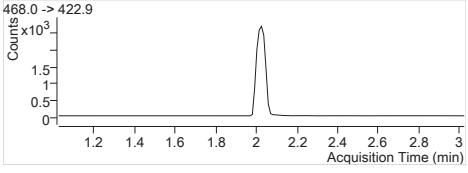

**13C4-PFOA** 417.0 -> 371.9
RT (Exp. RT): 1.881 (1.881)
Calc. conc. 112.36 µg/L
Area ratio: 0.41210
Sample type: Calibration



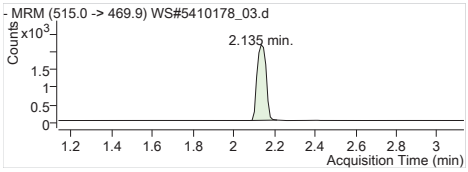



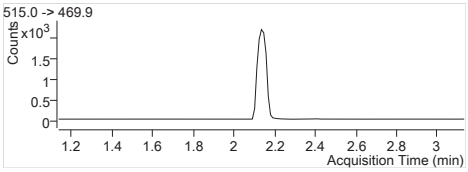

**13C4-PFOS** 502.9 -> 79.9
RT (Exp. RT): 1.968 (1.968)
Calc. conc. 110.57 µg/L
Area ratio: 0.08882
Sample type: Calibration



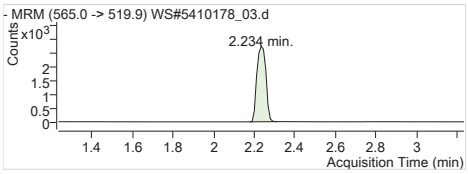



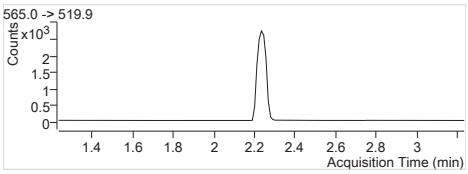

**13C5-PFNA** 468.0 -> 422.9
RT (Exp. RT): 2.025 (2.025)
Calc. conc. 108.84 µg/L
Area ratio: 0.38809
Sample type: Calibration



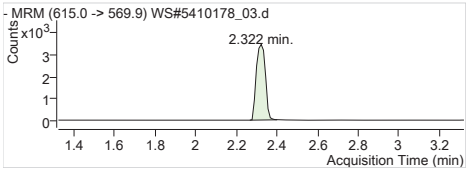



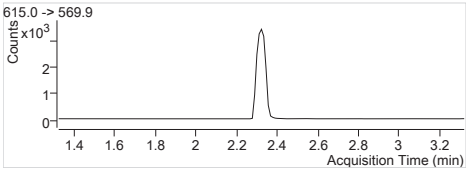

**13C2-PFDA** 515.0 -> 469.9
RT (Exp. RT): 2.135 (2.135)
Calc. conc. 108.66 µg/L
Area ratio: 0.26188
Sample type: Calibration



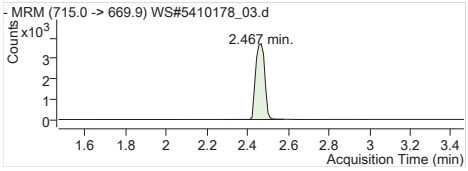



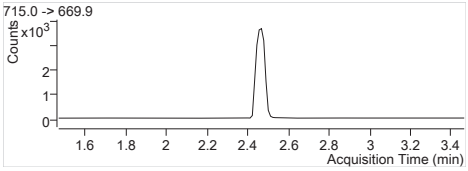

**13C2-PFUnA** 565.0 -> 519.9
RT (Exp. RT): 2.234 (2.234)
Calc. conc. 104.42 µg/L
Area ratio: 0.32513
Sample type: Calibration



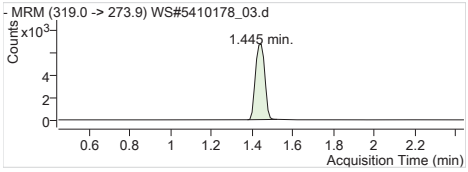



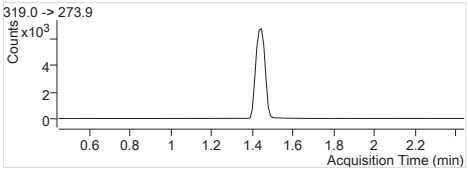

**13C2-PFDoA** 615.0 -> 569.9
RT (Exp. RT): 2.322 (2.322)
Calc. conc. 104.24 µg/L
Area ratio: 0.41147
Sample type: Calibration



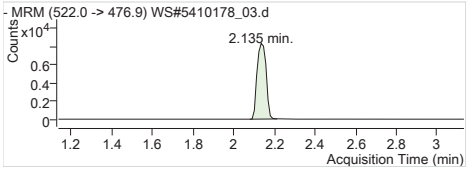



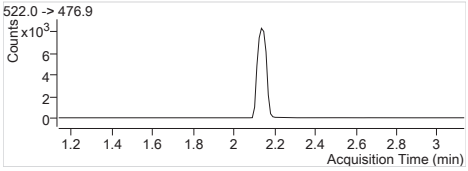

**13C2-PFTeDA** 715.0 -> 669.9
RT (Exp. RT): 2.467 (2.467)
Calc. conc. 107.83 µg/L
Area ratio: 0.44915
Sample type: Calibration




**13C6-PFHxA** 319.0 -> 273.9
RT (Exp. RT): 1.445 (1.445)
Calc. conc. 94.16 µg/L
Area ratio: 0
Sample type: Calibration



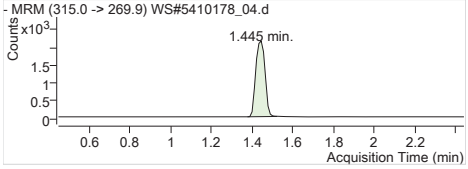

**13C9-PFDA** 522.0 -> 476.9
RT (Exp. RT): 2.135 (2.135)
Calc. conc. 94.47 µg/L
Area ratio: 0
Sample type: Calibration

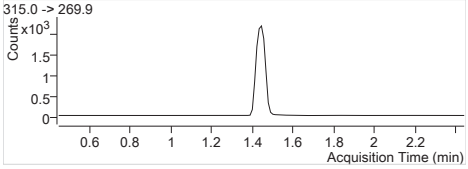
**Batch Path** T:\lcms4\PFC\20180223\WS#5410178\QuantResults\PFC_Water_Low_180223_WS#5410178_EToxics

| | | | |
|---|---|---|---|
| **Sample Name** | **STD 3** | **Instrument** | LCMS04 |
| **Data File** | WS#5410178_04.d | **Operator** | |
| **Sample Type** | Cal | **Dilution** | 1 |
| **Acq. Method** | PFC_Water_Low.m | **Position** | P1-A4 |
| **Acq. Date** | 2018/02/23 4:49:24 PM | **Injection Volume** | Per Method |
| **Sample Annotation** | - | | |

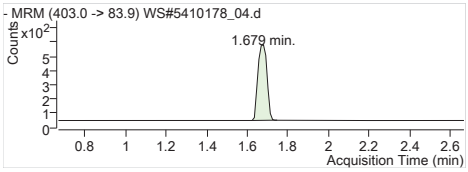
| ISTD Compounds | Response | RT | Target conc. | | |
|---|---|---|---|---|---|
| MPFHxA | 6761 | 1.44 | 1 µg/L | | |
| MPFHxS | 1652 | 1.68 | 1 µg/L | | |
| MPFHpA | 8438 | 1.70 | 1 µg/L | | |
| MPFOA | 8885 | 1.88 | 1 µg/L | | |
| MPFOS | 1872 | 1.97 | 1 µg/L | | |
| MPFNA | 8337 | 2.02 | 1 µg/L | | |
| MPFDA | 7032 | 2.14 | 1 µg/L | | |
| MPFUnA | 8882 | 2.23 | 1 µg/L | | |
| MPFDoA | 11107 | 2.32 | 1 µg/L | | |
| MPFTeDA | 11123 | 2.47 | 1 µg/L | | |
| 13C6-PFHxA IS | 23984 | 1.44 | 1 µg/L | | |
| 13C9-PFDA IS | 29535 | 2.13 | 1 µg/L | | |

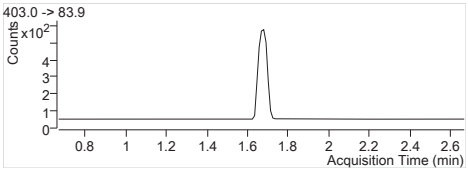
| Compound | Response | RT | Target Conc. | Calc. Conc. | Accuracy |
|---|---|---|---|---|---|
| PFBS 1 | 3317 | 1.09 | 5.00 | 4.54 µg/L | 90.76 |
| PFHxA 1 | 13016 | 1.45 | 5.00 | 4.87 µg/L | 97.40 |
| PFHxS 1 | 3482 | 1.67 | 5.00 | 4.71 µg/L | 94.18 |
| PFHpA 1 | 16518 | 1.70 | 5.00 | 4.92 µg/L | 98.40 |
| PFOA 1 | 17457 | 1.88 | 5.00 | 4.46 µg/L | 89.20 |
| PFOS 1 | 3377 | 1.96 | 5.00 | 4.83 µg/L | 96.52 |
| PFNA 1 | 16356 | 2.03 | 5.00 | 4.90 µg/L | 98.06 |
| PFDA 1 | 17010 | 2.14 | 5.00 | 4.75 µg/L | 94.98 |
| PFUnA 1 | 18088 | 2.23 | 5.00 | 4.75 µg/L | 94.90 |
| PFDoA 1 | 22806 | 2.32 | 5.00 | 4.94 µg/L | 98.74 |
| PFTrDA 1 | 24430 | 2.40 | 5.00 | 4.96 µg/L | 99.15 |
| PFTeDA 1 | 21695 | 2.46 | 5.00 | 5.23 µg/L | 104.52 |
| 13C2-PFHxA | 6761 | 1.44 | 100.00 | 95.29 µg/L | 95.29 |
| 18O2-PFHxS | 1652 | 1.68 | 100.00 | 99.86 µg/L | 99.86 |
| 13C4-PFHpA | 8438 | 1.70 | 100.00 | 94.98 µg/L | 94.98 |
| 13C4-PFOA | 8885 | 1.88 | 100.00 | 101.01 µg/L | 101.01 |
| 13C4-PFOS | 1872 | 1.97 | 100.00 | 97.17 µg/L | 97.17 |
| 13C5-PFNA | 8336 | 2.02 | 100.00 | 97.47 µg/L | 97.47 |
| 13C2-PFDA | 6953 | 2.14 | 100.00 | 97.68 µg/L | 97.68 |
| 13C2-PFUnA | 8882 | 2.23 | 100.00 | 96.58 µg/L | 96.58 |
| 13C2-PFDoA | 11107 | 2.32 | 100.00 | 95.27 µg/L | 95.27 |
| 13C2-PFTeDA | 11283 | 2.47 | 100.00 | 91.71 µg/L | 91.71 |
| 13C6-PFHxA | 23984 | 1.44 | 100.00 | 106.29 µg/L | 106.29 |
| 13C9-PFDA | 29535 | 2.13 | 100.00 | 108.81 µg/L | 108.81 |



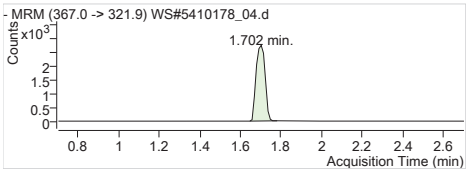



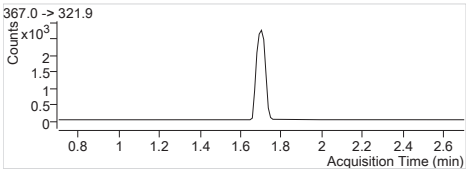

**MPFHxA** Internal Standard
RT (Exp. RT): 1.445 (1.445)
Concentration: 1 µg/L
Sample type: Calibration



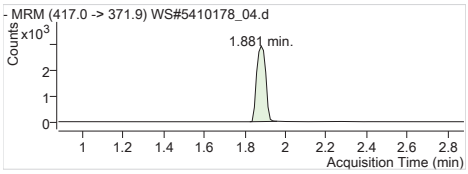



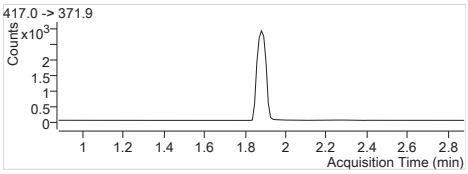

**MPFHxS** Internal Standard
RT (Exp. RT): 1.679 (1.668)
Concentration: 1 µg/L
Sample type: Calibration



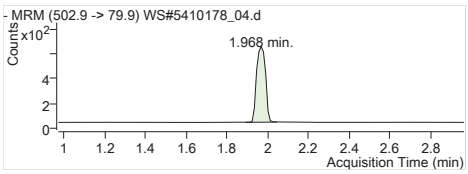



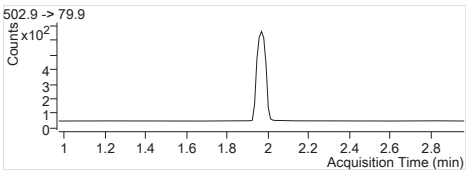

**MPFHpA** Internal Standard
RT (Exp. RT): 1.702 (1.702)
Concentration: 1 µg/L
Sample type: Calibration



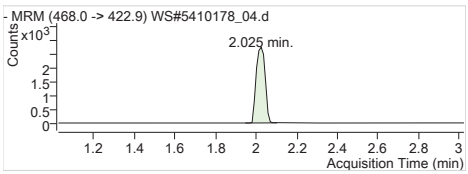



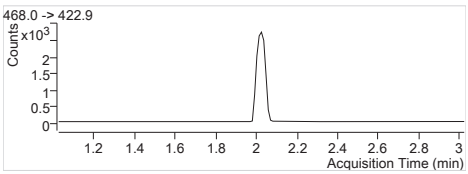

**MPFOA** Internal Standard
RT (Exp. RT): 1.881 (1.881)
Concentration: 1 µg/L
Sample type: Calibration



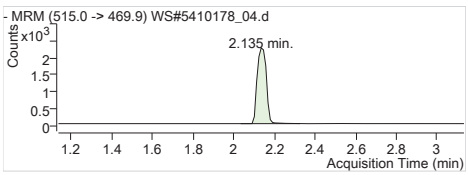



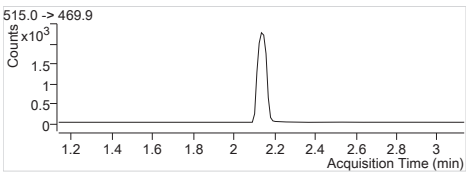

**MPFOS** Internal Standard
RT (Exp. RT): 1.968 (1.968)
Concentration: 1 µg/L
Sample type: Calibration



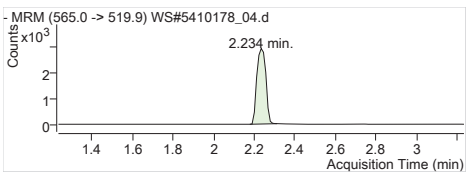



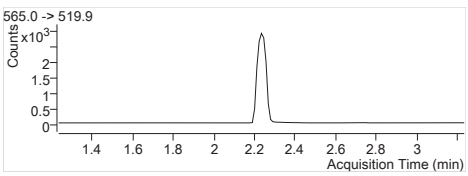

**MPFNA** Internal Standard
RT (Exp. RT): 2.025 (2.025)
Concentration: 1 µg/L
Sample type: Calibration



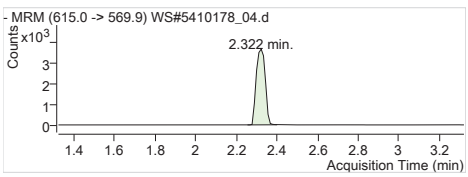



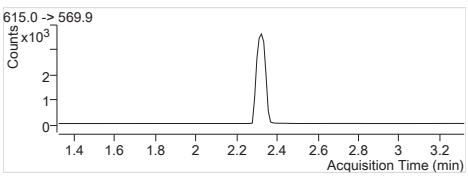

**MPFDA** Internal Standard
RT (Exp. RT): 2.135 (2.135)
Concentration: 1 µg/L
Sample type: Calibration



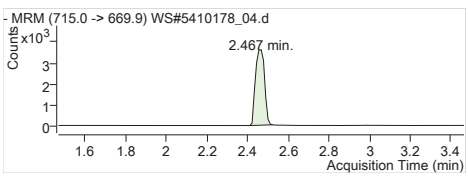



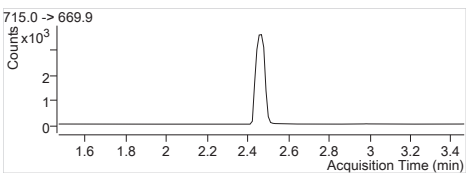

**MPFUnA** Internal Standard
RT (Exp. RT): 2.234 (2.234)
Concentration: 1 µg/L
Sample type: Calibration



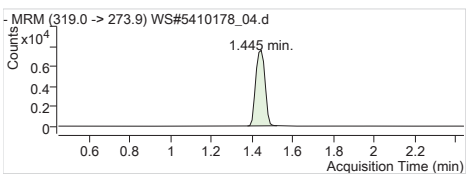



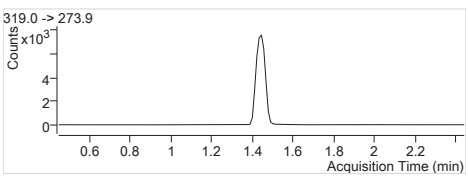

**MPFDoA** Internal Standard
RT (Exp. RT): 2.322 (2.322)
Concentration: 1 µg/L
Sample type: Calibration



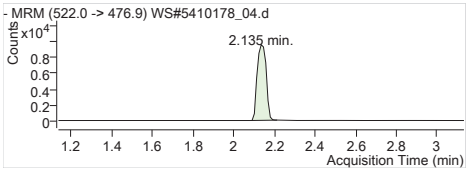



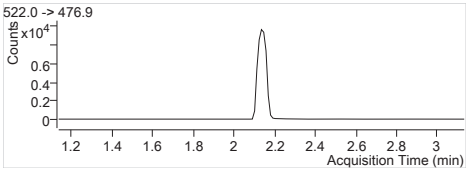

**MPFTeDA** Internal Standard
RT (Exp. RT): 2.467 (2.467)
Concentration: 1 µg/L
Sample type: Calibration



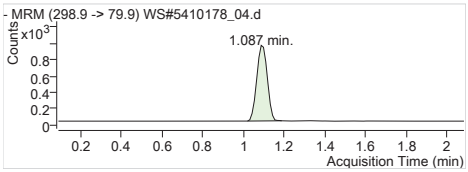



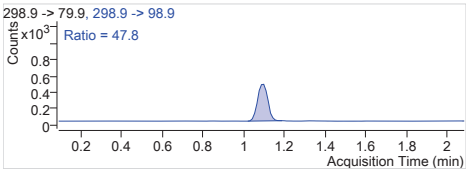

**13C6-PFHxA IS** Internal Standard
RT (Exp. RT): 1.445 (1.445)
Concentration: 1 µg/L
Sample type: Calibration



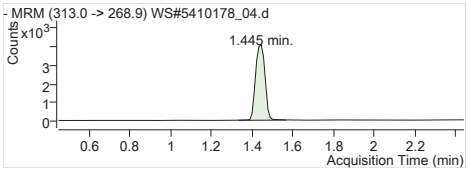



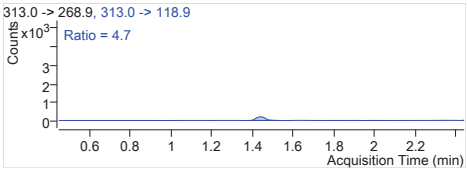

**13C9-PFDA IS** Internal Standard
RT (Exp. RT): 2.135 (2.135)
Concentration: 1 µg/L
Sample type: Calibration



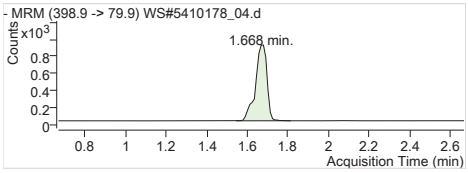



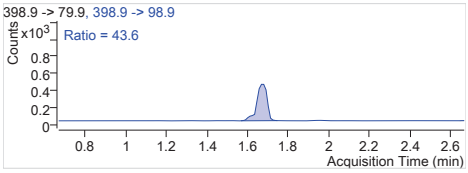

**PFBS 1** 298.9 -> 79.9
RT (Exp. RT): 1.087 (1.087)
Calc. conc. 4.54 µg/L
Area ratio: 2.00787
Sample type: Calibration



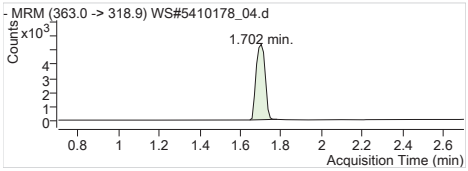



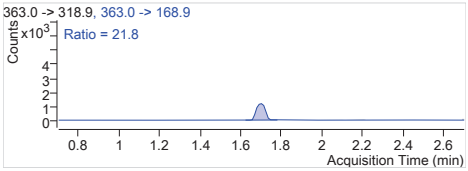

**PFHxA 1** 313.0 -> 268.9
RT (Exp. RT): 1.445 (1.445)
Calc. conc. 4.87 µg/L
Area ratio: 1.92516
Sample type: Calibration



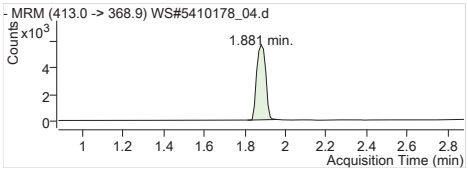



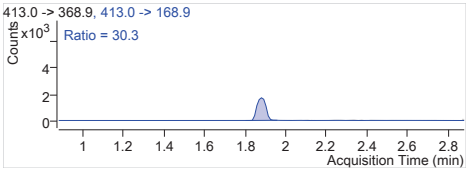

**PFHxS 1** 398.9 -> 79.9
RT (Exp. RT): 1.668 (1.668)
Calc. conc. 4.71 µg/L
Area ratio: 2.10775
Sample type: Calibration



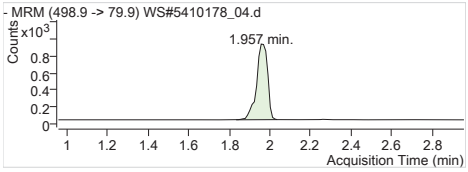



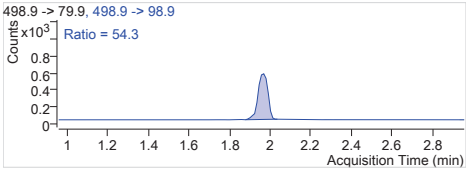

**PFHpA 1** 363.0 -> 318.9
RT (Exp. RT): 1.702 (1.702)
Calc. conc. 4.92 µg/L
Area ratio: 1.95757
Sample type: Calibration



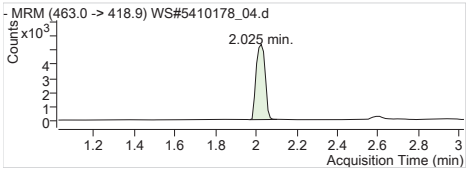



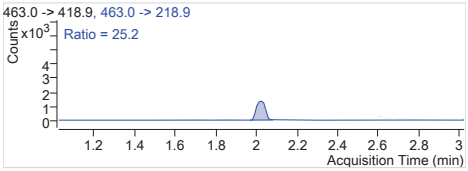

**PFOA 1** 413.0 -> 368.9
RT (Exp. RT): 1.881 (1.881)
Calc. conc. 4.46 µg/L
Area ratio: 1.96477
Sample type: Calibration



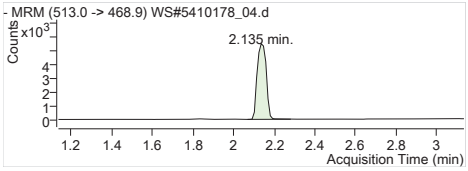



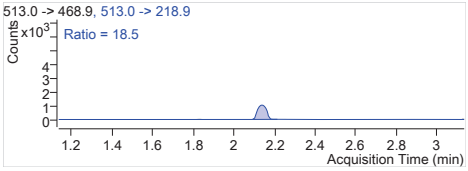

**PFOS 1** 498.9 -> 79.9
RT (Exp. RT): 1.957 (1.957)
Calc. conc. 4.83 µg/L
Area ratio: 1.80395
Sample type: Calibration



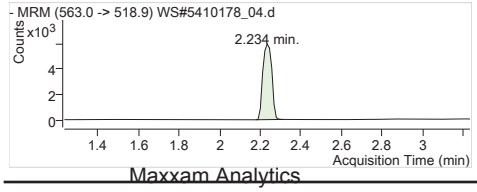



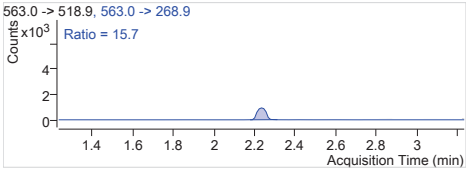

**PFNA 1** 463.0 -> 418.9
RT (Exp. RT): 2.025 (2.025)
Calc. conc. 4.90 µg/L
Area ratio: 1.96186
Sample type: Calibration



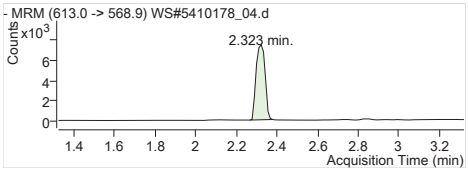



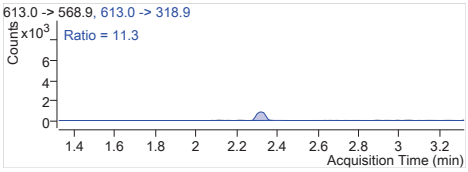

**PFDA 1** 513.0 -> 468.9
RT (Exp. RT): 2.135 (2.135)
Calc. conc. 4.75 µg/L
Area ratio: 2.41894
Sample type: Calibration



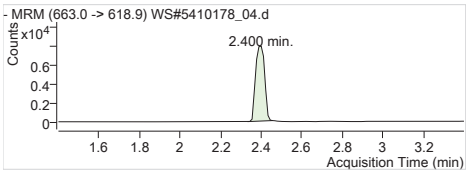



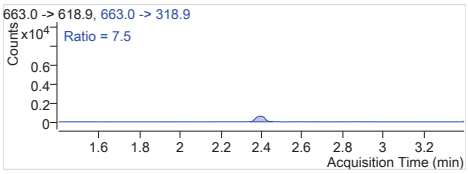

**PFUnA 1** 563.0 -> 518.9
RT (Exp. RT): 2.234 (2.234)
Calc. conc. 4.75 µg/L
Area ratio: 2.03648
Sample type: Calibration



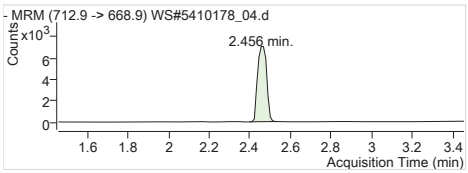



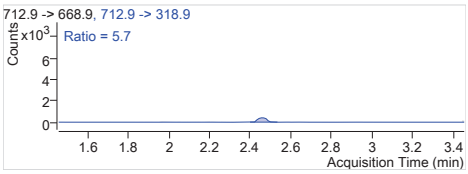

**PFDoA 1** 613.0 -> 568.9
RT (Exp. RT): 2.323 (2.323)
Calc. conc. 4.94 µg/L
Area ratio: 2.05330
Sample type: Calibration



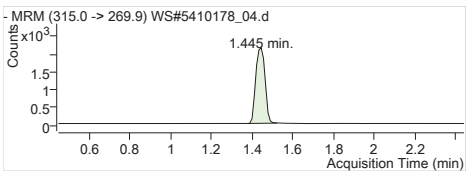



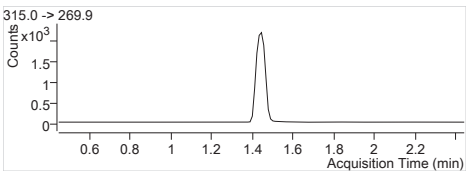

**PFTrDA 1** 663.0 -> 618.9
RT (Exp. RT): 2.400 (2.400)
Calc. conc. 4.96 µg/L
Area ratio: 2.19635
Sample type: Calibration



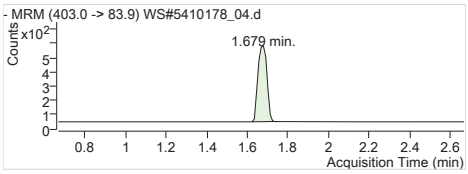



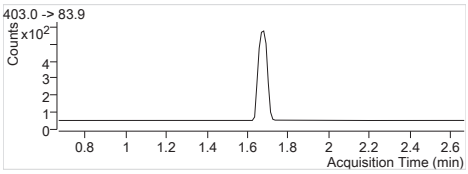

**PFTeDA 1** 712.9 -> 668.9
RT (Exp. RT): 2.456 (2.456)
Calc. conc. 5.23 µg/L
Area ratio: 1.95046
Sample type: Calibration



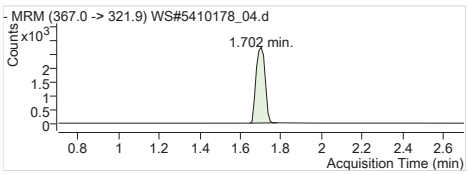



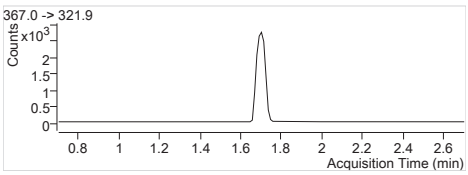

**13C2-PFHxA** 315.0 -> 269.9
RT (Exp. RT): 1.445 (1.445)
Calc. conc. 95.29 µg/L
Area ratio: 0.28190
Sample type: Calibration



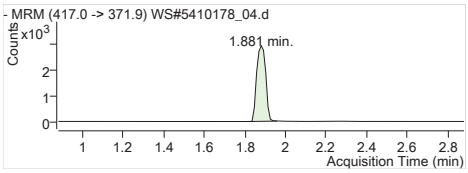



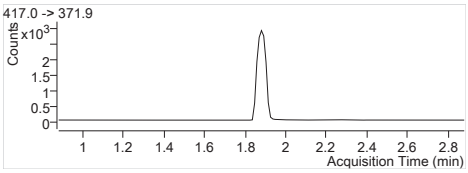

**18O2-PFHxS** 403.0 -> 83.9
RT (Exp. RT): 1.679 (1.668)
Calc. conc. 99.86 µg/L
Area ratio: 0.06888
Sample type: Calibration



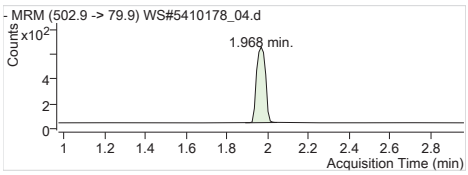



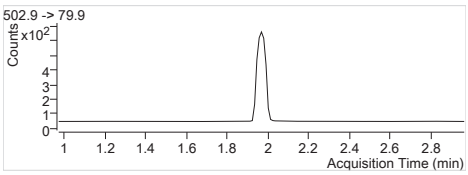

**13C4-PFHpA** 367.0 -> 321.9
RT (Exp. RT): 1.702 (1.702)
Calc. conc. 94.98 µg/L
Area ratio: 0.35182
Sample type: Calibration



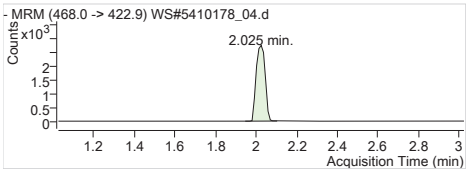



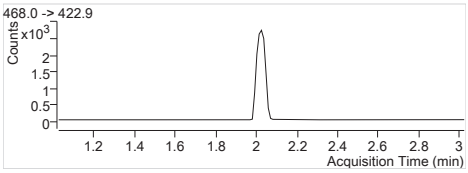

**13C4-PFOA** 417.0 -> 371.9
RT (Exp. RT): 1.881 (1.881)
Calc. conc. 101.01 µg/L
Area ratio: 0.37046
Sample type: Calibration



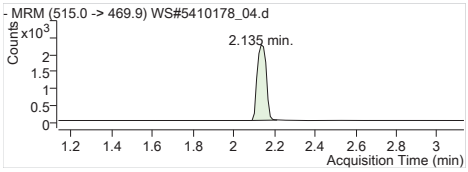



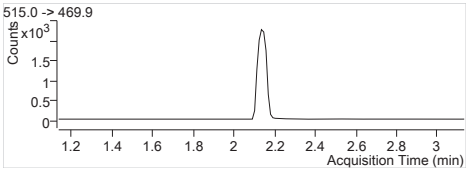

**13C4-PFOS** 502.9 -> 79.9
RT (Exp. RT): 1.968 (1.968)
Calc. conc. 97.17 µg/L
Area ratio: 0.07805
Sample type: Calibration



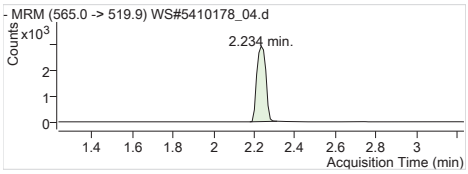



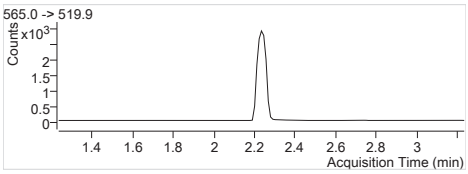

**13C5-PFNA** 468.0 -> 422.9
RT (Exp. RT): 2.025 (2.025)
Calc. conc. 97.47 µg/L
Area ratio: 0.34757
Sample type: Calibration



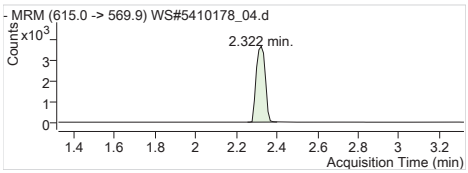



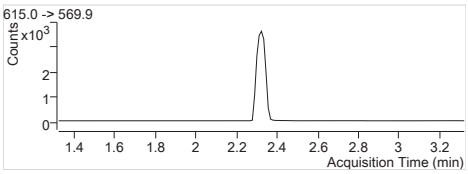

**13C2-PFDA** 515.0 -> 469.9
RT (Exp. RT): 2.135 (2.135)
Calc. conc. 97.68 µg/L
Area ratio: 0.23542
Sample type: Calibration



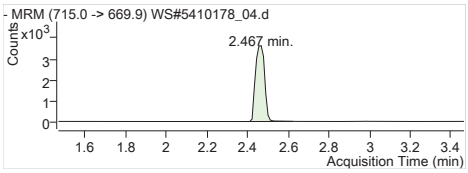



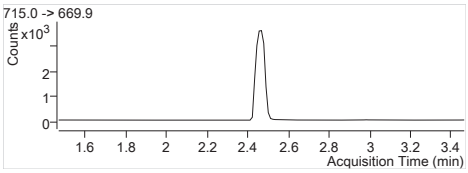

**13C2-PFUnA** 565.0 -> 519.9
RT (Exp. RT): 2.234 (2.234)
Calc. conc. 96.58 µg/L
Area ratio: 0.30073
Sample type: Calibration



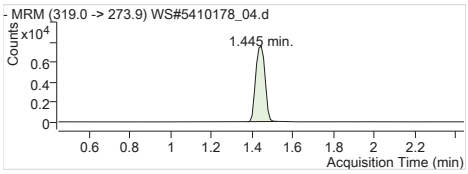



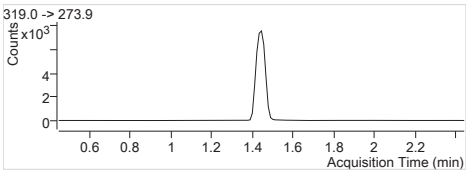

**13C2-PFDoA** 615.0 -> 569.9
RT (Exp. RT): 2.322 (2.322)
Calc. conc. 95.27 µg/L
Area ratio: 0.37606
Sample type: Calibration



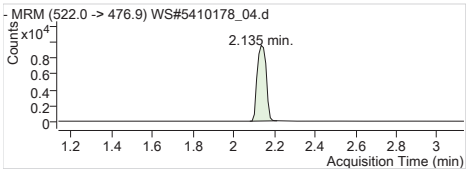



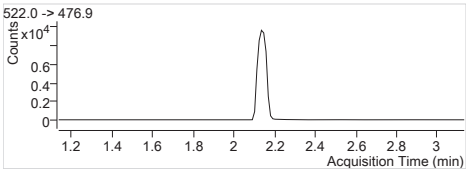

**13C2-PFTeDA** 715.0 -> 669.9
RT (Exp. RT): 2.467 (2.467)
Calc. conc. 91.71 µg/L
Area ratio: 0.38202
Sample type: Calibration




**13C6-PFHxA** 319.0 -> 273.9
RT (Exp. RT): 1.445 (1.445)
Calc. conc. 106.29 µg/L
Area ratio: 0
Sample type: Calibration



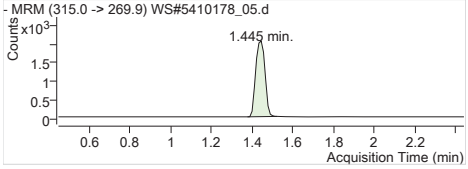

**13C9-PFDA** 522.0 -> 476.9
RT (Exp. RT): 2.135 (2.135)
Calc. conc. 108.81 µg/L
Area ratio: 0
Sample type: Calibration

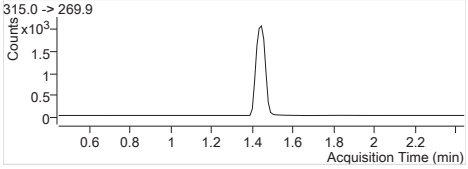
| | |
|---|---|
| **Batch Path** | T:\lcms4\PFC\20180223\WS#5410178\QuantResults\PFC_Water_Low_180223_WS#5410178_EToxics |

| | | | |
|---|---|---|---|
| **Sample Name** | **STD 4** | **Instrument** | LCMS04 |
| **Data File** | WS#5410178_05.d | **Operator** | |
| **Sample Type** | Cal | **Dilution** | 1 |
| **Acq. Method** | PFC_Water_Low.m | **Position** | P1-A5 |
| **Acq. Date** | 2018/02/23 4:54:20 PM | **Injection Volume** | Per Method |
| **Sample Annotation** | - | | |

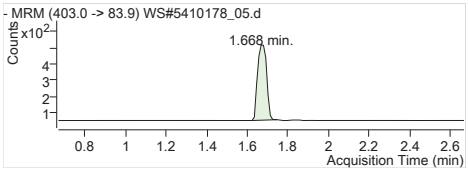
| ISTD Compounds | Response | RT | Target conc. | | |
|---|---|---|---|---|---|
| MPFHxA | 6459 | 1.44 | 1 µg/L | | |
| MPFHxS | 1456 | 1.67 | 1 µg/L | | |
| MPFHpA | 8379 | 1.70 | 1 µg/L | | |
| MPFOA | 7736 | 1.88 | 1 µg/L | | |
| MPFOS | 1780 | 1.97 | 1 µg/L | | |
| MPFNA | 7888 | 2.02 | 1 µg/L | | |
| MPFDA | 6313 | 2.14 | 1 µg/L | | |
| MPFUnA | 8586 | 2.23 | 1 µg/L | | |
| MPFDoA | 10221 | 2.32 | 1 µg/L | | |
| MPFTeDA | 11007 | 2.47 | 1 µg/L | | |
| 13C6-PFHxA IS | 22133 | 1.44 | 1 µg/L | | |
| 13C9-PFDA IS | 25329 | 2.13 | 1 µg/L | | |

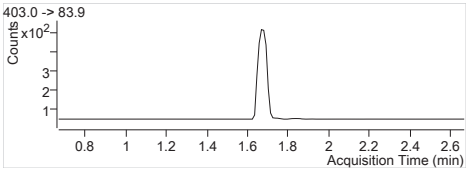
| Compound | Response | RT | Target Conc. | Calc. Conc. | Accuracy |
|---|---|---|---|---|---|
| PFBS 1 | 8138 | 1.09 | 12.50 | 12.14 µg/L | 97.11 |
| PFHxA 1 | 30538 | 1.45 | 12.50 | 11.76 µg/L | 94.10 |
| PFHxS 1 | 8004 | 1.67 | 12.50 | 11.88 µg/L | 95.00 |
| PFHpA 1 | 38018 | 1.70 | 12.50 | 11.04 µg/L | 88.35 |
| PFOA 1 | 41178 | 1.88 | 12.50 | 11.78 µg/L | 94.28 |
| PFOS 1 | 7484 | 1.96 | 12.50 | 10.95 µg/L | 87.61 |
| PFNA 1 | 37369 | 2.03 | 12.50 | 11.58 µg/L | 92.63 |
| PFDA 1 | 39112 | 2.14 | 12.50 | 11.95 µg/L | 95.57 |
| PFUnA 1 | 41609 | 2.23 | 12.50 | 10.95 µg/L | 87.59 |
| PFDoA 1 | 49731 | 2.32 | 12.50 | 11.42 µg/L | 91.39 |
| PFTrDA 1 | 58458 | 2.40 | 12.50 | 11.84 µg/L | 94.72 |
| PFTeDA 1 | 49421 | 2.46 | 12.50 | 11.91 µg/L | 95.27 |
| 13C2-PFHxA | 6459 | 1.44 | 100.00 | 98.65 µg/L | 98.65 |
| 18O2-PFHxS | 1456 | 1.67 | 100.00 | 95.37 µg/L | 95.37 |
| 13C4-PFHpA | 8379 | 1.70 | 100.00 | 102.20 µg/L | 102.20 |
| 13C4-PFOA | 7736 | 1.88 | 100.00 | 95.30 µg/L | 95.30 |
| 13C4-PFOS | 1780 | 1.97 | 100.00 | 100.12 µg/L | 100.12 |
| 13C5-PFNA | 7889 | 2.02 | 100.00 | 99.96 µg/L | 99.96 |
| 13C2-PFDA | 6247 | 2.14 | 100.00 | 102.34 µg/L | 102.34 |
| 13C2-PFUnA | 8586 | 2.23 | 100.00 | 108.86 µg/L | 108.86 |
| 13C2-PFDoA | 10221 | 2.32 | 100.00 | 102.22 µg/L | 102.22 |
| 13C2-PFTeDA | 11140 | 2.47 | 100.00 | 105.58 µg/L | 105.58 |
| 13C6-PFHxA | 22133 | 1.44 | 100.00 | 98.09 µg/L | 98.09 |
| 13C9-PFDA | 25329 | 2.13 | 100.00 | 93.31 µg/L | 93.31 |



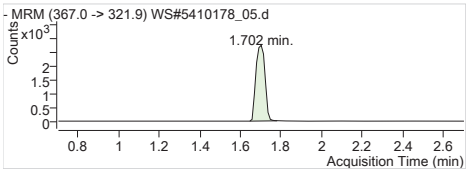



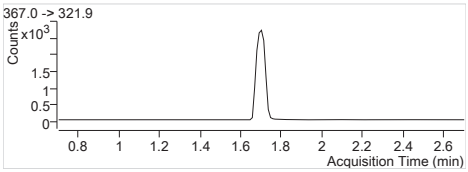

| | |
|---|---|
| **MPFHxA** | Internal Standard |
| RT (Exp. RT): | 1.445 (1.445) |
| Concentration: | 1 µg/L |
| Sample type: | Calibration |



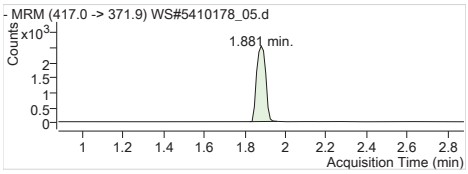



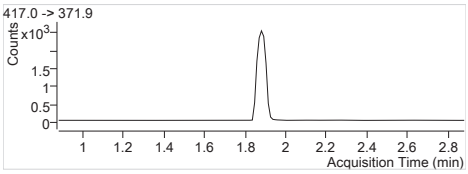

**MPFHxS** Internal Standard
RT (Exp. RT): 1.668 (1.668)
Concentration: 1 µg/L
Sample type: Calibration



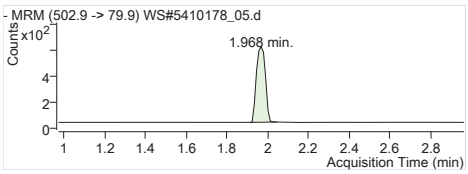



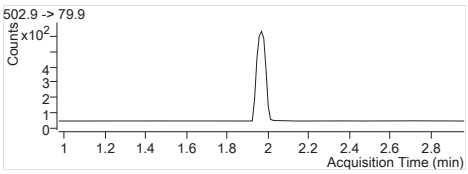

**MPFHpA** Internal Standard
RT (Exp. RT): 1.702 (1.702)
Concentration: 1 µg/L
Sample type: Calibration



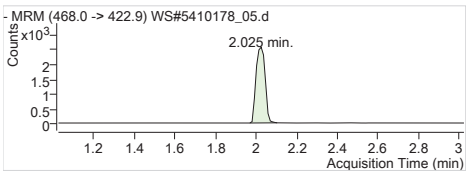



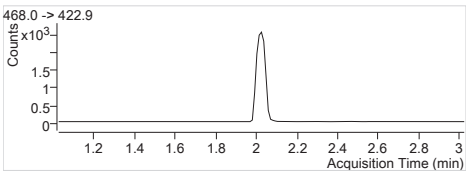

**MPFOA** Internal Standard
RT (Exp. RT): 1.881 (1.881)
Concentration: 1 µg/L
Sample type: Calibration



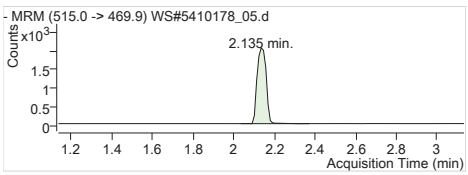



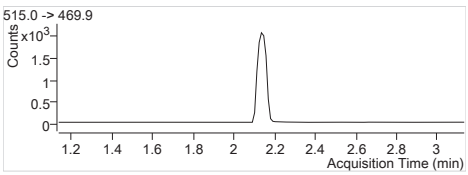

**MPFOS** Internal Standard
RT (Exp. RT): 1.968 (1.968)
Concentration: 1 µg/L
Sample type: Calibration



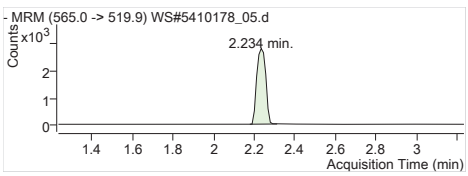



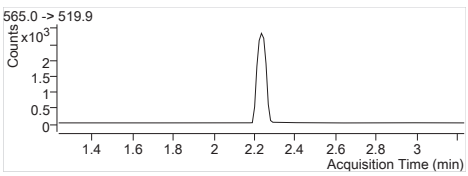

**MPFNA** Internal Standard
RT (Exp. RT): 2.025 (2.025)
Concentration: 1 µg/L
Sample type: Calibration



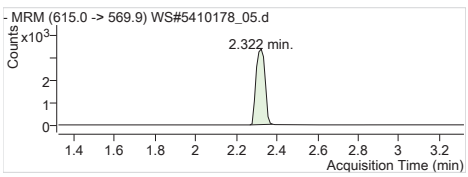



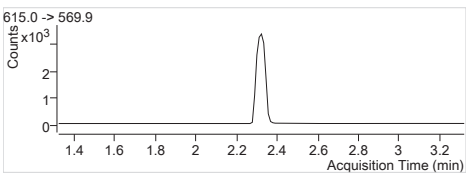

**MPFDA** Internal Standard
RT (Exp. RT): 2.135 (2.135)
Concentration: 1 µg/L
Sample type: Calibration



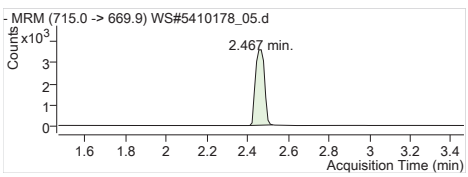



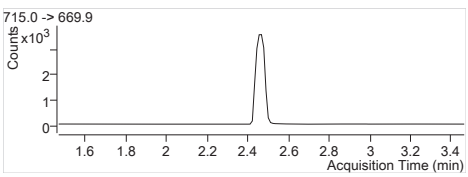

**MPFUnA** Internal Standard
RT (Exp. RT): 2.234 (2.234)
Concentration: 1 µg/L
Sample type: Calibration



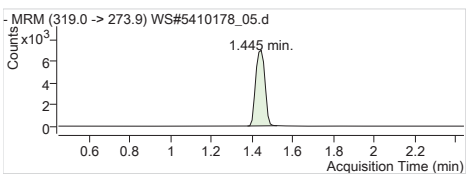



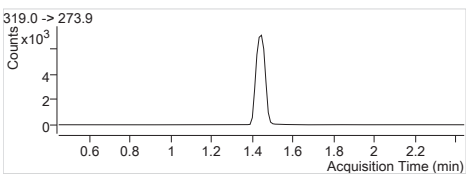

**MPFDoA** Internal Standard
RT (Exp. RT): 2.322 (2.322)
Concentration: 1 µg/L
Sample type: Calibration



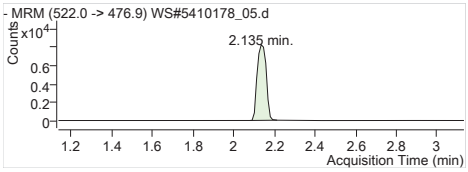



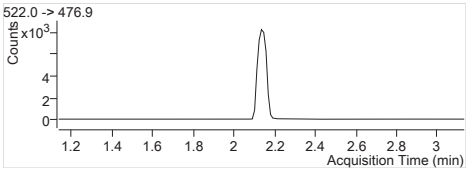

**MPFTeDA** Internal Standard
RT (Exp. RT): 2.467 (2.467)
Concentration: 1 µg/L
Sample type: Calibration



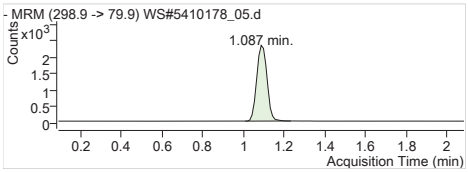



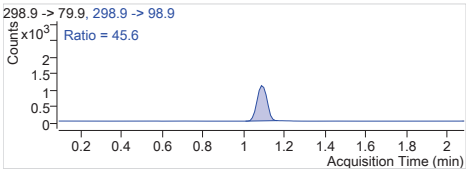

**13C6-PFHxA IS** Internal Standard
RT (Exp. RT): 1.445 (1.445)
Concentration: 1 µg/L
Sample type: Calibration



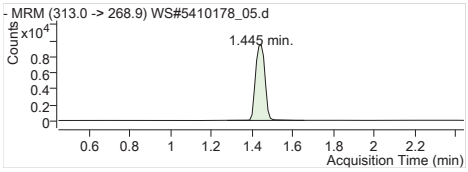



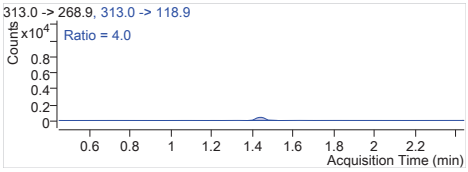

**13C9-PFDA IS** Internal Standard
RT (Exp. RT): 2.135 (2.135)
Concentration: 1 µg/L
Sample type: Calibration



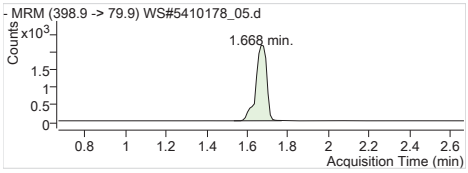



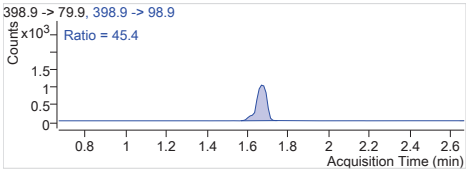

**PFBS 1** 298.9 -> 79.9
RT (Exp. RT): 1.087 (1.087)
Calc. conc. 12.14 µg/L
Area ratio: 5.58929
Sample type: Calibration



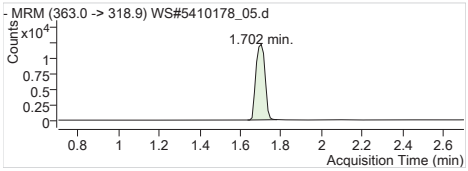



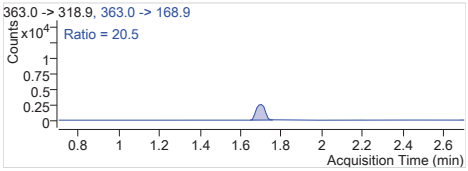

**PFHxA 1** 313.0 -> 268.9
RT (Exp. RT): 1.445 (1.445)
Calc. conc. 11.76 µg/L
Area ratio: 4.72798
Sample type: Calibration



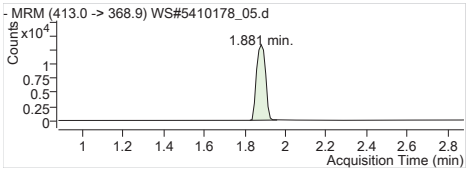



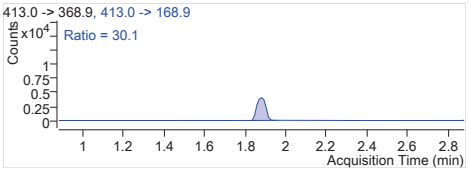

**PFHxS 1** 398.9 -> 79.9
RT (Exp. RT): 1.668 (1.668)
Calc. conc. 11.88 µg/L
Area ratio: 5.49725
Sample type: Calibration



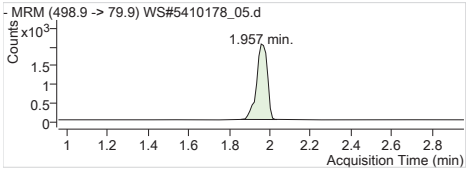



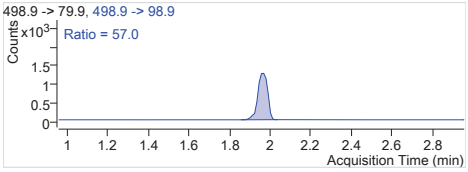

**PFHpA 1** 363.0 -> 318.9
RT (Exp. RT): 1.702 (1.702)
Calc. conc. 11.04 µg/L
Area ratio: 4.53730
Sample type: Calibration



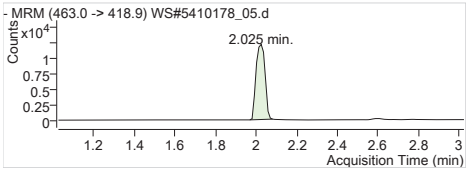



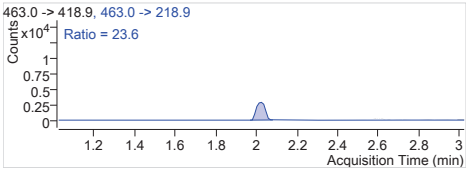

**PFOA 1** 413.0 -> 368.9
RT (Exp. RT): 1.881 (1.881)
Calc. conc. 11.78 µg/L
Area ratio: 5.32291
Sample type: Calibration



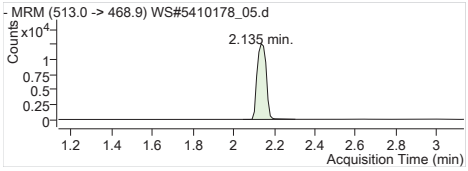



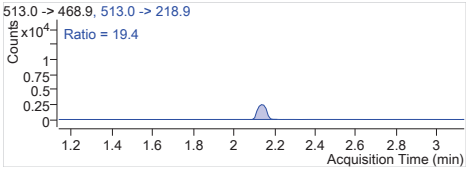

**PFOS 1** 498.9 -> 79.9
RT (Exp. RT): 1.957 (1.957)
Calc. conc. 10.95 µg/L
Area ratio: 4.20449
Sample type: Calibration



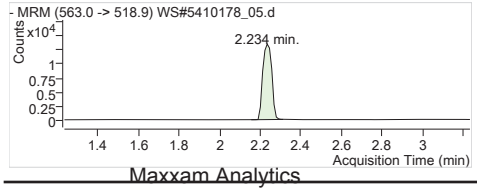



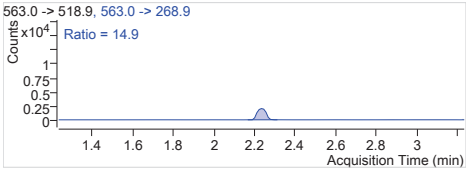

**PFNA 1** 463.0 -> 418.9
RT (Exp. RT): 2.025 (2.025)
Calc. conc. 11.58 µg/L
Area ratio: 4.73745
Sample type: Calibration



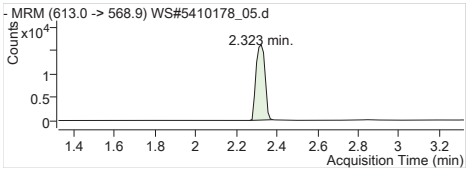



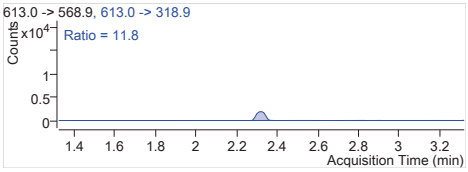

**PFDA 1** 513.0 -> 468.9
RT (Exp. RT): 2.135 (2.135)
Calc. conc. 11.95 µg/L
Area ratio: 6.19547
Sample type: Calibration



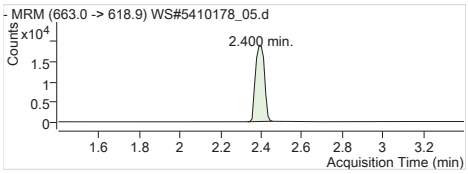



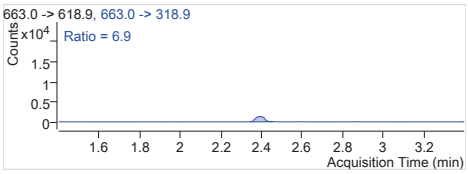

**PFUnA 1** 563.0 -> 518.9
RT (Exp. RT): 2.234 (2.234)
Calc. conc. 10.95 µg/L
Area ratio: 4.84614
Sample type: Calibration



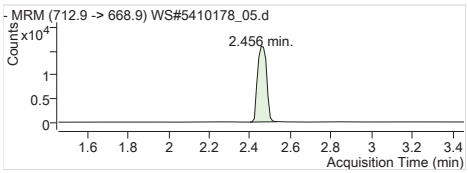



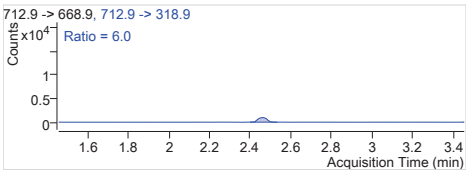

**PFDoA 1** 613.0 -> 568.9
RT (Exp. RT): 2.323 (2.323)
Calc. conc. 11.42 µg/L
Area ratio: 4.86557
Sample type: Calibration



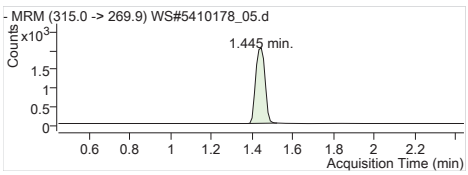



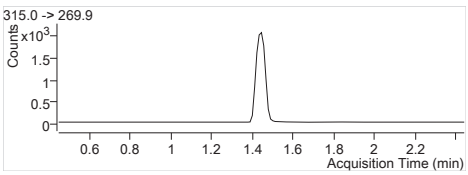

**PFTrDA 1** 663.0 -> 618.9
RT (Exp. RT): 2.400 (2.400)
Calc. conc. 11.84 µg/L
Area ratio: 5.31098
Sample type: Calibration



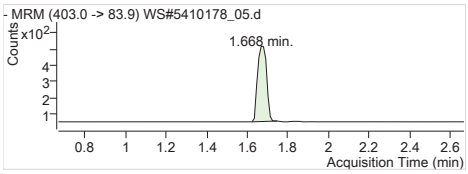



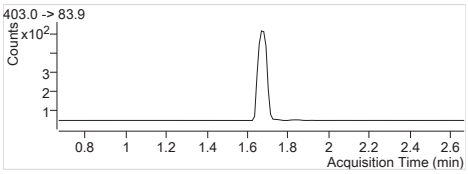

**PFTeDA 1** 712.9 -> 668.9
RT (Exp. RT): 2.456 (2.456)
Calc. conc. 11.91 µg/L
Area ratio: 4.48996
Sample type: Calibration



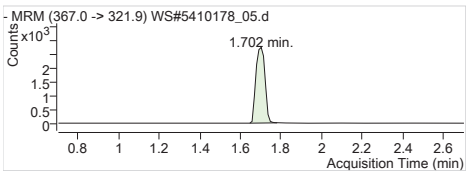



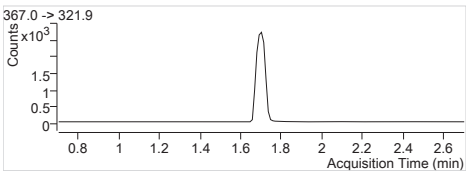

**13C2-PFHxA** 315.0 -> 269.9
RT (Exp. RT): 1.445 (1.445)
Calc. conc. 98.65 µg/L
Area ratio: 0.29183
Sample type: Calibration



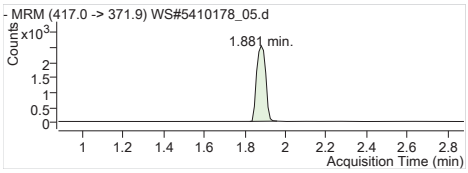



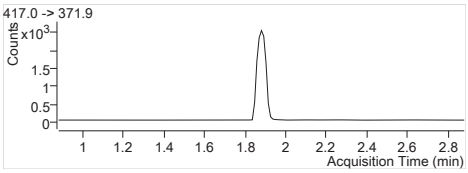

**18O2-PFHxS** 403.0 -> 83.9
RT (Exp. RT): 1.668 (1.668)
Calc. conc. 95.37 µg/L
Area ratio: 0.06578
Sample type: Calibration



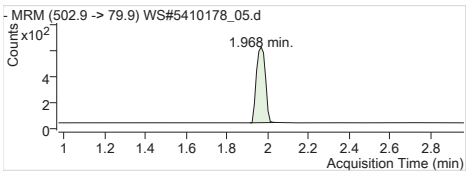



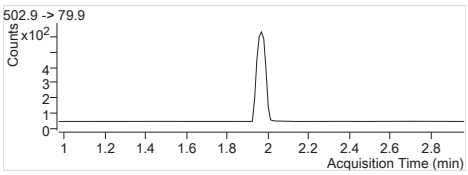

**13C4-PFHpA** 367.0 -> 321.9
RT (Exp. RT): 1.702 (1.702)
Calc. conc. 102.20 µg/L
Area ratio: 0.37857
Sample type: Calibration



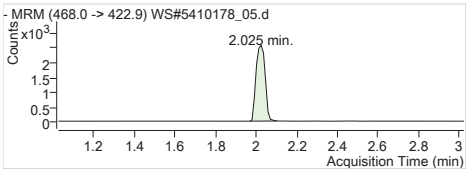



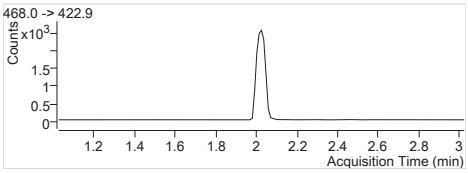

**13C4-PFOA** 417.0 -> 371.9
RT (Exp. RT): 1.881 (1.881)
Calc. conc. 95.30 µg/L
Area ratio: 0.34952
Sample type: Calibration



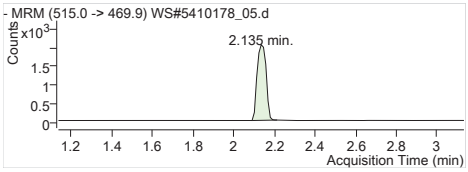



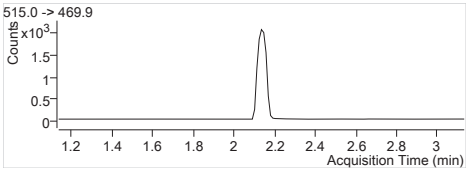

**13C4-PFOS** 502.9 -> 79.9
RT (Exp. RT): 1.968 (1.968)
Calc. conc. 100.12 µg/L
Area ratio: 0.08042
Sample type: Calibration



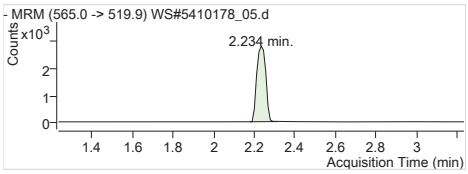



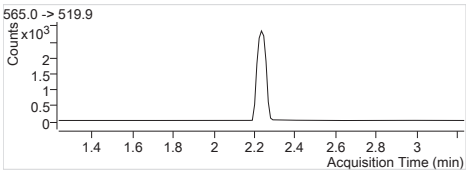

**13C5-PFNA** 468.0 -> 422.9
RT (Exp. RT): 2.025 (2.025)
Calc. conc. 99.96 µg/L
Area ratio: 0.35644
Sample type: Calibration



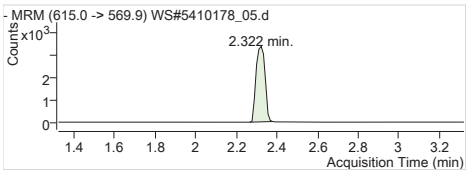



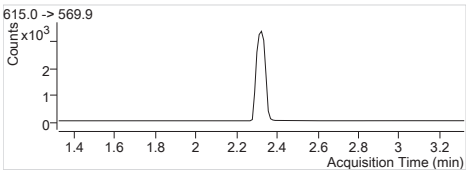

**13C2-PFDA** 515.0 -> 469.9
RT (Exp. RT): 2.135 (2.135)
Calc. conc. 102.34 µg/L
Area ratio: 0.24663
Sample type: Calibration



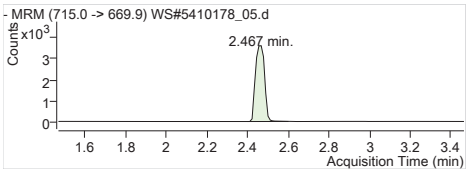



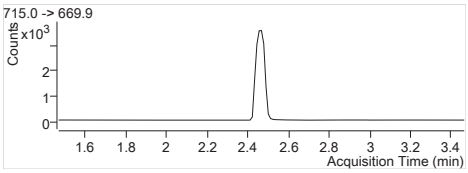

**13C2-PFUnA** 565.0 -> 519.9
RT (Exp. RT): 2.234 (2.234)
Calc. conc. 108.86 µg/L
Area ratio: 0.33898
Sample type: Calibration



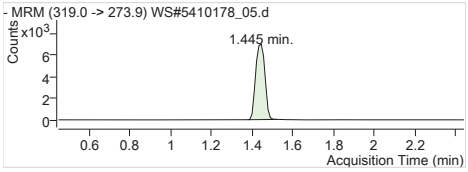



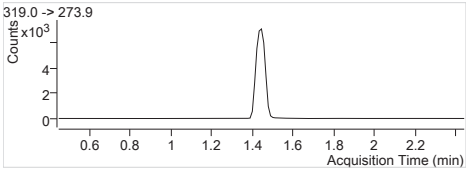

**13C2-PFDoA** 615.0 -> 569.9
RT (Exp. RT): 2.322 (2.322)
Calc. conc. 102.22 µg/L
Area ratio: 0.40353
Sample type: Calibration



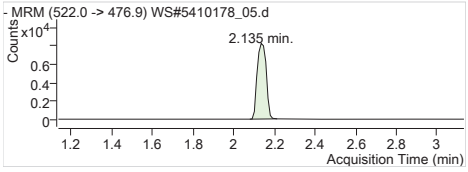



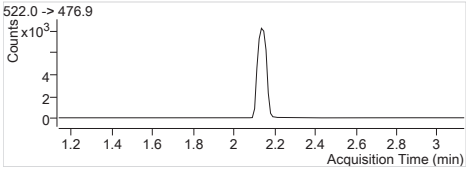

**13C2-PFTeDA** 715.0 -> 669.9
RT (Exp. RT): 2.467 (2.467)
Calc. conc. 105.58 µg/L
Area ratio: 0.43981
Sample type: Calibration




**13C6-PFHxA** 319.0 -> 273.9
RT (Exp. RT): 1.445 (1.445)
Calc. conc. 98.09 µg/L
Area ratio: 0
Sample type: Calibration



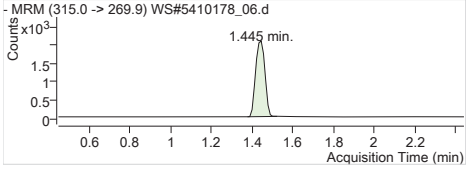

**13C9-PFDA** 522.0 -> 476.9
RT (Exp. RT): 2.135 (2.135)
Calc. conc. 93.31 µg/L
Area ratio: 0
Sample type: Calibration

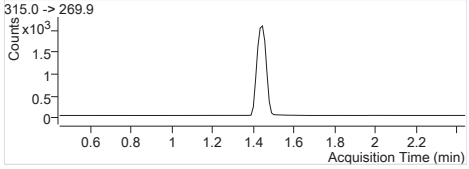
| | |
|---|---|
| **Batch Path** | T:\lcms4\PFC\20180223\WS#5410178\QuantResults\PFC_Water_Low_180223_WS#5410178_EToxics |

| | | | |
|---|---|---|---|
| **Sample Name** | **STD 5** | **Instrument** | LCMS04 |
| **Data File** | WS#5410178_06.d | **Operator** | |
| **Sample Type** | Cal | **Dilution** | 1 |
| **Acq. Method** | PFC_Water_Low.m | **Position** | P1-A6 |
| **Acq. Date** | 2018/02/23 4:59:16 PM | **Injection Volume** | Per Method |
| **Sample Annotation** | - | | |

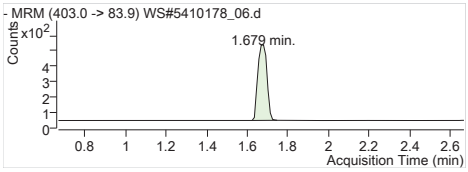
| ISTD Compounds | Response | RT | Target conc. | | |
|---|---|---|---|---|---|
| MPFHxA | 6545 | 1.44 | 1 µg/L | | |
| MPFHxS | 1538 | 1.68 | 1 µg/L | | |
| MPFHpA | 8150 | 1.70 | 1 µg/L | | |
| MPFOA | 8154 | 1.88 | 1 µg/L | | |
| MPFOS | 1829 | 1.97 | 1 µg/L | | |
| MPFNA | 7924 | 2.02 | 1 µg/L | | |
| MPFDA | 6338 | 2.14 | 1 µg/L | | |
| MPFUnA | 7804 | 2.23 | 1 µg/L | | |
| MPFDoA | 10884 | 2.32 | 1 µg/L | | |
| MPFTeDA | 11610 | 2.47 | 1 µg/L | | |
| 13C6-PFHxA IS | 23050 | 1.44 | 1 µg/L | | |
| 13C9-PFDA IS | 28850 | 2.13 | 1 µg/L | | |

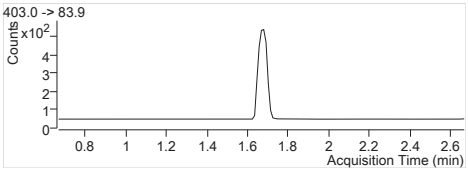
| Compound | Response | RT | Target Conc. | Calc. Conc. | Accuracy |
|---|---|---|---|---|---|
| PFBS 1 | 17495 | 1.09 | 25.00 | 24.42 µg/L | 97.67 |
| PFHxA 1 | 65090 | 1.45 | 25.00 | 24.59 µg/L | 98.36 |
| PFHxS 1 | 17672 | 1.67 | 25.00 | 24.55 µg/L | 98.18 |
| PFHpA 1 | 85776 | 1.70 | 25.00 | 25.26 µg/L | 101.03 |
| PFOA 1 | 94176 | 1.88 | 25.00 | 25.37 µg/L | 101.46 |
| PFOS 1 | 16848 | 1.96 | 25.00 | 23.73 µg/L | 94.90 |
| PFNA 1 | 80139 | 2.03 | 25.00 | 24.51 µg/L | 98.03 |
| PFDA 1 | 88140 | 2.14 | 25.00 | 26.64 µg/L | 106.57 |
| PFUnA 1 | 92104 | 2.23 | 25.00 | 26.31 µg/L | 105.22 |
| PFDoA 1 | 113209 | 2.32 | 25.00 | 24.19 µg/L | 96.77 |
| PFTrDA 1 | 126816 | 2.40 | 25.00 | 24.24 µg/L | 96.96 |
| PFTeDA 1 | 106507 | 2.47 | 25.00 | 24.23 µg/L | 96.94 |
| 13C2-PFHxA | 6545 | 1.44 | 100.00 | 95.98 µg/L | 95.98 |
| 18O2-PFHxS | 1538 | 1.68 | 100.00 | 96.74 µg/L | 96.74 |
| 13C4-PFHpA | 8150 | 1.70 | 100.00 | 95.45 µg/L | 95.45 |
| 13C4-PFOA | 8154 | 1.88 | 100.00 | 96.46 µg/L | 96.46 |
| 13C4-PFOS | 1829 | 1.97 | 100.00 | 98.78 µg/L | 98.78 |
| 13C5-PFNA | 7924 | 2.02 | 100.00 | 96.41 µg/L | 96.41 |
| 13C2-PFDA | 6251 | 2.14 | 100.00 | 89.91 µg/L | 89.91 |
| 13C2-PFUnA | 7804 | 2.23 | 100.00 | 86.87 µg/L | 86.87 |
| 13C2-PFDoA | 10884 | 2.32 | 100.00 | 95.57 µg/L | 95.57 |
| 13C2-PFTeDA | 11700 | 2.47 | 100.00 | 97.36 µg/L | 97.36 |
| 13C6-PFHxA | 23050 | 1.44 | 100.00 | 102.15 µg/L | 102.15 |
| 13C9-PFDA | 28850 | 2.13 | 100.00 | 106.29 µg/L | 106.29 |



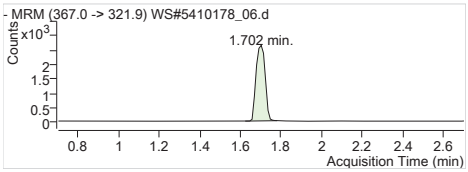



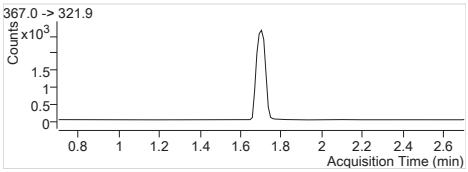

| | |
|---|---|
| **MPFHxA** | Internal Standard |
| RT (Exp. RT): | 1.445 (1.445) |
| Concentration: | 1 µg/L |
| Sample type: | Calibration |



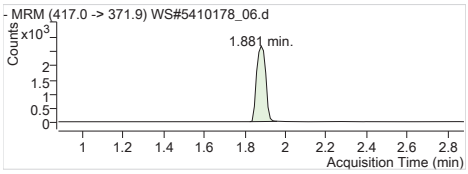



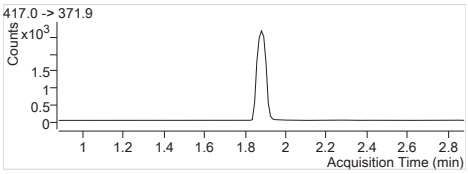

**MPFHxS** Internal Standard
RT (Exp. RT): 1.679 (1.668)
Concentration: 1 µg/L
Sample type: Calibration



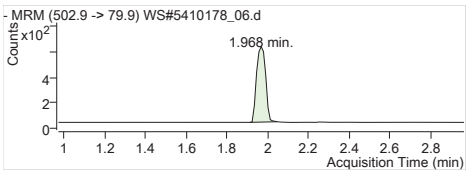



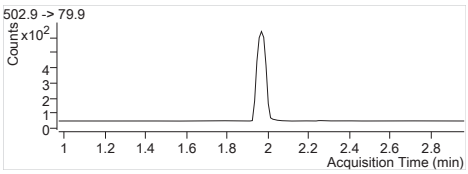

**MPFHpA** Internal Standard
RT (Exp. RT): 1.702 (1.702)
Concentration: 1 µg/L
Sample type: Calibration



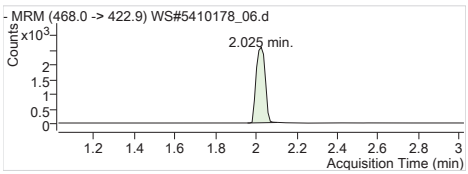



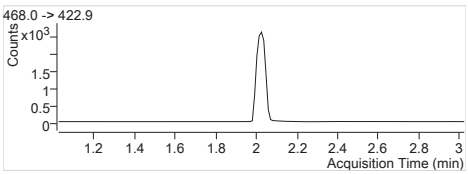

**MPFOA** Internal Standard
RT (Exp. RT): 1.881 (1.881)
Concentration: 1 µg/L
Sample type: Calibration



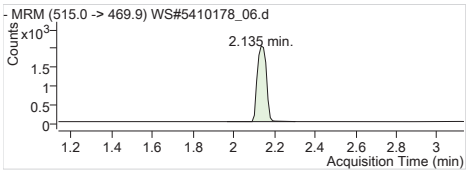



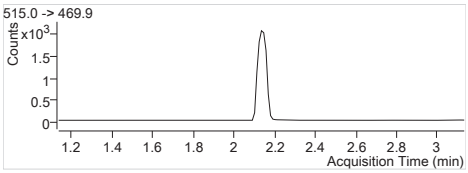

**MPFOS** Internal Standard
RT (Exp. RT): 1.968 (1.968)
Concentration: 1 µg/L
Sample type: Calibration



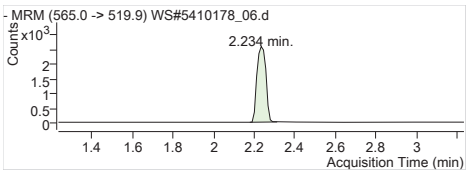



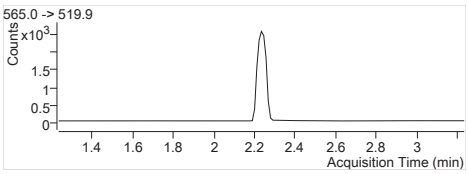

**MPFNA** Internal Standard
RT (Exp. RT): 2.025 (2.025)
Concentration: 1 µg/L
Sample type: Calibration



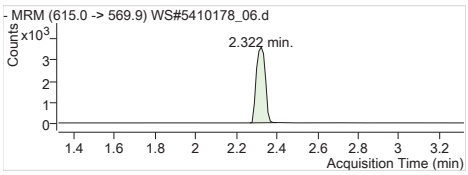



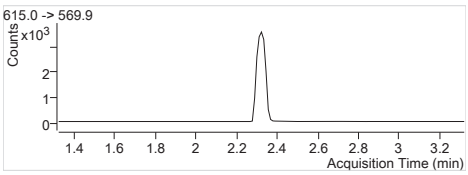

**MPFDA** Internal Standard
RT (Exp. RT): 2.135 (2.135)
Concentration: 1 µg/L
Sample type: Calibration



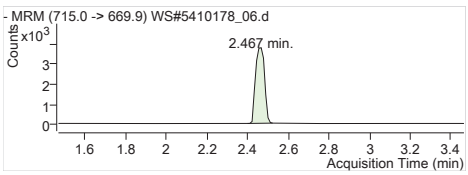



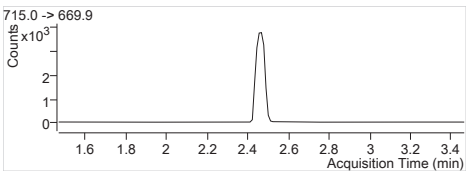

**MPFUnA** Internal Standard
RT (Exp. RT): 2.234 (2.234)
Concentration: 1 µg/L
Sample type: Calibration



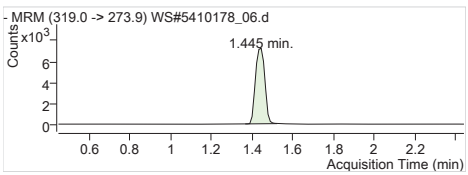



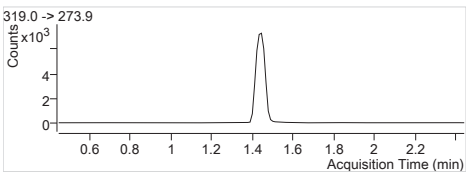

**MPFDoA** Internal Standard
RT (Exp. RT): 2.322 (2.322)
Concentration: 1 µg/L
Sample type: Calibration



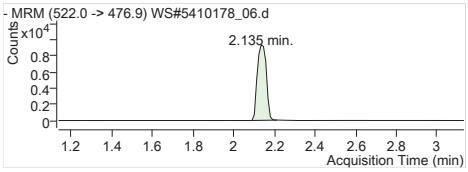



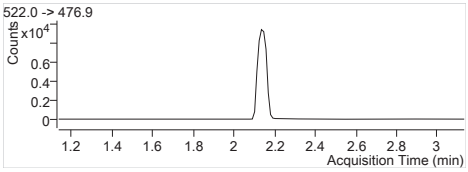

**MPFTeDA** Internal Standard
RT (Exp. RT): 2.467 (2.467)
Concentration: 1 µg/L
Sample type: Calibration



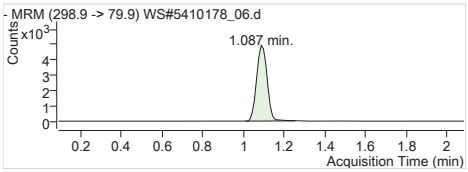



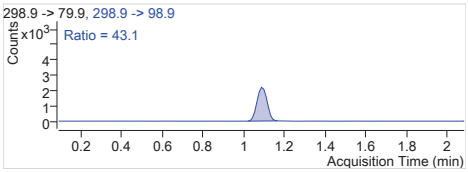

**13C6-PFHxA IS** Internal Standard
RT (Exp. RT): 1.445 (1.445)
Concentration: 1 µg/L
Sample type: Calibration



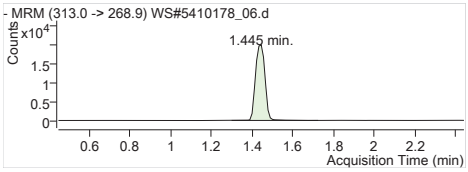



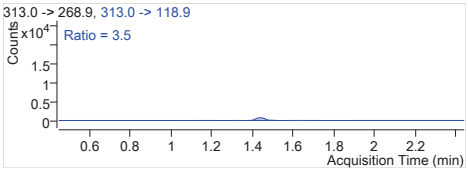

**13C9-PFDA IS** Internal Standard
RT (Exp. RT): 2.135 (2.135)
Concentration: 1 µg/L
Sample type: Calibration



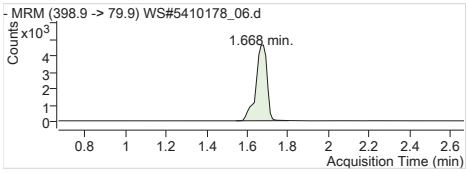



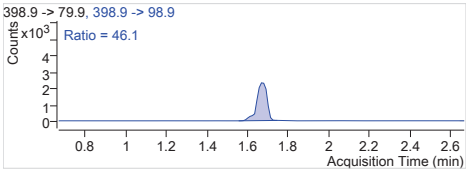

**PFBS 1** 298.9 -> 79.9
RT (Exp. RT): 1.087 (1.087)
Calc. conc. 24.42 µg/L
Area ratio: 11.37516
Sample type: Calibration



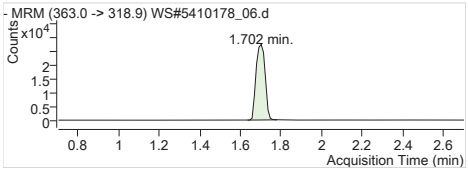



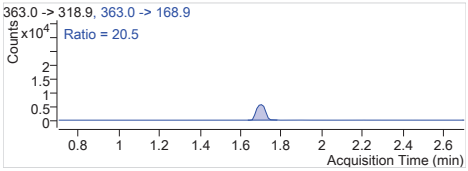

**PFHxA 1** 313.0 -> 268.9
RT (Exp. RT): 1.445 (1.445)
Calc. conc. 24.59 µg/L
Area ratio: 9.94500
Sample type: Calibration



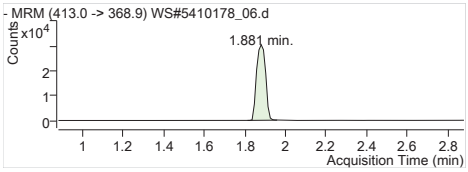



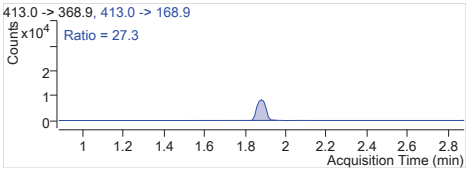

**PFHxS 1** 398.9 -> 79.9
RT (Exp. RT): 1.668 (1.668)
Calc. conc. 24.55 µg/L
Area ratio: 11.49025
Sample type: Calibration



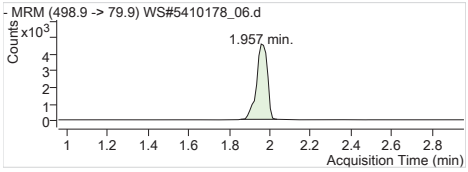



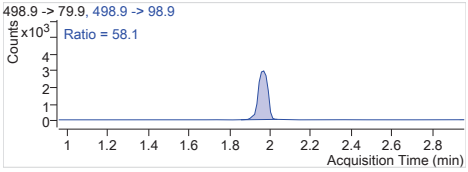

**PFHpA 1** 363.0 -> 318.9
RT (Exp. RT): 1.702 (1.702)
Calc. conc. 25.26 µg/L
Area ratio: 10.52466
Sample type: Calibration



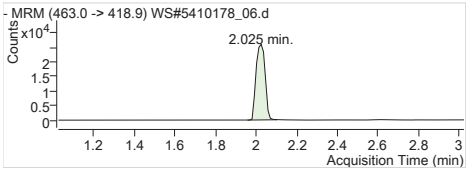



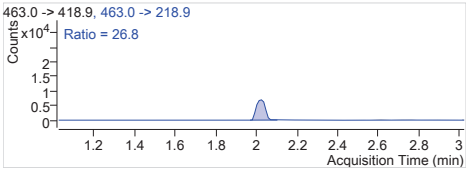

**PFOA 1** 413.0 -> 368.9
RT (Exp. RT): 1.881 (1.881)
Calc. conc. 25.37 µg/L
Area ratio: 11.54967
Sample type: Calibration



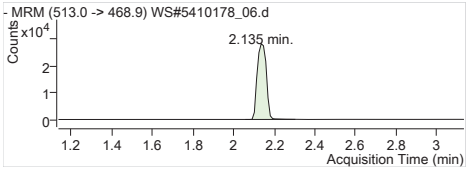



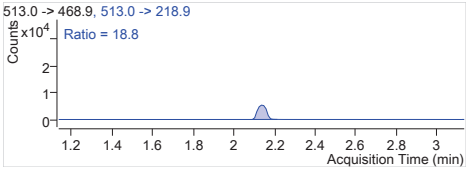

**PFOS 1** 498.9 -> 79.9
RT (Exp. RT): 1.957 (1.957)
Calc. conc. 23.73 µg/L
Area ratio: 9.21159
Sample type: Calibration



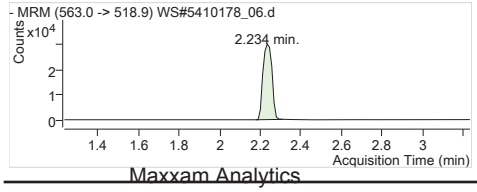



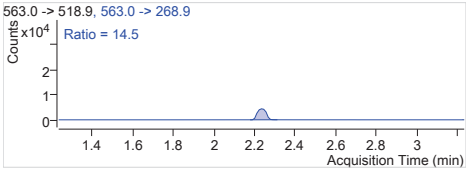

**PFNA 1** 463.0 -> 418.9
RT (Exp. RT): 2.025 (2.025)
Calc. conc. 24.51 µg/L
Area ratio: 10.11345
Sample type: Calibration



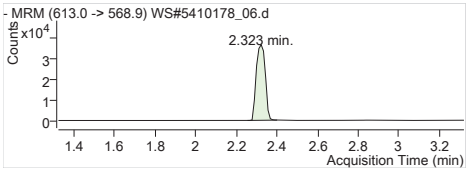



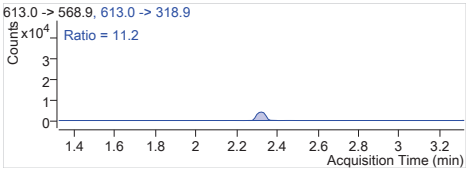

**PFDA 1** 513.0 -> 468.9
RT (Exp. RT): 2.135 (2.135)
Calc. conc. 26.64 µg/L
Area ratio: 13.90660
Sample type: Calibration



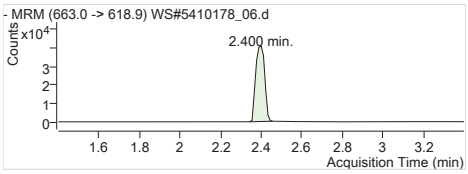



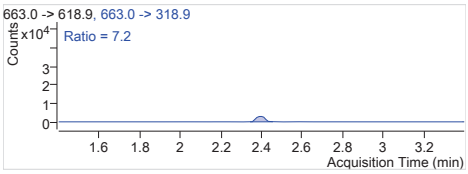

**PFUnA 1** 563.0 -> 518.9
RT (Exp. RT): 2.234 (2.234)
Calc. conc. 26.31 µg/L
Area ratio: 11.80215
Sample type: Calibration



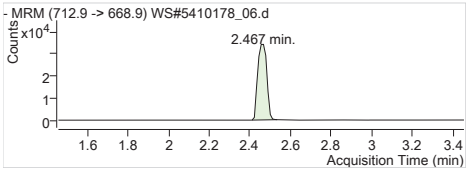



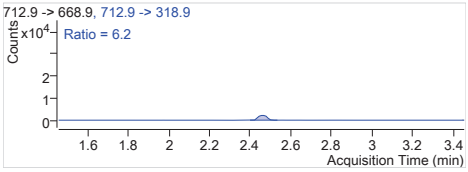

**PFDoA 1** 613.0 -> 568.9
RT (Exp. RT): 2.323 (2.323)
Calc. conc. 24.19 µg/L
Area ratio: 10.40141
Sample type: Calibration



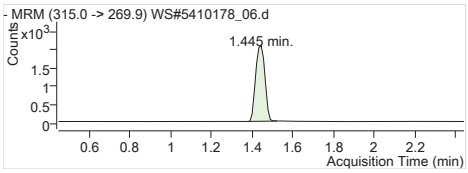



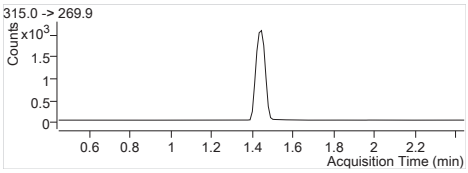

**PFTrDA 1** 663.0 -> 618.9
RT (Exp. RT): 2.400 (2.400)
Calc. conc. 24.24 µg/L
Area ratio: 10.92300
Sample type: Calibration



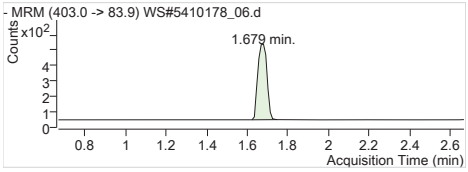



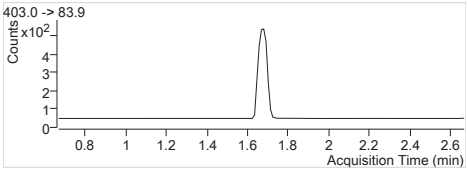

**PFTeDA 1** 712.9 -> 668.9
RT (Exp. RT): 2.467 (2.456)
Calc. conc. 24.23 µg/L
Area ratio: 9.17373
Sample type: Calibration



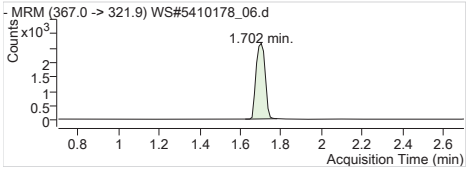



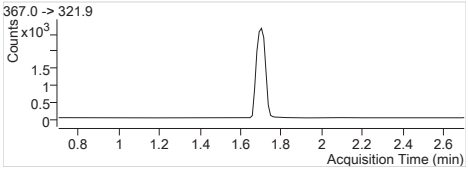

**13C2-PFHxA** 315.0 -> 269.9
RT (Exp. RT): 1.445 (1.445)
Calc. conc. 95.98 µg/L
Area ratio: 0.28395
Sample type: Calibration



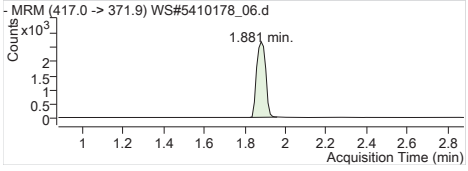



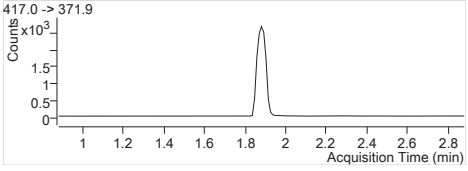

**18O2-PFHxS** 403.0 -> 83.9
RT (Exp. RT): 1.679 (1.668)
Calc. conc. 96.74 µg/L
Area ratio: 0.06672
Sample type: Calibration



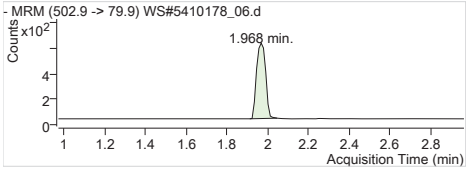



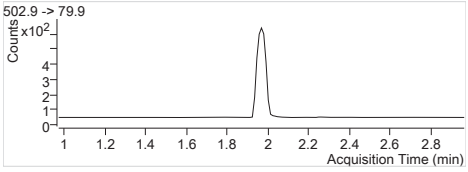

**13C4-PFHpA** 367.0 -> 321.9
RT (Exp. RT): 1.702 (1.702)
Calc. conc. 95.45 µg/L
Area ratio: 0.35358
Sample type: Calibration



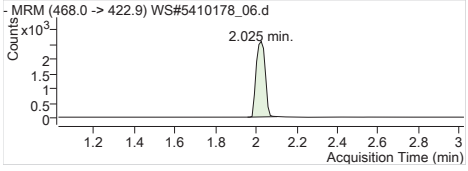



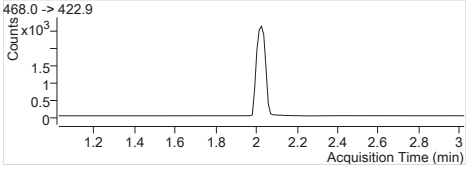

**13C4-PFOA** 417.0 -> 371.9
RT (Exp. RT): 1.881 (1.881)
Calc. conc. 96.46 µg/L
Area ratio: 0.35375
Sample type: Calibration



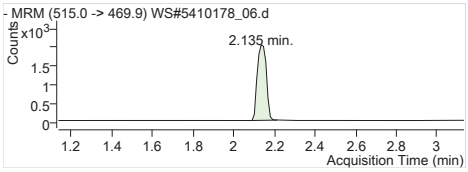



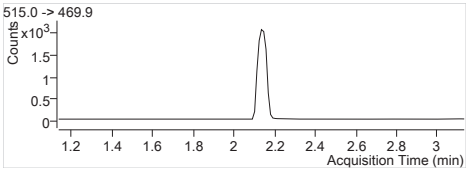

**13C4-PFOS** 502.9 -> 79.9
RT (Exp. RT): 1.968 (1.968)
Calc. conc. 98.78 µg/L
Area ratio: 0.07935
Sample type: Calibration



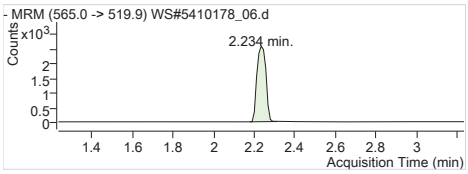



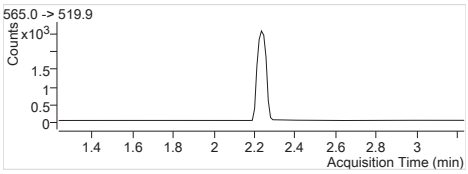

**13C5-PFNA** 468.0 -> 422.9
RT (Exp. RT): 2.025 (2.025)
Calc. conc. 96.41 µg/L
Area ratio: 0.34377
Sample type: Calibration



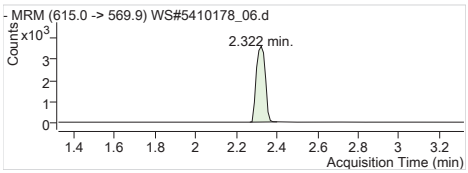



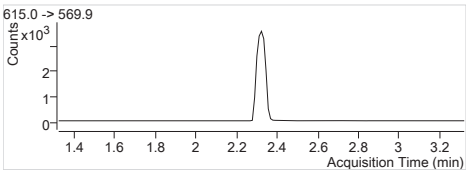

**13C2-PFDA** 515.0 -> 469.9
RT (Exp. RT): 2.135 (2.135)
Calc. conc. 89.91 µg/L
Area ratio: 0.21667
Sample type: Calibration



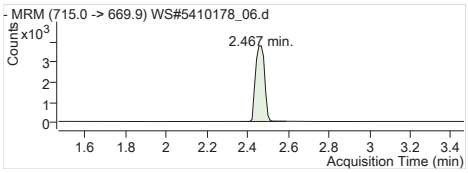



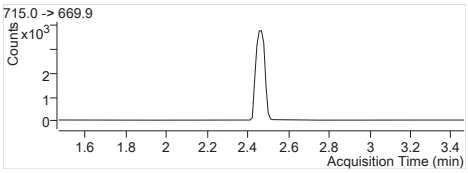

**13C2-PFUnA** 565.0 -> 519.9
RT (Exp. RT): 2.234 (2.234)
Calc. conc. 86.87 µg/L
Area ratio: 0.27050
Sample type: Calibration



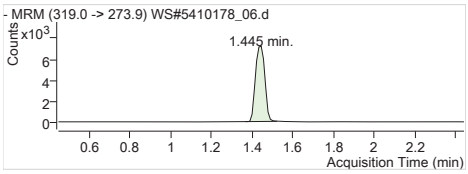



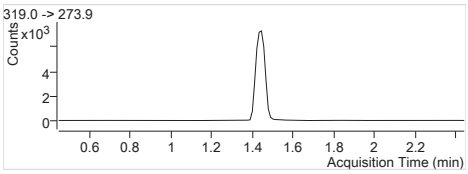

**13C2-PFDoA** 615.0 -> 569.9
RT (Exp. RT): 2.322 (2.322)
Calc. conc. 95.57 µg/L
Area ratio: 0.37726
Sample type: Calibration



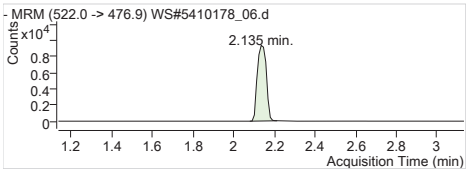



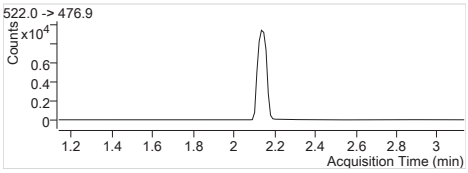

**13C2-PFTeDA** 715.0 -> 669.9
RT (Exp. RT): 2.467 (2.467)
Calc. conc. 97.36 µg/L
Area ratio: 0.40555
Sample type: Calibration




**13C6-PFHxA** 319.0 -> 273.9
RT (Exp. RT): 1.445 (1.445)
Calc. conc. 102.15 µg/L
Area ratio: 0
Sample type: Calibration



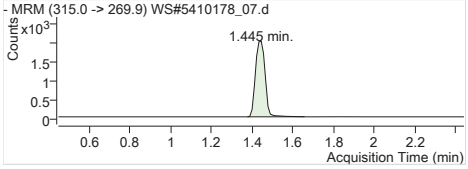

**13C9-PFDA** 522.0 -> 476.9
RT (Exp. RT): 2.135 (2.135)
Calc. conc. 106.29 µg/L
Area ratio: 0
Sample type: Calibration

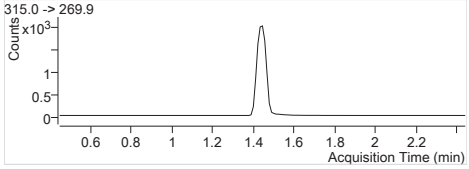
**Batch Path** T:\lcms4\PFC\20180223\WS#5410178\QuantResults\PFC_Water_Low_180223_WS#5410178_EToxics

| | | | |
|---|---|---|---|
| **Sample Name** | **STD 6** | **Instrument** | LCMS04 |
| **Data File** | WS#5410178_07.d | **Operator** | |
| **Sample Type** | Cal | **Dilution** | 1 |
| **Acq. Method** | PFC_Water_Low.m | **Position** | P1-A7 |
| **Acq. Date** | 2018/02/23 5:04:12 PM | **Injection Volume** | Per Method |
| **Sample Annotation** | - | | |

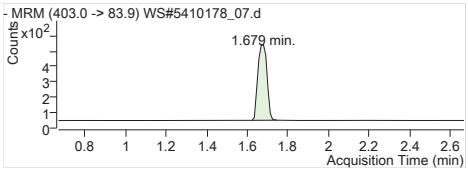
| ISTD Compounds | Response | RT | Target conc. | | |
|---|---|---|---|---|---|
| MPFHxA | 6541 | 1.44 | 1 µg/L | | |
| MPFHxS | 1535 | 1.68 | 1 µg/L | | |
| MPFHpA | 7931 | 1.70 | 1 µg/L | | |
| MPFOA | 7923 | 1.88 | 1 µg/L | | |
| MPFOS | 1686 | 1.97 | 1 µg/L | | |
| MPFNA | 7843 | 2.02 | 1 µg/L | | |
| MPFDA | 6778 | 2.14 | 1 µg/L | | |
| MPFUnA | 8282 | 2.23 | 1 µg/L | | |
| MPFDoA | 10316 | 2.32 | 1 µg/L | | |
| MPFTeDA | 11201 | 2.46 | 1 µg/L | | |
| 13C6-PFHxA IS | 21853 | 1.44 | 1 µg/L | | |
| 13C9-PFDA IS | 25997 | 2.13 | 1 µg/L | | |

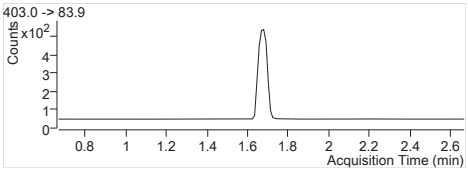
| Compound | Response | RT | Target Conc. | Calc. Conc. | Accuracy |
|---|---|---|---|---|---|
| PFBS 1 | 30887 | 1.09 | 41.70 | 42.98 µg/L | 103.07 |
| PFHxA 1 | 113899 | 1.45 | 41.70 | 42.96 µg/L | 103.01 |
| PFHxS 1 | 31001 | 1.67 | 41.70 | 42.95 µg/L | 103.00 |
| PFHpA 1 | 142442 | 1.70 | 41.70 | 42.91 µg/L | 102.90 |
| PFOA 1 | 153654 | 1.88 | 41.70 | 42.47 µg/L | 101.86 |
| PFOS 1 | 29328 | 1.96 | 41.70 | 44.61 µg/L | 106.97 |
| PFNA 1 | 140109 | 2.03 | 41.70 | 43.15 µg/L | 103.48 |
| PFDA 1 | 144884 | 2.14 | 41.70 | 40.88 µg/L | 98.03 |
| PFUnA 1 | 157019 | 2.23 | 41.70 | 42.11 µg/L | 100.98 |
| PFDoA 1 | 193950 | 2.32 | 41.70 | 43.56 µg/L | 104.47 |
| PFTrDA 1 | 218095 | 2.40 | 41.70 | 43.13 µg/L | 103.43 |
| PFTeDA 1 | 182013 | 2.46 | 41.70 | 42.86 µg/L | 102.77 |
| 13C2-PFHxA | 6541 | 1.44 | 100.00 | 101.18 µg/L | 101.18 |
| 18O2-PFHxS | 1535 | 1.68 | 100.00 | 101.84 µg/L | 101.84 |
| 13C4-PFHpA | 7931 | 1.70 | 100.00 | 97.97 µg/L | 97.97 |
| 13C4-PFOA | 7923 | 1.88 | 100.00 | 98.86 µg/L | 98.86 |
| 13C4-PFOS | 1686 | 1.97 | 100.00 | 96.05 µg/L | 96.05 |
| 13C5-PFNA | 7843 | 2.02 | 100.00 | 100.65 µg/L | 100.65 |
| 13C2-PFDA | 6760 | 2.14 | 100.00 | 107.90 µg/L | 107.90 |
| 13C2-PFUnA | 8282 | 2.23 | 100.00 | 102.31 µg/L | 102.31 |
| 13C2-PFDoA | 10316 | 2.32 | 100.00 | 100.52 µg/L | 100.52 |
| 13C2-PFTeDA | 11333 | 2.46 | 100.00 | 104.65 µg/L | 104.65 |
| 13C6-PFHxA | 21853 | 1.44 | 100.00 | 96.85 µg/L | 96.85 |
| 13C9-PFDA | 25997 | 2.13 | 100.00 | 95.77 µg/L | 95.77 |



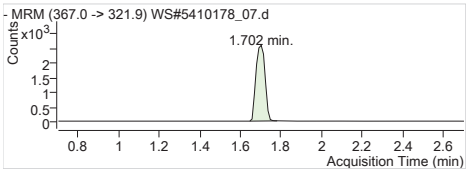



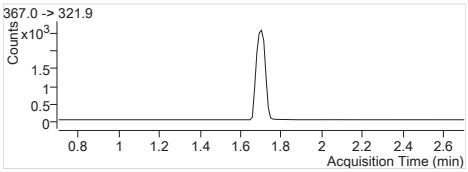

**MPFHxA** Internal Standard
RT (Exp. RT): 1.445 (1.445)
Concentration: 1 µg/L
Sample type: Calibration



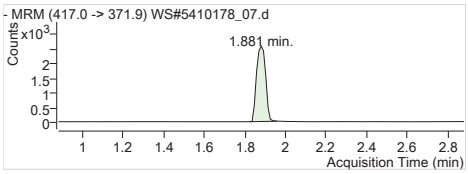



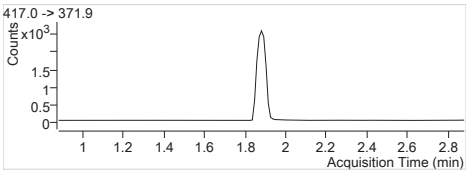

**MPFHxS** Internal Standard
RT (Exp. RT): 1.679 (1.668)
Concentration: 1 µg/L
Sample type: Calibration



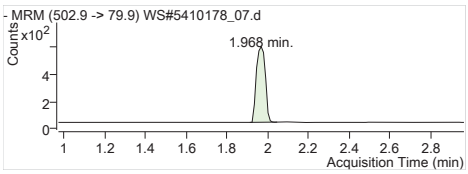



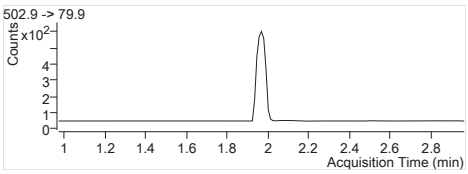

**MPFHpA** Internal Standard
RT (Exp. RT): 1.702 (1.702)
Concentration: 1 µg/L
Sample type: Calibration



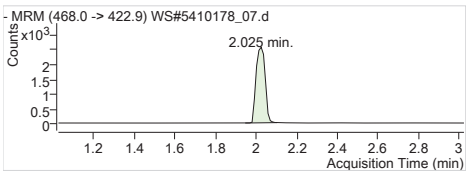



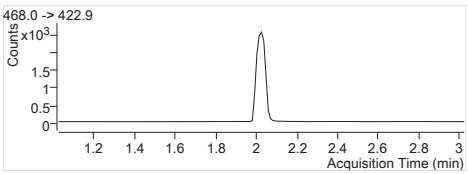

**MPFOA** Internal Standard
RT (Exp. RT): 1.881 (1.881)
Concentration: 1 µg/L
Sample type: Calibration



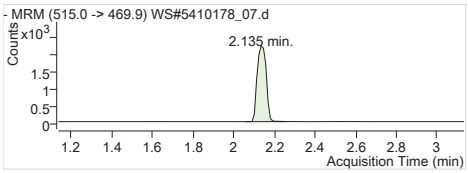



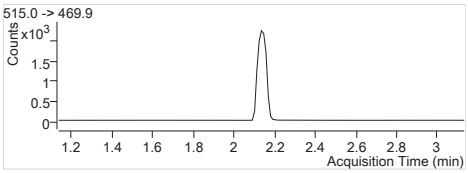

**MPFOS** Internal Standard
RT (Exp. RT): 1.968 (1.968)
Concentration: 1 µg/L
Sample type: Calibration



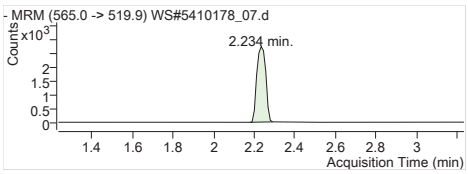



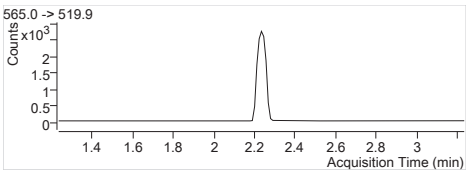

**MPFNA** Internal Standard
RT (Exp. RT): 2.025 (2.025)
Concentration: 1 µg/L
Sample type: Calibration



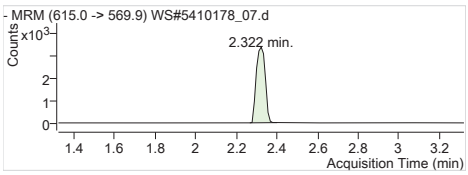



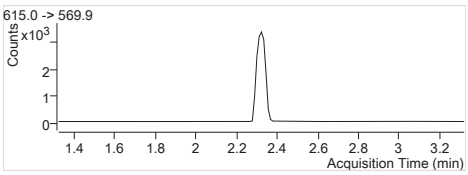

**MPFDA** Internal Standard
RT (Exp. RT): 2.135 (2.135)
Concentration: 1 µg/L
Sample type: Calibration



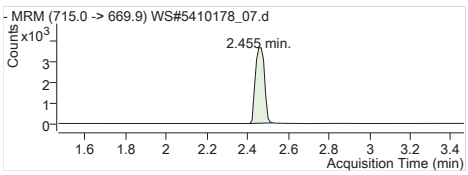



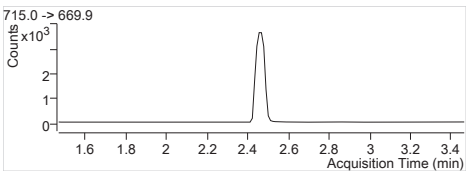

**MPFUnA** Internal Standard
RT (Exp. RT): 2.234 (2.234)
Concentration: 1 µg/L
Sample type: Calibration



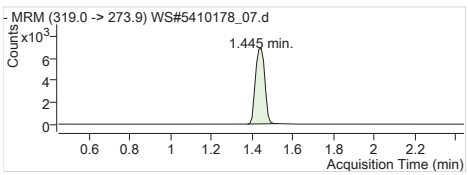



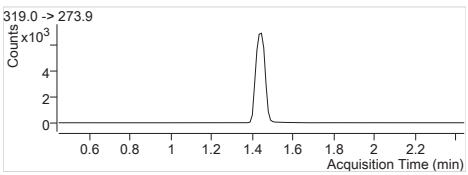

**MPFDoA** Internal Standard
RT (Exp. RT): 2.322 (2.322)
Concentration: 1 µg/L
Sample type: Calibration



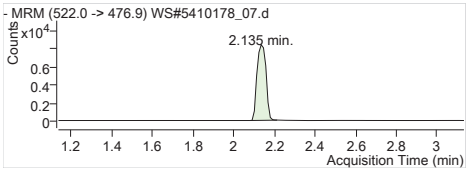



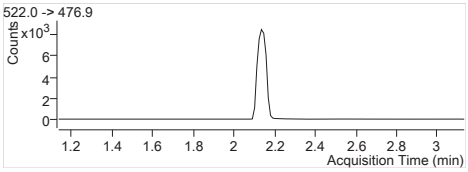

**MPFTeDA** Internal Standard
RT (Exp. RT): 2.455 (2.467)
Concentration: 1 µg/L
Sample type: Calibration



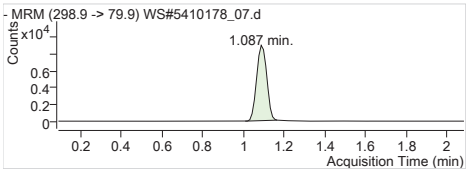



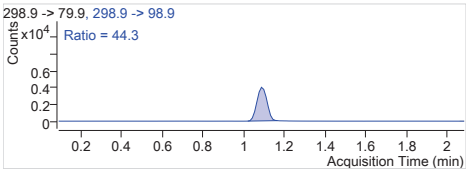

**13C6-PFHxA IS** Internal Standard
RT (Exp. RT): 1.445 (1.445)
Concentration: 1 µg/L
Sample type: Calibration



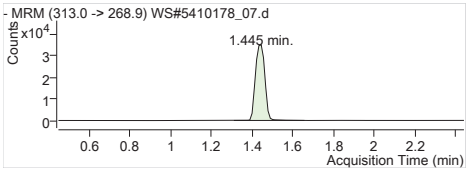



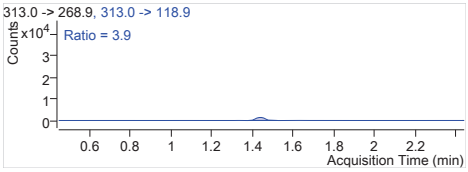

**13C9-PFDA IS** Internal Standard
RT (Exp. RT): 2.135 (2.135)
Concentration: 1 µg/L
Sample type: Calibration



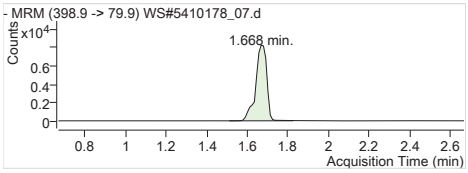



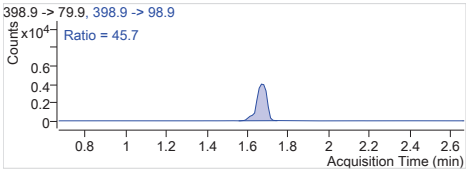

**PFBS 1** 298.9 -> 79.9
RT (Exp. RT): 1.087 (1.087)
Calc. conc. 42.98 µg/L
Area ratio: 20.12182
Sample type: Calibration



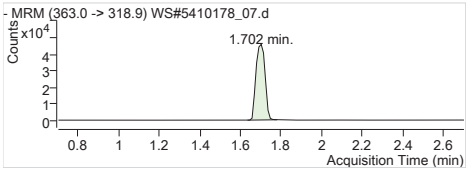



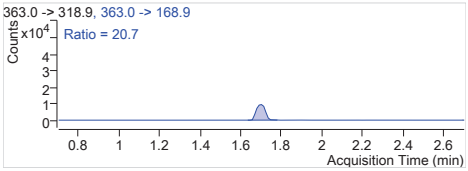

**PFHxA 1** 313.0 -> 268.9
RT (Exp. RT): 1.445 (1.445)
Calc. conc. 42.96 µg/L
Area ratio: 17.41309
Sample type: Calibration



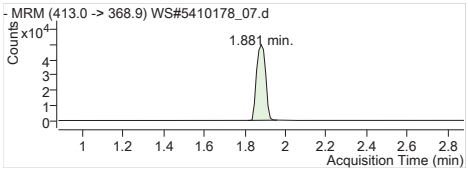



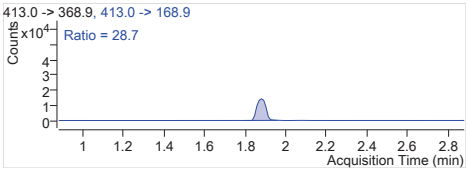

**PFHxS 1** 398.9 -> 79.9
RT (Exp. RT): 1.668 (1.668)
Calc. conc. 42.95 µg/L
Area ratio: 20.19609
Sample type: Calibration



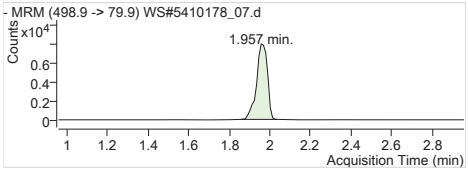



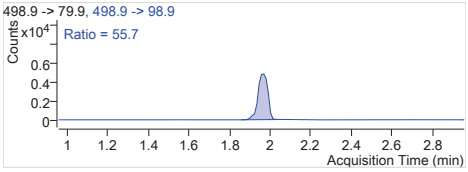

**PFHpA 1** 363.0 -> 318.9
RT (Exp. RT): 1.702 (1.702)
Calc. conc. 42.91 µg/L
Area ratio: 17.96016
Sample type: Calibration



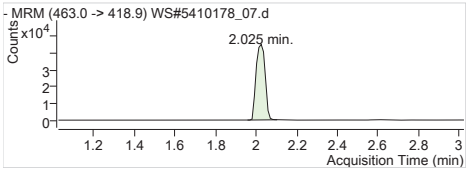



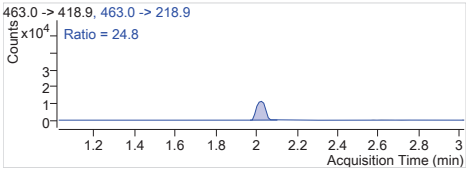

**PFOA 1** 413.0 -> 368.9
RT (Exp. RT): 1.881 (1.881)
Calc. conc. 42.47 µg/L
Area ratio: 19.39341
Sample type: Calibration



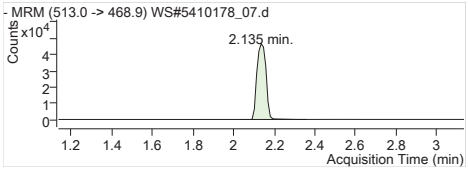



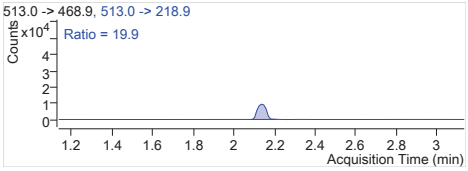

**PFOS 1** 498.9 -> 79.9
RT (Exp. RT): 1.957 (1.957)
Calc. conc. 44.61 µg/L
Area ratio: 17.39502
Sample type: Calibration



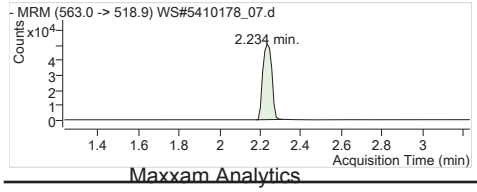



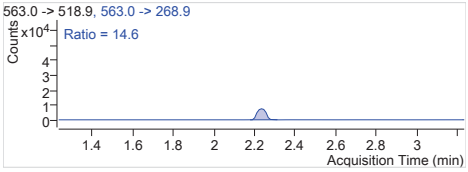

**PFNA 1** 463.0 -> 418.9
RT (Exp. RT): 2.025 (2.025)
Calc. conc. 43.15 µg/L
Area ratio: 17.86421
Sample type: Calibration



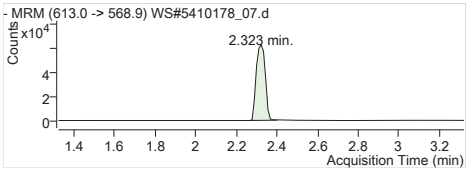



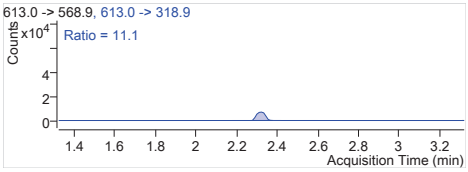

**PFDA 1** 513.0 -> 468.9
RT (Exp. RT): 2.135 (2.135)
Calc. conc. 40.88 µg/L
Area ratio: 21.37563
Sample type: Calibration



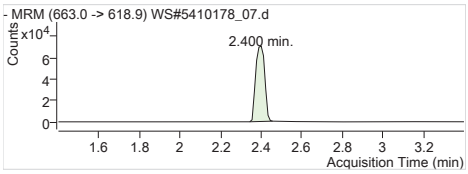



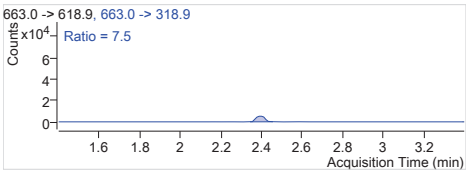

**PFUnA 1** 563.0 -> 518.9
RT (Exp. RT): 2.234 (2.234)
Calc. conc. 42.11 µg/L
Area ratio: 18.95907
Sample type: Calibration



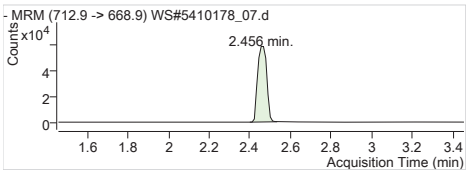



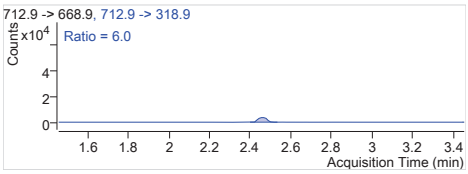

**PFDoA 1** 613.0 -> 568.9
RT (Exp. RT): 2.323 (2.323)
Calc. conc. 43.56 µg/L
Area ratio: 18.80089
Sample type: Calibration



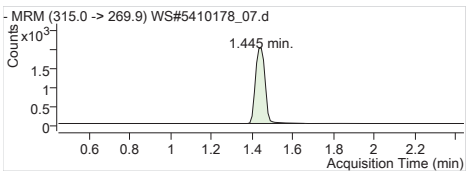



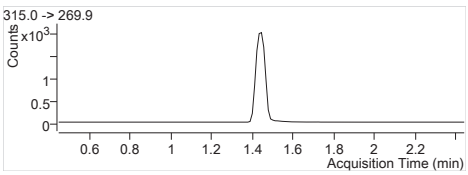

**PFTrDA 1** 663.0 -> 618.9
RT (Exp. RT): 2.400 (2.400)
Calc. conc. 43.13 µg/L
Area ratio: 19.47103
Sample type: Calibration



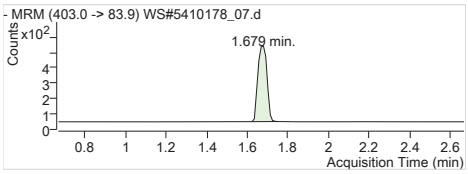



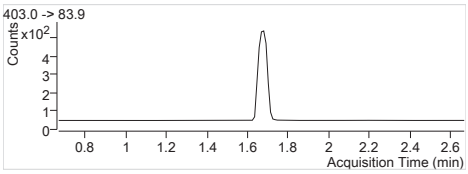

**PFTeDA 1** 712.9 -> 668.9
RT (Exp. RT): 2.456 (2.456)
Calc. conc. 42.86 µg/L
Area ratio: 16.24971
Sample type: Calibration



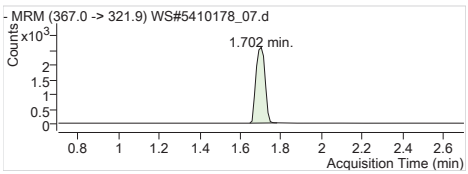



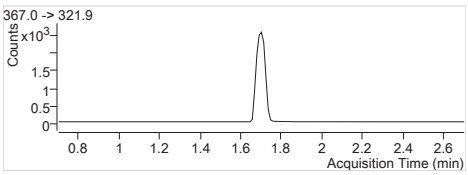

**13C2-PFHxA** 315.0 -> 269.9
RT (Exp. RT): 1.445 (1.445)
Calc. conc. 101.18 µg/L
Area ratio: 0.29932
Sample type: Calibration



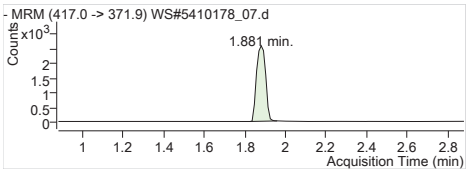



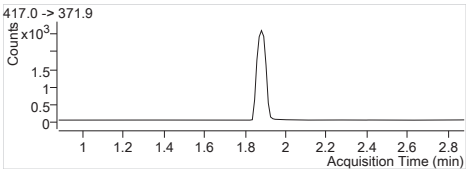

**18O2-PFHxS** 403.0 -> 83.9
RT (Exp. RT): 1.679 (1.668)
Calc. conc. 101.84 µg/L
Area ratio: 0.07024
Sample type: Calibration



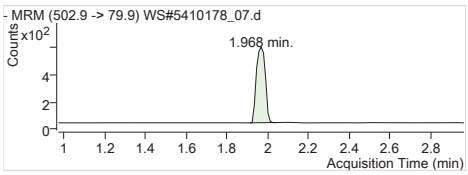



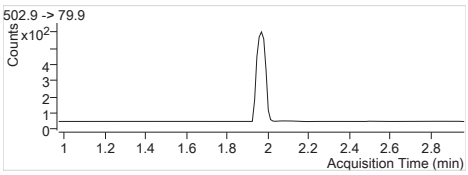

**13C4-PFHpA** 367.0 -> 321.9
RT (Exp. RT): 1.702 (1.702)
Calc. conc. 97.97 µg/L
Area ratio: 0.36292
Sample type: Calibration



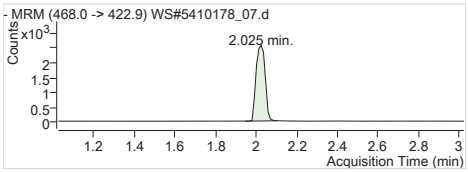



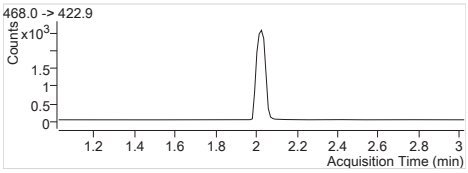

**13C4-PFOA** 417.0 -> 371.9
RT (Exp. RT): 1.881 (1.881)
Calc. conc. 98.86 µg/L
Area ratio: 0.36256
Sample type: Calibration



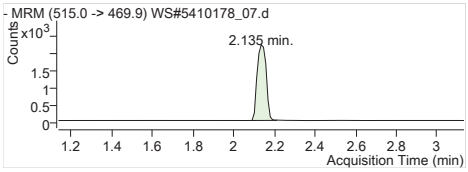



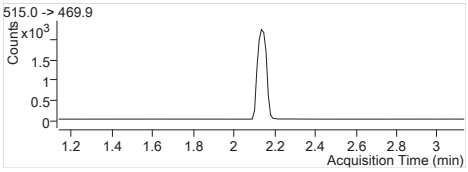

**13C4-PFOS** 502.9 -> 79.9
RT (Exp. RT): 1.968 (1.968)
Calc. conc. 96.05 µg/L
Area ratio: 0.07715
Sample type: Calibration



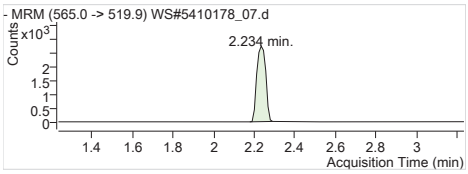



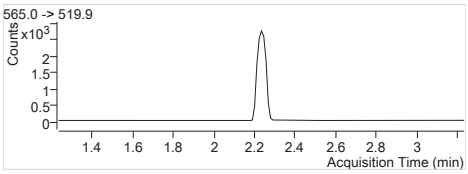

**13C5-PFNA** 468.0 -> 422.9
RT (Exp. RT): 2.025 (2.025)
Calc. conc. 100.65 µg/L
Area ratio: 0.35890
Sample type: Calibration



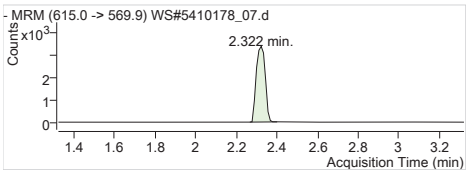



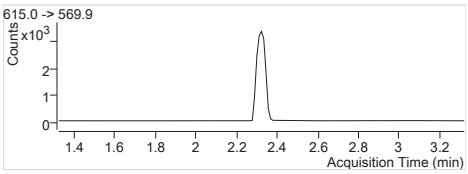

**13C2-PFDA** 515.0 -> 469.9
RT (Exp. RT): 2.135 (2.135)
Calc. conc. 107.90 µg/L
Area ratio: 0.26003
Sample type: Calibration



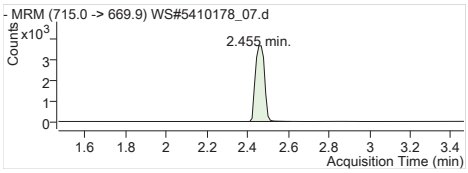



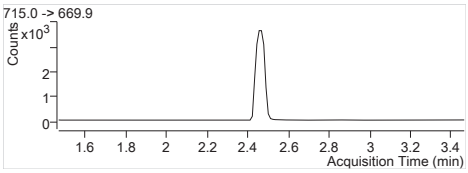

**13C2-PFUnA** 565.0 -> 519.9
RT (Exp. RT): 2.234 (2.234)
Calc. conc. 102.31 µg/L
Area ratio: 0.31858
Sample type: Calibration



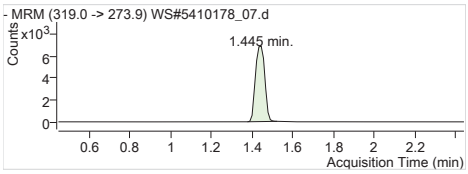



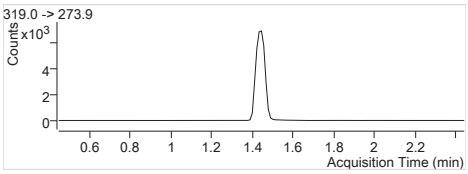

**13C2-PFDoA** 615.0 -> 569.9
RT (Exp. RT): 2.322 (2.322)
Calc. conc. 100.52 µg/L
Area ratio: 0.39682
Sample type: Calibration



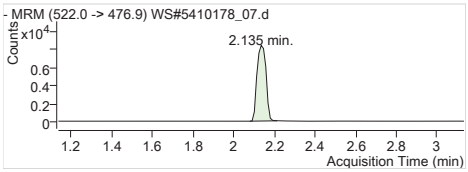



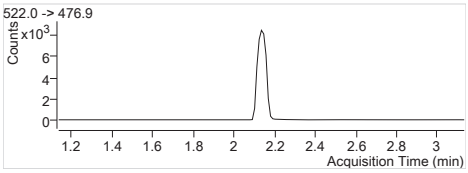

**13C2-PFTeDA** 715.0 -> 669.9
RT (Exp. RT): 2.455 (2.467)
Calc. conc. 104.65 µg/L
Area ratio: 0.43593
Sample type: Calibration




**13C6-PFHxA** 319.0 -> 273.9
RT (Exp. RT): 1.445 (1.445)
Calc. conc. 96.85 µg/L
Area ratio: 0
Sample type: Calibration



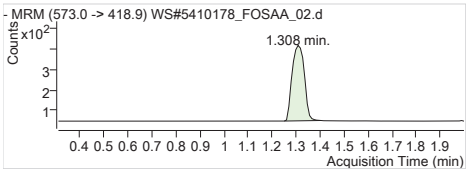

**13C9-PFDA** 522.0 -> 476.9
RT (Exp. RT): 2.135 (2.135)
Calc. conc. 95.77 µg/L
Area ratio: 0
Sample type: Calibration

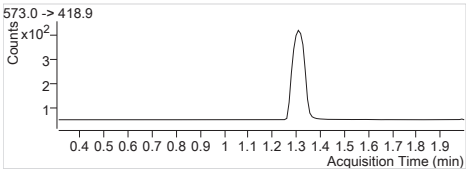
| | |
|---|---|
| **Batch Path** | T:\lcms4\PFC\20180223\WS#5410178_FOSAA\QuantResults\PFC_Water_Low_180223_WS#5410178_FOSAA_ETOxics |

| | | | |
|---|---|---|---|
| **Sample Name** | **STD 1** | **Instrument** | LCMS04 |
| **Data File** | WS#5410178_FOSAA_02.d | **Operator** | |
| **Sample Type** | Cal | **Dilution** | 1 |
| **Acq. Method** | PFC_Water_Low_FOSAA.m | **Position** | P1-A2 |
| **Acq. Date** | 2018/02/24 3:10:51 AM | **Injection Volume** | Per Method |
| **Sample Annotation** | - | | |

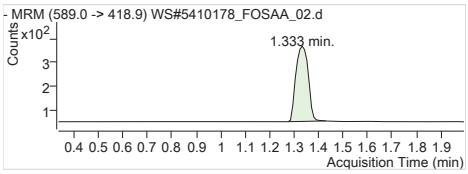
| ISTD Compounds | Response | RT | Target conc. | | |
|---|---|---|---|---|---|
| D3-MeFOSAA IS | 1307 | 1.31 | 1 µg/L | | |
| D5-EtFOSAA IS | 1119 | 1.33 | 1 µg/L | | |
| 13C9-PFDA IS | 19721 | 0.91 | 1 µg/L | | |

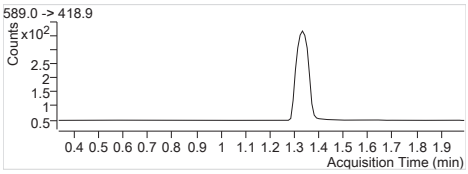
| Compound | Response | RT | Target Conc. | Calc. Conc. | Accuracy |
|---|---|---|---|---|---|
| MeFOSAA 1 | 358 | 1.31 | 0.83 | 0.88 µg/L | 106.02 |
| EtFOSAA 1 | 360 | 1.33 | 0.83 | 0.91 µg/L | 109.39 |
| D3-MeFOSAA | 1316 | 1.31 | 100.00 | 96.50 µg/L | 96.50 |
| D5-EtFOSAA | 1141 | 1.33 | 100.00 | 98.25 µg/L | 98.25 |
| 13C9-PFDA | 19378 | 0.91 | 100.00 | 96.49 µg/L | 96.49 |



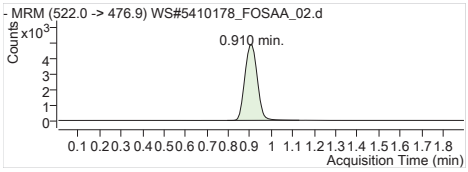



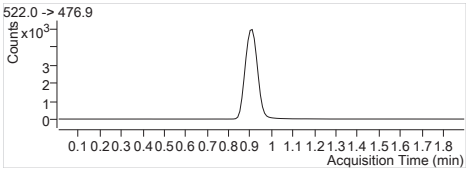

**D3-MeFOSAA IS** Internal Standard
RT (Exp. RT): 1.308 (1.308)
Concentration: 1 µg/L
Sample type: Calibration



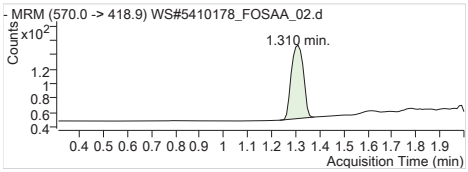



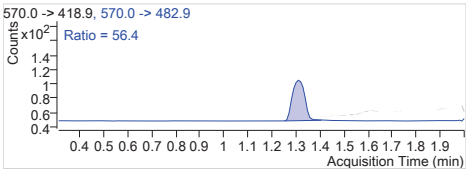

**D5-EtFOSAA IS** Internal Standard
RT (Exp. RT): 1.333 (1.333)
Concentration: 1 µg/L
Sample type: Calibration



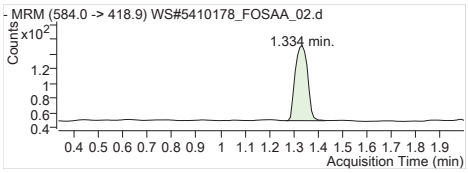



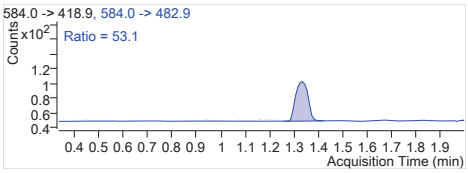

**13C9-PFDA IS** Internal Standard
RT (Exp. RT): 0.910 (0.900)
Concentration: 1 µg/L
Sample type: Calibration



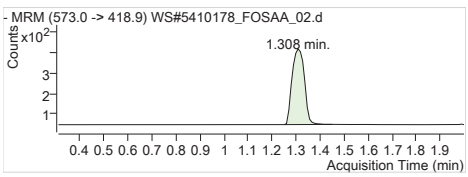



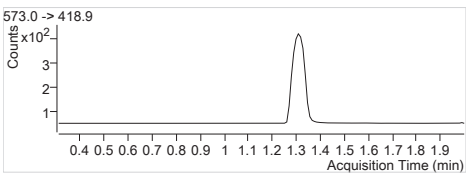

**MeFOSAA 1** 570.0 -> 418.9
RT (Exp. RT): 1.310 (1.310)
Calc. conc. 0.88 µg/L
Area ratio: 0.27391
Sample type: Calibration



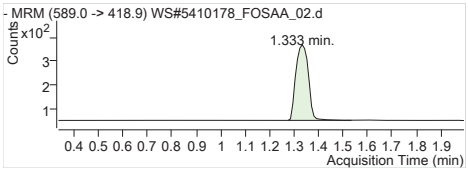



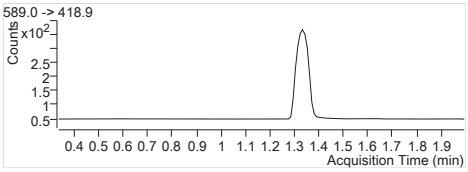

**EtFOSAA 1** 584.0 -> 418.9
RT (Exp. RT): 1.334 (1.334)
Calc. conc. 0.91 µg/L
Area ratio: 0.32172
Sample type: Calibration



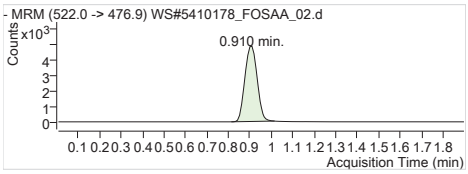



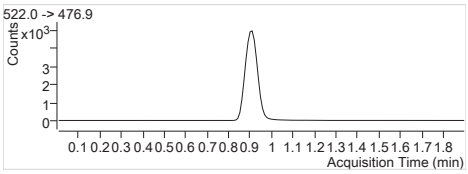

**D3-MeFOSAA** 573.0 -> 418.9
RT (Exp. RT): 1.308 (1.308)
Calc. conc. 96.50 µg/L
Area ratio: 0.06673
Sample type: Calibration




| | |
|---|---|
| **D5-EtFOSAA** | 589.0 -> 418.9 |
| RT (Exp. RT): | 1.333 (1.333) |
| Calc. conc. | 98.25 µg/L |
| Area ratio: | 0.05786 |
| Sample type: | Calibration |



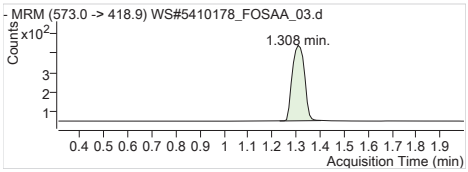

| | |
|---|---|
| **13C9-PFDA** | 522.0 -> 476.9 |
| RT (Exp. RT): | 0.910 (0.900) |
| Calc. conc. | 96.49 µg/L |
| Area ratio: | 0 |
| Sample type: | Calibration |

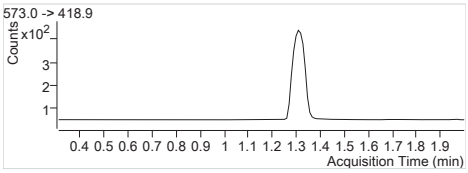
| | |
|---|---|
| **Batch Path** | T:\lcms4\PFC\20180223\WS#5410178_FOSAA\QuantResults\PFC_Water_Low_180223_WS#5410178_FOSAA_ETOxics |

| | | | |
|---|---|---|---|
| **Sample Name** | **STD 2** | **Instrument** | LCMS04 |
| **Data File** | WS#5410178_FOSAA_03.d | **Operator** | |
| **Sample Type** | Cal | **Dilution** | 1 |
| **Acq. Method** | PFC_Water_Low_FOSAA.m | **Position** | P1-A3 |
| **Acq. Date** | 2018/02/24 3:13:16 AM | **Injection Volume** | Per Method |
| **Sample Annotation** | - | | |

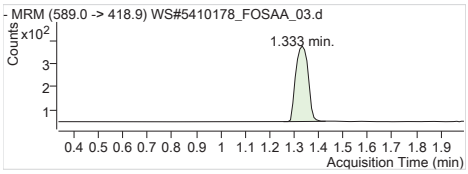
| ISTD Compounds | Response | RT | Target conc. | | |
|---|---|---|---|---|---|
| D3-MeFOSAA IS | 1382 | 1.31 | 1 µg/L | | |
| D5-EtFOSAA IS | 1159 | 1.33 | 1 µg/L | | |
| 13C9-PFDA IS | 19111 | 0.91 | 1 µg/L | | |

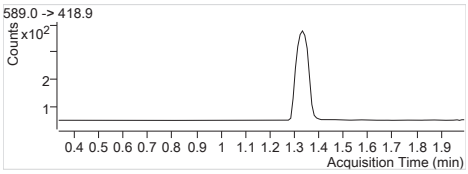
| Compound | Response | RT | Target Conc. | Calc. Conc. | Accuracy |
|---|---|---|---|---|---|
| MeFOSAA 1 | 799 | 1.31 | 1.70 | 1.71 µg/L | 100.59 |
| EtFOSAA 1 | 753 | 1.33 | 1.70 | 1.67 µg/L | 98.29 |
| D3-MeFOSAA | 1378 | 1.31 | 100.00 | 104.27 µg/L | 104.27 |
| D5-EtFOSAA | 1157 | 1.33 | 100.00 | 102.81 µg/L | 102.81 |
| 13C9-PFDA | 18764 | 0.91 | 100.00 | 93.43 µg/L | 93.43 |



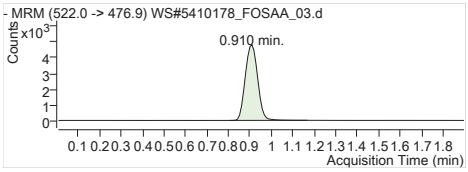



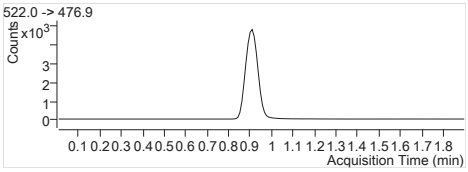

**D3-MeFOSAA IS** Internal Standard
RT (Exp. RT): 1.308 (1.308)
Concentration: 1 µg/L
Sample type: Calibration



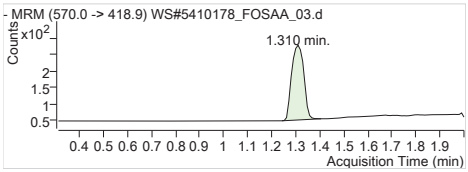



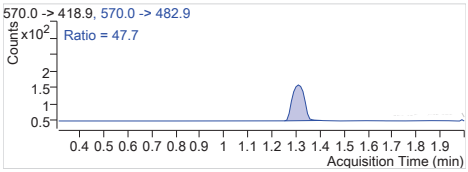

**D5-EtFOSAA IS** Internal Standard
RT (Exp. RT): 1.333 (1.333)
Concentration: 1 µg/L
Sample type: Calibration



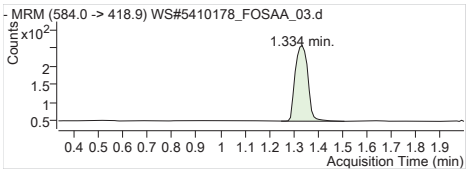



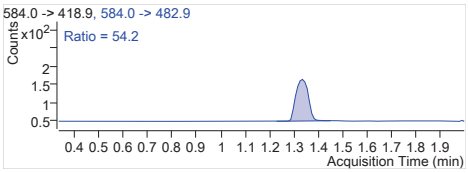

**13C9-PFDA IS** Internal Standard
RT (Exp. RT): 0.910 (0.900)
Concentration: 1 µg/L
Sample type: Calibration



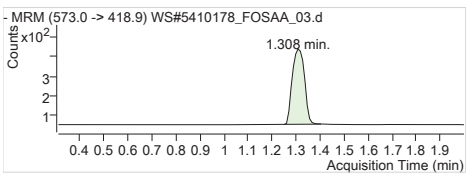



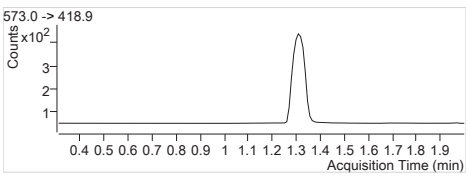

**MeFOSAA 1** 570.0 -> 418.9
RT (Exp. RT): 1.310 (1.310)
Calc. conc. 1.71 µg/L
Area ratio: 0.57815
Sample type: Calibration



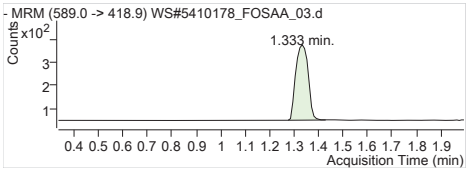



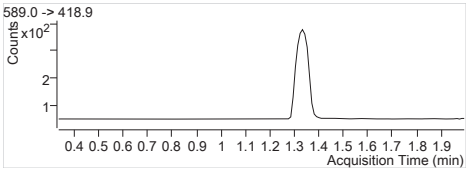

**EtFOSAA 1** 584.0 -> 418.9
RT (Exp. RT): 1.334 (1.334)
Calc. conc. 1.67 µg/L
Area ratio: 0.64970
Sample type: Calibration



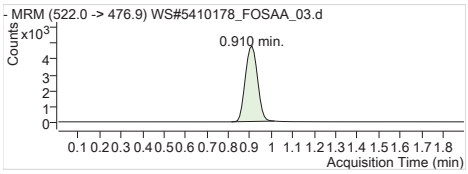



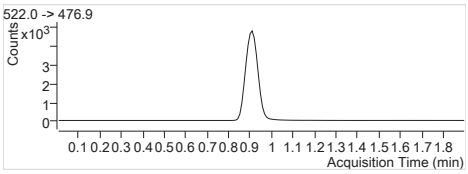

**D3-MeFOSAA** 573.0 -> 418.9
RT (Exp. RT): 1.308 (1.308)
Calc. conc. 104.27 µg/L
Area ratio: 0.07211
Sample type: Calibration




| | |
|---|---|
| **D5-EtFOSAA** | 589.0 -> 418.9 |
| RT (Exp. RT): | 1.333 (1.333) |
| Calc. conc. | 102.81 µg/L |
| Area ratio: | 0.06054 |
| Sample type: | Calibration |



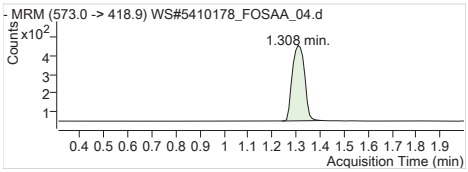

| | |
|---|---|
| **13C9-PFDA** | 522.0 -> 476.9 |
| RT (Exp. RT): | 0.910 (0.900) |
| Calc. conc. | 93.43 µg/L |
| Area ratio: | 0 |
| Sample type: | Calibration |

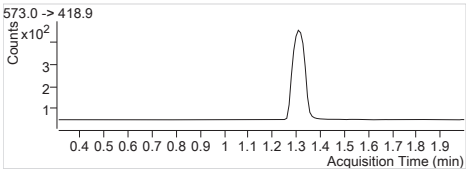
| | |
|---|---|
| **Batch Path** | T:\lcms4\PFC\20180223\WS#5410178_FOSAA\QuantResults\PFC_Water_Low_180223_WS#5410178_FOSAA_ETOxics |

| | | | |
|---|---|---|---|
| **Sample Name** | **STD 3** | **Instrument** | LCMS04 |
| **Data File** | WS#5410178_FOSAA_04.d | **Operator** | |
| **Sample Type** | Cal | **Dilution** | 1 |
| **Acq. Method** | PFC_Water_Low_FOSAA.m | **Position** | P1-A4 |
| **Acq. Date** | 2018/02/24 3:15:41 AM | **Injection Volume** | Per Method |
| **Sample Annotation** | - | | |

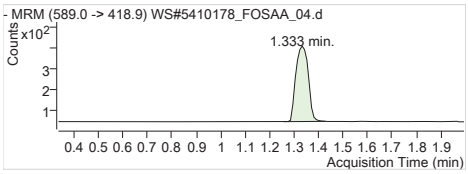
| ISTD Compounds | Response | RT | Target conc. | | |
|---|---|---|---|---|---|
| D3-MeFOSAA IS | 1449 | 1.31 | 1 µg/L | | |
| D5-EtFOSAA IS | 1264 | 1.33 | 1 µg/L | | |
| 13C9-PFDA IS | 22360 | 0.91 | 1 µg/L | | |

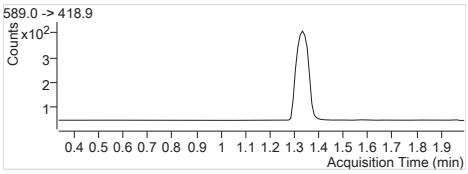
| Compound | Response | RT | Target Conc. | Calc. Conc. | Accuracy |
|---|---|---|---|---|---|
| MeFOSAA 1 | 2599 | 1.31 | 5.00 | 5.03 µg/L | 100.52 |
| EtFOSAA 1 | 2575 | 1.33 | 5.00 | 4.90 µg/L | 97.97 |
| D3-MeFOSAA | 1454 | 1.31 | 100.00 | 94.03 µg/L | 94.03 |
| D5-EtFOSAA | 1266 | 1.33 | 100.00 | 96.15 µg/L | 96.15 |
| 13C9-PFDA | 21971 | 0.91 | 100.00 | 109.40 µg/L | 109.40 |



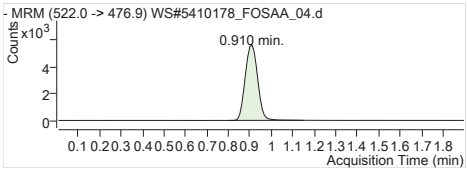



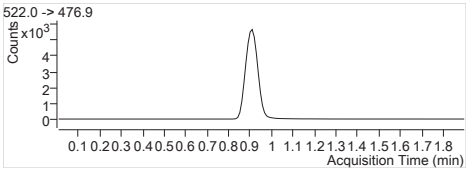

**D3-MeFOSAA IS** Internal Standard
RT (Exp. RT): 1.308 (1.308)
Concentration: 1 µg/L
Sample type: Calibration



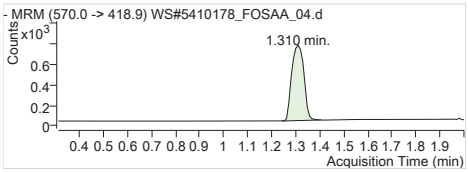



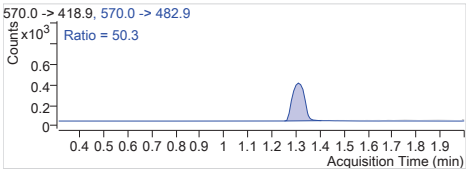

**D5-EtFOSAA IS** Internal Standard
RT (Exp. RT): 1.333 (1.333)
Concentration: 1 µg/L
Sample type: Calibration



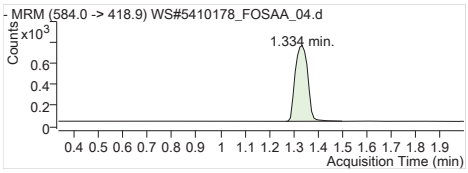



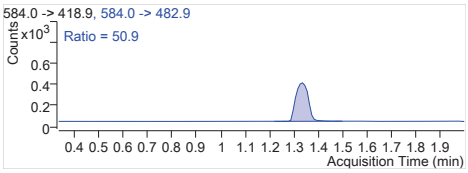

**13C9-PFDA IS** Internal Standard
RT (Exp. RT): 0.910 (0.900)
Concentration: 1 µg/L
Sample type: Calibration



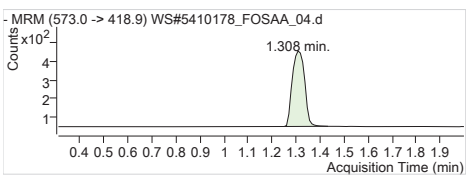



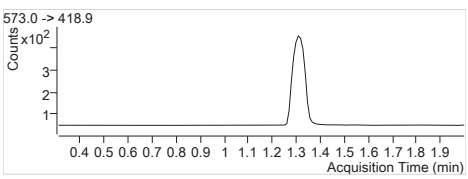

**MeFOSAA 1** 570.0 -> 418.9
RT (Exp. RT): 1.310 (1.310)
Calc. conc. 5.03 µg/L
Area ratio: 1.79365
Sample type: Calibration



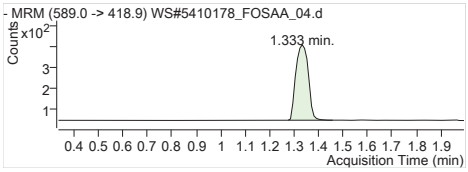



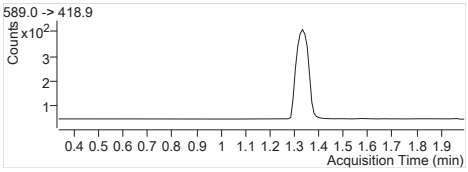

**EtFOSAA 1** 584.0 -> 418.9
RT (Exp. RT): 1.334 (1.334)
Calc. conc. 4.90 µg/L
Area ratio: 2.03718
Sample type: Calibration



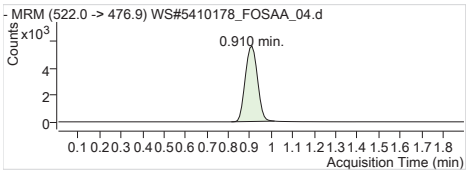



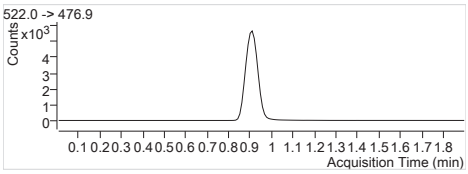

**D3-MeFOSAA** 573.0 -> 418.9
RT (Exp. RT): 1.308 (1.308)
Calc. conc. 94.03 µg/L
Area ratio: 0.06503
Sample type: Calibration




| | |
|---|---|
| **D5-EtFOSAA** | 589.0 -> 418.9 |
| RT (Exp. RT): | 1.333 (1.333) |
| Calc. conc. | 96.15 µg/L |
| Area ratio: | 0.05662 |
| Sample type: | Calibration |



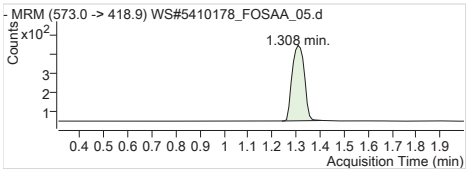

| | |
|---|---|
| **13C9-PFDA** | 522.0 -> 476.9 |
| RT (Exp. RT): | 0.910 (0.900) |
| Calc. conc. | 109.40 µg/L |
| Area ratio: | 0 |
| Sample type: | Calibration |

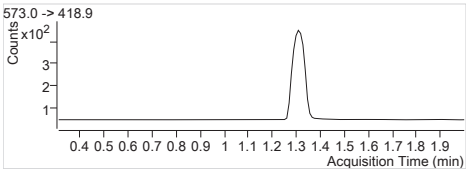
| | |
|---|---|
| **Batch Path** | T:\lcms4\PFC\20180223\WS#5410178_FOSAA\QuantResults\PFC_Water_Low_180223_WS#5410178_FOSAA_ETOxics |

| | | | |
|---|---|---|---|
| **Sample Name** | **STD 4** | **Instrument** | LCMS04 |
| **Data File** | WS#5410178_FOSAA_05.d | **Operator** | |
| **Sample Type** | Cal | **Dilution** | 1 |
| **Acq. Method** | PFC_Water_Low_FOSAA.m | **Position** | P1-A5 |
| **Acq. Date** | 2018/02/24 3:18:06 AM | **Injection Volume** | Per Method |
| **Sample Annotation** | - | | |

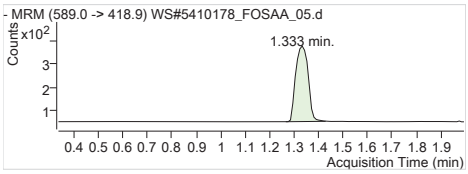
| ISTD Compounds | Response | RT | Target conc. | | |
|---|---|---|---|---|---|
| D3-MeFOSAA IS | 1406 | 1.31 | 1 µg/L | | |
| D5-EtFOSAA IS | 1172 | 1.33 | 1 µg/L | | |
| 13C9-PFDA IS | 19773 | 0.90 | 1 µg/L | | |

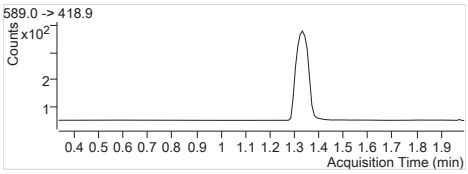
| Compound | Response | RT | Target Conc. | Calc. Conc. | Accuracy |
|---|---|---|---|---|---|
| MeFOSAA 1 | 5708 | 1.31 | 12.50 | 11.21 µg/L | 89.67 |
| EtFOSAA 1 | 5621 | 1.33 | 12.50 | 11.32 µg/L | 90.53 |
| D3-MeFOSAA | 1421 | 1.31 | 100.00 | 103.92 µg/L | 103.92 |
| D5-EtFOSAA | 1173 | 1.33 | 100.00 | 100.74 µg/L | 100.74 |
| 13C9-PFDA | 19426 | 0.90 | 100.00 | 96.72 µg/L | 96.72 |



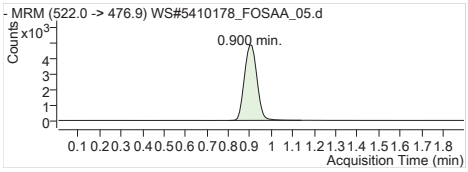



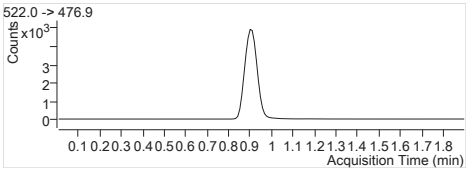

**D3-MeFOSAA IS** Internal Standard
RT (Exp. RT): 1.308 (1.308)
Concentration: 1 µg/L
Sample type: Calibration



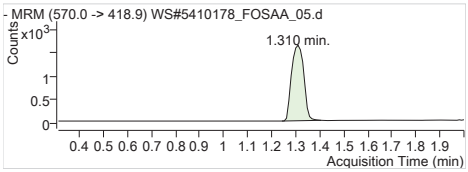



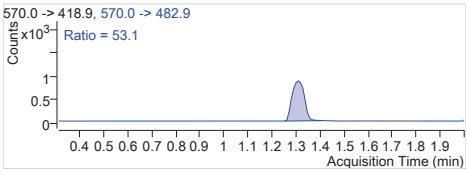

**D5-EtFOSAA IS** Internal Standard
RT (Exp. RT): 1.333 (1.333)
Concentration: 1 µg/L
Sample type: Calibration



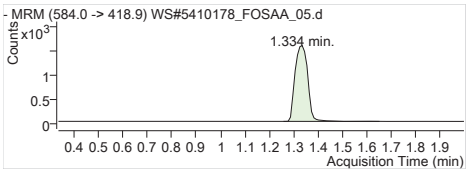



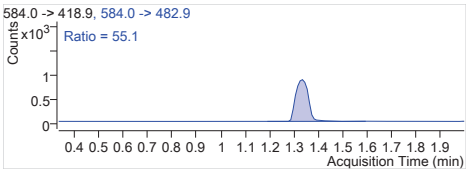

**13C9-PFDA IS** Internal Standard
RT (Exp. RT): 0.900 (0.900)
Concentration: 1 µg/L
Sample type: Calibration



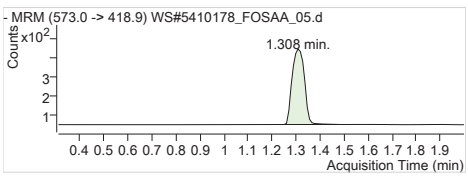



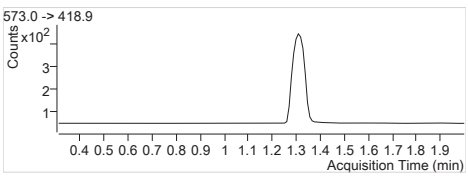

**MeFOSAA 1** 570.0 -> 418.9
RT (Exp. RT): 1.310 (1.310)
Calc. conc. 11.21 µg/L
Area ratio: 4.05974
Sample type: Calibration



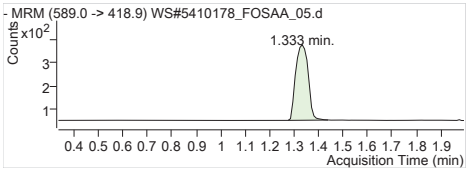



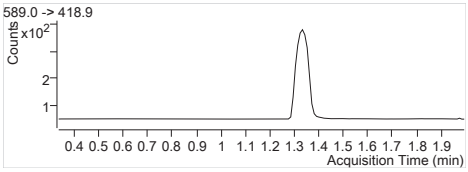

**EtFOSAA 1** 584.0 -> 418.9
RT (Exp. RT): 1.334 (1.334)
Calc. conc. 11.32 µg/L
Area ratio: 4.79608
Sample type: Calibration



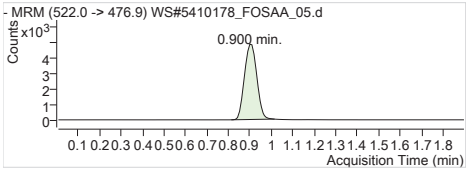



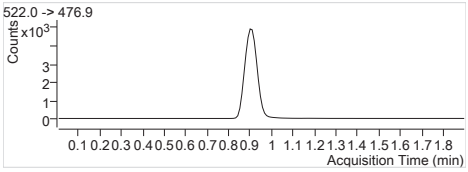

**D3-MeFOSAA** 573.0 -> 418.9
RT (Exp. RT): 1.308 (1.308)
Calc. conc. 103.92 µg/L
Area ratio: 0.07187
Sample type: Calibration




| | |
|---|---|
| **D5-EtFOSAA** | 589.0 -> 418.9 |
| RT (Exp. RT): | 1.333 (1.333) |
| Calc. conc. | 100.74 µg/L |
| Area ratio: | 0.05932 |
| Sample type: | Calibration |



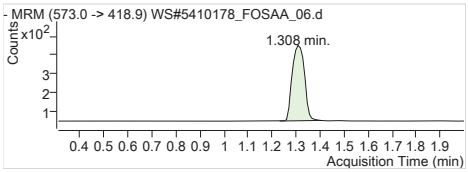

| | |
|---|---|
| **13C9-PFDA** | 522.0 -> 476.9 |
| RT (Exp. RT): | 0.900 (0.900) |
| Calc. conc. | 96.72 µg/L |
| Area ratio: | 0 |
| Sample type: | Calibration |

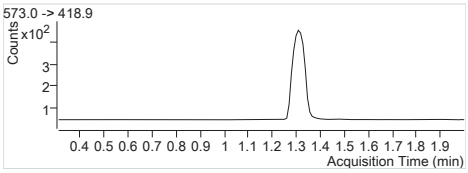
| | |
|---|---|
| **Batch Path** | T:\lcms4\PFC\20180223\WS#5410178_FOSAA\QuantResults\PFC_Water_Low_180223_WS#5410178_FOSAA_EToxics |

| | | | |
|---|---|---|---|
| **Sample Name** | **STD 5** | **Instrument** | LCMS04 |
| **Data File** | WS#5410178_FOSAA_06.d | **Operator** | |
| **Sample Type** | Cal | **Dilution** | 1 |
| **Acq. Method** | PFC_Water_Low_FOSAA.m | **Position** | P1-A6 |
| **Acq. Date** | 2018/02/24 3:20:31 AM | **Injection Volume** | Per Method |
| **Sample Annotation** | - | | |

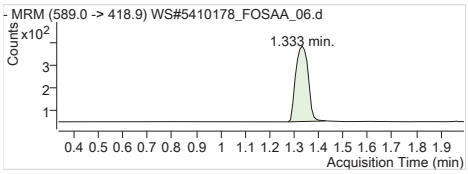
| ISTD Compounds | Response | RT | Target conc. | | |
|---|---|---|---|---|---|
| D3-MeFOSAA IS | 1426 | 1.31 | 1 µg/L | | |
| D5-EtFOSAA IS | 1186 | 1.33 | 1 µg/L | | |
| 13C9-PFDA IS | 21482 | 0.90 | 1 µg/L | | |

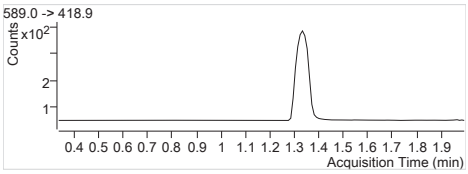
| Compound | Response | RT | Target Conc. | Calc. Conc. | Accuracy |
|---|---|---|---|---|---|
| MeFOSAA 1 | 13098 | 1.31 | 25.00 | 25.19 µg/L | 100.77 |
| EtFOSAA 1 | 12933 | 1.33 | 25.00 | 25.53 µg/L | 102.11 |
| D3-MeFOSAA | 1433 | 1.31 | 100.00 | 96.46 µg/L | 96.46 |
| D5-EtFOSAA | 1197 | 1.33 | 100.00 | 94.62 µg/L | 94.62 |
| 13C9-PFDA | 21460 | 0.90 | 100.00 | 106.85 µg/L | 106.85 |



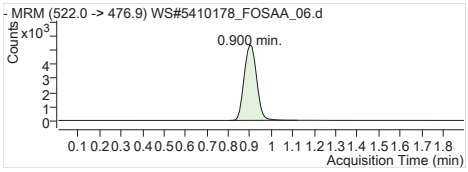



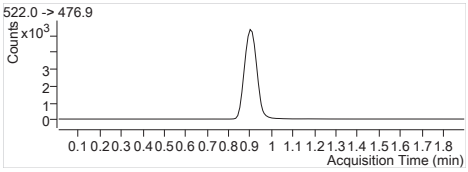

**D3-MeFOSAA IS** Internal Standard
RT (Exp. RT): 1.308 (1.308)
Concentration: 1 µg/L
Sample type: Calibration



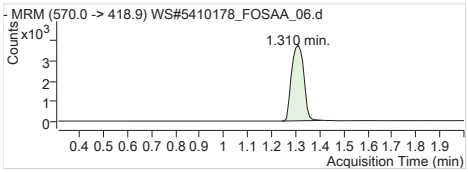



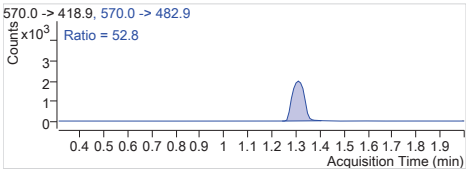

**D5-EtFOSAA IS** Internal Standard
RT (Exp. RT): 1.333 (1.333)
Concentration: 1 µg/L
Sample type: Calibration



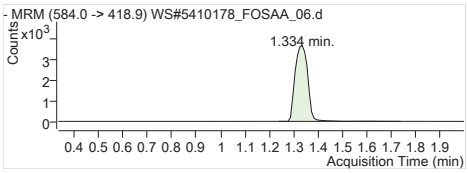



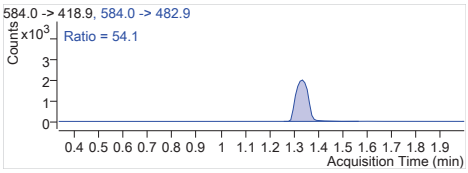

**13C9-PFDA IS** Internal Standard
RT (Exp. RT): 0.900 (0.900)
Concentration: 1 µg/L
Sample type: Calibration



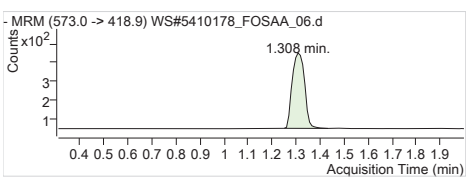



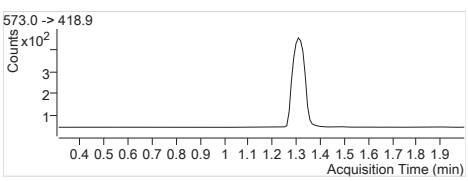

**MeFOSAA 1** 570.0 -> 418.9
RT (Exp. RT): 1.310 (1.310)
Calc. conc. 25.19 µg/L
Area ratio: 9.18513
Sample type: Calibration



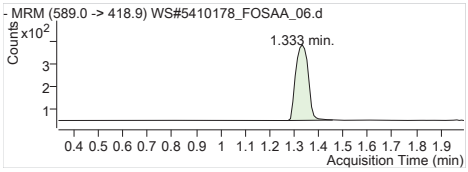



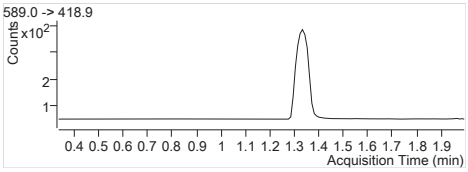

**EtFOSAA 1** 584.0 -> 418.9
RT (Exp. RT): 1.334 (1.334)
Calc. conc. 25.53 µg/L
Area ratio: 10.90472
Sample type: Calibration



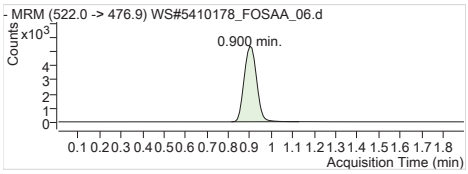



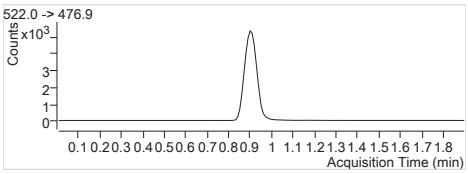

**D3-MeFOSAA** 573.0 -> 418.9
RT (Exp. RT): 1.308 (1.308)
Calc. conc. 96.46 µg/L
Area ratio: 0.06671
Sample type: Calibration




| | |
|---|---|
| **D5-EtFOSAA** | 589.0 -> 418.9 |
| RT (Exp. RT): | 1.333 (1.333) |
| Calc. conc. | 94.62 µg/L |
| Area ratio: | 0.05572 |
| Sample type: | Calibration |



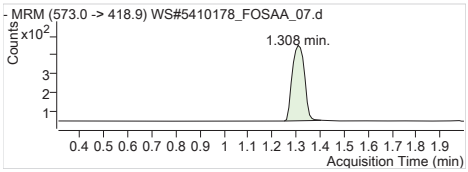

| | |
|---|---|
| **13C9-PFDA** | 522.0 -> 476.9 |
| RT (Exp. RT): | 0.900 (0.900) |
| Calc. conc. | 106.85 µg/L |
| Area ratio: | 0 |
| Sample type: | Calibration |

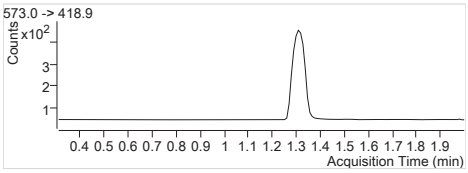
| | |
|---|---|
| **Batch Path** | T:\lcms4\PFC\20180223\WS#5410178_FOSAA\QuantResults\PFC_Water_Low_180223_WS#5410178_FOSAA_EToxics |

| | | | |
|---|---|---|---|
| **Sample Name** | **STD 6** | **Instrument** | LCMS04 |
| **Data File** | WS#5410178_FOSAA_07.d | **Operator** | |
| **Sample Type** | Cal | **Dilution** | 1 |
| **Acq. Method** | PFC_Water_Low_FOSAA.m | **Position** | P1-A7 |
| **Acq. Date** | 2018/02/24 3:22:56 AM | **Injection Volume** | Per Method |
| **Sample Annotation** | - | | |

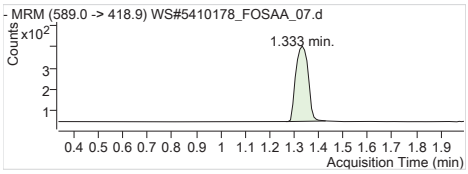
| ISTD Compounds | Response | RT | Target conc. | | |
|---|---|---|---|---|---|
| D3-MeFOSAA IS | 1422 | 1.31 | 1 µg/L | | |
| D5-EtFOSAA IS | 1239 | 1.33 | 1 µg/L | | |
| 13C9-PFDA IS | 19837 | 0.90 | 1 µg/L | | |

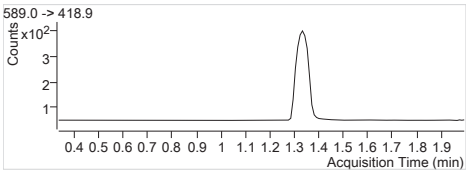
| Compound | Response | RT | Target Conc. | Calc. Conc. | Accuracy |
|---|---|---|---|---|---|
| MeFOSAA 1 | 22193 | 1.31 | 41.70 | 42.71 µg/L | 102.43 |
| EtFOSAA 1 | 22502 | 1.33 | 41.70 | 42.41 µg/L | 101.70 |
| D3-MeFOSAA | 1438 | 1.31 | 100.00 | 104.82 µg/L | 104.82 |
| D5-EtFOSAA | 1255 | 1.33 | 100.00 | 107.43 µg/L | 107.43 |
| 13C9-PFDA | 19504 | 0.90 | 100.00 | 97.11 µg/L | 97.11 |



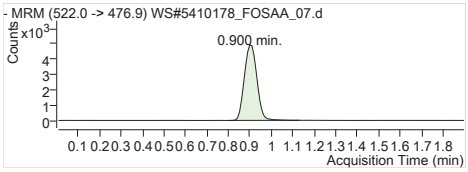



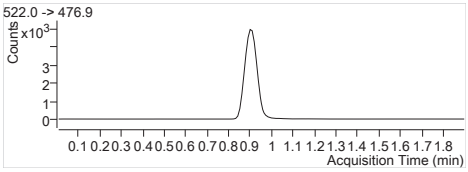

**D3-MeFOSAA IS** Internal Standard
RT (Exp. RT): 1.308 (1.308)
Concentration: 1 µg/L
Sample type: Calibration



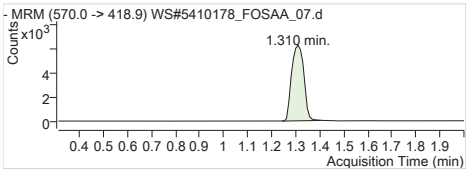



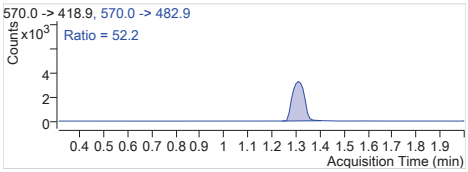

**D5-EtFOSAA IS** Internal Standard
RT (Exp. RT): 1.333 (1.333)
Concentration: 1 µg/L
Sample type: Calibration



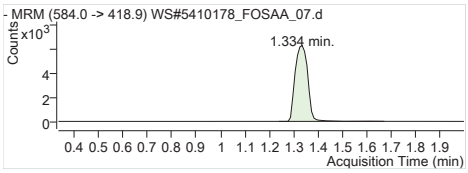



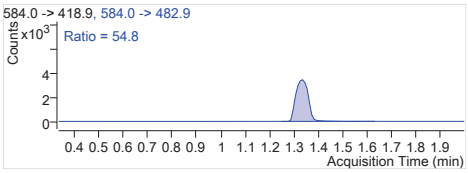

**13C9-PFDA IS** Internal Standard
RT (Exp. RT): 0.900 (0.900)
Concentration: 1 µg/L
Sample type: Calibration



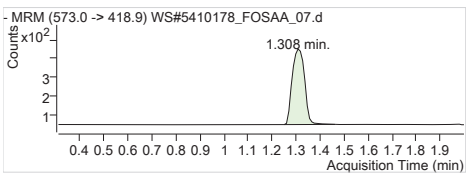



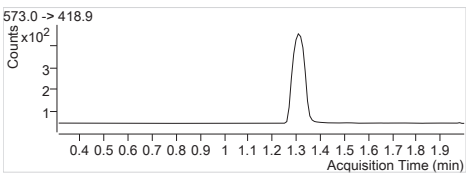

**MeFOSAA 1** 570.0 -> 418.9
RT (Exp. RT): 1.310 (1.310)
Calc. conc. 42.71 µg/L
Area ratio: 15.60689
Sample type: Calibration



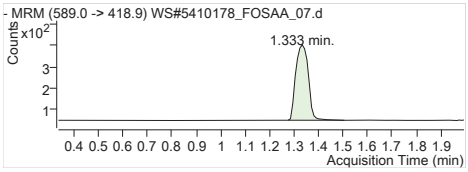



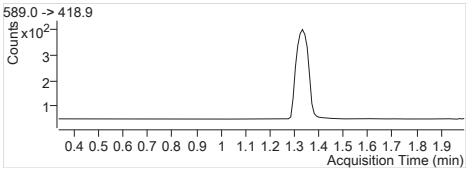

**EtFOSAA 1** 584.0 -> 418.9
RT (Exp. RT): 1.334 (1.334)
Calc. conc. 42.41 µg/L
Area ratio: 18.16142
Sample type: Calibration



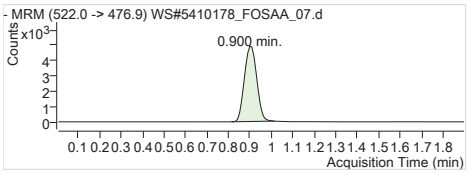



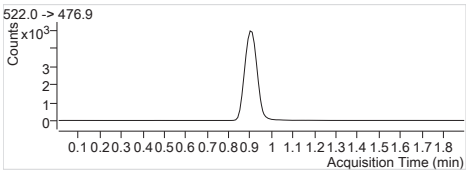

**D3-MeFOSAA** 573.0 -> 418.9
RT (Exp. RT): 1.308 (1.308)
Calc. conc. 104.82 µg/L
Area ratio: 0.07249
Sample type: Calibration




| | |
|---|---|
| **D5-EtFOSAA** | 589.0 -> 418.9 |
| RT (Exp. RT): | 1.333 (1.333) |
| Calc. conc. | 107.43 µg/L |
| Area ratio: | 0.06327 |
| Sample type: | Calibration |



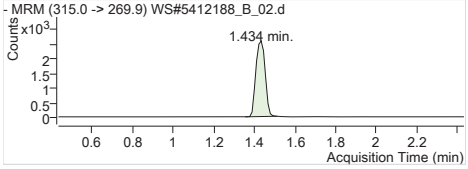

| | |
|---|---|
| **13C9-PFDA** | 522.0 -> 476.9 |
| RT (Exp. RT): | 0.900 (0.900) |
| Calc. conc. | 97.11 µg/L |
| Area ratio: | 0 |
| Sample type: | Calibration |

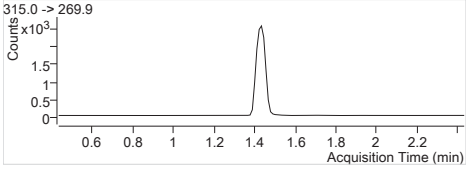
**Batch Path** T:\lcms4\PFC\20180226\WS#5412188_B\QuantResults\PFC_Water_Low_180227_WS#5412188_B_EToxics

| | | | |
|---|---|---|---|
| **Sample Name** | **STD 1** | **Instrument** | LCMS04 |
| **Data File** | WS#5412188_B_02.d | **Operator** | |
| **Sample Type** | Cal | **Dilution** | 1 |
| **Acq. Method** | PFC_Water_Low.m | **Position** | P1-C1 |
| **Acq. Date** | 2018/02/27 1:07:08 PM | **Injection Volume** | Per Method |
| **Sample Annotation** | - | | |

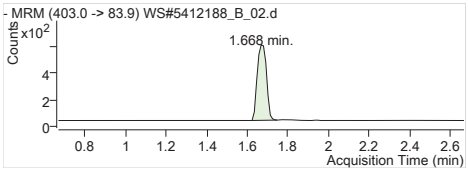
| ISTD Compounds | Response | RT | Target conc. | | |
|---|---|---|---|---|---|
| MPFHxA | 8076 | 1.43 | 1 µg/L | | |
| MPFHxS | 1771 | 1.67 | 1 µg/L | | |
| MPFHpA | 9659 | 1.69 | 1 µg/L | | |
| MPFOA | 10078 | 1.87 | 1 µg/L | | |
| MPFOS | 2088 | 1.97 | 1 µg/L | | |
| MPFNA | 9949 | 2.01 | 1 µg/L | | |
| MPFDA | 8913 | 2.14 | 1 µg/L | | |
| MPFUnA | 9961 | 2.23 | 1 µg/L | | |
| MPFDoA | 12840 | 2.31 | 1 µg/L | | |
| MPFTeDA | 13422 | 2.46 | 1 µg/L | | |
| 13C6-PFHxA IS | 35446 | 1.43 | 1 µg/L | | |
| 13C9-PFDA IS | 41836 | 2.13 | 1 µg/L | | |

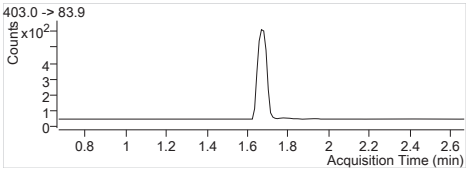
| Compound | Response | RT | Target Conc. | Calc. Conc. | Accuracy |
|---|---|---|---|---|---|
| PFBS 1 | 769 | 1.09 | 0.83 | 0.78 µg/L | 94.29 |
| PFHxA 1 | 3245 | 1.43 | 0.83 | 0.86 µg/L | 103.96 |
| PFHxS 1 | 681 | 1.67 | 0.83 | 0.71 µg/L | 85.55 |
| PFHpA 1 | 3853 | 1.69 | 0.83 | 0.84 µg/L | 100.69 |
| PFOA 1 | 3976 | 1.87 | 0.83 | 0.75 µg/L | 90.78 |
| PFOS 1 | 603 | 1.96 | 0.83 | 0.87 µg/L | 104.57 |
| PFNA 1 | 3631 | 2.01 | 0.83 | 0.83 µg/L | 99.99 |
| PFDA 1 | 3863 | 2.14 | 0.83 | 0.78 µg/L | 94.26 |
| PFUnA 1 | 4147 | 2.23 | 0.83 | 0.86 µg/L | 103.03 |
| PFDoA 1 | 4902 | 2.31 | 0.83 | 0.81 µg/L | 97.42 |
| PFTrDA 1 | 5678 | 2.39 | 0.83 | 0.83 µg/L | 100.36 |
| PFTeDA 1 | 4685 | 2.46 | 0.83 | 0.82 µg/L | 99.05 |
| 13C2-PFHxA | 8076 | 1.43 | 100.00 | 91.66 µg/L | 91.66 |
| 18O2-PFHxS | 1771 | 1.67 | 100.00 | 96.21 µg/L | 96.21 |
| 13C4-PFHpA | 9659 | 1.69 | 100.00 | 94.65 µg/L | 94.65 |
| 13C4-PFOA | 10078 | 1.87 | 100.00 | 95.73 µg/L | 95.73 |
| 13C4-PFOS | 2088 | 1.97 | 100.00 | 97.97 µg/L | 97.97 |
| 13C5-PFNA | 9950 | 2.01 | 100.00 | 97.59 µg/L | 97.59 |
| 13C2-PFDA | 8789 | 2.14 | 100.00 | 95.39 µg/L | 95.39 |
| 13C2-PFUnA | 9961 | 2.23 | 100.00 | 92.96 µg/L | 92.96 |
| 13C2-PFDoA | 12840 | 2.31 | 100.00 | 94.58 µg/L | 94.58 |
| 13C2-PFTeDA | 13624 | 2.46 | 100.00 | 91.29 µg/L | 91.29 |
| 13C6-PFHxA | 35446 | 1.43 | 100.00 | 113.13 µg/L | 113.13 |
| 13C9-PFDA | 41836 | 2.13 | 100.00 | 112.27 µg/L | 112.27 |



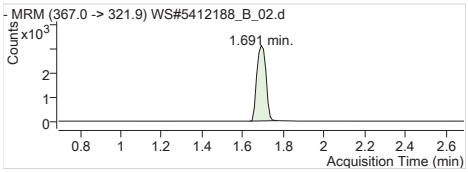



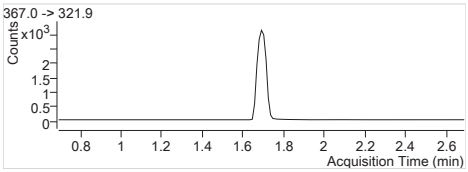

**MPFHxA** Internal Standard
RT (Exp. RT): 1.434 (1.434)
Concentration: 1 µg/L
Sample type: Calibration



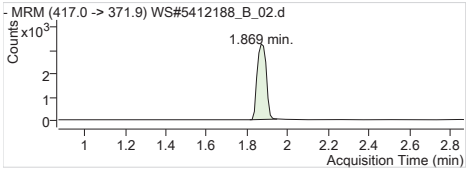



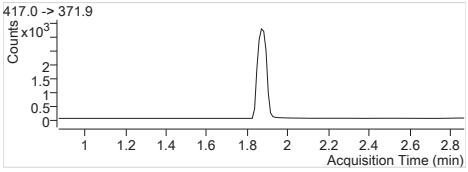

**MPFHxS** Internal Standard
RT (Exp. RT): 1.668 (1.668)
Concentration: 1 µg/L
Sample type: Calibration



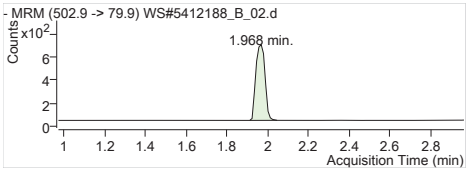



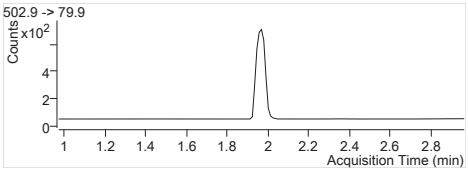

**MPFHpA** Internal Standard
RT (Exp. RT): 1.691 (1.691)
Concentration: 1 µg/L
Sample type: Calibration



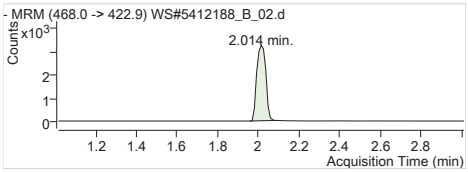



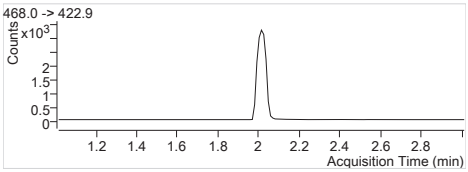

**MPFOA** Internal Standard
RT (Exp. RT): 1.869 (1.869)
Concentration: 1 µg/L
Sample type: Calibration



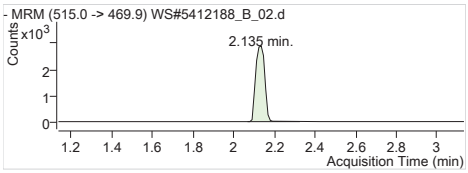



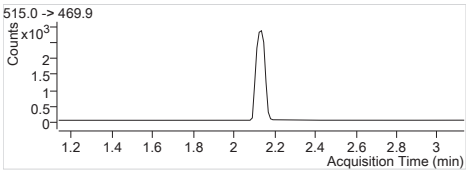

**MPFOS** Internal Standard
RT (Exp. RT): 1.968 (1.968)
Concentration: 1 µg/L
Sample type: Calibration



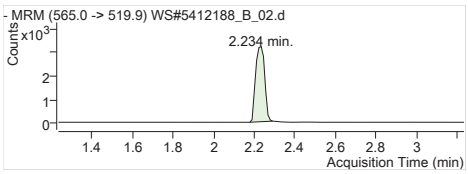



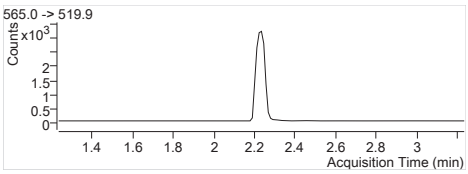

**MPFNA** Internal Standard
RT (Exp. RT): 2.014 (2.014)
Concentration: 1 µg/L
Sample type: Calibration



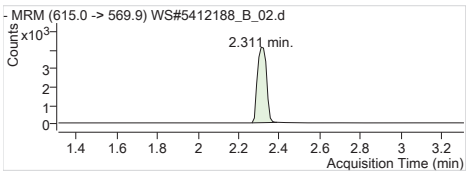



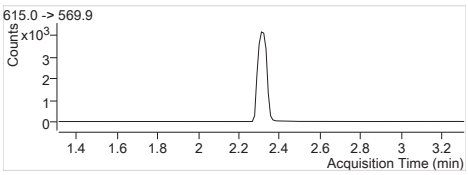

**MPFDA** Internal Standard
RT (Exp. RT): 2.135 (2.135)
Concentration: 1 µg/L
Sample type: Calibration



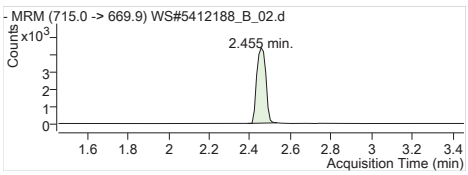



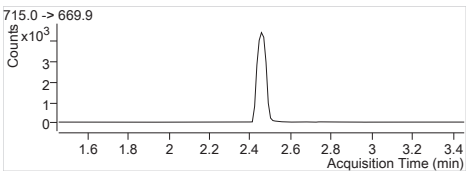

**MPFUnA** Internal Standard
RT (Exp. RT): 2.234 (2.234)
Concentration: 1 µg/L
Sample type: Calibration



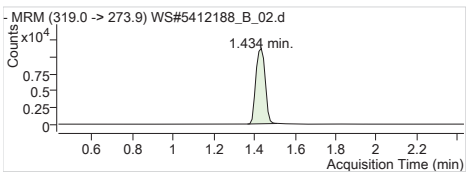



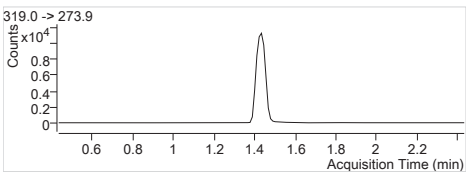

**MPFDoA** Internal Standard
RT (Exp. RT): 2.311 (2.311)
Concentration: 1 µg/L
Sample type: Calibration



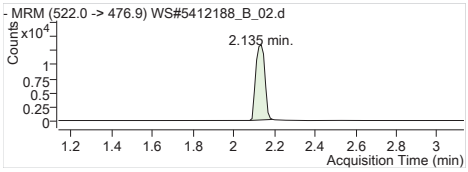



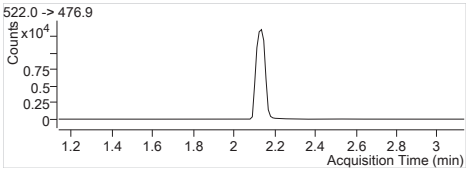

**MPFTeDA** Internal Standard
RT (Exp. RT): 2.455 (2.455)
Concentration: 1 µg/L
Sample type: Calibration



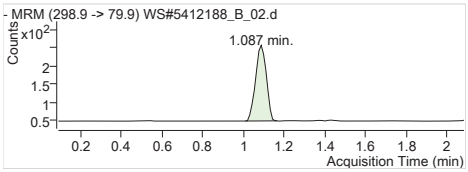



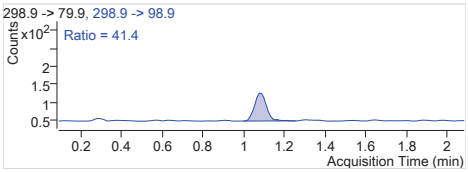

**13C6-PFHxA IS** Internal Standard
RT (Exp. RT): 1.434 (1.434)
Concentration: 1 µg/L
Sample type: Calibration



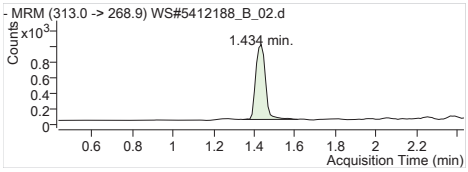



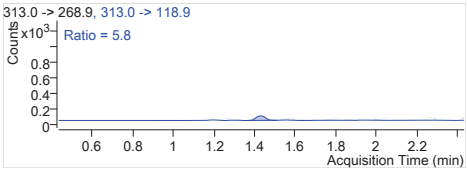

**13C9-PFDA IS** Internal Standard
RT (Exp. RT): 2.135 (2.135)
Concentration: 1 µg/L
Sample type: Calibration



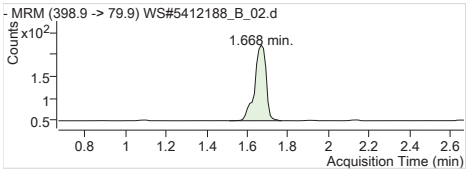



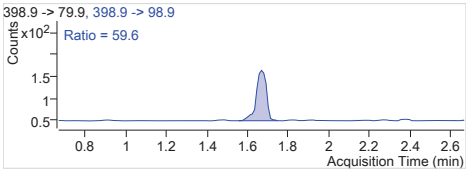

**PFBS 1** 298.9 -> 79.9
RT (Exp. RT): 1.087 (1.087)
Calc. conc. 0.78 µg/L
Area ratio: 0.43422
Sample type: Calibration



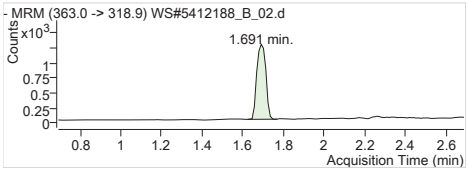



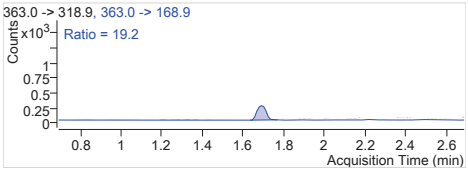

**PFHxA 1** 313.0 -> 268.9
RT (Exp. RT): 1.434 (1.434)
Calc. conc. 0.86 µg/L
Area ratio: 0.40181
Sample type: Calibration



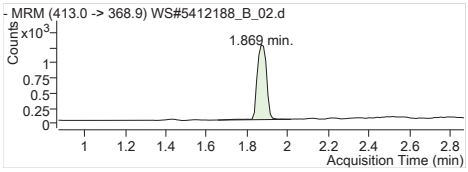



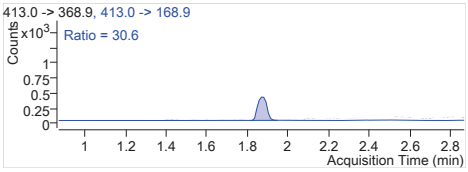

**PFHxS 1** 398.9 -> 79.9
RT (Exp. RT): 1.668 (1.668)
Calc. conc. 0.71 µg/L
Area ratio: 0.38453
Sample type: Calibration



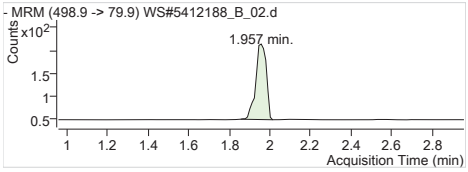



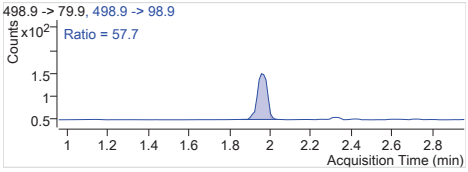

**PFHpA 1** 363.0 -> 318.9
RT (Exp. RT): 1.691 (1.691)
Calc. conc. 0.84 µg/L
Area ratio: 0.39890
Sample type: Calibration



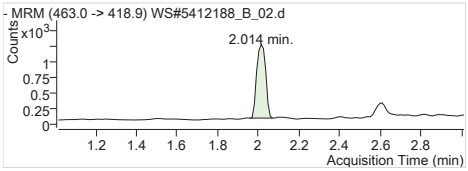



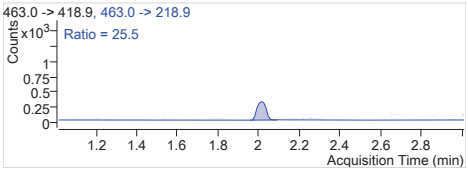

**PFOA 1** 413.0 -> 368.9
RT (Exp. RT): 1.869 (1.869)
Calc. conc. 0.75 µg/L
Area ratio: 0.39452
Sample type: Calibration



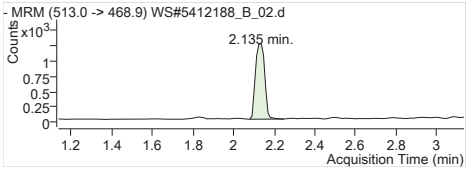



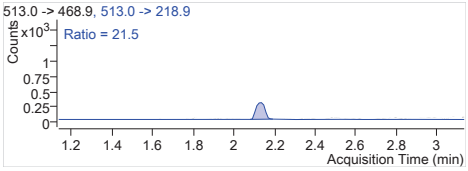

**PFOS 1** 498.9 -> 79.9
RT (Exp. RT): 1.957 (1.957)
Calc. conc. 0.87 µg/L
Area ratio: 0.28879
Sample type: Calibration



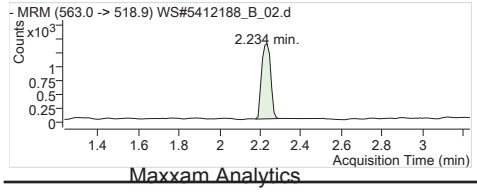



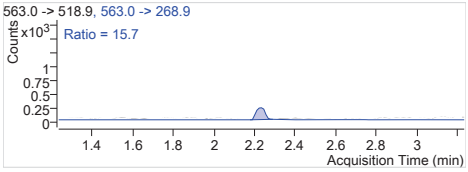

**PFNA 1** 463.0 -> 418.9
RT (Exp. RT): 2.014 (2.014)
Calc. conc. 0.83 µg/L
Area ratio: 0.36496
Sample type: Calibration



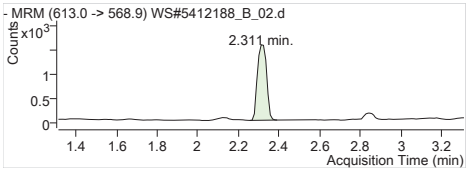



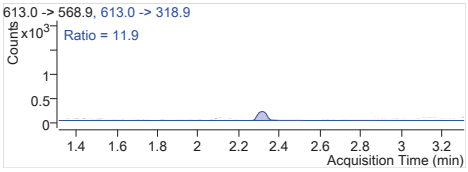

**PFDA 1** 513.0 -> 468.9
RT (Exp. RT): 2.135 (2.135)
Calc. conc. 0.78 µg/L
Area ratio: 0.43341
Sample type: Calibration



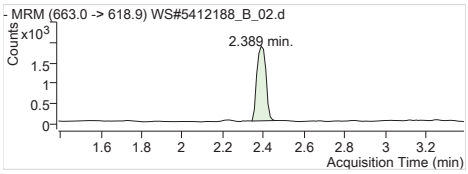



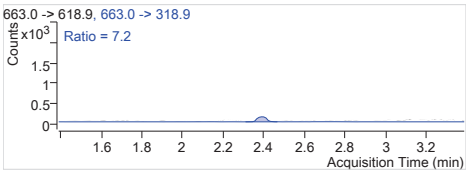

**PFUnA 1** 563.0 -> 518.9
RT (Exp. RT): 2.234 (2.234)
Calc. conc. 0.86 µg/L
Area ratio: 0.41632
Sample type: Calibration



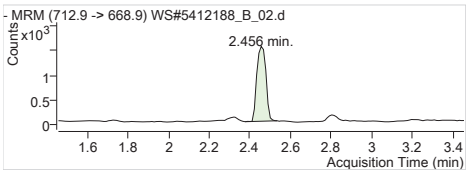



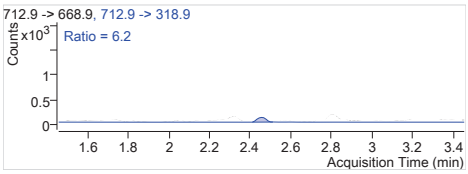

| | |
|---|---|
| **PFDoA 1** | 613.0 -> 568.9 |
| RT (Exp. RT): | 2.311 (2.311) |
| Calc. conc. | 0.81 µg/L |
| Area ratio: | 0.38178 |
| Sample type: | Calibration |



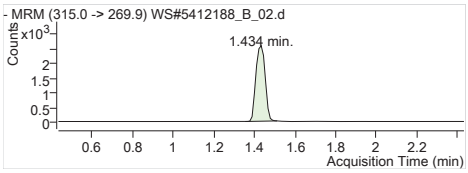



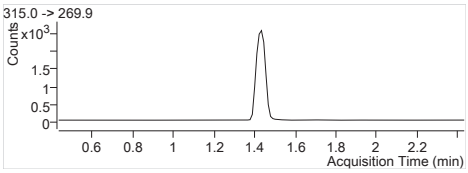

| | |
|---|---|
| **PFTrDA 1** | 663.0 -> 618.9 |
| RT (Exp. RT): | 2.389 (2.389) |
| Calc. conc. | 0.83 µg/L |
| Area ratio: | 0.42304 |
| Sample type: | Calibration |



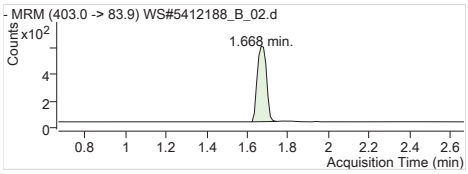



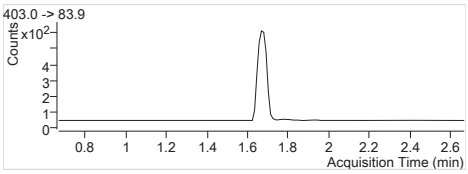

| | |
|---|---|
| **PFTeDA 1** | 712.9 -> 668.9 |
| RT (Exp. RT): | 2.456 (2.456) |
| Calc. conc. | 0.82 µg/L |
| Area ratio: | 0.34905 |
| Sample type: | Calibration |



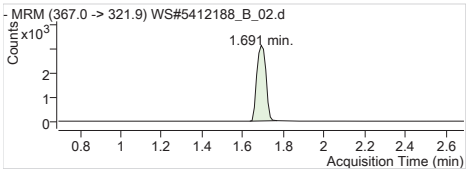



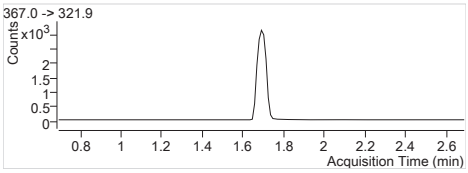

| | |
|---|---|
| **13C2-PFHxA** | 315.0 -> 269.9 |
| RT (Exp. RT): | 1.434 (1.434) |
| Calc. conc. | 91.66 µg/L |
| Area ratio: | 0.22784 |
| Sample type: | Calibration |



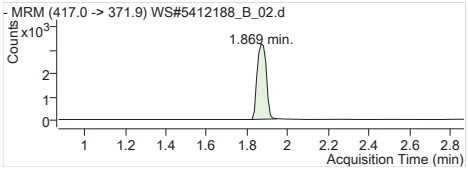



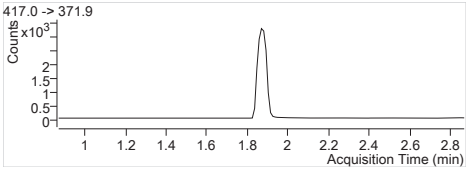

| | |
|---|---|
| **18O2-PFHxS** | 403.0 -> 83.9 |
| RT (Exp. RT): | 1.668 (1.668) |
| Calc. conc. | 96.21 µg/L |
| Area ratio: | 0.04996 |
| Sample type: | Calibration |



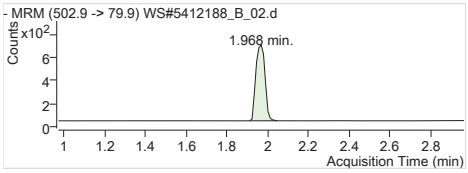



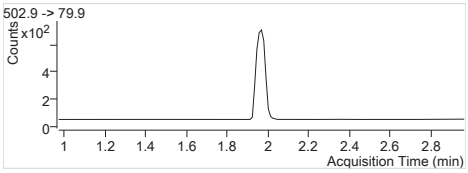

| | |
|---|---|
| **13C4-PFHpA** | 367.0 -> 321.9 |
| RT (Exp. RT): | 1.691 (1.691) |
| Calc. conc. | 94.65 µg/L |
| Area ratio: | 0.27250 |
| Sample type: | Calibration |



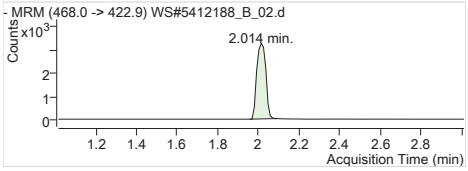



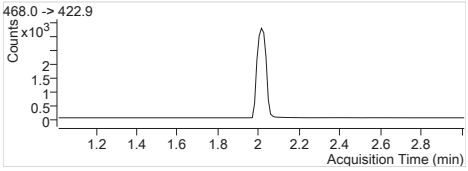

| | |
|---|---|
| **13C4-PFOA** | 417.0 -> 371.9 |
| RT (Exp. RT): | 1.869 (1.869) |
| Calc. conc. | 95.73 µg/L |
| Area ratio: | 0.28432 |
| Sample type: | Calibration |



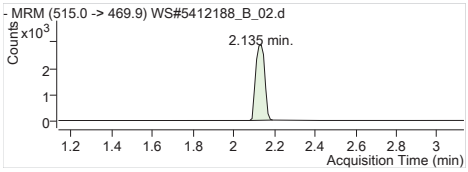



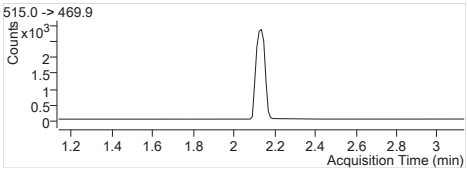

| | |
|---|---|
| **13C4-PFOS** | 502.9 -> 79.9 |
| RT (Exp. RT): | 1.968 (1.968) |
| Calc. conc. | 97.97 µg/L |
| Area ratio: | 0.05891 |
| Sample type: | Calibration |



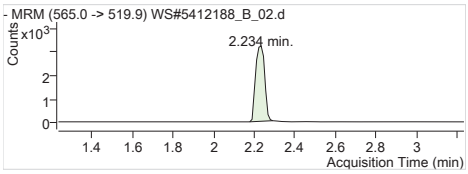



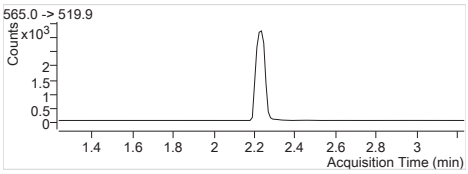

| | |
|---|---|
| **13C5-PFNA** | 468.0 -> 422.9 |
| RT (Exp. RT): | 2.014 (2.014) |
| Calc. conc. | 97.59 µg/L |
| Area ratio: | 0.28071 |
| Sample type: | Calibration |



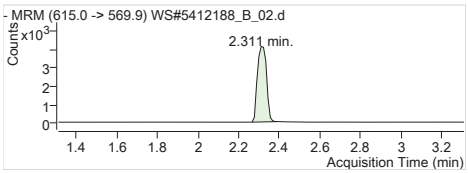



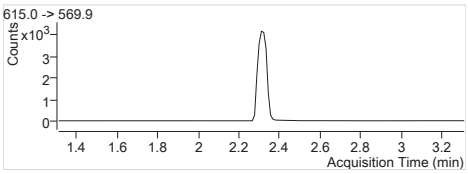

**13C2-PFDA** 515.0 -> 469.9
RT (Exp. RT): 2.135 (2.135)
Calc. conc. 95.39 µg/L
Area ratio: 0.21008
Sample type: Calibration



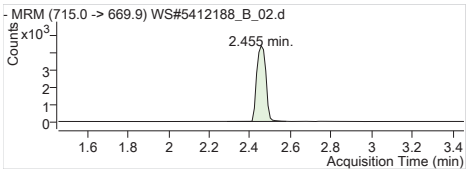



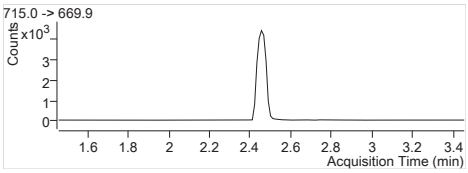

**13C2-PFUnA** 565.0 -> 519.9
RT (Exp. RT): 2.234 (2.234)
Calc. conc. 92.96 µg/L
Area ratio: 0.23810
Sample type: Calibration



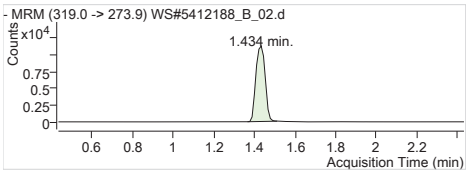



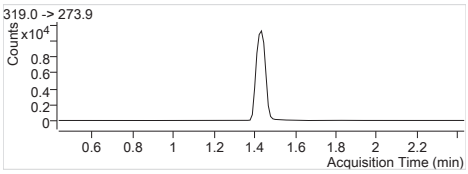

**13C2-PFDoA** 615.0 -> 569.9
RT (Exp. RT): 2.311 (2.311)
Calc. conc. 94.58 µg/L
Area ratio: 0.30691
Sample type: Calibration



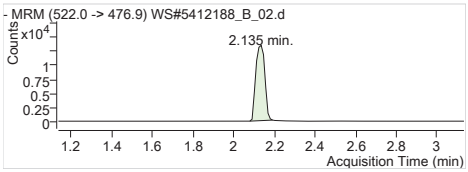



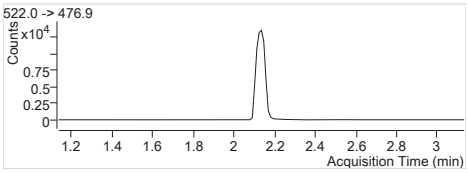

**13C2-PFTeDA** 715.0 -> 669.9
RT (Exp. RT): 2.455 (2.455)
Calc. conc. 91.29 µg/L
Area ratio: 0.32565
Sample type: Calibration




**13C6-PFHxA** 319.0 -> 273.9
RT (Exp. RT): 1.434 (1.434)
Calc. conc. 113.13 µg/L
Area ratio: 0
Sample type: Calibration



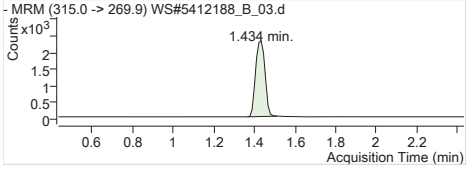

**13C9-PFDA** 522.0 -> 476.9
RT (Exp. RT): 2.135 (2.135)
Calc. conc. 112.27 µg/L
Area ratio: 0
Sample type: Calibration

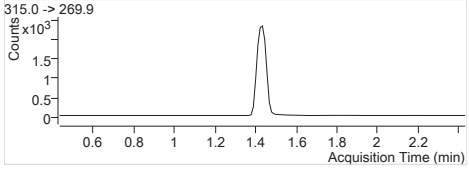
| | |
|---|---|
| **Batch Path** | T:\lcms4\PFC\20180226\WS#5412188_B\QuantResults\PFC_Water_Low_180227_WS#5412188_B_EToxics |

| | | | |
|---|---|---|---|
| **Sample Name** | **STD 2** | **Instrument** | LCMS04 |
| **Data File** | WS#5412188_B_03.d | **Operator** | |
| **Sample Type** | Cal | **Dilution** | 1 |
| **Acq. Method** | PFC_Water_Low.m | **Position** | P1-C2 |
| **Acq. Date** | 2018/02/27 1:12:04 PM | **Injection Volume** | Per Method |
| **Sample Annotation** | - | | |

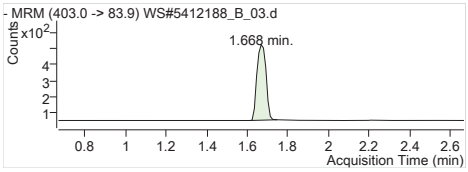
| ISTD Compounds | Response | RT | Target conc. | | |
|---|---|---|---|---|---|
| MPFHxA | 7368 | 1.43 | 1 µg/L | | |
| MPFHxS | 1475 | 1.67 | 1 µg/L | | |
| MPFHpA | 8773 | 1.69 | 1 µg/L | | |
| MPFOA | 8652 | 1.87 | 1 µg/L | | |
| MPFOS | 1814 | 1.97 | 1 µg/L | | |
| MPFNA | 8428 | 2.01 | 1 µg/L | | |
| MPFDA | 7914 | 2.14 | 1 µg/L | | |
| MPFUnA | 9146 | 2.23 | 1 µg/L | | |
| MPFDoA | 10878 | 2.31 | 1 µg/L | | |
| MPFTeDA | 12001 | 2.46 | 1 µg/L | | |
| 13C6-PFHxA IS | 29796 | 1.43 | 1 µg/L | | |
| 13C9-PFDA IS | 35683 | 2.13 | 1 µg/L | | |

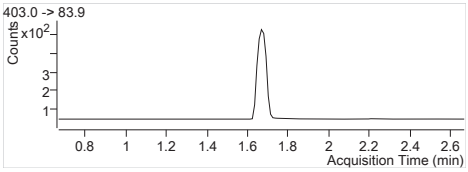
| Compound | Response | RT | Target Conc. | Calc. Conc. | Accuracy |
|---|---|---|---|---|---|
| PFBS 1 | 1125 | 1.08 | 1.70 | 1.52 µg/L | 89.18 |
| PFHxA 1 | 5122 | 1.43 | 1.70 | 1.58 µg/L | 92.72 |
| PFHxS 1 | 1203 | 1.67 | 1.70 | 1.68 µg/L | 98.86 |
| PFHpA 1 | 6674 | 1.69 | 1.70 | 1.64 µg/L | 96.21 |
| PFOA 1 | 7554 | 1.87 | 1.70 | 1.82 µg/L | 106.83 |
| PFOS 1 | 1204 | 1.96 | 1.70 | 1.76 µg/L | 103.60 |
| PFNA 1 | 6500 | 2.01 | 1.70 | 1.78 µg/L | 104.57 |
| PFDA 1 | 6596 | 2.14 | 1.70 | 1.62 µg/L | 95.31 |
| PFUnA 1 | 6874 | 2.23 | 1.70 | 1.60 µg/L | 94.21 |
| PFDoA 1 | 8613 | 2.31 | 1.70 | 1.74 µg/L | 102.29 |
| PFTrDA 1 | 9540 | 2.39 | 1.70 | 1.66 µg/L | 97.47 |
| PFTeDA 1 | 8172 | 2.46 | 1.70 | 1.70 µg/L | 100.19 |
| 13C2-PFHxA | 7368 | 1.43 | 100.00 | 99.48 µg/L | 99.48 |
| 18O2-PFHxS | 1475 | 1.67 | 100.00 | 95.33 µg/L | 95.33 |
| 13C4-PFHpA | 8773 | 1.69 | 100.00 | 102.27 µg/L | 102.27 |
| 13C4-PFOA | 8652 | 1.87 | 100.00 | 97.77 µg/L | 97.77 |
| 13C4-PFOS | 1814 | 1.97 | 100.00 | 101.25 µg/L | 101.25 |
| 13C5-PFNA | 8429 | 2.01 | 100.00 | 98.35 µg/L | 98.35 |
| 13C2-PFDA | 7789 | 2.14 | 100.00 | 99.11 µg/L | 99.11 |
| 13C2-PFUnA | 9146 | 2.23 | 100.00 | 100.07 µg/L | 100.07 |
| 13C2-PFDoA | 10878 | 2.31 | 100.00 | 93.95 µg/L | 93.95 |
| 13C2-PFTeDA | 12267 | 2.46 | 100.00 | 96.37 µg/L | 96.37 |
| 13C6-PFHxA | 29796 | 1.43 | 100.00 | 95.10 µg/L | 95.10 |
| 13C9-PFDA | 35683 | 2.13 | 100.00 | 95.76 µg/L | 95.76 |



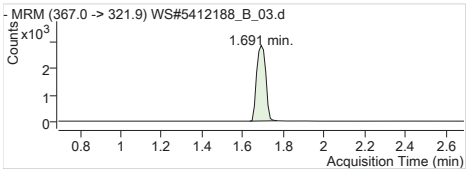



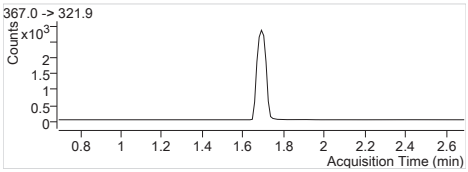

| | |
|---|---|
| **MPFHxA** | Internal Standard |
| RT (Exp. RT): | 1.434 (1.434) |
| Concentration: | 1 µg/L |
| Sample type: | Calibration |



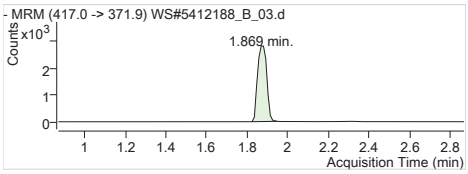



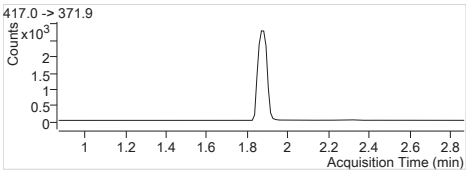

**MPFHxS** Internal Standard
RT (Exp. RT): 1.668 (1.668)
Concentration: 1 µg/L
Sample type: Calibration



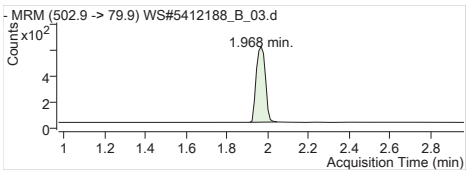



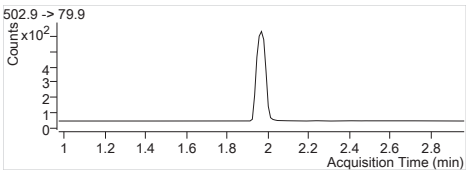

**MPFHpA** Internal Standard
RT (Exp. RT): 1.691 (1.691)
Concentration: 1 µg/L
Sample type: Calibration



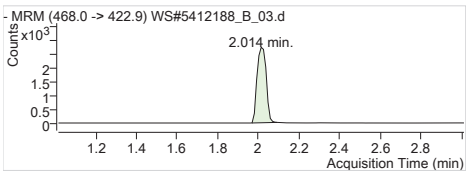



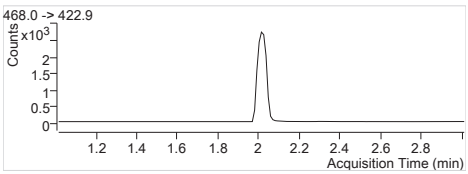

**MPFOA** Internal Standard
RT (Exp. RT): 1.869 (1.869)
Concentration: 1 µg/L
Sample type: Calibration



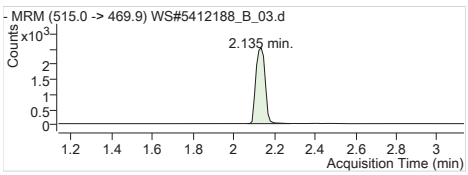



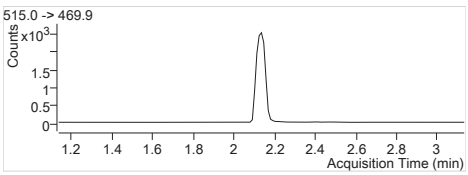

**MPFOS** Internal Standard
RT (Exp. RT): 1.968 (1.968)
Concentration: 1 µg/L
Sample type: Calibration



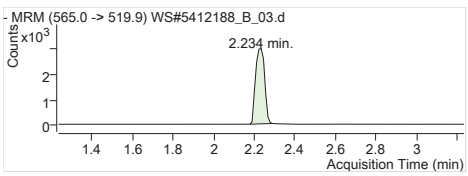



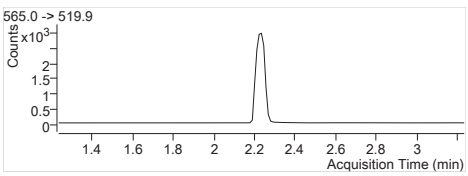

**MPFNA** Internal Standard
RT (Exp. RT): 2.014 (2.014)
Concentration: 1 µg/L
Sample type: Calibration



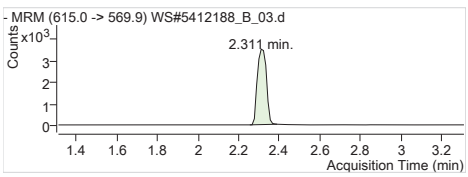



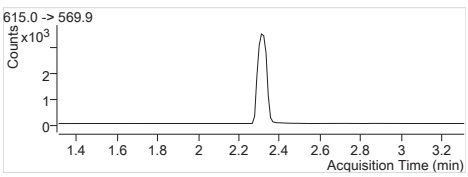

**MPFDA** Internal Standard
RT (Exp. RT): 2.135 (2.135)
Concentration: 1 µg/L
Sample type: Calibration



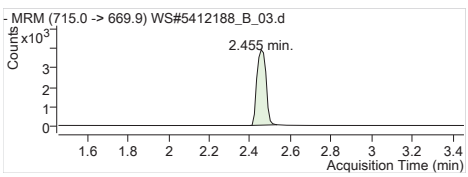



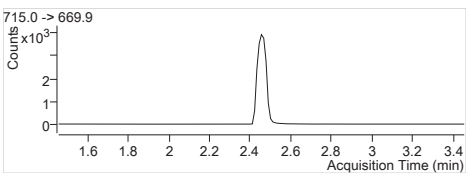

**MPFUnA** Internal Standard
RT (Exp. RT): 2.234 (2.234)
Concentration: 1 µg/L
Sample type: Calibration



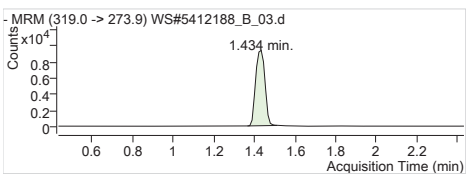



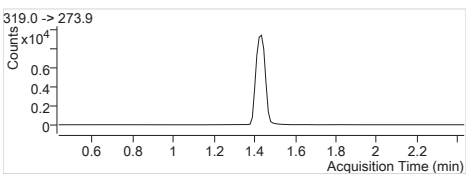

**MPFDoA** Internal Standard
RT (Exp. RT): 2.311 (2.311)
Concentration: 1 µg/L
Sample type: Calibration



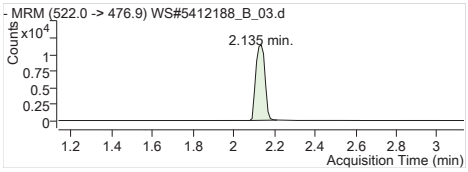



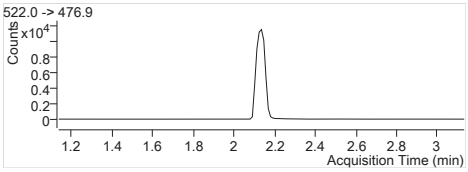

**MPFTeDA** Internal Standard
RT (Exp. RT): 2.455 (2.455)
Concentration: 1 µg/L
Sample type: Calibration



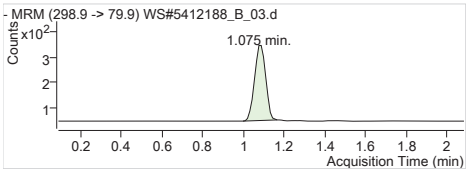



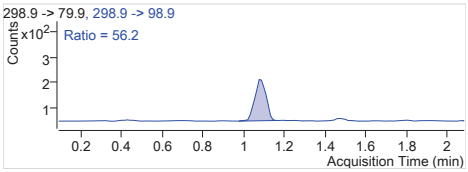

**13C6-PFHxA IS** Internal Standard
RT (Exp. RT): 1.434 (1.434)
Concentration: 1 µg/L
Sample type: Calibration



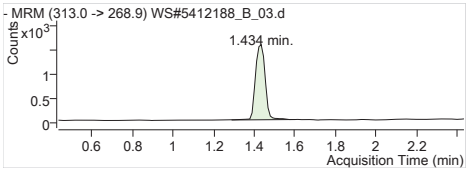



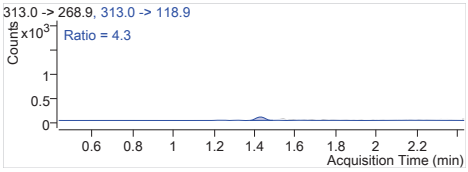

**13C9-PFDA IS** Internal Standard
RT (Exp. RT): 2.135 (2.135)
Concentration: 1 µg/L
Sample type: Calibration



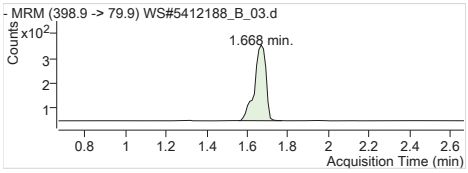



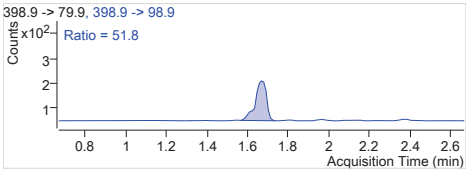

**PFBS 1** 298.9 -> 79.9
RT (Exp. RT): 1.075 (1.087)
Calc. conc. 1.52 µg/L
Area ratio: 0.76271
Sample type: Calibration



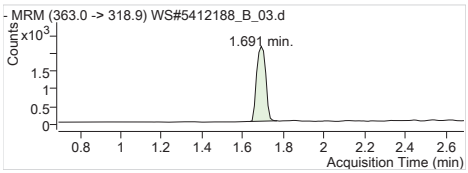



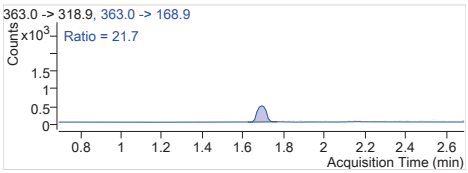

**PFHxA 1** 313.0 -> 268.9
RT (Exp. RT): 1.434 (1.434)
Calc. conc. 1.58 µg/L
Area ratio: 0.69517
Sample type: Calibration



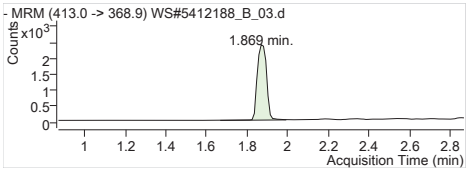



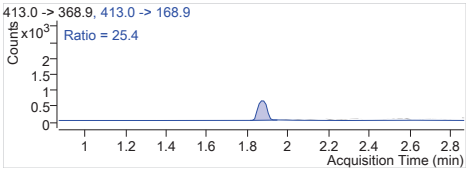

**PFHxS 1** 398.9 -> 79.9
RT (Exp. RT): 1.668 (1.668)
Calc. conc. 1.68 µg/L
Area ratio: 0.81559
Sample type: Calibration



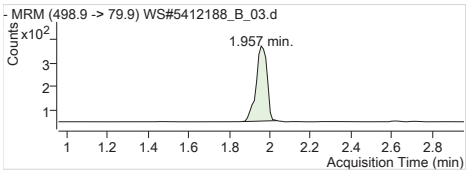



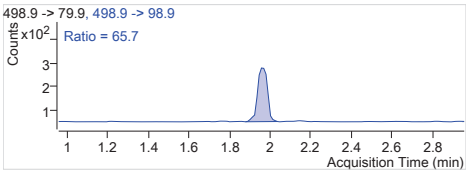

**PFHpA 1** 363.0 -> 318.9
RT (Exp. RT): 1.691 (1.691)
Calc. conc. 1.64 µg/L
Area ratio: 0.76074
Sample type: Calibration



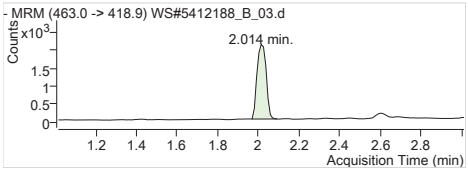



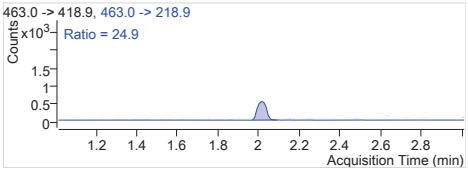

**PFOA 1** 413.0 -> 368.9
RT (Exp. RT): 1.869 (1.869)
Calc. conc. 1.82 µg/L
Area ratio: 0.87309
Sample type: Calibration



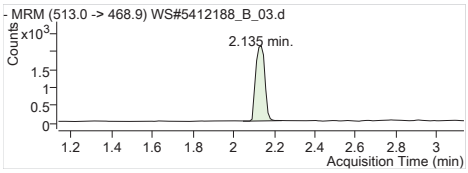



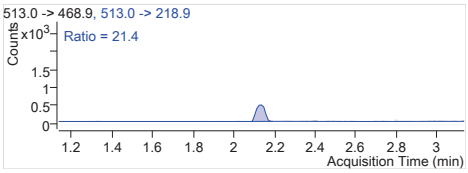

**PFOS 1** 498.9 -> 79.9
RT (Exp. RT): 1.957 (1.957)
Calc. conc. 1.76 µg/L
Area ratio: 0.66373
Sample type: Calibration



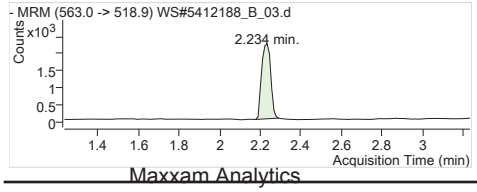



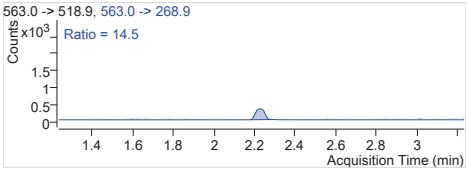

**PFNA 1** 463.0 -> 418.9
RT (Exp. RT): 2.014 (2.014)
Calc. conc. 1.78 µg/L
Area ratio: 0.77124
Sample type: Calibration



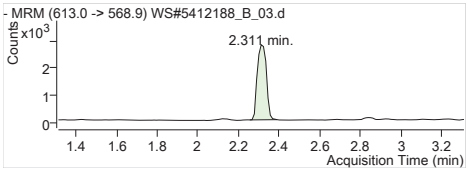



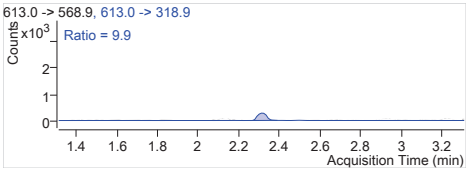

**PFDA 1** 513.0 -> 468.9
RT (Exp. RT): 2.135 (2.135)
Calc. conc. 1.62 µg/L
Area ratio: 0.83346
Sample type: Calibration



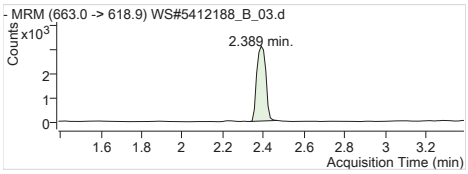



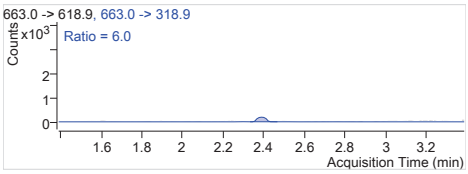

**PFUnA 1** 563.0 -> 518.9
RT (Exp. RT): 2.234 (2.234)
Calc. conc. 1.60 µg/L
Area ratio: 0.75159
Sample type: Calibration



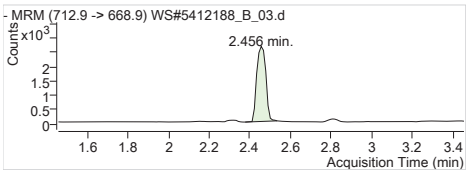



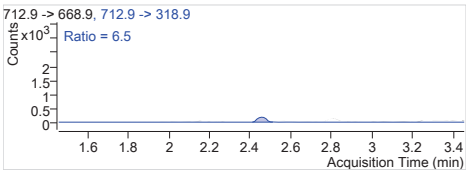

**PFDoA 1** 613.0 -> 568.9
RT (Exp. RT): 2.311 (2.311)
Calc. conc. 1.74 µg/L
Area ratio: 0.79178
Sample type: Calibration



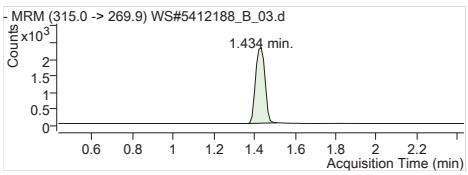



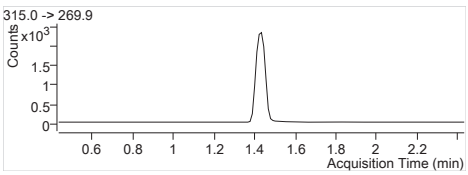

**PFTrDA 1** 663.0 -> 618.9
RT (Exp. RT): 2.389 (2.389)
Calc. conc. 1.66 µg/L
Area ratio: 0.79493
Sample type: Calibration



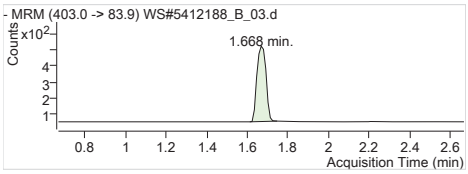



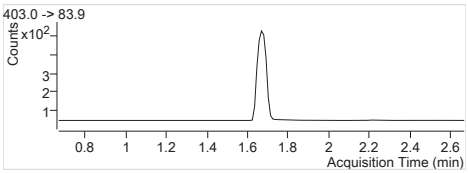

**PFTeDA 1** 712.9 -> 668.9
RT (Exp. RT): 2.456 (2.456)
Calc. conc. 1.70 µg/L
Area ratio: 0.68094
Sample type: Calibration



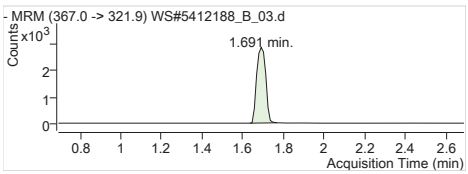



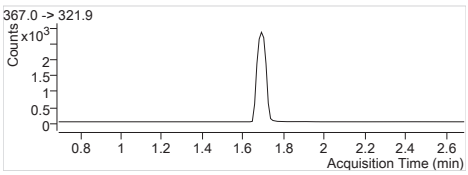

**13C2-PFHxA** 315.0 -> 269.9
RT (Exp. RT): 1.434 (1.434)
Calc. conc. 99.48 µg/L
Area ratio: 0.24728
Sample type: Calibration



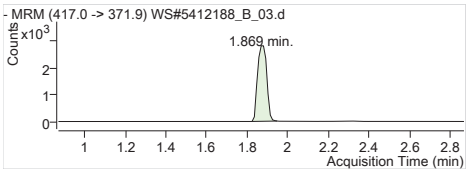



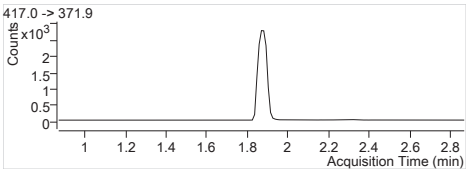

**18O2-PFHxS** 403.0 -> 83.9
RT (Exp. RT): 1.668 (1.668)
Calc. conc. 95.33 µg/L
Area ratio: 0.04950
Sample type: Calibration



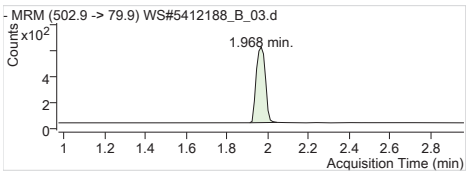



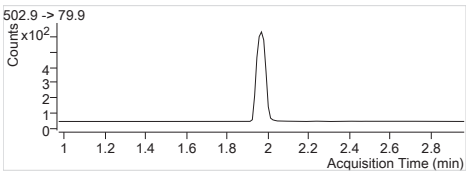

**13C4-PFHpA** 367.0 -> 321.9
RT (Exp. RT): 1.691 (1.691)
Calc. conc. 102.27 µg/L
Area ratio: 0.29444
Sample type: Calibration



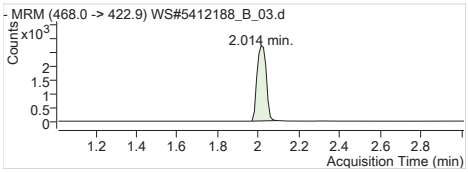



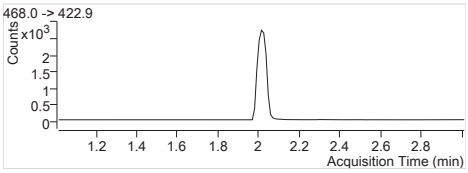

**13C4-PFOA** 417.0 -> 371.9
RT (Exp. RT): 1.869 (1.869)
Calc. conc. 97.77 µg/L
Area ratio: 0.29037
Sample type: Calibration



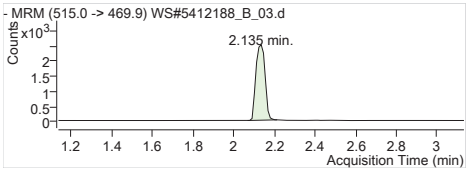



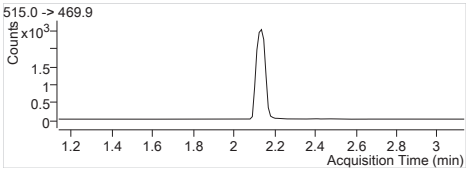

**13C4-PFOS** 502.9 -> 79.9
RT (Exp. RT): 1.968 (1.968)
Calc. conc. 101.25 µg/L
Area ratio: 0.06088
Sample type: Calibration



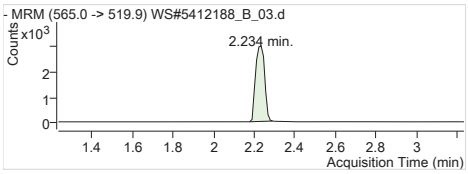



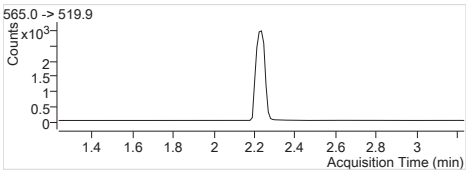

**13C5-PFNA** 468.0 -> 422.9
RT (Exp. RT): 2.014 (2.014)
Calc. conc. 98.35 µg/L
Area ratio: 0.28289
Sample type: Calibration



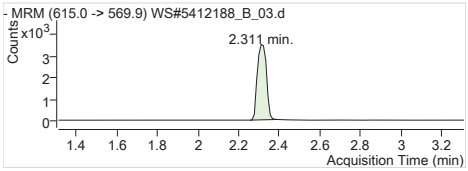



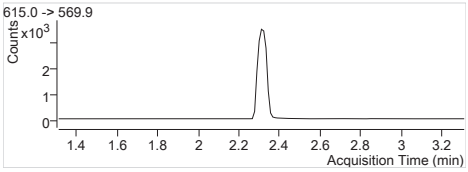

**13C2-PFDA** 515.0 -> 469.9
RT (Exp. RT): 2.135 (2.135)
Calc. conc. 99.11 µg/L
Area ratio: 0.21828
Sample type: Calibration



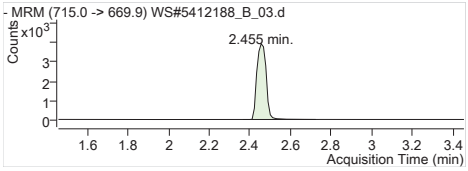



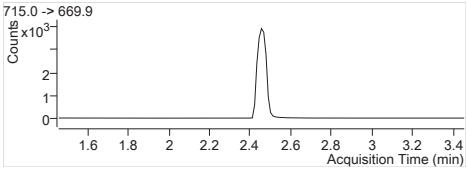

**13C2-PFUnA** 565.0 -> 519.9
RT (Exp. RT): 2.234 (2.234)
Calc. conc. 100.07 µg/L
Area ratio: 0.25631
Sample type: Calibration



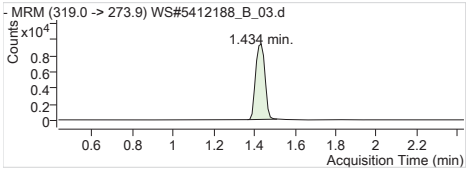



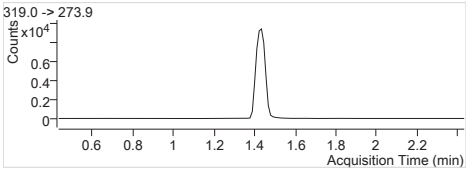

**13C2-PFDoA** 615.0 -> 569.9
RT (Exp. RT): 2.311 (2.311)
Calc. conc. 93.95 µg/L
Area ratio: 0.30485
Sample type: Calibration



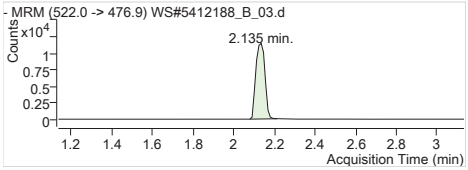



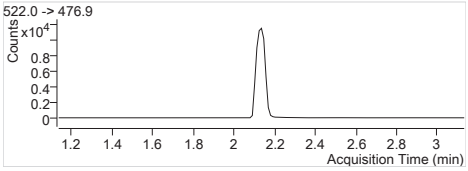

**13C2-PFTeDA** 715.0 -> 669.9
RT (Exp. RT): 2.455 (2.455)
Calc. conc. 96.37 µg/L
Area ratio: 0.34378
Sample type: Calibration




**13C6-PFHxA** 319.0 -> 273.9
RT (Exp. RT): 1.434 (1.434)
Calc. conc. 95.10 µg/L
Area ratio: 0
Sample type: Calibration



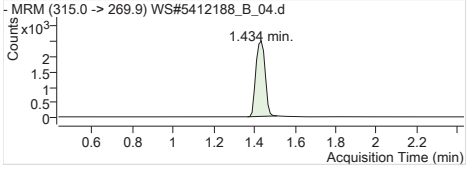

**13C9-PFDA** 522.0 -> 476.9
RT (Exp. RT): 2.135 (2.135)
Calc. conc. 95.76 µg/L
Area ratio: 0
Sample type: Calibration

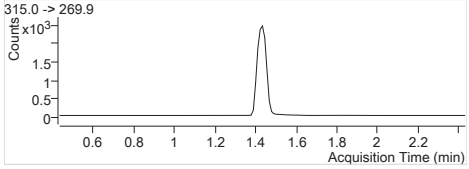
**Batch Path** T:\lcms4\PFC\20180226\WS#5412188_B\QuantResults\PFC_Water_Low_180227_WS#5412188_B_EToxics

| | | | |
|---|---|---|---|
| **Sample Name** | **STD 3** | **Instrument** | LCMS04 |
| **Data File** | WS#5412188_B_04.d | **Operator** | |
| **Sample Type** | Cal | **Dilution** | 1 |
| **Acq. Method** | PFC_Water_Low.m | **Position** | P1-C3 |
| **Acq. Date** | 2018/02/27 1:17:00 PM | **Injection Volume** | Per Method |
| **Sample Annotation** | - | | |

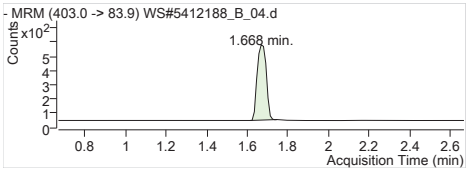
| ISTD Compounds | Response | RT | Target conc. | | |
|---|---|---|---|---|---|
| MPFHxA | 7665 | 1.43 | 1 µg/L | | |
| MPFHxS | 1655 | 1.67 | 1 µg/L | | |
| MPFHpA | 9429 | 1.69 | 1 µg/L | | |
| MPFOA | 9215 | 1.87 | 1 µg/L | | |
| MPFOS | 1953 | 1.97 | 1 µg/L | | |
| MPFNA | 9122 | 2.01 | 1 µg/L | | |
| MPFDA | 7809 | 2.14 | 1 µg/L | | |
| MPFUnA | 9814 | 2.23 | 1 µg/L | | |
| MPFDoA | 12480 | 2.31 | 1 µg/L | | |
| MPFTeDA | 13259 | 2.46 | 1 µg/L | | |
| 13C6-PFHxA IS | 31917 | 1.43 | 1 µg/L | | |
| 13C9-PFDA IS | 38219 | 2.13 | 1 µg/L | | |

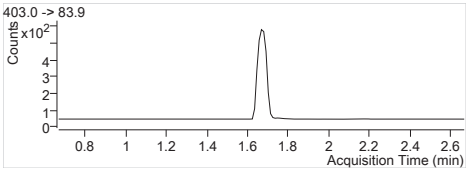
| Compound | Response | RT | Target Conc. | Calc. Conc. | Accuracy |
|---|---|---|---|---|---|
| PFBS 1 | 4042 | 1.09 | 5.00 | 5.27 µg/L | 105.33 |
| PFHxA 1 | 17235 | 1.43 | 5.00 | 5.35 µg/L | 107.07 |
| PFHxS 1 | 4132 | 1.67 | 5.00 | 5.47 µg/L | 109.32 |
| PFHpA 1 | 22441 | 1.69 | 5.00 | 5.21 µg/L | 104.29 |
| PFOA 1 | 22992 | 1.87 | 5.00 | 5.42 µg/L | 108.36 |
| PFOS 1 | 3916 | 1.96 | 5.00 | 4.96 µg/L | 99.14 |
| PFNA 1 | 20382 | 2.01 | 5.00 | 5.19 µg/L | 103.82 |
| PFDA 1 | 21934 | 2.14 | 5.00 | 5.76 µg/L | 115.15 |
| PFUnA 1 | 23349 | 2.23 | 5.00 | 5.23 µg/L | 104.51 |
| PFDoA 1 | 28482 | 2.31 | 5.00 | 5.12 µg/L | 102.42 |
| PFTrDA 1 | 32849 | 2.39 | 5.00 | 5.38 µg/L | 107.70 |
| PFTeDA 1 | 27108 | 2.46 | 5.00 | 5.32 µg/L | 106.45 |
| 13C2-PFHxA | 7665 | 1.43 | 100.00 | 96.61 µg/L | 96.61 |
| 18O2-PFHxS | 1655 | 1.67 | 100.00 | 99.85 µg/L | 99.85 |
| 13C4-PFHpA | 9429 | 1.69 | 100.00 | 102.61 µg/L | 102.61 |
| 13C4-PFOA | 9215 | 1.87 | 100.00 | 97.21 µg/L | 97.21 |
| 13C4-PFOS | 1953 | 1.97 | 100.00 | 101.77 µg/L | 101.77 |
| 13C5-PFNA | 9121 | 2.01 | 100.00 | 99.35 µg/L | 99.35 |
| 13C2-PFDA | 7722 | 2.14 | 100.00 | 91.74 µg/L | 91.74 |
| 13C2-PFUnA | 9814 | 2.23 | 100.00 | 100.26 µg/L | 100.26 |
| 13C2-PFDoA | 12480 | 2.31 | 100.00 | 100.63 µg/L | 100.63 |
| 13C2-PFTeDA | 13370 | 2.46 | 100.00 | 98.07 µg/L | 98.07 |
| 13C6-PFHxA | 31917 | 1.43 | 100.00 | 101.87 µg/L | 101.87 |
| 13C9-PFDA | 38219 | 2.13 | 100.00 | 102.56 µg/L | 102.56 |



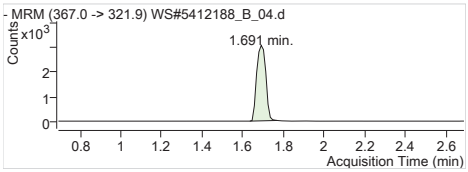



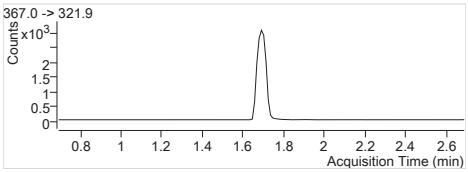

**MPFHxA** Internal Standard
RT (Exp. RT): 1.434 (1.434)
Concentration: 1 µg/L
Sample type: Calibration



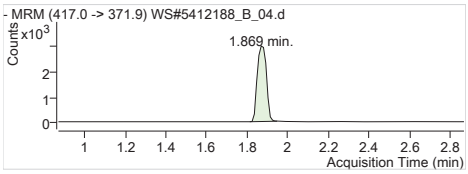



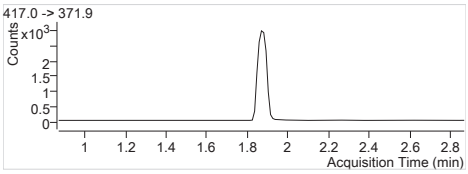

**MPFHxS** Internal Standard
RT (Exp. RT): 1.668 (1.668)
Concentration: 1 µg/L
Sample type: Calibration



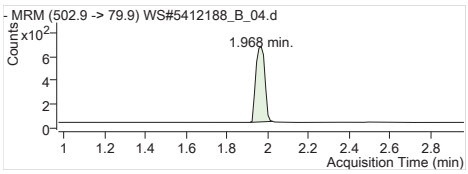



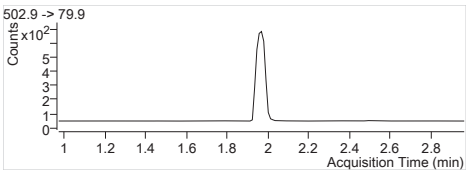

**MPFHpA** Internal Standard
RT (Exp. RT): 1.691 (1.691)
Concentration: 1 µg/L
Sample type: Calibration



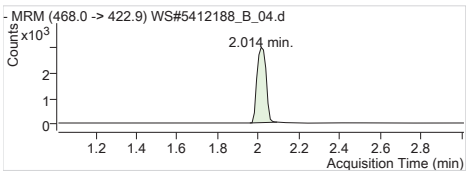



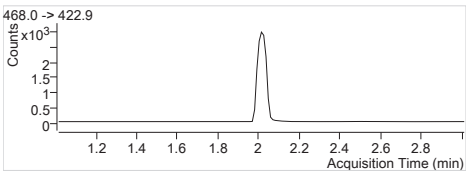

**MPFOA** Internal Standard
RT (Exp. RT): 1.869 (1.869)
Concentration: 1 µg/L
Sample type: Calibration



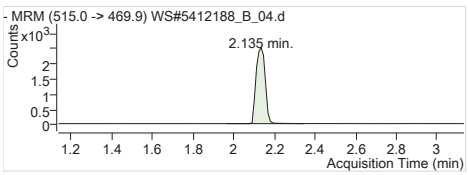



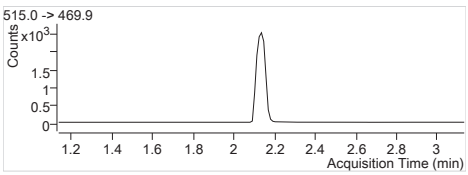

**MPFOS** Internal Standard
RT (Exp. RT): 1.968 (1.968)
Concentration: 1 µg/L
Sample type: Calibration



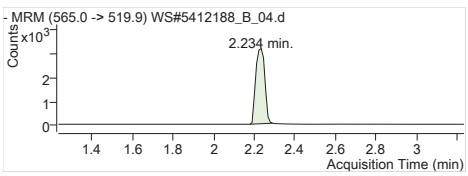



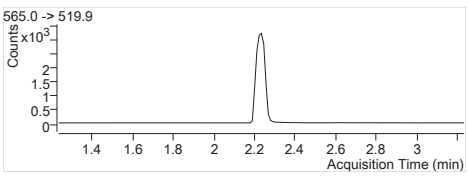

**MPFNA** Internal Standard
RT (Exp. RT): 2.014 (2.014)
Concentration: 1 µg/L
Sample type: Calibration



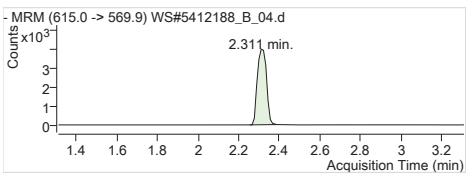



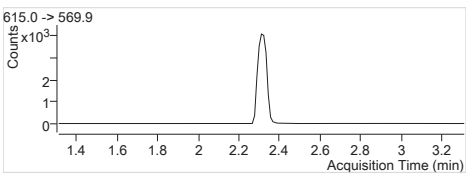

**MPFDA** Internal Standard
RT (Exp. RT): 2.135 (2.135)
Concentration: 1 µg/L
Sample type: Calibration



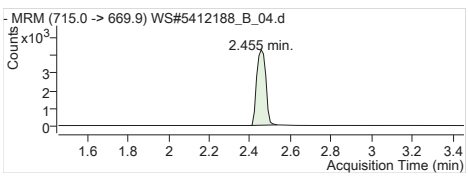



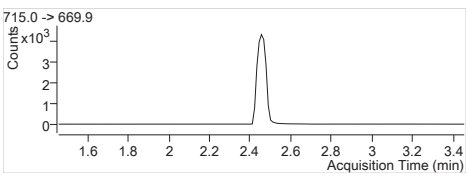

**MPFUnA** Internal Standard
RT (Exp. RT): 2.234 (2.234)
Concentration: 1 µg/L
Sample type: Calibration



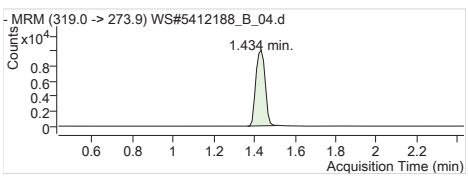



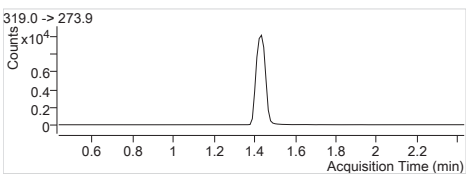

**MPFDoA** Internal Standard
RT (Exp. RT): 2.311 (2.311)
Concentration: 1 µg/L
Sample type: Calibration



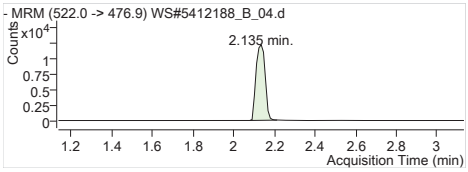



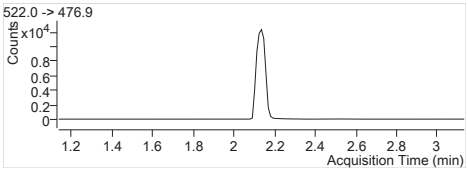

**MPFTeDA** Internal Standard
RT (Exp. RT): 2.455 (2.455)
Concentration: 1 µg/L
Sample type: Calibration



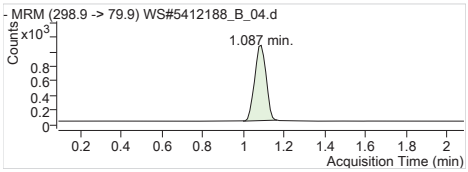



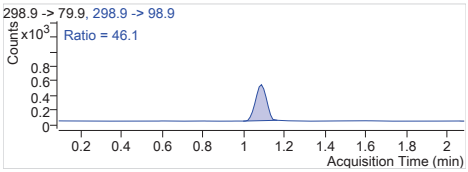

**13C6-PFHxA IS** Internal Standard
RT (Exp. RT): 1.434 (1.434)
Concentration: 1 µg/L
Sample type: Calibration



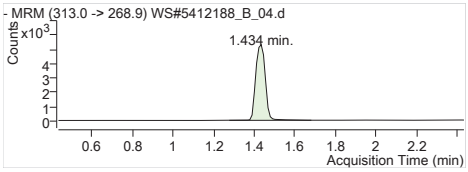



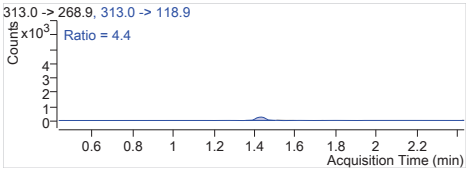

**13C9-PFDA IS** Internal Standard
RT (Exp. RT): 2.135 (2.135)
Concentration: 1 µg/L
Sample type: Calibration



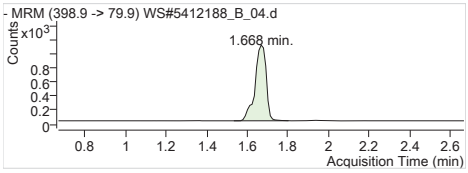



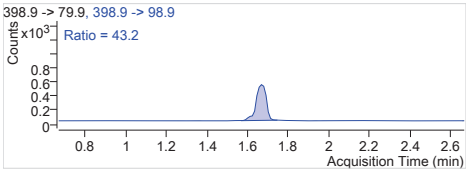

**PFBS 1** 298.9 -> 79.9
RT (Exp. RT): 1.087 (1.087)
Calc. conc. 5.27 µg/L
Area ratio: 2.44230
Sample type: Calibration



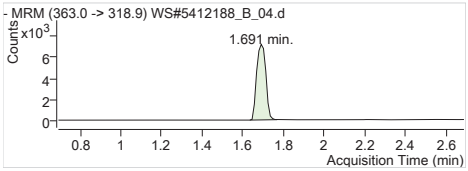



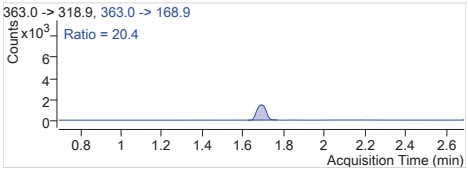

**PFHxA 1** 313.0 -> 268.9
RT (Exp. RT): 1.434 (1.434)
Calc. conc. 5.35 µg/L
Area ratio: 2.24853
Sample type: Calibration



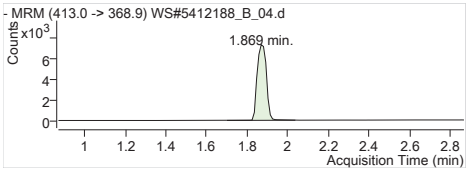



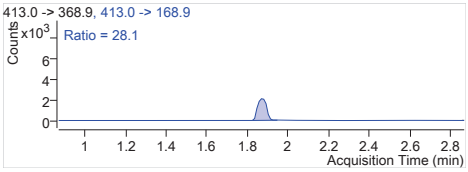

**PFHxS 1** 398.9 -> 79.9
RT (Exp. RT): 1.668 (1.668)
Calc. conc. 5.47 µg/L
Area ratio: 2.49668
Sample type: Calibration



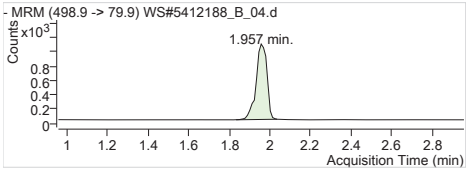



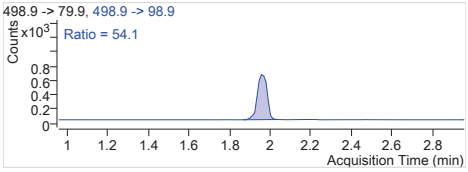

**PFHpA 1** 363.0 -> 318.9
RT (Exp. RT): 1.691 (1.691)
Calc. conc. 5.21 µg/L
Area ratio: 2.38000
Sample type: Calibration



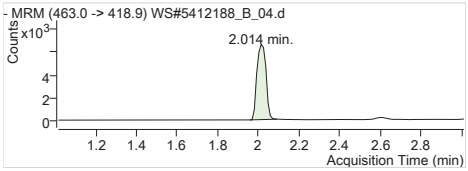



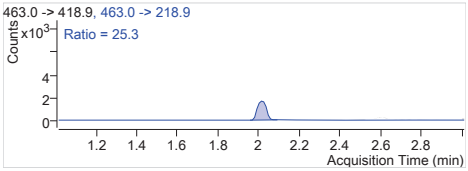

**PFOA 1** 413.0 -> 368.9
RT (Exp. RT): 1.869 (1.869)
Calc. conc. 5.42 µg/L
Area ratio: 2.49506
Sample type: Calibration



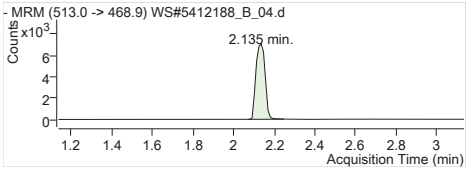



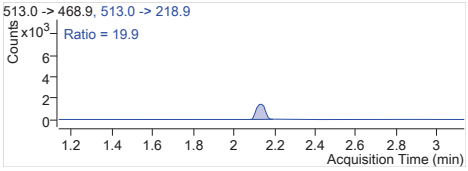

**PFOS 1** 498.9 -> 79.9
RT (Exp. RT): 1.957 (1.957)
Calc. conc. 4.96 µg/L
Area ratio: 2.00512
Sample type: Calibration



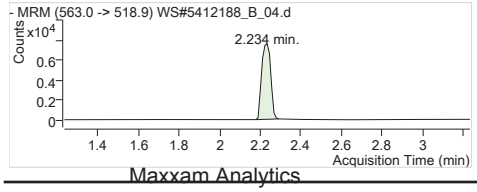



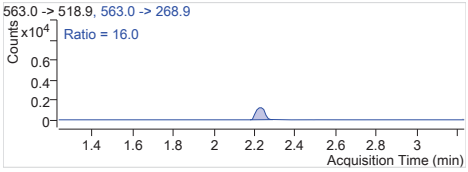

**PFNA 1** 463.0 -> 418.9
RT (Exp. RT): 2.014 (2.014)
Calc. conc. 5.19 µg/L
Area ratio: 2.23438
Sample type: Calibration



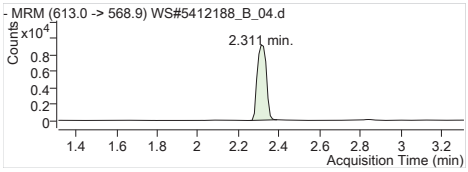



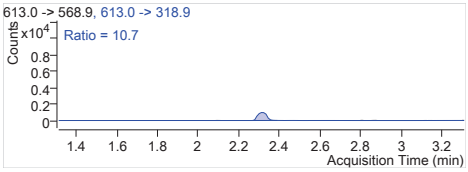

**PFDA 1** 513.0 -> 468.9
RT (Exp. RT): 2.135 (2.135)
Calc. conc. 5.76 µg/L
Area ratio: 2.80881
Sample type: Calibration



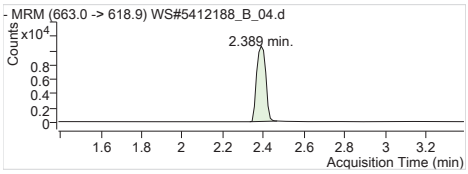



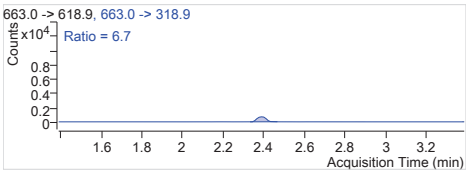

**PFUnA 1** 563.0 -> 518.9
RT (Exp. RT): 2.234 (2.234)
Calc. conc. 5.23 µg/L
Area ratio: 2.37915
Sample type: Calibration



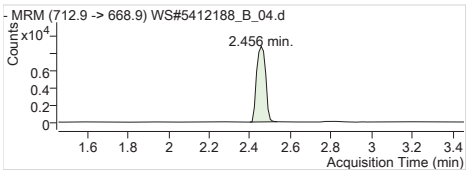



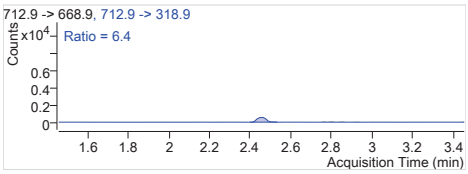

| | |
|---|---|
| **PFDoA 1** | 613.0 -> 568.9 |
| RT (Exp. RT): | 2.311 (2.311) |
| Calc. conc. | 5.12 µg/L |
| Area ratio: | 2.28221 |
| Sample type: | Calibration |



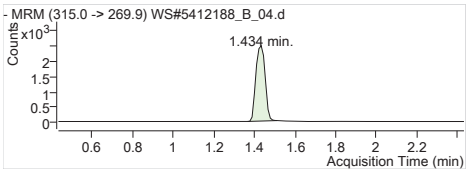



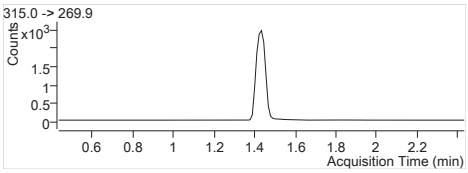

| | |
|---|---|
| **PFTrDA 1** | 663.0 -> 618.9 |
| RT (Exp. RT): | 2.389 (2.389) |
| Calc. conc. | 5.38 µg/L |
| Area ratio: | 2.47749 |
| Sample type: | Calibration |



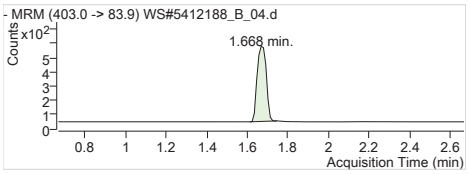



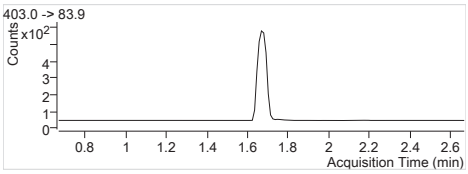

| | |
|---|---|
| **PFTeDA 1** | 712.9 -> 668.9 |
| RT (Exp. RT): | 2.456 (2.456) |
| Calc. conc. | 5.32 µg/L |
| Area ratio: | 2.04450 |
| Sample type: | Calibration |



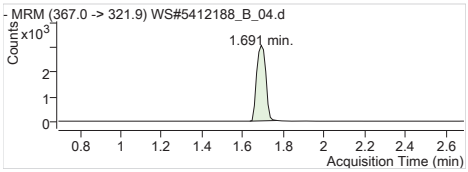



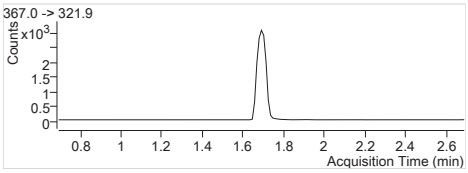

| | |
|---|---|
| **13C2-PFHxA** | 315.0 -> 269.9 |
| RT (Exp. RT): | 1.434 (1.434) |
| Calc. conc. | 96.61 µg/L |
| Area ratio: | 0.24015 |
| Sample type: | Calibration |



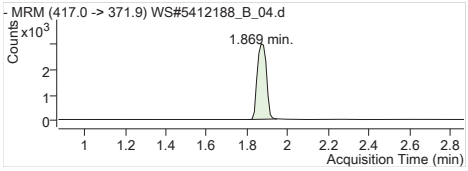



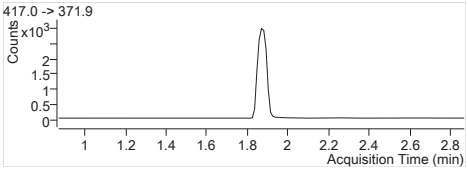

| | |
|---|---|
| **18O2-PFHxS** | 403.0 -> 83.9 |
| RT (Exp. RT): | 1.668 (1.668) |
| Calc. conc. | 99.85 µg/L |
| Area ratio: | 0.05185 |
| Sample type: | Calibration |



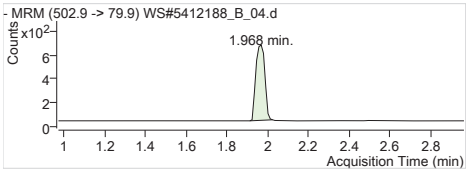



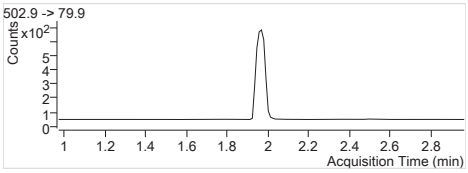

| | |
|---|---|
| **13C4-PFHpA** | 367.0 -> 321.9 |
| RT (Exp. RT): | 1.691 (1.691) |
| Calc. conc. | 102.61 µg/L |
| Area ratio: | 0.29542 |
| Sample type: | Calibration |



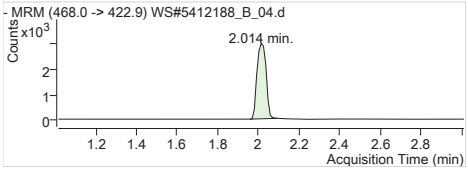



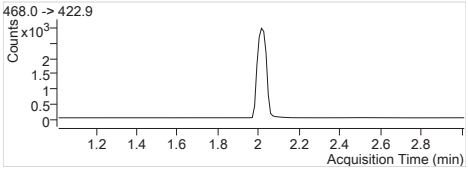

| | |
|---|---|
| **13C4-PFOA** | 417.0 -> 371.9 |
| RT (Exp. RT): | 1.869 (1.869) |
| Calc. conc. | 97.21 µg/L |
| Area ratio: | 0.28872 |
| Sample type: | Calibration |



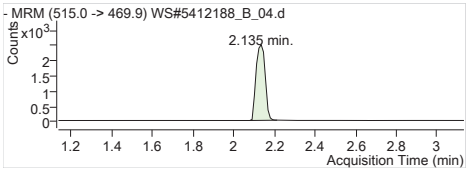



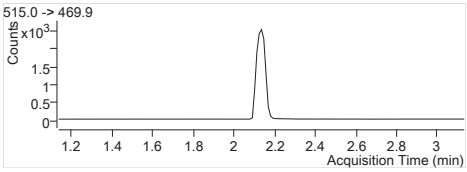

| | |
|---|---|
| **13C4-PFOS** | 502.9 -> 79.9 |
| RT (Exp. RT): | 1.968 (1.968) |
| Calc. conc. | 101.77 µg/L |
| Area ratio: | 0.06119 |
| Sample type: | Calibration |



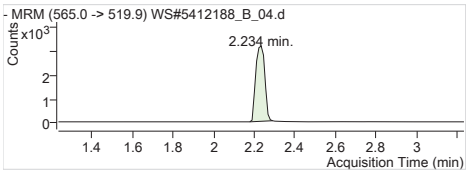



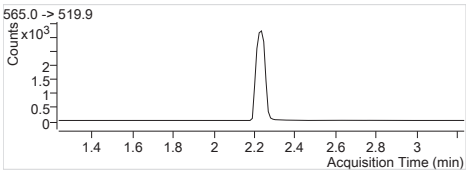

| | |
|---|---|
| **13C5-PFNA** | 468.0 -> 422.9 |
| RT (Exp. RT): | 2.014 (2.014) |
| Calc. conc. | 99.35 µg/L |
| Area ratio: | 0.28577 |
| Sample type: | Calibration |



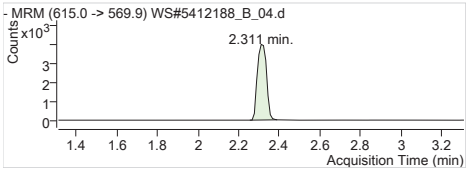



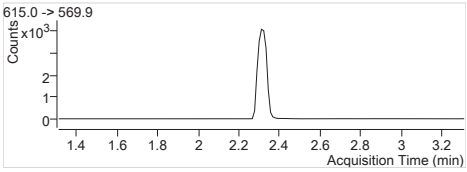

**13C2-PFDA** 515.0 -> 469.9
RT (Exp. RT): 2.135 (2.135)
Calc. conc. 91.74 µg/L
Area ratio: 0.20205
Sample type: Calibration



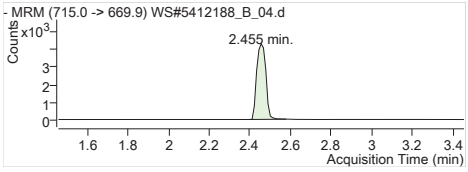



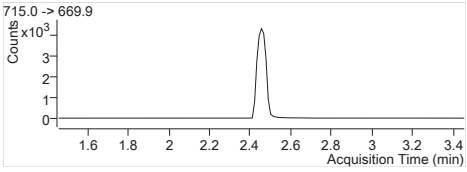

**13C2-PFUnA** 565.0 -> 519.9
RT (Exp. RT): 2.234 (2.234)
Calc. conc. 100.26 µg/L
Area ratio: 0.25678
Sample type: Calibration



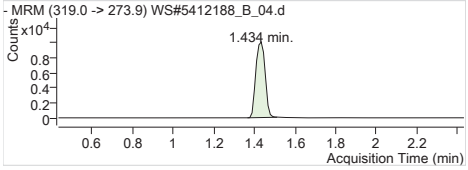



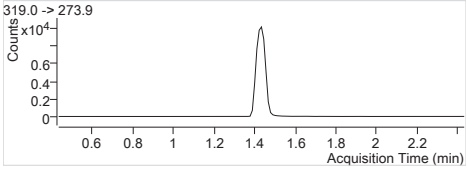

**13C2-PFDoA** 615.0 -> 569.9
RT (Exp. RT): 2.311 (2.311)
Calc. conc. 100.63 µg/L
Area ratio: 0.32654
Sample type: Calibration



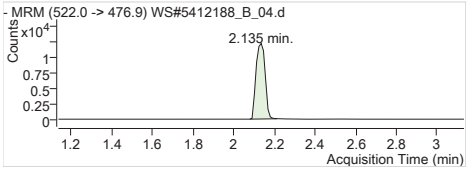



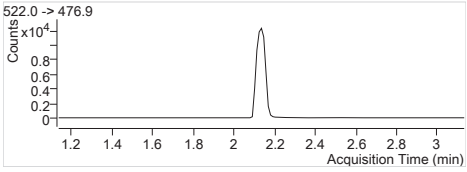

**13C2-PFTeDA** 715.0 -> 669.9
RT (Exp. RT): 2.455 (2.455)
Calc. conc. 98.07 µg/L
Area ratio: 0.34983
Sample type: Calibration




**13C6-PFHxA** 319.0 -> 273.9
RT (Exp. RT): 1.434 (1.434)
Calc. conc. 101.87 µg/L
Area ratio: 0
Sample type: Calibration



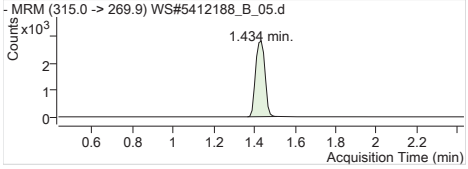

**13C9-PFDA** 522.0 -> 476.9
RT (Exp. RT): 2.135 (2.135)
Calc. conc. 102.56 µg/L
Area ratio: 0
Sample type: Calibration

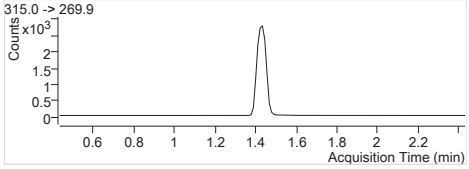
| | |
|---|---|
| **Batch Path** | T:\lcms4\PFC\20180226\WS#5412188_B\QuantResults\PFC_Water_Low_180227_WS#5412188_B_EToxics |

| | | | |
|---|---|---|---|
| **Sample Name** | **STD 4** | **Instrument** | LCMS04 |
| **Data File** | WS#5412188_B_05.d | **Operator** | |
| **Sample Type** | Cal | **Dilution** | 1 |
| **Acq. Method** | PFC_Water_Low.m | **Position** | P1-C4 |
| **Acq. Date** | 2018/02/27 1:21:56 PM | **Injection Volume** | Per Method |
| **Sample Annotation** | - | | |

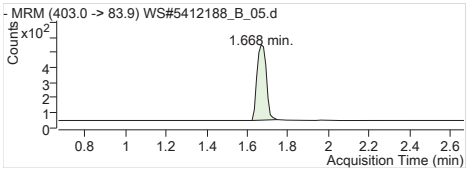
| ISTD Compounds | Response | RT | Target conc. | | |
|---|---|---|---|---|---|
| MPFHxA | 8793 | 1.43 | 1 µg/L | | |
| MPFHxS | 1595 | 1.67 | 1 µg/L | | |
| MPFHpA | 9629 | 1.69 | 1 µg/L | | |
| MPFOA | 10261 | 1.87 | 1 µg/L | | |
| MPFOS | 2098 | 1.97 | 1 µg/L | | |
| MPFNA | 9810 | 2.01 | 1 µg/L | | |
| MPFDA | 9295 | 2.14 | 1 µg/L | | |
| MPFUnA | 10376 | 2.23 | 1 µg/L | | |
| MPFDoA | 13314 | 2.31 | 1 µg/L | | |
| MPFTeDA | 14886 | 2.46 | 1 µg/L | | |
| 13C6-PFHxA IS | 31264 | 1.43 | 1 µg/L | | |
| 13C9-PFDA IS | 38264 | 2.13 | 1 µg/L | | |

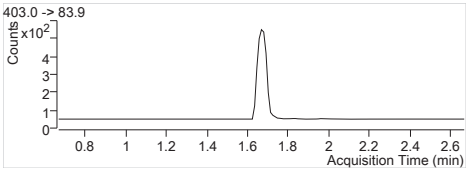
| Compound | Response | RT | Target Conc. | Calc. Conc. | Accuracy |
|---|---|---|---|---|---|
| PFBS 1 | 10227 | 1.09 | 12.50 | 14.13 µg/L | 113.04 |
| PFHxA 1 | 43010 | 1.43 | 12.50 | 11.78 µg/L | 94.24 |
| PFHxS 1 | 9773 | 1.67 | 12.50 | 13.64 µg/L | 109.13 |
| PFHpA 1 | 53864 | 1.69 | 12.50 | 12.32 µg/L | 98.55 |
| PFOA 1 | 56679 | 1.87 | 12.50 | 12.14 µg/L | 97.15 |
| PFOS 1 | 9967 | 1.96 | 12.50 | 11.50 µg/L | 91.99 |
| PFNA 1 | 49111 | 2.01 | 12.50 | 11.66 µg/L | 93.25 |
| PFDA 1 | 53630 | 2.14 | 12.50 | 11.96 µg/L | 95.67 |
| PFUnA 1 | 58249 | 2.23 | 12.50 | 12.43 µg/L | 99.42 |
| PFDoA 1 | 71560 | 2.31 | 12.50 | 12.14 µg/L | 97.10 |
| PFTrDA 1 | 78922 | 2.39 | 12.50 | 11.64 µg/L | 93.14 |
| PFTeDA 1 | 69591 | 2.46 | 12.50 | 12.31 µg/L | 98.44 |
| 13C2-PFHxA | 8793 | 1.43 | 100.00 | 113.15 µg/L | 113.15 |
| 18O2-PFHxS | 1595 | 1.67 | 100.00 | 98.24 µg/L | 98.24 |
| 13C4-PFHpA | 9629 | 1.69 | 100.00 | 106.97 µg/L | 106.97 |
| 13C4-PFOA | 10261 | 1.87 | 100.00 | 110.51 µg/L | 110.51 |
| 13C4-PFOS | 2098 | 1.97 | 100.00 | 111.61 µg/L | 111.61 |
| 13C5-PFNA | 9811 | 2.01 | 100.00 | 109.10 µg/L | 109.10 |
| 13C2-PFDA | 9108 | 2.14 | 100.00 | 108.07 µg/L | 108.07 |
| 13C2-PFUnA | 10376 | 2.23 | 100.00 | 105.87 µg/L | 105.87 |
| 13C2-PFDoA | 13314 | 2.31 | 100.00 | 107.23 µg/L | 107.23 |
| 13C2-PFTeDA | 15112 | 2.46 | 100.00 | 110.71 µg/L | 110.71 |
| 13C6-PFHxA | 31264 | 1.43 | 100.00 | 99.78 µg/L | 99.78 |
| 13C9-PFDA | 38264 | 2.13 | 100.00 | 102.68 µg/L | 102.68 |



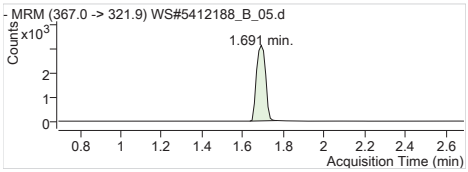



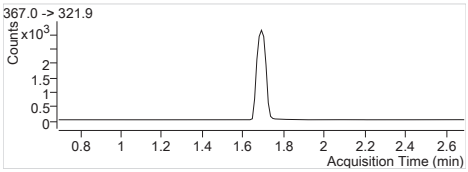

| | |
|---|---|
| **MPFHxA** | Internal Standard |
| RT (Exp. RT): | 1.434 (1.434) |
| Concentration: | 1 µg/L |
| Sample type: | Calibration |



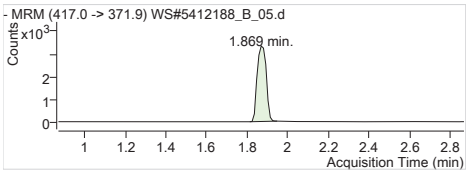



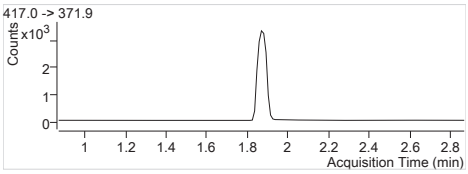

**MPFHxS** Internal Standard
RT (Exp. RT): 1.668 (1.668)
Concentration: 1 µg/L
Sample type: Calibration



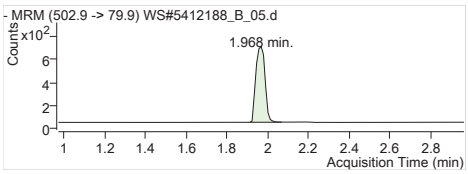



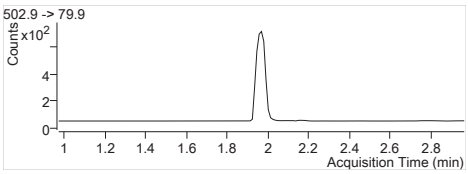

**MPFHpA** Internal Standard
RT (Exp. RT): 1.691 (1.691)
Concentration: 1 µg/L
Sample type: Calibration



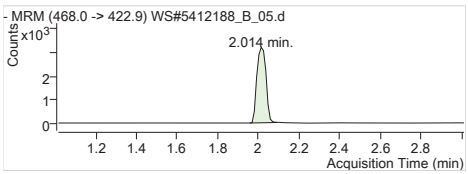



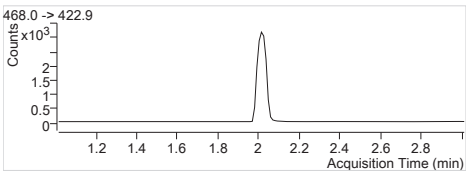

**MPFOA** Internal Standard
RT (Exp. RT): 1.869 (1.869)
Concentration: 1 µg/L
Sample type: Calibration



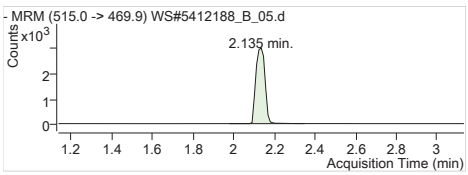



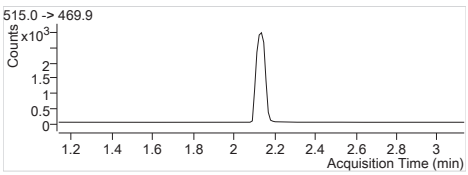

**MPFOS** Internal Standard
RT (Exp. RT): 1.968 (1.968)
Concentration: 1 µg/L
Sample type: Calibration



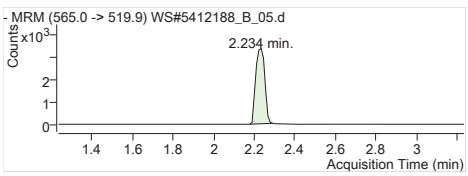



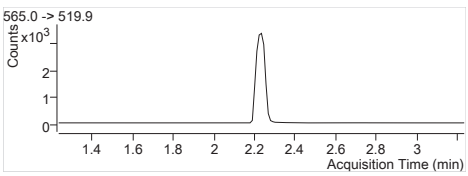

**MPFNA** Internal Standard
RT (Exp. RT): 2.014 (2.014)
Concentration: 1 µg/L
Sample type: Calibration



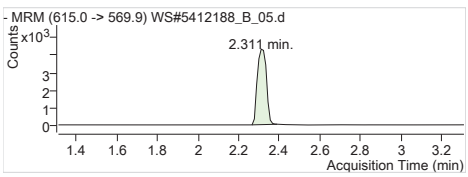



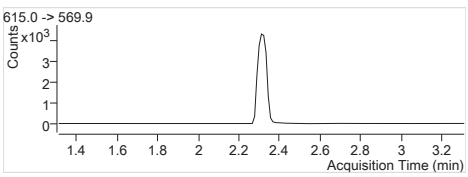

**MPFDA** Internal Standard
RT (Exp. RT): 2.135 (2.135)
Concentration: 1 µg/L
Sample type: Calibration



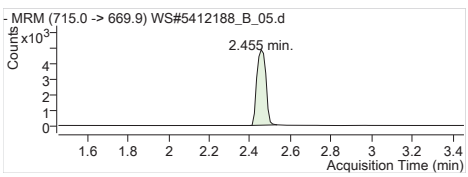



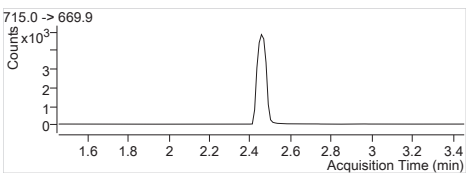

**MPFUnA** Internal Standard
RT (Exp. RT): 2.234 (2.234)
Concentration: 1 µg/L
Sample type: Calibration



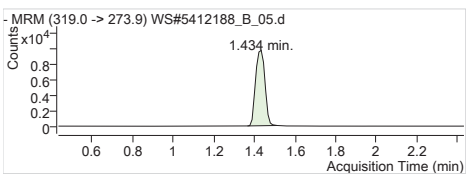



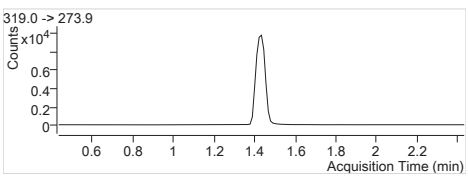

**MPFDoA** Internal Standard
RT (Exp. RT): 2.311 (2.311)
Concentration: 1 µg/L
Sample type: Calibration



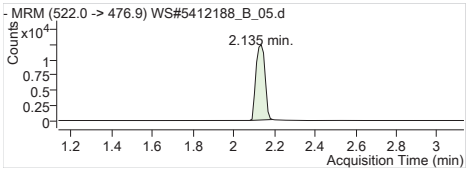



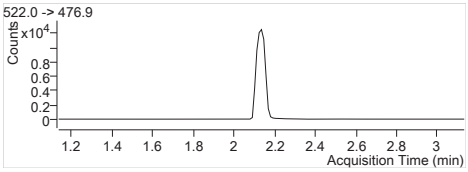

**MPFTeDA** Internal Standard
RT (Exp. RT): 2.455 (2.455)
Concentration: 1 µg/L
Sample type: Calibration



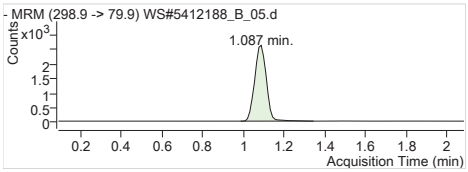



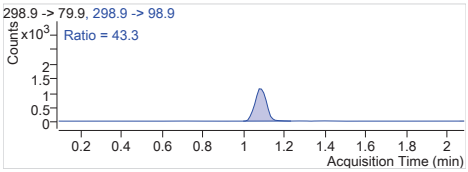

**13C6-PFHxA IS** Internal Standard
RT (Exp. RT): 1.434 (1.434)
Concentration: 1 µg/L
Sample type: Calibration



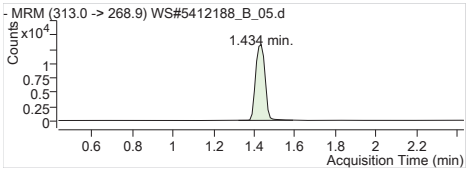



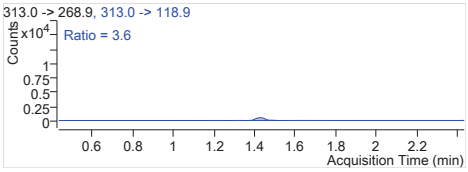

**13C9-PFDA IS** Internal Standard
RT (Exp. RT): 2.135 (2.135)
Concentration: 1 µg/L
Sample type: Calibration



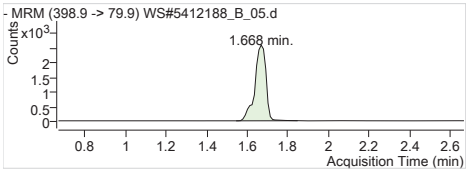



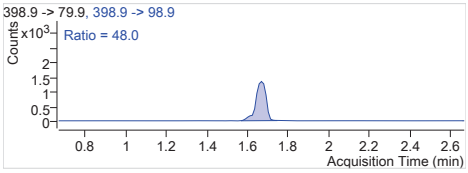

**PFBS 1** 298.9 -> 79.9
RT (Exp. RT): 1.087 (1.087)
Calc. conc. 14.13 µg/L
Area ratio: 6.41191
Sample type: Calibration



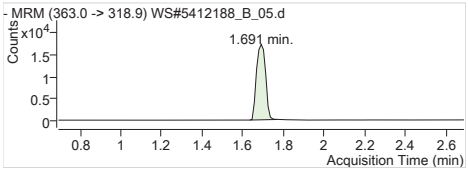



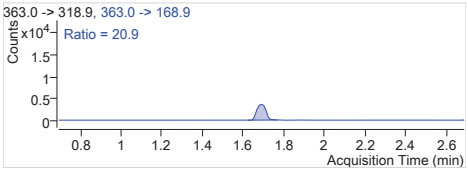

**PFHxA 1** 313.0 -> 268.9
RT (Exp. RT): 1.434 (1.434)
Calc. conc. 11.78 µg/L
Area ratio: 4.89139
Sample type: Calibration



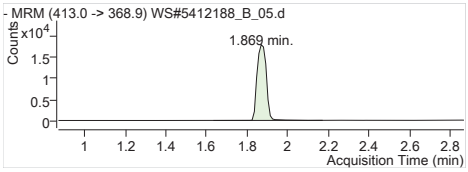



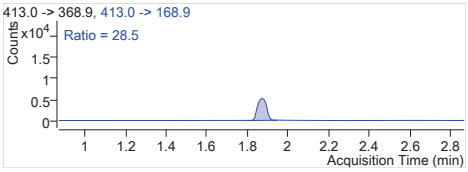

**PFHxS 1** 398.9 -> 79.9
RT (Exp. RT): 1.668 (1.668)
Calc. conc. 13.64 µg/L
Area ratio: 6.12727
Sample type: Calibration



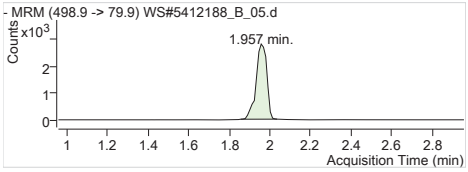



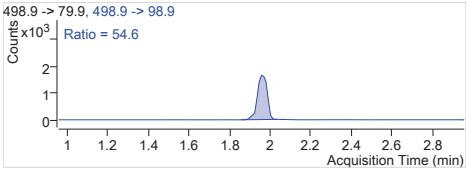

**PFHpA 1** 363.0 -> 318.9
RT (Exp. RT): 1.691 (1.691)
Calc. conc. 12.32 µg/L
Area ratio: 5.59393
Sample type: Calibration



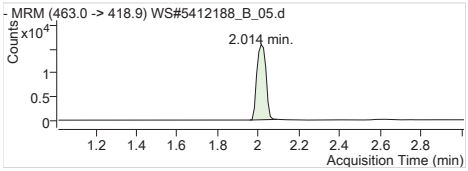



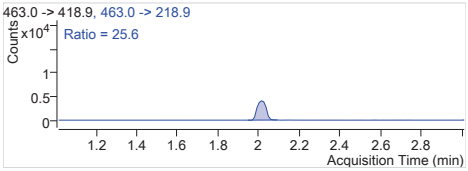

**PFOA 1** 413.0 -> 368.9
RT (Exp. RT): 1.869 (1.869)
Calc. conc. 12.14 µg/L
Area ratio: 5.52373
Sample type: Calibration



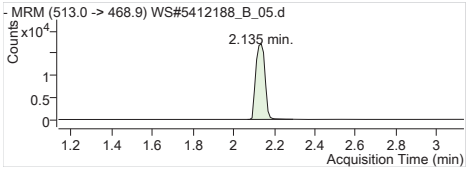



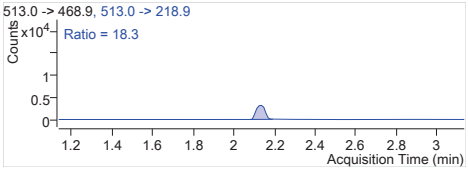

**PFOS 1** 498.9 -> 79.9
RT (Exp. RT): 1.957 (1.957)
Calc. conc. 11.50 µg/L
Area ratio: 4.75071
Sample type: Calibration



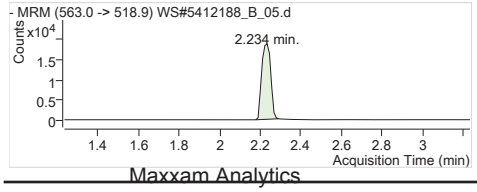



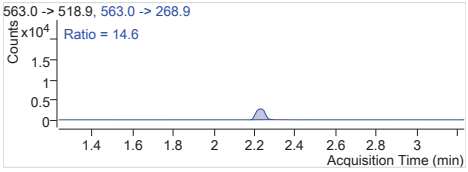

**PFNA 1** 463.0 -> 418.9
RT (Exp. RT): 2.014 (2.014)
Calc. conc. 11.66 µg/L
Area ratio: 5.00622
Sample type: Calibration



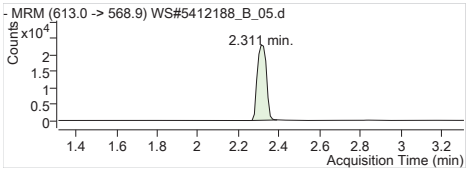



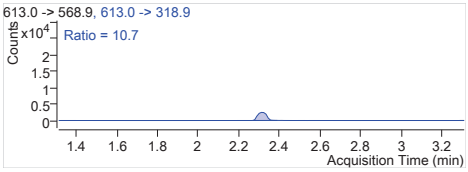

**PFDA 1** 513.0 -> 468.9
RT (Exp. RT): 2.135 (2.135)
Calc. conc. 11.96 µg/L
Area ratio: 5.76977
Sample type: Calibration



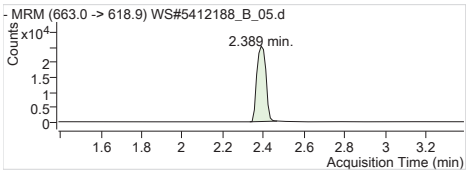



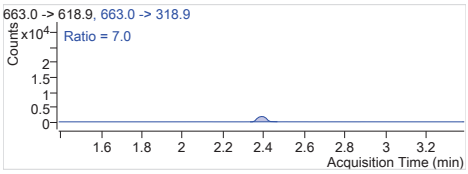

**PFUnA 1** 563.0 -> 518.9
RT (Exp. RT): 2.234 (2.234)
Calc. conc. 12.43 µg/L
Area ratio: 5.61382
Sample type: Calibration



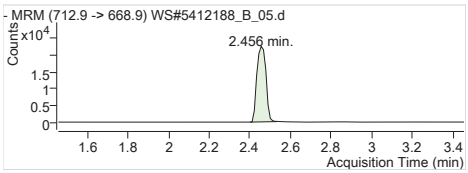



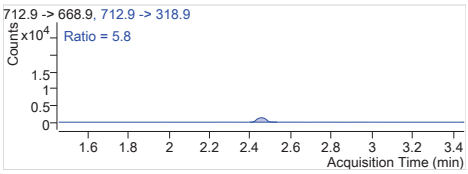

| | |
|---|---|
| **PFDoA 1** | 613.0 -> 568.9 |
| RT (Exp. RT): | 2.311 (2.311) |
| Calc. conc. | 12.14 µg/L |
| Area ratio: | 5.37479 |
| Sample type: | Calibration |



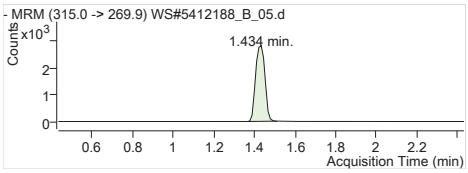



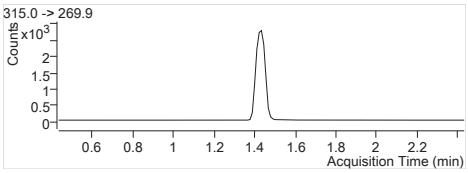

| | |
|---|---|
| **PFTrDA 1** | 663.0 -> 618.9 |
| RT (Exp. RT): | 2.389 (2.389) |
| Calc. conc. | 11.64 µg/L |
| Area ratio: | 5.30176 |
| Sample type: | Calibration |



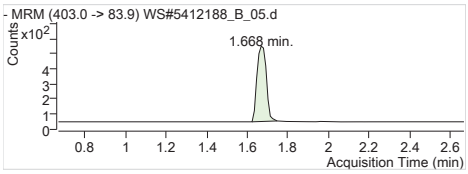



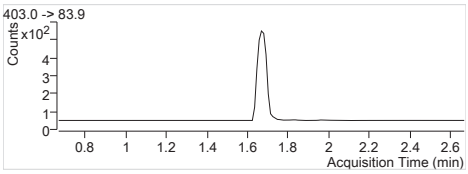

| | |
|---|---|
| **PFTeDA 1** | 712.9 -> 668.9 |
| RT (Exp. RT): | 2.456 (2.456) |
| Calc. conc. | 12.31 µg/L |
| Area ratio: | 4.67493 |
| Sample type: | Calibration |



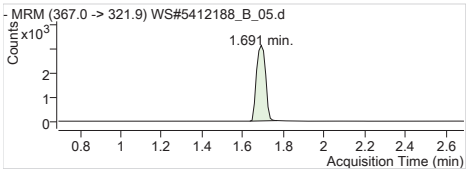



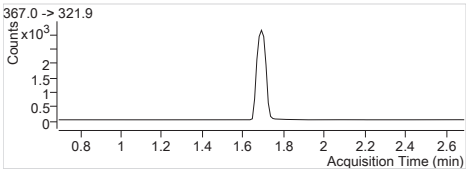

| | |
|---|---|
| **13C2-PFHxA** | 315.0 -> 269.9 |
| RT (Exp. RT): | 1.434 (1.434) |
| Calc. conc. | 113.15 µg/L |
| Area ratio: | 0.28125 |
| Sample type: | Calibration |



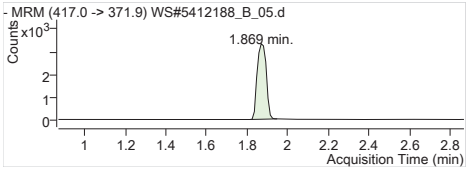



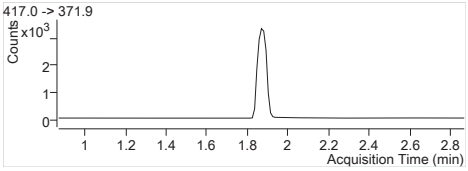

| | |
|---|---|
| **18O2-PFHxS** | 403.0 -> 83.9 |
| RT (Exp. RT): | 1.668 (1.668) |
| Calc. conc. | 98.24 µg/L |
| Area ratio: | 0.05102 |
| Sample type: | Calibration |



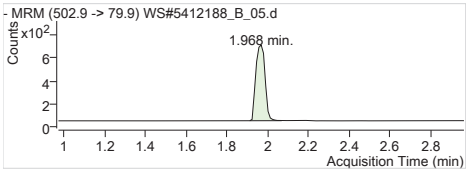



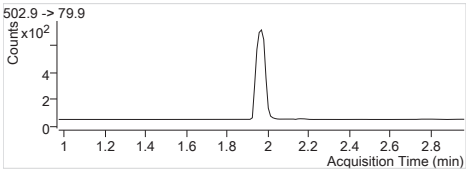

| | |
|---|---|
| **13C4-PFHpA** | 367.0 -> 321.9 |
| RT (Exp. RT): | 1.691 (1.691) |
| Calc. conc. | 106.97 µg/L |
| Area ratio: | 0.30799 |
| Sample type: | Calibration |



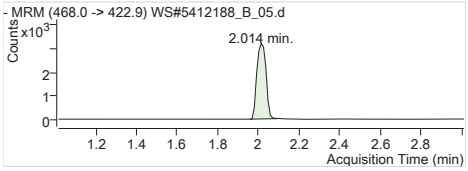



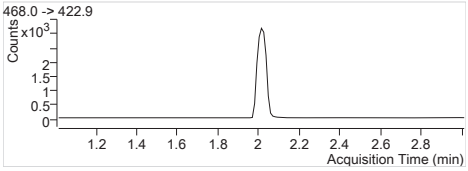

| | |
|---|---|
| **13C4-PFOA** | 417.0 -> 371.9 |
| RT (Exp. RT): | 1.869 (1.869) |
| Calc. conc. | 110.51 µg/L |
| Area ratio: | 0.32820 |
| Sample type: | Calibration |



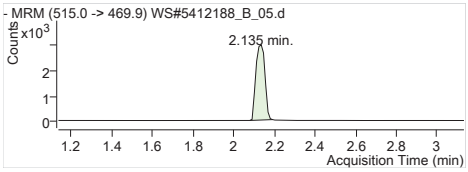



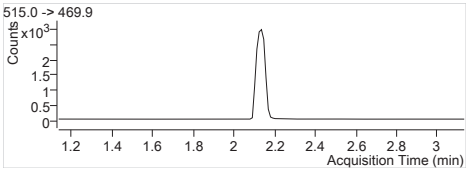

| | |
|---|---|
| **13C4-PFOS** | 502.9 -> 79.9 |
| RT (Exp. RT): | 1.968 (1.968) |
| Calc. conc. | 111.61 µg/L |
| Area ratio: | 0.06711 |
| Sample type: | Calibration |



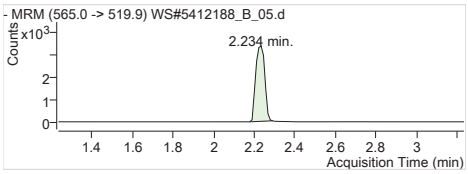



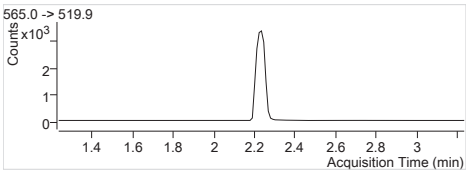

| | |
|---|---|
| **13C5-PFNA** | 468.0 -> 422.9 |
| RT (Exp. RT): | 2.014 (2.014) |
| Calc. conc. | 109.10 µg/L |
| Area ratio: | 0.31381 |
| Sample type: | Calibration |



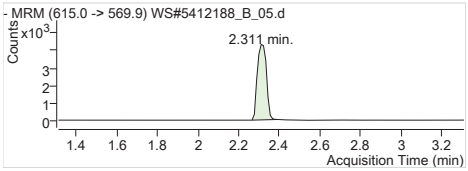



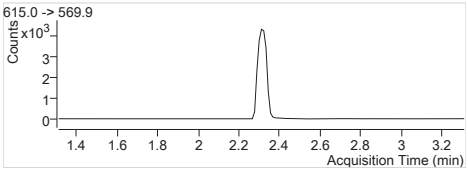

**13C2-PFDA** 515.0 -> 469.9
RT (Exp. RT): 2.135 (2.135)
Calc. conc. 108.07 µg/L
Area ratio: 0.23803
Sample type: Calibration



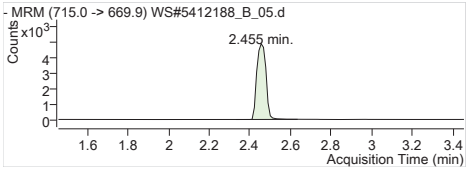



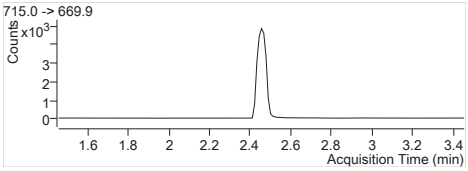

**13C2-PFUnA** 565.0 -> 519.9
RT (Exp. RT): 2.234 (2.234)
Calc. conc. 105.87 µg/L
Area ratio: 0.27117
Sample type: Calibration



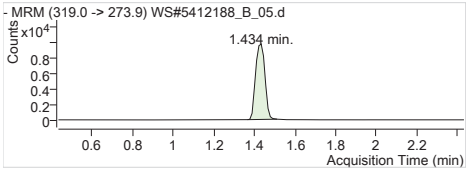



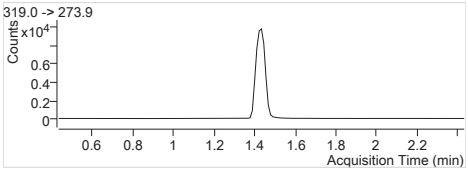

**13C2-PFDoA** 615.0 -> 569.9
RT (Exp. RT): 2.311 (2.311)
Calc. conc. 107.23 µg/L
Area ratio: 0.34795
Sample type: Calibration



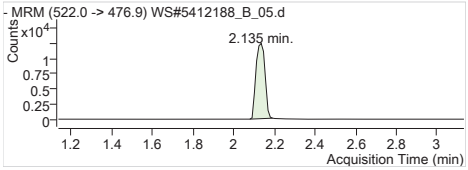



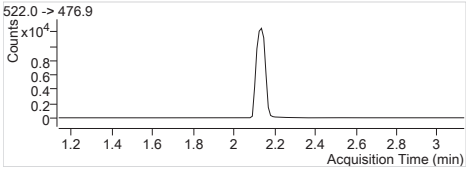

**13C2-PFTeDA** 715.0 -> 669.9
RT (Exp. RT): 2.455 (2.455)
Calc. conc. 110.71 µg/L
Area ratio: 0.39494
Sample type: Calibration




**13C6-PFHxA** 319.0 -> 273.9
RT (Exp. RT): 1.434 (1.434)
Calc. conc. 99.78 µg/L
Area ratio: 0
Sample type: Calibration



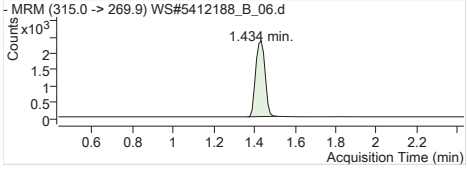

**13C9-PFDA** 522.0 -> 476.9
RT (Exp. RT): 2.135 (2.135)
Calc. conc. 102.68 µg/L
Area ratio: 0
Sample type: Calibration

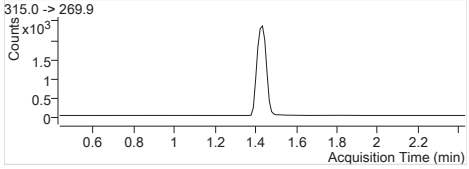
**Batch Path** T:\lcms4\PFC\20180226\WS#5412188_B\QuantResults\PFC_Water_Low_180227_WS#5412188_B_EToxics

| | | | |
|---|---|---|---|
| **Sample Name** | **STD 5** | **Instrument** | LCMS04 |
| **Data File** | WS#5412188_B_06.d | **Operator** | |
| **Sample Type** | Cal | **Dilution** | 1 |
| **Acq. Method** | PFC_Water_Low.m | **Position** | P1-C5 |
| **Acq. Date** | 2018/02/27 1:26:52 PM | **Injection Volume** | Per Method |
| **Sample Annotation** | - | | |

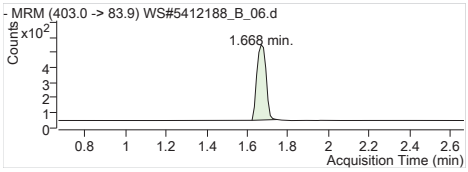
| ISTD Compounds | Response | RT | Target conc. | | |
|---|---|---|---|---|---|
| MPFHxA | 7446 | 1.43 | 1 µg/L | | |
| MPFHxS | 1575 | 1.67 | 1 µg/L | | |
| MPFHpA | 8523 | 1.69 | 1 µg/L | | |
| MPFOA | 9404 | 1.87 | 1 µg/L | | |
| MPFOS | 1767 | 1.97 | 1 µg/L | | |
| MPFNA | 8914 | 2.01 | 1 µg/L | | |
| MPFDA | 8194 | 2.14 | 1 µg/L | | |
| MPFUnA | 9268 | 2.23 | 1 µg/L | | |
| MPFDoA | 11594 | 2.31 | 1 µg/L | | |
| MPFTeDA | 12590 | 2.46 | 1 µg/L | | |
| 13C6-PFHxA IS | 30279 | 1.43 | 1 µg/L | | |
| 13C9-PFDA IS | 35645 | 2.13 | 1 µg/L | | |

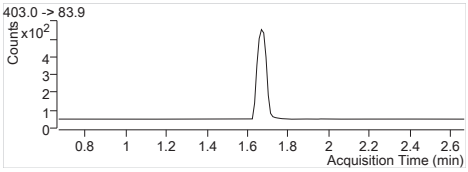
| Compound | Response | RT | Target Conc. | Calc. Conc. | Accuracy |
|---|---|---|---|---|---|
| PFBS 1 | 18716 | 1.09 | 25.00 | 26.35 µg/L | 105.38 |
| PFHxA 1 | 78659 | 1.43 | 25.00 | 25.57 µg/L | 102.29 |
| PFHxS 1 | 17883 | 1.67 | 25.00 | 25.41 µg/L | 101.64 |
| PFHpA 1 | 97076 | 1.69 | 25.00 | 25.13 µg/L | 100.52 |
| PFOA 1 | 98798 | 1.87 | 25.00 | 23.21 µg/L | 92.83 |
| PFOS 1 | 17681 | 1.96 | 25.00 | 24.02 µg/L | 96.08 |
| PFNA 1 | 88434 | 2.01 | 25.00 | 23.12 µg/L | 92.48 |
| PFDA 1 | 97888 | 2.14 | 25.00 | 24.90 µg/L | 99.58 |
| PFUnA 1 | 101812 | 2.23 | 25.00 | 24.39 µg/L | 97.55 |
| PFDoA 1 | 128788 | 2.31 | 25.00 | 25.15 µg/L | 100.59 |
| PFTrDA 1 | 145384 | 2.39 | 25.00 | 25.48 µg/L | 101.92 |
| PFTeDA 1 | 116270 | 2.46 | 25.00 | 24.41 µg/L | 97.64 |
| 13C2-PFHxA | 7446 | 1.43 | 100.00 | 98.93 µg/L | 98.93 |
| 18O2-PFHxS | 1575 | 1.67 | 100.00 | 100.17 µg/L | 100.17 |
| 13C4-PFHpA | 8523 | 1.69 | 100.00 | 97.77 µg/L | 97.77 |
| 13C4-PFOA | 9404 | 1.87 | 100.00 | 104.58 µg/L | 104.58 |
| 13C4-PFOS | 1767 | 1.97 | 100.00 | 97.06 µg/L | 97.06 |
| 13C5-PFNA | 8915 | 2.01 | 100.00 | 102.36 µg/L | 102.36 |
| 13C2-PFDA | 7987 | 2.14 | 100.00 | 101.74 µg/L | 101.74 |
| 13C2-PFUnA | 9268 | 2.23 | 100.00 | 101.52 µg/L | 101.52 |
| 13C2-PFDoA | 11594 | 2.31 | 100.00 | 100.24 µg/L | 100.24 |
| 13C2-PFTeDA | 12748 | 2.46 | 100.00 | 100.26 µg/L | 100.26 |
| 13C6-PFHxA | 30279 | 1.43 | 100.00 | 96.64 µg/L | 96.64 |
| 13C9-PFDA | 35645 | 2.13 | 100.00 | 95.65 µg/L | 95.65 |



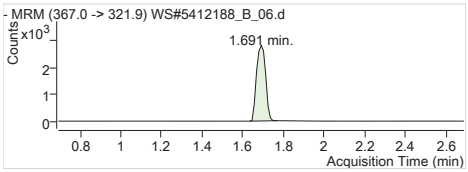



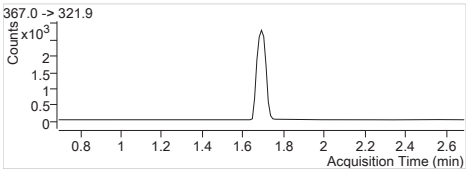

**MPFHxA** Internal Standard
RT (Exp. RT): 1.434 (1.434)
Concentration: 1 µg/L
Sample type: Calibration



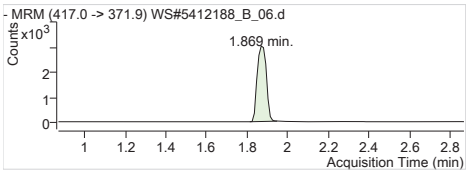



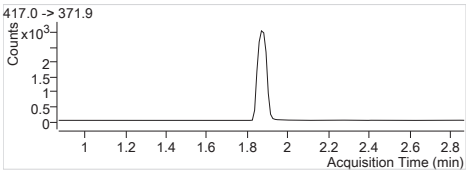

**MPFHxS** Internal Standard
RT (Exp. RT): 1.668 (1.668)
Concentration: 1 µg/L
Sample type: Calibration



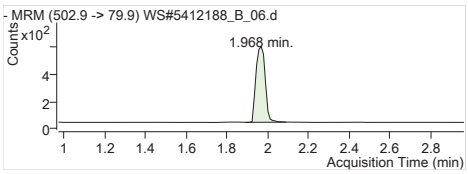



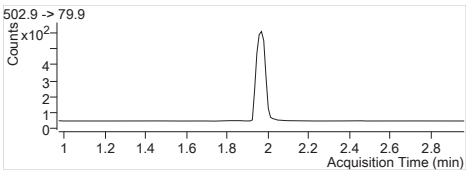

**MPFHpA** Internal Standard
RT (Exp. RT): 1.691 (1.691)
Concentration: 1 µg/L
Sample type: Calibration



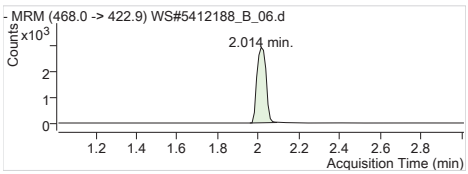



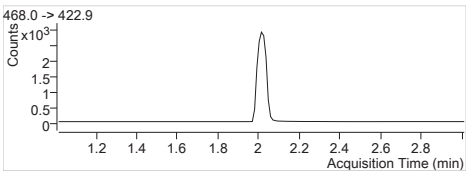

**MPFOA** Internal Standard
RT (Exp. RT): 1.869 (1.869)
Concentration: 1 µg/L
Sample type: Calibration



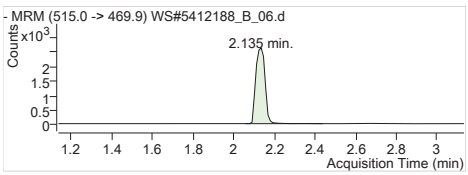



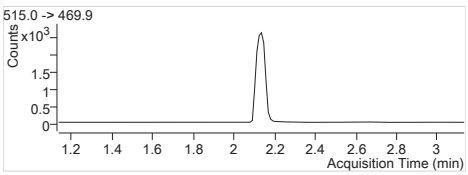

**MPFOS** Internal Standard
RT (Exp. RT): 1.968 (1.968)
Concentration: 1 µg/L
Sample type: Calibration



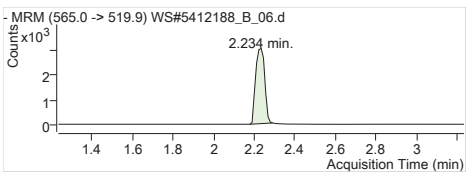



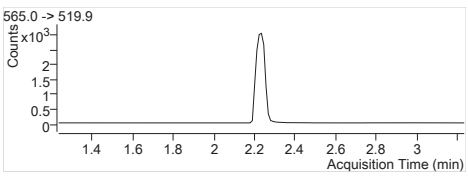

**MPFNA** Internal Standard
RT (Exp. RT): 2.014 (2.014)
Concentration: 1 µg/L
Sample type: Calibration



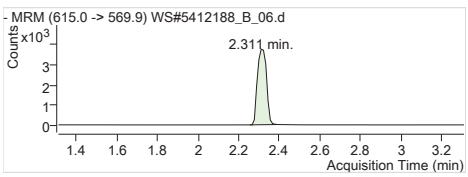



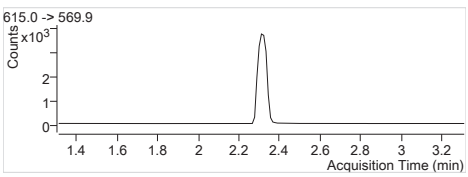

**MPFDA** Internal Standard
RT (Exp. RT): 2.135 (2.135)
Concentration: 1 µg/L
Sample type: Calibration



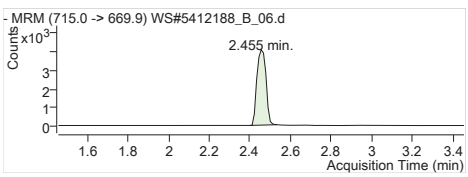



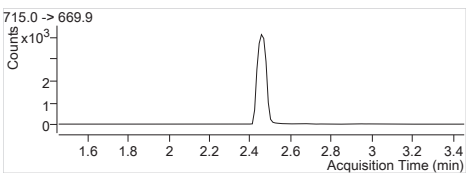

**MPFUnA** Internal Standard
RT (Exp. RT): 2.234 (2.234)
Concentration: 1 µg/L
Sample type: Calibration



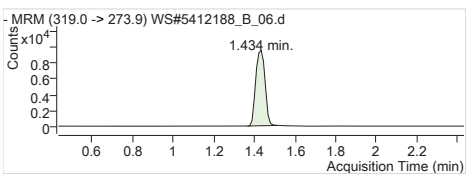



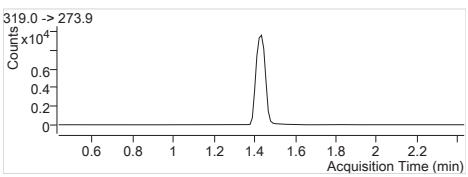

**MPFDoA** Internal Standard
RT (Exp. RT): 2.311 (2.311)
Concentration: 1 µg/L
Sample type: Calibration



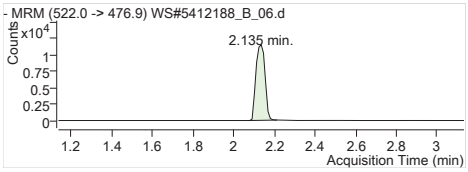



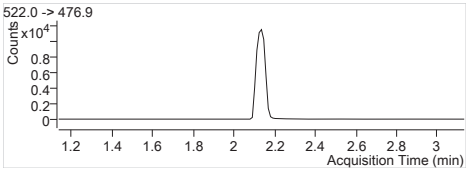

**MPFTeDA** Internal Standard
RT (Exp. RT): 2.455 (2.455)
Concentration: 1 µg/L
Sample type: Calibration



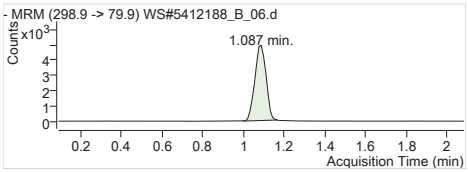



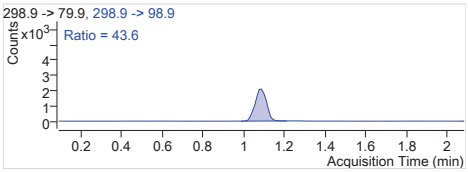

**13C6-PFHxA IS** Internal Standard
RT (Exp. RT): 1.434 (1.434)
Concentration: 1 µg/L
Sample type: Calibration



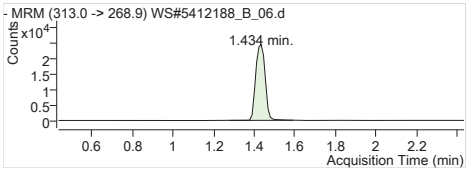



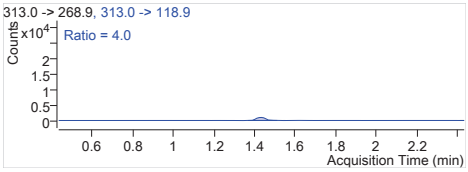

**13C9-PFDA IS** Internal Standard
RT (Exp. RT): 2.135 (2.135)
Concentration: 1 µg/L
Sample type: Calibration



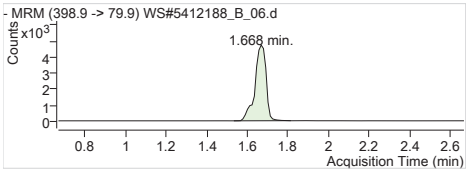



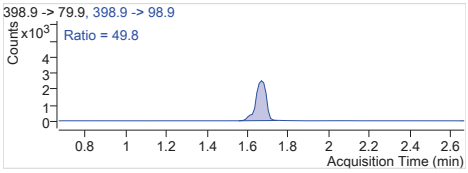

**PFBS 1** 298.9 -> 79.9
RT (Exp. RT): 1.087 (1.087)
Calc. conc. 26.35 µg/L
Area ratio: 11.88317
Sample type: Calibration



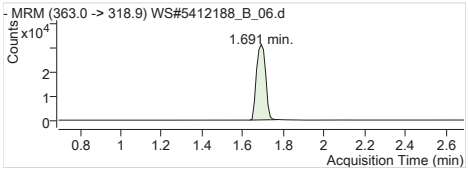



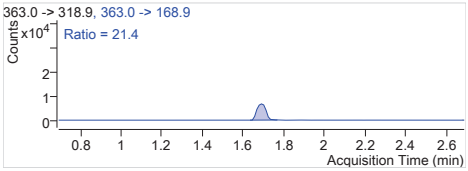

**PFHxA 1** 313.0 -> 268.9
RT (Exp. RT): 1.434 (1.434)
Calc. conc. 25.57 µg/L
Area ratio: 10.56393
Sample type: Calibration



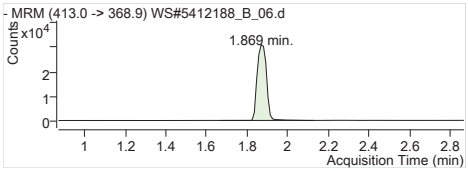



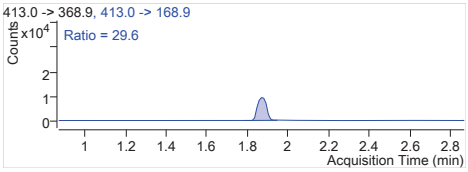

**PFHxS 1** 398.9 -> 79.9
RT (Exp. RT): 1.668 (1.668)
Calc. conc. 25.41 µg/L
Area ratio: 11.35429
Sample type: Calibration



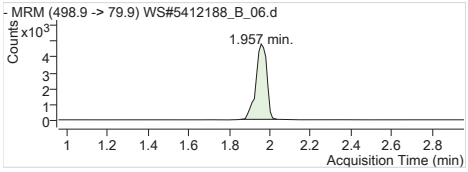



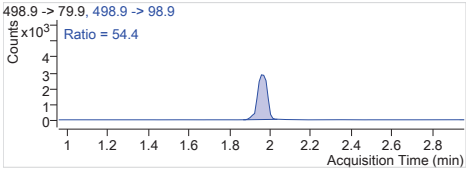

**PFHpA 1** 363.0 -> 318.9
RT (Exp. RT): 1.691 (1.691)
Calc. conc. 25.13 µg/L
Area ratio: 11.38989
Sample type: Calibration



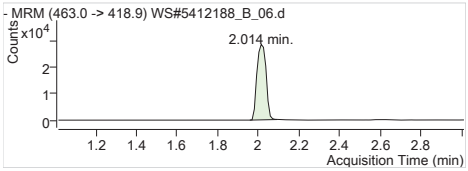



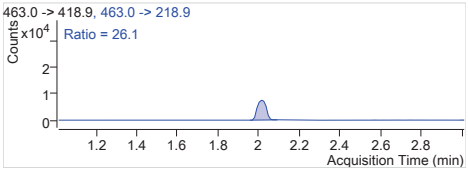

**PFOA 1** 413.0 -> 368.9
RT (Exp. RT): 1.869 (1.869)
Calc. conc. 23.21 µg/L
Area ratio: 10.50595
Sample type: Calibration



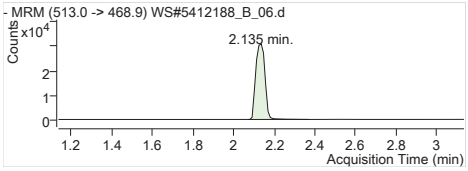



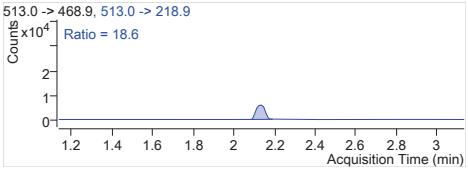

**PFOS 1** 498.9 -> 79.9
RT (Exp. RT): 1.957 (1.957)
Calc. conc. 24.02 µg/L
Area ratio: 10.00623
Sample type: Calibration



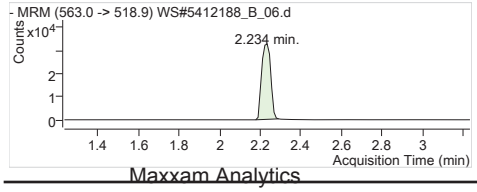



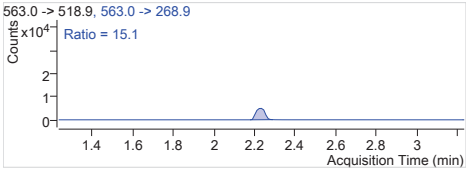

**PFNA 1** 463.0 -> 418.9
RT (Exp. RT): 2.014 (2.014)
Calc. conc. 23.12 µg/L
Area ratio: 9.92080
Sample type: Calibration



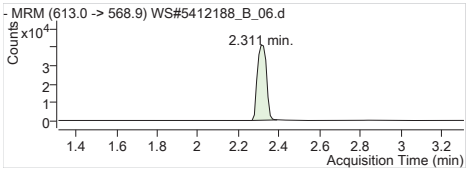



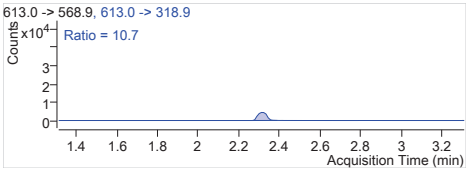

**PFDA 1** 513.0 -> 468.9
RT (Exp. RT): 2.135 (2.135)
Calc. conc. 24.90 µg/L
Area ratio: 11.94630
Sample type: Calibration



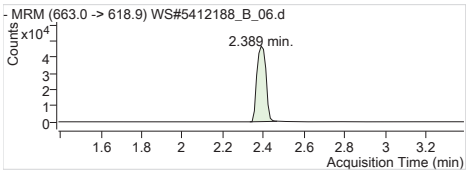



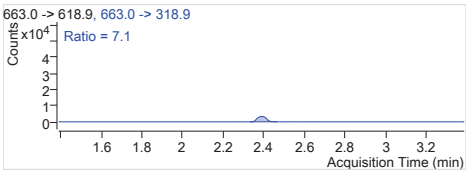

**PFUnA 1** 563.0 -> 518.9
RT (Exp. RT): 2.234 (2.234)
Calc. conc. 24.39 µg/L
Area ratio: 10.98533
Sample type: Calibration



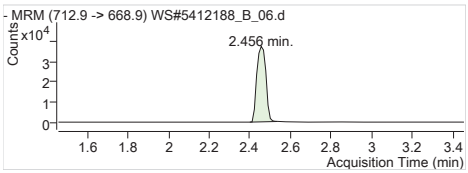



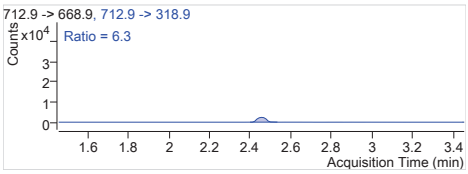

| | |
|---|---|
| **PFDoA 1** | 613.0 -> 568.9 |
| RT (Exp. RT): | 2.311 (2.311) |
| Calc. conc. | 25.15 µg/L |
| Area ratio: | 11.10816 |
| Sample type: | Calibration |



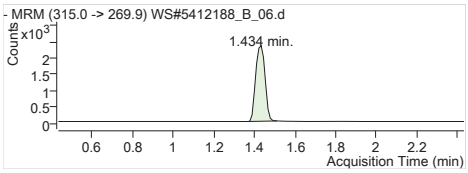



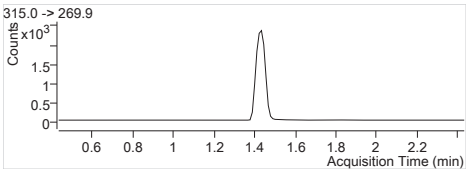

| | |
|---|---|
| **PFTrDA 1** | 663.0 -> 618.9 |
| RT (Exp. RT): | 2.389 (2.389) |
| Calc. conc. | 25.48 µg/L |
| Area ratio: | 11.54758 |
| Sample type: | Calibration |



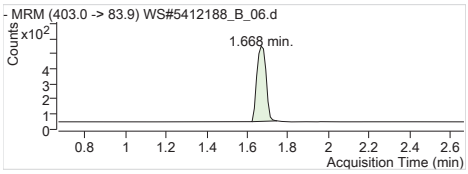



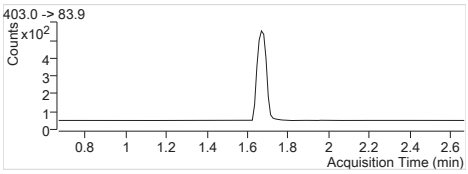

| | |
|---|---|
| **PFTeDA 1** | 712.9 -> 668.9 |
| RT (Exp. RT): | 2.456 (2.456) |
| Calc. conc. | 24.41 µg/L |
| Area ratio: | 9.23511 |
| Sample type: | Calibration |



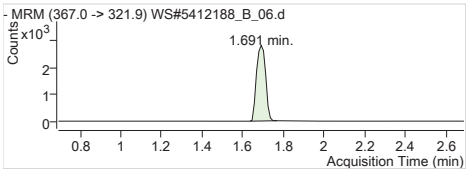



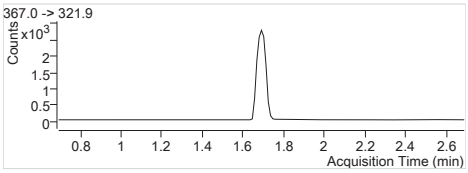

| | |
|---|---|
| **13C2-PFHxA** | 315.0 -> 269.9 |
| RT (Exp. RT): | 1.434 (1.434) |
| Calc. conc. | 98.93 µg/L |
| Area ratio: | 0.24591 |
| Sample type: | Calibration |



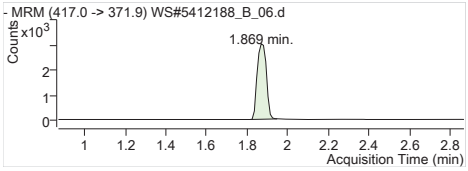



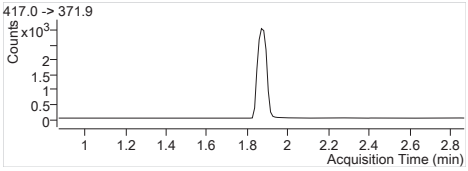

| | |
|---|---|
| **18O2-PFHxS** | 403.0 -> 83.9 |
| RT (Exp. RT): | 1.668 (1.668) |
| Calc. conc. | 100.17 µg/L |
| Area ratio: | 0.05202 |
| Sample type: | Calibration |



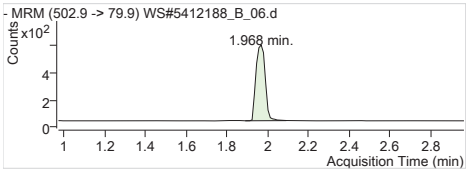



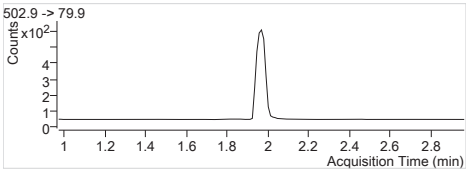

| | |
|---|---|
| **13C4-PFHpA** | 367.0 -> 321.9 |
| RT (Exp. RT): | 1.691 (1.691) |
| Calc. conc. | 97.77 µg/L |
| Area ratio: | 0.28148 |
| Sample type: | Calibration |



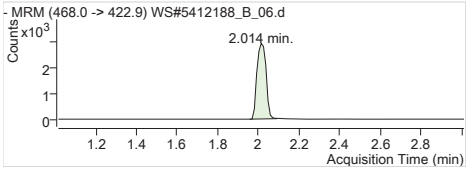



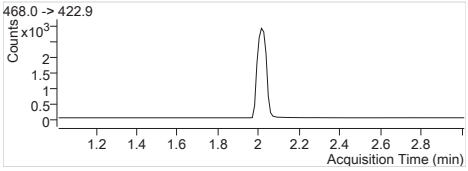

| | |
|---|---|
| **13C4-PFOA** | 417.0 -> 371.9 |
| RT (Exp. RT): | 1.869 (1.869) |
| Calc. conc. | 104.58 µg/L |
| Area ratio: | 0.31058 |
| Sample type: | Calibration |



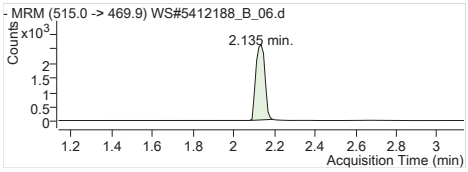



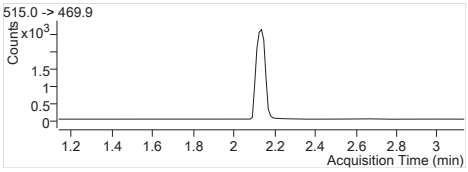

| | |
|---|---|
| **13C4-PFOS** | 502.9 -> 79.9 |
| RT (Exp. RT): | 1.968 (1.968) |
| Calc. conc. | 97.06 µg/L |
| Area ratio: | 0.05836 |
| Sample type: | Calibration |



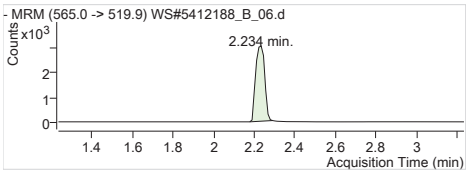



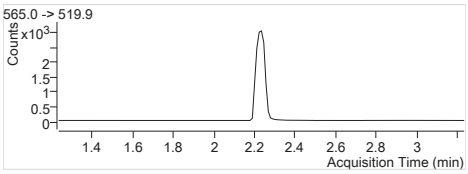

| | |
|---|---|
| **13C5-PFNA** | 468.0 -> 422.9 |
| RT (Exp. RT): | 2.014 (2.014) |
| Calc. conc. | 102.36 µg/L |
| Area ratio: | 0.29443 |
| Sample type: | Calibration |



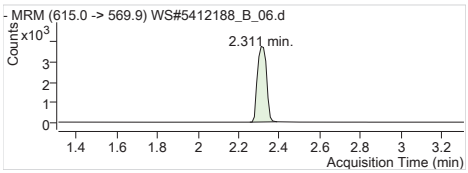



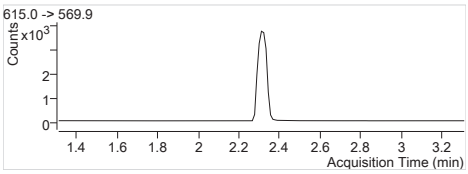

**13C2-PFDA** 515.0 -> 469.9
RT (Exp. RT): 2.135 (2.135)
Calc. conc. 101.74 µg/L
Area ratio: 0.22407
Sample type: Calibration



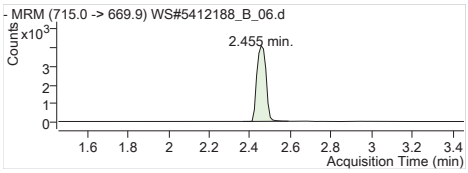



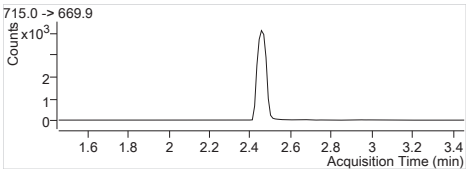

**13C2-PFUnA** 565.0 -> 519.9
RT (Exp. RT): 2.234 (2.234)
Calc. conc. 101.52 µg/L
Area ratio: 0.26001
Sample type: Calibration



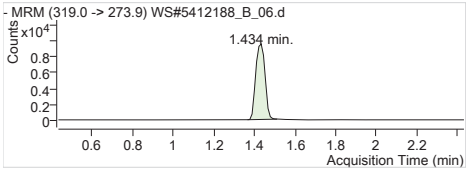



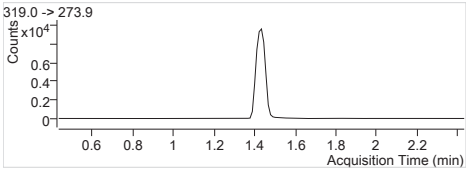

**13C2-PFDoA** 615.0 -> 569.9
RT (Exp. RT): 2.311 (2.311)
Calc. conc. 100.24 µg/L
Area ratio: 0.32526
Sample type: Calibration



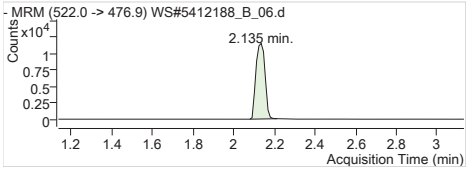



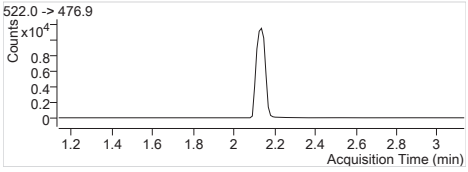

**13C2-PFTeDA** 715.0 -> 669.9
RT (Exp. RT): 2.455 (2.455)
Calc. conc. 100.26 µg/L
Area ratio: 0.35764
Sample type: Calibration




**13C6-PFHxA** 319.0 -> 273.9
RT (Exp. RT): 1.434 (1.434)
Calc. conc. 96.64 µg/L
Area ratio: 0
Sample type: Calibration



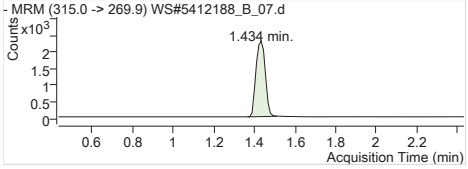

**13C9-PFDA** 522.0 -> 476.9
RT (Exp. RT): 2.135 (2.135)
Calc. conc. 95.65 µg/L
Area ratio: 0
Sample type: Calibration

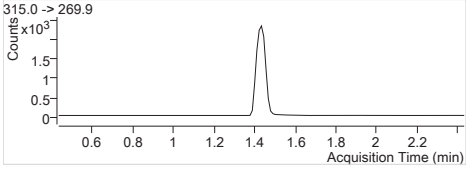
**Batch Path** T:\lcms4\PFC\20180226\WS#5412188_B\QuantResults\PFC_Water_Low_180227_WS#5412188_B_EToxics

| | | | |
|---|---|---|---|
| **Sample Name** | **STD 6** | **Instrument** | LCMS04 |
| **Data File** | WS#5412188_B_07.d | **Operator** | |
| **Sample Type** | Cal | **Dilution** | 1 |
| **Acq. Method** | PFC_Water_Low.m | **Position** | P1-C6 |
| **Acq. Date** | 2018/02/27 1:31:47 PM | **Injection Volume** | Per Method |
| **Sample Annotation** | - | | |

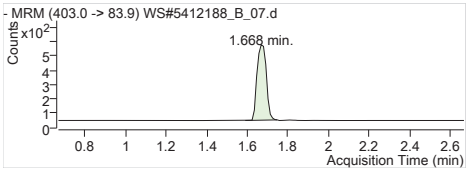
| ISTD Compounds | Response | RT | Target conc. | | |
|---|---|---|---|---|---|
| MPFHxA | 7292 | 1.43 | 1 µg/L | | |
| MPFHxS | 1676 | 1.67 | 1 µg/L | | |
| MPFHpA | 8073 | 1.69 | 1 µg/L | | |
| MPFOA | 8193 | 1.87 | 1 µg/L | | |
| MPFOS | 1591 | 1.97 | 1 µg/L | | |
| MPFNA | 7857 | 2.01 | 1 µg/L | | |
| MPFDA | 7771 | 2.14 | 1 µg/L | | |
| MPFUnA | 8634 | 2.23 | 1 µg/L | | |
| MPFDoA | 11384 | 2.31 | 1 µg/L | | |
| MPFTeDA | 12326 | 2.46 | 1 µg/L | | |
| 13C6-PFHxA IS | 29288 | 1.43 | 1 µg/L | | |
| 13C9-PFDA IS | 33940 | 2.13 | 1 µg/L | | |

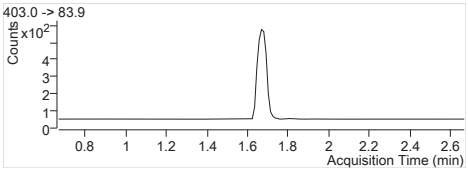
| Compound | Response | RT | Target Conc. | Calc. Conc. | Accuracy |
|---|---|---|---|---|---|
| PFBS 1 | 29181 | 1.09 | 41.70 | 38.69 µg/L | 92.78 |
| PFHxA 1 | 125050 | 1.43 | 41.70 | 41.58 µg/L | 99.72 |
| PFHxS 1 | 29756 | 1.67 | 41.70 | 39.82 µg/L | 95.50 |
| PFHpA 1 | 152095 | 1.69 | 41.70 | 41.60 µg/L | 99.75 |
| PFOA 1 | 160551 | 1.87 | 41.70 | 43.39 µg/L | 104.06 |
| PFOS 1 | 29013 | 1.96 | 41.70 | 43.63 µg/L | 104.62 |
| PFNA 1 | 148789 | 2.01 | 41.70 | 44.15 µg/L | 105.88 |
| PFDA 1 | 155246 | 2.14 | 41.70 | 41.72 µg/L | 100.04 |
| PFUnA 1 | 164051 | 2.23 | 41.70 | 42.23 µg/L | 101.28 |
| PFDoA 1 | 209885 | 2.31 | 41.70 | 41.78 µg/L | 100.18 |
| PFTrDA 1 | 231192 | 2.39 | 41.70 | 41.45 µg/L | 99.41 |
| PFTeDA 1 | 190672 | 2.46 | 41.70 | 40.96 µg/L | 98.22 |
| 13C2-PFHxA | 7292 | 1.43 | 100.00 | 100.16 µg/L | 100.16 |
| 18O2-PFHxS | 1676 | 1.67 | 100.00 | 110.20 µg/L | 110.20 |
| 13C4-PFHpA | 8073 | 1.69 | 100.00 | 95.74 µg/L | 95.74 |
| 13C4-PFOA | 8193 | 1.87 | 100.00 | 94.19 µg/L | 94.19 |
| 13C4-PFOS | 1591 | 1.97 | 100.00 | 90.35 µg/L | 90.35 |
| 13C5-PFNA | 7857 | 2.01 | 100.00 | 93.26 µg/L | 93.26 |
| 13C2-PFDA | 7771 | 2.14 | 100.00 | 103.96 µg/L | 103.96 |
| 13C2-PFUnA | 8634 | 2.23 | 100.00 | 99.32 µg/L | 99.32 |
| 13C2-PFDoA | 11384 | 2.31 | 100.00 | 103.37 µg/L | 103.37 |
| 13C2-PFTeDA | 12507 | 2.46 | 100.00 | 103.30 µg/L | 103.30 |
| 13C6-PFHxA | 29288 | 1.43 | 100.00 | 93.48 µg/L | 93.48 |
| 13C9-PFDA | 33940 | 2.13 | 100.00 | 91.08 µg/L | 91.08 |



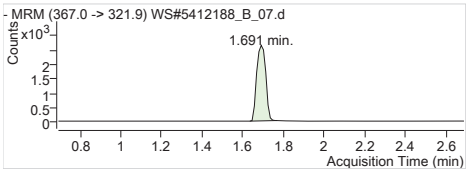



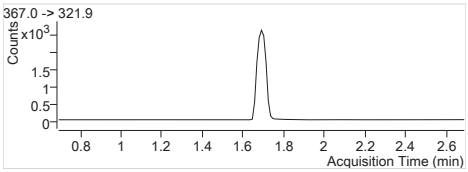

| | |
|---|---|
| **MPFHxA** | Internal Standard |
| RT (Exp. RT): | 1.434 (1.434) |
| Concentration: | 1 µg/L |
| Sample type: | Calibration |



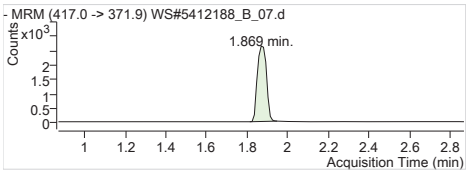



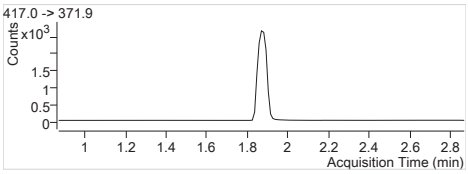

**MPFHxS** Internal Standard
RT (Exp. RT): 1.668 (1.668)
Concentration: 1 µg/L
Sample type: Calibration



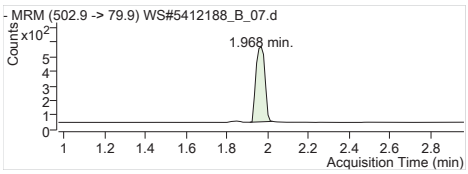



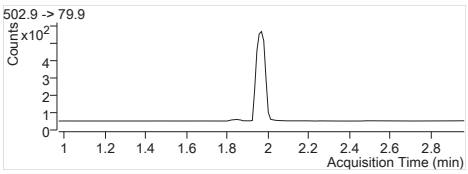

**MPFHpA** Internal Standard
RT (Exp. RT): 1.691 (1.691)
Concentration: 1 µg/L
Sample type: Calibration



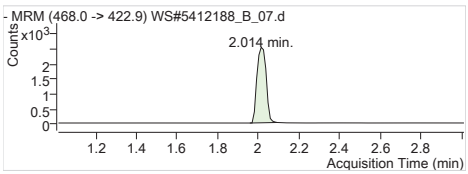



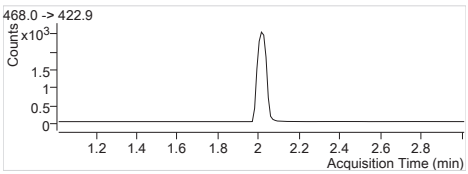

**MPFOA** Internal Standard
RT (Exp. RT): 1.869 (1.869)
Concentration: 1 µg/L
Sample type: Calibration



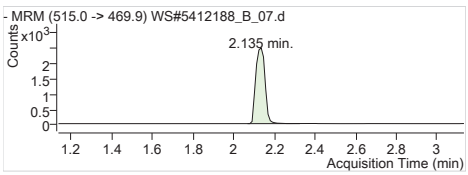



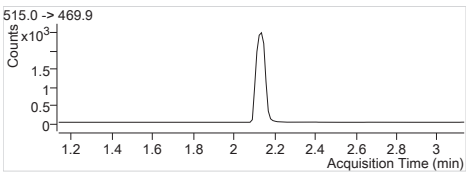

**MPFOS** Internal Standard
RT (Exp. RT): 1.968 (1.968)
Concentration: 1 µg/L
Sample type: Calibration



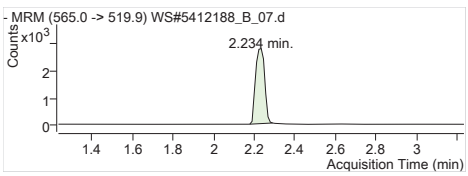



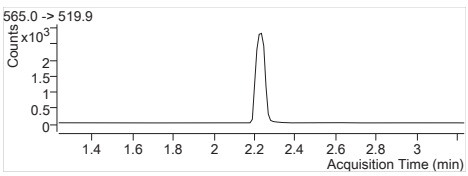

**MPFNA** Internal Standard
RT (Exp. RT): 2.014 (2.014)
Concentration: 1 µg/L
Sample type: Calibration



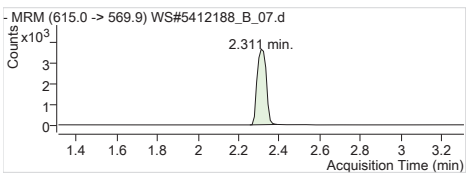



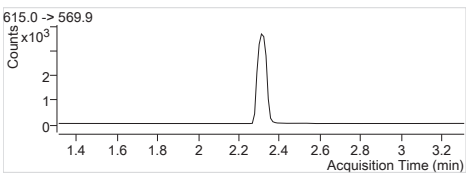

**MPFDA** Internal Standard
RT (Exp. RT): 2.135 (2.135)
Concentration: 1 µg/L
Sample type: Calibration



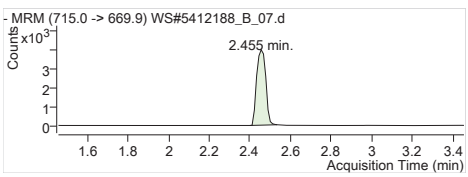



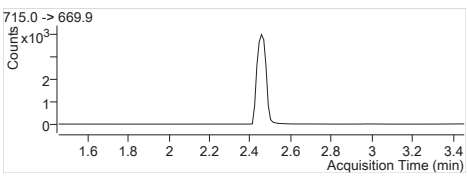

**MPFUnA** Internal Standard
RT (Exp. RT): 2.234 (2.234)
Concentration: 1 µg/L
Sample type: Calibration



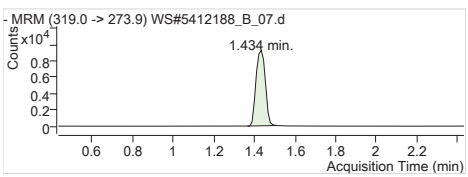



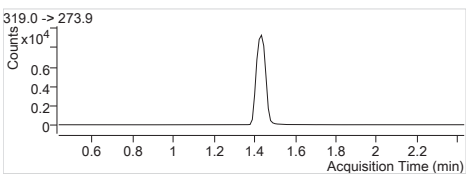

**MPFDoA** Internal Standard
RT (Exp. RT): 2.311 (2.311)
Concentration: 1 µg/L
Sample type: Calibration



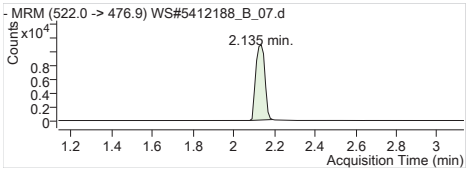



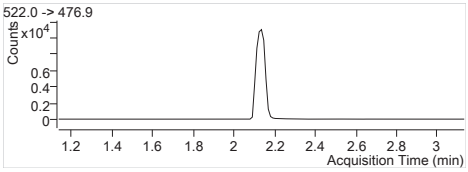

**MPFTeDA** Internal Standard
RT (Exp. RT): 2.455 (2.455)
Concentration: 1 µg/L
Sample type: Calibration



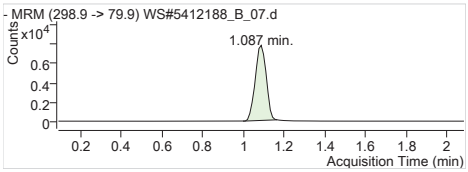



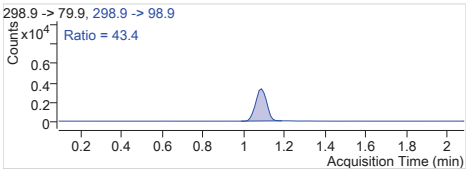

**13C6-PFHxA IS** Internal Standard
RT (Exp. RT): 1.434 (1.434)
Concentration: 1 µg/L
Sample type: Calibration



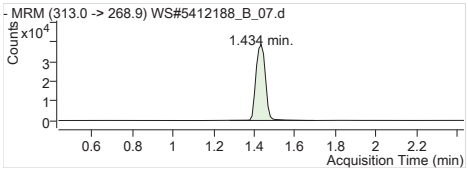



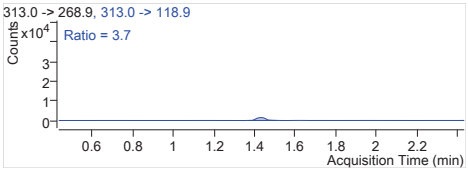

**13C9-PFDA IS** Internal Standard
RT (Exp. RT): 2.135 (2.135)
Concentration: 1 µg/L
Sample type: Calibration



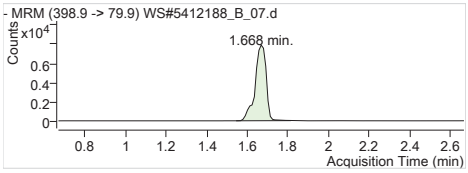



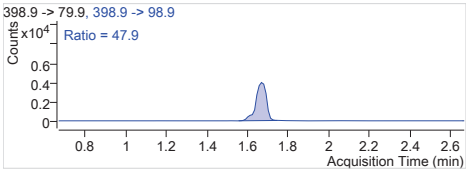

**PFBS 1** 298.9 -> 79.9
RT (Exp. RT): 1.087 (1.087)
Calc. conc. 38.69 µg/L
Area ratio: 17.41110
Sample type: Calibration



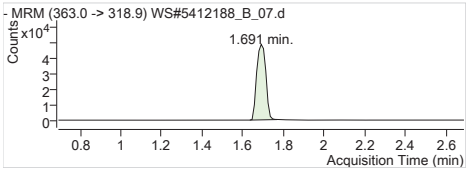



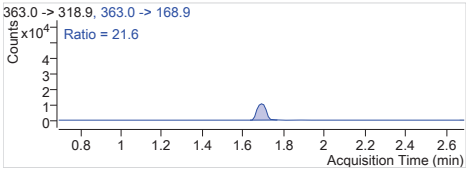

**PFHxA 1** 313.0 -> 268.9
RT (Exp. RT): 1.434 (1.434)
Calc. conc. 41.58 µg/L
Area ratio: 17.14893
Sample type: Calibration



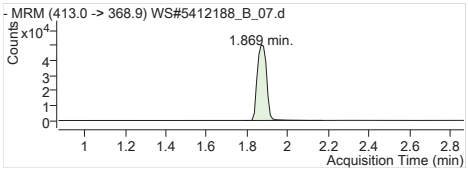



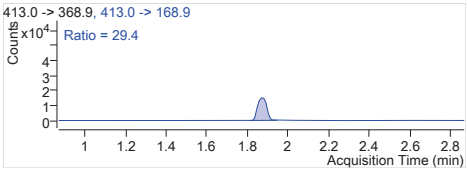

**PFHxS 1** 398.9 -> 79.9
RT (Exp. RT): 1.668 (1.668)
Calc. conc. 39.82 µg/L
Area ratio: 17.75418
Sample type: Calibration



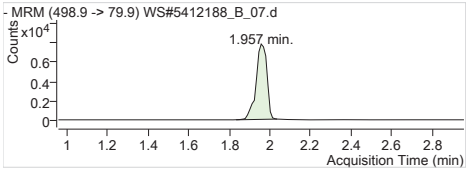



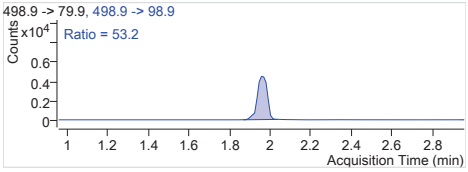

**PFHpA 1** 363.0 -> 318.9
RT (Exp. RT): 1.691 (1.691)
Calc. conc. 41.60 µg/L
Area ratio: 18.83996
Sample type: Calibration



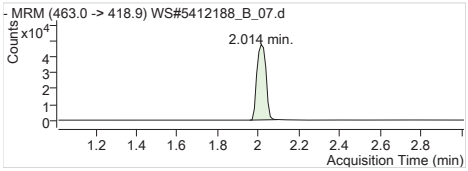



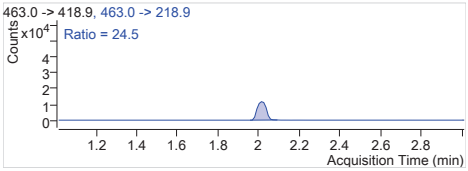

**PFOA 1** 413.0 -> 368.9
RT (Exp. RT): 1.869 (1.869)
Calc. conc. 43.39 µg/L
Area ratio: 19.59612
Sample type: Calibration



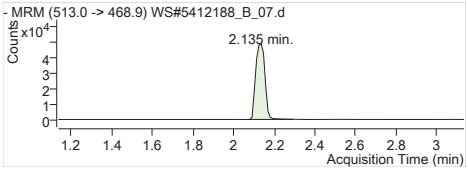



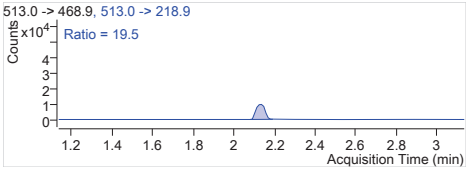

**PFOS 1** 498.9 -> 79.9
RT (Exp. RT): 1.957 (1.957)
Calc. conc. 43.63 µg/L
Area ratio: 18.23570
Sample type: Calibration



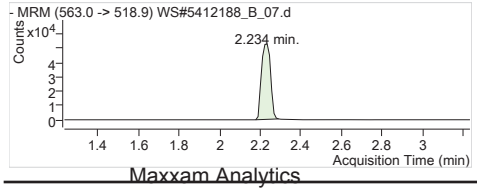



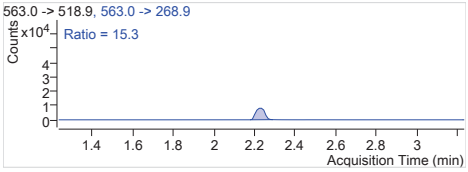

**PFNA 1** 463.0 -> 418.9
RT (Exp. RT): 2.014 (2.014)
Calc. conc. 44.15 µg/L
Area ratio: 18.93713
Sample type: Calibration



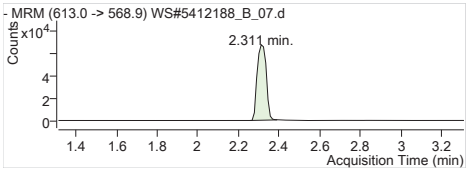



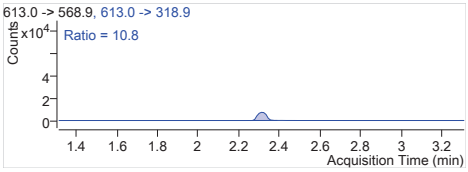

**PFDA 1** 513.0 -> 468.9
RT (Exp. RT): 2.135 (2.135)
Calc. conc. 41.72 µg/L
Area ratio: 19.97761
Sample type: Calibration



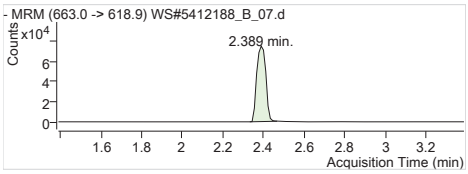



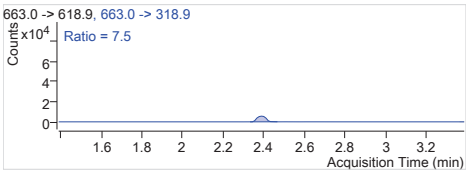

**PFUnA 1** 563.0 -> 518.9
RT (Exp. RT): 2.234 (2.234)
Calc. conc. 42.23 µg/L
Area ratio: 19.00058
Sample type: Calibration



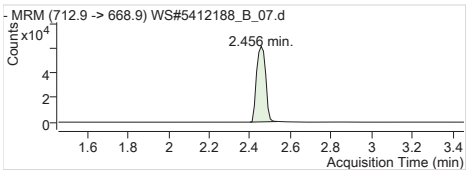



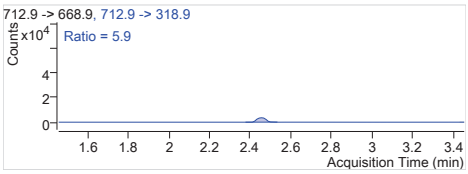

| | |
|---|---|
| **PFDoA 1** | 613.0 -> 568.9 |
| RT (Exp. RT): | 2.311 (2.311) |
| Calc. conc. | 41.78 µg/L |
| Area ratio: | 18.43684 |
| Sample type: | Calibration |



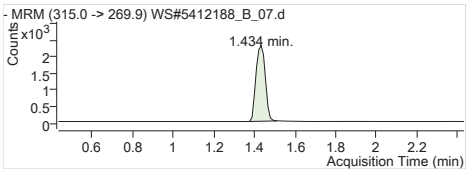



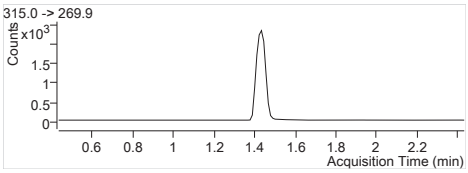

| | |
|---|---|
| **PFTrDA 1** | 663.0 -> 618.9 |
| RT (Exp. RT): | 2.389 (2.389) |
| Calc. conc. | 41.45 µg/L |
| Area ratio: | 18.75645 |
| Sample type: | Calibration |



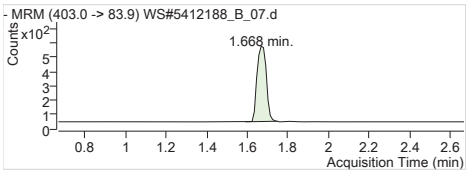



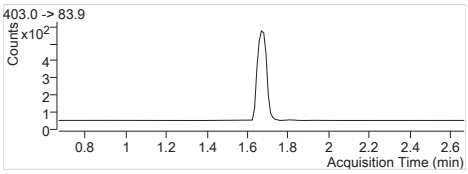

| | |
|---|---|
| **PFTeDA 1** | 712.9 -> 668.9 |
| RT (Exp. RT): | 2.456 (2.456) |
| Calc. conc. | 40.96 µg/L |
| Area ratio: | 15.46909 |
| Sample type: | Calibration |



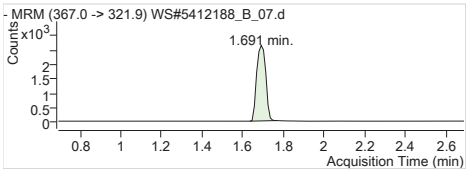



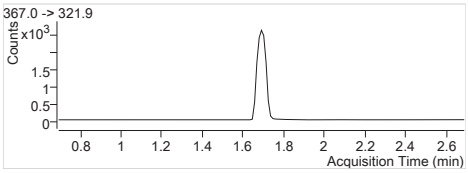

| | |
|---|---|
| **13C2-PFHxA** | 315.0 -> 269.9 |
| RT (Exp. RT): | 1.434 (1.434) |
| Calc. conc. | 100.16 µg/L |
| Area ratio: | 0.24898 |
| Sample type: | Calibration |



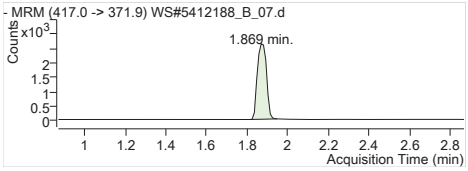



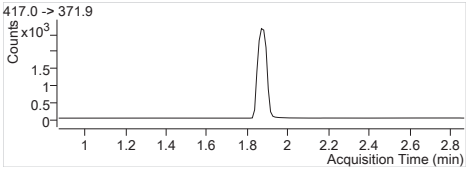

| | |
|---|---|
| **18O2-PFHxS** | 403.0 -> 83.9 |
| RT (Exp. RT): | 1.668 (1.668) |
| Calc. conc. | 110.20 µg/L |
| Area ratio: | 0.05722 |
| Sample type: | Calibration |



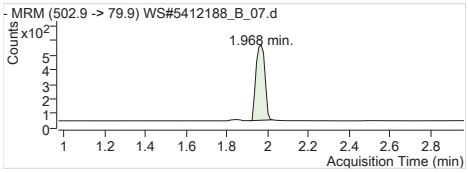



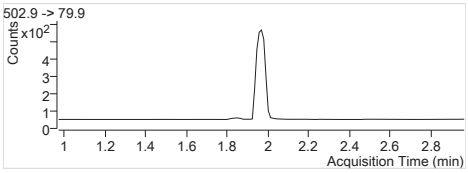

| | |
|---|---|
| **13C4-PFHpA** | 367.0 -> 321.9 |
| RT (Exp. RT): | 1.691 (1.691) |
| Calc. conc. | 95.74 µg/L |
| Area ratio: | 0.27564 |
| Sample type: | Calibration |



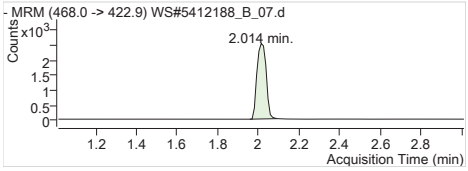



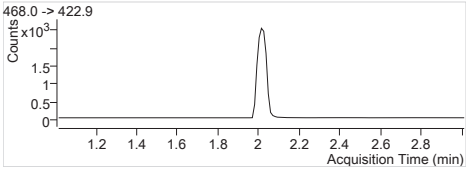

| | |
|---|---|
| **13C4-PFOA** | 417.0 -> 371.9 |
| RT (Exp. RT): | 1.869 (1.869) |
| Calc. conc. | 94.19 µg/L |
| Area ratio: | 0.27974 |
| Sample type: | Calibration |



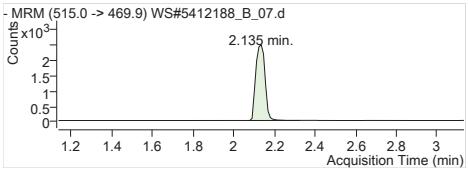



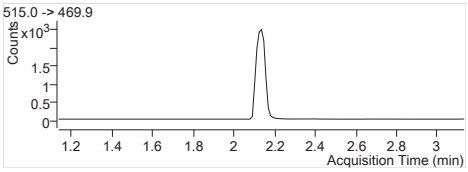

| | |
|---|---|
| **13C4-PFOS** | 502.9 -> 79.9 |
| RT (Exp. RT): | 1.968 (1.968) |
| Calc. conc. | 90.35 µg/L |
| Area ratio: | 0.05432 |
| Sample type: | Calibration |



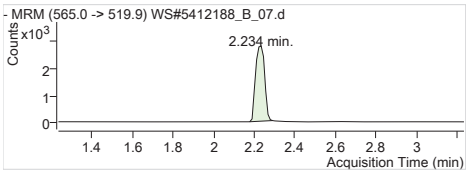



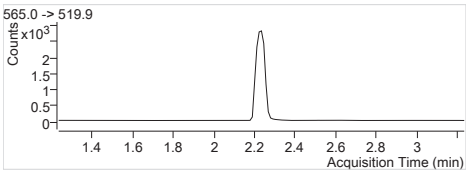

| | |
|---|---|
| **13C5-PFNA** | 468.0 -> 422.9 |
| RT (Exp. RT): | 2.014 (2.014) |
| Calc. conc. | 93.26 µg/L |
| Area ratio: | 0.26827 |
| Sample type: | Calibration |



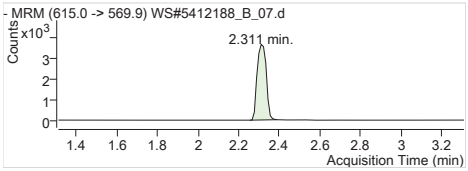



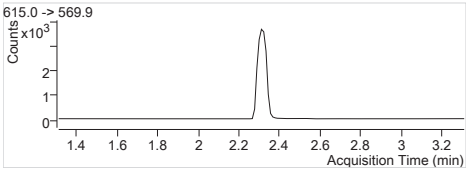

**13C2-PFDA** 515.0 -> 469.9
RT (Exp. RT): 2.135 (2.135)
Calc. conc. 103.96 µg/L
Area ratio: 0.22896
Sample type: Calibration



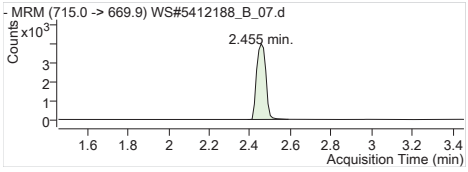



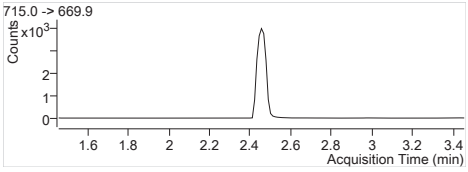

**13C2-PFUnA** 565.0 -> 519.9
RT (Exp. RT): 2.234 (2.234)
Calc. conc. 99.32 µg/L
Area ratio: 0.25439
Sample type: Calibration



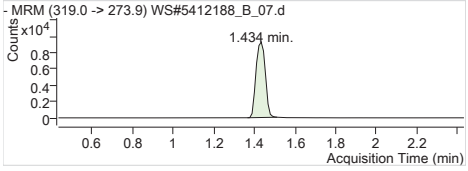



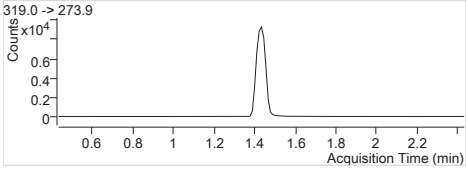

**13C2-PFDoA** 615.0 -> 569.9
RT (Exp. RT): 2.311 (2.311)
Calc. conc. 103.37 µg/L
Area ratio: 0.33542
Sample type: Calibration



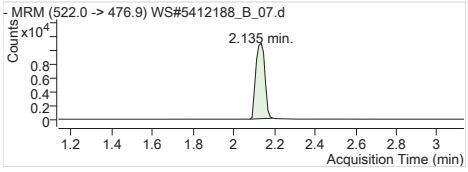



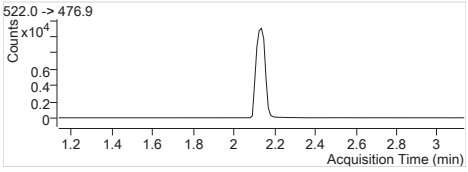

**13C2-PFTeDA** 715.0 -> 669.9
RT (Exp. RT): 2.455 (2.455)
Calc. conc. 103.30 µg/L
Area ratio: 0.36850
Sample type: Calibration




**13C6-PFHxA** 319.0 -> 273.9
RT (Exp. RT): 1.434 (1.434)
Calc. conc. 93.48 µg/L
Area ratio: 0
Sample type: Calibration



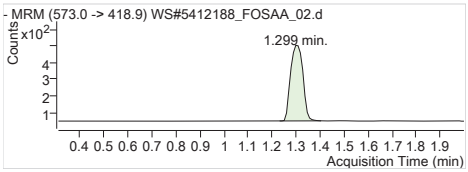

**13C9-PFDA** 522.0 -> 476.9
RT (Exp. RT): 2.135 (2.135)
Calc. conc. 91.08 µg/L
Area ratio: 0
Sample type: Calibration

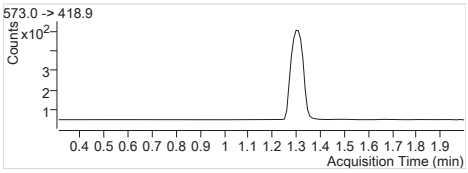
| | |
|---|---|
| **Batch Path** | T:\lcms4\PFC\20180226\WS#5412188_FOSAA\QuantResults\PFC_Water_Low_180226_WS#5412188_FOSAA_ETOxics |

| | | | |
|---|---|---|---|
| **Sample Name** | **STD 1** | **Instrument** | LCMS04 |
| **Data File** | WS#5412188_FOSAA_02.d | **Operator** | |
| **Sample Type** | Cal | **Dilution** | 1 |
| **Acq. Method** | PFC_Water_Low_FOSAA.m | **Position** | P1-C1 |
| **Acq. Date** | 2018/02/27 4:39:34 AM | **Injection Volume** | Per Method |
| **Sample Annotation** | - | | |

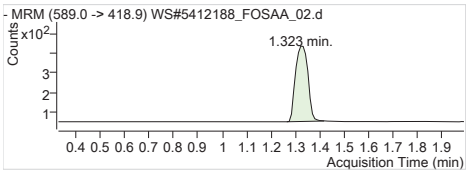
| ISTD Compounds | Response | RT | Target conc. | | |
|---|---|---|---|---|---|
| D3-MeFOSAA IS | 1628 | 1.30 | 1 µg/L | | |
| D5-EtFOSAA IS | 1380 | 1.32 | 1 µg/L | | |
| 13C9-PFDA IS | 28124 | 0.89 | 1 µg/L | | |

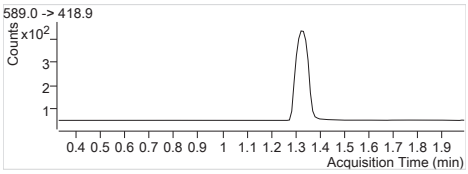
| Compound | Response | RT | Target Conc. | Calc. Conc. | Accuracy |
|---|---|---|---|---|---|
| MeFOSAA 1 | 587 | 1.30 | 0.83 | 0.81 µg/L | 97.32 |
| EtFOSAA 1 | 574 | 1.32 | 0.83 | 0.80 µg/L | 96.97 |
| D3-MeFOSAA | 1628 | 1.30 | 100.00 | 95.17 µg/L | 95.17 |
| D5-EtFOSAA | 1399 | 1.32 | 100.00 | 96.05 µg/L | 96.05 |
| 13C9-PFDA | 27647 | 0.89 | 100.00 | 108.74 µg/L | 108.74 |



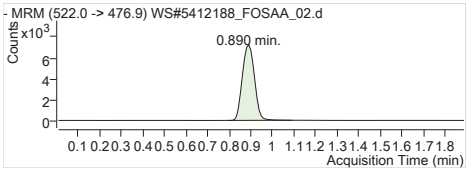



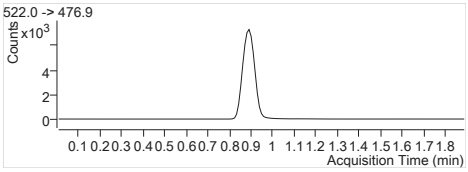

**D3-MeFOSAA IS** Internal Standard
RT (Exp. RT): 1.299 (1.308)
Concentration: 1 µg/L
Sample type: Calibration



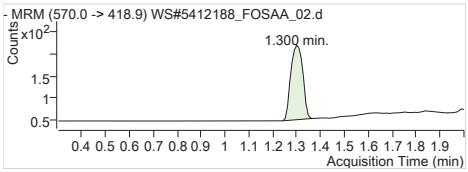



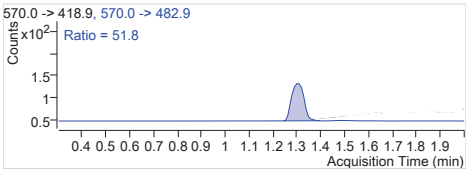

**D5-EtFOSAA IS** Internal Standard
RT (Exp. RT): 1.323 (1.323)
Concentration: 1 µg/L
Sample type: Calibration



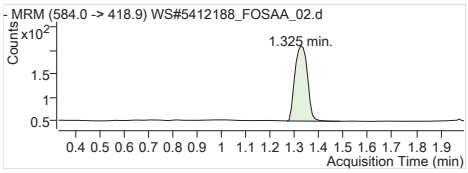



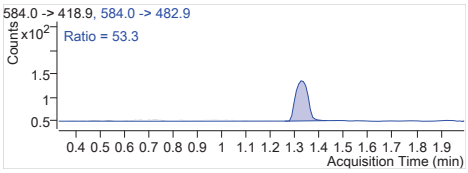

**13C9-PFDA IS** Internal Standard
RT (Exp. RT): 0.890 (0.890)
Concentration: 1 µg/L
Sample type: Calibration



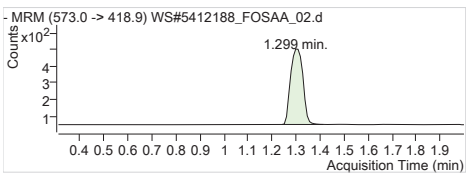



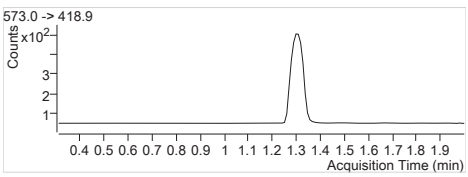

**MeFOSAA 1** 570.0 -> 418.9
RT (Exp. RT): 1.300 (1.300)
Calc. conc. 0.81 µg/L
Area ratio: 0.36057
Sample type: Calibration



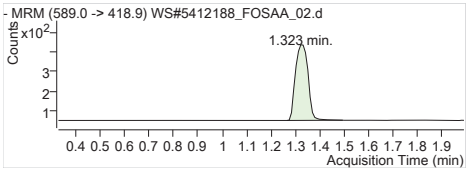



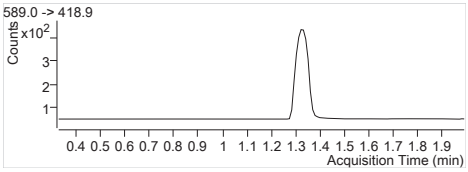

**EtFOSAA 1** 584.0 -> 418.9
RT (Exp. RT): 1.325 (1.325)
Calc. conc. 0.80 µg/L
Area ratio: 0.41594
Sample type: Calibration



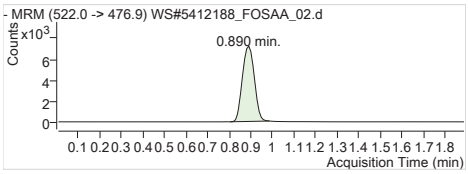



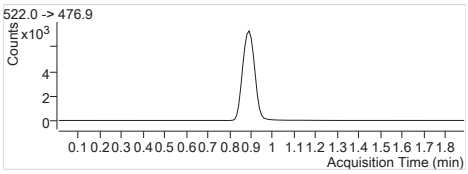

**D3-MeFOSAA** 573.0 -> 418.9
RT (Exp. RT): 1.299 (1.308)
Calc. conc. 95.17 µg/L
Area ratio: 0.05789
Sample type: Calibration




| | |
|---|---|
| **D5-EtFOSAA** | 589.0 -> 418.9 |
| RT (Exp. RT): | 1.323 (1.323) |
| Calc. conc. | 96.05 µg/L |
| Area ratio: | 0.04974 |
| Sample type: | Calibration |



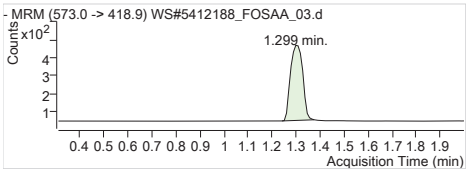

| | |
|---|---|
| **13C9-PFDA** | 522.0 -> 476.9 |
| RT (Exp. RT): | 0.890 (0.890) |
| Calc. conc. | 108.74 µg/L |
| Area ratio: | 0 |
| Sample type: | Calibration |

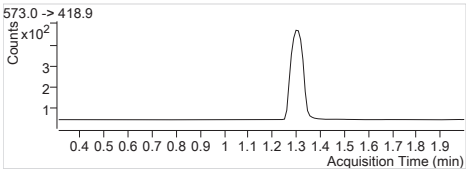
| | |
|---|---|
| **Batch Path** | T:\lcms4\PFC\20180226\WS#5412188_FOSAA\QuantResults\PFC_Water_Low_180226_WS#5412188_FOSAA_ETOxics |

| | | | |
|---|---|---|---|
| **Sample Name** | **STD 2** | **Instrument** | LCMS04 |
| **Data File** | WS#5412188_FOSAA_03.d | **Operator** | |
| **Sample Type** | Cal | **Dilution** | 1 |
| **Acq. Method** | PFC_Water_Low_FOSAA.m | **Position** | P1-C2 |
| **Acq. Date** | 2018/02/27 4:41:57 AM | **Injection Volume** | Per Method |
| **Sample Annotation** | - | | |

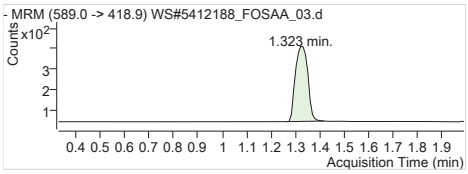
| ISTD Compounds | Response | RT | Target conc. | | |
|---|---|---|---|---|---|
| D3-MeFOSAA IS | 1478 | 1.30 | 1 µg/L | | |
| D5-EtFOSAA IS | 1289 | 1.32 | 1 µg/L | | |
| 13C9-PFDA IS | 25773 | 0.89 | 1 µg/L | | |

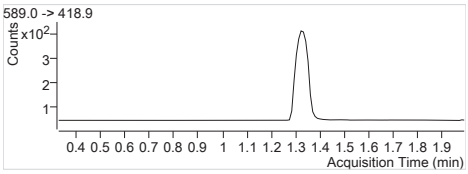
| Compound | Response | RT | Target Conc. | Calc. Conc. | Accuracy |
|---|---|---|---|---|---|
| MeFOSAA 1 | 1047 | 1.30 | 1.70 | 1.74 µg/L | 102.11 |
| EtFOSAA 1 | 1053 | 1.32 | 1.70 | 1.72 µg/L | 101.11 |
| D3-MeFOSAA | 1506 | 1.30 | 100.00 | 96.07 µg/L | 96.07 |
| D5-EtFOSAA | 1300 | 1.32 | 100.00 | 97.39 µg/L | 97.39 |
| 13C9-PFDA | 25053 | 0.89 | 100.00 | 98.53 µg/L | 98.53 |



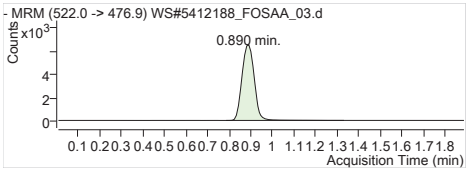



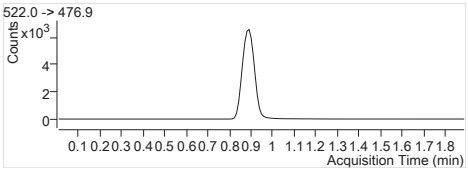

**D3-MeFOSAA IS** Internal Standard
RT (Exp. RT): 1.299 (1.308)
Concentration: 1 µg/L
Sample type: Calibration



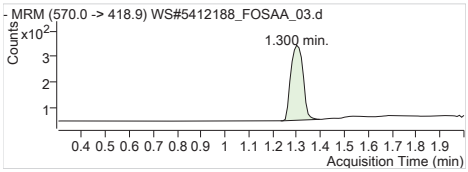



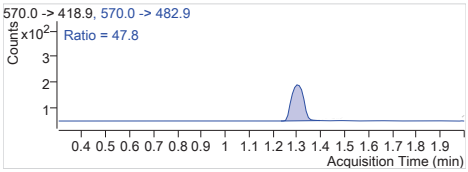

**D5-EtFOSAA IS** Internal Standard
RT (Exp. RT): 1.323 (1.323)
Concentration: 1 µg/L
Sample type: Calibration



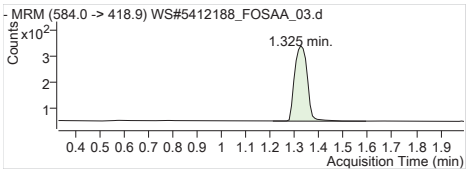



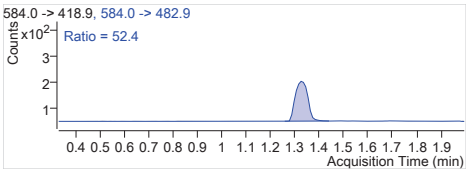

**13C9-PFDA IS** Internal Standard
RT (Exp. RT): 0.890 (0.890)
Concentration: 1 µg/L
Sample type: Calibration



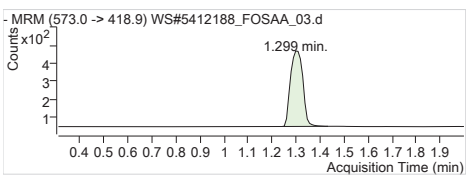



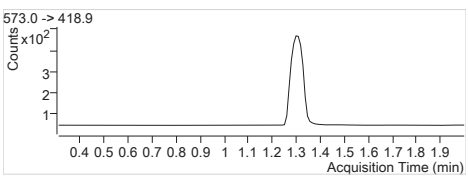

**MeFOSAA 1** 570.0 -> 418.9
RT (Exp. RT): 1.300 (1.300)
Calc. conc. 1.74 µg/L
Area ratio: 0.70839
Sample type: Calibration



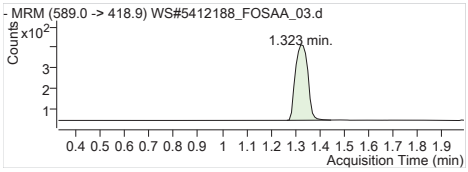



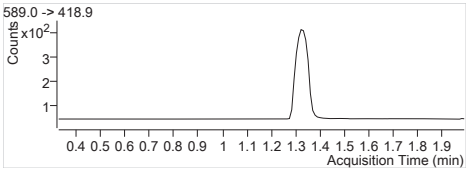

**EtFOSAA 1** 584.0 -> 418.9
RT (Exp. RT): 1.325 (1.325)
Calc. conc. 1.72 µg/L
Area ratio: 0.81691
Sample type: Calibration



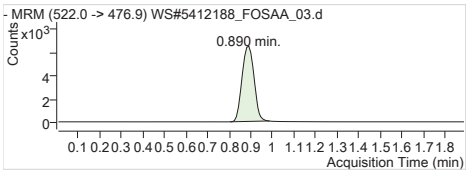



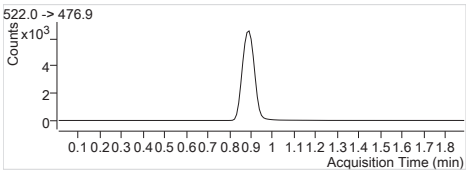

**D3-MeFOSAA** 573.0 -> 418.9
RT (Exp. RT): 1.299 (1.308)
Calc. conc. 96.07 µg/L
Area ratio: 0.05843
Sample type: Calibration




| | |
|---|---|
| **D5-EtFOSAA** | 589.0 -> 418.9 |
| RT (Exp. RT): | 1.323 (1.323) |
| Calc. conc. | 97.39 µg/L |
| Area ratio: | 0.05044 |
| Sample type: | Calibration |



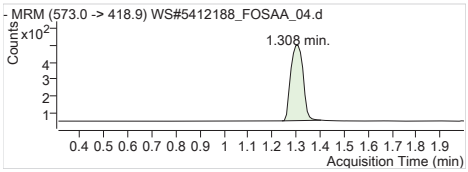

| | |
|---|---|
| **13C9-PFDA** | 522.0 -> 476.9 |
| RT (Exp. RT): | 0.890 (0.890) |
| Calc. conc. | 98.53 µg/L |
| Area ratio: | 0 |
| Sample type: | Calibration |

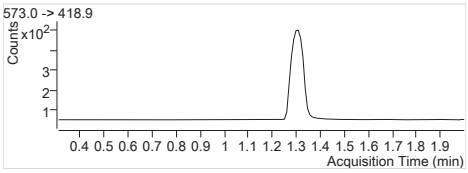
| | |
|---|---|
| **Batch Path** | T:\lcms4\PFC\20180226\WS#5412188_FOSAA\QuantResults\PFC_Water_Low_180226_WS#5412188_FOSAA_ETOxics |

| | | | |
|---|---|---|---|
| **Sample Name** | **STD 3** | **Instrument** | LCMS04 |
| **Data File** | WS#5412188_FOSAA_04.d | **Operator** | |
| **Sample Type** | Cal | **Dilution** | 1 |
| **Acq. Method** | PFC_Water_Low_FOSAA.m | **Position** | P1-C3 |
| **Acq. Date** | 2018/02/27 4:44:22 AM | **Injection Volume** | Per Method |
| **Sample Annotation** | - | | |

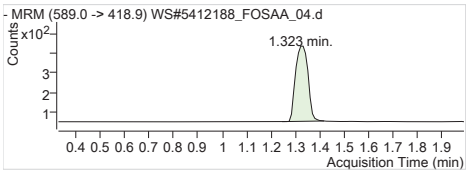
| ISTD Compounds | Response | RT | Target conc. | | |
|---|---|---|---|---|---|
| D3-MeFOSAA IS | 1614 | 1.31 | 1 µg/L | | |
| D5-EtFOSAA IS | 1391 | 1.32 | 1 µg/L | | |
| 13C9-PFDA IS | 26607 | 0.89 | 1 µg/L | | |

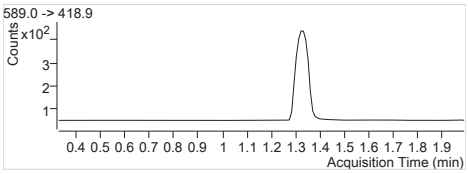
| Compound | Response | RT | Target Conc. | Calc. Conc. | Accuracy |
|---|---|---|---|---|---|
| MeFOSAA 1 | 3256 | 1.30 | 5.00 | 5.23 µg/L | 104.58 |
| EtFOSAA 1 | 3227 | 1.32 | 5.00 | 5.14 µg/L | 102.90 |
| D3-MeFOSAA | 1642 | 1.31 | 100.00 | 101.46 µg/L | 101.46 |
| D5-EtFOSAA | 1404 | 1.32 | 100.00 | 101.89 µg/L | 101.89 |
| 13C9-PFDA | 26021 | 0.89 | 100.00 | 102.34 µg/L | 102.34 |



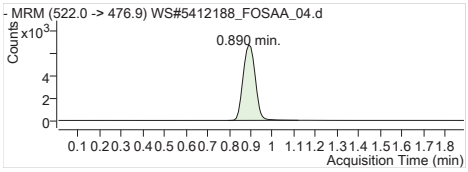



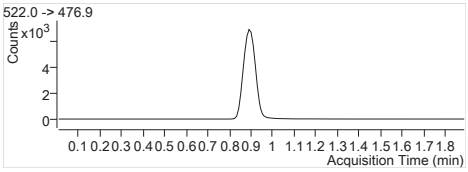

**D3-MeFOSAA IS** Internal Standard
RT (Exp. RT): 1.308 (1.308)
Concentration: 1 µg/L
Sample type: Calibration



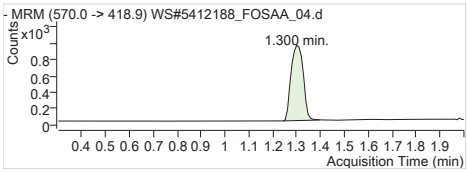



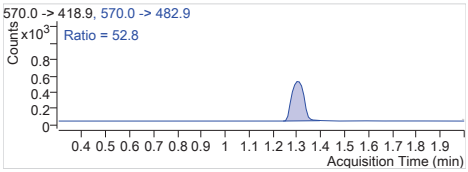

**D5-EtFOSAA IS** Internal Standard
RT (Exp. RT): 1.323 (1.323)
Concentration: 1 µg/L
Sample type: Calibration



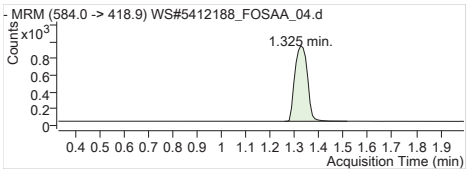



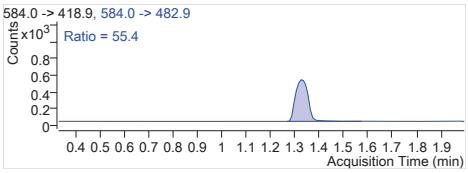

**13C9-PFDA IS** Internal Standard
RT (Exp. RT): 0.890 (0.890)
Concentration: 1 µg/L
Sample type: Calibration



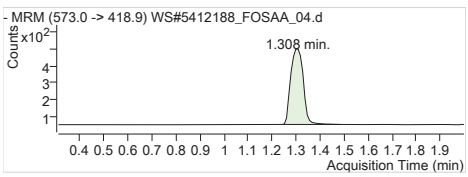



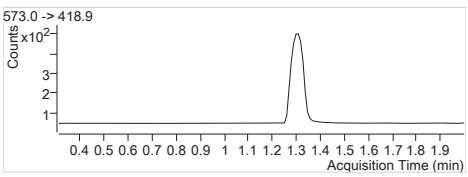

**MeFOSAA 1** 570.0 -> 418.9
RT (Exp. RT): 1.300 (1.300)
Calc. conc. 5.23 µg/L
Area ratio: 2.01735
Sample type: Calibration



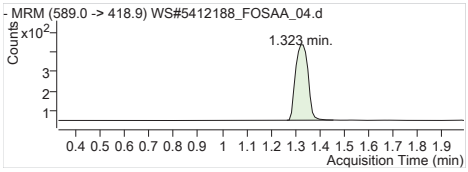



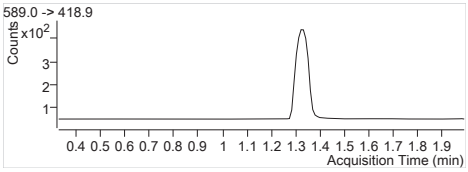

**EtFOSAA 1** 584.0 -> 418.9
RT (Exp. RT): 1.325 (1.325)
Calc. conc. 5.14 µg/L
Area ratio: 2.31991
Sample type: Calibration



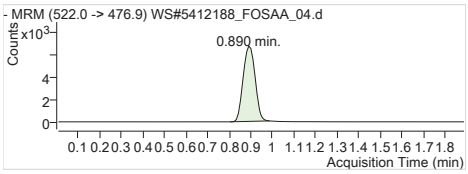



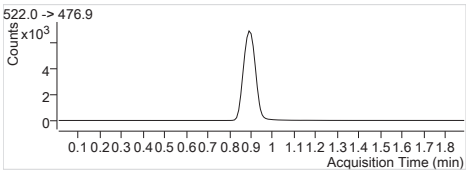

**D3-MeFOSAA** 573.0 -> 418.9
RT (Exp. RT): 1.308 (1.308)
Calc. conc. 101.46 µg/L
Area ratio: 0.06171
Sample type: Calibration




| | |
|---|---|
| **D5-EtFOSAA** | 589.0 -> 418.9 |
| RT (Exp. RT): | 1.323 (1.323) |
| Calc. conc. | 101.89 µg/L |
| Area ratio: | 0.05277 |
| Sample type: | Calibration |



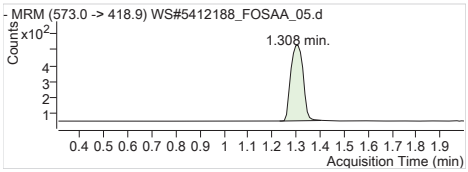

| | |
|---|---|
| **13C9-PFDA** | 522.0 -> 476.9 |
| RT (Exp. RT): | 0.890 (0.890) |
| Calc. conc. | 102.34 µg/L |
| Area ratio: | 0 |
| Sample type: | Calibration |

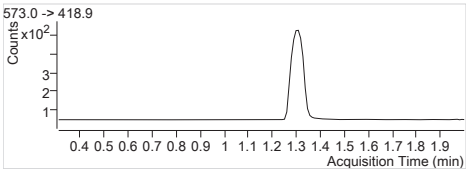
| | |
|---|---|
| **Batch Path** | T:\lcms4\PFC\20180226\WS#5412188_FOSAA\QuantResults\PFC_Water_Low_180226_WS#5412188_FOSAA_ETOxics |

| | | | |
|---|---|---|---|
| **Sample Name** | **STD 4** | **Instrument** | LCMS04 |
| **Data File** | WS#5412188_FOSAA_05.d | **Operator** | |
| **Sample Type** | Cal | **Dilution** | 1 |
| **Acq. Method** | PFC_Water_Low_FOSAA.m | **Position** | P1-C4 |
| **Acq. Date** | 2018/02/27 4:46:47 AM | **Injection Volume** | Per Method |
| **Sample Annotation** | - | | |

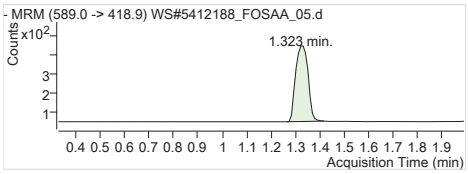
| ISTD Compounds | Response | RT | Target conc. | | |
|---|---|---|---|---|---|
| D3-MeFOSAA IS | 1714 | 1.31 | 1 µg/L | | |
| D5-EtFOSAA IS | 1414 | 1.32 | 1 µg/L | | |
| 13C9-PFDA IS | 26024 | 0.89 | 1 µg/L | | |

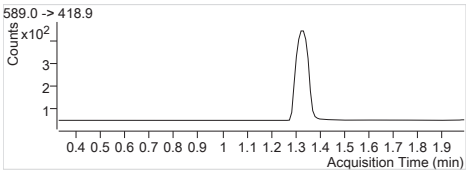
| Compound | Response | RT | Target Conc. | Calc. Conc. | Accuracy |
|---|---|---|---|---|---|
| MeFOSAA 1 | 7771 | 1.30 | 12.50 | 11.94 µg/L | 95.55 |
| EtFOSAA 1 | 7645 | 1.32 | 12.50 | 12.18 µg/L | 97.45 |
| D3-MeFOSAA | 1724 | 1.31 | 100.00 | 108.92 µg/L | 108.92 |
| D5-EtFOSAA | 1425 | 1.32 | 100.00 | 105.73 µg/L | 105.73 |
| 13C9-PFDA | 25442 | 0.89 | 100.00 | 100.06 µg/L | 100.06 |



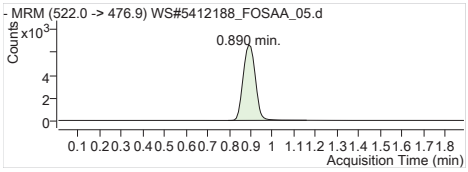



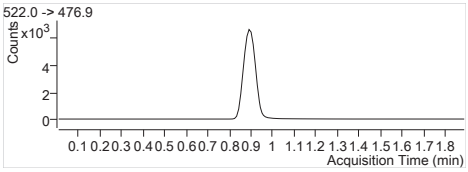

**D3-MeFOSAA IS** Internal Standard
RT (Exp. RT): 1.308 (1.308)
Concentration: 1 µg/L
Sample type: Calibration



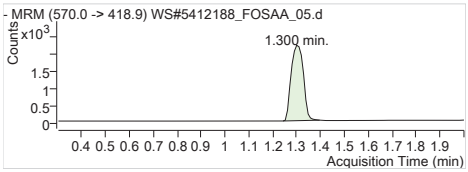



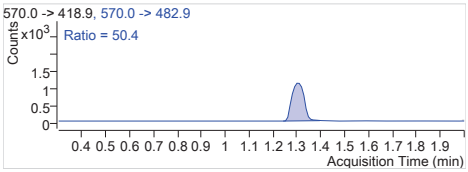

**D5-EtFOSAA IS** Internal Standard
RT (Exp. RT): 1.323 (1.323)
Concentration: 1 µg/L
Sample type: Calibration



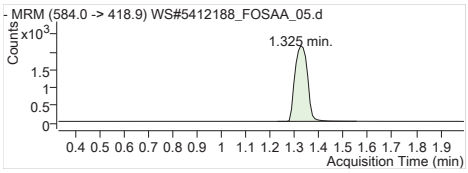



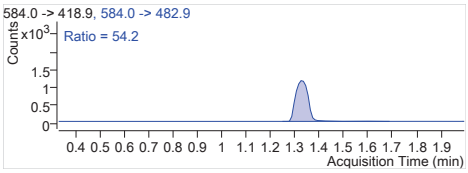

**13C9-PFDA IS** Internal Standard
RT (Exp. RT): 0.890 (0.890)
Concentration: 1 µg/L
Sample type: Calibration



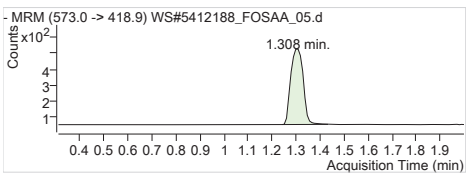



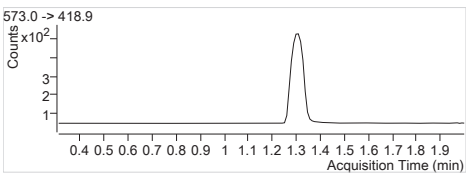

**MeFOSAA 1** 570.0 -> 418.9
RT (Exp. RT): 1.300 (1.300)
Calc. conc. 11.94 µg/L
Area ratio: 4.53384
Sample type: Calibration



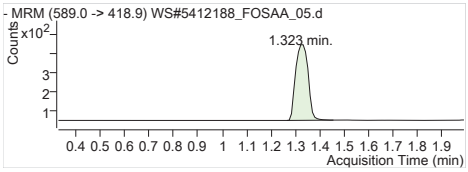



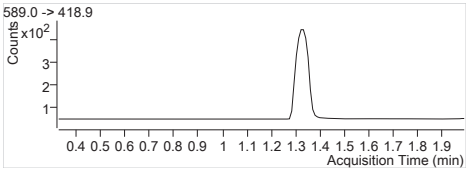

**EtFOSAA 1** 584.0 -> 418.9
RT (Exp. RT): 1.325 (1.325)
Calc. conc. 12.18 µg/L
Area ratio: 5.40665
Sample type: Calibration



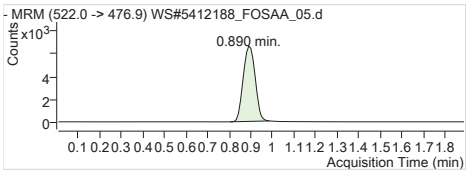



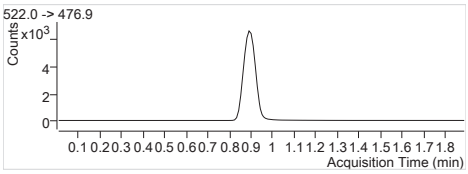

**D3-MeFOSAA** 573.0 -> 418.9
RT (Exp. RT): 1.308 (1.308)
Calc. conc. 108.92 µg/L
Area ratio: 0.06625
Sample type: Calibration




| | |
|---|---|
| **D5-EtFOSAA** | 589.0 -> 418.9 |
| RT (Exp. RT): | 1.323 (1.323) |
| Calc. conc. | 105.73 µg/L |
| Area ratio: | 0.05476 |
| Sample type: | Calibration |



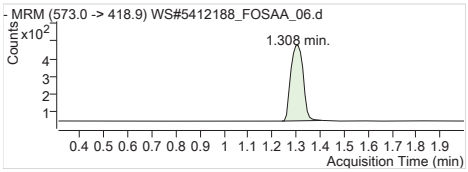

| | |
|---|---|
| **13C9-PFDA** | 522.0 -> 476.9 |
| RT (Exp. RT): | 0.890 (0.890) |
| Calc. conc. | 100.06 µg/L |
| Area ratio: | 0 |
| Sample type: | Calibration |

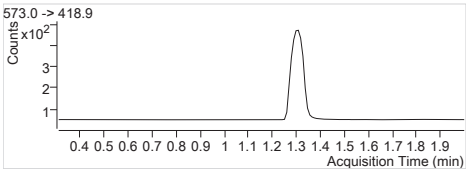
| | |
|---|---|
| **Batch Path** | T:\lcms4\PFC\20180226\WS#5412188_FOSAA\QuantResults\PFC_Water_Low_180226_WS#5412188_FOSAA_ETOxics |

| | | | |
|---|---|---|---|
| **Sample Name** | **STD 5** | **Instrument** | LCMS04 |
| **Data File** | WS#5412188_FOSAA_06.d | **Operator** | |
| **Sample Type** | Cal | **Dilution** | 1 |
| **Acq. Method** | PFC_Water_Low_FOSAA.m | **Position** | P1-C5 |
| **Acq. Date** | 2018/02/27 4:49:12 AM | **Injection Volume** | Per Method |
| **Sample Annotation** | - | | |

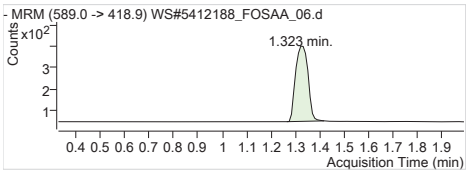
| ISTD Compounds | Response | RT | Target conc. | | |
|---|---|---|---|---|---|
| D3-MeFOSAA IS | 1530 | 1.31 | 1 µg/L | | |
| D5-EtFOSAA IS | 1250 | 1.32 | 1 µg/L | | |
| 13C9-PFDA IS | 25143 | 0.89 | 1 µg/L | | |

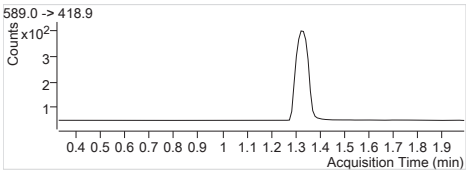
| Compound | Response | RT | Target Conc. | Calc. Conc. | Accuracy |
|---|---|---|---|---|---|
| MeFOSAA 1 | 14312 | 1.30 | 25.00 | 24.81 µg/L | 99.23 |
| EtFOSAA 1 | 14182 | 1.32 | 25.00 | 25.72 µg/L | 102.87 |
| D3-MeFOSAA | 1545 | 1.31 | 100.00 | 101.03 µg/L | 101.03 |
| D5-EtFOSAA | 1265 | 1.32 | 100.00 | 97.14 µg/L | 97.14 |
| 13C9-PFDA | 24594 | 0.89 | 100.00 | 96.73 µg/L | 96.73 |



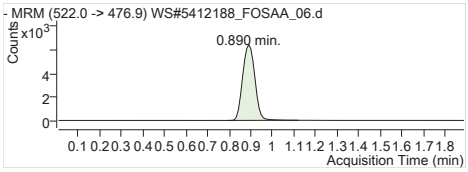



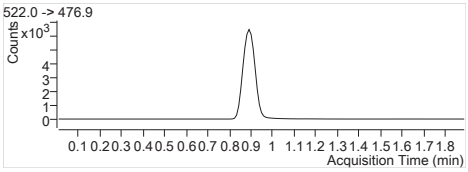

**D3-MeFOSAA IS** Internal Standard
RT (Exp. RT): 1.308 (1.308)
Concentration: 1 µg/L
Sample type: Calibration



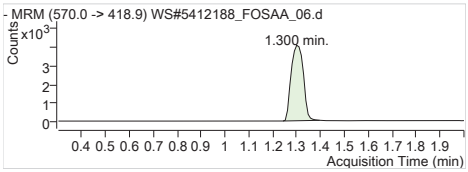



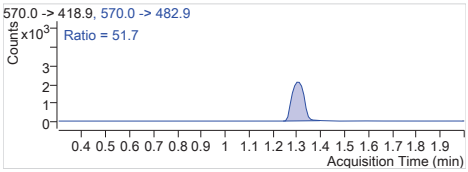

**D5-EtFOSAA IS** Internal Standard
RT (Exp. RT): 1.323 (1.323)
Concentration: 1 µg/L
Sample type: Calibration



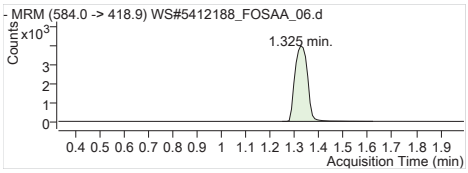



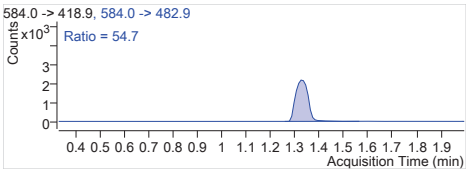

**13C9-PFDA IS** Internal Standard
RT (Exp. RT): 0.890 (0.890)
Concentration: 1 µg/L
Sample type: Calibration



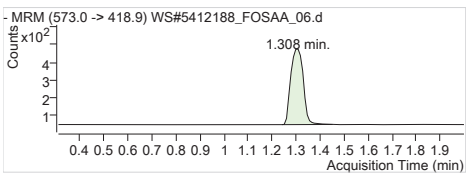



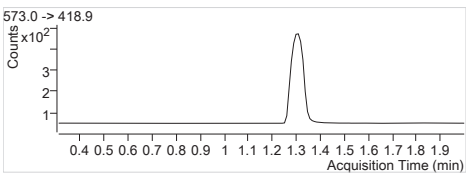

**MeFOSAA 1** 570.0 -> 418.9
RT (Exp. RT): 1.300 (1.300)
Calc. conc. 24.81 µg/L
Area ratio: 9.35425
Sample type: Calibration



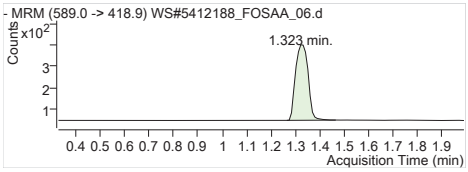



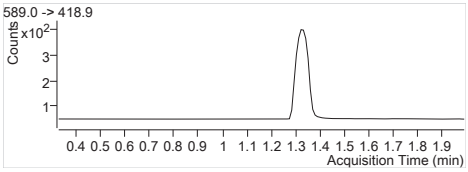

**EtFOSAA 1** 584.0 -> 418.9
RT (Exp. RT): 1.325 (1.325)
Calc. conc. 25.72 µg/L
Area ratio: 11.34560
Sample type: Calibration



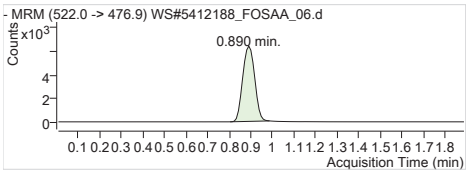



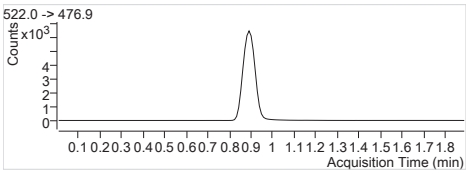

**D3-MeFOSAA** 573.0 -> 418.9
RT (Exp. RT): 1.308 (1.308)
Calc. conc. 101.03 µg/L
Area ratio: 0.06145
Sample type: Calibration




| | |
|---|---|
| **D5-EtFOSAA** | 589.0 -> 418.9 |
| RT (Exp. RT): | 1.323 (1.323) |
| Calc. conc. | 97.14 µg/L |
| Area ratio: | 0.05031 |
| Sample type: | Calibration |



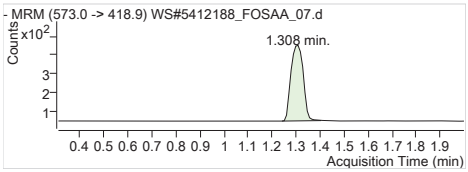

| | |
|---|---|
| **13C9-PFDA** | 522.0 -> 476.9 |
| RT (Exp. RT): | 0.890 (0.890) |
| Calc. conc. | 96.73 µg/L |
| Area ratio: | 0 |
| Sample type: | Calibration |

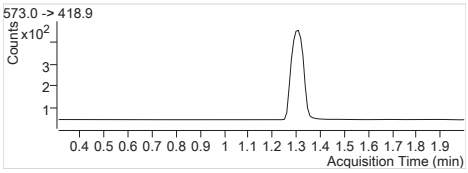
| | |
|---|---|
| **Batch Path** | T:\lcms4\PFC\20180226\WS#5412188_FOSAA\QuantResults\PFC_Water_Low_180226_WS#5412188_FOSAA_ETOxics |

| | | | |
|---|---|---|---|
| **Sample Name** | **STD 6** | **Instrument** | LCMS04 |
| **Data File** | WS#5412188_FOSAA_07.d | **Operator** | |
| **Sample Type** | Cal | **Dilution** | 1 |
| **Acq. Method** | PFC_Water_Low_FOSAA.m | **Position** | P1-C6 |
| **Acq. Date** | 2018/02/27 4:51:38 AM | **Injection Volume** | Per Method |
| **Sample Annotation** | - | | |

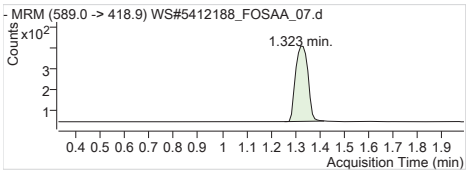
| ISTD Compounds | Response | RT | Target conc. | | |
|---|---|---|---|---|---|
| D3-MeFOSAA IS | 1433 | 1.31 | 1 µg/L | | |
| D5-EtFOSAA IS | 1275 | 1.32 | 1 µg/L | | |
| 13C9-PFDA IS | 24353 | 0.89 | 1 µg/L | | |

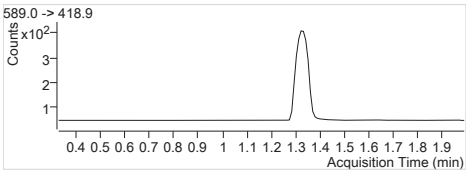
| Compound | Response | RT | Target Conc. | Calc. Conc. | Accuracy |
|---|---|---|---|---|---|
| MeFOSAA 1 | 22748 | 1.30 | 41.70 | 42.21 µg/L | 101.21 |
| EtFOSAA 1 | 23104 | 1.32 | 41.70 | 41.16 µg/L | 98.71 |
| D3-MeFOSAA | 1442 | 1.31 | 100.00 | 97.35 µg/L | 97.35 |
| D5-EtFOSAA | 1284 | 1.32 | 100.00 | 101.80 µg/L | 101.80 |
| 13C9-PFDA | 23798 | 0.89 | 100.00 | 93.60 µg/L | 93.60 |



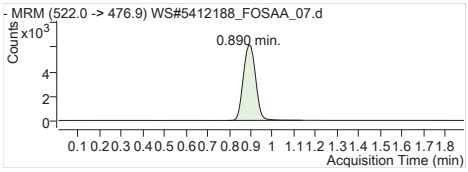



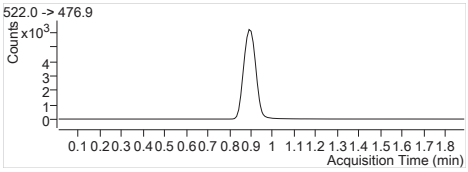

**D3-MeFOSAA IS** Internal Standard
RT (Exp. RT): 1.308 (1.308)
Concentration: 1 µg/L
Sample type: Calibration



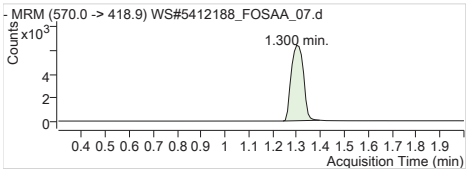



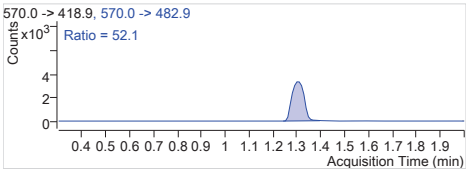

**D5-EtFOSAA IS** Internal Standard
RT (Exp. RT): 1.323 (1.323)
Concentration: 1 µg/L
Sample type: Calibration



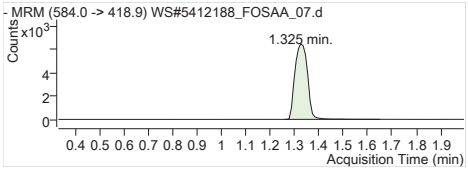



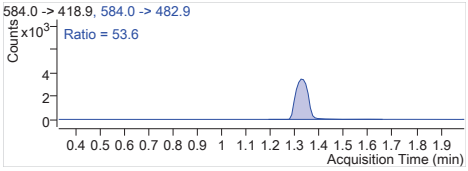

**13C9-PFDA IS** Internal Standard
RT (Exp. RT): 0.890 (0.890)
Concentration: 1 µg/L
Sample type: Calibration



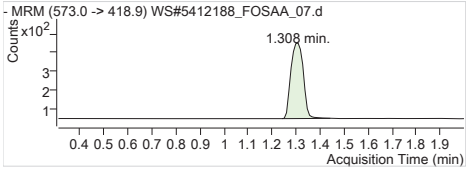



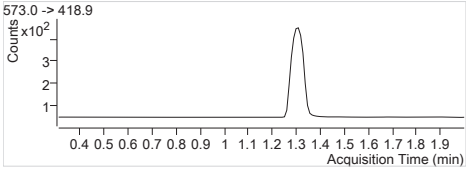

**MeFOSAA 1** 570.0 -> 418.9
RT (Exp. RT): 1.300 (1.300)
Calc. conc. 42.21 µg/L
Area ratio: 15.87439
Sample type: Calibration



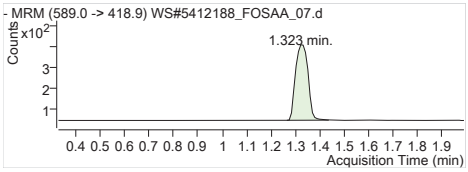



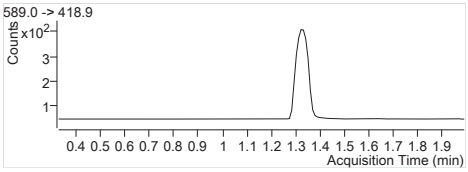

**EtFOSAA 1** 584.0 -> 418.9
RT (Exp. RT): 1.325 (1.325)
Calc. conc. 41.16 µg/L
Area ratio: 18.12078
Sample type: Calibration



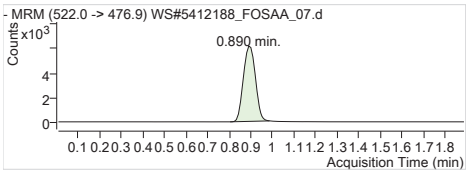



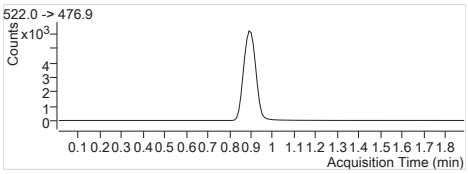

**D3-MeFOSAA** 573.0 -> 418.9
RT (Exp. RT): 1.308 (1.308)
Calc. conc. 97.35 µg/L
Area ratio: 0.05921
Sample type: Calibration




| | |
|---|---|
| **D5-EtFOSAA** | 589.0 -> 418.9 |
| RT (Exp. RT): | 1.323 (1.323) |
| Calc. conc. | 101.80 µg/L |
| Area ratio: | 0.05272 |
| Sample type: | Calibration |




| | |
|---|---|
| **13C9-PFDA** | 522.0 -> 476.9 |
| RT (Exp. RT): | 0.890 (0.890) |
| Calc. conc. | 93.60 µg/L |
| Area ratio: | 0 |
| Sample type: | Calibration |

# Quantitation Results

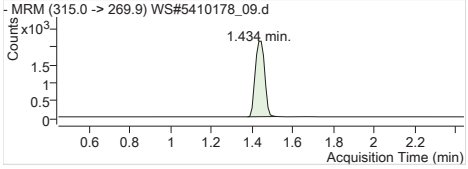
Agilent Technologies

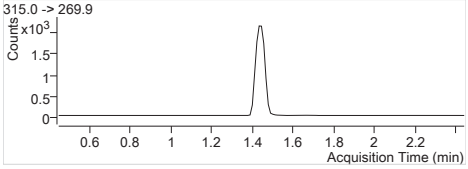
| | |
|---|---|
| **Batch Path** | T:\lcms4\PFC\20180223\WS#5410178\QuantResults\PFC_Water_Low_180223_WS#5410178_EToxics |

| | | | |
|---|---|---|---|
| **Sample Name** | **ICV** | **Instrument** | LCMS04 |
| **Data File** | WS#5410178_09.d | **Operator** | |
| **Sample Type** | QC | **Dilution** | 1 |
| **Acq. Method** | PFC_Water_Low.m | **Position** | P1-A9 |
| **Acq. Date** | 2018/02/23 5:14:04 PM | **Injection Volume** | Per Method |
| **Sample Annotation** | - | | |

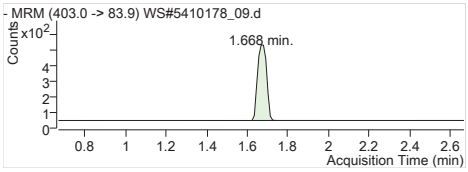
| ISTD Compounds | Response | RT | Target conc. | | |
|---|---|---|---|---|---|
| MPFHxA | 6803 | 1.43 | 1 µg/L | | |
| MPFHxS | 1503 | 1.67 | 1 µg/L | | |
| MPFHpA | 8017 | 1.70 | 1 µg/L | | |
| MPFOA | 8444 | 1.88 | 1 µg/L | | |
| MPFOS | 1701 | 1.97 | 1 µg/L | | |
| MPFNA | 8462 | 2.02 | 1 µg/L | | |
| MPFDA | 6675 | 2.14 | 1 µg/L | | |
| MPFUnA | 8383 | 2.23 | 1 µg/L | | |
| MPFDoA | 10884 | 2.32 | 1 µg/L | | |
| MPFTeDA | 11575 | 2.47 | 1 µg/L | | |
| 13C6-PFHxA IS | 25768 | 1.44 | 1 µg/L | | |
| 13C9-PFDA IS | 30429 | 2.13 | 1 µg/L | | |

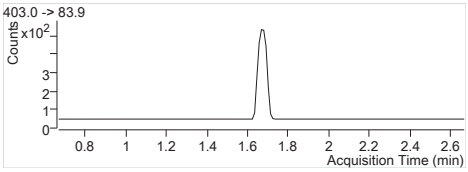
| Compound | Response | RT | Target Conc. | Calc. Conc. | Accuracy |
|---|---|---|---|---|---|
| PFBS 1 | 14490 | 1.09 | 20.80 | 20.74 µg/L | 99.69 |
| PFHxA 1 | 53348 | 1.45 | 20.80 | 19.42 µg/L | 93.36 |
| PFHxS 1 | 13739 | 1.67 | 20.80 | 19.58 µg/L | 94.13 |
| PFHpA 1 | 66090 | 1.70 | 20.80 | 19.84 µg/L | 95.40 |
| PFOA 1 | 79154 | 1.88 | 20.80 | 20.62 µg/L | 99.14 |
| PFOS 1 | 13627 | 1.96 | 20.80 | 20.66 µg/L | 99.34 |
| PFNA 1 | 67433 | 2.03 | 20.80 | 19.35 µg/L | 93.03 |
| PFDA 1 | 70358 | 2.14 | 20.80 | 20.23 µg/L | 97.25 |
| PFUnA 1 | 77503 | 2.23 | 20.80 | 20.66 µg/L | 99.33 |
| PFDoA 1 | 93466 | 2.32 | 20.80 | 20.01 µg/L | 96.19 |
| PFTrDA 1 | 108420 | 2.40 | 20.80 | 20.80 µg/L | 100.01 |
| PFTeDA 1 | 90301 | 2.47 | 20.80 | 20.62 µg/L | 99.15 |
| 13C2-PFHxA | 6803 | 1.43 | 100.00 | 89.24 µg/L | 89.24 |
| 18O2-PFHxS | 1503 | 1.67 | 100.00 | 84.56 µg/L | 84.56 |
| 13C4-PFHpA | 8017 | 1.70 | 100.00 | 83.99 µg/L | 83.99 |
| 13C4-PFOA | 8444 | 1.88 | 100.00 | 89.35 µg/L | 89.35 |
| 13C4-PFOS | 1701 | 1.97 | 100.00 | 82.18 µg/L | 82.18 |
| 13C5-PFNA | 8462 | 2.02 | 100.00 | 92.10 µg/L | 92.10 |
| 13C2-PFDA | 6619 | 2.14 | 100.00 | 90.26 µg/L | 90.26 |
| 13C2-PFUnA | 8383 | 2.23 | 100.00 | 88.48 µg/L | 88.48 |
| 13C2-PFDoA | 10884 | 2.32 | 100.00 | 90.61 µg/L | 90.61 |
| 13C2-PFTeDA | 11813 | 2.47 | 100.00 | 93.20 µg/L | 93.20 |
| 13C6-PFHxA | 25768 | 1.44 | 100.00 | 114.20 µg/L | 114.20 |
| 13C9-PFDA | 30429 | 2.13 | 100.00 | 112.10 µg/L | 112.10 |



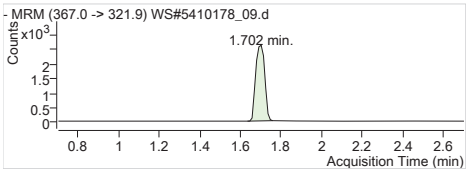



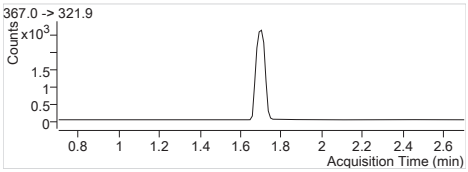

| | |
|---|---|
| **MPFHxA** | Internal Standard |
| RT (Exp. RT): | 1.434 (1.445) |
| Concentration: | 1 µg/L |
| Sample type: | QC |



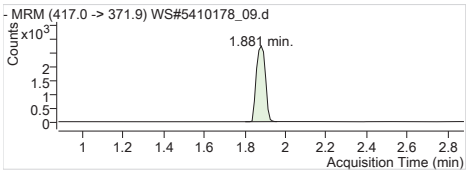



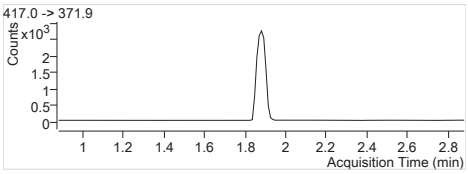

**MPFHxS** Internal Standard
RT (Exp. RT): 1.668 (1.668)
Concentration: 1 µg/L
Sample type: QC



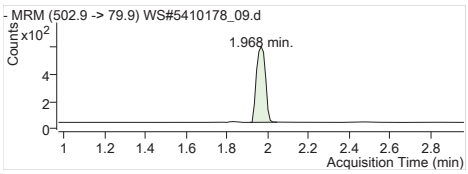



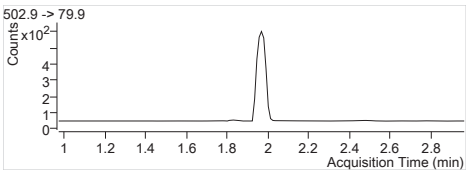

**MPFHpA** Internal Standard
RT (Exp. RT): 1.702 (1.702)
Concentration: 1 µg/L
Sample type: QC



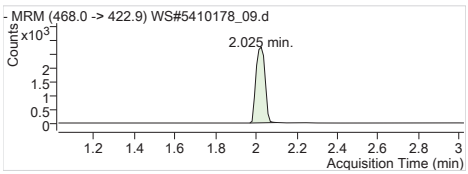



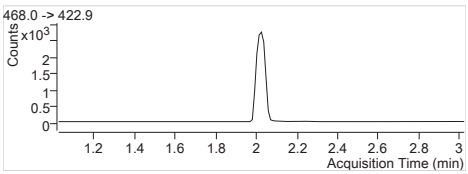

**MPFOA** Internal Standard
RT (Exp. RT): 1.881 (1.881)
Concentration: 1 µg/L
Sample type: QC



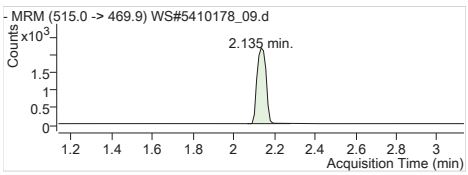



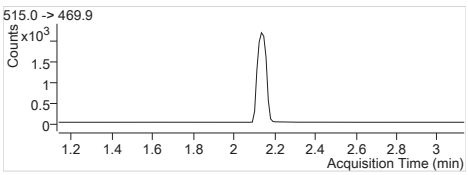

**MPFOS** Internal Standard
RT (Exp. RT): 1.968 (1.968)
Concentration: 1 µg/L
Sample type: QC



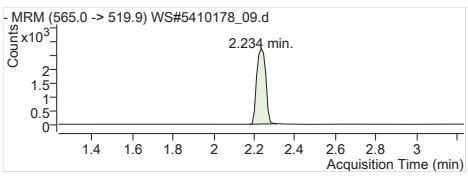



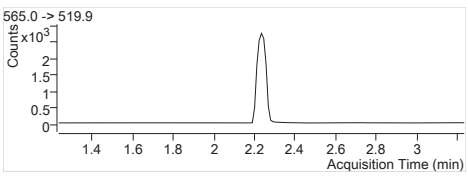

**MPFNA** Internal Standard
RT (Exp. RT): 2.025 (2.025)
Concentration: 1 µg/L
Sample type: QC



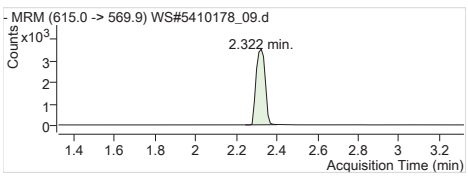



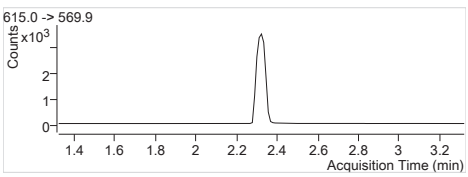

**MPFDA** Internal Standard
RT (Exp. RT): 2.135 (2.135)
Concentration: 1 µg/L
Sample type: QC



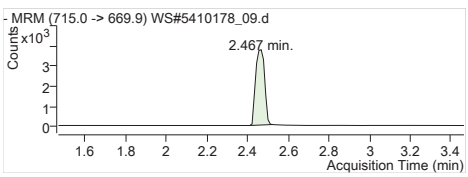



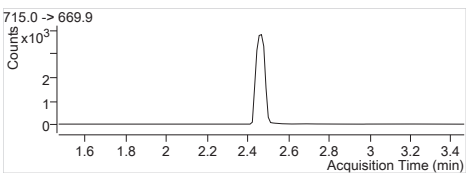

**MPFUnA** Internal Standard
RT (Exp. RT): 2.234 (2.234)
Concentration: 1 µg/L
Sample type: QC



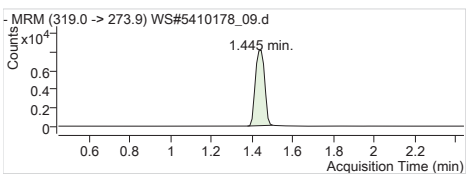



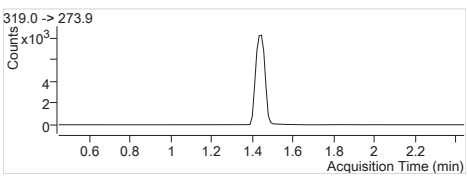

**MPFDoA** Internal Standard
RT (Exp. RT): 2.322 (2.322)
Concentration: 1 µg/L
Sample type: QC



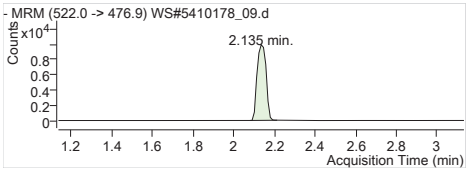



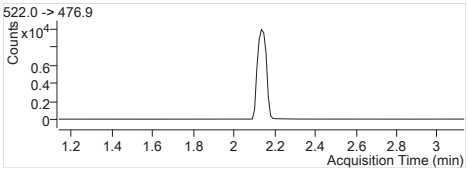

**MPFTeDA** Internal Standard
RT (Exp. RT): 2.467 (2.467)
Concentration: 1 µg/L
Sample type: QC



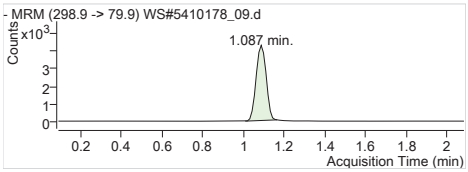



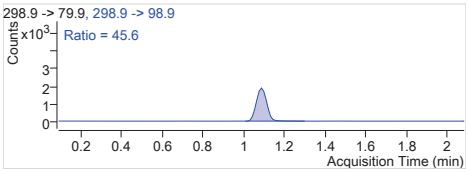

**13C6-PFHxA IS** Internal Standard
RT (Exp. RT): 1.445 (1.445)
Concentration: 1 µg/L
Sample type: QC



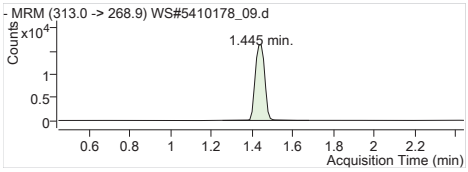



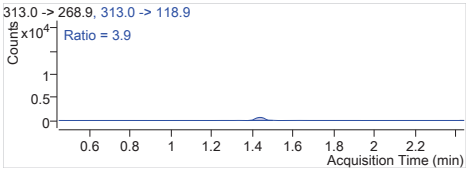

**13C9-PFDA IS** Internal Standard
RT (Exp. RT): 2.135 (2.135)
Concentration: 1 µg/L
Sample type: QC



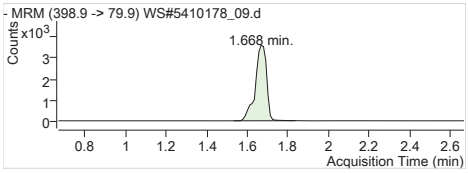



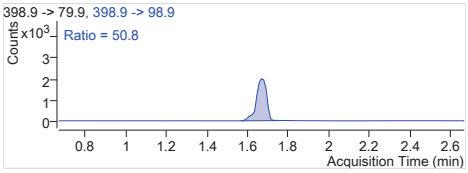

**PFBS 1** 298.9 -> 79.9
RT (Exp. RT): 1.087 (1.087)
Calc. conc. 20.74 µg/L
Area ratio: 9.64072
Sample type: QC



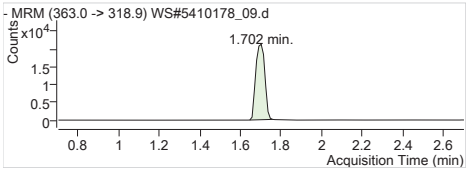



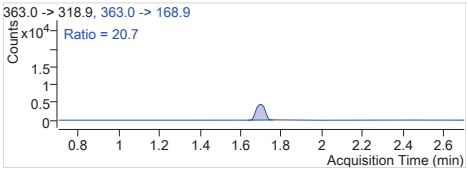

**PFHxA 1** 313.0 -> 268.9
RT (Exp. RT): 1.445 (1.445)
Calc. conc. 19.42 µg/L
Area ratio: 7.84183
Sample type: QC



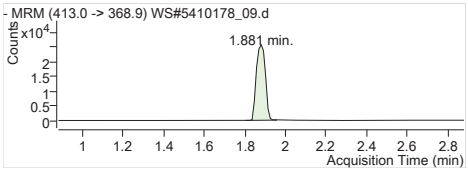



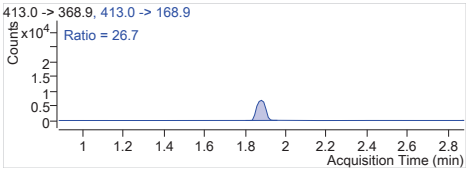

**PFHxS 1** 398.9 -> 79.9
RT (Exp. RT): 1.668 (1.668)
Calc. conc. 19.58 µg/L
Area ratio: 9.14105
Sample type: QC



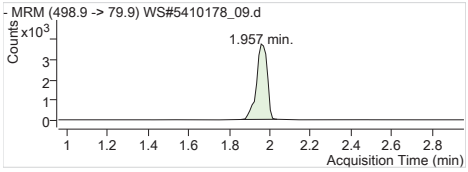



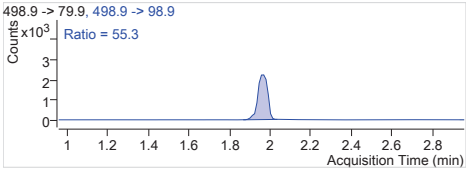

**PFHpA 1** 363.0 -> 318.9
RT (Exp. RT): 1.702 (1.702)
Calc. conc. 19.84 µg/L
Area ratio: 8.24373
Sample type: QC



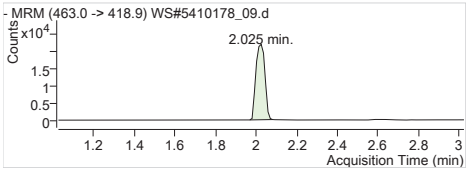



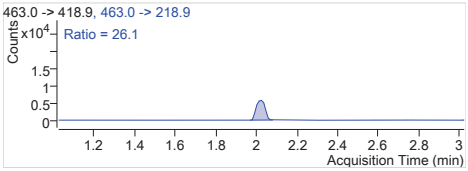

**PFOA 1** 413.0 -> 368.9
RT (Exp. RT): 1.881 (1.881)
Calc. conc. 20.62 µg/L
Area ratio: 9.37399
Sample type: QC



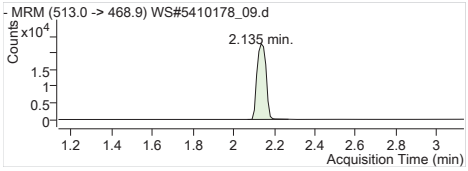



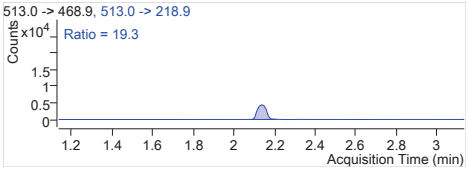

**PFOS 1** 498.9 -> 79.9
RT (Exp. RT): 1.957 (1.957)
Calc. conc. 20.66 µg/L
Area ratio: 8.01117
Sample type: QC



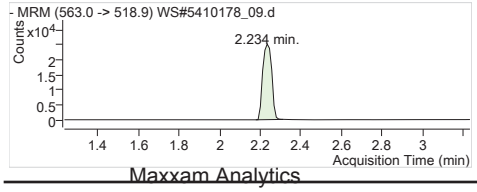



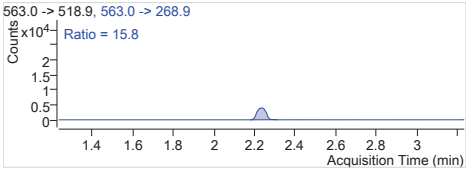

**PFNA 1** 463.0 -> 418.9
RT (Exp. RT): 2.025 (2.025)
Calc. conc. 19.35 µg/L
Area ratio: 7.96892
Sample type: QC



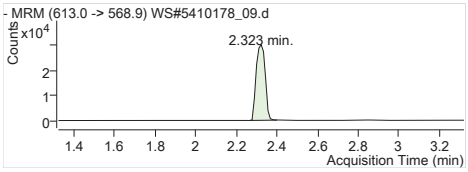



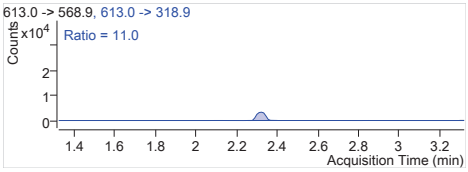

**PFDA 1** 513.0 -> 468.9
RT (Exp. RT): 2.135 (2.135)
Calc. conc. 20.23 µg/L
Area ratio: 10.54052
Sample type: QC



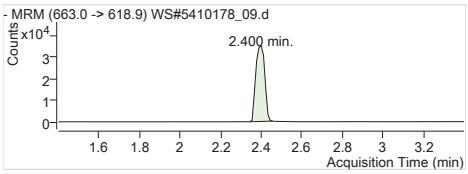



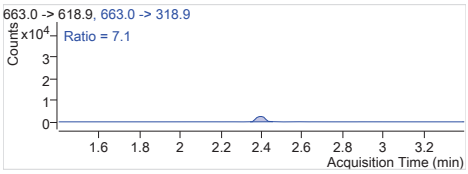

**PFUnA 1** 563.0 -> 518.9
RT (Exp. RT): 2.234 (2.234)
Calc. conc. 20.66 µg/L
Area ratio: 9.24526
Sample type: QC



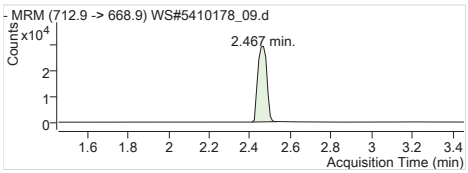



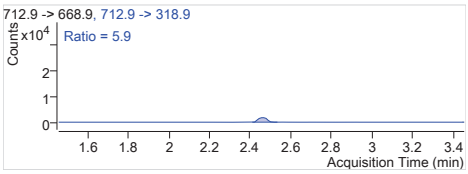

**PFDoA 1** 613.0 -> 568.9
RT (Exp. RT): 2.323 (2.323)
Calc. conc. 20.01 µg/L
Area ratio: 8.58747
Sample type: QC



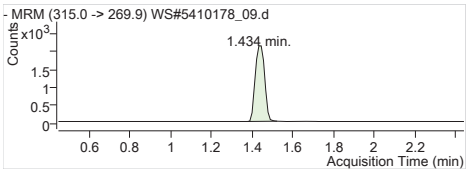



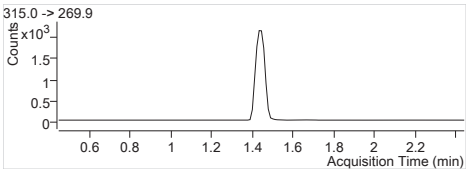

**PFTrDA 1** 663.0 -> 618.9
RT (Exp. RT): 2.400 (2.400)
Calc. conc. 20.80 µg/L
Area ratio: 9.36674
Sample type: QC



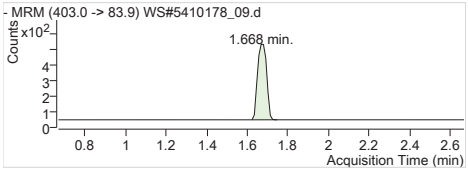



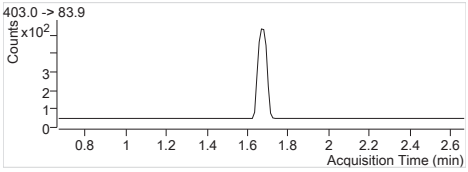

**PFTeDA 1** 712.9 -> 668.9
RT (Exp. RT): 2.467 (2.456)
Calc. conc. 20.62 µg/L
Area ratio: 7.80138
Sample type: QC



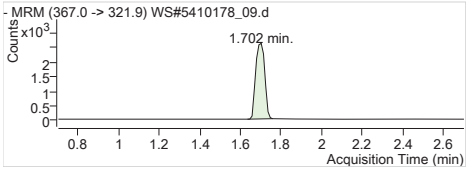



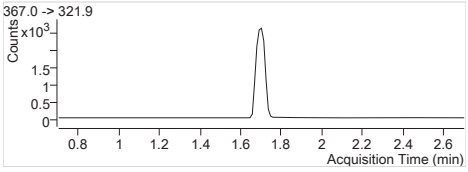

**13C2-PFHxA** 315.0 -> 269.9
RT (Exp. RT): 1.434 (1.445)
Calc. conc. 89.24 µg/L
Area ratio: 0.26401
Sample type: QC



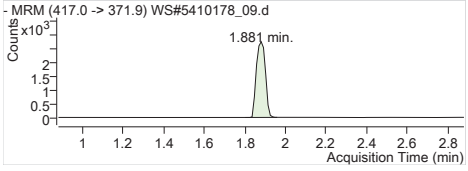



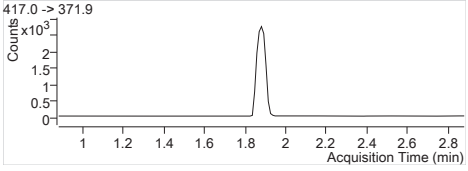

**18O2-PFHxS** 403.0 -> 83.9
RT (Exp. RT): 1.668 (1.668)
Calc. conc. 84.56 µg/L
Area ratio: 0.05833
Sample type: QC



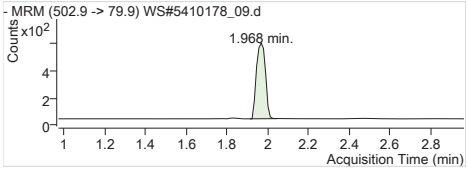



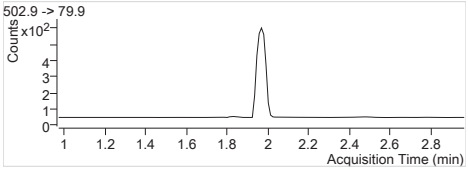

**13C4-PFHpA** 367.0 -> 321.9
RT (Exp. RT): 1.702 (1.702)
Calc. conc. 83.99 µg/L
Area ratio: 0.31112
Sample type: QC



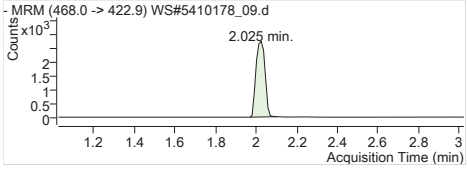



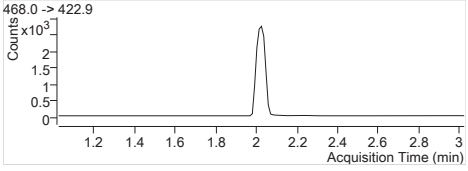

**13C4-PFOA** 417.0 -> 371.9
RT (Exp. RT): 1.881 (1.881)
Calc. conc. 89.35 µg/L
Area ratio: 0.32769
Sample type: QC



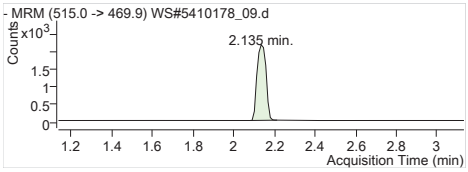



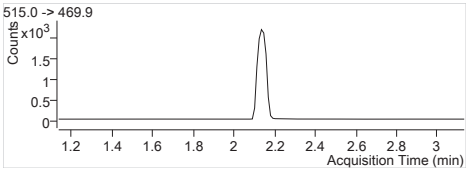

**13C4-PFOS** 502.9 -> 79.9
RT (Exp. RT): 1.968 (1.968)
Calc. conc. 82.18 µg/L
Area ratio: 0.06601
Sample type: QC



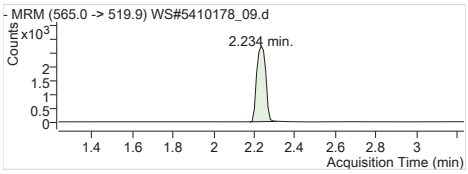



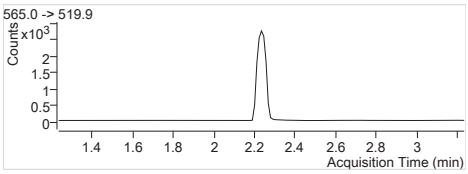

**13C5-PFNA** 468.0 -> 422.9
RT (Exp. RT): 2.025 (2.025)
Calc. conc. 92.10 µg/L
Area ratio: 0.32839
Sample type: QC



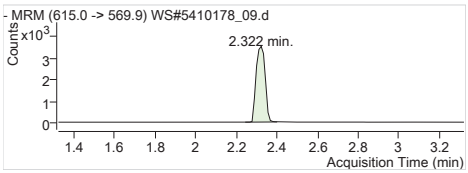



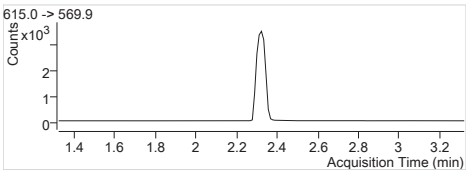

**13C2-PFDA** 515.0 -> 469.9
RT (Exp. RT): 2.135 (2.135)
Calc. conc. 90.26 µg/L
Area ratio: 0.21752
Sample type: QC



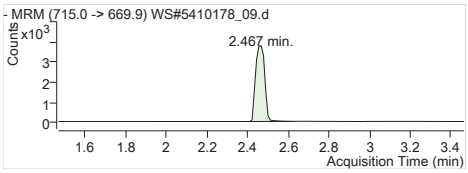



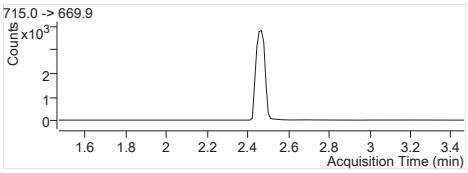

**13C2-PFUnA** 565.0 -> 519.9
RT (Exp. RT): 2.234 (2.234)
Calc. conc. 88.48 µg/L
Area ratio: 0.27549
Sample type: QC



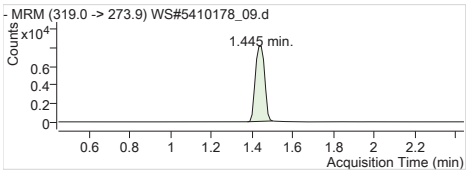



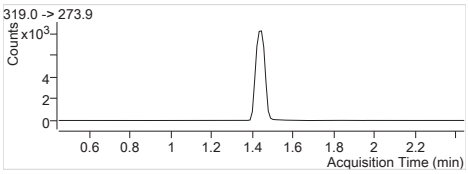

**13C2-PFDoA** 615.0 -> 569.9
RT (Exp. RT): 2.322 (2.322)
Calc. conc. 90.61 µg/L
Area ratio: 0.35769
Sample type: QC



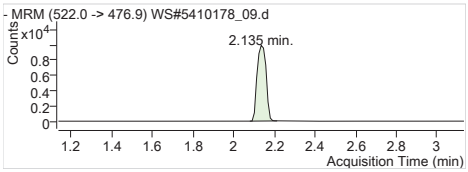



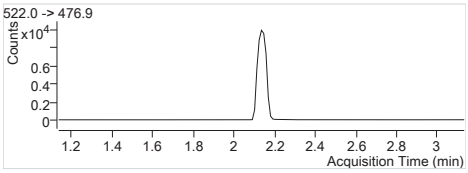

**13C2-PFTeDA** 715.0 -> 669.9
RT (Exp. RT): 2.467 (2.467)
Calc. conc. 93.20 µg/L
Area ratio: 0.38822
Sample type: QC




**13C6-PFHxA** 319.0 -> 273.9
RT (Exp. RT): 1.445 (1.445)
Calc. conc. 114.20 µg/L
Area ratio: 0
Sample type: QC




**13C9-PFDA** 522.0 -> 476.9
RT (Exp. RT): 2.135 (2.135)
Calc. conc. 112.10 µg/L
Area ratio: 0
Sample type: QC

# Quantitation Results

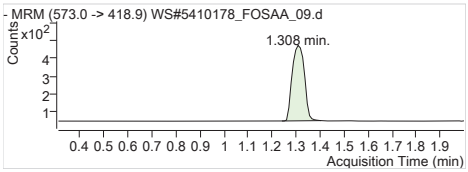
Agilent Technologies

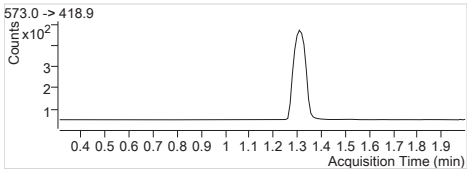
| | |
|---|---|
| **Batch Path** | T:\lcms4\PFC\20180223\WS#5410178_FOSAA\QuantResults\PFC_Water_Low_180223_WS#5410178_FOSAA_ETOxics |

| | | | |
|---|---|---|---|
| **Sample Name** | **ICV** | **Instrument** | LCMS04 |
| **Data File** | WS#5410178_FOSAA_09.d | **Operator** | |
| **Sample Type** | QC | **Dilution** | 1 |
| **Acq. Method** | PFC_Water_Low_FOSAA.m | **Position** | P1-A9 |
| **Acq. Date** | 2018/02/24 3:27:45 AM | **Injection Volume** | Per Method |
| **Sample Annotation** | - | | |

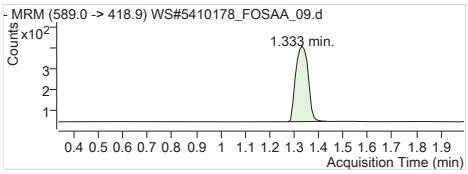
| ISTD Compounds | Response | RT | Target conc. | | |
|---|---|---|---|---|---|
| D3-MeFOSAA IS | 1492 | 1.31 | 1 µg/L | | |
| D5-EtFOSAA IS | 1279 | 1.33 | 1 µg/L | | |
| 13C9-PFDA IS | 22619 | 0.90 | 1 µg/L | | |

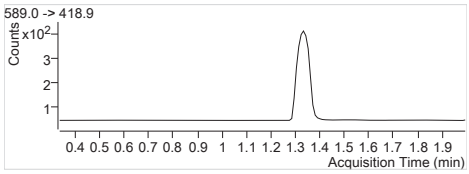
| Compound | Response | RT | Target Conc. | Calc. Conc. | Accuracy |
|---|---|---|---|---|---|
| MeFOSAA 1 | 11265 | 1.31 | 20.80 | 20.73 µg/L | 99.67 |
| EtFOSAA 1 | 11197 | 1.33 | 20.80 | 20.53 µg/L | 98.68 |
| D3-MeFOSAA | 1502 | 1.31 | 100.00 | 96.02 µg/L | 96.02 |
| D5-EtFOSAA | 1283 | 1.33 | 100.00 | 96.32 µg/L | 96.32 |
| 13C9-PFDA | 22698 | 0.90 | 100.00 | 113.02 µg/L | 113.02 |



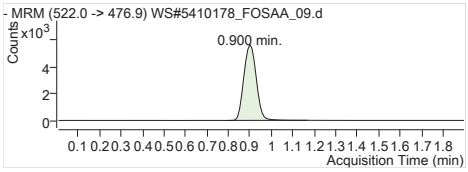



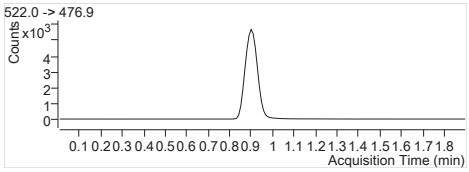

**D3-MeFOSAA IS** Internal Standard
RT (Exp. RT): 1.308 (1.308)
Concentration: 1 µg/L
Sample type: QC



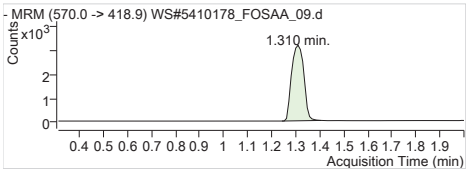



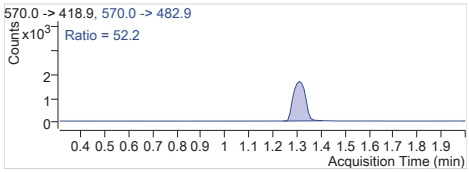

**D5-EtFOSAA IS** Internal Standard
RT (Exp. RT): 1.333 (1.333)
Concentration: 1 µg/L
Sample type: QC



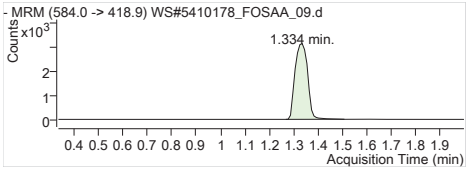



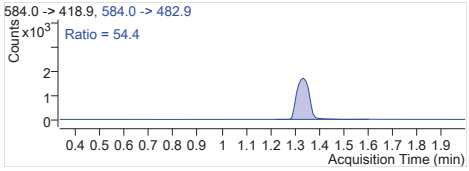

**13C9-PFDA IS** Internal Standard
RT (Exp. RT): 0.900 (0.900)
Concentration: 1 µg/L
Sample type: QC



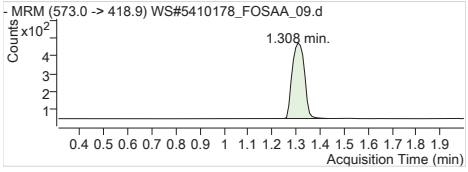



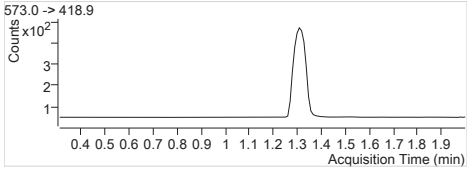

**MeFOSAA 1** 570.0 -> 418.9
RT (Exp. RT): 1.310 (1.310)
Calc. conc. 20.73 µg/L
Area ratio: 7.55027
Sample type: QC



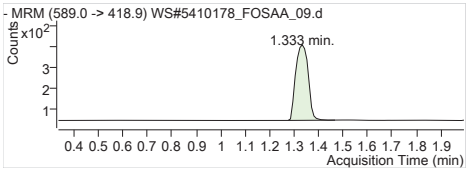



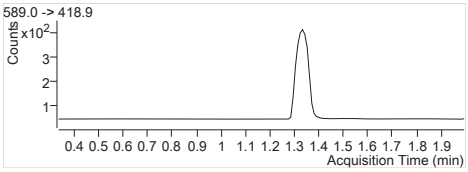

**EtFOSAA 1** 584.0 -> 418.9
RT (Exp. RT): 1.334 (1.334)
Calc. conc. 20.53 µg/L
Area ratio: 8.75450
Sample type: QC



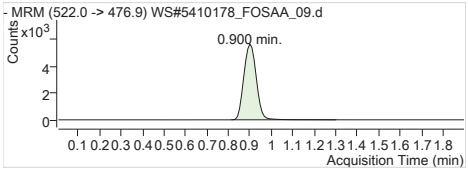



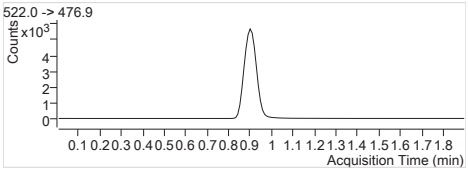

**D3-MeFOSAA** 573.0 -> 418.9
RT (Exp. RT): 1.308 (1.308)
Calc. conc. 96.02 µg/L
Area ratio: 0.06640
Sample type: QC




| | |
|---|---|
| **D5-EtFOSAA** | 589.0 -> 418.9 |
| RT (Exp. RT): | 1.333 (1.333) |
| Calc. conc. | 96.32 µg/L |
| Area ratio: | 0.05672 |
| Sample type: | QC |




| | |
|---|---|
| **13C9-PFDA** | 522.0 -> 476.9 |
| RT (Exp. RT): | 0.900 (0.900) |
| Calc. conc. | 113.02 µg/L |
| Area ratio: | 0 |
| Sample type: | QC |

# Quantitation Results

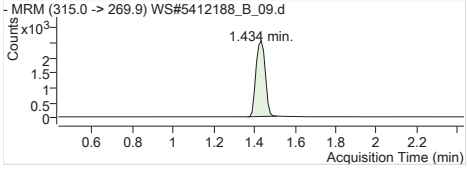
Agilent Technologies

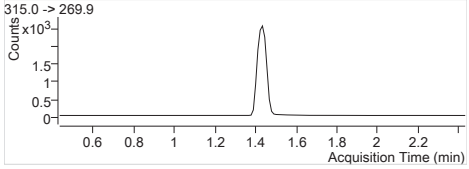
| | |
|---|---|
| **Batch Path** | T:\lcms4\PFC\20180226\WS#5412188_B\QuantResults\PFC_Water_Low_180227_WS#5412188_B_EToxics |

| | | | |
|---|---|---|---|
| **Sample Name** | **ICV** | **Instrument** | LCMS04 |
| **Data File** | WS#5412188_B_09.d | **Operator** | |
| **Sample Type** | QC | **Dilution** | 1 |
| **Acq. Method** | PFC_Water_Low.m | **Position** | P1-C8 |
| **Acq. Date** | 2018/02/27 1:41:40 PM | **Injection Volume** | Per Method |
| **Sample Annotation** | - | | |

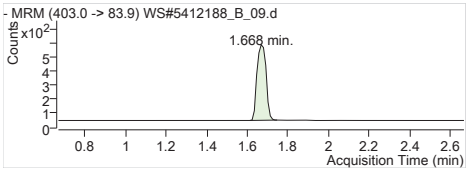
| ISTD Compounds | Response | RT | Target conc. | | |
|---|---|---|---|---|---|
| MPFHxA | 7968 | 1.43 | 1 µg/L | | |
| MPFHxS | 1690 | 1.67 | 1 µg/L | | |
| MPFHpA | 8896 | 1.69 | 1 µg/L | | |
| MPFOA | 8910 | 1.87 | 1 µg/L | | |
| MPFOS | 1985 | 1.97 | 1 µg/L | | |
| MPFNA | 9070 | 2.01 | 1 µg/L | | |
| MPFDA | 8380 | 2.14 | 1 µg/L | | |
| MPFUnA | 9550 | 2.23 | 1 µg/L | | |
| MPFDoA | 12008 | 2.31 | 1 µg/L | | |
| MPFTeDA | 13403 | 2.46 | 1 µg/L | | |
| 13C6-PFHxA IS | 28962 | 1.43 | 1 µg/L | | |
| 13C9-PFDA IS | 35009 | 2.13 | 1 µg/L | | |

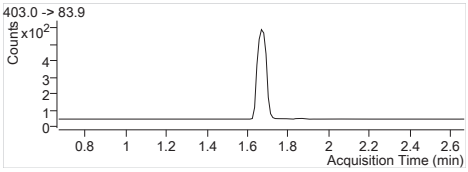
| Compound | Response | RT | Target Conc. | Calc. Conc. | Accuracy |
|---|---|---|---|---|---|
| PFBS 1 | 15344 | 1.09 | 20.80 | 20.09 µg/L | 96.57 |
| PFHxA 1 | 65605 | 1.43 | 20.80 | 19.91 µg/L | 95.70 |
| PFHxS 1 | 15620 | 1.67 | 20.80 | 20.66 µg/L | 99.31 |
| PFHpA 1 | 82360 | 1.69 | 20.80 | 20.42 µg/L | 98.16 |
| PFOA 1 | 88984 | 1.87 | 20.80 | 22.05 µg/L | 106.03 |
| PFOS 1 | 14903 | 1.96 | 20.80 | 18.07 µg/L | 86.86 |
| PFNA 1 | 78299 | 2.01 | 20.80 | 20.12 µg/L | 96.71 |
| PFDA 1 | 86032 | 2.14 | 20.80 | 21.38 µg/L | 102.77 |
| PFUnA 1 | 88547 | 2.23 | 20.80 | 20.57 µg/L | 98.91 |
| PFDoA 1 | 110877 | 2.31 | 20.80 | 20.89 µg/L | 100.45 |
| PFTrDA 1 | 127853 | 2.39 | 20.80 | 21.03 µg/L | 101.11 |
| PFTeDA 1 | 103766 | 2.46 | 20.80 | 20.45 µg/L | 98.30 |
| 13C2-PFHxA | 7968 | 1.43 | 100.00 | 110.68 µg/L | 110.68 |
| 18O2-PFHxS | 1690 | 1.67 | 100.00 | 112.37 µg/L | 112.37 |
| 13C4-PFHpA | 8896 | 1.69 | 100.00 | 106.69 µg/L | 106.69 |
| 13C4-PFOA | 8910 | 1.87 | 100.00 | 103.59 µg/L | 103.59 |
| 13C4-PFOS | 1985 | 1.97 | 100.00 | 113.99 µg/L | 113.99 |
| 13C5-PFNA | 9070 | 2.01 | 100.00 | 108.87 µg/L | 108.87 |
| 13C2-PFDA | 8359 | 2.14 | 100.00 | 108.41 µg/L | 108.41 |
| 13C2-PFUnA | 9550 | 2.23 | 100.00 | 106.50 µg/L | 106.50 |
| 13C2-PFDoA | 12008 | 2.31 | 100.00 | 105.70 µg/L | 105.70 |
| 13C2-PFTeDA | 13622 | 2.46 | 100.00 | 109.08 µg/L | 109.08 |
| 13C6-PFHxA | 28962 | 1.43 | 100.00 | 92.44 µg/L | 92.44 |
| 13C9-PFDA | 35009 | 2.13 | 100.00 | 93.95 µg/L | 93.95 |



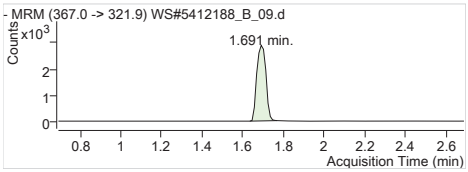



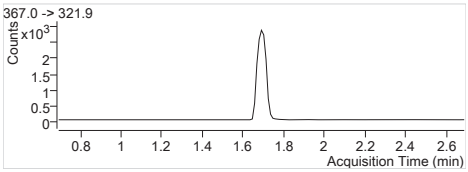

| | |
|---|---|
| **MPFHxA** | Internal Standard |
| RT (Exp. RT): | 1.434 (1.434) |
| Concentration: | 1 µg/L |
| Sample type: | QC |



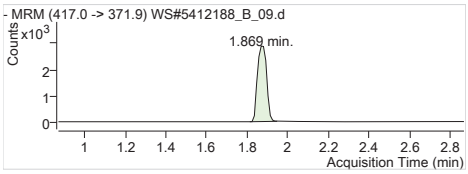



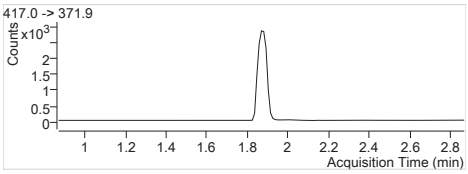

**MPFHxS** Internal Standard
RT (Exp. RT): 1.668 (1.668)
Concentration: 1 µg/L
Sample type: QC



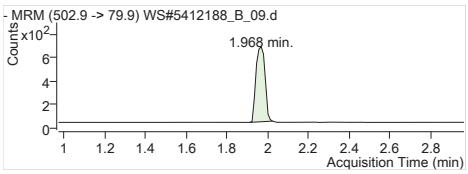



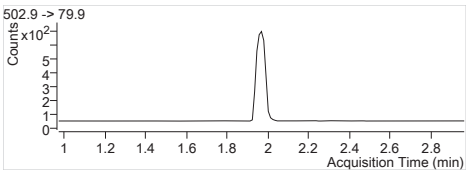

**MPFHpA** Internal Standard
RT (Exp. RT): 1.691 (1.691)
Concentration: 1 µg/L
Sample type: QC



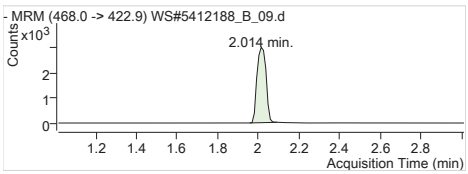



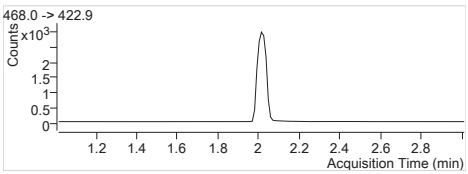

**MPFOA** Internal Standard
RT (Exp. RT): 1.869 (1.869)
Concentration: 1 µg/L
Sample type: QC



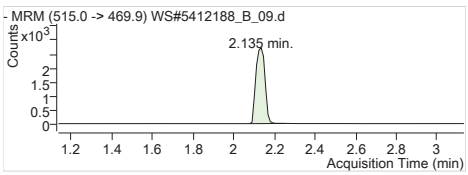



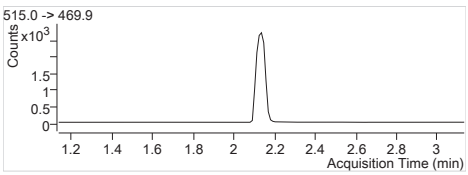

**MPFOS** Internal Standard
RT (Exp. RT): 1.968 (1.968)
Concentration: 1 µg/L
Sample type: QC



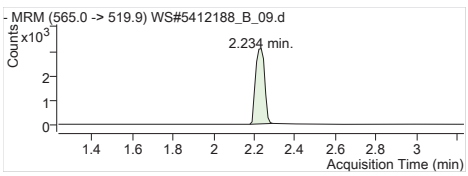



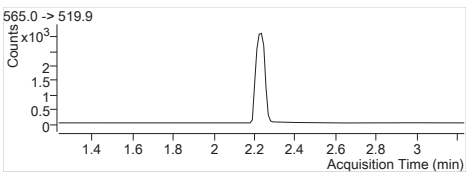

**MPFNA** Internal Standard
RT (Exp. RT): 2.014 (2.014)
Concentration: 1 µg/L
Sample type: QC



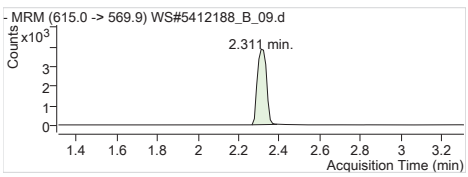



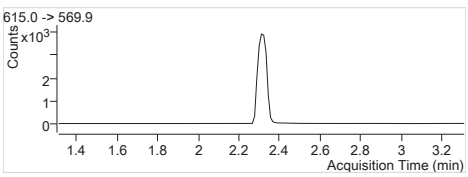

**MPFDA** Internal Standard
RT (Exp. RT): 2.135 (2.135)
Concentration: 1 µg/L
Sample type: QC



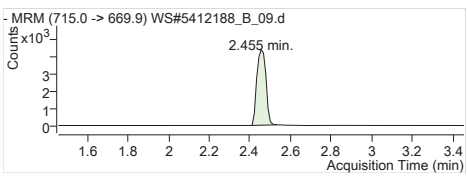



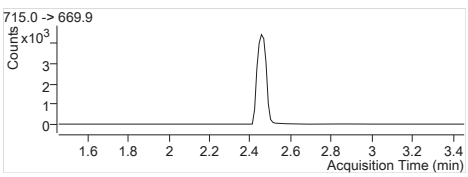

**MPFUnA** Internal Standard
RT (Exp. RT): 2.234 (2.234)
Concentration: 1 µg/L
Sample type: QC



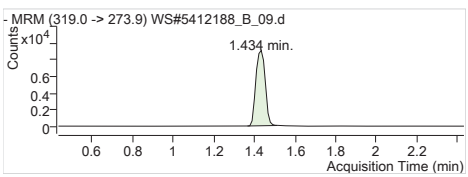



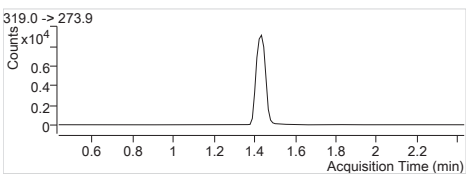

**MPFDoA** Internal Standard
RT (Exp. RT): 2.311 (2.311)
Concentration: 1 µg/L
Sample type: QC



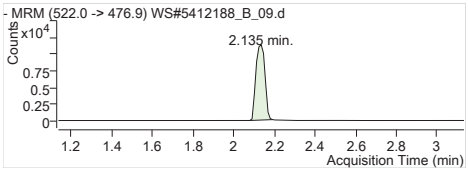



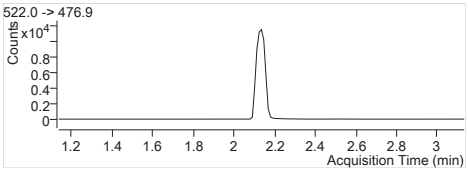

**MPFTeDA** Internal Standard
RT (Exp. RT): 2.455 (2.455)
Concentration: 1 µg/L
Sample type: QC



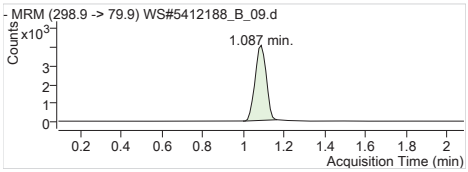



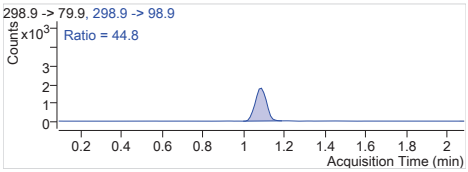

**13C6-PFHxA IS** Internal Standard
RT (Exp. RT): 1.434 (1.434)
Concentration: 1 µg/L
Sample type: QC



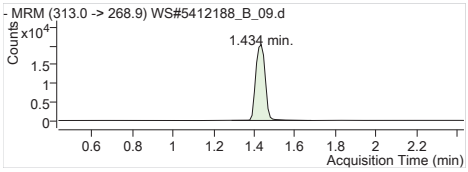



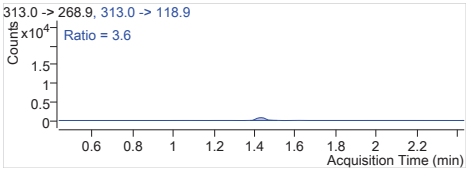

**13C9-PFDA IS** Internal Standard
RT (Exp. RT): 2.135 (2.135)
Concentration: 1 µg/L
Sample type: QC



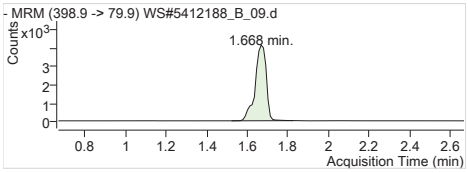



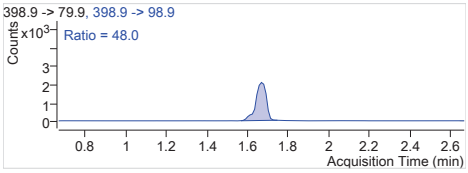

**PFBS 1** 298.9 -> 79.9
RT (Exp. RT): 1.087 (1.087)
Calc. conc. 20.09 µg/L
Area ratio: 9.07929
Sample type: QC



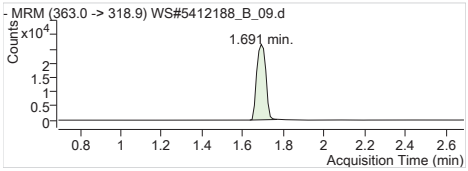



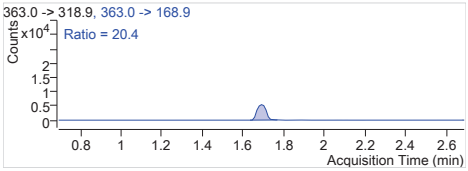

**PFHxA 1** 313.0 -> 268.9
RT (Exp. RT): 1.434 (1.434)
Calc. conc. 19.91 µg/L
Area ratio: 8.23356
Sample type: QC



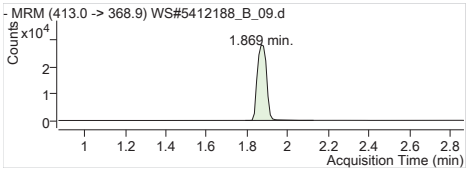



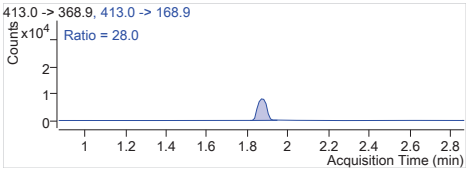

**PFHxS 1** 398.9 -> 79.9
RT (Exp. RT): 1.668 (1.668)
Calc. conc. 20.66 µg/L
Area ratio: 9.24260
Sample type: QC



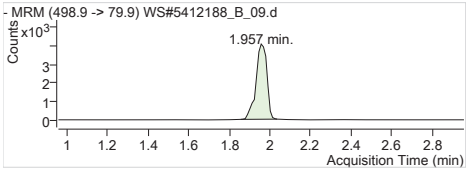



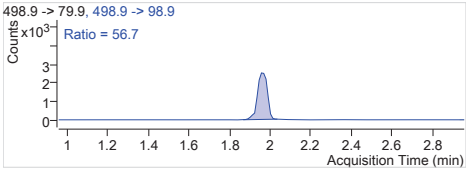

**PFHpA 1** 363.0 -> 318.9
RT (Exp. RT): 1.691 (1.691)
Calc. conc. 20.42 µg/L
Area ratio: 9.25809
Sample type: QC



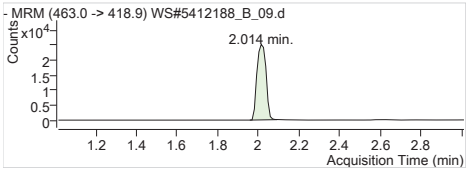



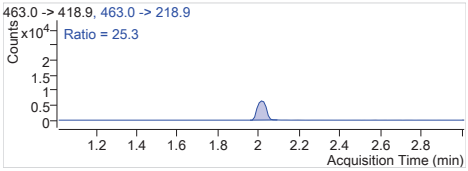

**PFOA 1** 413.0 -> 368.9
RT (Exp. RT): 1.869 (1.869)
Calc. conc. 22.05 µg/L
Area ratio: 9.98698
Sample type: QC



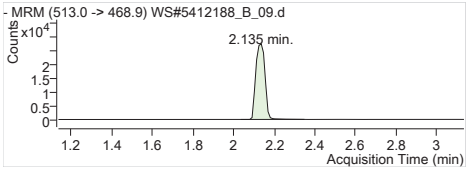



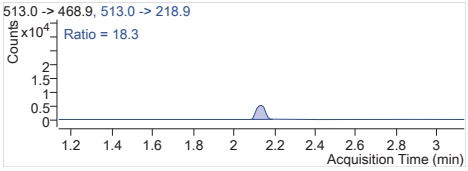

**PFOS 1** 498.9 -> 79.9
RT (Exp. RT): 1.957 (1.957)
Calc. conc. 18.07 µg/L
Area ratio: 7.50781
Sample type: QC



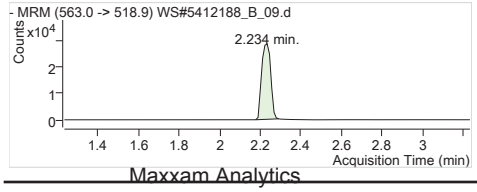



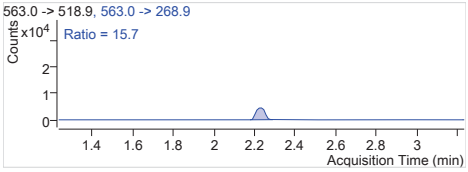

**PFNA 1** 463.0 -> 418.9
RT (Exp. RT): 2.014 (2.014)
Calc. conc. 20.12 µg/L
Area ratio: 8.63275
Sample type: QC



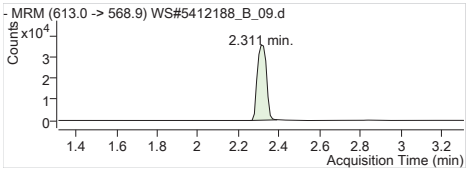



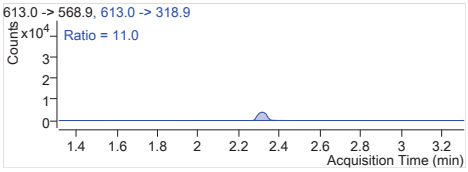

**PFDA 1** 513.0 -> 468.9
RT (Exp. RT): 2.135 (2.135)
Calc. conc. 21.38 µg/L
Area ratio: 10.26635
Sample type: QC



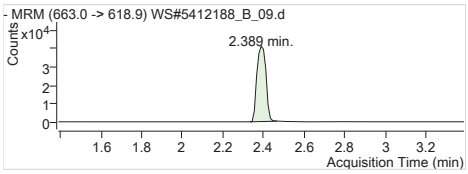



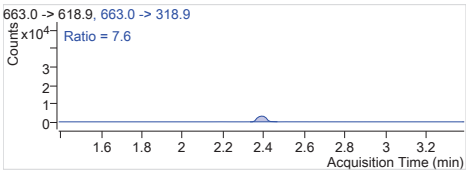

**PFUnA 1** 563.0 -> 518.9
RT (Exp. RT): 2.234 (2.234)
Calc. conc. 20.57 µg/L
Area ratio: 9.27194
Sample type: QC



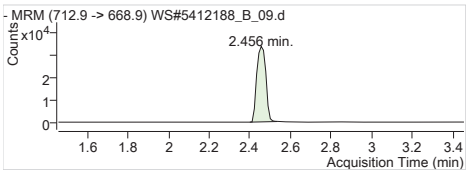



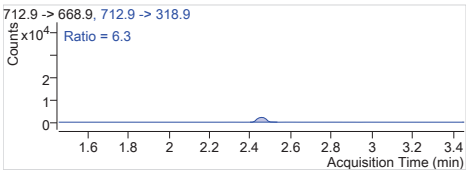

**PFDoA 1** 613.0 -> 568.9
RT (Exp. RT): 2.311 (2.311)
Calc. conc. 20.89 µg/L
Area ratio: 9.23359
Sample type: QC



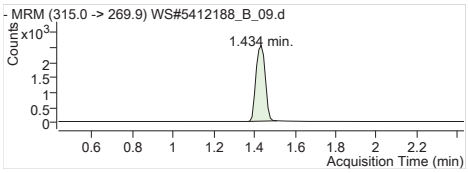



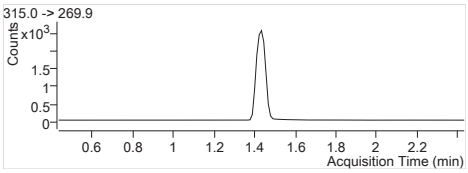

**PFTrDA 1** 663.0 -> 618.9
RT (Exp. RT): 2.389 (2.389)
Calc. conc. 21.03 µg/L
Area ratio: 9.53913
Sample type: QC



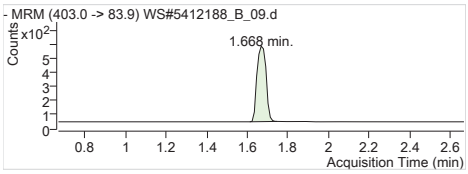



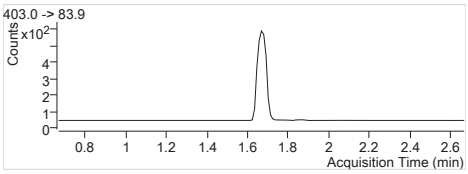

**PFTeDA 1** 712.9 -> 668.9
RT (Exp. RT): 2.456 (2.456)
Calc. conc. 20.45 µg/L
Area ratio: 7.74200
Sample type: QC



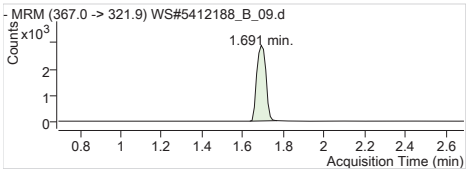



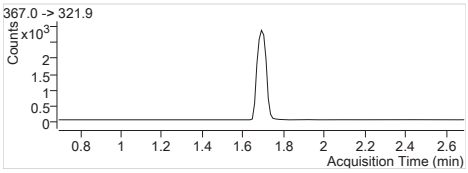

**13C2-PFHxA** 315.0 -> 269.9
RT (Exp. RT): 1.434 (1.434)
Calc. conc. 110.68 µg/L
Area ratio: 0.27512
Sample type: QC



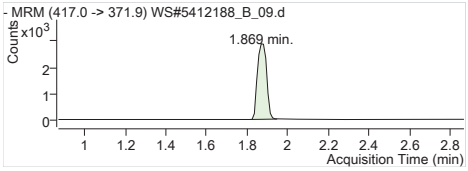



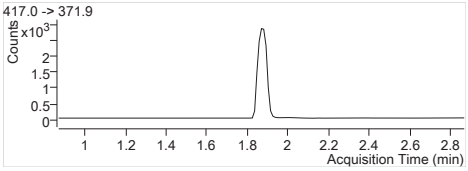

**18O2-PFHxS** 403.0 -> 83.9
RT (Exp. RT): 1.668 (1.668)
Calc. conc. 112.37 µg/L
Area ratio: 0.05835
Sample type: QC



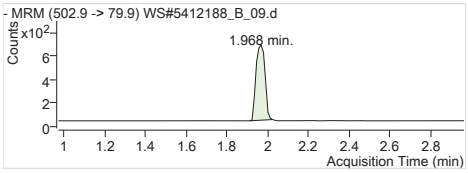



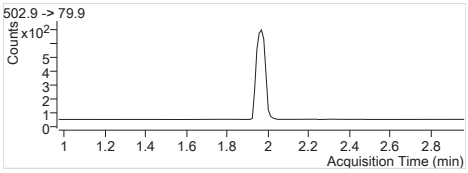

**13C4-PFHpA** 367.0 -> 321.9
RT (Exp. RT): 1.691 (1.691)
Calc. conc. 106.69 µg/L
Area ratio: 0.30716
Sample type: QC



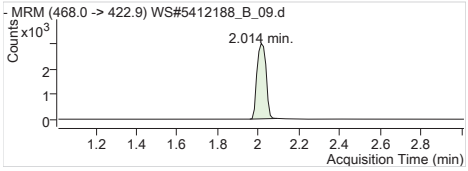



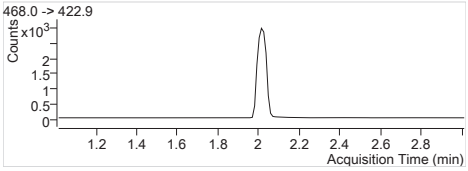

**13C4-PFOA** 417.0 -> 371.9
RT (Exp. RT): 1.869 (1.869)
Calc. conc. 103.59 µg/L
Area ratio: 0.30764
Sample type: QC



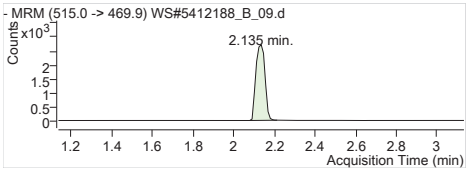



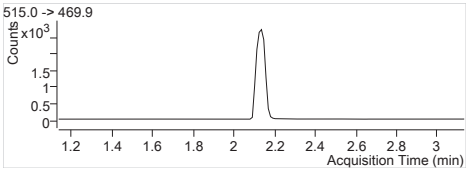

**13C4-PFOS** 502.9 -> 79.9
RT (Exp. RT): 1.968 (1.968)
Calc. conc. 113.99 µg/L
Area ratio: 0.06854
Sample type: QC



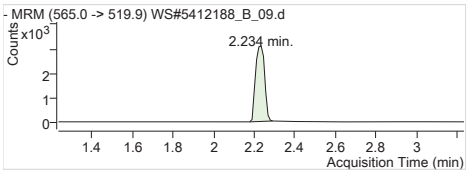



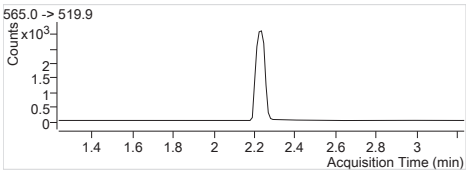

**13C5-PFNA** 468.0 -> 422.9
RT (Exp. RT): 2.014 (2.014)
Calc. conc. 108.87 µg/L
Area ratio: 0.31317
Sample type: QC



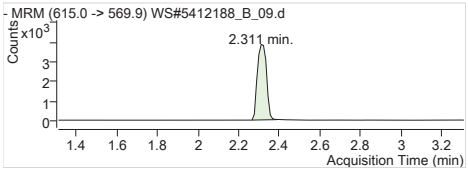



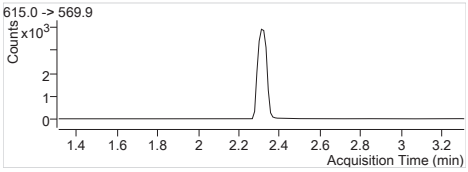

**13C2-PFDA** 515.0 -> 469.9
RT (Exp. RT): 2.135 (2.135)
Calc. conc. 108.41 µg/L
Area ratio: 0.23877
Sample type: QC



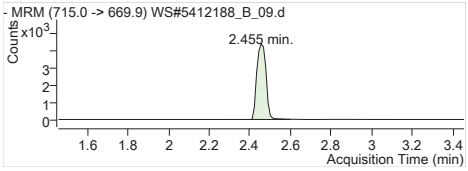



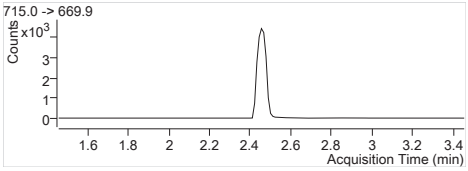

**13C2-PFUnA** 565.0 -> 519.9
RT (Exp. RT): 2.234 (2.234)
Calc. conc. 106.50 µg/L
Area ratio: 0.27279
Sample type: QC



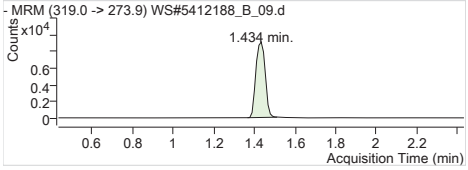



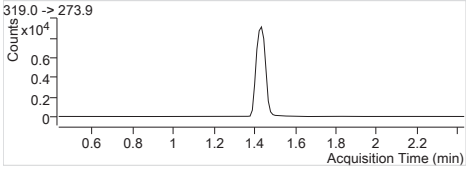

**13C2-PFDoA** 615.0 -> 569.9
RT (Exp. RT): 2.311 (2.311)
Calc. conc. 105.70 µg/L
Area ratio: 0.34300
Sample type: QC



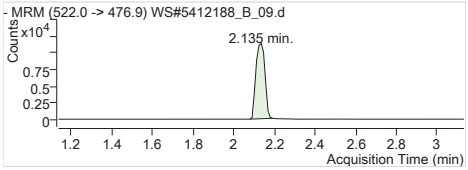



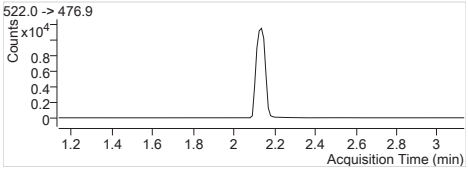

**13C2-PFTeDA** 715.0 -> 669.9
RT (Exp. RT): 2.455 (2.455)
Calc. conc. 109.08 µg/L
Area ratio: 0.38910
Sample type: QC




**13C6-PFHxA** 319.0 -> 273.9
RT (Exp. RT): 1.434 (1.434)
Calc. conc. 92.44 µg/L
Area ratio: 0
Sample type: QC




**13C9-PFDA** 522.0 -> 476.9
RT (Exp. RT): 2.135 (2.135)
Calc. conc. 93.95 µg/L
Area ratio: 0
Sample type: QC

# Quantitation Results

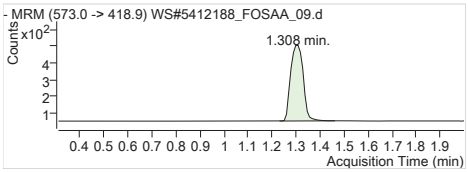
Agilent Technologies

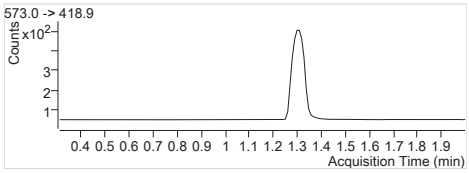
| | |
|---|---|
| **Batch Path** | T:\lcms4\PFC\20180226\WS#5412188_FOSAA\QuantResults\PFC_Water_Low_180226_WS#5412188_FOSAA_EToxics |

| | | | |
|---|---|---|---|
| **Sample Name** | **ICV** | **Instrument** | LCMS04 |
| **Data File** | WS#5412188_FOSAA_09.d | **Operator** | |
| **Sample Type** | QC | **Dilution** | 1 |
| **Acq. Method** | PFC_Water_Low_FOSAA.m | **Position** | P1-C8 |
| **Acq. Date** | 2018/02/27 4:56:29 AM | **Injection Volume** | Per Method |
| **Sample Annotation** | - | | |

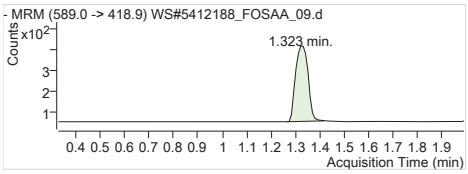
| ISTD Compounds | Response | RT | Target conc. | | |
|---|---|---|---|---|---|
| D3-MeFOSAA IS | 1669 | 1.31 | 1 µg/L | | |
| D5-EtFOSAA IS | 1323 | 1.32 | 1 µg/L | | |
| 13C9-PFDA IS | 24764 | 0.89 | 1 µg/L | | |

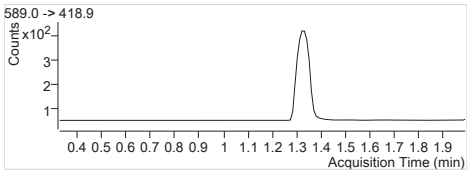
| Compound | Response | RT | Target Conc. | Calc. Conc. | Accuracy |
|---|---|---|---|---|---|
| MeFOSAA 1 | 12173 | 1.30 | 20.80 | 19.31 µg/L | 92.83 |
| EtFOSAA 1 | 12549 | 1.32 | 20.80 | 21.48 µg/L | 103.26 |
| D3-MeFOSAA | 1664 | 1.31 | 100.00 | 110.47 µg/L | 110.47 |
| D5-EtFOSAA | 1340 | 1.32 | 100.00 | 104.48 µg/L | 104.48 |
| 13C9-PFDA | 24262 | 0.89 | 100.00 | 95.42 µg/L | 95.42 |



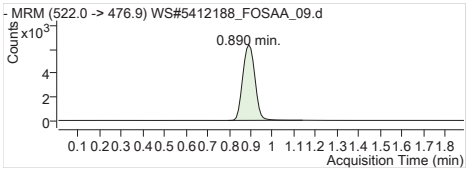



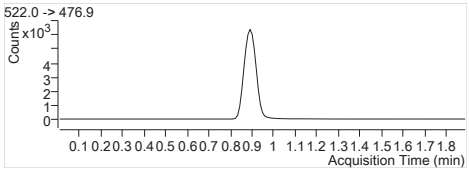

**D3-MeFOSAA IS** Internal Standard
RT (Exp. RT): 1.308 (1.308)
Concentration: 1 µg/L
Sample type: QC



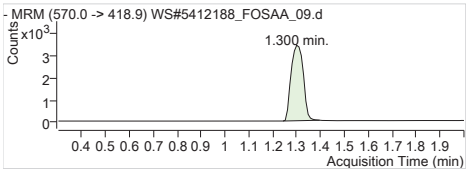



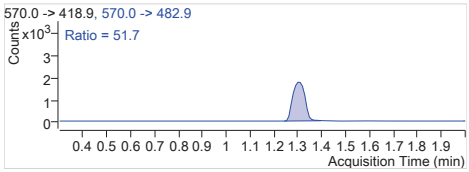

**D5-EtFOSAA IS** Internal Standard
RT (Exp. RT): 1.323 (1.323)
Concentration: 1 µg/L
Sample type: QC



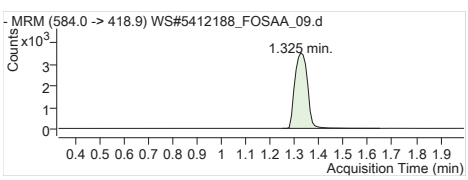



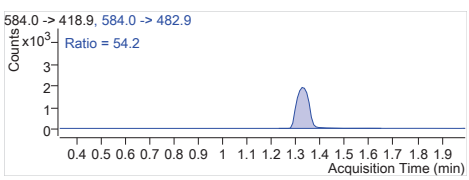

**13C9-PFDA IS** Internal Standard
RT (Exp. RT): 0.890 (0.890)
Concentration: 1 µg/L
Sample type: QC



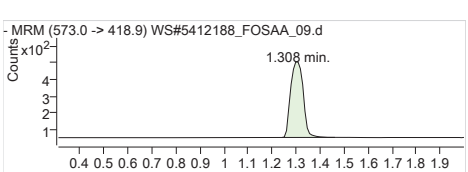



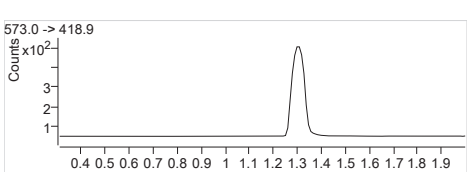

**MeFOSAA 1** 570.0 -> 418.9
RT (Exp. RT): 1.300 (1.300)
Calc. conc. 19.31 µg/L
Area ratio: 7.29359
Sample type: QC



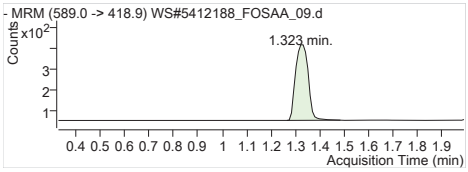



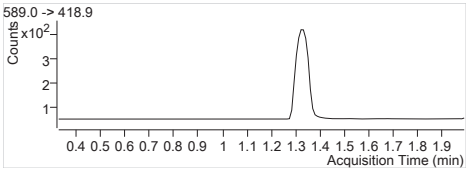

**EtFOSAA 1** 584.0 -> 418.9
RT (Exp. RT): 1.325 (1.325)
Calc. conc. 21.48 µg/L
Area ratio: 9.48526
Sample type: QC



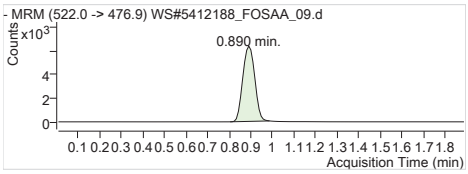



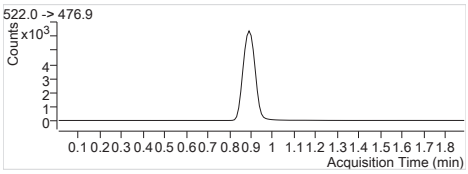

**D3-MeFOSAA** 573.0 -> 418.9
RT (Exp. RT): 1.308 (1.308)
Calc. conc. 110.47 µg/L
Area ratio: 0.06719
Sample type: QC




| | |
|---|---|
| **D5-EtFOSAA** | 589.0 -> 418.9 |
| RT (Exp. RT): | 1.323 (1.323) |
| Calc. conc. | 104.48 µg/L |
| Area ratio: | 0.05411 |
| Sample type: | QC |

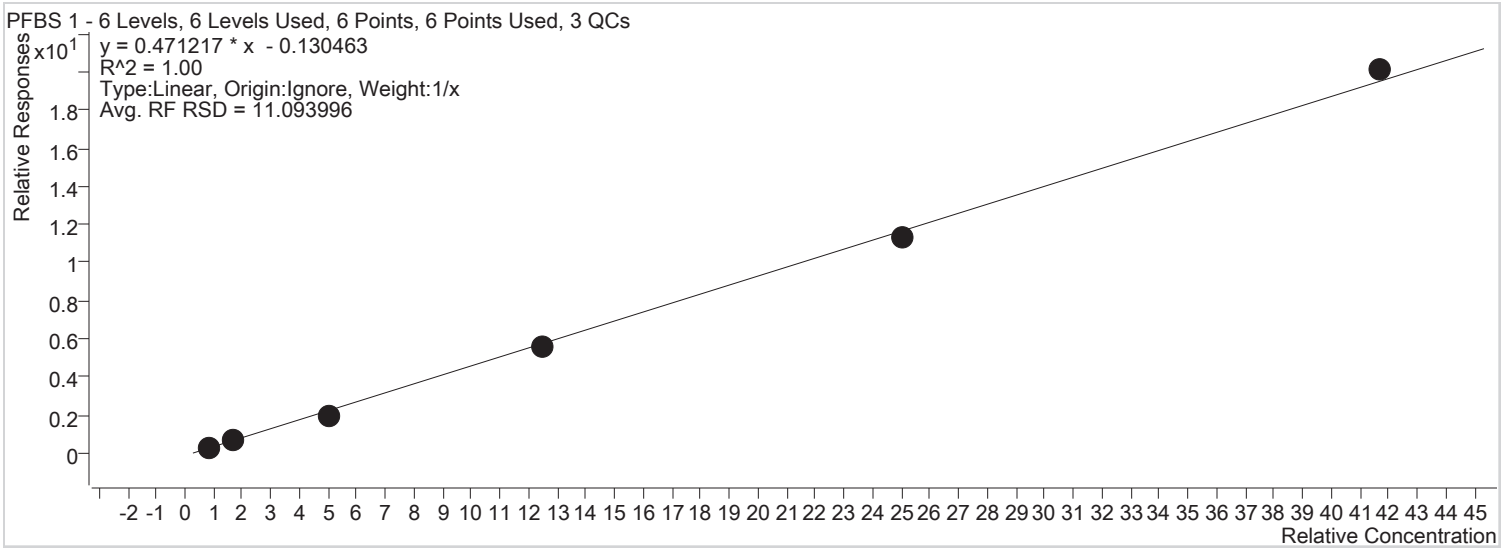



| | |
|---|---|
| **13C9-PFDA** | 522.0 -> 476.9 |
| RT (Exp. RT): | 0.890 (0.890) |
| Calc. conc. | 95.42 µg/L |
| Area ratio: | 0 |
| Sample type: | QC |

**Batch Path** T:\lcms4\PFC\20180223\WS#5410178\QuantResults\PFC_Water_Low_180223_WS#5410178_EToxics.batch.bin
**Last Calib Update** 2018/02/27 2:51:08 PM
**Instrument:** LCMS04

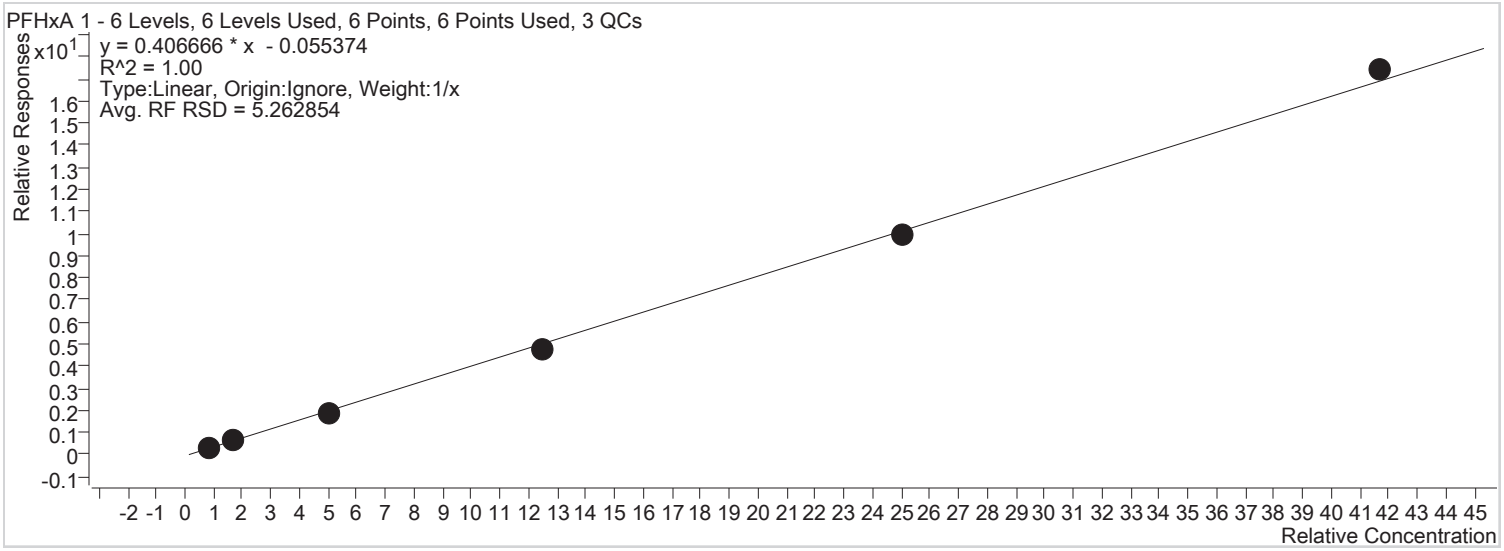
**Analyte:** PFBS 1
**Internal Standard:** MPFHxS




| Sample | Level | Enabled | Acquisition Time | Exp. Conc. | Concentration | Response | RF | S/N | Accuracy |
|---|---|---|---|---|---|---|---|---|---|
| STD 1 | STD 1 | x | 2018/02/23 4:39:32 PM | 0.83 | 0.89 | 485 | 0.3495 | 62 | 107.5 |
| STD 2 | STD 2 | x | 2018/02/23 4:44:28 PM | 1.70 | 1.77 | 1042 | 0.4128 | 83 | 103.9 |
| STD 3 | STD 3 | x | 2018/02/23 4:49:24 PM | 5.00 | 4.54 | 3317 | 0.4016 | 253 | 90.8 |
| STD 4 | STD 4 | x | 2018/02/23 4:54:20 PM | 12.50 | 12.14 | 8138 | 0.4471 | 753 | 97.1 |
| STD 5 | STD 5 | x | 2018/02/23 4:59:16 PM | 25.00 | 24.42 | 17495 | 0.4550 | 464 | 97.7 |
| STD 6 | STD 6 | x | 2018/02/23 5:04:12 PM | 41.70 | 42.98 | 30887 | 0.4825 | 168 | 103.1 |

**Batch Path** T:\lcms4\PFC\20180223\WS#5410178\QuantResults\PFC_Water_Low_180223_WS#5410178_EToxics.batch.bin
**Last Calib Update** 2018/02/27 2:51:08 PM
**Instrument:** LCMS04

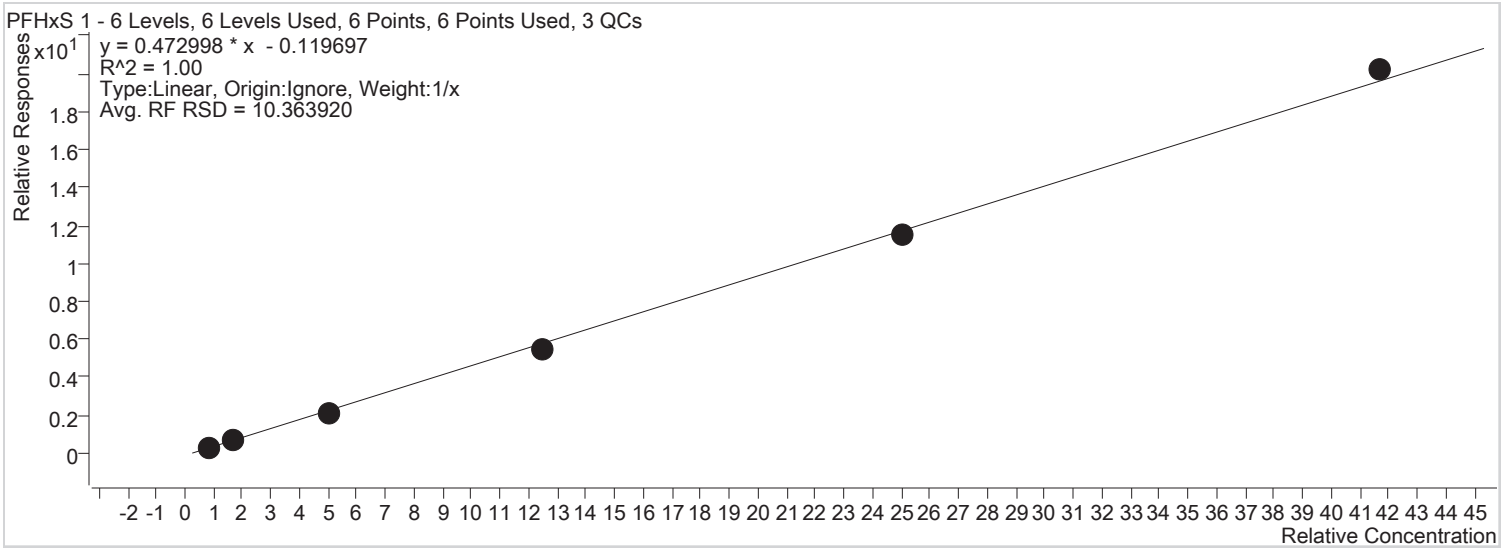
**Analyte:** PFHxA 1
**Internal Standard:** MPFHxA




| Sample | Level | Enabled | Acquisition Time | Exp. Conc. | Concentration | Response | RF | S/N | Accuracy |
|---|---|---|---|---|---|---|---|---|---|
| STD 1 | STD 1 | x | 2018/02/23 4:39:32 PM | 0.83 | 0.93 | 2229 | 0.3867 | 96 | 111.5 |
| STD 2 | STD 2 | x | 2018/02/23 4:44:28 PM | 1.70 | 1.63 | 4087 | 0.3563 | 159 | 95.6 |
| STD 3 | STD 3 | x | 2018/02/23 4:49:24 PM | 5.00 | 4.87 | 13016 | 0.3850 | 823 | 97.4 |
| STD 4 | STD 4 | x | 2018/02/23 4:54:20 PM | 12.50 | 11.76 | 30538 | 0.3782 | 1525 | 94.1 |
| STD 5 | STD 5 | x | 2018/02/23 4:59:16 PM | 25.00 | 24.59 | 65090 | 0.3978 | 3455 | 98.4 |
| STD 6 | STD 6 | x | 2018/02/23 5:04:12 PM | 41.70 | 42.96 | 113899 | 0.4176 | 5634 | 103.0 |

**Batch Path** T:\lcms4\PFC\20180223\WS#5410178\QuantResults\PFC_Water_Low_180223_WS#5410178_EToxics.batch.bin
**Last Calib Update** 2018/02/27 2:51:08 PM
**Instrument:** LCMS04

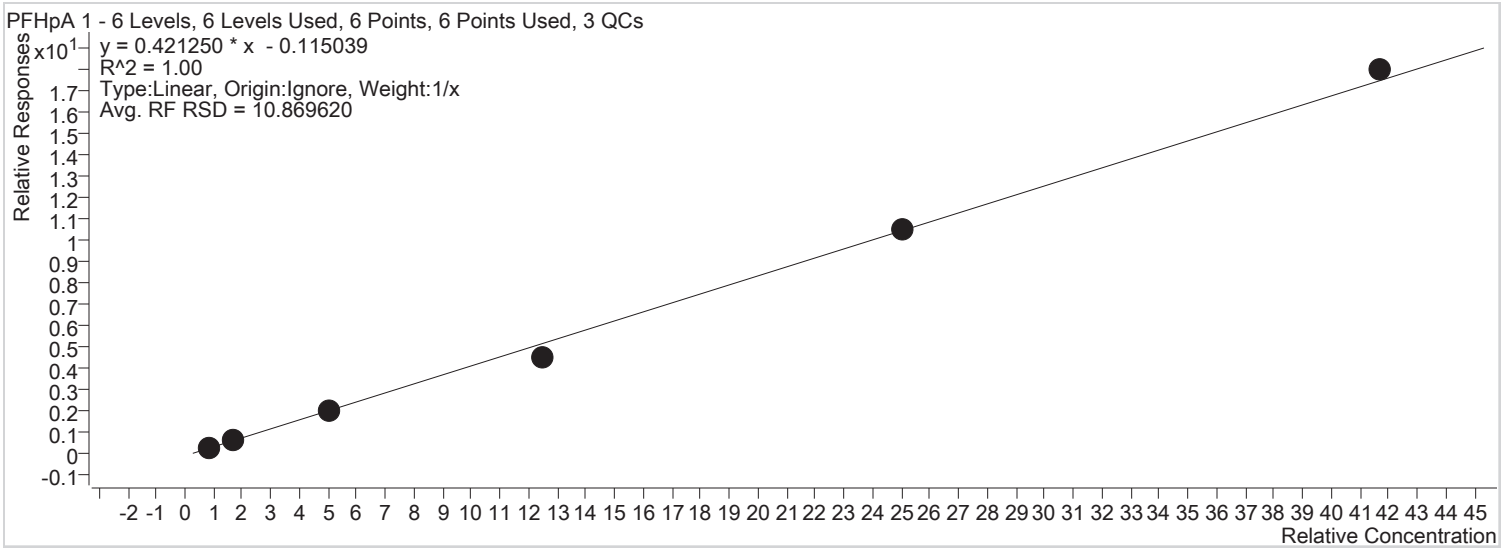
**Analyte:** PFHxS 1
**Internal Standard:** MPFHxS




| Sample | Level | Enabled | Acquisition Time | Exp. Conc. | Concentration | Response | RF | S/N | Accuracy |
|---|---|---|---|---|---|---|---|---|---|
| STD 1 | STD 1 | x | 2018/02/23 4:39:32 PM | 0.83 | 0.87 | 490 | 0.3531 | 546 | 105.1 |
| STD 2 | STD 2 | x | 2018/02/23 4:44:28 PM | 1.70 | 1.78 | 1070 | 0.4238 | 316 | 104.5 |
| STD 3 | STD 3 | x | 2018/02/23 4:49:24 PM | 5.00 | 4.71 | 3482 | 0.4215 | 2890 | 94.2 |
| STD 4 | STD 4 | x | 2018/02/23 4:54:20 PM | 12.50 | 11.88 | 8004 | 0.4398 | 3946 | 95.0 |
| STD 5 | STD 5 | x | 2018/02/23 4:59:16 PM | 25.00 | 24.55 | 17672 | 0.4596 | 19392 | 98.2 |
| STD 6 | STD 6 | x | 2018/02/23 5:04:12 PM | 41.70 | 42.95 | 31001 | 0.4843 | 42555 | 103.0 |

**Batch Path** T:\lcms4\PFC\20180223\WS#5410178\QuantResults\PFC_Water_Low_180223_WS#5410178_EToxics.batch.bin
**Last Calib Update** 2018/02/27 2:51:08 PM
**Instrument:** LCMS04

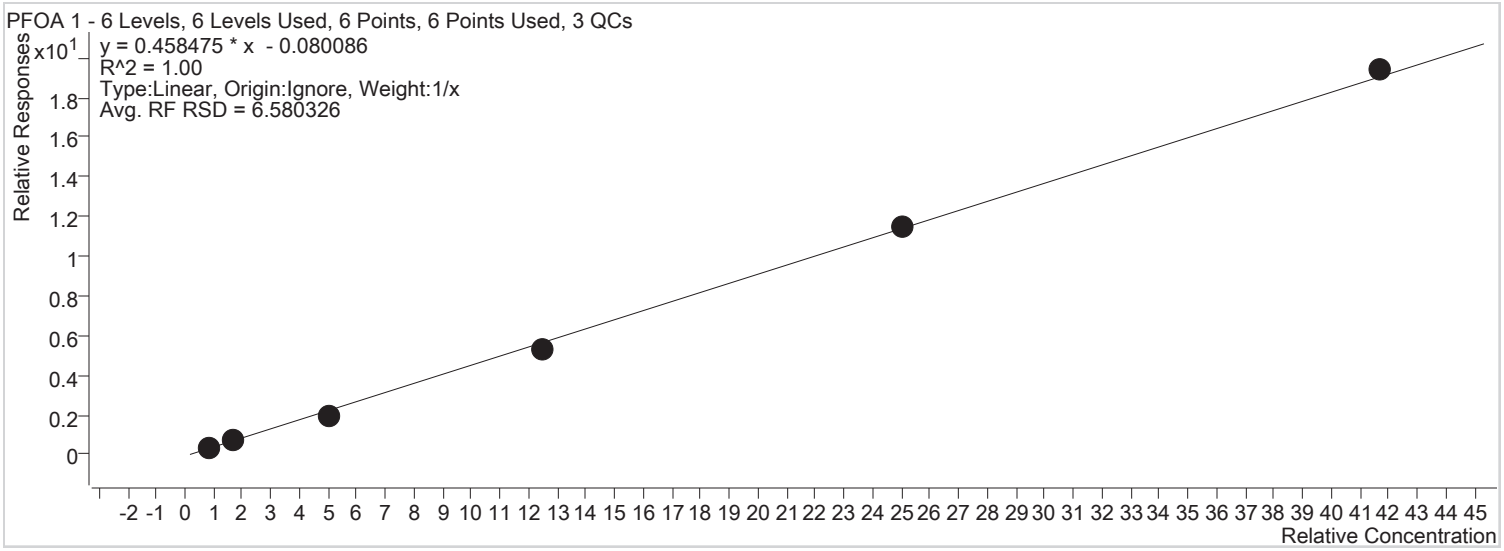
**Analyte:** PFHpA 1
**Internal Standard:** MPFHpA




| Sample | Level | Enabled | Acquisition Time | Exp. Conc. | Concentration | Response | RF | S/N | Accuracy |
|---|---|---|---|---|---|---|---|---|---|
| STD 1 | STD 1 | x | 2018/02/23 4:39:32 PM | 0.83 | 0.91 | 2296 | 0.3255 | 22 | 110.2 |
| STD 2 | STD 2 | x | 2018/02/23 4:44:28 PM | 1.70 | 1.69 | 5158 | 0.3500 | 55 | 99.1 |
| STD 3 | STD 3 | x | 2018/02/23 4:49:24 PM | 5.00 | 4.92 | 16518 | 0.3915 | 149 | 98.4 |
| STD 4 | STD 4 | x | 2018/02/23 4:54:20 PM | 12.50 | 11.04 | 38018 | 0.3630 | 333 | 88.4 |
| STD 5 | STD 5 | x | 2018/02/23 4:59:16 PM | 25.00 | 25.26 | 85776 | 0.4210 | 497 | 101.0 |
| STD 6 | STD 6 | x | 2018/02/23 5:04:12 PM | 41.70 | 42.91 | 142442 | 0.4307 | 449 | 102.9 |

**Batch Path** T:\lcms4\PFC\20180223\WS#5410178\QuantResults\PFC_Water_Low_180223_WS#5410178_EToxics.batch.bin
**Last Calib Update** 2018/02/27 2:51:08 PM
**Instrument:** LCMS04

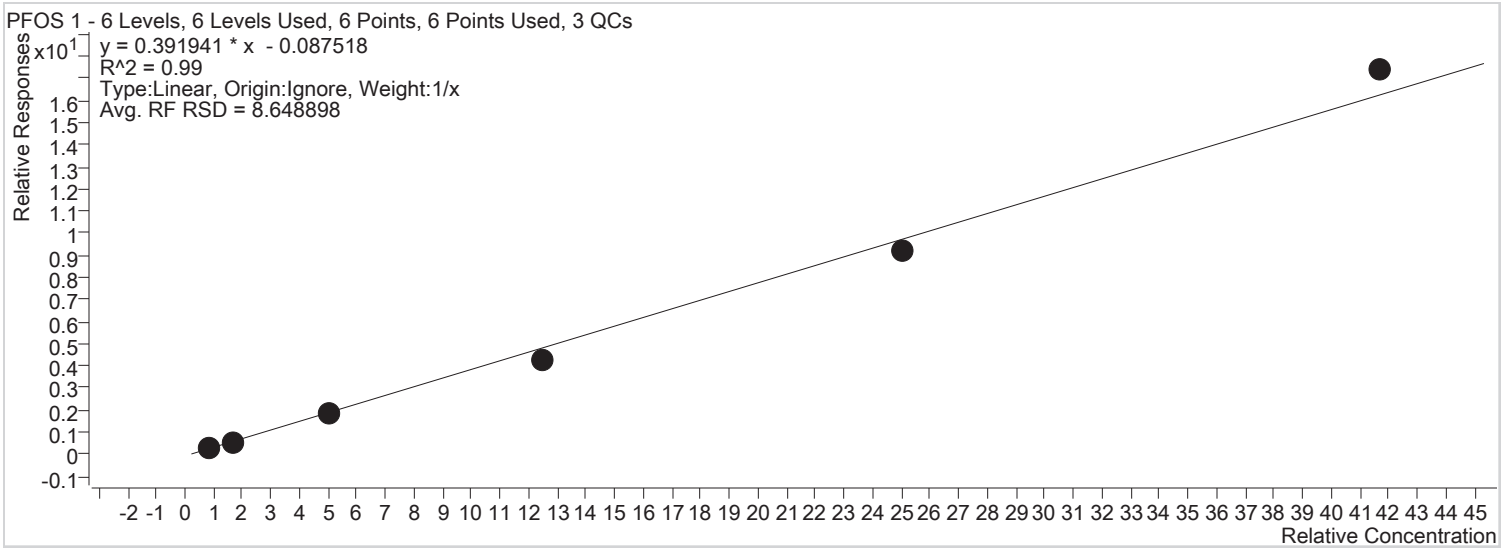
**Analyte:** PFOA 1
**Internal Standard:** MPFOA




| Sample | Level | Enabled | Acquisition Time | Exp. Conc. | Concentration | Response | RF | S/N | Accuracy |
|---|---|---|---|---|---|---|---|---|---|
| STD 1 | STD 1 | x | 2018/02/23 4:39:32 PM | 0.83 | 0.93 | 2837 | 0.4199 | 85 | 112.6 |
| STD 2 | STD 2 | x | 2018/02/23 4:44:28 PM | 1.70 | 1.71 | 6161 | 0.4139 | 119 | 100.6 |
| STD 3 | STD 3 | x | 2018/02/23 4:49:24 PM | 5.00 | 4.46 | 17457 | 0.3930 | 341 | 89.2 |
| STD 4 | STD 4 | x | 2018/02/23 4:54:20 PM | 12.50 | 11.78 | 41178 | 0.4258 | 1176 | 94.3 |
| STD 5 | STD 5 | x | 2018/02/23 4:59:16 PM | 25.00 | 25.37 | 94176 | 0.4620 | 1892 | 101.5 |
| STD 6 | STD 6 | x | 2018/02/23 5:04:12 PM | 41.70 | 42.47 | 153654 | 0.4651 | 3485 | 101.9 |

**Batch Path** T:\lcms4\PFC\20180223\WS#5410178\QuantResults\PFC_Water_Low_180223_WS#5410178_EToxics.batch.bin
**Last Calib Update** 2018/02/27 2:51:08 PM
**Instrument:** LCMS04

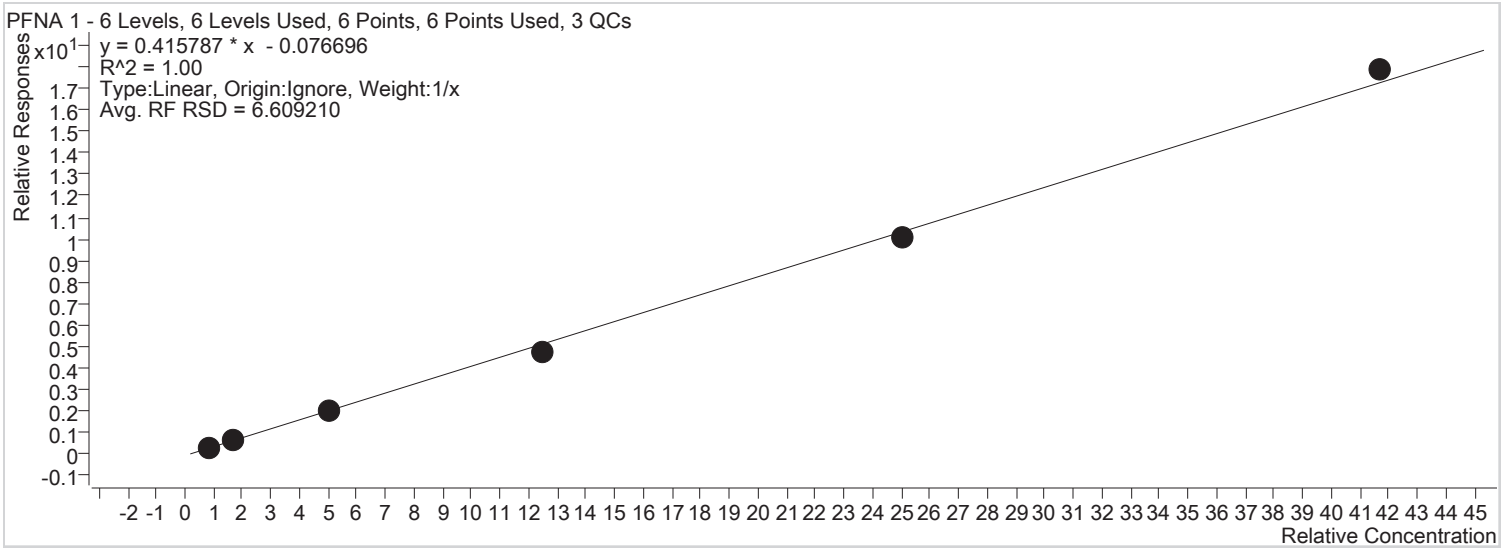
**Analyte:** PFOS 1
**Internal Standard:** MPFOS




| Sample | Level | Enabled | Acquisition Time | Exp. Conc. | Concentration | Response | RF | S/N | Accuracy |
|---|---|---|---|---|---|---|---|---|---|
| STD 1 | STD 1 | x | 2018/02/23 4:39:32 PM | 0.83 | 0.97 | 528 | 0.3520 | 161 | 116.7 |
| STD 2 | STD 2 | x | 2018/02/23 4:44:28 PM | 1.70 | 1.65 | 1058 | 0.3298 | 220 | 97.3 |
| STD 3 | STD 3 | x | 2018/02/23 4:49:24 PM | 5.00 | 4.83 | 3377 | 0.3608 | 267 | 96.5 |
| STD 4 | STD 4 | x | 2018/02/23 4:54:20 PM | 12.50 | 10.95 | 7484 | 0.3364 | 242 | 87.6 |
| STD 5 | STD 5 | x | 2018/02/23 4:59:16 PM | 25.00 | 23.73 | 16848 | 0.3685 | 165 | 94.9 |
| STD 6 | STD 6 | x | 2018/02/23 5:04:12 PM | 41.70 | 44.61 | 29328 | 0.4171 | 183 | 107.0 |

**Batch Path** T:\lcms4\PFC\20180223\WS#5410178\QuantResults\PFC_Water_Low_180223_WS#5410178_EToxics.batch.bin
**Last Calib Update** 2018/02/27 2:51:08 PM
**Instrument:** LCMS04

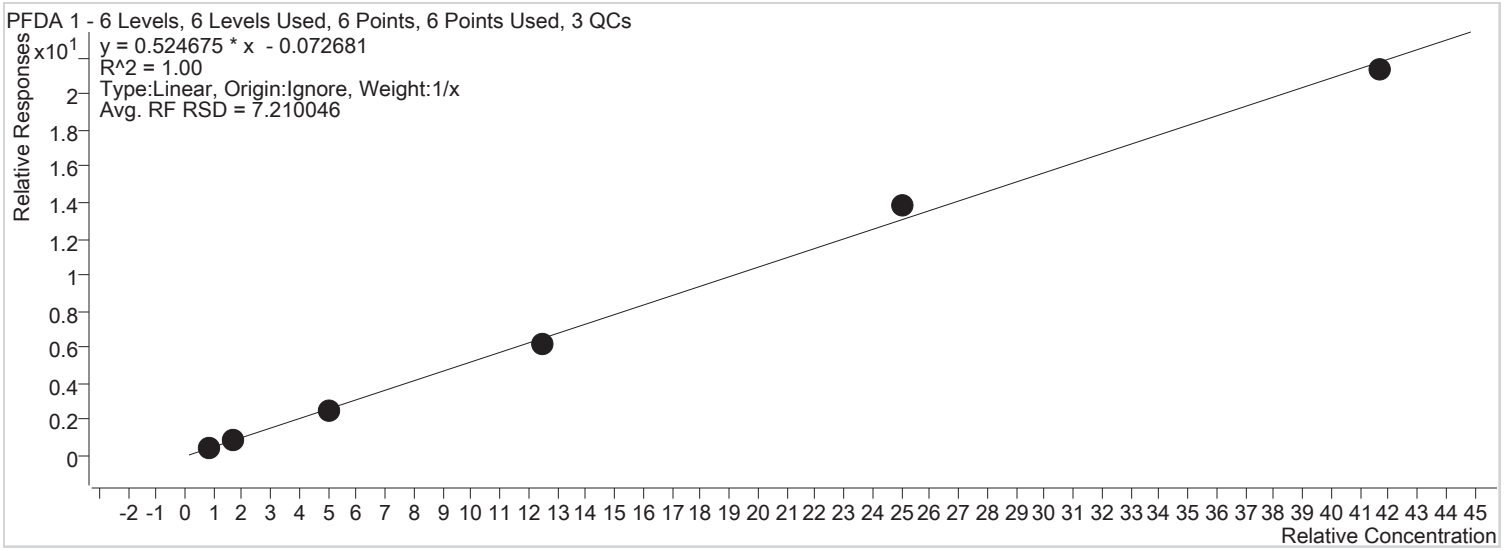
**Analyte:** PFNA 1
**Internal Standard:** MPFNA




| Sample | Level | Enabled | Acquisition Time | Exp. Conc. | Concentration | Response | RF | S/N | Accuracy |
|---|---|---|---|---|---|---|---|---|---|
| STD 1 | STD 1 | x | 2018/02/23 4:39:32 PM | 0.83 | 0.90 | 2364 | 0.3575 | 34 | 108.2 |
| STD 2 | STD 2 | x | 2018/02/23 4:44:28 PM | 1.70 | 1.69 | 5173 | 0.3691 | 82 | 99.6 |
| STD 3 | STD 3 | x | 2018/02/23 4:49:24 PM | 5.00 | 4.90 | 16356 | 0.3924 | 391 | 98.1 |
| STD 4 | STD 4 | x | 2018/02/23 4:54:20 PM | 12.50 | 11.58 | 37369 | 0.3790 | 745 | 92.6 |
| STD 5 | STD 5 | x | 2018/02/23 4:59:16 PM | 25.00 | 24.51 | 80139 | 0.4045 | 928 | 98.0 |
| STD 6 | STD 6 | x | 2018/02/23 5:04:12 PM | 41.70 | 43.15 | 140109 | 0.4284 | 2500 | 103.5 |

**Batch Path** T:\lcms4\PFC\20180223\WS#5410178\QuantResults\PFC_Water_Low_180223_WS#5410178_EToxics.batch.bin
**Last Calib Update** 2018/02/27 2:51:08 PM
**Instrument:** LCMS04

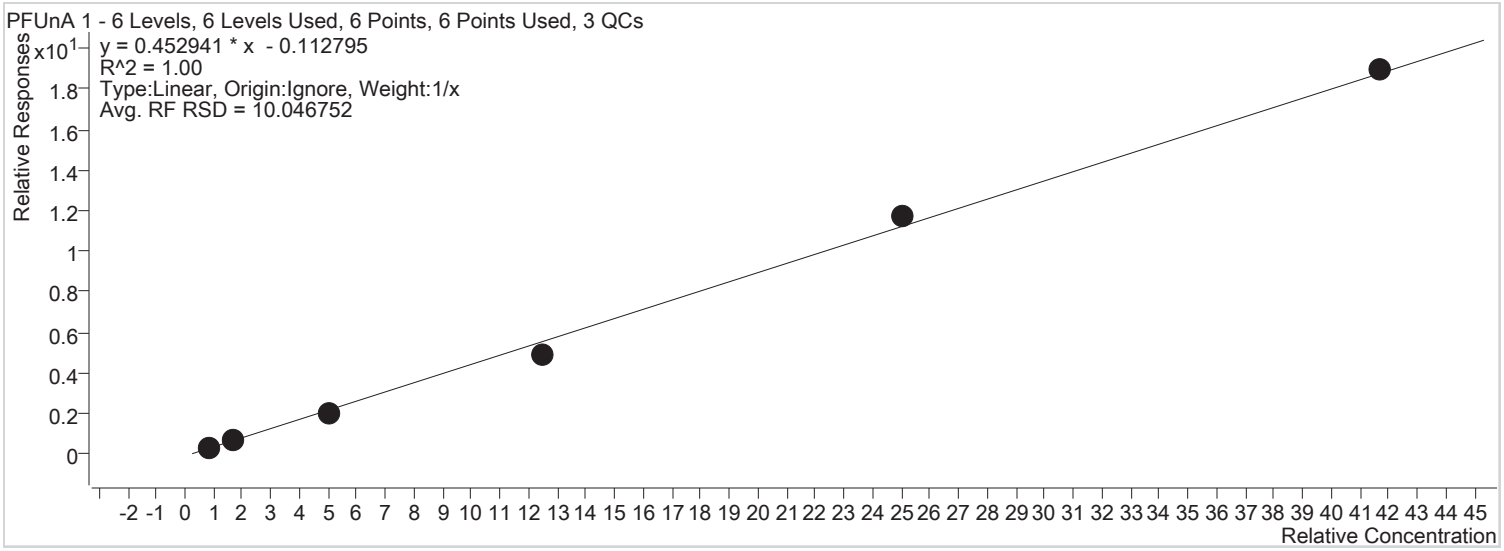
**Analyte:** PFDA 1
**Internal Standard:** MPFDA




| Sample | Level | Enabled | Acquisition Time | Exp. Conc. | Concentration | Response | RF | S/N | Accuracy |
|---|---|---|---|---|---|---|---|---|---|
| STD 1 | STD 1 | x | 2018/02/23 4:39:32 PM | 0.83 | 0.93 | 2591 | 0.4980 | 28 | 111.6 |
| STD 2 | STD 2 | x | 2018/02/23 4:44:28 PM | 1.70 | 1.59 | 5140 | 0.4465 | 60 | 93.2 |
| STD 3 | STD 3 | x | 2018/02/23 4:49:24 PM | 5.00 | 4.75 | 17010 | 0.4838 | 133 | 95.0 |
| STD 4 | STD 4 | x | 2018/02/23 4:54:20 PM | 12.50 | 11.95 | 39112 | 0.4956 | 253 | 95.6 |
| STD 5 | STD 5 | x | 2018/02/23 4:59:16 PM | 25.00 | 26.64 | 88140 | 0.5563 | 781 | 106.6 |
| STD 6 | STD 6 | x | 2018/02/23 5:04:12 PM | 41.70 | 40.88 | 144884 | 0.5126 | 1300 | 98.0 |

**Batch Path** T:\lcms4\PFC\20180223\WS#5410178\QuantResults\PFC_Water_Low_180223_WS#5410178_EToxics.batch.bin
**Last Calib Update** 2018/02/27 2:51:08 PM
**Instrument:** LCMS04

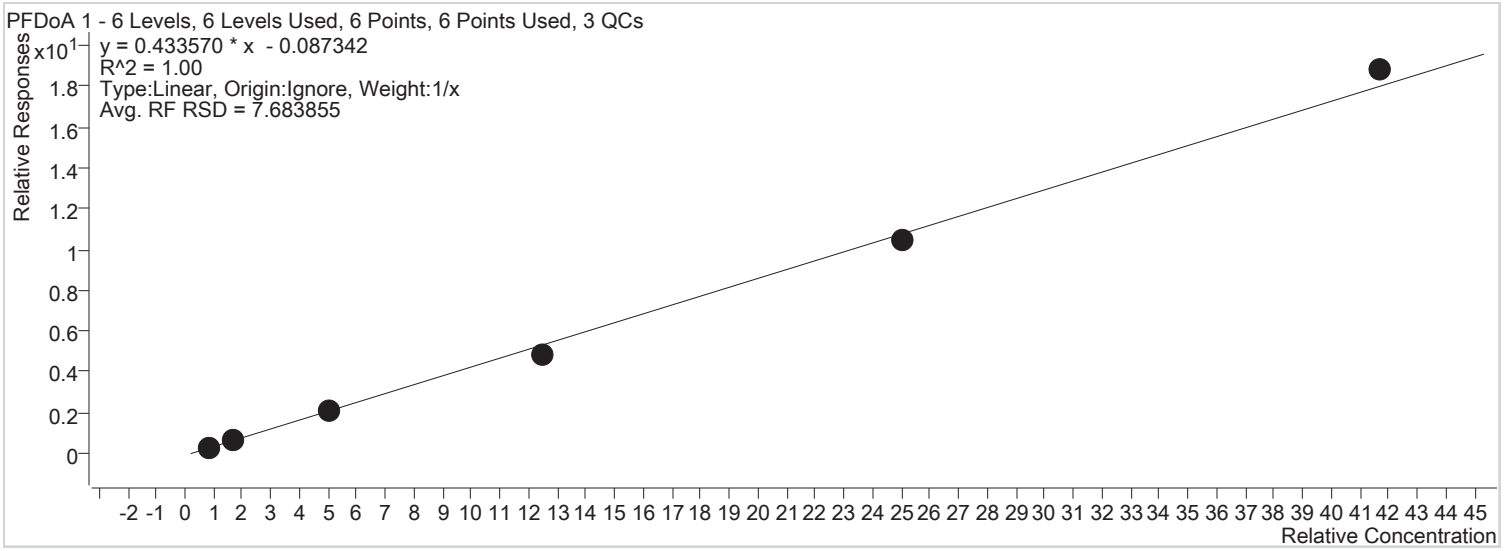
**Analyte:** PFUnA 1
**Internal Standard:** MPFUnA




| Sample | Level | Enabled | Acquisition Time | Exp. Conc. | Concentration | Response | RF | S/N | Accuracy |
|---|---|---|---|---|---|---|---|---|---|
| STD 1 | STD 1 | x | 2018/02/23 4:39:32 PM | 0.83 | 0.92 | 2643 | 0.3682 | 21 | 111.3 |
| STD 2 | STD 2 | x | 2018/02/23 4:44:28 PM | 1.70 | 1.70 | 5480 | 0.3867 | 39 | 100.0 |
| STD 3 | STD 3 | x | 2018/02/23 4:49:24 PM | 5.00 | 4.75 | 18088 | 0.4073 | 149 | 94.9 |
| STD 4 | STD 4 | x | 2018/02/23 4:54:20 PM | 12.50 | 10.95 | 41609 | 0.3877 | 230 | 87.6 |
| STD 5 | STD 5 | x | 2018/02/23 4:59:16 PM | 25.00 | 26.31 | 92104 | 0.4721 | 275 | 105.2 |
| STD 6 | STD 6 | x | 2018/02/23 5:04:12 PM | 41.70 | 42.11 | 157019 | 0.4547 | 356 | 101.0 |

**Batch Path** T:\lcms4\PFC\20180223\WS#5410178\QuantResults\PFC_Water_Low_180223_WS#5410178_EToxics.batch.bin
**Last Calib Update** 2018/02/27 2:51:08 PM
**Instrument:** LCMS04

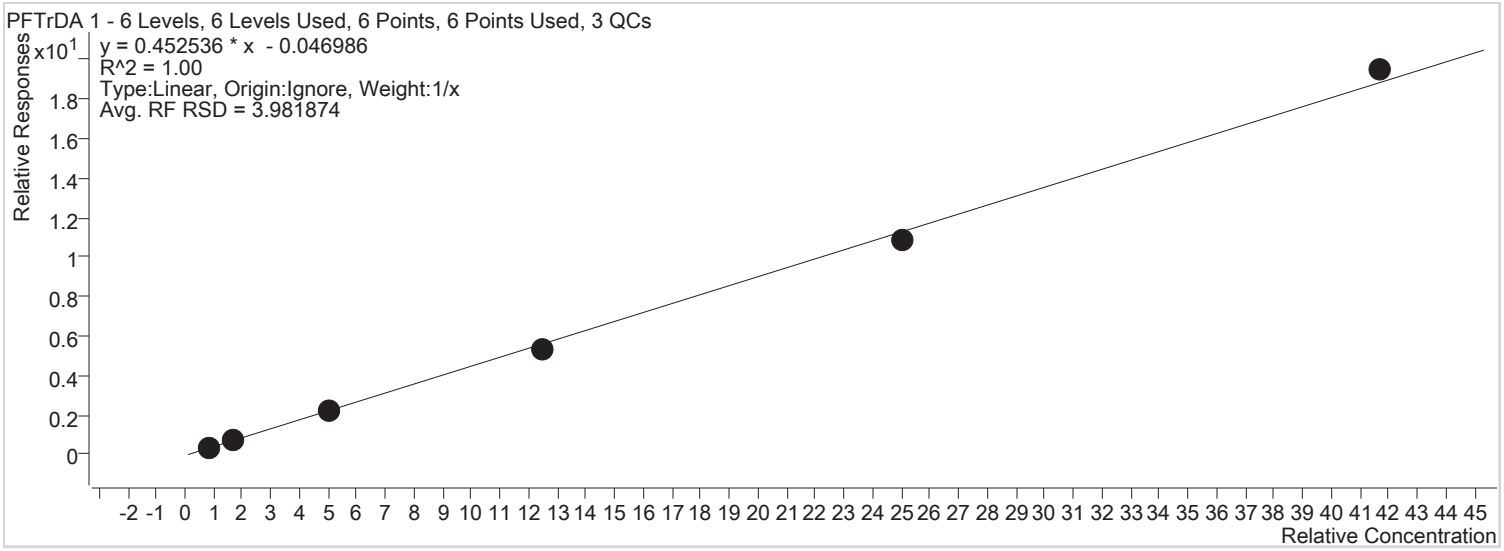
**Analyte:** PFDoA 1
**Internal Standard:** MPFDoA




| Sample | Level | Enabled | Acquisition Time | Exp. Conc. | Concentration | Response | RF | S/N | Accuracy |
|---|---|---|---|---|---|---|---|---|---|
| STD 1 | STD 1 | x | 2018/02/23 4:39:32 PM | 0.83 | 0.89 | 3316 | 0.3600 | 29 | 107.3 |
| STD 2 | STD 2 | x | 2018/02/23 4:44:28 PM | 1.70 | 1.72 | 6958 | 0.3879 | 171 | 101.3 |
| STD 3 | STD 3 | x | 2018/02/23 4:49:24 PM | 5.00 | 4.94 | 22806 | 0.4107 | 610 | 98.7 |
| STD 4 | STD 4 | x | 2018/02/23 4:54:20 PM | 12.50 | 11.42 | 49731 | 0.3892 | 1552 | 91.4 |
| STD 5 | STD 5 | x | 2018/02/23 4:59:16 PM | 25.00 | 24.19 | 113209 | 0.4161 | 2020 | 96.8 |
| STD 6 | STD 6 | x | 2018/02/23 5:04:12 PM | 41.70 | 43.56 | 193950 | 0.4509 | 3186 | 104.5 |

**Batch Path** T:\lcms4\PFC\20180223\WS#5410178\QuantResults\PFC_Water_Low_180223_WS#5410178_EToxics.batch.bin
**Last Calib Update** 2018/02/27 2:51:08 PM
**Instrument:** LCMS04

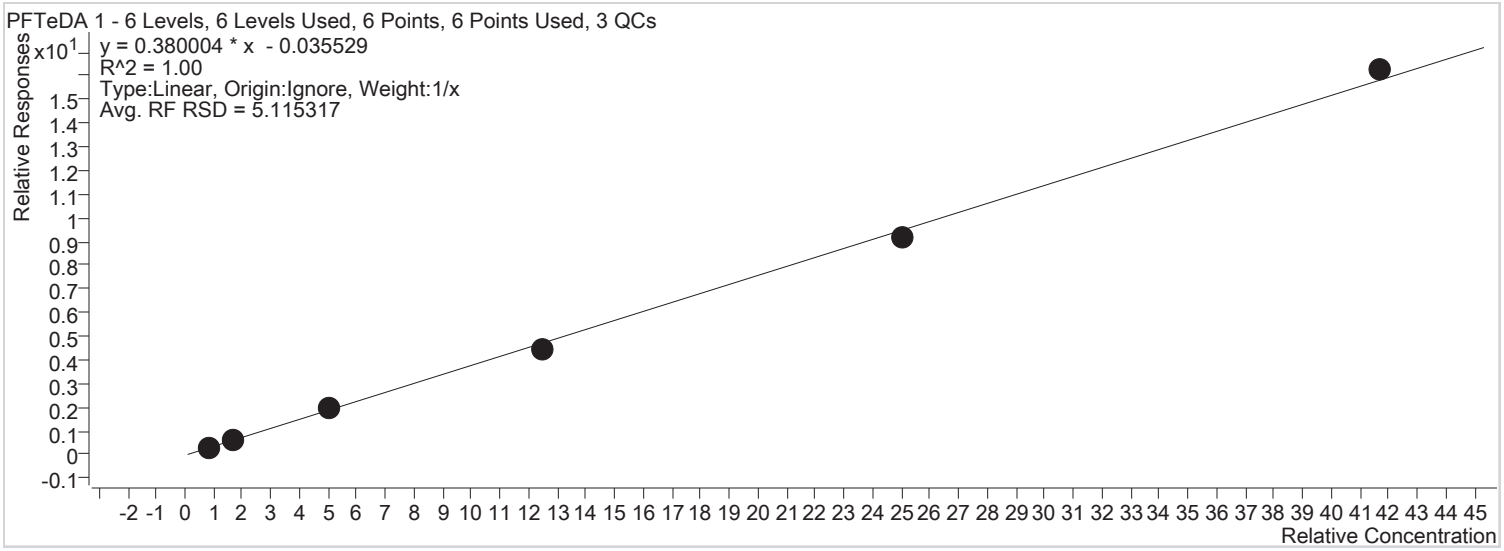
**Analyte:** PFTrDA 1
**Internal Standard:** MPFTeDA




| Sample | Level | Enabled | Acquisition Time | Exp. Conc. | Concentration | Response | RF | S/N | Accuracy |
|---|---|---|---|---|---|---|---|---|---|
| STD 1 | STD 1 | x | 2018/02/23 4:39:32 PM | 0.83 | 0.89 | 3748 | 0.4304 | 24 | 107.6 |
| STD 2 | STD 2 | x | 2018/02/23 4:44:28 PM | 1.70 | 1.67 | 8044 | 0.4165 | 43 | 98.1 |
| STD 3 | STD 3 | x | 2018/02/23 4:49:24 PM | 5.00 | 4.96 | 24430 | 0.4393 | 89 | 99.1 |
| STD 4 | STD 4 | x | 2018/02/23 4:54:20 PM | 12.50 | 11.84 | 58458 | 0.4249 | 238 | 94.7 |
| STD 5 | STD 5 | x | 2018/02/23 4:59:16 PM | 25.00 | 24.24 | 126816 | 0.4369 | 202 | 97.0 |
| STD 6 | STD 6 | x | 2018/02/23 5:04:12 PM | 41.70 | 43.13 | 218095 | 0.4669 | 216 | 103.4 |

**Batch Path** T:\lcms4\PFC\20180223\WS#5410178\QuantResults\PFC_Water_Low_180223_WS#5410178_EToxics.batch.bin
**Last Calib Update** 2018/02/27 2:51:08 PM
**Instrument:** LCMS04

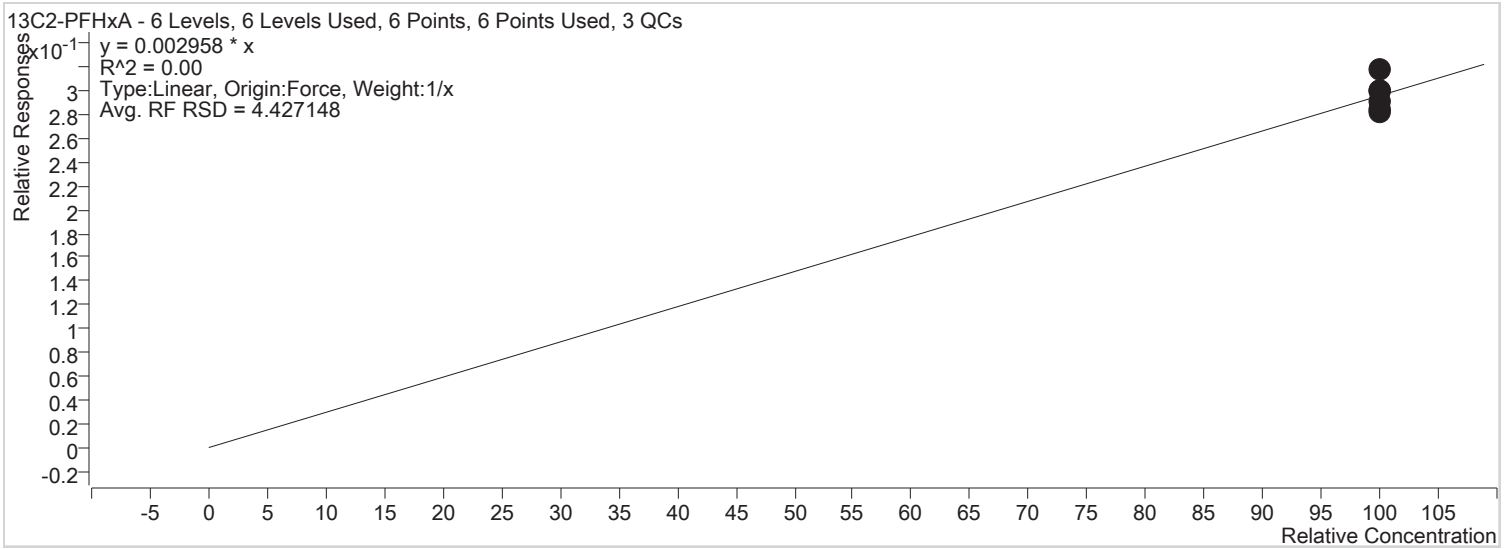
**Analyte:** PFTeDA 1
**Internal Standard:** MPFTeDA




| Sample | Level | Enabled | Acquisition Time | Exp. Conc. | Concentration | Response | RF | S/N | Accuracy |
|---|---|---|---|---|---|---|---|---|---|
| STD 1 | STD 1 | x | 2018/02/23 4:39:32 PM | 0.83 | 0.86 | 3065 | 0.3519 | 14 | 103.9 |
| STD 2 | STD 2 | x | 2018/02/23 4:44:28 PM | 1.70 | 1.64 | 6688 | 0.3463 | 32 | 96.6 |
| STD 3 | STD 3 | x | 2018/02/23 4:49:24 PM | 5.00 | 5.23 | 21695 | 0.3901 | 141 | 104.5 |
| STD 4 | STD 4 | x | 2018/02/23 4:54:20 PM | 12.50 | 11.91 | 49421 | 0.3592 | 209 | 95.3 |
| STD 5 | STD 5 | x | 2018/02/23 4:59:16 PM | 25.00 | 24.23 | 106507 | 0.3669 | 264 | 96.9 |
| STD 6 | STD 6 | x | 2018/02/23 5:04:12 PM | 41.70 | 42.86 | 182013 | 0.3897 | 341 | 102.8 |

**Batch Path** T:\lcms4\PFC\20180223\WS#5410178\QuantResults\PFC_Water_Low_180223_WS#5410178_EToxics.batch.bin
**Last Calib Update** 2018/02/27 2:51:08 PM
**Instrument:** LCMS04

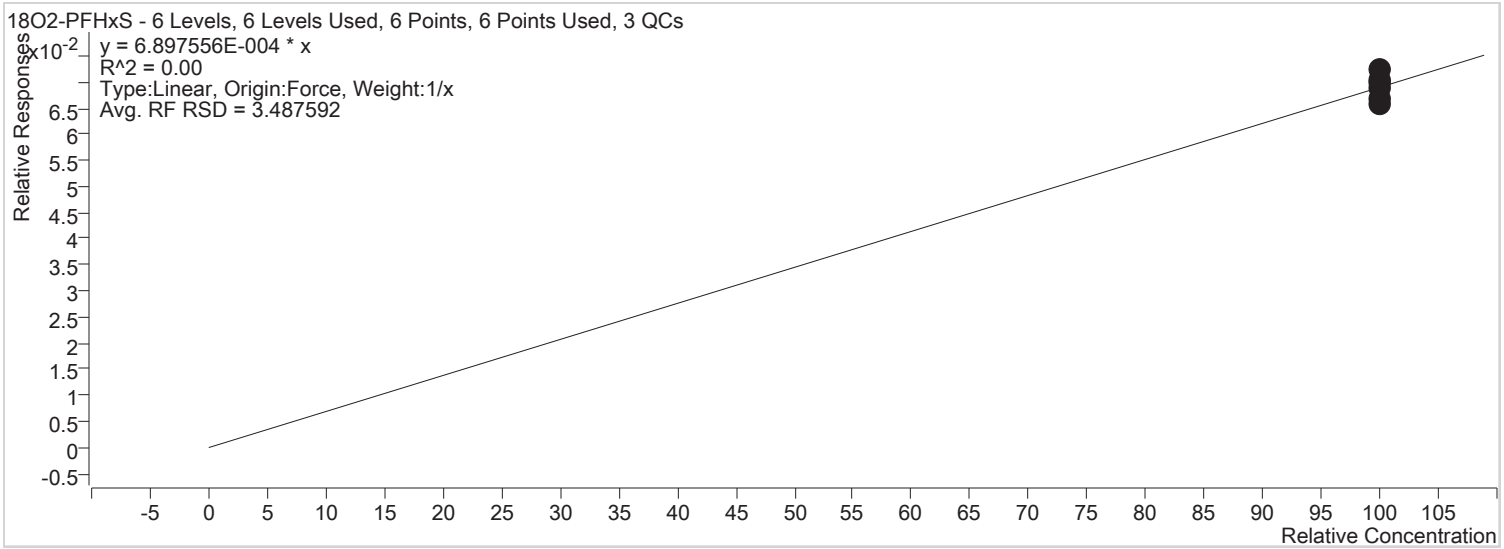
**Analyte:** 13C2-PFHxA
**Internal Standard:** 13C6-PFHxA IS




| Sample | Level | Enabled | Acquisition Time | Exp. Conc. | Concentration | Response | RF | S/N | Accuracy |
|---|---|---|---|---|---|---|---|---|---|
| STD 1 | STD 1 | x | 2018/02/23 4:39:32 PM | 100.00 | 101.55 | 6945 | 0.0030 | 594 | 101.5 |
| STD 2 | STD 2 | x | 2018/02/23 4:44:28 PM | 100.00 | 107.35 | 6747 | 0.0032 | 516 | 107.4 |
| STD 3 | STD 3 | x | 2018/02/23 4:49:24 PM | 100.00 | 95.29 | 6761 | 0.0028 | 356 | 95.3 |
| STD 4 | STD 4 | x | 2018/02/23 4:54:20 PM | 100.00 | 98.65 | 6459 | 0.0029 | 329 | 98.6 |
| STD 5 | STD 5 | x | 2018/02/23 4:59:16 PM | 100.00 | 95.98 | 6545 | 0.0028 | 265 | 96.0 |
| STD 6 | STD 6 | x | 2018/02/23 5:04:12 PM | 100.00 | 101.18 | 6541 | 0.0030 | 1070 | 101.2 |

**Batch Path** T:\lcms4\PFC\20180223\WS#5410178\QuantResults\PFC_Water_Low_180223_WS#5410178_EToxics.batch.bin
**Last Calib Update** 2018/02/27 2:51:08 PM
**Instrument:** LCMS04

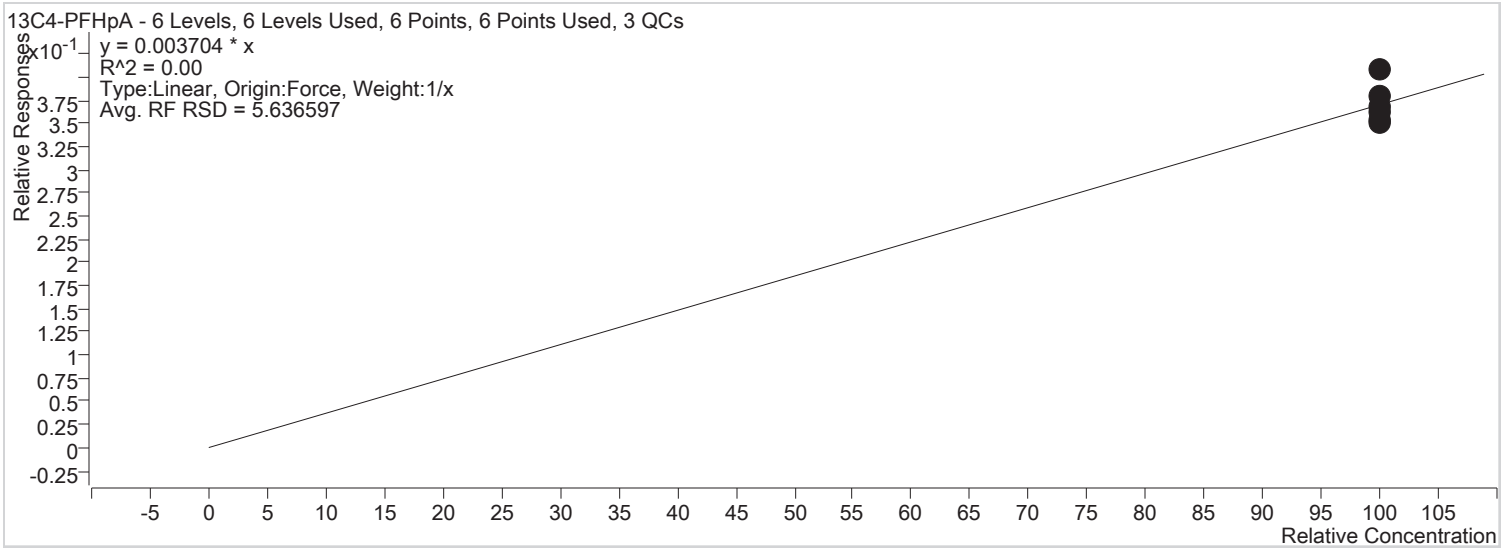
**Analyte:** 18O2-PFHxS
**Internal Standard:** 13C6-PFHxA IS




| Sample | Level | Enabled | Acquisition Time | Exp. Conc. | Concentration | Response | RF | S/N | Accuracy |
|---|---|---|---|---|---|---|---|---|---|
| STD 1 | STD 1 | x | 2018/02/23 4:39:32 PM | 100.00 | 104.86 | 1672 | 0.0007 | 167 | 104.9 |
| STD 2 | STD 2 | x | 2018/02/23 4:44:28 PM | 100.00 | 101.34 | 1485 | 0.0007 | 295 | 101.3 |
| STD 3 | STD 3 | x | 2018/02/23 4:49:24 PM | 100.00 | 99.86 | 1652 | 0.0007 | 341 | 99.9 |
| STD 4 | STD 4 | x | 2018/02/23 4:54:20 PM | 100.00 | 95.37 | 1456 | 0.0007 | 177 | 95.4 |
| STD 5 | STD 5 | x | 2018/02/23 4:59:16 PM | 100.00 | 96.74 | 1538 | 0.0007 | 409 | 96.7 |
| STD 6 | STD 6 | x | 2018/02/23 5:04:12 PM | 100.00 | 101.84 | 1535 | 0.0007 | 360 | 101.8 |

**Batch Path** T:\lcms4\PFC\20180223\WS#5410178\QuantResults\PFC_Water_Low_180223_WS#5410178_EToxics.batch.bin
**Last Calib Update** 2018/02/27 2:51:08 PM
**Instrument:** LCMS04

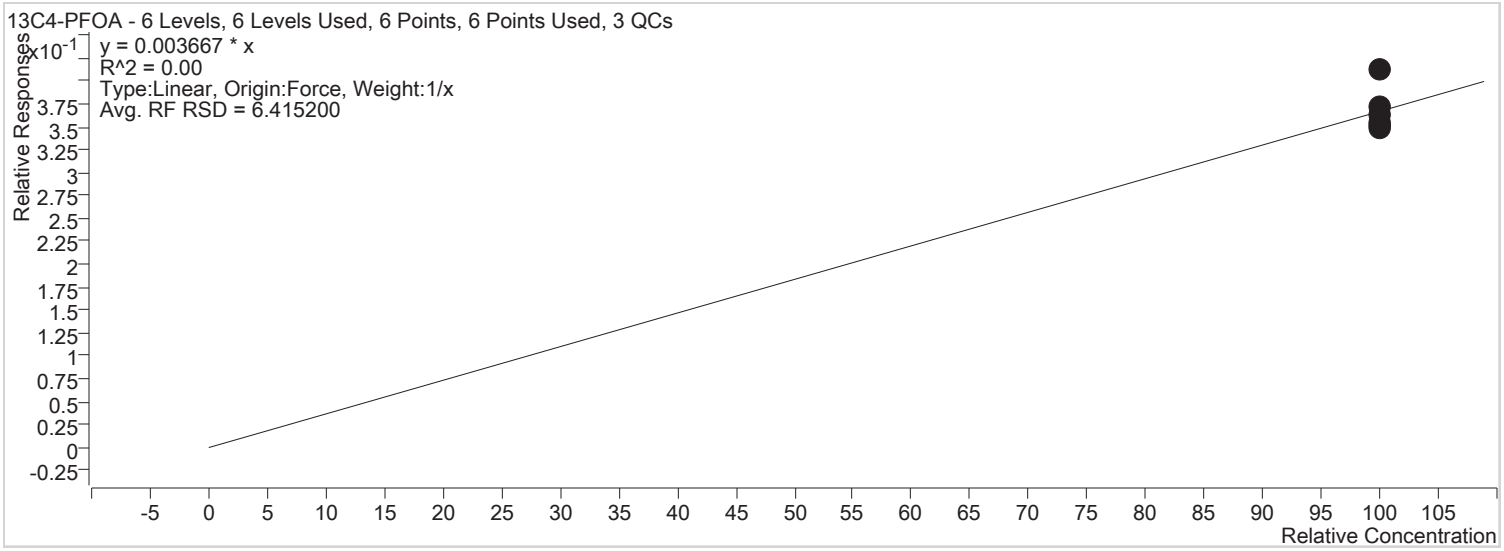
**Analyte:** 13C4-PFHpA
**Internal Standard:** 13C6-PFHxA IS




| Sample | Level | Enabled | Acquisition Time | Exp. Conc. | Concentration | Response | RF | S/N | Accuracy |
|---|---|---|---|---|---|---|---|---|---|
| STD 1 | STD 1 | x | 2018/02/23 4:39:32 PM | 100.00 | 99.23 | 8498 | 0.0037 | 335 | 99.2 |
| STD 2 | STD 2 | x | 2018/02/23 4:44:28 PM | 100.00 | 110.17 | 8670 | 0.0041 | 326 | 110.2 |
| STD 3 | STD 3 | x | 2018/02/23 4:49:24 PM | 100.00 | 94.98 | 8438 | 0.0035 | 409 | 95.0 |
| STD 4 | STD 4 | x | 2018/02/23 4:54:20 PM | 100.00 | 102.20 | 8379 | 0.0038 | 406 | 102.2 |
| STD 5 | STD 5 | x | 2018/02/23 4:59:16 PM | 100.00 | 95.45 | 8150 | 0.0035 | 241 | 95.5 |
| STD 6 | STD 6 | x | 2018/02/23 5:04:12 PM | 100.00 | 97.97 | 7931 | 0.0036 | 507 | 98.0 |

**Batch Path** T:\lcms4\PFC\20180223\WS#5410178\QuantResults\PFC_Water_Low_180223_WS#5410178_EToxics.batch.bin
**Last Calib Update** 2018/02/27 2:51:08 PM
**Instrument:** LCMS04

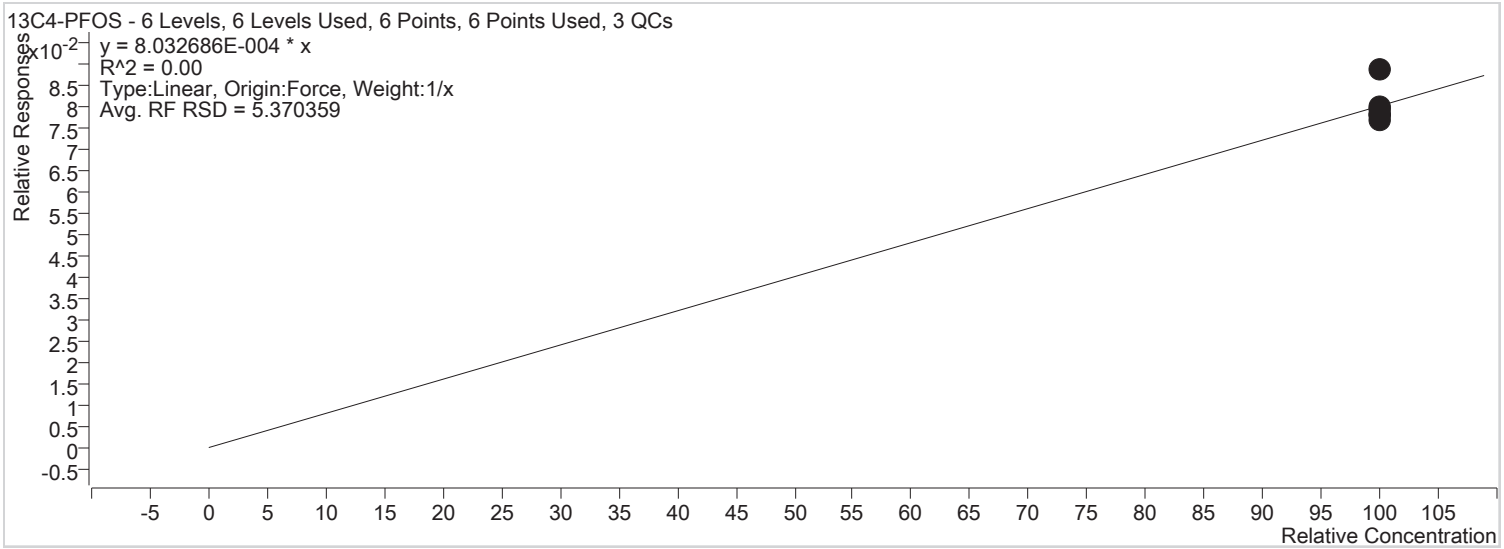
**Analyte:** 13C4-PFOA
**Internal Standard:** 13C6-PFHxA IS




| Sample | Level | Enabled | Acquisition Time | Exp. Conc. | Concentration | Response | RF | S/N | Accuracy |
|---|---|---|---|---|---|---|---|---|---|
| STD 1 | STD 1 | x | 2018/02/23 4:39:32 PM | 100.00 | 96.01 | 8140 | 0.0035 | 230 | 96.0 |
| STD 2 | STD 2 | x | 2018/02/23 4:44:28 PM | 100.00 | 112.36 | 8755 | 0.0041 | 290 | 112.4 |
| STD 3 | STD 3 | x | 2018/02/23 4:49:24 PM | 100.00 | 101.01 | 8885 | 0.0037 | 308 | 101.0 |
| STD 4 | STD 4 | x | 2018/02/23 4:54:20 PM | 100.00 | 95.30 | 7736 | 0.0035 | 290 | 95.3 |
| STD 5 | STD 5 | x | 2018/02/23 4:59:16 PM | 100.00 | 96.46 | 8154 | 0.0035 | 303 | 96.5 |
| STD 6 | STD 6 | x | 2018/02/23 5:04:12 PM | 100.00 | 98.86 | 7923 | 0.0036 | 194 | 98.9 |

**Batch Path** T:\lcms4\PFC\20180223\WS#5410178\QuantResults\PFC_Water_Low_180223_WS#5410178_EToxics.batch.bin
**Last Calib Update** 2018/02/27 2:51:08 PM
**Instrument:** LCMS04

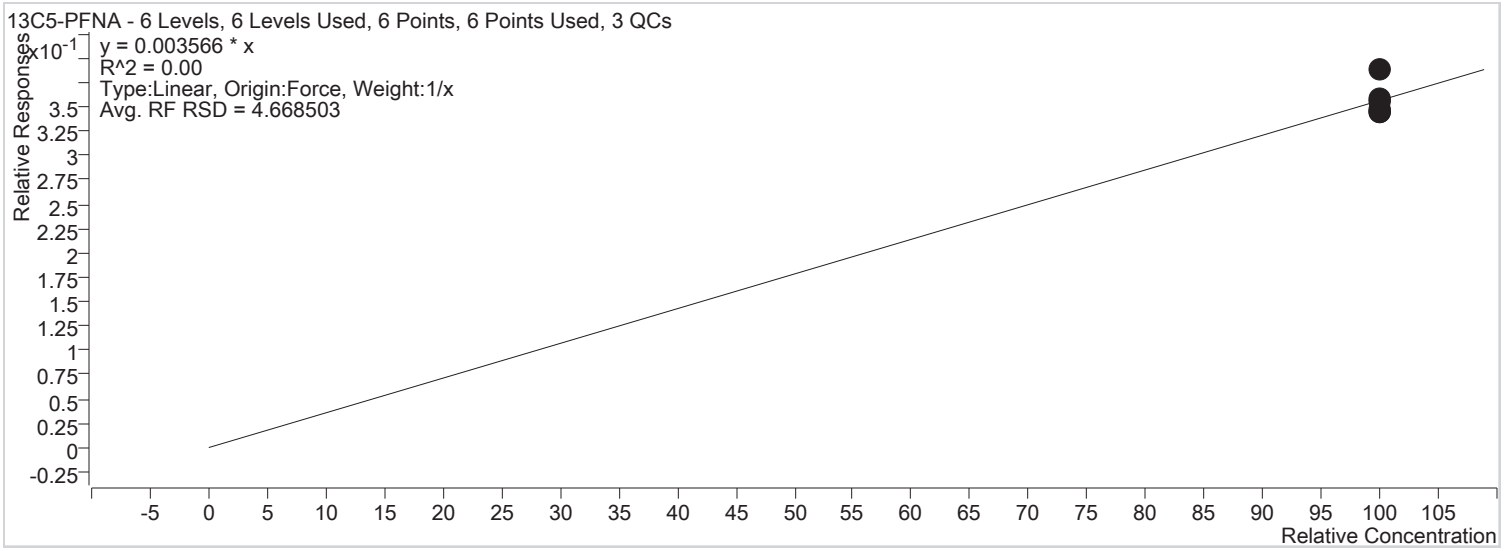
**Analyte:** 13C4-PFOS
**Internal Standard:** 13C6-PFHxA IS




| Sample | Level | Enabled | Acquisition Time | Exp. Conc. | Concentration | Response | RF | S/N | Accuracy |
|---|---|---|---|---|---|---|---|---|---|
| STD 1 | STD 1 | x | 2018/02/23 4:39:32 PM | 100.00 | 97.31 | 1807 | 0.0008 | 713 | 97.3 |
| STD 2 | STD 2 | x | 2018/02/23 4:44:28 PM | 100.00 | 110.57 | 1887 | 0.0009 | 304 | 110.6 |
| STD 3 | STD 3 | x | 2018/02/23 4:49:24 PM | 100.00 | 97.17 | 1872 | 0.0008 | 277 | 97.2 |
| STD 4 | STD 4 | x | 2018/02/23 4:54:20 PM | 100.00 | 100.12 | 1780 | 0.0008 | 237 | 100.1 |
| STD 5 | STD 5 | x | 2018/02/23 4:59:16 PM | 100.00 | 98.78 | 1829 | 0.0008 | 160 | 98.8 |
| STD 6 | STD 6 | x | 2018/02/23 5:04:12 PM | 100.00 | 96.05 | 1686 | 0.0008 | 188 | 96.0 |

**Batch Path** T:\lcms4\PFC\20180223\WS#5410178\QuantResults\PFC_Water_Low_180223_WS#5410178_EToxics.batch.bin
**Last Calib Update** 2018/02/27 2:51:08 PM
**Instrument:** LCMS04

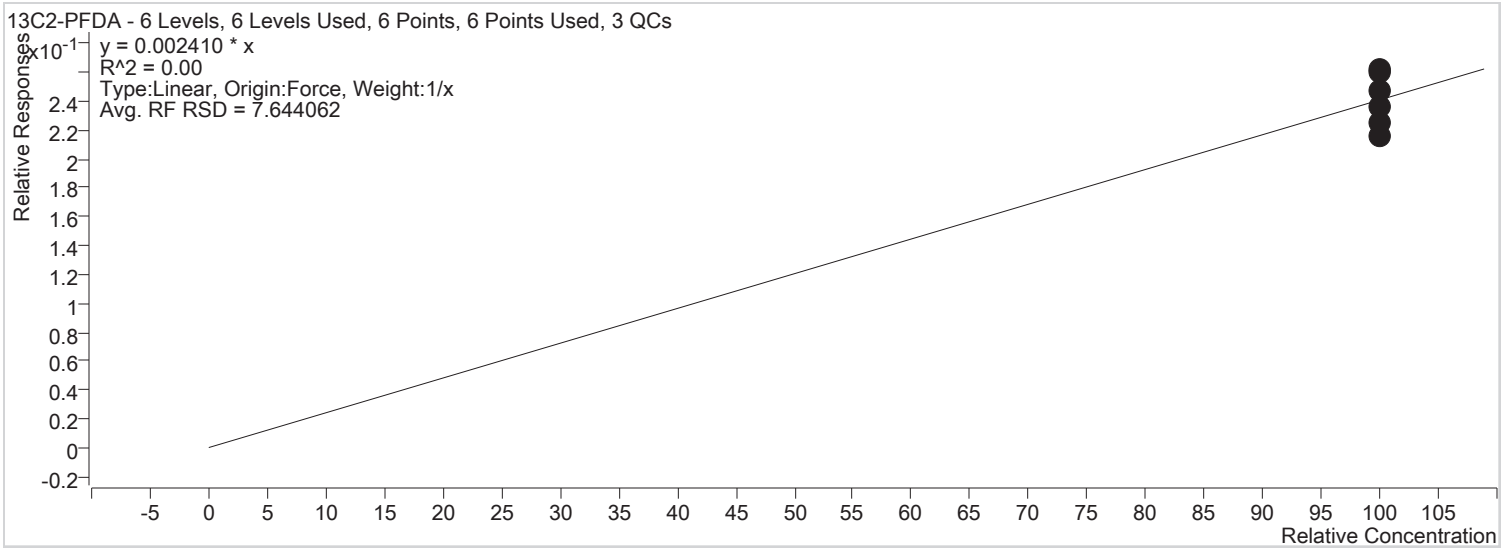
**Analyte:** 13C5-PFNA
**Internal Standard:** 13C6-PFHxA IS




| Sample | Level | Enabled | Acquisition Time | Exp. Conc. | Concentration | Response | RF | S/N | Accuracy |
|---|---|---|---|---|---|---|---|---|---|
| STD 1 | STD 1 | x | 2018/02/23 4:39:32 PM | 100.00 | 96.66 | 7968 | 0.0034 | 450 | 96.7 |
| STD 2 | STD 2 | x | 2018/02/23 4:44:28 PM | 100.00 | 108.84 | 8245 | 0.0039 | 206 | 108.8 |
| STD 3 | STD 3 | x | 2018/02/23 4:49:24 PM | 100.00 | 97.47 | 8336 | 0.0035 | 777 | 97.5 |
| STD 4 | STD 4 | x | 2018/02/23 4:54:20 PM | 100.00 | 99.96 | 7889 | 0.0036 | 466 | 100.0 |
| STD 5 | STD 5 | x | 2018/02/23 4:59:16 PM | 100.00 | 96.41 | 7924 | 0.0034 | 259 | 96.4 |
| STD 6 | STD 6 | x | 2018/02/23 5:04:12 PM | 100.00 | 100.65 | 7843 | 0.0036 | 403 | 100.7 |

**Batch Path** T:\lcms4\PFC\20180223\WS#5410178\QuantResults\PFC_Water_Low_180223_WS#5410178_EToxics.batch.bin
**Last Calib Update** 2018/02/27 2:51:08 PM
**Instrument:** LCMS04

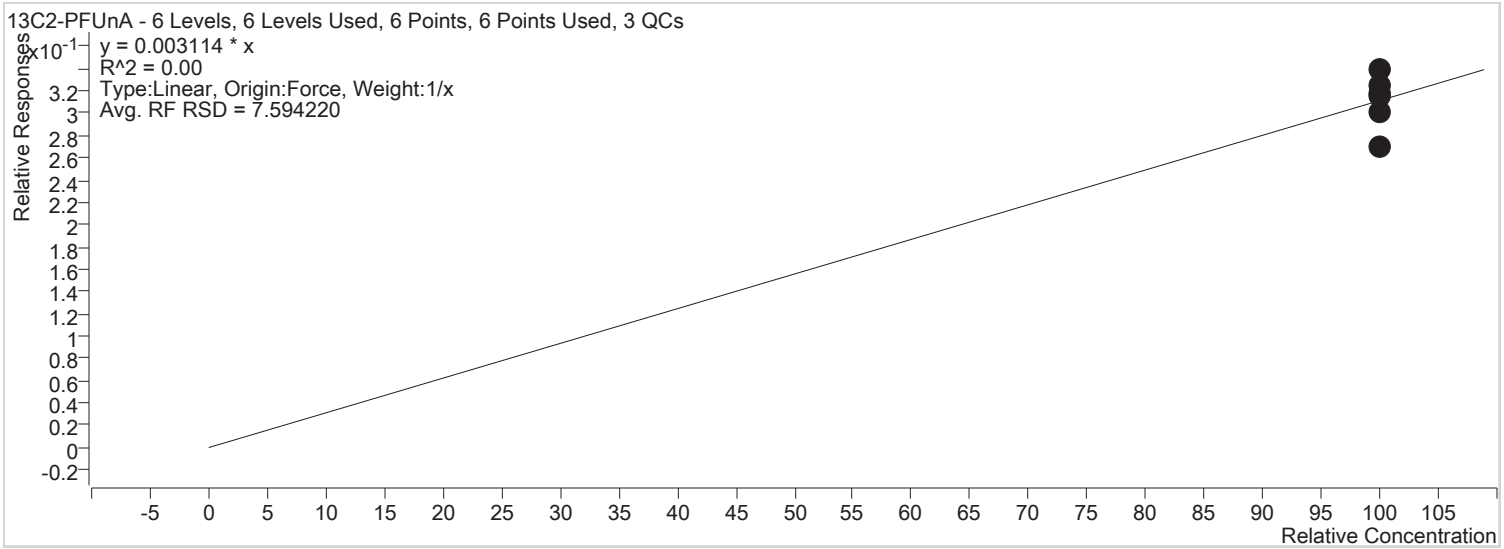
**Analyte:** 13C2-PFDA
**Internal Standard:** 13C9-PFDA IS




| Sample | Level | Enabled | Acquisition Time | Exp. Conc. | Concentration | Response | RF | S/N | Accuracy |
|---|---|---|---|---|---|---|---|---|---|
| STD 1 | STD 1 | x | 2018/02/23 4:39:32 PM | 100.00 | 93.52 | 6200 | 0.0023 | 316 | 93.5 |
| STD 2 | STD 2 | x | 2018/02/23 4:44:28 PM | 100.00 | 108.66 | 6715 | 0.0026 | 265 | 108.7 |
| STD 3 | STD 3 | x | 2018/02/23 4:49:24 PM | 100.00 | 97.68 | 6953 | 0.0024 | 341 | 97.7 |
| STD 4 | STD 4 | x | 2018/02/23 4:54:20 PM | 100.00 | 102.34 | 6247 | 0.0025 | 226 | 102.3 |
| STD 5 | STD 5 | x | 2018/02/23 4:59:16 PM | 100.00 | 89.91 | 6251 | 0.0022 | 234 | 89.9 |
| STD 6 | STD 6 | x | 2018/02/23 5:04:12 PM | 100.00 | 107.90 | 6760 | 0.0026 | 544 | 107.9 |

**Batch Path** T:\lcms4\PFC\20180223\WS#5410178\QuantResults\PFC_Water_Low_180223_WS#5410178_EToxics.batch.bin
**Last Calib Update** 2018/02/27 2:51:08 PM
**Instrument:** LCMS04

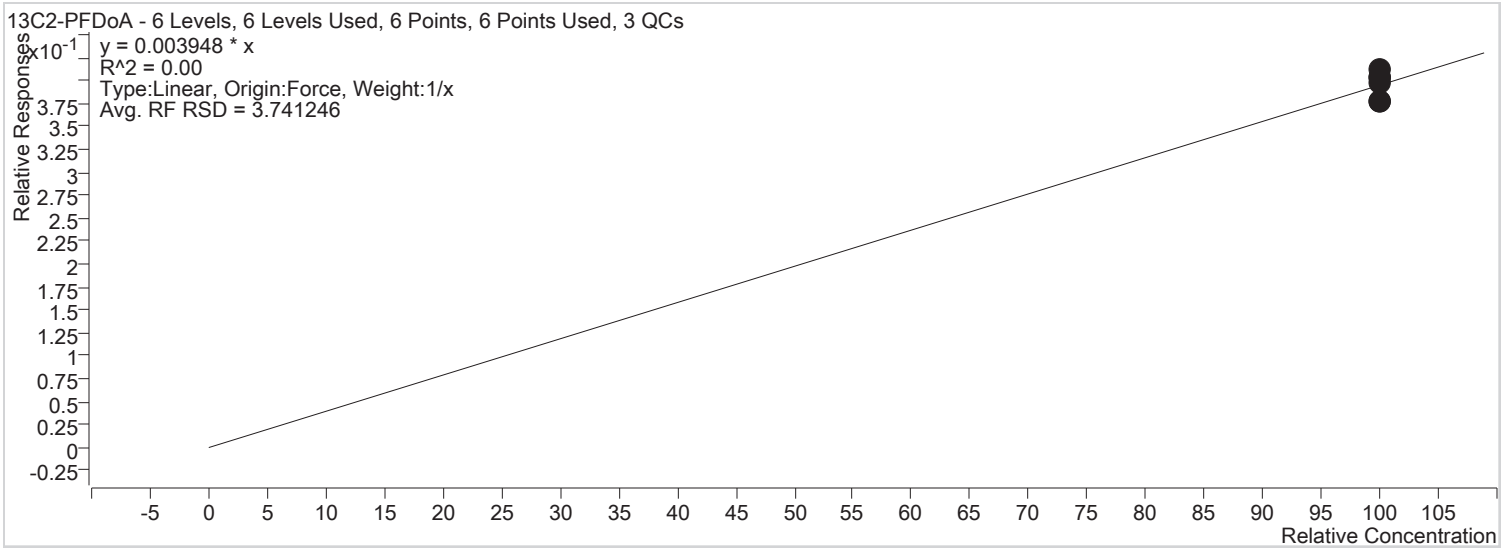
**Analyte:** 13C2-PFUnA
**Internal Standard:** 13C9-PFDA IS




| Sample | Level | Enabled | Acquisition Time | Exp. Conc. | Concentration | Response | RF | S/N | Accuracy |
|---|---|---|---|---|---|---|---|---|---|
| STD 1 | STD 1 | x | 2018/02/23 4:39:32 PM | 100.00 | 100.96 | 8648 | 0.0031 | 280 | 101.0 |
| STD 2 | STD 2 | x | 2018/02/23 4:44:28 PM | 100.00 | 104.42 | 8337 | 0.0033 | 340 | 104.4 |
| STD 3 | STD 3 | x | 2018/02/23 4:49:24 PM | 100.00 | 96.58 | 8882 | 0.0030 | 220 | 96.6 |
| STD 4 | STD 4 | x | 2018/02/23 4:54:20 PM | 100.00 | 108.86 | 8586 | 0.0034 | 365 | 108.9 |
| STD 5 | STD 5 | x | 2018/02/23 4:59:16 PM | 100.00 | 86.87 | 7804 | 0.0027 | 344 | 86.9 |
| STD 6 | STD 6 | x | 2018/02/23 5:04:12 PM | 100.00 | 102.31 | 8282 | 0.0032 | 295 | 102.3 |

**Batch Path** T:\lcms4\PFC\20180223\WS#5410178\QuantResults\PFC_Water_Low_180223_WS#5410178_EToxics.batch.bin
**Last Calib Update** 2018/02/27 2:51:08 PM
**Instrument:** LCMS04

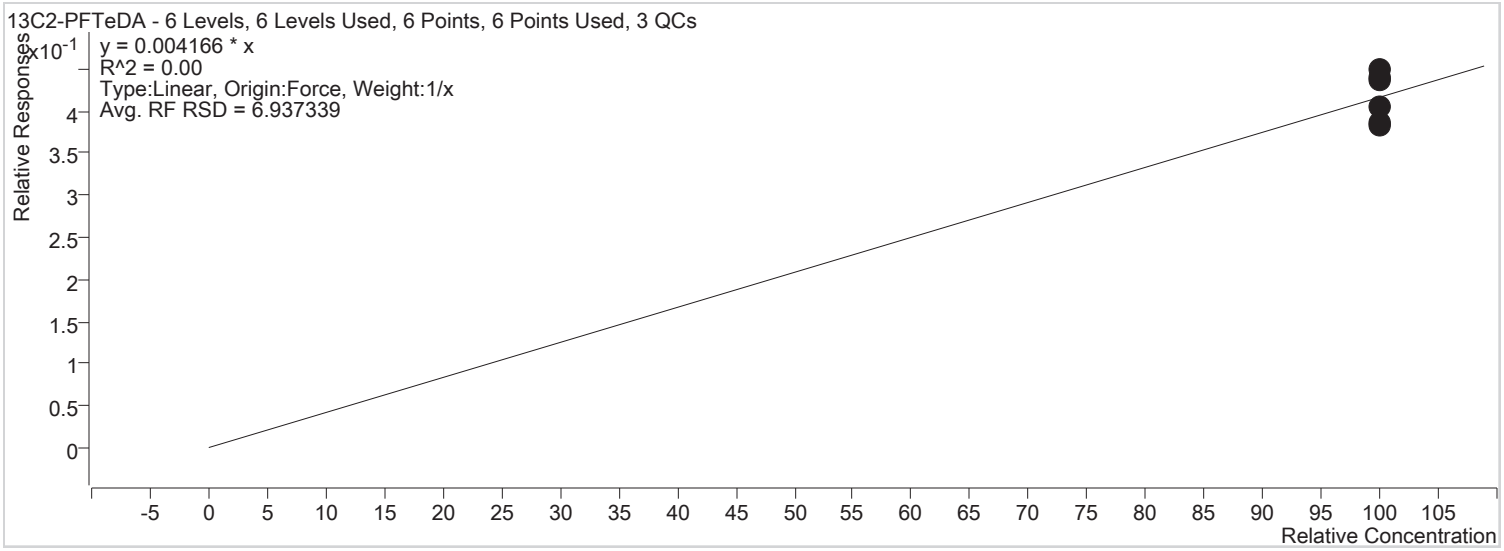
**Analyte:** 13C2-PFDoA
**Internal Standard:** 13C9-PFDA IS




| Sample | Level | Enabled | Acquisition Time | Exp. Conc. | Concentration | Response | RF | S/N | Accuracy |
|---|---|---|---|---|---|---|---|---|---|
| STD 1 | STD 1 | x | 2018/02/23 4:39:32 PM | 100.00 | 102.19 | 11097 | 0.0040 | 226 | 102.2 |
| STD 2 | STD 2 | x | 2018/02/23 4:44:28 PM | 100.00 | 104.24 | 10551 | 0.0041 | 302 | 104.2 |
| STD 3 | STD 3 | x | 2018/02/23 4:49:24 PM | 100.00 | 95.27 | 11107 | 0.0038 | 549 | 95.3 |
| STD 4 | STD 4 | x | 2018/02/23 4:54:20 PM | 100.00 | 102.22 | 10221 | 0.0040 | 230 | 102.2 |
| STD 5 | STD 5 | x | 2018/02/23 4:59:16 PM | 100.00 | 95.57 | 10884 | 0.0038 | 485 | 95.6 |
| STD 6 | STD 6 | x | 2018/02/23 5:04:12 PM | 100.00 | 100.52 | 10316 | 0.0040 | 427 | 100.5 |

**Batch Path** T:\lcms4\PFC\20180223\WS#5410178\QuantResults\PFC_Water_Low_180223_WS#5410178_EToxics.batch.bin
**Last Calib Update** 2018/02/27 2:51:08 PM
**Instrument:** LCMS04

**Analyte:** 13C2-PFTeDA
**Internal Standard:** 13C9-PFDA IS




| Sample | Level | Enabled | Acquisition Time | Exp. Conc. | Concentration | Response | RF | S/N | Accuracy |
|---|---|---|---|---|---|---|---|---|---|
| STD 1 | STD 1 | x | 2018/02/23 4:39:32 PM | 100.00 | 92.87 | 10642 | 0.0039 | 417 | 92.9 |
| STD 2 | STD 2 | x | 2018/02/23 4:44:28 PM | 100.00 | 107.83 | 11517 | 0.0045 | 472 | 107.8 |
| STD 3 | STD 3 | x | 2018/02/23 4:49:24 PM | 100.00 | 91.71 | 11283 | 0.0038 | 382 | 91.7 |
| STD 4 | STD 4 | x | 2018/02/23 4:54:20 PM | 100.00 | 105.58 | 11140 | 0.0044 | 502 | 105.6 |
| STD 5 | STD 5 | x | 2018/02/23 4:59:16 PM | 100.00 | 97.36 | 11700 | 0.0041 | 387 | 97.4 |
| STD 6 | STD 6 | x | 2018/02/23 5:04:12 PM | 100.00 | 104.65 | 11333 | 0.0044 | 461 | 104.7 |

# By Compound Report

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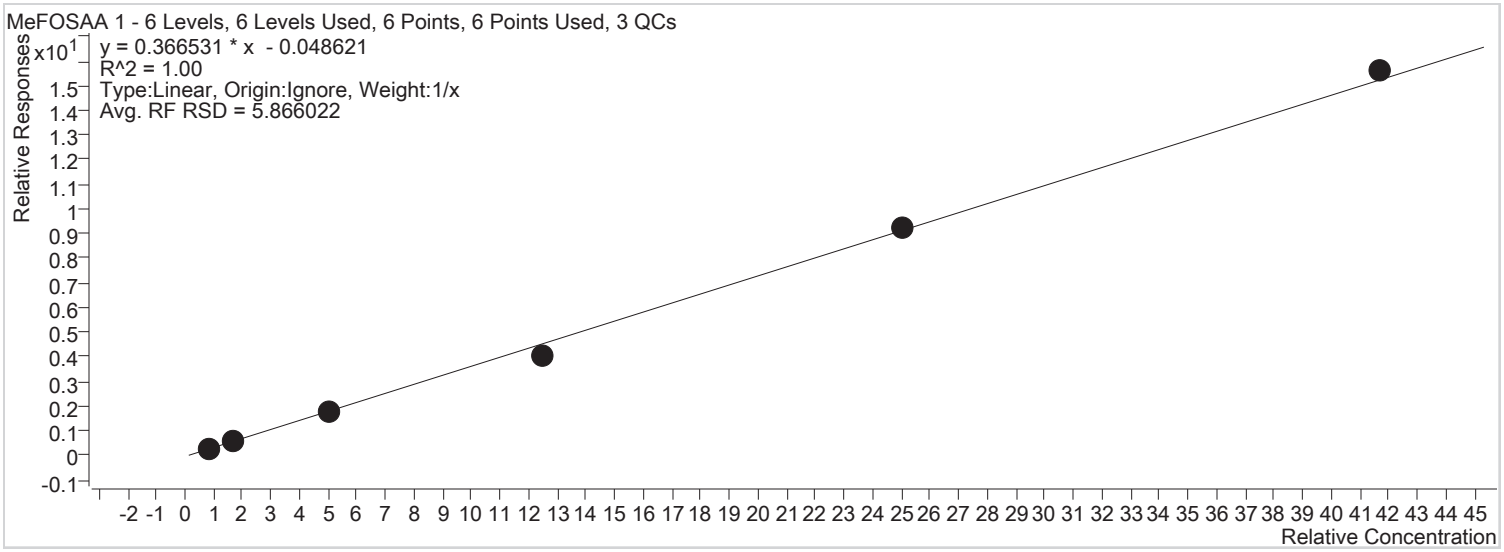
**Batch Path** T:\lcms4\PFC\20180223\WS#5410178_FOSAA\QuantResults\PFC_Water_Low_180223_WS#5410178_FOSAA_EToxics.batch.bin

**Last Calib Update** 2018/02/27 10:52:53 AM

**Instrument:** LCMS04

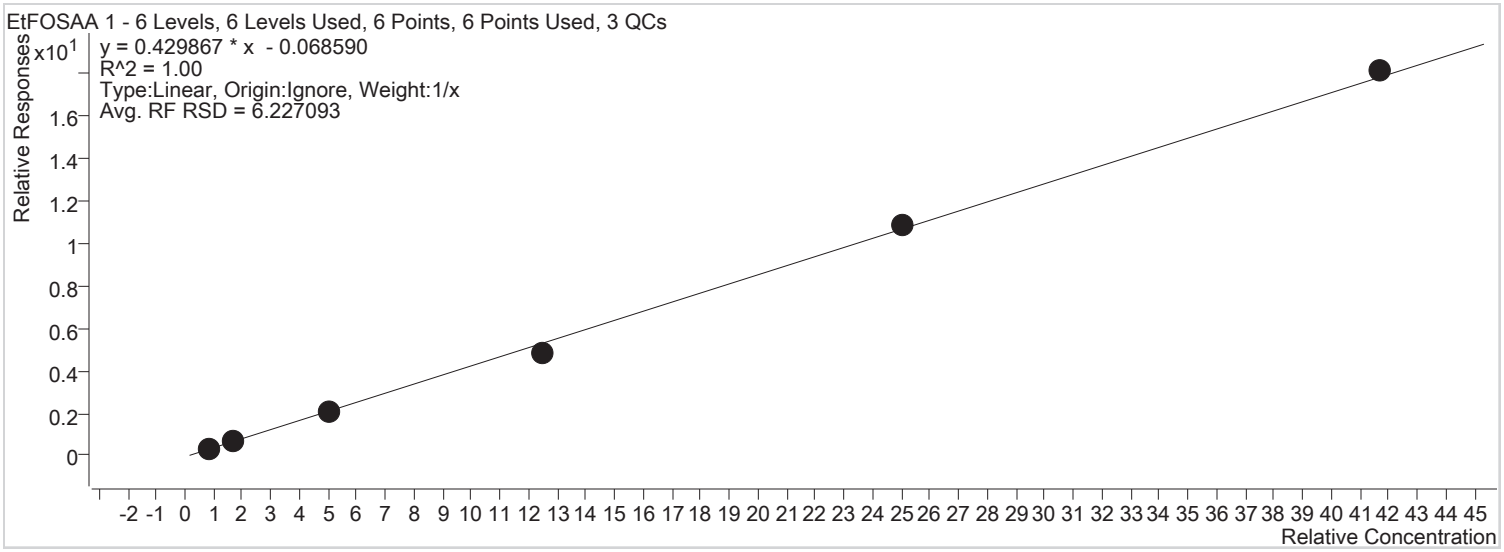
**Analyte:** MeFOSAA 1

**Internal Standard:** D3-MeFOSAA IS




| Sample | Level | Enabled | Acquisition Time | Exp. Conc. | Concentration | Response | RF | S/N | Accuracy |
|---|---|---|---|---|---|---|---|---|---|
| STD 1 | STD 1 | x | 2018/02/24 3:10:51 AM | 0.83 | 0.88 | 358 | 0.3300 | 20 | 106.0 |
| STD 2 | STD 2 | x | 2018/02/24 3:13:16 AM | 1.70 | 1.71 | 799 | 0.3401 | 33 | 100.6 |
| STD 3 | STD 3 | x | 2018/02/24 3:15:41 AM | 5.00 | 5.03 | 2599 | 0.3587 | 94 | 100.5 |
| STD 4 | STD 4 | x | 2018/02/24 3:18:06 AM | 12.50 | 11.21 | 5708 | 0.3248 | 278 | 89.7 |
| STD 5 | STD 5 | x | 2018/02/24 3:20:31 AM | 25.00 | 25.19 | 13098 | 0.3674 | 547 | 100.8 |
| STD 6 | STD 6 | x | 2018/02/24 3:22:56 AM | 41.70 | 42.71 | 22193 | 0.3743 | 422 | 102.4 |

| | |
|---|---|
| **Batch Path** | T:\lcms4\PFC\20180223\WS#5410178_FOSAA\QuantResults\PFC_Water_Low_180223_WS#5410178_FOSAA_EToxics.batch.bin |
| **Last Calib Update** | 2018/02/27 10:52:53 AM |
| **Instrument:** | LCMS04 |
| **Analyte:** | EtFOSAA 1 |
| **Internal Standard:** | D5-EtFOSAA IS |




| Sample | Level | Enabled | Acquisition Time | Exp. Conc. | Concentration | Response | RF | S/N | Accuracy |
|---|---|---|---|---|---|---|---|---|---|
| STD 1 | STD 1 | x | 2018/02/24 3:10:51 AM | 0.83 | 0.91 | 360 | 0.3876 | 42 | 109.4 |
| STD 2 | STD 2 | x | 2018/02/24 3:13:16 AM | 1.70 | 1.67 | 753 | 0.3822 | 82 | 98.3 |
| STD 3 | STD 3 | x | 2018/02/24 3:15:41 AM | 5.00 | 4.90 | 2575 | 0.4074 | 490 | 98.0 |
| STD 4 | STD 4 | x | 2018/02/24 3:18:06 AM | 12.50 | 11.32 | 5621 | 0.3837 | 875 | 90.5 |
| STD 5 | STD 5 | x | 2018/02/24 3:20:31 AM | 25.00 | 25.53 | 12933 | 0.4362 | 1311 | 102.1 |
| STD 6 | STD 6 | x | 2018/02/24 3:22:56 AM | 41.70 | 42.41 | 22502 | 0.4355 | 2283 | 101.7 |

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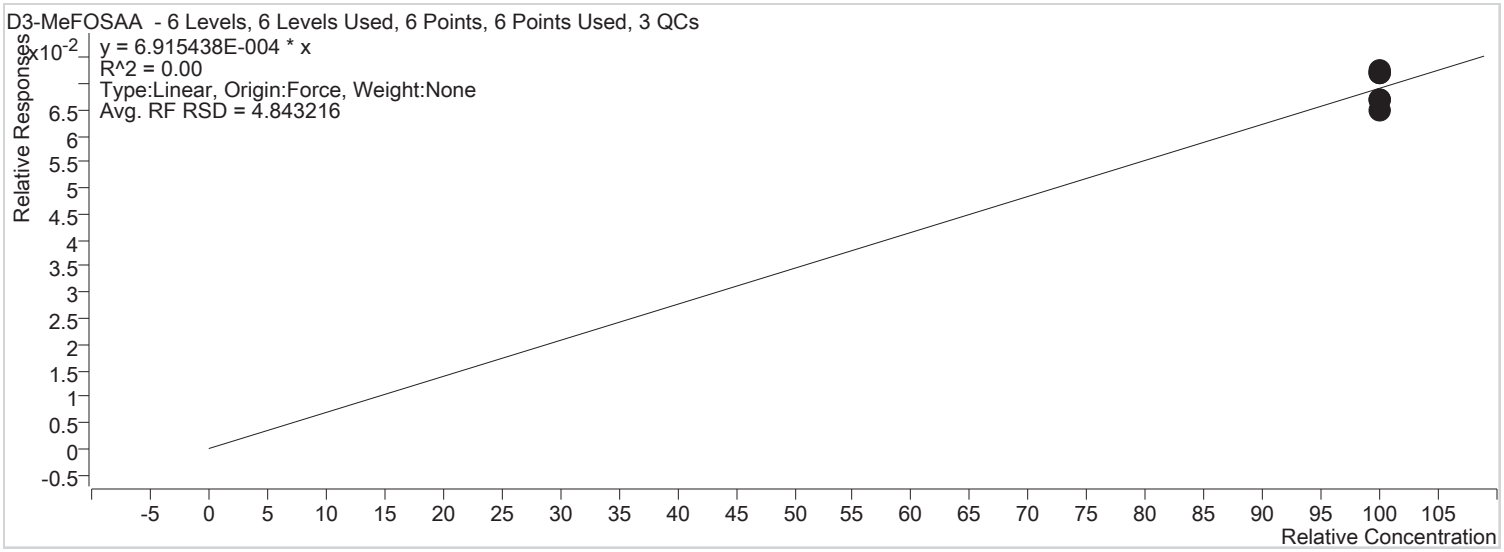
**Batch Path** T:\lcms4\PFC\20180223\WS#5410178_FOSAA\QuantResults\PFC_Water_Low_180223_WS#5410178_FOSAA_EToxics.batch.bin

**Last Calib Update** 2018/02/27 10:52:53 AM

**Instrument:** LCMS04

**Analyte:** D3-MeFOSAA

**Internal Standard:** 13C9-PFDA IS




| Sample | Level | Enabled | Acquisition Time | Exp. Conc. | Concentration | Response | RF | S/N | Accuracy |
|---|---|---|---|---|---|---|---|---|---|
| STD 1 | STD 1 | x | 2018/02/24 3:10:51 AM | 100.00 | 96.50 | 1316 | 0.0007 | 142 | 96.5 |
| STD 2 | STD 2 | x | 2018/02/24 3:13:16 AM | 100.00 | 104.27 | 1378 | 0.0007 | 105 | 104.3 |
| STD 3 | STD 3 | x | 2018/02/24 3:15:41 AM | 100.00 | 94.03 | 1454 | 0.0007 | 138 | 94.0 |
| STD 4 | STD 4 | x | 2018/02/24 3:18:06 AM | 100.00 | 103.92 | 1421 | 0.0007 | 193 | 103.9 |
| STD 5 | STD 5 | x | 2018/02/24 3:20:31 AM | 100.00 | 96.46 | 1433 | 0.0007 | 149 | 96.5 |
| STD 6 | STD 6 | x | 2018/02/24 3:22:56 AM | 100.00 | 104.82 | 1438 | 0.0007 | 145 | 104.8 |

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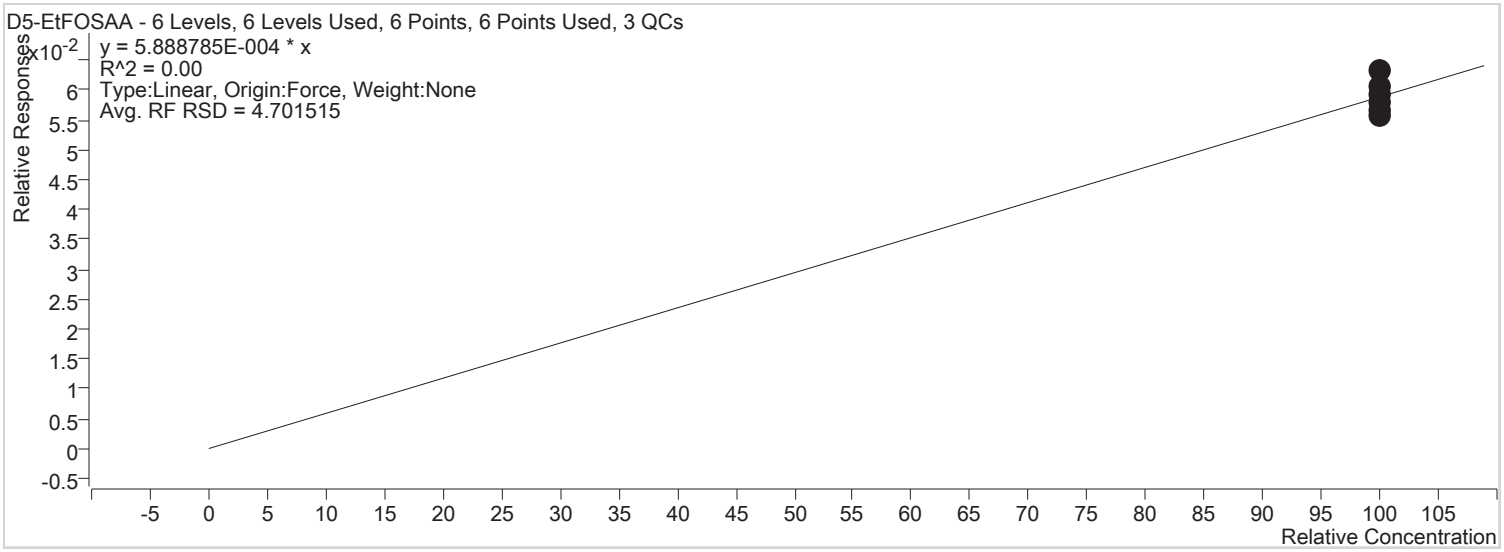
**Batch Path** T:\lcms4\PFC\20180223\WS#5410178_FOSAA\QuantResults\PFC_Water_Low_180223_WS#5410178_FOSAA_EToxics.batch.bin

**Last Calib Update** 2018/02/27 10:52:53 AM

**Instrument:** LCMS04

**Analyte:** D5-EtFOSAA

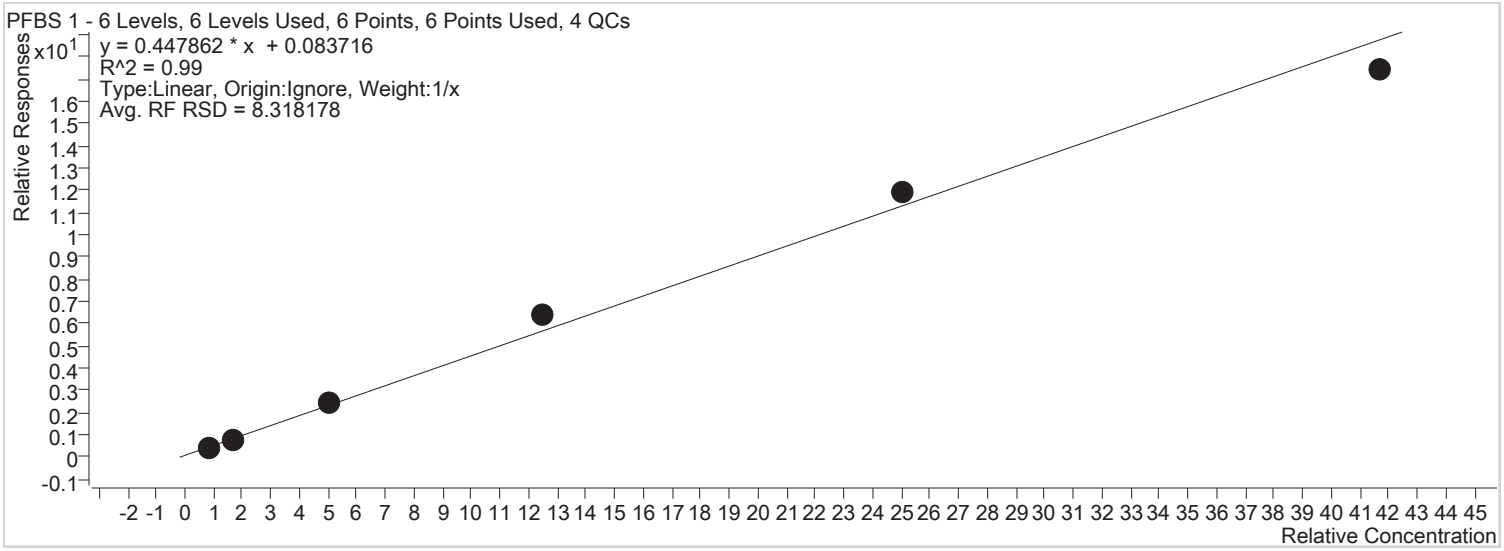
**Internal Standard:** 13C9-PFDA IS




| Sample | Level | Enabled | Acquisition Time | Exp. Conc. | Concentration | Response | RF | S/N | Accuracy |
|---|---|---|---|---|---|---|---|---|---|
| STD 1 | STD 1 | x | 2018/02/24 3:10:51 AM | 100.00 | 98.25 | 1141 | 0.0006 | 222 | 98.2 |
| STD 2 | STD 2 | x | 2018/02/24 3:13:16 AM | 100.00 | 102.81 | 1157 | 0.0006 | 253 | 102.8 |
| STD 3 | STD 3 | x | 2018/02/24 3:15:41 AM | 100.00 | 96.15 | 1266 | 0.0006 | 399 | 96.1 |
| STD 4 | STD 4 | x | 2018/02/24 3:18:06 AM | 100.00 | 100.74 | 1173 | 0.0006 | 208 | 100.7 |
| STD 5 | STD 5 | x | 2018/02/24 3:20:31 AM | 100.00 | 94.62 | 1197 | 0.0006 | 266 | 94.6 |
| STD 6 | STD 6 | x | 2018/02/24 3:22:56 AM | 100.00 | 107.43 | 1255 | 0.0006 | 339 | 107.4 |

**Batch Path** T:\lcms4\PFC\20180226\WS#5412188_B\QuantResults\PFC_Water_Low_180227_WS#5412188_B_EToxics.batch.bin
**Last Calib Update** 2018/02/28 8:26:12 AM
**Instrument:** LCMS04

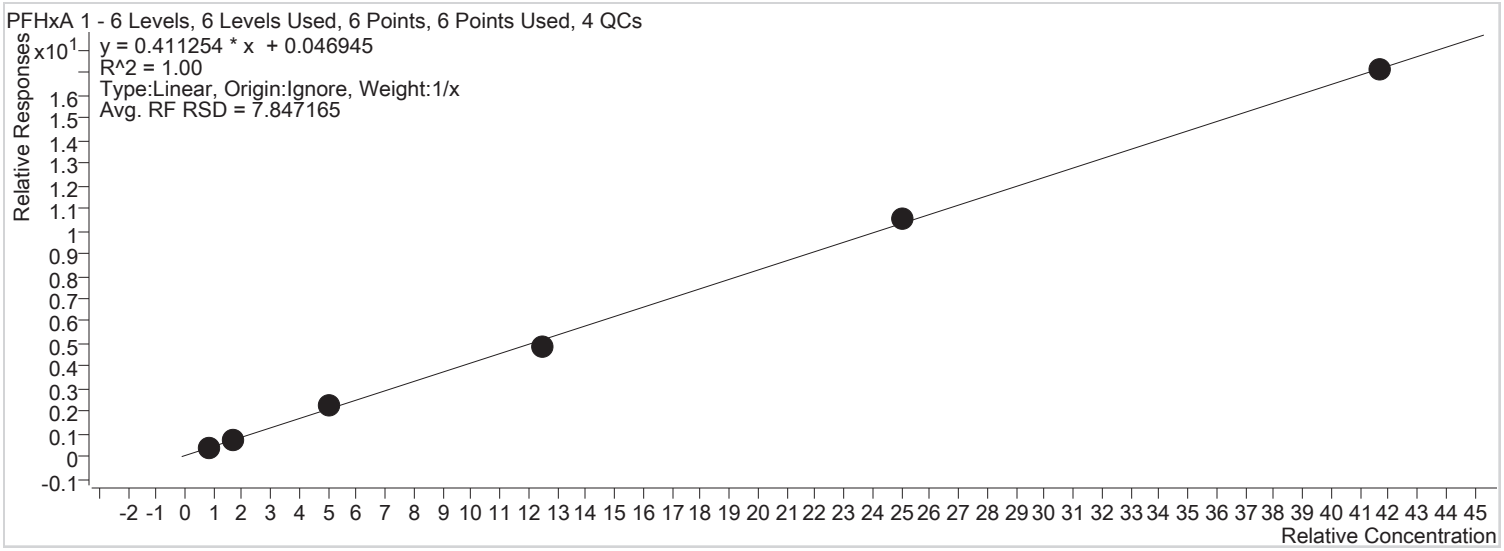
**Analyte:** PFBS 1
**Internal Standard:** MPFHxS




| Sample | Level | Enabled | Acquisition Time | Exp. Conc. | Concentration | Response | RF | S/N | Accuracy |
|---|---|---|---|---|---|---|---|---|---|
| STD 1 | STD 1 | x | 2018/02/27 1:07:08 PM | 0.83 | 0.78 | 769 | 0.5232 | 93 | 94.3 |
| STD 2 | STD 2 | x | 2018/02/27 1:12:04 PM | 1.70 | 1.52 | 1125 | 0.4487 | 129 | 89.2 |
| STD 3 | STD 3 | x | 2018/02/27 1:17:00 PM | 5.00 | 5.27 | 4042 | 0.4885 | 150 | 105.3 |
| STD 4 | STD 4 | x | 2018/02/27 1:21:56 PM | 12.50 | 14.13 | 10227 | 0.5130 | 802 | 113.0 |
| STD 5 | STD 5 | x | 2018/02/27 1:26:52 PM | 25.00 | 26.35 | 18716 | 0.4753 | 139 | 105.4 |
| STD 6 | STD 6 | x | 2018/02/27 1:31:47 PM | 41.70 | 38.69 | 29181 | 0.4175 | 124 | 92.8 |

**Batch Path** T:\lcms4\PFC\20180226\WS#5412188_B\QuantResults\PFC_Water_Low_180227_WS#5412188_B_EToxics.batch.bin
**Last Calib Update** 2018/02/28 8:26:12 AM
**Instrument:** LCMS04

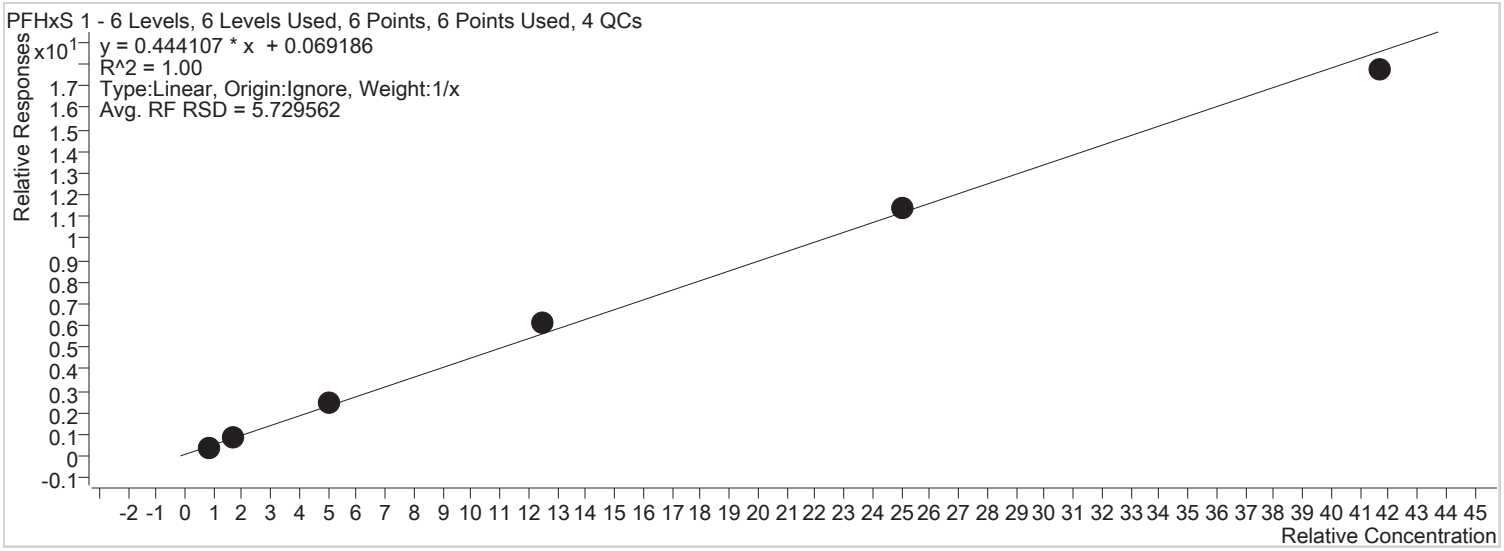
**Analyte:** PFHxA 1
**Internal Standard:** MPFHxA




| Sample | Level | Enabled | Acquisition Time | Exp. Conc. | Concentration | Response | RF | S/N | Accuracy |
|---|---|---|---|---|---|---|---|---|---|
| STD 1 | STD 1 | x | 2018/02/27 1:07:08 PM | 0.83 | 0.86 | 3245 | 0.4841 | 184 | 104.0 |
| STD 2 | STD 2 | x | 2018/02/27 1:12:04 PM | 1.70 | 1.58 | 5122 | 0.4089 | 171 | 92.7 |
| STD 3 | STD 3 | x | 2018/02/27 1:17:00 PM | 5.00 | 5.35 | 17235 | 0.4497 | 2704 | 107.1 |
| STD 4 | STD 4 | x | 2018/02/27 1:21:56 PM | 12.50 | 11.78 | 43010 | 0.3913 | 3441 | 94.2 |
| STD 5 | STD 5 | x | 2018/02/27 1:26:52 PM | 25.00 | 25.57 | 78659 | 0.4226 | 5928 | 102.3 |
| STD 6 | STD 6 | x | 2018/02/27 1:31:47 PM | 41.70 | 41.58 | 125050 | 0.4112 | 11256 | 99.7 |

**Batch Path** T:\lcms4\PFC\20180226\WS#5412188_B\QuantResults\PFC_Water_Low_180227_WS#5412188_B_EToxics.batch.bin
**Last Calib Update** 2018/02/28 8:26:12 AM
**Instrument:** LCMS04

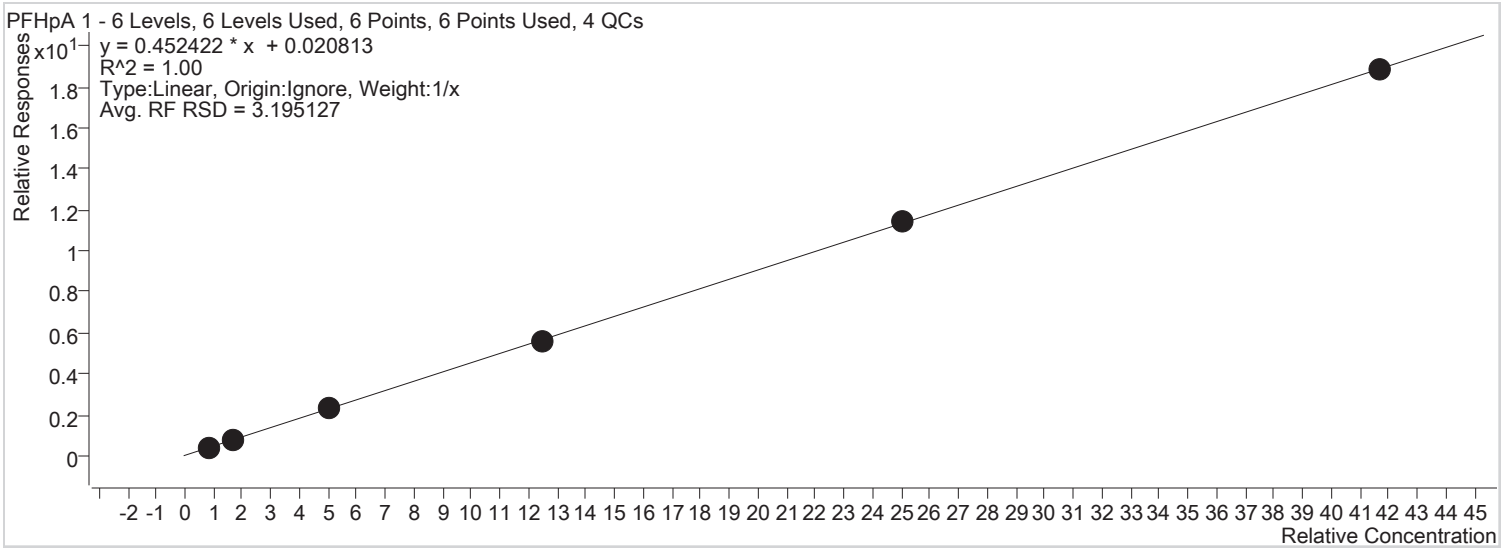
**Analyte:** PFHxS 1
**Internal Standard:** MPFHxS




| Sample | Level | Enabled | Acquisition Time | Exp. Conc. | Concentration | Response | RF | S/N | Accuracy |
|---|---|---|---|---|---|---|---|---|---|
| STD 1 | STD 1 | x | 2018/02/27 1:07:08 PM | 0.83 | 0.71 | 681 | 0.4633 | 102 | 85.5 |
| STD 2 | STD 2 | x | 2018/02/27 1:12:04 PM | 1.70 | 1.68 | 1203 | 0.4798 | 162 | 98.9 |
| STD 3 | STD 3 | x | 2018/02/27 1:17:00 PM | 5.00 | 5.47 | 4132 | 0.4993 | 235 | 109.3 |
| STD 4 | STD 4 | x | 2018/02/27 1:21:56 PM | 12.50 | 13.64 | 9773 | 0.4902 | 1233 | 109.1 |
| STD 5 | STD 5 | x | 2018/02/27 1:26:52 PM | 25.00 | 25.41 | 17883 | 0.4542 | 1237 | 101.6 |
| STD 6 | STD 6 | x | 2018/02/27 1:31:47 PM | 41.70 | 39.82 | 29756 | 0.4258 | 636 | 95.5 |

**Batch Path** T:\lcms4\PFC\20180226\WS#5412188_B\QuantResults\PFC_Water_Low_180227_WS#5412188_B_EToxics.batch.bin
**Last Calib Update** 2018/02/28 8:26:12 AM
**Instrument:** LCMS04

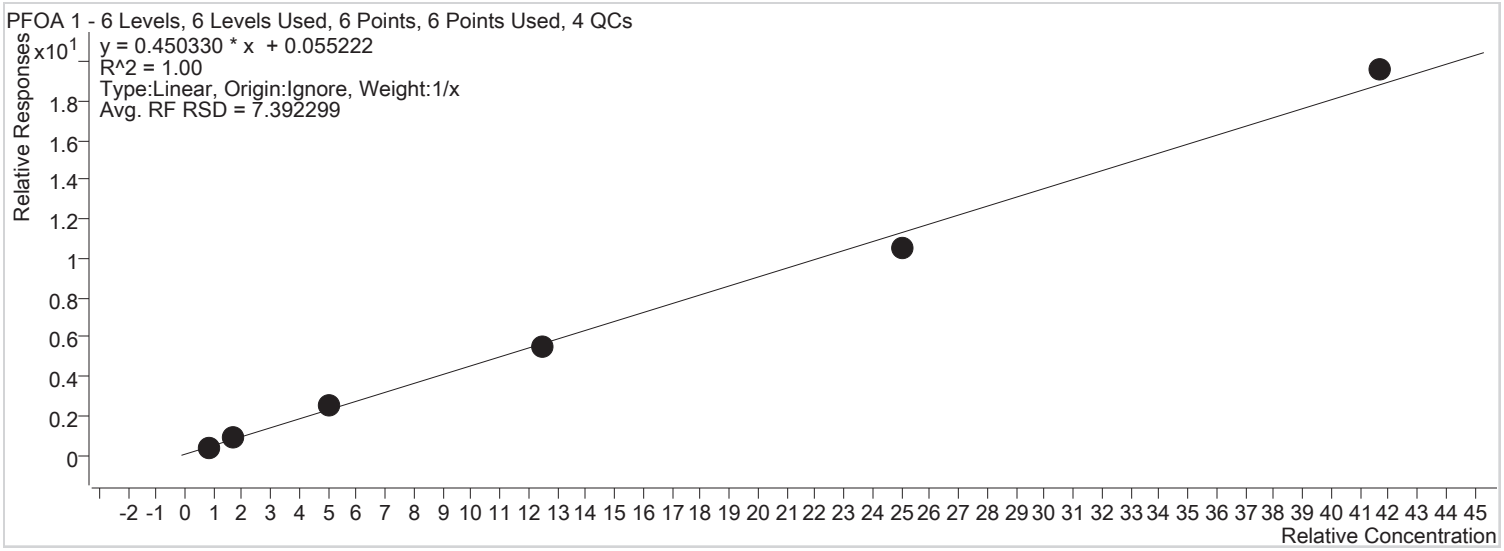
**Analyte:** PFHpA 1
**Internal Standard:** MPFHpA




| Sample | Level | Enabled | Acquisition Time | Exp. Conc. | Concentration | Response | RF | S/N | Accuracy |
|---|---|---|---|---|---|---|---|---|---|
| STD 1 | STD 1 | x | 2018/02/27 1:07:08 PM | 0.83 | 0.84 | 3853 | 0.4806 | 39 | 100.7 |
| STD 2 | STD 2 | x | 2018/02/27 1:12:04 PM | 1.70 | 1.64 | 6674 | 0.4475 | 80 | 96.2 |
| STD 3 | STD 3 | x | 2018/02/27 1:17:00 PM | 5.00 | 5.21 | 22441 | 0.4760 | 240 | 104.3 |
| STD 4 | STD 4 | x | 2018/02/27 1:21:56 PM | 12.50 | 12.32 | 53864 | 0.4475 | 232 | 98.5 |
| STD 5 | STD 5 | x | 2018/02/27 1:26:52 PM | 25.00 | 25.13 | 97076 | 0.4556 | 322 | 100.5 |
| STD 6 | STD 6 | x | 2018/02/27 1:31:47 PM | 41.70 | 41.60 | 152095 | 0.4518 | 289 | 99.8 |

**Batch Path** T:\lcms4\PFC\20180226\WS#5412188_B\QuantResults\PFC_Water_Low_180227_WS#5412188_B_EToxics.batch.bin
**Last Calib Update** 2018/02/28 8:26:12 AM
**Instrument:** LCMS04

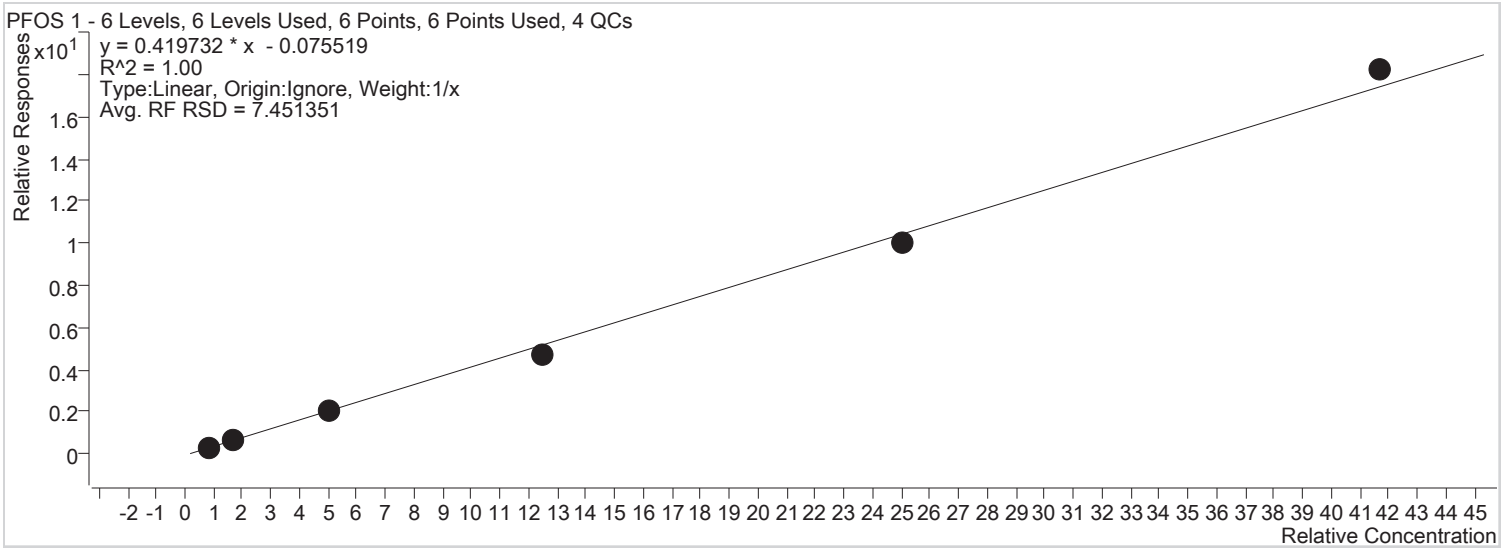
**Analyte:** PFOA 1
**Internal Standard:** MPFOA




| Sample | Level | Enabled | Acquisition Time | Exp. Conc. | Concentration | Response | RF | S/N | Accuracy |
|---|---|---|---|---|---|---|---|---|---|
| STD 1 | STD 1 | x | 2018/02/27 1:07:08 PM | 0.83 | 0.75 | 3976 | 0.4753 | 40 | 90.8 |
| STD 2 | STD 2 | x | 2018/02/27 1:12:04 PM | 1.70 | 1.82 | 7554 | 0.5136 | 83 | 106.8 |
| STD 3 | STD 3 | x | 2018/02/27 1:17:00 PM | 5.00 | 5.42 | 22992 | 0.4990 | 217 | 108.4 |
| STD 4 | STD 4 | x | 2018/02/27 1:21:56 PM | 12.50 | 12.14 | 56679 | 0.4419 | 541 | 97.1 |
| STD 5 | STD 5 | x | 2018/02/27 1:26:52 PM | 25.00 | 23.21 | 98798 | 0.4202 | 1124 | 92.8 |
| STD 6 | STD 6 | x | 2018/02/27 1:31:47 PM | 41.70 | 43.39 | 160551 | 0.4699 | 1484 | 104.1 |

**Batch Path** T:\lcms4\PFC\20180226\WS#5412188_B\QuantResults\PFC_Water_Low_180227_WS#5412188_B_EToxics.batch.bin
**Last Calib Update** 2018/02/28 8:26:12 AM
**Instrument:** LCMS04

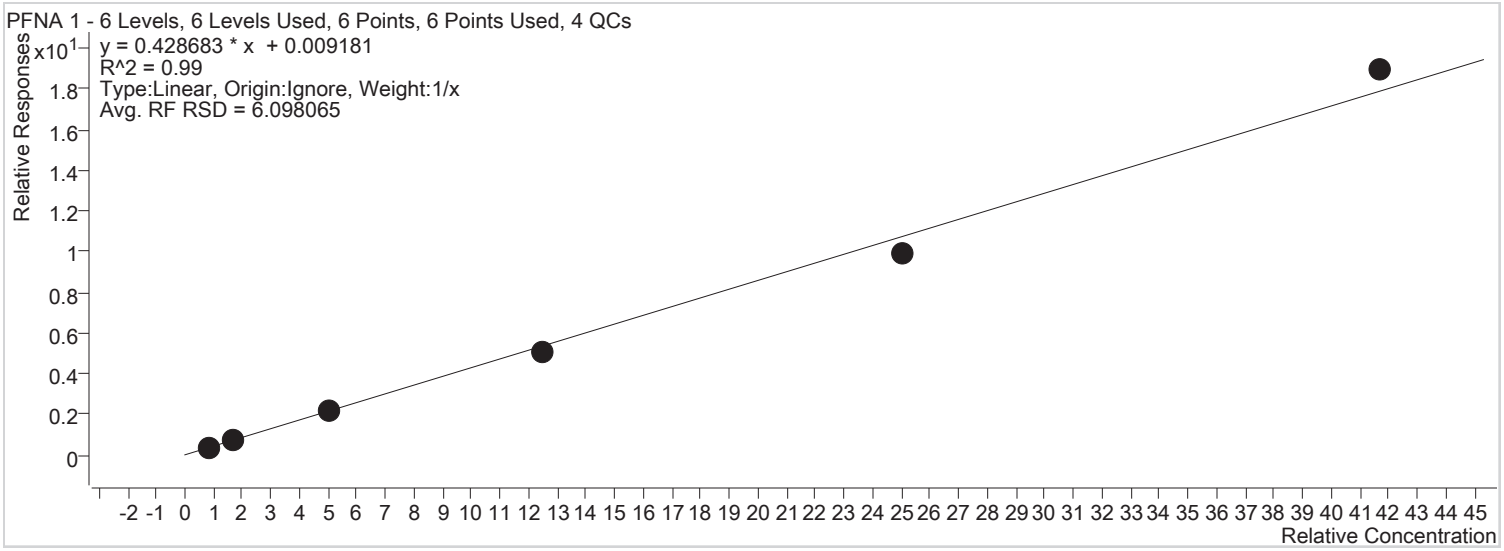
**Analyte:** PFOS 1
**Internal Standard:** MPFOS




| Sample | Level | Enabled | Acquisition Time | Exp. Conc. | Concentration | Response | RF | S/N | Accuracy |
|---|---|---|---|---|---|---|---|---|---|
| STD 1 | STD 1 | x | 2018/02/27 1:07:08 PM | 0.83 | 0.87 | 603 | 0.3479 | 127 | 104.6 |
| STD 2 | STD 2 | x | 2018/02/27 1:12:04 PM | 1.70 | 1.76 | 1204 | 0.3904 | 110 | 103.6 |
| STD 3 | STD 3 | x | 2018/02/27 1:17:00 PM | 5.00 | 4.96 | 3916 | 0.4010 | 207 | 99.1 |
| STD 4 | STD 4 | x | 2018/02/27 1:21:56 PM | 12.50 | 11.50 | 9967 | 0.3801 | 124 | 92.0 |
| STD 5 | STD 5 | x | 2018/02/27 1:26:52 PM | 25.00 | 24.02 | 17681 | 0.4002 | 164 | 96.1 |
| STD 6 | STD 6 | x | 2018/02/27 1:31:47 PM | 41.70 | 43.63 | 29013 | 0.4373 | 218 | 104.6 |

**Batch Path** T:\lcms4\PFC\20180226\WS#5412188_B\QuantResults\PFC_Water_Low_180227_WS#5412188_B_EToxics.batch.bin
**Last Calib Update** 2018/02/28 8:26:12 AM
**Instrument:** LCMS04

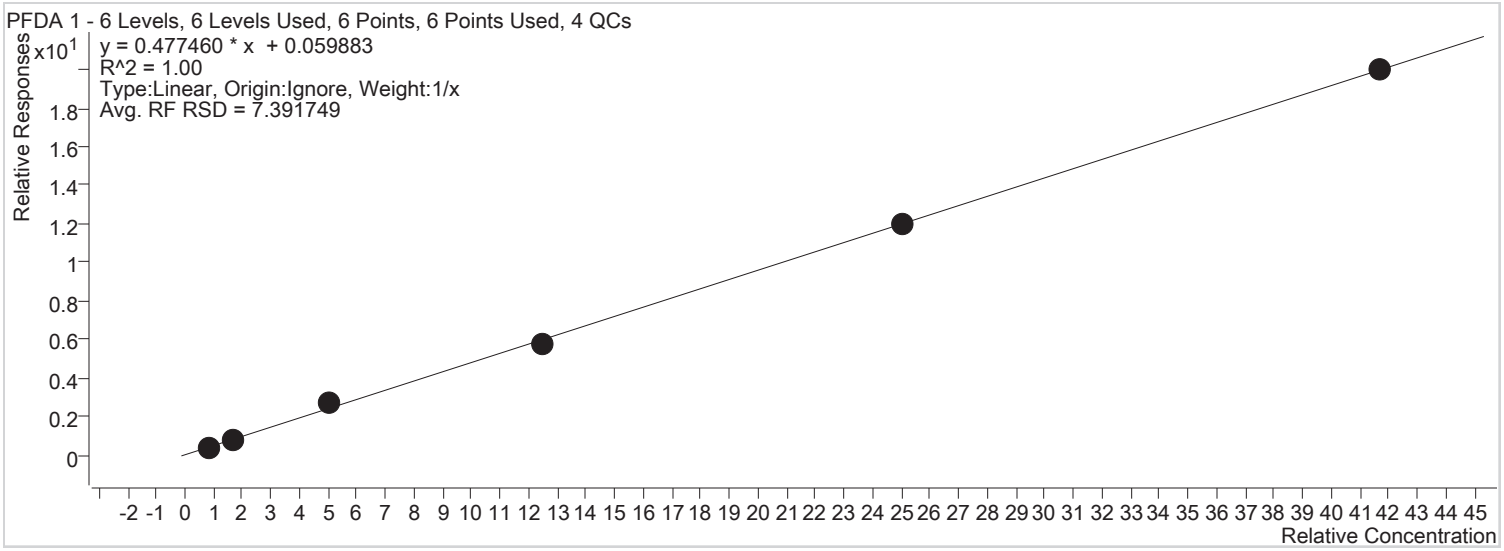
**Analyte:** PFNA 1
**Internal Standard:** MPFNA




| Sample | Level | Enabled | Acquisition Time | Exp. Conc. | Concentration | Response | RF | S/N | Accuracy |
|---|---|---|---|---|---|---|---|---|---|
| STD 1 | STD 1 | x | 2018/02/27 1:07:08 PM | 0.83 | 0.83 | 3631 | 0.4397 | 69 | 100.0 |
| STD 2 | STD 2 | x | 2018/02/27 1:12:04 PM | 1.70 | 1.78 | 6500 | 0.4537 | 153 | 104.6 |
| STD 3 | STD 3 | x | 2018/02/27 1:17:00 PM | 5.00 | 5.19 | 20382 | 0.4469 | 756 | 103.8 |
| STD 4 | STD 4 | x | 2018/02/27 1:21:56 PM | 12.50 | 11.66 | 49111 | 0.4005 | 708 | 93.3 |
| STD 5 | STD 5 | x | 2018/02/27 1:26:52 PM | 25.00 | 23.12 | 88434 | 0.3968 | 2448 | 92.5 |
| STD 6 | STD 6 | x | 2018/02/27 1:31:47 PM | 41.70 | 44.15 | 148789 | 0.4541 | 2808 | 105.9 |

**Batch Path** T:\lcms4\PFC\20180226\WS#5412188_B\QuantResults\PFC_Water_Low_180227_WS#5412188_B_EToxics.batch.bin
**Last Calib Update** 2018/02/28 8:26:12 AM
**Instrument:** LCMS04

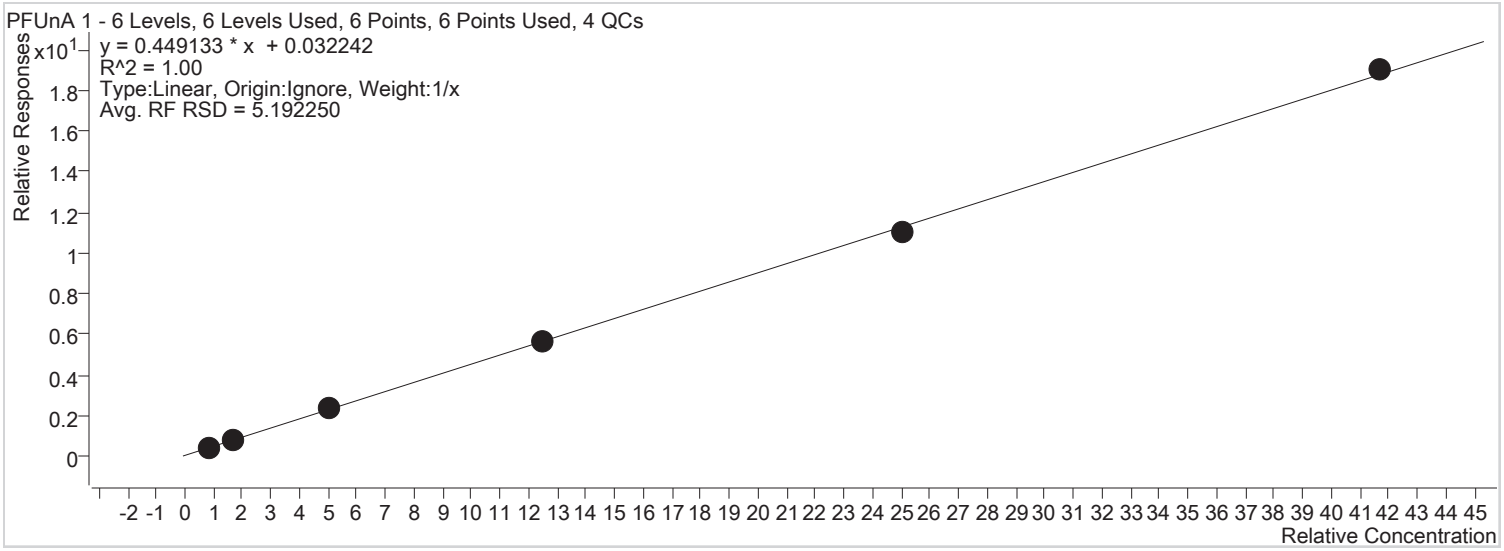
**Analyte:** PFDA 1
**Internal Standard:** MPFDA




| Sample | Level | Enabled | Acquisition Time | Exp. Conc. | Concentration | Response | RF | S/N | Accuracy |
|---|---|---|---|---|---|---|---|---|---|
| STD 1 | STD 1 | x | 2018/02/27 1:07:08 PM | 0.83 | 0.78 | 3863 | 0.5222 | 37 | 94.3 |
| STD 2 | STD 2 | x | 2018/02/27 1:12:04 PM | 1.70 | 1.62 | 6596 | 0.4903 | 77 | 95.3 |
| STD 3 | STD 3 | x | 2018/02/27 1:17:00 PM | 5.00 | 5.76 | 21934 | 0.5618 | 236 | 115.1 |
| STD 4 | STD 4 | x | 2018/02/27 1:21:56 PM | 12.50 | 11.96 | 53630 | 0.4616 | 581 | 95.7 |
| STD 5 | STD 5 | x | 2018/02/27 1:26:52 PM | 25.00 | 24.90 | 97888 | 0.4779 | 1007 | 99.6 |
| STD 6 | STD 6 | x | 2018/02/27 1:31:47 PM | 41.70 | 41.72 | 155246 | 0.4791 | 1459 | 100.0 |

**Batch Path** T:\lcms4\PFC\20180226\WS#5412188_B\QuantResults\PFC_Water_Low_180227_WS#5412188_B_EToxics.batch.bin
**Last Calib Update** 2018/02/28 8:26:12 AM
**Instrument:** LCMS04

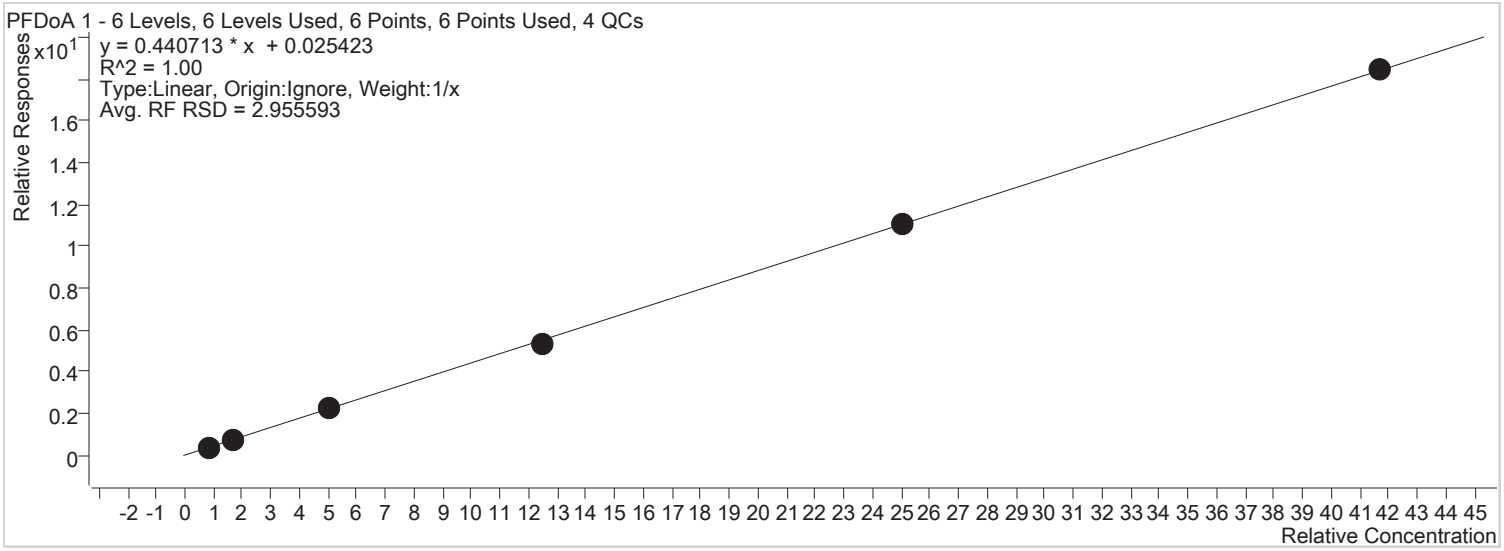
**Analyte:** PFUnA 1
**Internal Standard:** MPFUnA




| Sample | Level | Enabled | Acquisition Time | Exp. Conc. | Concentration | Response | RF | S/N | Accuracy |
|---|---|---|---|---|---|---|---|---|---|
| STD 1 | STD 1 | x | 2018/02/27 1:07:08 PM | 0.83 | 0.86 | 4147 | 0.5016 | 37 | 103.0 |
| STD 2 | STD 2 | x | 2018/02/27 1:12:04 PM | 1.70 | 1.60 | 6874 | 0.4421 | 56 | 94.2 |
| STD 3 | STD 3 | x | 2018/02/27 1:17:00 PM | 5.00 | 5.23 | 23349 | 0.4758 | 120 | 104.5 |
| STD 4 | STD 4 | x | 2018/02/27 1:21:56 PM | 12.50 | 12.43 | 58249 | 0.4491 | 145 | 99.4 |
| STD 5 | STD 5 | x | 2018/02/27 1:26:52 PM | 25.00 | 24.39 | 101812 | 0.4394 | 161 | 97.5 |
| STD 6 | STD 6 | x | 2018/02/27 1:31:47 PM | 41.70 | 42.23 | 164051 | 0.4556 | 177 | 101.3 |

**Batch Path** T:\lcms4\PFC\20180226\WS#5412188_B\QuantResults\PFC_Water_Low_180227_WS#5412188_B_EToxics.batch.bin
**Last Calib Update** 2018/02/28 8:26:12 AM
**Instrument:** LCMS04

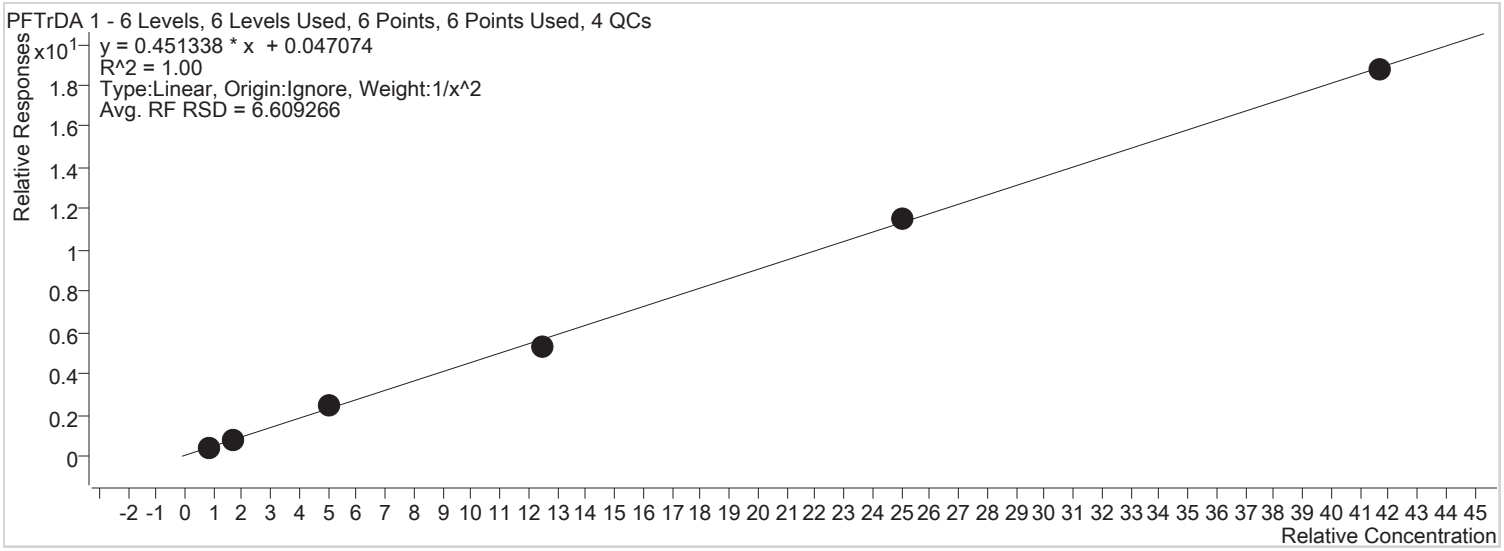
**Analyte:** PFDoA 1
**Internal Standard:** MPFDoA




| Sample | Level | Enabled | Acquisition Time | Exp. Conc. | Concentration | Response | RF | S/N | Accuracy |
|---|---|---|---|---|---|---|---|---|---|
| STD 1 | STD 1 | x | 2018/02/27 1:07:08 PM | 0.83 | 0.81 | 4902 | 0.4600 | 111 | 97.4 |
| STD 2 | STD 2 | x | 2018/02/27 1:12:04 PM | 1.70 | 1.74 | 8613 | 0.4658 | 254 | 102.3 |
| STD 3 | STD 3 | x | 2018/02/27 1:17:00 PM | 5.00 | 5.12 | 28482 | 0.4564 | 666 | 102.4 |
| STD 4 | STD 4 | x | 2018/02/27 1:21:56 PM | 12.50 | 12.14 | 71560 | 0.4300 | 1607 | 97.1 |
| STD 5 | STD 5 | x | 2018/02/27 1:26:52 PM | 25.00 | 25.15 | 128788 | 0.4443 | 1415 | 100.6 |
| STD 6 | STD 6 | x | 2018/02/27 1:31:47 PM | 41.70 | 41.78 | 209885 | 0.4421 | 2799 | 100.2 |

**Batch Path** T:\lcms4\PFC\20180226\WS#5412188_B\QuantResults\PFC_Water_Low_180227_WS#5412188_B_EToxics.batch.bin
**Last Calib Update** 2018/02/28 8:26:12 AM
**Instrument:** LCMS04

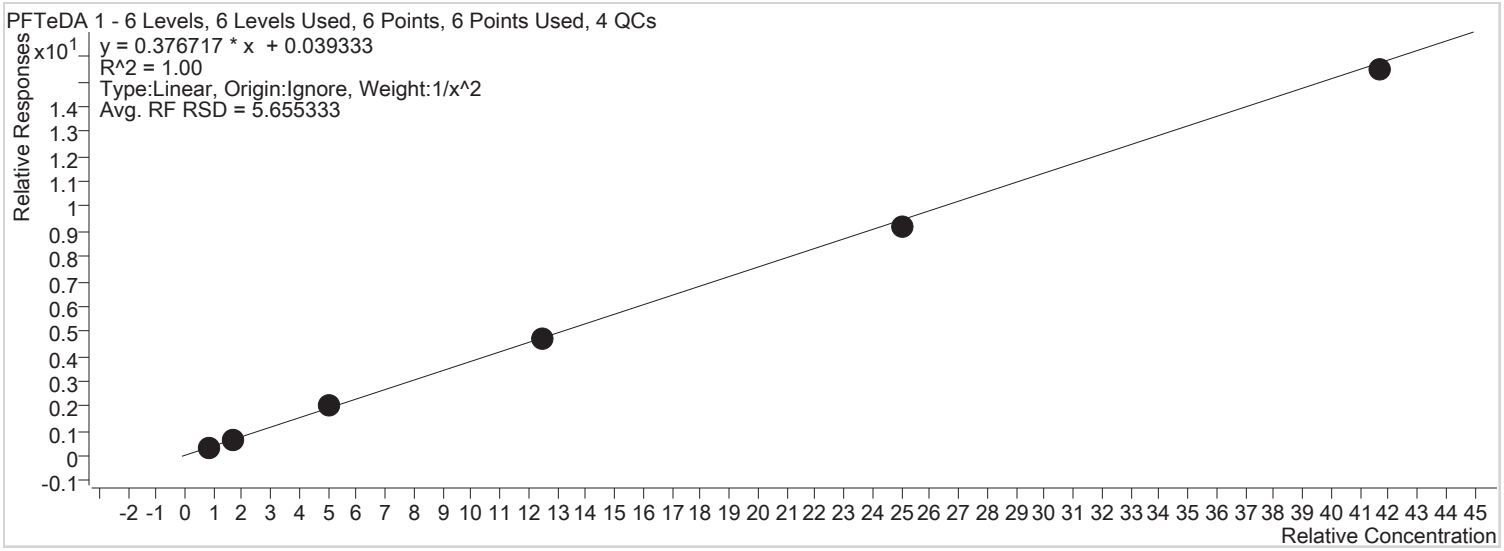
**Analyte:** PFTrDA 1
**Internal Standard:** MPFTeDA




| Sample | Level | Enabled | Acquisition Time | Exp. Conc. | Concentration | Response | RF | S/N | Accuracy |
|---|---|---|---|---|---|---|---|---|---|
| STD 1 | STD 1 | x | 2018/02/27 1:07:08 PM | 0.83 | 0.83 | 5678 | 0.5097 | 39 | 100.4 |
| STD 2 | STD 2 | x | 2018/02/27 1:12:04 PM | 1.70 | 1.66 | 9540 | 0.4676 | 58 | 97.5 |
| STD 3 | STD 3 | x | 2018/02/27 1:17:00 PM | 5.00 | 5.38 | 32849 | 0.4955 | 143 | 107.7 |
| STD 4 | STD 4 | x | 2018/02/27 1:21:56 PM | 12.50 | 11.64 | 78922 | 0.4241 | 172 | 93.1 |
| STD 5 | STD 5 | x | 2018/02/27 1:26:52 PM | 25.00 | 25.48 | 145384 | 0.4619 | 288 | 101.9 |
| STD 6 | STD 6 | x | 2018/02/27 1:31:47 PM | 41.70 | 41.45 | 231192 | 0.4498 | 266 | 99.4 |

**Batch Path** T:\lcms4\PFC\20180226\WS#5412188_B\QuantResults\PFC_Water_Low_180227_WS#5412188_B_EToxics.batch.bin
**Last Calib Update** 2018/02/28 8:26:12 AM
**Instrument:** LCMS04

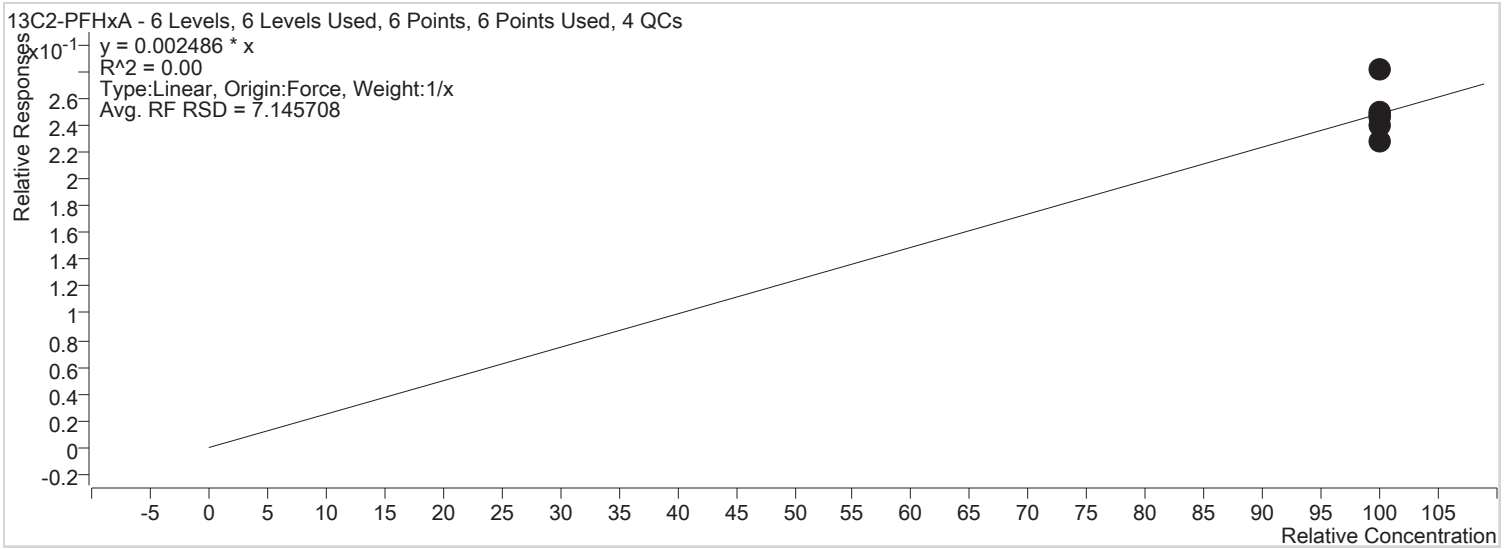
**Analyte:** PFTeDA 1
**Internal Standard:** MPFTeDA




| Sample | Level | Enabled | Acquisition Time | Exp. Conc. | Concentration | Response | RF | S/N | Accuracy |
|---|---|---|---|---|---|---|---|---|---|
| STD 1 | STD 1 | x | 2018/02/27 1:07:08 PM | 0.83 | 0.82 | 4685 | 0.4205 | 13 | 99.1 |
| STD 2 | STD 2 | x | 2018/02/27 1:12:04 PM | 1.70 | 1.70 | 8172 | 0.4006 | 31 | 100.2 |
| STD 3 | STD 3 | x | 2018/02/27 1:17:00 PM | 5.00 | 5.32 | 27108 | 0.4089 | 105 | 106.5 |
| STD 4 | STD 4 | x | 2018/02/27 1:21:56 PM | 12.50 | 12.31 | 69591 | 0.3740 | 237 | 98.4 |
| STD 5 | STD 5 | x | 2018/02/27 1:26:52 PM | 25.00 | 24.41 | 116270 | 0.3694 | 208 | 97.6 |
| STD 6 | STD 6 | x | 2018/02/27 1:31:47 PM | 41.70 | 40.96 | 190672 | 0.3710 | 239 | 98.2 |

**Batch Path** T:\lcms4\PFC\20180226\WS#5412188_B\QuantResults\PFC_Water_Low_180227_WS#5412188_B_EToxics.batch.bin
**Last Calib Update** 2018/02/28 8:26:12 AM
**Instrument:** LCMS04

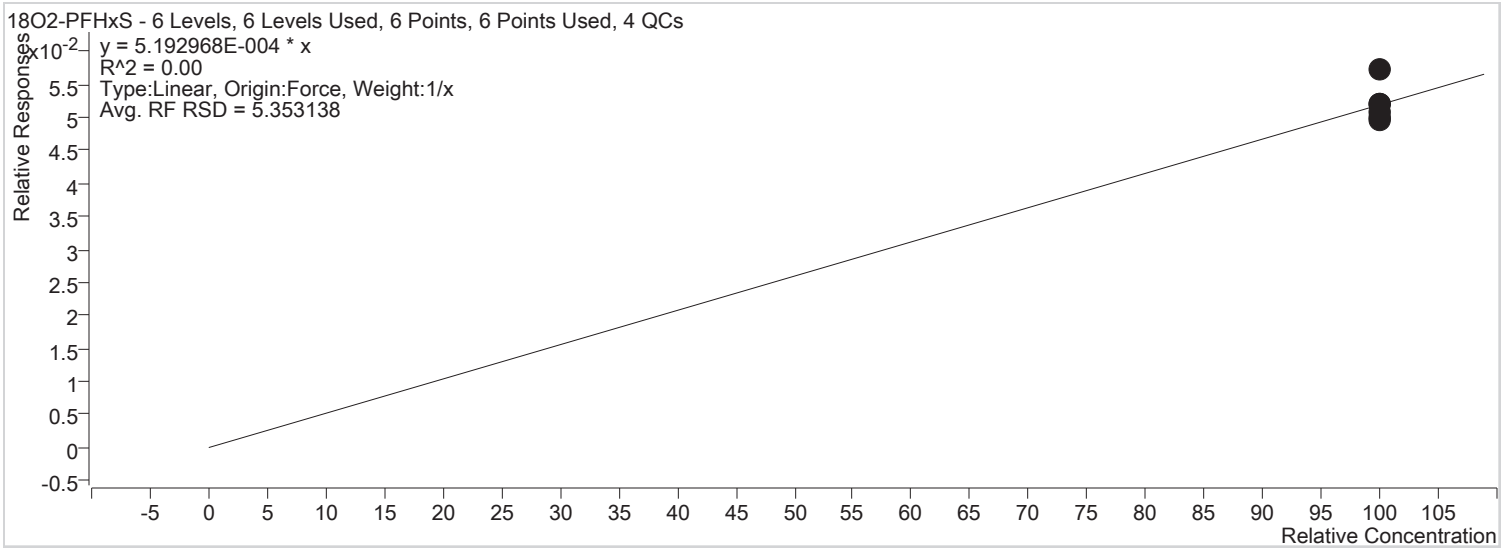
**Analyte:** 13C2-PFHxA
**Internal Standard:** 13C6-PFHxA IS




| Sample | Level | Enabled | Acquisition Time | Exp. Conc. | Concentration | Response | RF | S/N | Accuracy |
|---|---|---|---|---|---|---|---|---|---|
| STD 1 | STD 1 | x | 2018/02/27 1:07:08 PM | 100.00 | 91.66 | 8076 | 0.0023 | 253 | 91.7 |
| STD 2 | STD 2 | x | 2018/02/27 1:12:04 PM | 100.00 | 99.48 | 7368 | 0.0025 | 234 | 99.5 |
| STD 3 | STD 3 | x | 2018/02/27 1:17:00 PM | 100.00 | 96.61 | 7665 | 0.0024 | 165 | 96.6 |
| STD 4 | STD 4 | x | 2018/02/27 1:21:56 PM | 100.00 | 113.15 | 8793 | 0.0028 | 481 | 113.1 |
| STD 5 | STD 5 | x | 2018/02/27 1:26:52 PM | 100.00 | 98.93 | 7446 | 0.0025 | 231 | 98.9 |
| STD 6 | STD 6 | x | 2018/02/27 1:31:47 PM | 100.00 | 100.16 | 7292 | 0.0025 | 286 | 100.2 |

**Batch Path** T:\lcms4\PFC\20180226\WS#5412188_B\QuantResults\PFC_Water_Low_180227_WS#5412188_B_EToxics.batch.bin
**Last Calib Update** 2018/02/28 8:26:12 AM
**Instrument:** LCMS04

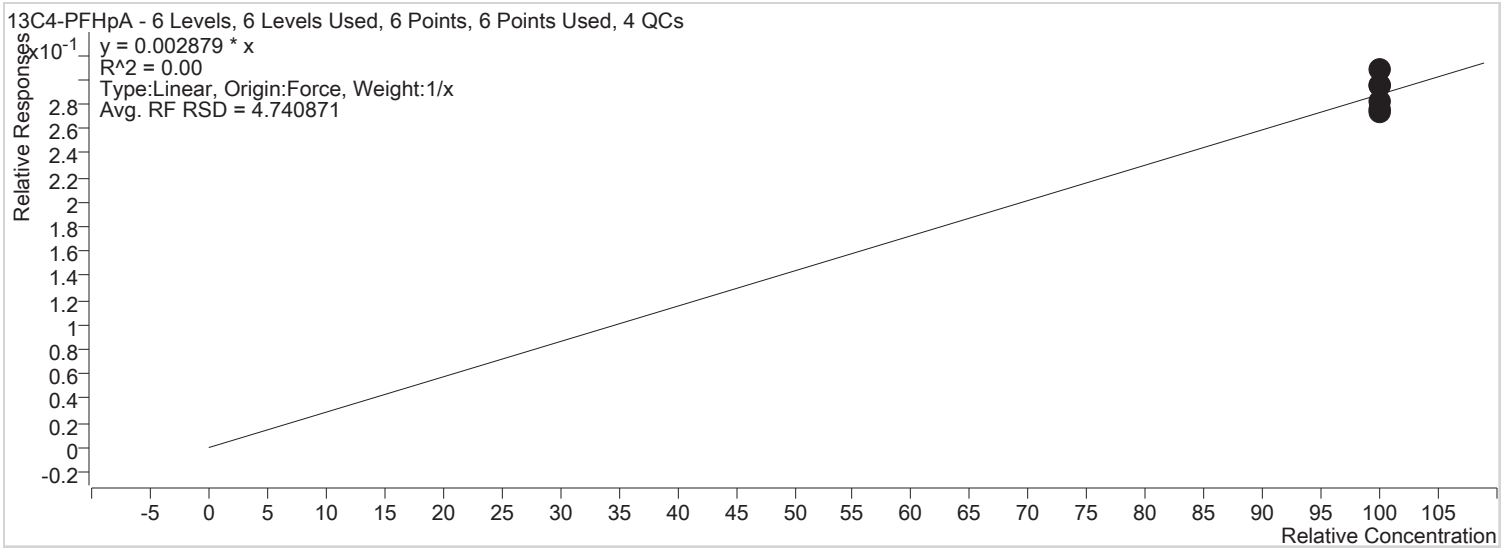
**Analyte:** 18O2-PFHxS
**Internal Standard:** 13C6-PFHxA IS




| Sample | Level | Enabled | Acquisition Time | Exp. Conc. | Concentration | Response | RF | S/N | Accuracy |
|---|---|---|---|---|---|---|---|---|---|
| STD 1 | STD 1 | x | 2018/02/27 1:07:08 PM | 100.00 | 96.21 | 1771 | 0.0005 | 155 | 96.2 |
| STD 2 | STD 2 | x | 2018/02/27 1:12:04 PM | 100.00 | 95.33 | 1475 | 0.0005 | 210 | 95.3 |
| STD 3 | STD 3 | x | 2018/02/27 1:17:00 PM | 100.00 | 99.85 | 1655 | 0.0005 | 147 | 99.9 |
| STD 4 | STD 4 | x | 2018/02/27 1:21:56 PM | 100.00 | 98.24 | 1595 | 0.0005 | 179 | 98.2 |
| STD 5 | STD 5 | x | 2018/02/27 1:26:52 PM | 100.00 | 100.17 | 1575 | 0.0005 | 134 | 100.2 |
| STD 6 | STD 6 | x | 2018/02/27 1:31:47 PM | 100.00 | 110.20 | 1676 | 0.0006 | 233 | 110.2 |

**Batch Path** T:\lcms4\PFC\20180226\WS#5412188_B\QuantResults\PFC_Water_Low_180227_WS#5412188_B_EToxics.batch.bin
**Last Calib Update** 2018/02/28 8:26:12 AM
**Instrument:** LCMS04

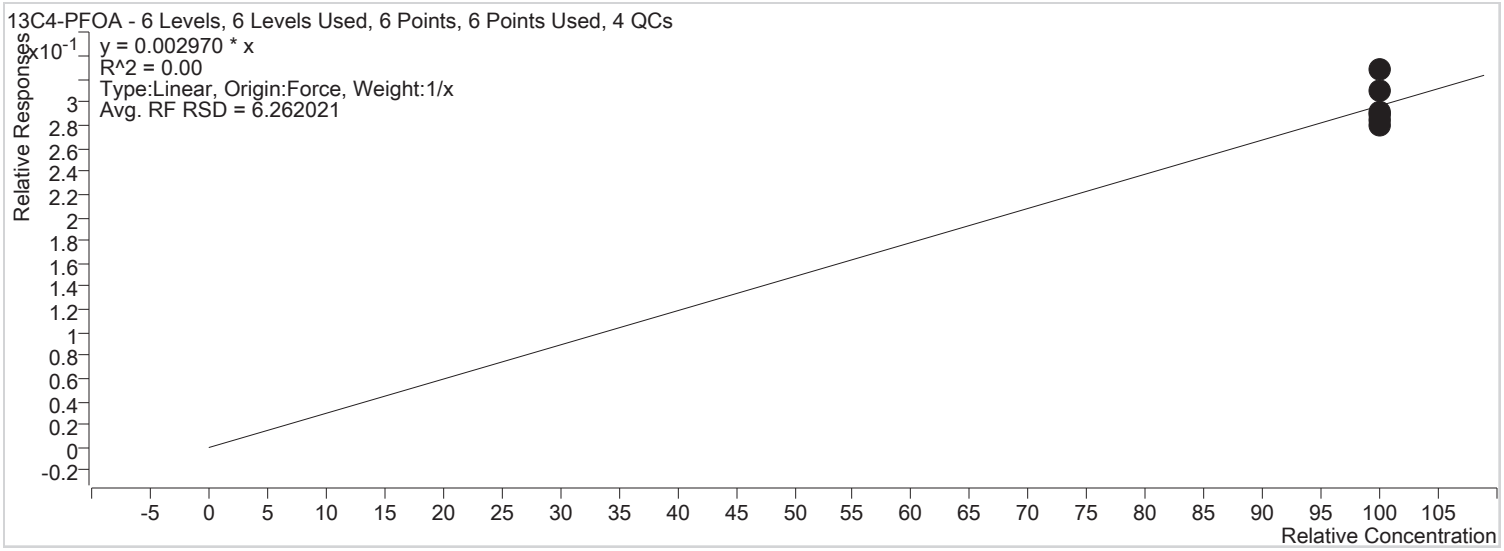
**Analyte:** 13C4-PFHpA
**Internal Standard:** 13C6-PFHxA IS




| Sample | Level | Enabled | Acquisition Time | Exp. Conc. | Concentration | Response | RF | S/N | Accuracy |
|---|---|---|---|---|---|---|---|---|---|
| STD 1 | STD 1 | x | 2018/02/27 1:07:08 PM | 100.00 | 94.65 | 9659 | 0.0027 | 306 | 94.6 |
| STD 2 | STD 2 | x | 2018/02/27 1:12:04 PM | 100.00 | 102.27 | 8773 | 0.0029 | 441 | 102.3 |
| STD 3 | STD 3 | x | 2018/02/27 1:17:00 PM | 100.00 | 102.61 | 9429 | 0.0030 | 222 | 102.6 |
| STD 4 | STD 4 | x | 2018/02/27 1:21:56 PM | 100.00 | 106.97 | 9629 | 0.0031 | 248 | 107.0 |
| STD 5 | STD 5 | x | 2018/02/27 1:26:52 PM | 100.00 | 97.77 | 8523 | 0.0028 | 329 | 97.8 |
| STD 6 | STD 6 | x | 2018/02/27 1:31:47 PM | 100.00 | 95.74 | 8073 | 0.0028 | 211 | 95.7 |

**Batch Path** T:\lcms4\PFC\20180226\WS#5412188_B\QuantResults\PFC_Water_Low_180227_WS#5412188_B_EToxics.batch.bin
**Last Calib Update** 2018/02/28 8:26:12 AM
**Instrument:** LCMS04

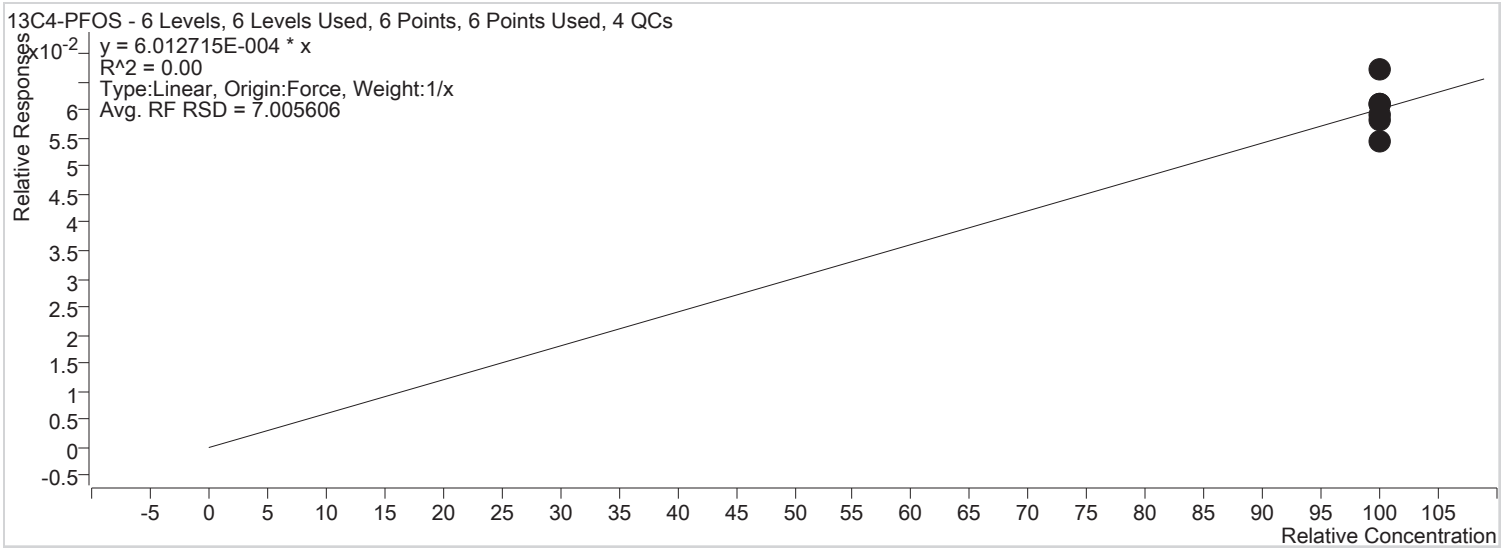
**Analyte:** 13C4-PFOA
**Internal Standard:** 13C6-PFHxA IS




| Sample | Level | Enabled | Acquisition Time | Exp. Conc. | Concentration | Response | RF | S/N | Accuracy |
|---|---|---|---|---|---|---|---|---|---|
| STD 1 | STD 1 | x | 2018/02/27 1:07:08 PM | 100.00 | 95.73 | 10078 | 0.0028 | 222 | 95.7 |
| STD 2 | STD 2 | x | 2018/02/27 1:12:04 PM | 100.00 | 97.77 | 8652 | 0.0029 | 231 | 97.8 |
| STD 3 | STD 3 | x | 2018/02/27 1:17:00 PM | 100.00 | 97.21 | 9215 | 0.0029 | 250 | 97.2 |
| STD 4 | STD 4 | x | 2018/02/27 1:21:56 PM | 100.00 | 110.51 | 10261 | 0.0033 | 242 | 110.5 |
| STD 5 | STD 5 | x | 2018/02/27 1:26:52 PM | 100.00 | 104.58 | 9404 | 0.0031 | 249 | 104.6 |
| STD 6 | STD 6 | x | 2018/02/27 1:31:47 PM | 100.00 | 94.19 | 8193 | 0.0028 | 205 | 94.2 |

**Batch Path** T:\lcms4\PFC\20180226\WS#5412188_B\QuantResults\PFC_Water_Low_180227_WS#5412188_B_EToxics.batch.bin
**Last Calib Update** 2018/02/28 8:26:12 AM
**Instrument:** LCMS04

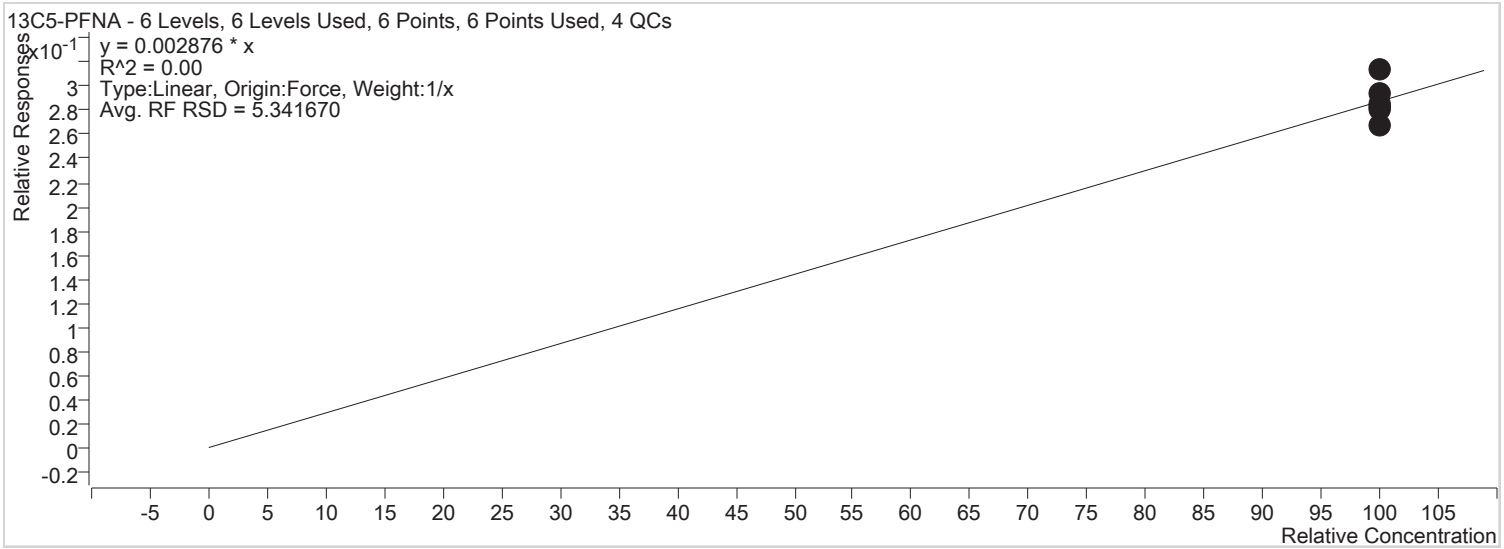
**Analyte:** 13C4-PFOS
**Internal Standard:** 13C6-PFHxA IS




| Sample | Level | Enabled | Acquisition Time | Exp. Conc. | Concentration | Response | RF | S/N | Accuracy |
|---|---|---|---|---|---|---|---|---|---|
| STD 1 | STD 1 | x | 2018/02/27 1:07:08 PM | 100.00 | 97.97 | 2088 | 0.0006 | 279 | 98.0 |
| STD 2 | STD 2 | x | 2018/02/27 1:12:04 PM | 100.00 | 101.25 | 1814 | 0.0006 | 284 | 101.3 |
| STD 3 | STD 3 | x | 2018/02/27 1:17:00 PM | 100.00 | 101.77 | 1953 | 0.0006 | 114 | 101.8 |
| STD 4 | STD 4 | x | 2018/02/27 1:21:56 PM | 100.00 | 111.61 | 2098 | 0.0007 | 195 | 111.6 |
| STD 5 | STD 5 | x | 2018/02/27 1:26:52 PM | 100.00 | 97.06 | 1767 | 0.0006 | 185 | 97.1 |
| STD 6 | STD 6 | x | 2018/02/27 1:31:47 PM | 100.00 | 90.35 | 1591 | 0.0005 | 67 | 90.3 |

**Batch Path** T:\lcms4\PFC\20180226\WS#5412188_B\QuantResults\PFC_Water_Low_180227_WS#5412188_B_EToxics.batch.bin
**Last Calib Update** 2018/02/28 8:26:12 AM
**Instrument:** LCMS04

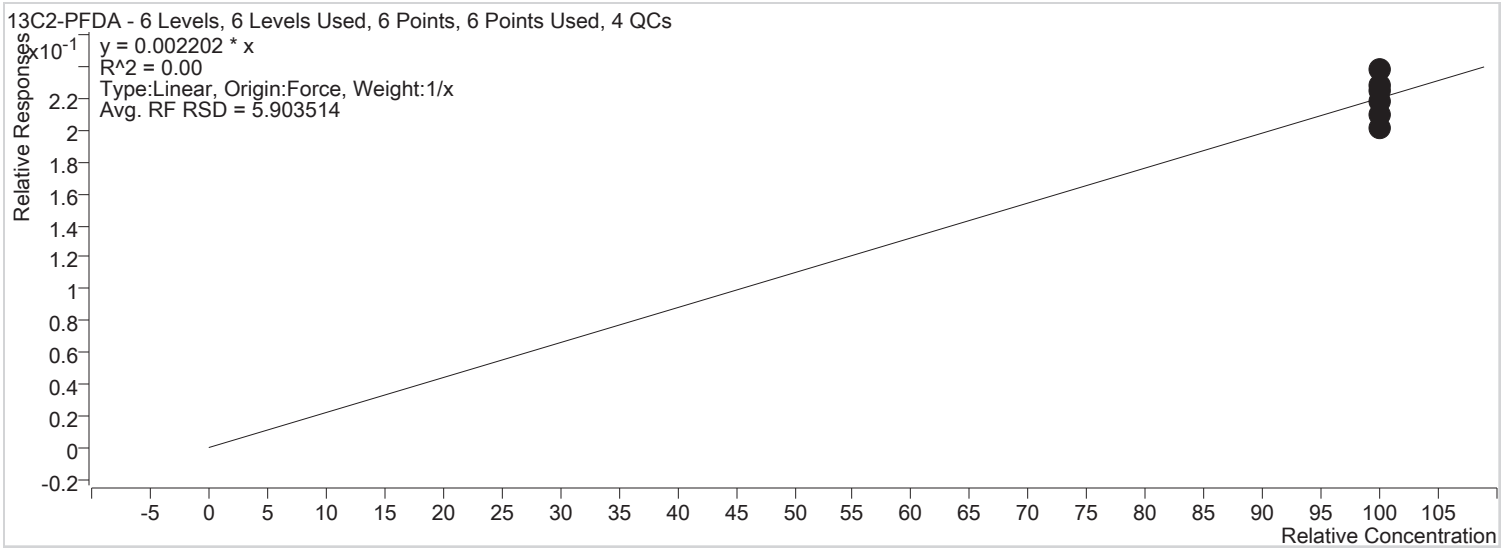
**Analyte:** 13C5-PFNA
**Internal Standard:** 13C6-PFHxA IS




| Sample | Level | Enabled | Acquisition Time | Exp. Conc. | Concentration | Response | RF | S/N | Accuracy |
|---|---|---|---|---|---|---|---|---|---|
| STD 1 | STD 1 | x | 2018/02/27 1:07:08 PM | 100.00 | 97.59 | 9950 | 0.0028 | 246 | 97.6 |
| STD 2 | STD 2 | x | 2018/02/27 1:12:04 PM | 100.00 | 98.35 | 8429 | 0.0028 | 228 | 98.3 |
| STD 3 | STD 3 | x | 2018/02/27 1:17:00 PM | 100.00 | 99.35 | 9121 | 0.0029 | 157 | 99.3 |
| STD 4 | STD 4 | x | 2018/02/27 1:21:56 PM | 100.00 | 109.10 | 9811 | 0.0031 | 258 | 109.1 |
| STD 5 | STD 5 | x | 2018/02/27 1:26:52 PM | 100.00 | 102.36 | 8915 | 0.0029 | 269 | 102.4 |
| STD 6 | STD 6 | x | 2018/02/27 1:31:47 PM | 100.00 | 93.26 | 7857 | 0.0027 | 259 | 93.3 |

**Batch Path** T:\lcms4\PFC\20180226\WS#5412188_B\QuantResults\PFC_Water_Low_180227_WS#5412188_B_EToxics.batch.bin
**Last Calib Update** 2018/02/28 8:26:12 AM
**Instrument:** LCMS04

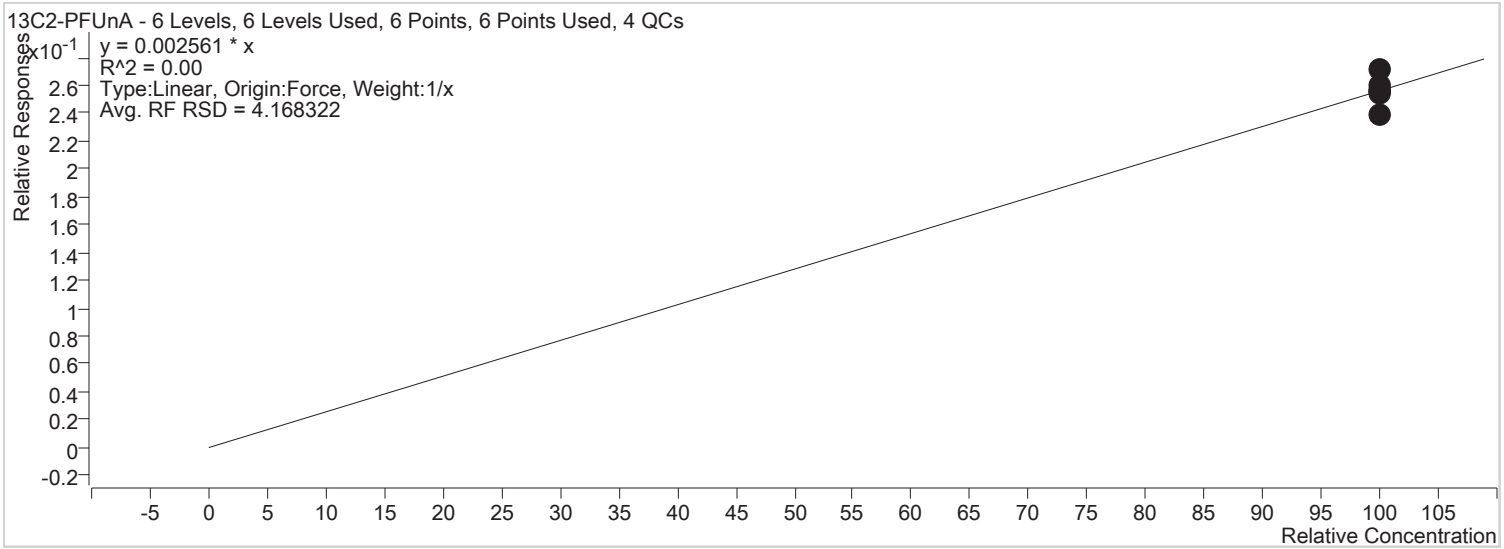
**Analyte:** 13C2-PFDA
**Internal Standard:** 13C9-PFDA IS




| Sample | Level | Enabled | Acquisition Time | Exp. Conc. | Concentration | Response | RF | S/N | Accuracy |
|---|---|---|---|---|---|---|---|---|---|
| STD 1 | STD 1 | x | 2018/02/27 1:07:08 PM | 100.00 | 95.39 | 8789 | 0.0021 | 336 | 95.4 |
| STD 2 | STD 2 | x | 2018/02/27 1:12:04 PM | 100.00 | 99.11 | 7789 | 0.0022 | 203 | 99.1 |
| STD 3 | STD 3 | x | 2018/02/27 1:17:00 PM | 100.00 | 91.74 | 7722 | 0.0020 | 339 | 91.7 |
| STD 4 | STD 4 | x | 2018/02/27 1:21:56 PM | 100.00 | 108.07 | 9108 | 0.0024 | 168 | 108.1 |
| STD 5 | STD 5 | x | 2018/02/27 1:26:52 PM | 100.00 | 101.74 | 7987 | 0.0022 | 127 | 101.7 |
| STD 6 | STD 6 | x | 2018/02/27 1:31:47 PM | 100.00 | 103.96 | 7771 | 0.0023 | 524 | 104.0 |

**Batch Path** T:\lcms4\PFC\20180226\WS#5412188_B\QuantResults\PFC_Water_Low_180227_WS#5412188_B_EToxics.batch.bin
**Last Calib Update** 2018/02/28 8:26:12 AM
**Instrument:** LCMS04

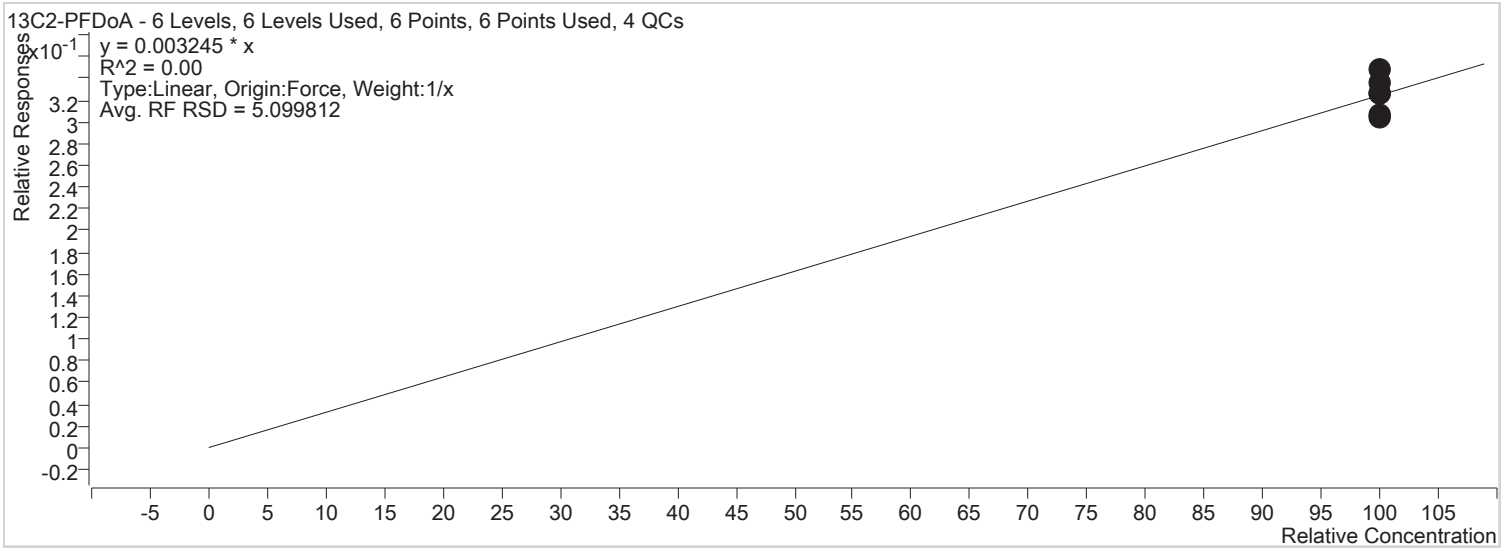
**Analyte:** 13C2-PFUnA
**Internal Standard:** 13C9-PFDA IS




| Sample | Level | Enabled | Acquisition Time | Exp. Conc. | Concentration | Response | RF | S/N | Accuracy |
|---|---|---|---|---|---|---|---|---|---|
| STD 1 | STD 1 | x | 2018/02/27 1:07:08 PM | 100.00 | 92.96 | 9961 | 0.0024 | 135 | 93.0 |
| STD 2 | STD 2 | x | 2018/02/27 1:12:04 PM | 100.00 | 100.07 | 9146 | 0.0026 | 171 | 100.1 |
| STD 3 | STD 3 | x | 2018/02/27 1:17:00 PM | 100.00 | 100.26 | 9814 | 0.0026 | 141 | 100.3 |
| STD 4 | STD 4 | x | 2018/02/27 1:21:56 PM | 100.00 | 105.87 | 10376 | 0.0027 | 147 | 105.9 |
| STD 5 | STD 5 | x | 2018/02/27 1:26:52 PM | 100.00 | 101.52 | 9268 | 0.0026 | 116 | 101.5 |
| STD 6 | STD 6 | x | 2018/02/27 1:31:47 PM | 100.00 | 99.32 | 8634 | 0.0025 | 109 | 99.3 |

**Batch Path** T:\lcms4\PFC\20180226\WS#5412188_B\QuantResults\PFC_Water_Low_180227_WS#5412188_B_EToxics.batch.bin
**Last Calib Update** 2018/02/28 8:26:12 AM
**Instrument:** LCMS04

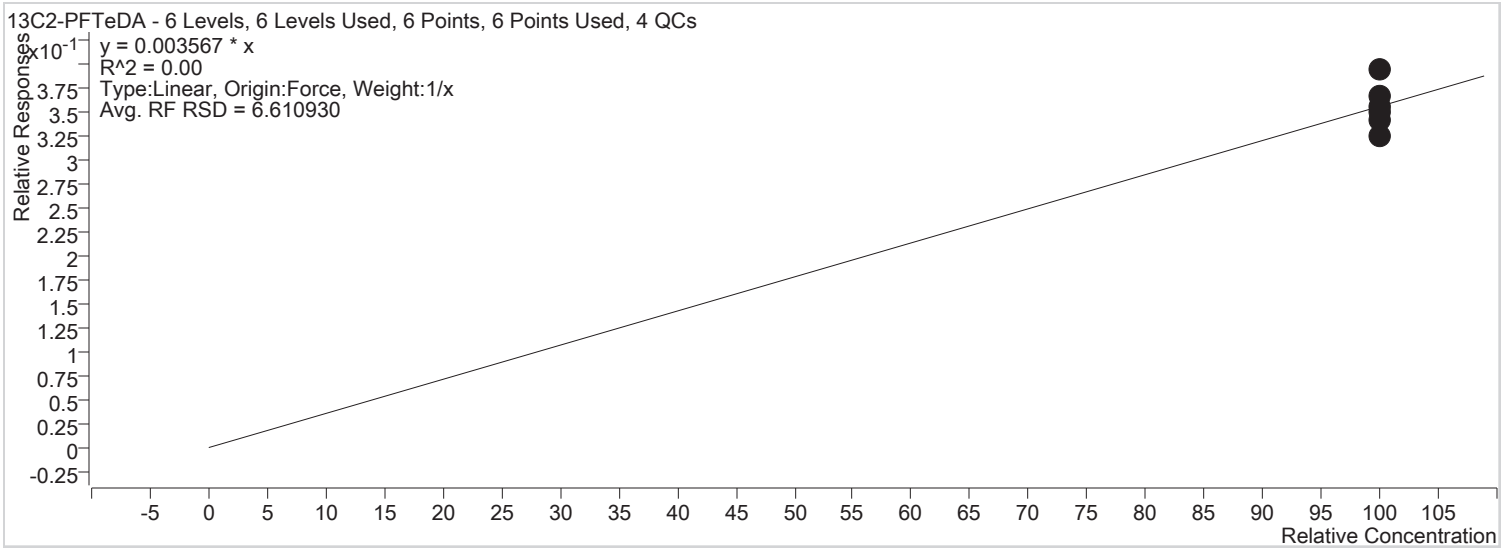
**Analyte:** 13C2-PFDoA
**Internal Standard:** 13C9-PFDA IS




| Sample | Level | Enabled | Acquisition Time | Exp. Conc. | Concentration | Response | RF | S/N | Accuracy |
|---|---|---|---|---|---|---|---|---|---|
| STD 1 | STD 1 | x | 2018/02/27 1:07:08 PM | 100.00 | 94.58 | 12840 | 0.0031 | 270 | 94.6 |
| STD 2 | STD 2 | x | 2018/02/27 1:12:04 PM | 100.00 | 93.95 | 10878 | 0.0030 | 185 | 93.9 |
| STD 3 | STD 3 | x | 2018/02/27 1:17:00 PM | 100.00 | 100.63 | 12480 | 0.0033 | 355 | 100.6 |
| STD 4 | STD 4 | x | 2018/02/27 1:21:56 PM | 100.00 | 107.23 | 13314 | 0.0035 | 204 | 107.2 |
| STD 5 | STD 5 | x | 2018/02/27 1:26:52 PM | 100.00 | 100.24 | 11594 | 0.0033 | 335 | 100.2 |
| STD 6 | STD 6 | x | 2018/02/27 1:31:47 PM | 100.00 | 103.37 | 11384 | 0.0034 | 276 | 103.4 |

**Batch Path** T:\lcms4\PFC\20180226\WS#5412188_B\QuantResults\PFC_Water_Low_180227_WS#5412188_B_EToxics.batch.bin
**Last Calib Update** 2018/02/28 8:26:12 AM
**Instrument:** LCMS04

**Analyte:** 13C2-PFTeDA
**Internal Standard:** 13C9-PFDA IS




| Sample | Level | Enabled | Acquisition Time | Exp. Conc. | Concentration | Response | RF | S/N | Accuracy |
|---|---|---|---|---|---|---|---|---|---|
| STD 1 | STD 1 | x | 2018/02/27 1:07:08 PM | 100.00 | 91.29 | 13624 | 0.0033 | 454 | 91.3 |
| STD 2 | STD 2 | x | 2018/02/27 1:12:04 PM | 100.00 | 96.37 | 12267 | 0.0034 | 560 | 96.4 |
| STD 3 | STD 3 | x | 2018/02/27 1:17:00 PM | 100.00 | 98.07 | 13370 | 0.0035 | 393 | 98.1 |
| STD 4 | STD 4 | x | 2018/02/27 1:21:56 PM | 100.00 | 110.71 | 15112 | 0.0039 | 422 | 110.7 |
| STD 5 | STD 5 | x | 2018/02/27 1:26:52 PM | 100.00 | 100.26 | 12748 | 0.0036 | 330 | 100.3 |
| STD 6 | STD 6 | x | 2018/02/27 1:31:47 PM | 100.00 | 103.30 | 12507 | 0.0037 | 348 | 103.3 |

# By Compound Report

Agilent Technologies

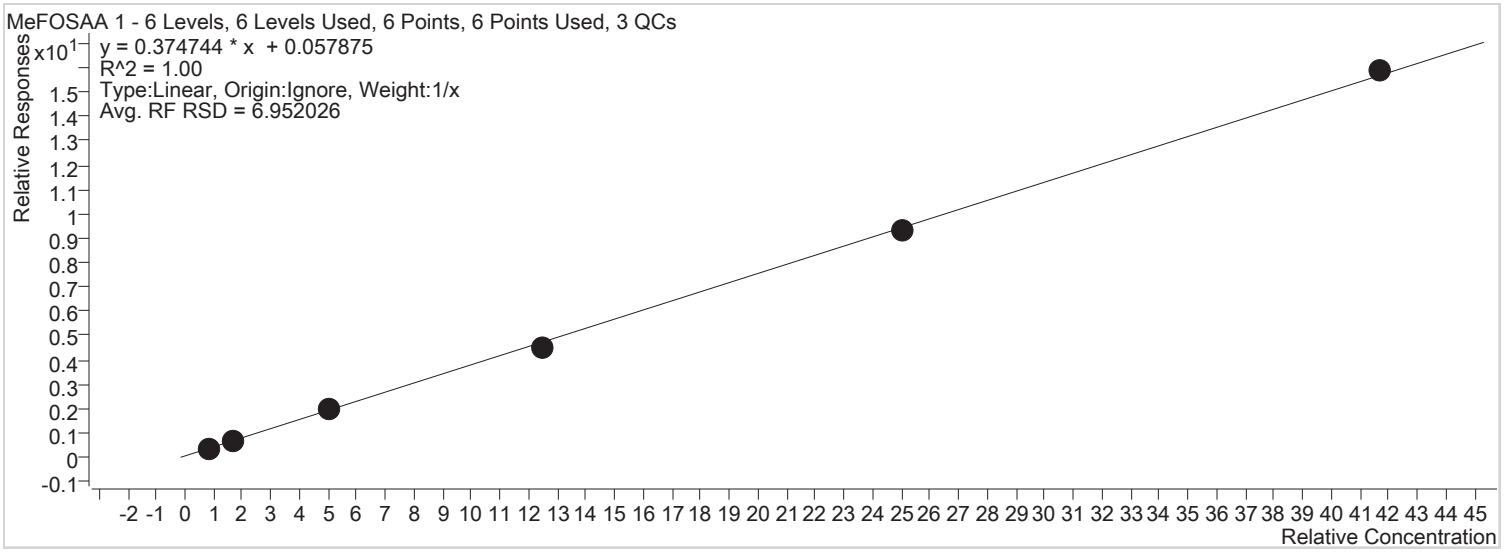
**Batch Path** T:\lcms4\PFC\20180226\WS#5412188_FOSAA\QuantResults\PFC_Water_Low_180226_WS#5412188_FOSAA_EToxics.batch.bin

**Last Calib Update** 2018/02/27 3:14:24 PM

**Instrument:** LCMS04

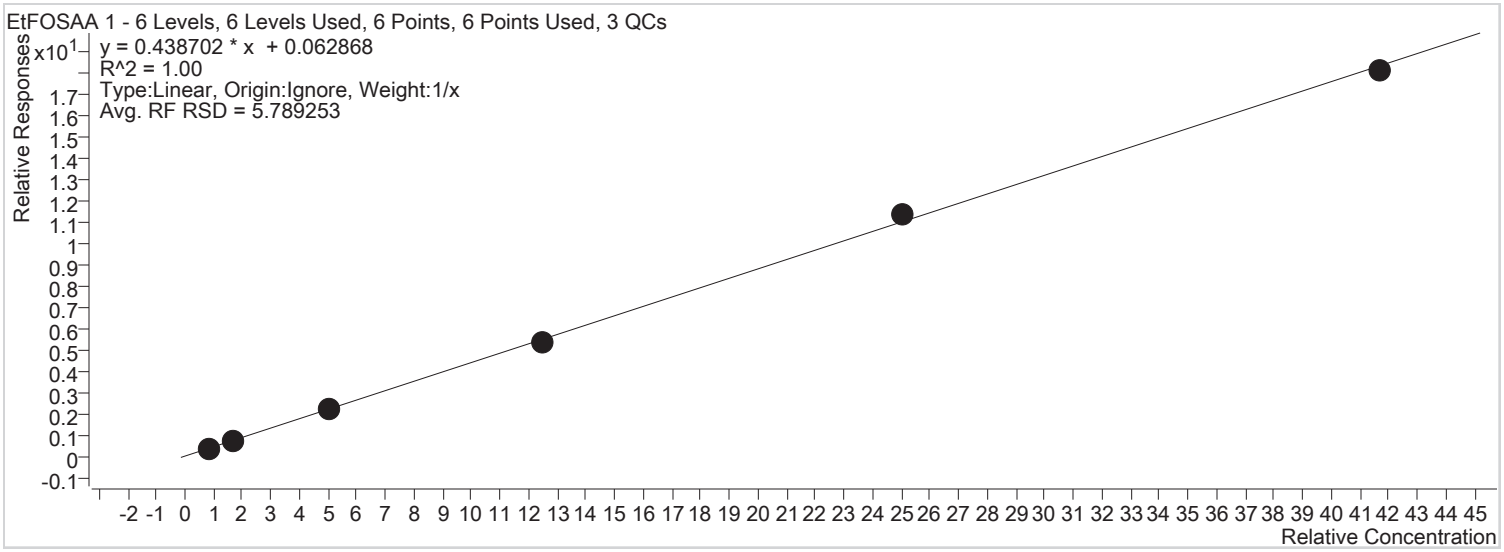
**Analyte:** MeFOSAA 1

**Internal Standard:** D3-MeFOSAA IS




| Sample | Level | Enabled | Acquisition Time | Exp. Conc. | Concentration | Response | RF | S/N | Accuracy |
|---|---|---|---|---|---|---|---|---|---|
| STD 1 | STD 1 | x | 2018/02/27 4:39:34 AM | 0.83 | 0.81 | 587 | 0.4344 | 35 | 97.3 |
| STD 2 | STD 2 | x | 2018/02/27 4:41:57 AM | 1.70 | 1.74 | 1047 | 0.4167 | 44 | 102.1 |
| STD 3 | STD 3 | x | 2018/02/27 4:44:22 AM | 5.00 | 5.23 | 3256 | 0.4035 | 89 | 104.6 |
| STD 4 | STD 4 | x | 2018/02/27 4:46:47 AM | 12.50 | 11.94 | 7771 | 0.3627 | 251 | 95.6 |
| STD 5 | STD 5 | x | 2018/02/27 4:49:12 AM | 25.00 | 24.81 | 14312 | 0.3742 | 302 | 99.2 |
| STD 6 | STD 6 | x | 2018/02/27 4:51:38 AM | 41.70 | 42.21 | 22748 | 0.3807 | 274 | 101.2 |

| | |
|---|---|
| **Batch Path** | T:\lcms4\PFC\20180226\WS#5412188_FOSAA\QuantResults\PFC_Water_Low_180226_WS#5412188_FOSAA_EToxics.batch.bin |
| **Last Calib Update** | 2018/02/27 3:14:24 PM |
| **Instrument:** | LCMS04 |
| **Analyte:** | EtFOSAA 1 |
| **Internal Standard:** | D5-EtFOSAA IS |




| Sample | Level | Enabled | Acquisition Time | Exp. Conc. | Concentration | Response | RF | S/N | Accuracy |
|---|---|---|---|---|---|---|---|---|---|
| STD 1 | STD 1 | x | 2018/02/27 4:39:34 AM | 0.83 | 0.80 | 574 | 0.5011 | 46 | 97.0 |
| STD 2 | STD 2 | x | 2018/02/27 4:41:57 AM | 1.70 | 1.72 | 1053 | 0.4805 | 151 | 101.1 |
| STD 3 | STD 3 | x | 2018/02/27 4:44:22 AM | 5.00 | 5.14 | 3227 | 0.4640 | 336 | 102.9 |
| STD 4 | STD 4 | x | 2018/02/27 4:46:47 AM | 12.50 | 12.18 | 7645 | 0.4325 | 1017 | 97.4 |
| STD 5 | STD 5 | x | 2018/02/27 4:49:12 AM | 25.00 | 25.72 | 14182 | 0.4538 | 1502 | 102.9 |
| STD 6 | STD 6 | x | 2018/02/27 4:51:38 AM | 41.70 | 41.16 | 23104 | 0.4346 | 1714 | 98.7 |

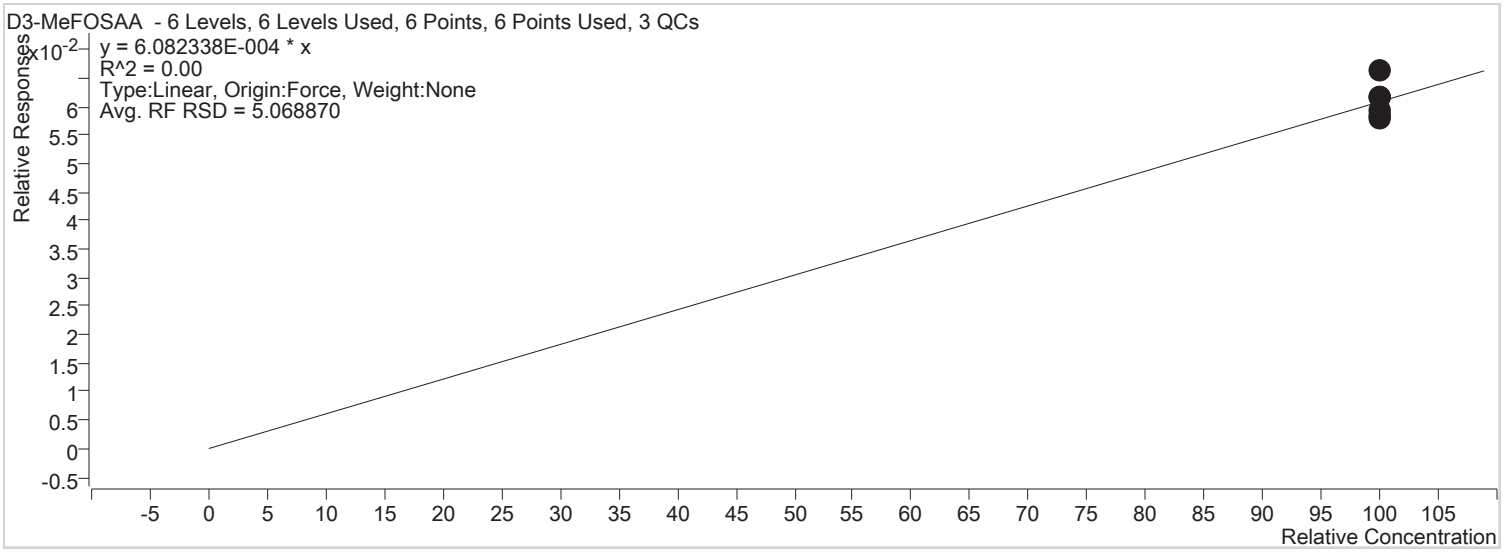
**Batch Path** T:\lcms4\PFC\20180226\WS#5412188_FOSAA\QuantResults\PFC_Water_Low_180226_WS#5412188_FOSAA_EToxics.batch.bin

**Last Calib Update** 2018/02/27 3:14:24 PM

**Instrument:** LCMS04

**Analyte:** D3-MeFOSAA

**Internal Standard:** 13C9-PFDA IS




| Sample | Level | Enabled | Acquisition Time | Exp. Conc. | Concentration | Response | RF | S/N | Accuracy |
|---|---|---|---|---|---|---|---|---|---|
| STD 1 | STD 1 | x | 2018/02/27 4:39:34 AM | 100.00 | 95.17 | 1628 | 0.0006 | 152 | 95.2 |
| STD 2 | STD 2 | x | 2018/02/27 4:41:57 AM | 100.00 | 96.07 | 1506 | 0.0006 | 132 | 96.1 |
| STD 3 | STD 3 | x | 2018/02/27 4:44:22 AM | 100.00 | 101.46 | 1642 | 0.0006 | 213 | 101.5 |
| STD 4 | STD 4 | x | 2018/02/27 4:46:47 AM | 100.00 | 108.92 | 1724 | 0.0007 | 169 | 108.9 |
| STD 5 | STD 5 | x | 2018/02/27 4:49:12 AM | 100.00 | 101.03 | 1545 | 0.0006 | 232 | 101.0 |
| STD 6 | STD 6 | x | 2018/02/27 4:51:38 AM | 100.00 | 97.35 | 1442 | 0.0006 | 186 | 97.4 |

Agilent Technologies

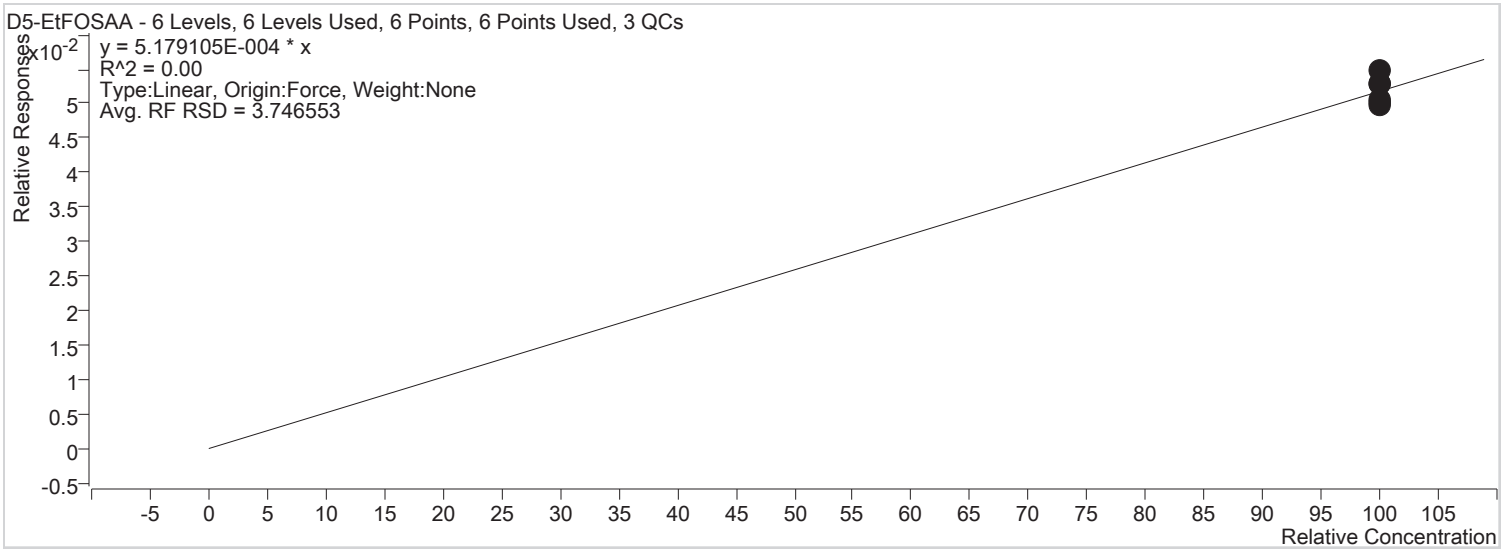
**Batch Path** T:\lcms4\PFC\20180226\WS#5412188_FOSAA\QuantResults\PFC_Water_Low_180226_WS#5412188_FOSAA_EToxics.batch.bin

**Last Calib Update** 2018/02/27 3:14:24 PM

**Instrument:** LCMS04

**Analyte:** D5-EtFOSAA

**Internal Standard:** 13C9-PFDA IS




| Sample | Level | Enabled | Acquisition Time | Exp. Conc. | Concentration | Response | RF | S/N | Accuracy |
|---|---|---|---|---|---|---|---|---|---|
| STD 1 | STD 1 | x | 2018/02/27 4:39:34 AM | 100.00 | 96.05 | 1399 | 0.0005 | 158 | 96.0 |
| STD 2 | STD 2 | x | 2018/02/27 4:41:57 AM | 100.00 | 97.39 | 1300 | 0.0005 | 133 | 97.4 |
| STD 3 | STD 3 | x | 2018/02/27 4:44:22 AM | 100.00 | 101.89 | 1404 | 0.0005 | 133 | 101.9 |
| STD 4 | STD 4 | x | 2018/02/27 4:46:47 AM | 100.00 | 105.73 | 1425 | 0.0005 | 147 | 105.7 |
| STD 5 | STD 5 | x | 2018/02/27 4:49:12 AM | 100.00 | 97.14 | 1265 | 0.0005 | 114 | 97.1 |
| STD 6 | STD 6 | x | 2018/02/27 4:51:38 AM | 100.00 | 101.80 | 1284 | 0.0005 | 154 | 101.8 |



# 6. Continuing Calibration

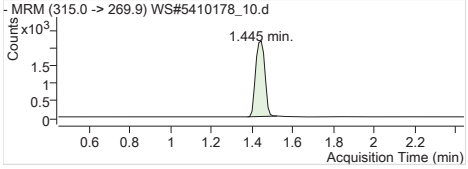
Maxxam Analytics International
6740 Campobello Rd
Mississauga, Ontario, Canada
L5N 2L8
1-800-668-0639
www.maxxamanalytics.com

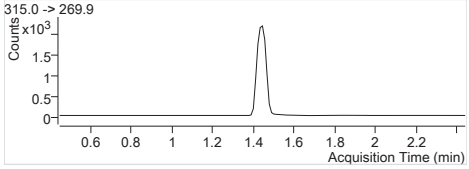
| | |
|---|---|
| **Batch Path** | T:\lcms4\PFC\20180223\WS#5410178\QuantResults\PFC_Water_Low_180223_WS#5410178_EToxics |

| | | | |
|---|---|---|---|
| **Sample Name** | **ISC** | **Instrument** | LCMS04 |
| **Data File** | WS#5410178_10.d | **Operator** | |
| **Sample Type** | CC | **Dilution** | 1 |
| **Acq. Method** | PFC_Water_Low.m | **Position** | P1-A2 |
| **Acq. Date** | 2018/02/23 5:19:00 PM | **Injection Volume** | Per Method |
| **Sample Annotation** | - | | |

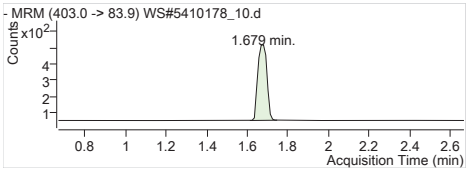
| ISTD Compounds | Response | RT | Target conc. | | |
|---|---|---|---|---|---|
| MPFHxA | 6771 | 1.44 | 1 µg/L | | |
| MPFHxS | 1471 | 1.68 | 1 µg/L | | |
| MPFHpA | 8755 | 1.70 | 1 µg/L | | |
| MPFOA | 9106 | 1.88 | 1 µg/L | | |
| MPFOS | 1742 | 1.97 | 1 µg/L | | |
| MPFNA | 8143 | 2.02 | 1 µg/L | | |
| MPFDA | 6788 | 2.14 | 1 µg/L | | |
| MPFUnA | 8886 | 2.23 | 1 µg/L | | |
| MPFDoA | 11328 | 2.32 | 1 µg/L | | |
| MPFTeDA | 12030 | 2.47 | 1 µg/L | | |
| 13C6-PFHxA IS | 23606 | 1.44 | 1 µg/L | | |
| 13C9-PFDA IS | 29016 | 2.13 | 1 µg/L | | |

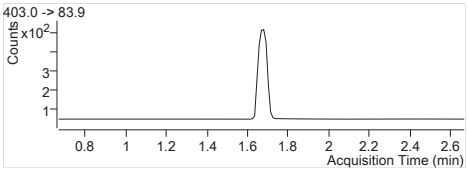
| Compound | Response | RT | Target Conc. | Calc. Conc. | Accuracy |
|---|---|---|---|---|---|
| PFBS 1 | 520 | 1.09 | 0.83 | 1.03 µg/L | 123.74 |
| PFHxA 1 | 2179 | 1.45 | 0.83 | 0.93 µg/L | 111.75 |
| PFHxS 1 | 515 | 1.68 | 0.83 | 0.99 µg/L | 119.67 |
| PFHpA 1 | 2509 | 1.70 | 0.83 | 0.95 µg/L | 114.87 |
| PFOA 1 | 2688 | 1.88 | 0.83 | 0.82 µg/L | 98.62 |
| PFOS 1 | 420 | 1.96 | 0.83 | 0.84 µg/L | 101.02 |
| PFNA 1 | 2669 | 2.03 | 0.83 | 0.97 µg/L | 117.20 |
| PFDA 1 | 2555 | 2.14 | 0.83 | 0.86 µg/L | 103.12 |
| PFUnA 1 | 2825 | 2.23 | 0.83 | 0.95 µg/L | 114.57 |
| PFDoA 1 | 3622 | 2.32 | 0.83 | 0.94 µg/L | 113.12 |
| PFTrDA 1 | 4004 | 2.40 | 0.83 | 0.84 µg/L | 101.12 |
| PFTeDA 1 | 3416 | 2.46 | 0.83 | 0.84 µg/L | 101.29 |
| 13C2-PFHxA | 6771 | 1.44 | 100.00 | 96.96 µg/L | 96.96 |
| 18O2-PFHxS | 1471 | 1.68 | 100.00 | 90.34 µg/L | 90.34 |
| 13C4-PFHpA | 8755 | 1.70 | 100.00 | 100.12 µg/L | 100.12 |
| 13C4-PFOA | 9106 | 1.88 | 100.00 | 105.18 µg/L | 105.18 |
| 13C4-PFOS | 1742 | 1.97 | 100.00 | 91.87 µg/L | 91.87 |
| 13C5-PFNA | 8142 | 2.02 | 100.00 | 96.73 µg/L | 96.73 |
| 13C2-PFDA | 6755 | 2.14 | 100.00 | 96.60 µg/L | 96.60 |
| 13C2-PFUnA | 8886 | 2.23 | 100.00 | 98.35 µg/L | 98.35 |
| 13C2-PFDoA | 11328 | 2.32 | 100.00 | 98.90 µg/L | 98.90 |
| 13C2-PFTeDA | 12137 | 2.47 | 100.00 | 100.42 µg/L | 100.42 |
| 13C6-PFHxA | 23606 | 1.44 | 100.00 | 104.62 µg/L | 104.62 |
| 13C9-PFDA | 29016 | 2.13 | 100.00 | 106.90 µg/L | 106.90 |



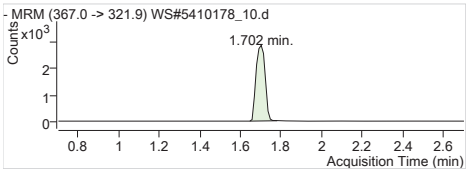



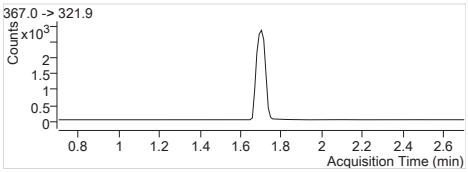

| | |
|---|---|
| **MPFHxA** | Internal Standard |
| RT (Exp. RT): | 1.445 (1.445) |
| Concentration: | 1 µg/L |
| Sample type: | CC |



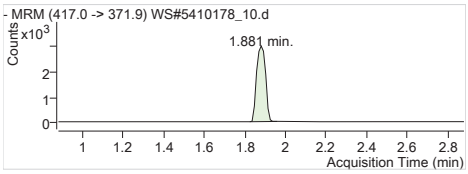



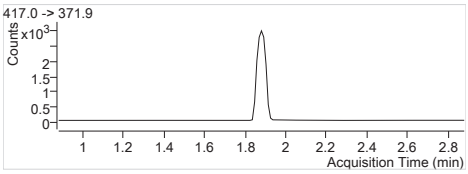

**MPFHxS** Internal Standard
RT (Exp. RT): 1.679 (1.668)
Concentration: 1 µg/L
Sample type: CC



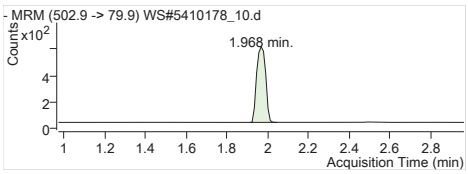



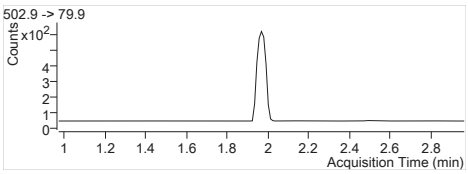

**MPFHpA** Internal Standard
RT (Exp. RT): 1.702 (1.702)
Concentration: 1 µg/L
Sample type: CC



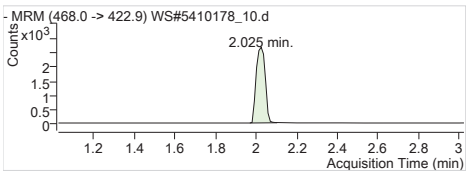



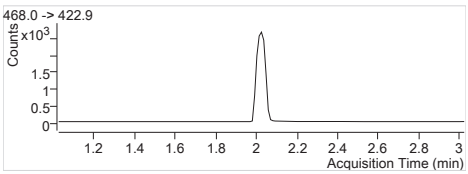

**MPFOA** Internal Standard
RT (Exp. RT): 1.881 (1.881)
Concentration: 1 µg/L
Sample type: CC



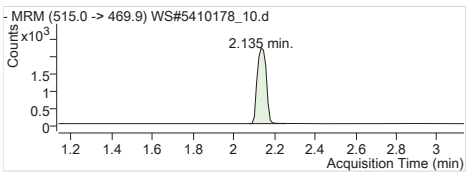



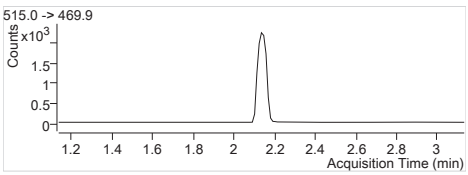

**MPFOS** Internal Standard
RT (Exp. RT): 1.968 (1.968)
Concentration: 1 µg/L
Sample type: CC



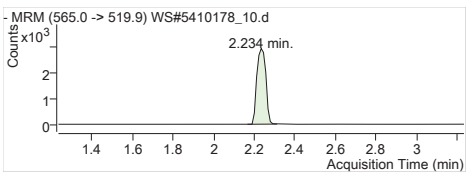



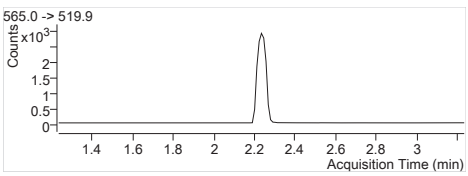

**MPFNA** Internal Standard
RT (Exp. RT): 2.025 (2.025)
Concentration: 1 µg/L
Sample type: CC



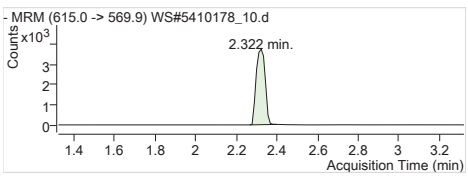



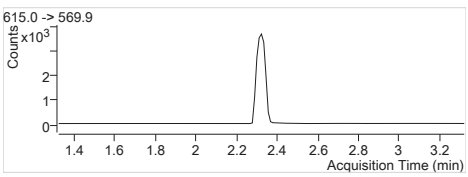

**MPFDA** Internal Standard
RT (Exp. RT): 2.135 (2.135)
Concentration: 1 µg/L
Sample type: CC



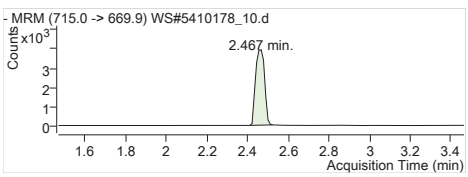



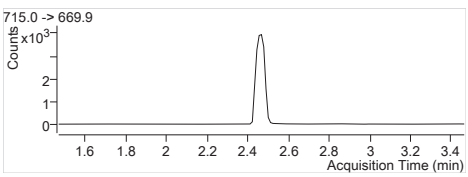

**MPFUnA** Internal Standard
RT (Exp. RT): 2.234 (2.234)
Concentration: 1 µg/L
Sample type: CC



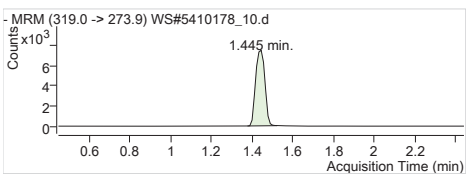



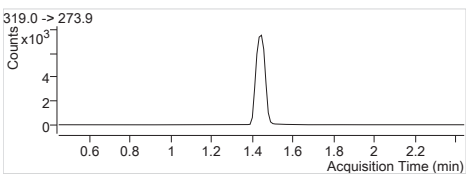

**MPFDoA** Internal Standard
RT (Exp. RT): 2.322 (2.322)
Concentration: 1 µg/L
Sample type: CC



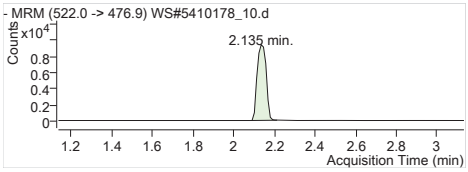



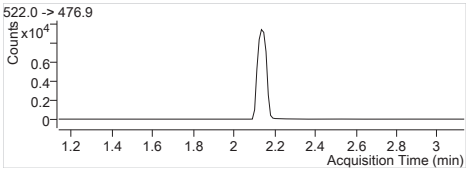

**MPFTeDA** Internal Standard
RT (Exp. RT): 2.467 (2.467)
Concentration: 1 µg/L
Sample type: CC



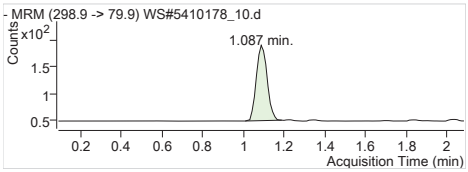



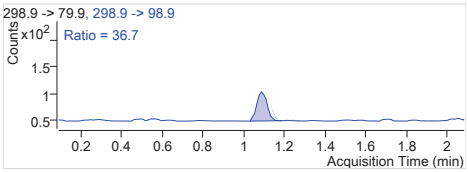

**13C6-PFHxA IS** Internal Standard
RT (Exp. RT): 1.445 (1.445)
Concentration: 1 µg/L
Sample type: CC



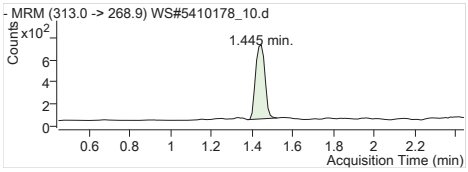



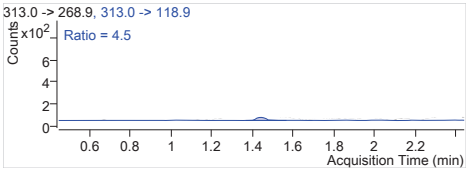

**13C9-PFDA IS** Internal Standard
RT (Exp. RT): 2.135 (2.135)
Concentration: 1 µg/L
Sample type: CC



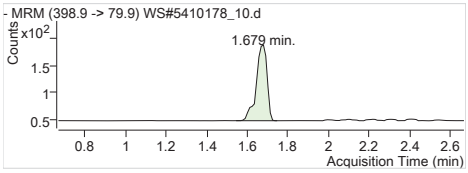



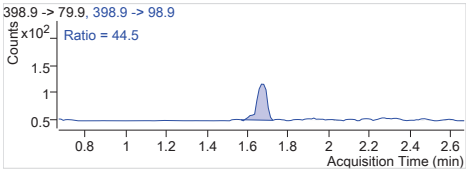

**PFBS 1** 298.9 -> 79.9
RT (Exp. RT): 1.087 (1.087)
Calc. conc. 1.03 µg/L
Area ratio: 0.35350
Sample type: CC



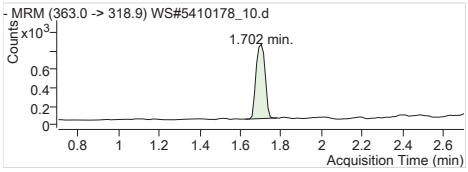



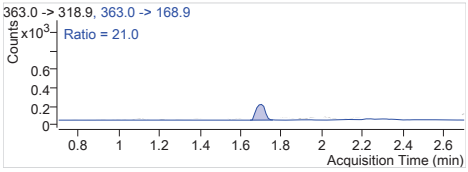

**PFHxA 1** 313.0 -> 268.9
RT (Exp. RT): 1.445 (1.445)
Calc. conc. 0.93 µg/L
Area ratio: 0.32181
Sample type: CC



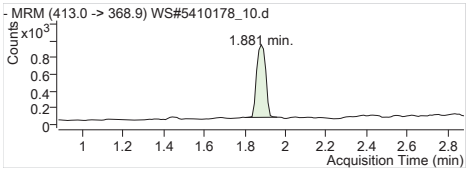



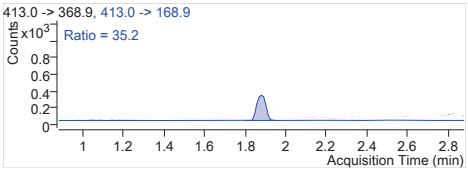

**PFHxS 1** 398.9 -> 79.9
RT (Exp. RT): 1.679 (1.668)
Calc. conc. 0.99 µg/L
Area ratio: 0.35010
Sample type: CC



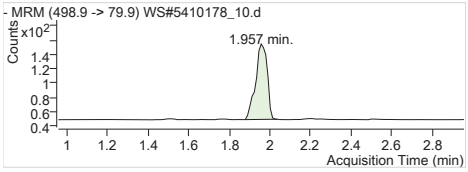



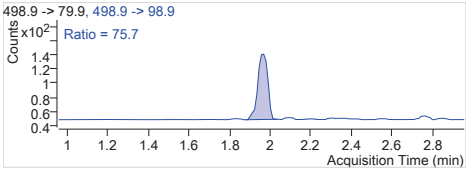

**PFHpA 1** 363.0 -> 318.9
RT (Exp. RT): 1.702 (1.702)
Calc. conc. 0.95 µg/L
Area ratio: 0.28658
Sample type: CC



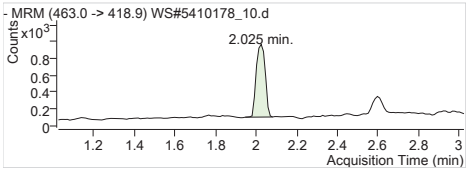



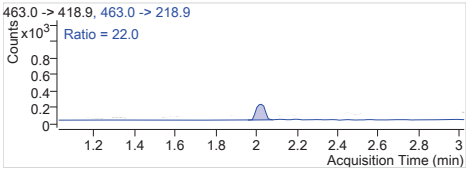

**PFOA 1** 413.0 -> 368.9
RT (Exp. RT): 1.881 (1.881)
Calc. conc. 0.82 µg/L
Area ratio: 0.29519
Sample type: CC



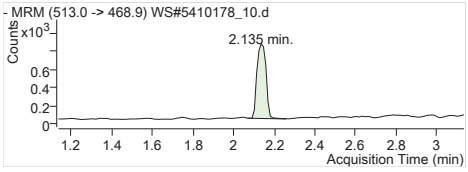



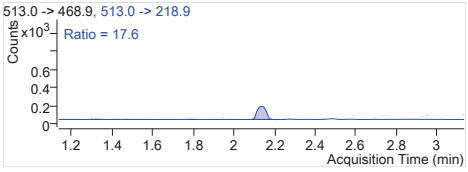

**PFOS 1** 498.9 -> 79.9
RT (Exp. RT): 1.957 (1.957)
Calc. conc. 0.84 µg/L
Area ratio: 0.24110
Sample type: CC



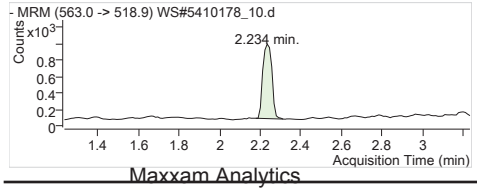



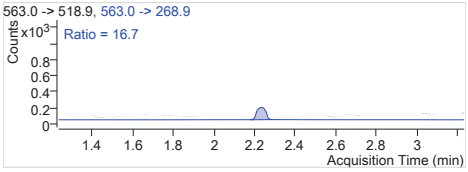

**PFNA 1** 463.0 -> 418.9
RT (Exp. RT): 2.025 (2.025)
Calc. conc. 0.97 µg/L
Area ratio: 0.32777
Sample type: CC



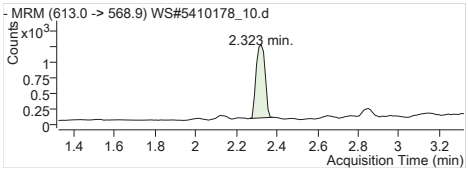



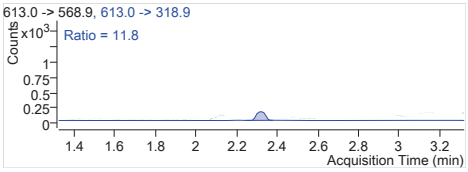

**PFDA 1** 513.0 -> 468.9
RT (Exp. RT): 2.135 (2.135)
Calc. conc. 0.86 µg/L
Area ratio: 0.37640
Sample type: CC



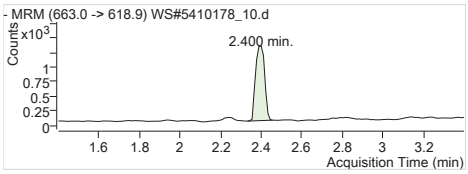



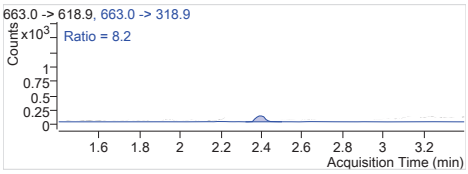

**PFUnA 1** 563.0 -> 518.9
RT (Exp. RT): 2.234 (2.234)
Calc. conc. 0.95 µg/L
Area ratio: 0.31792
Sample type: CC



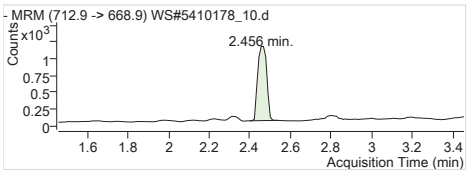



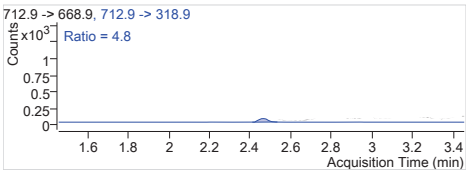

**PFDoA 1** 613.0 -> 568.9
RT (Exp. RT): 2.323 (2.323)
Calc. conc. 0.94 µg/L
Area ratio: 0.31974
Sample type: CC



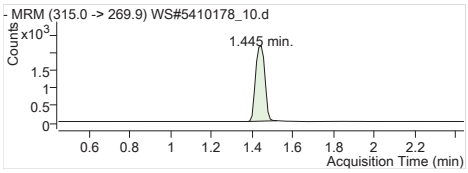



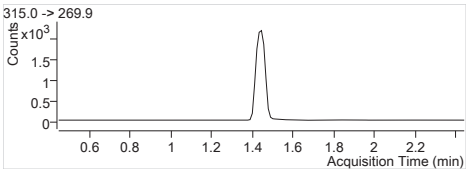

**PFTrDA 1** 663.0 -> 618.9
RT (Exp. RT): 2.400 (2.400)
Calc. conc. 0.84 µg/L
Area ratio: 0.33283
Sample type: CC



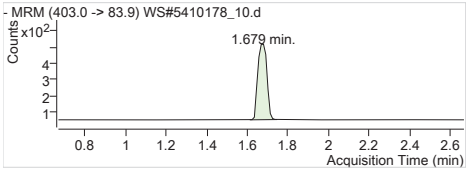



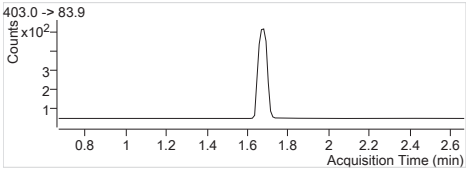

**PFTeDA 1** 712.9 -> 668.9
RT (Exp. RT): 2.456 (2.456)
Calc. conc. 0.84 µg/L
Area ratio: 0.28396
Sample type: CC



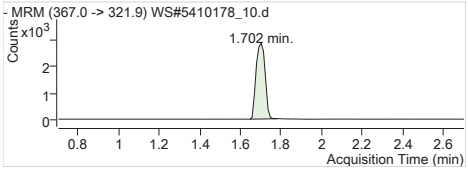



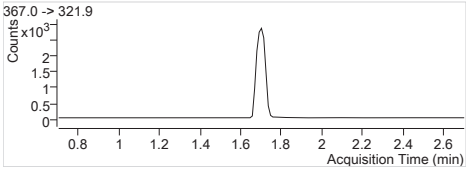

**13C2-PFHxA** 315.0 -> 269.9
RT (Exp. RT): 1.445 (1.445)
Calc. conc. 96.96 µg/L
Area ratio: 0.28683
Sample type: CC



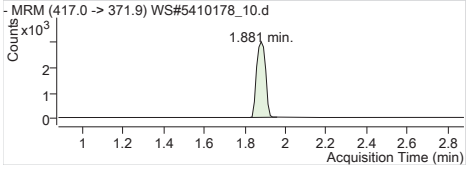



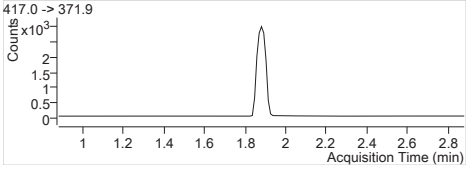

**18O2-PFHxS** 403.0 -> 83.9
RT (Exp. RT): 1.679 (1.668)
Calc. conc. 90.34 µg/L
Area ratio: 0.06231
Sample type: CC



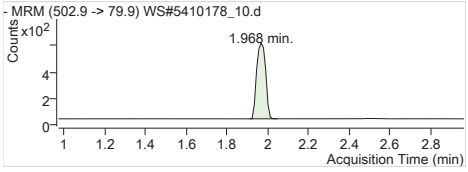



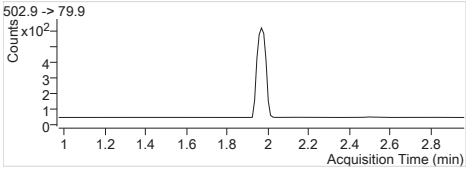

**13C4-PFHpA** 367.0 -> 321.9
RT (Exp. RT): 1.702 (1.702)
Calc. conc. 100.12 µg/L
Area ratio: 0.37088
Sample type: CC



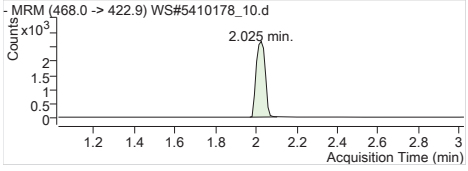



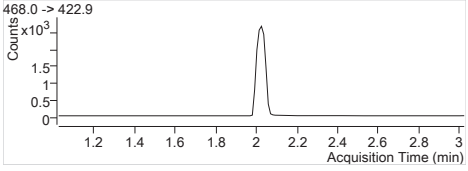

**13C4-PFOA** 417.0 -> 371.9
RT (Exp. RT): 1.881 (1.881)
Calc. conc. 105.18 µg/L
Area ratio: 0.38575
Sample type: CC



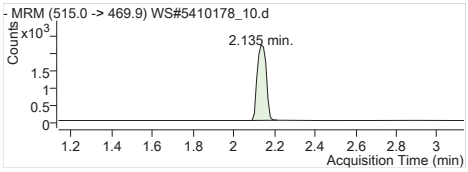



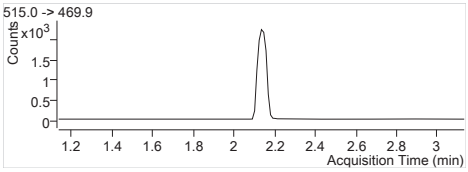

**13C4-PFOS** 502.9 -> 79.9
RT (Exp. RT): 1.968 (1.968)
Calc. conc. 91.87 µg/L
Area ratio: 0.07379
Sample type: CC



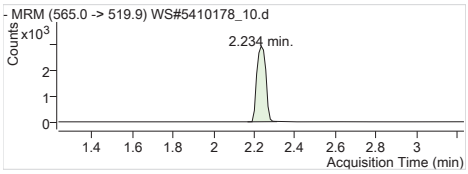



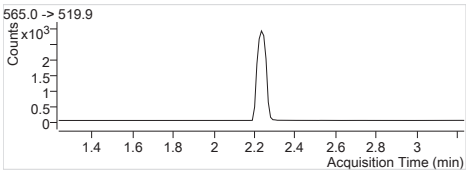

**13C5-PFNA** 468.0 -> 422.9
RT (Exp. RT): 2.025 (2.025)
Calc. conc. 96.73 µg/L
Area ratio: 0.34491
Sample type: CC



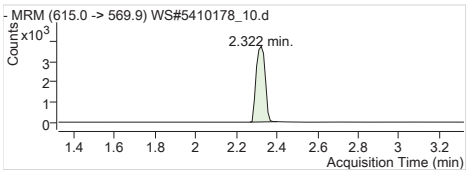



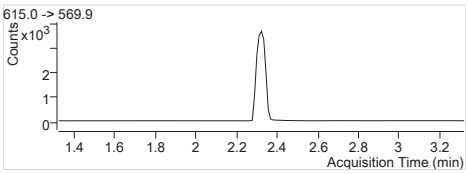

**13C2-PFDA** 515.0 -> 469.9
RT (Exp. RT): 2.135 (2.135)
Calc. conc. 96.60 µg/L
Area ratio: 0.23280
Sample type: CC



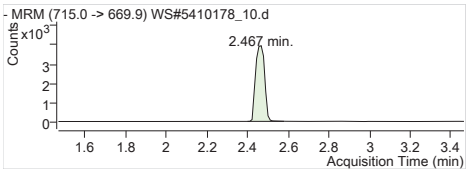



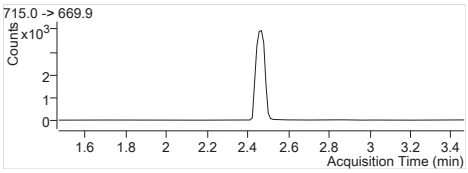

**13C2-PFUnA** 565.0 -> 519.9
RT (Exp. RT): 2.234 (2.234)
Calc. conc. 98.35 µg/L
Area ratio: 0.30624
Sample type: CC



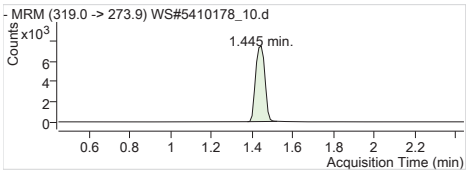



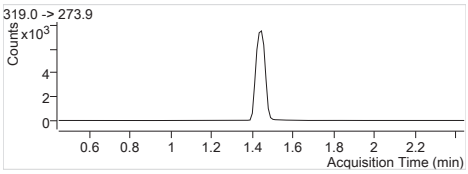

**13C2-PFDoA** 615.0 -> 569.9
RT (Exp. RT): 2.322 (2.322)
Calc. conc. 98.90 µg/L
Area ratio: 0.39041
Sample type: CC



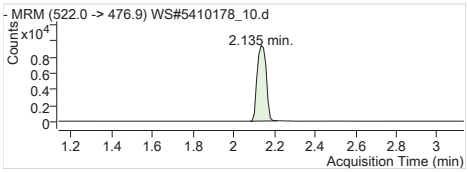



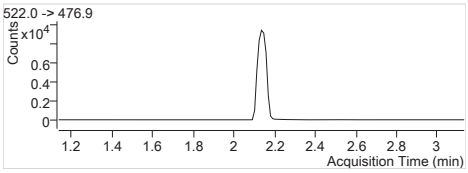

**13C2-PFTeDA** 715.0 -> 669.9
RT (Exp. RT): 2.467 (2.467)
Calc. conc. 100.42 µg/L
Area ratio: 0.41829
Sample type: CC




**13C6-PFHxA** 319.0 -> 273.9
RT (Exp. RT): 1.445 (1.445)
Calc. conc. 104.62 µg/L
Area ratio: 0
Sample type: CC



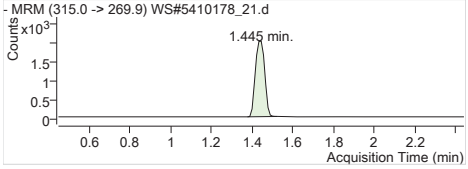

**13C9-PFDA** 522.0 -> 476.9
RT (Exp. RT): 2.135 (2.135)
Calc. conc. 106.90 µg/L
Area ratio: 0
Sample type: CC

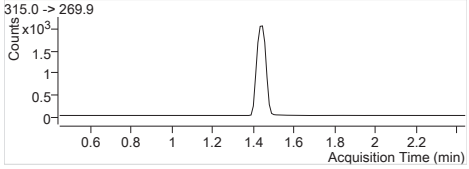
| | |
|---|---|
| **Batch Path** | T:\lcms4\PFC\20180223\WS#5410178\QuantResults\PFC_Water_Low_180223_WS#5410178_EToxics |

| | | | |
|---|---|---|---|
| **Sample Name** | **CCV** | **Instrument** | LCMS04 |
| **Data File** | WS#5410178_21.d | **Operator** | |
| **Sample Type** | CC | **Dilution** | 1 |
| **Acq. Method** | PFC_Water_Low.m | **Position** | P1-A5 |
| **Acq. Date** | 2018/02/23 6:13:15 PM | **Injection Volume** | Per Method |
| **Sample Annotation** | - | | |

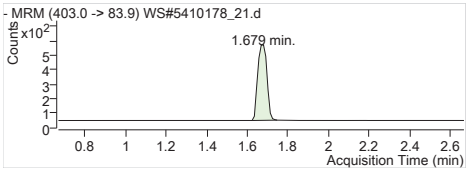
| ISTD Compounds | Response | RT | Target conc. | | |
|---|---|---|---|---|---|
| MPFHxA | 6418 | 1.44 | 1 µg/L | | |
| MPFHxS | 1649 | 1.68 | 1 µg/L | | |
| MPFHpA | 8295 | 1.70 | 1 µg/L | | |
| MPFOA | 8311 | 1.88 | 1 µg/L | | |
| MPFOS | 1811 | 1.97 | 1 µg/L | | |
| MPFNA | 8207 | 2.02 | 1 µg/L | | |
| MPFDA | 6579 | 2.14 | 1 µg/L | | |
| MPFUnA | 8359 | 2.23 | 1 µg/L | | |
| MPFDoA | 10341 | 2.32 | 1 µg/L | | |
| MPFTeDA | 11208 | 2.46 | 1 µg/L | | |
| 13C6-PFHxA IS | 22063 | 1.43 | 1 µg/L | | |
| 13C9-PFDA IS | 27791 | 2.13 | 1 µg/L | | |

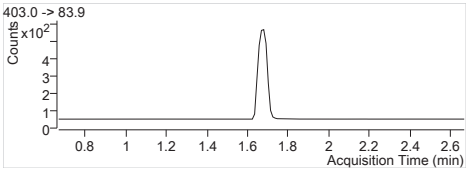
| Compound | Response | RT | Target Conc. | Calc. Conc. | Accuracy |
|---|---|---|---|---|---|
| PFBS 1 | 8076 | 1.09 | 12.50 | 10.67 µg/L | 85.36 |
| PFHxA 1 | 29783 | 1.43 | 12.50 | 11.55 µg/L | 92.38 |
| PFHxS 1 | 7777 | 1.67 | 12.50 | 10.22 µg/L | 81.79 |
| PFHpA 1 | 37428 | 1.70 | 12.50 | 10.98 µg/L | 87.87 |
| PFOA 1 | 41920 | 1.88 | 12.50 | 11.18 µg/L | 89.41 |
| PFOS 1 | 7659 | 1.96 | 12.50 | 11.01 µg/L | 88.11 |
| PFNA 1 | 37061 | 2.03 | 12.50 | 11.05 µg/L | 88.36 |
| PFDA 1 | 39773 | 2.14 | 12.50 | 11.66 µg/L | 93.29 |
| PFUnA 1 | 42649 | 2.23 | 12.50 | 11.51 µg/L | 92.11 |
| PFDoA 1 | 53921 | 2.32 | 12.50 | 12.23 µg/L | 97.82 |
| PFTrDA 1 | 59889 | 2.39 | 12.50 | 11.91 µg/L | 95.29 |
| PFTeDA 1 | 50652 | 2.46 | 12.50 | 11.99 µg/L | 95.89 |
| 13C2-PFHxA | 6418 | 1.44 | 100.00 | 98.33 µg/L | 98.33 |
| 18O2-PFHxS | 1649 | 1.68 | 100.00 | 108.36 µg/L | 108.36 |
| 13C4-PFHpA | 8295 | 1.70 | 100.00 | 101.49 µg/L | 101.49 |
| 13C4-PFOA | 8311 | 1.88 | 100.00 | 102.71 µg/L | 102.71 |
| 13C4-PFOS | 1811 | 1.97 | 100.00 | 102.19 µg/L | 102.19 |
| 13C5-PFNA | 8132 | 2.02 | 100.00 | 103.37 µg/L | 103.37 |
| 13C2-PFDA | 6498 | 2.14 | 100.00 | 97.02 µg/L | 97.02 |
| 13C2-PFUnA | 8359 | 2.23 | 100.00 | 96.60 µg/L | 96.60 |
| 13C2-PFDoA | 10341 | 2.32 | 100.00 | 94.26 µg/L | 94.26 |
| 13C2-PFTeDA | 11359 | 2.46 | 100.00 | 98.12 µg/L | 98.12 |
| 13C6-PFHxA | 22063 | 1.43 | 100.00 | 97.78 µg/L | 97.78 |
| 13C9-PFDA | 27791 | 2.13 | 100.00 | 102.38 µg/L | 102.38 |



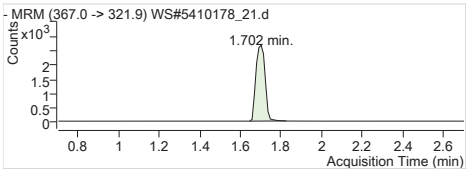



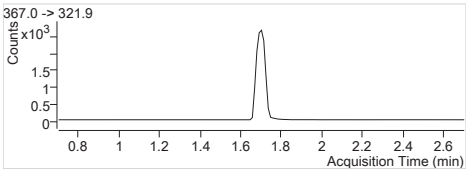

| | |
|---|---|
| **MPFHxA** | Internal Standard |
| RT (Exp. RT): | 1.445 (1.445) |
| Concentration: | 1 µg/L |
| Sample type: | CC |



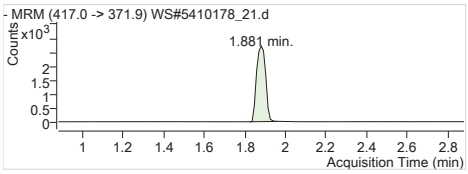



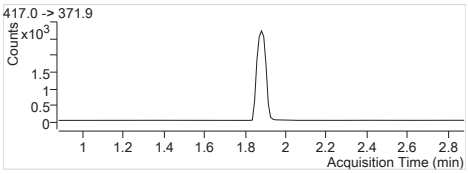

**MPFHxS** Internal Standard
RT (Exp. RT): 1.679 (1.668)
Concentration: 1 µg/L
Sample type: CC



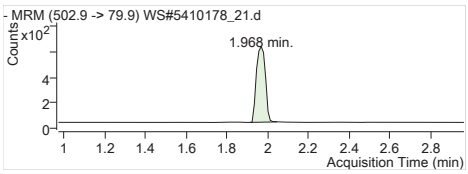



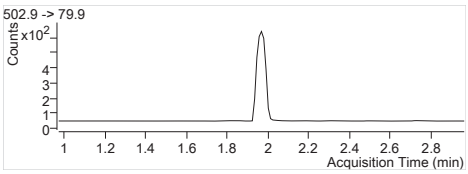

**MPFHpA** Internal Standard
RT (Exp. RT): 1.702 (1.702)
Concentration: 1 µg/L
Sample type: CC



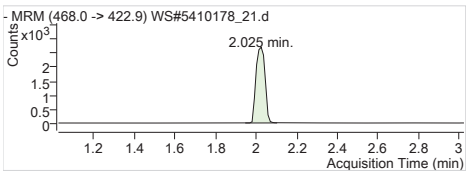



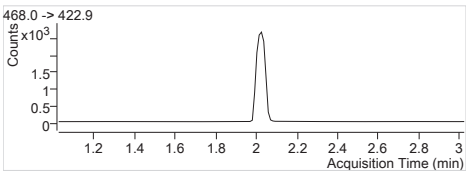

**MPFOA** Internal Standard
RT (Exp. RT): 1.881 (1.881)
Concentration: 1 µg/L
Sample type: CC



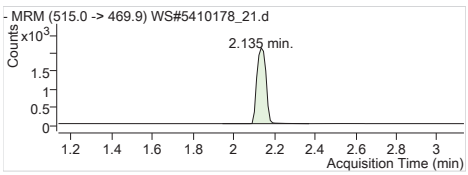



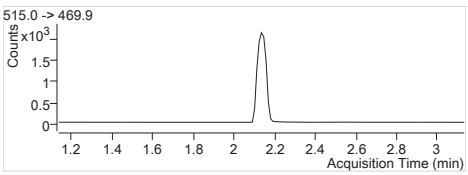

**MPFOS** Internal Standard
RT (Exp. RT): 1.968 (1.968)
Concentration: 1 µg/L
Sample type: CC



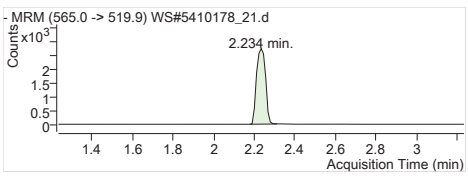



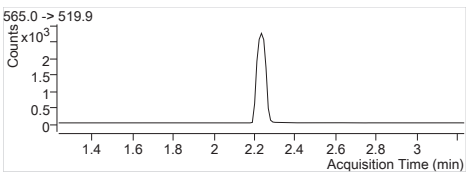

**MPFNA** Internal Standard
RT (Exp. RT): 2.025 (2.025)
Concentration: 1 µg/L
Sample type: CC



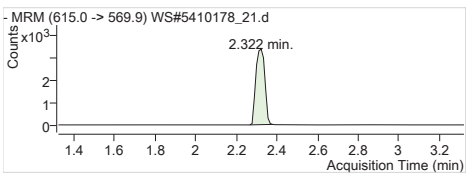



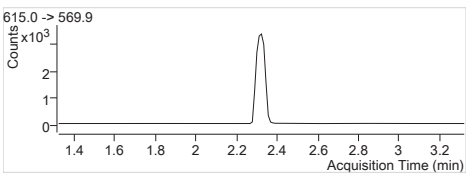

**MPFDA** Internal Standard
RT (Exp. RT): 2.135 (2.135)
Concentration: 1 µg/L
Sample type: CC



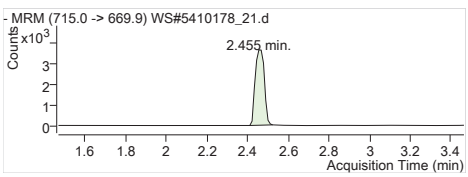



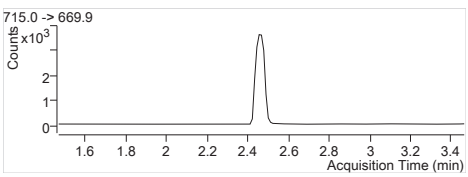

**MPFUnA** Internal Standard
RT (Exp. RT): 2.234 (2.234)
Concentration: 1 µg/L
Sample type: CC



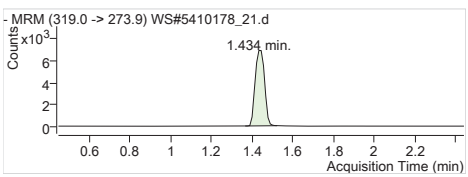



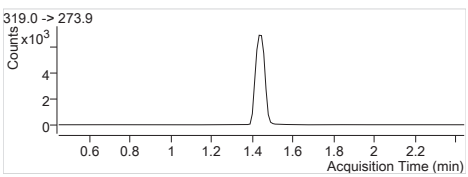

**MPFDoA** Internal Standard
RT (Exp. RT): 2.322 (2.322)
Concentration: 1 µg/L
Sample type: CC



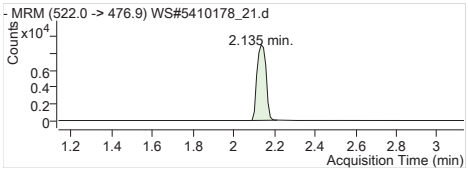



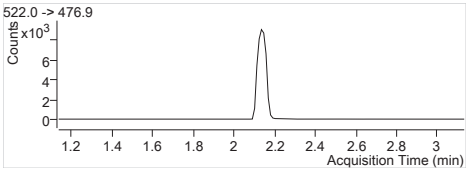

**MPFTeDA** Internal Standard
RT (Exp. RT): 2.455 (2.467)
Concentration: 1 µg/L
Sample type: CC



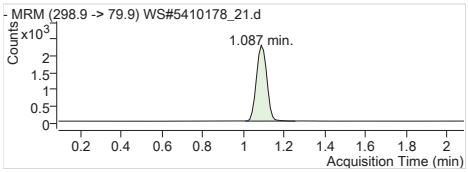



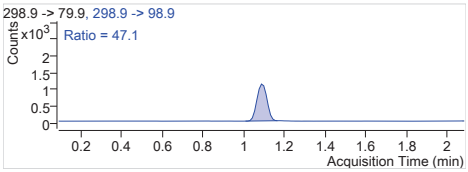

**13C6-PFHxA IS** Internal Standard
RT (Exp. RT): 1.434 (1.445)
Concentration: 1 µg/L
Sample type: CC



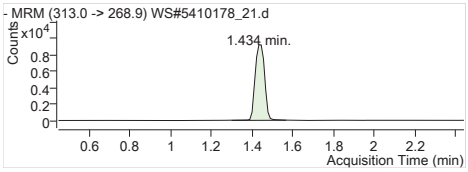



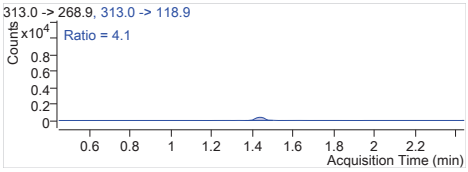

**13C9-PFDA IS** Internal Standard
RT (Exp. RT): 2.135 (2.135)
Concentration: 1 µg/L
Sample type: CC



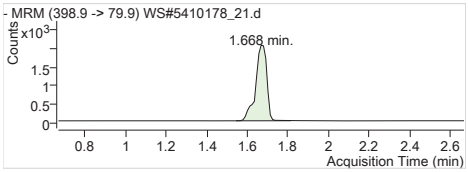



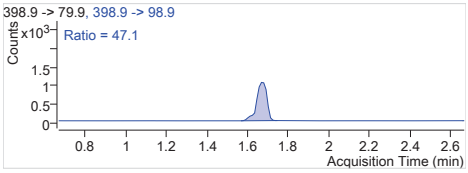

**PFBS 1** 298.9 -> 79.9
RT (Exp. RT): 1.087 (1.087)
Calc. conc. 10.67 µg/L
Area ratio: 4.89751
Sample type: CC



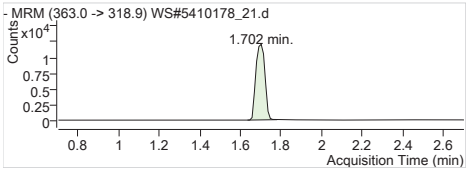



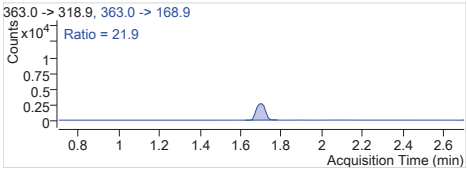

**PFHxA 1** 313.0 -> 268.9
RT (Exp. RT): 1.434 (1.445)
Calc. conc. 11.55 µg/L
Area ratio: 4.64054
Sample type: CC



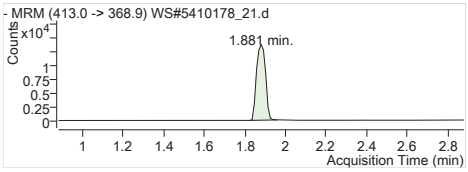



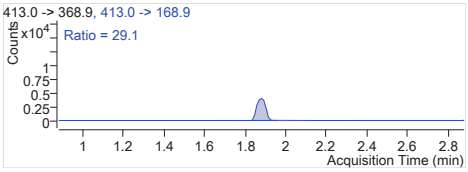

**PFHxS 1** 398.9 -> 79.9
RT (Exp. RT): 1.668 (1.668)
Calc. conc. 10.22 µg/L
Area ratio: 4.71619
Sample type: CC



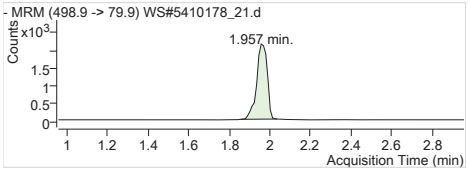



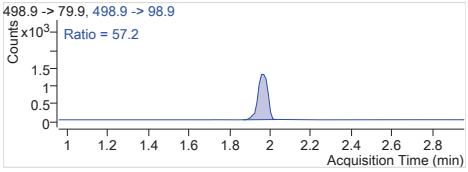

**PFHpA 1** 363.0 -> 318.9
RT (Exp. RT): 1.702 (1.702)
Calc. conc. 10.98 µg/L
Area ratio: 4.51212
Sample type: CC



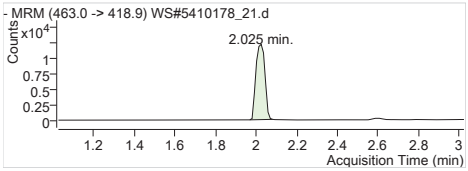



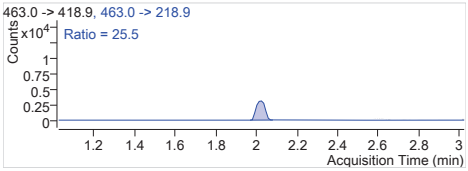

**PFOA 1** 413.0 -> 368.9
RT (Exp. RT): 1.881 (1.881)
Calc. conc. 11.18 µg/L
Area ratio: 5.04392
Sample type: CC



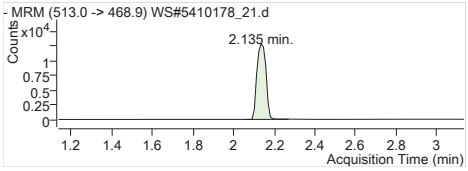



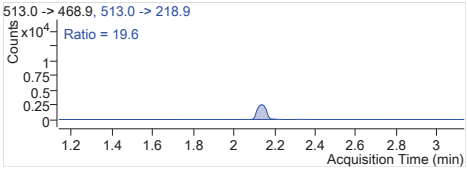

**PFOS 1** 498.9 -> 79.9
RT (Exp. RT): 1.957 (1.957)
Calc. conc. 11.01 µg/L
Area ratio: 4.22916
Sample type: CC



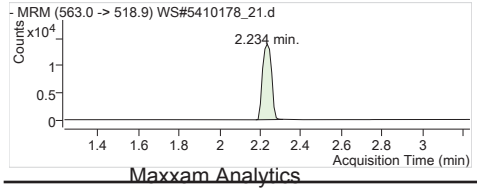



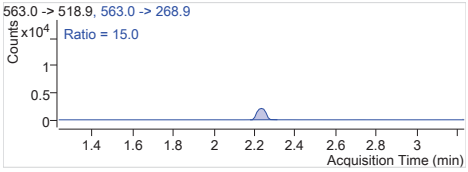

**PFNA 1** 463.0 -> 418.9
RT (Exp. RT): 2.025 (2.025)
Calc. conc. 11.05 µg/L
Area ratio: 4.51578
Sample type: CC



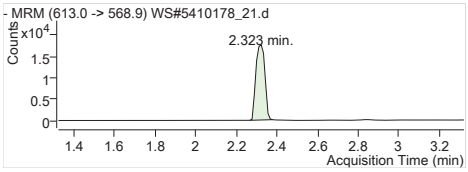



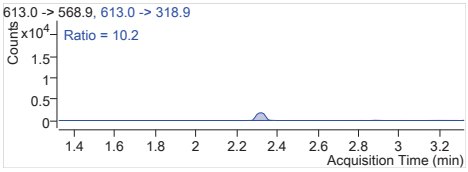

**PFDA 1** 513.0 -> 468.9
RT (Exp. RT): 2.135 (2.135)
Calc. conc. 11.66 µg/L
Area ratio: 6.04545
Sample type: CC



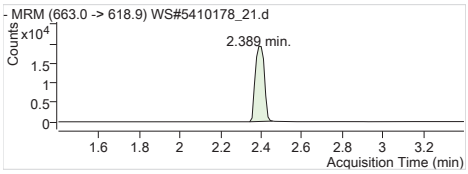



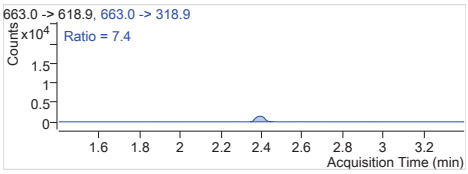

**PFUnA 1** 563.0 -> 518.9
RT (Exp. RT): 2.234 (2.234)
Calc. conc. 11.51 µg/L
Area ratio: 5.10217
Sample type: CC



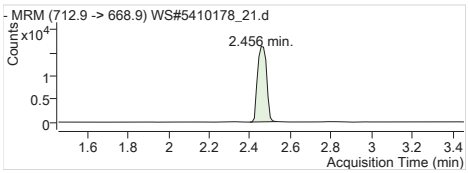



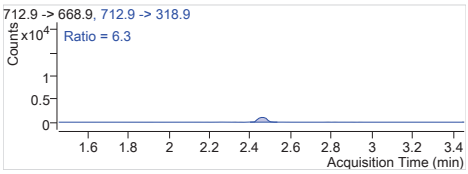

**PFDoA 1** 613.0 -> 568.9
RT (Exp. RT): 2.323 (2.323)
Calc. conc. 12.23 µg/L
Area ratio: 5.21429
Sample type: CC



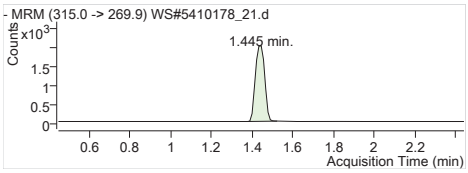



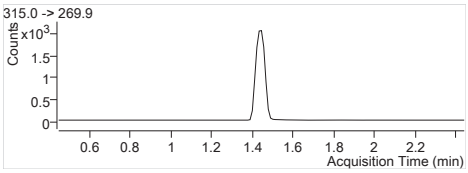

**PFTrDA 1** 663.0 -> 618.9
RT (Exp. RT): 2.389 (2.400)
Calc. conc. 11.91 µg/L
Area ratio: 5.34342
Sample type: CC



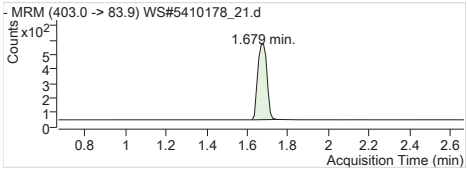



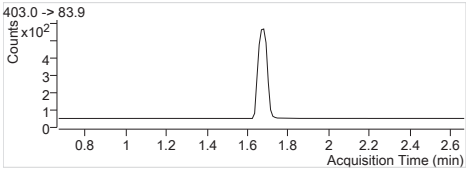

**PFTeDA 1** 712.9 -> 668.9
RT (Exp. RT): 2.456 (2.456)
Calc. conc. 11.99 µg/L
Area ratio: 4.51927
Sample type: CC



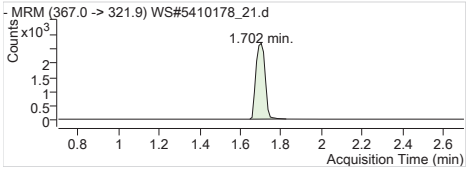



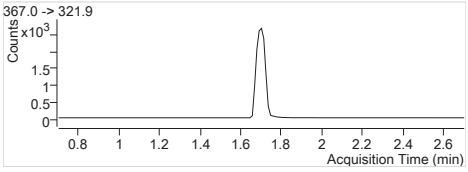

**13C2-PFHxA** 315.0 -> 269.9
RT (Exp. RT): 1.445 (1.445)
Calc. conc. 98.33 µg/L
Area ratio: 0.29089
Sample type: CC



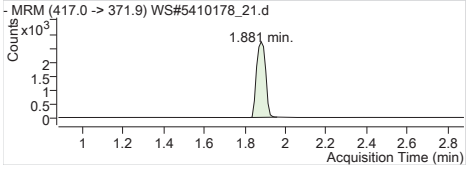



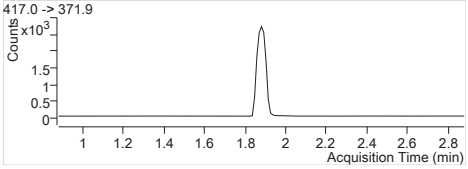

**18O2-PFHxS** 403.0 -> 83.9
RT (Exp. RT): 1.679 (1.668)
Calc. conc. 108.36 µg/L
Area ratio: 0.07474
Sample type: CC



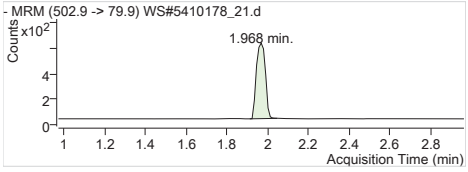



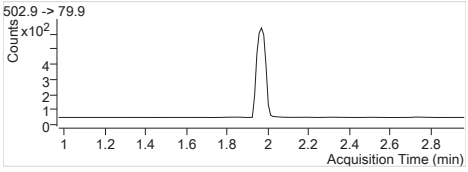

**13C4-PFHpA** 367.0 -> 321.9
RT (Exp. RT): 1.702 (1.702)
Calc. conc. 101.49 µg/L
Area ratio: 0.37597
Sample type: CC



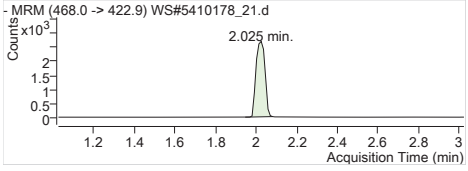



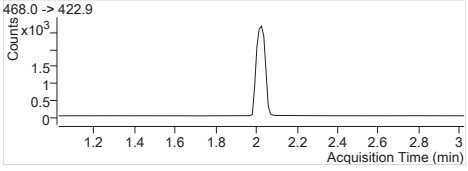

**13C4-PFOA** 417.0 -> 371.9
RT (Exp. RT): 1.881 (1.881)
Calc. conc. 102.71 µg/L
Area ratio: 0.37669
Sample type: CC



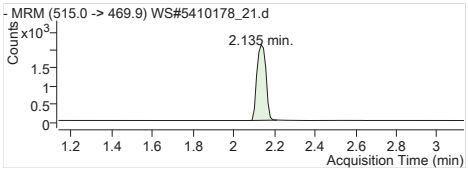



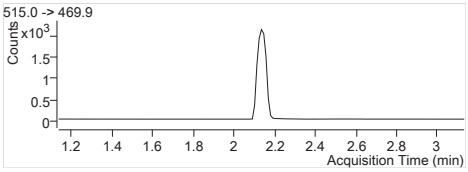

**13C4-PFOS** 502.9 -> 79.9
RT (Exp. RT): 1.968 (1.968)
Calc. conc. 102.19 µg/L
Area ratio: 0.08208
Sample type: CC



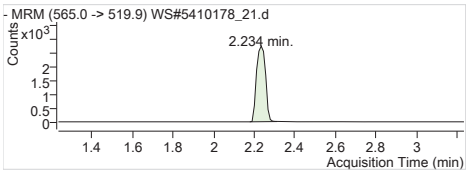



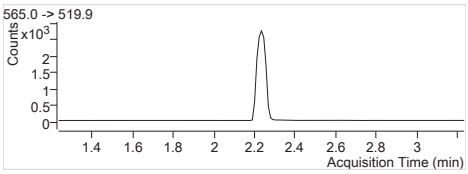

**13C5-PFNA** 468.0 -> 422.9
RT (Exp. RT): 2.025 (2.025)
Calc. conc. 103.37 µg/L
Area ratio: 0.36858
Sample type: CC



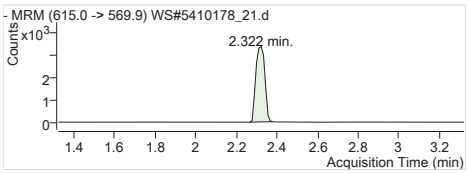



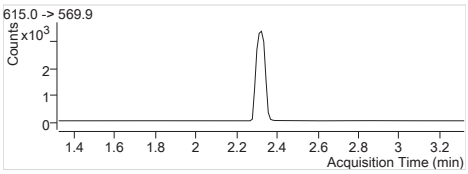

**13C2-PFDA** 515.0 -> 469.9
RT (Exp. RT): 2.135 (2.135)
Calc. conc. 97.02 µg/L
Area ratio: 0.23382
Sample type: CC



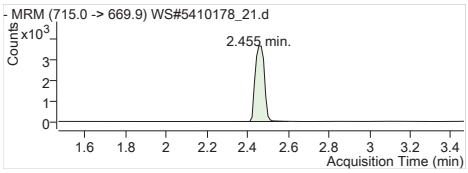



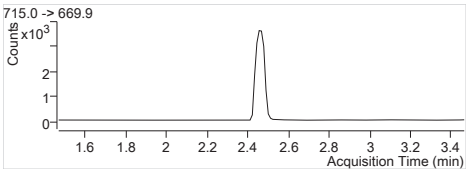

**13C2-PFUnA** 565.0 -> 519.9
RT (Exp. RT): 2.234 (2.234)
Calc. conc. 96.60 µg/L
Area ratio: 0.30078
Sample type: CC



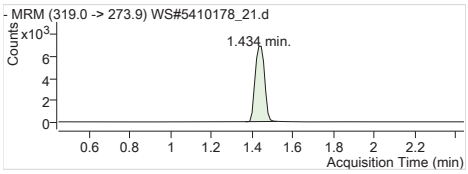



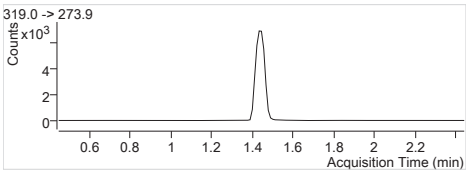

**13C2-PFDoA** 615.0 -> 569.9
RT (Exp. RT): 2.322 (2.322)
Calc. conc. 94.26 µg/L
Area ratio: 0.37210
Sample type: CC



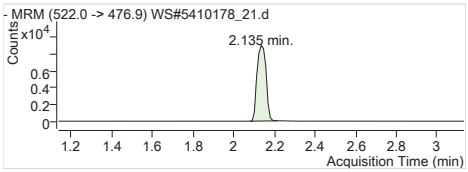



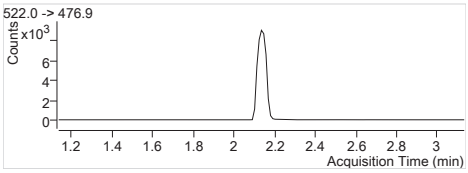

**13C2-PFTeDA** 715.0 -> 669.9
RT (Exp. RT): 2.455 (2.467)
Calc. conc. 98.12 µg/L
Area ratio: 0.40873
Sample type: CC




**13C6-PFHxA** 319.0 -> 273.9
RT (Exp. RT): 1.434 (1.445)
Calc. conc. 97.78 µg/L
Area ratio: 0
Sample type: CC




**13C9-PFDA** 522.0 -> 476.9
RT (Exp. RT): 2.135 (2.135)
Calc. conc. 102.38 µg/L
Area ratio: 0
Sample type: CC

# Quantitation Results

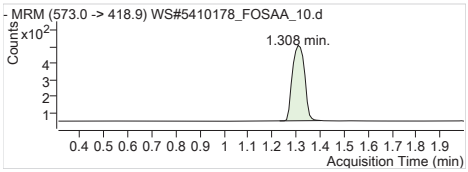
Agilent Technologies

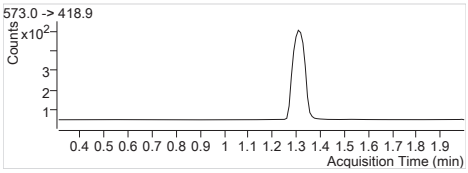
| | |
|---|---|
| **Batch Path** | T:\lcms4\PFC\20180223\WS#5410178_FOSAA\QuantResults\PFC_Water_Low_180223_WS#5410178_FOSAA_EToxics |

| | | | |
|---|---|---|---|
| **Sample Name** | **ISC** | **Instrument** | LCMS04 |
| **Data File** | WS#5410178_FOSAA_10.d | **Operator** | |
| **Sample Type** | CC | **Dilution** | 1 |
| **Acq. Method** | PFC_Water_Low_FOSAA.m | **Position** | P1-A2 |
| **Acq. Date** | 2018/02/24 3:30:09 AM | **Injection Volume** | Per Method |
| **Sample Annotation** | - | | |

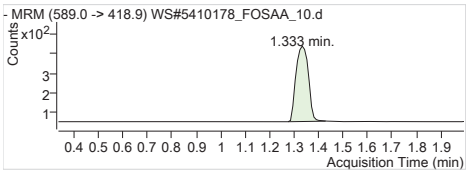
| ISTD Compounds | Response | RT | Target conc. | | |
|---|---|---|---|---|---|
| D3-MeFOSAA IS | 1613 | 1.31 | 1 µg/L | | |
| D5-EtFOSAA IS | 1375 | 1.33 | 1 µg/L | | |
| 13C9-PFDA IS | 21831 | 0.91 | 1 µg/L | | |

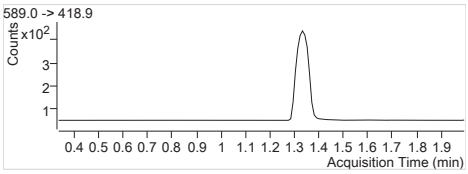
| Compound | Response | RT | Target Conc. | Calc. Conc. | Accuracy |
|---|---|---|---|---|---|
| MeFOSAA 1 | 436 | 1.31 | 0.83 | 0.87 µg/L | 104.83 |
| EtFOSAA 1 | 450 | 1.33 | 0.83 | 0.92 µg/L | 110.95 |
| D3-MeFOSAA | 1621 | 1.31 | 100.00 | 107.37 µg/L | 107.37 |
| D5-EtFOSAA | 1391 | 1.33 | 100.00 | 108.20 µg/L | 108.20 |
| 13C9-PFDA | 21463 | 0.91 | 100.00 | 106.87 µg/L | 106.87 |



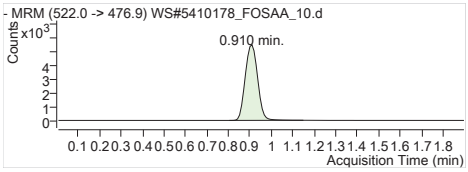



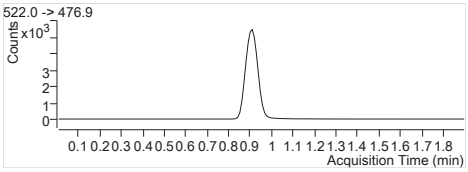

**D3-MeFOSAA IS** Internal Standard
RT (Exp. RT): 1.308 (1.308)
Concentration: 1 µg/L
Sample type: CC



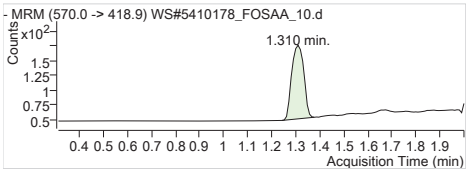



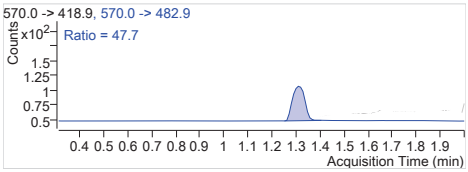

**D5-EtFOSAA IS** Internal Standard
RT (Exp. RT): 1.333 (1.333)
Concentration: 1 µg/L
Sample type: CC



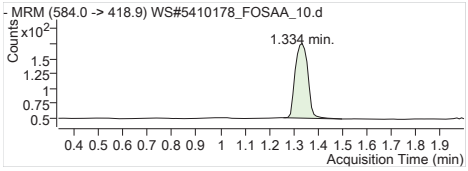



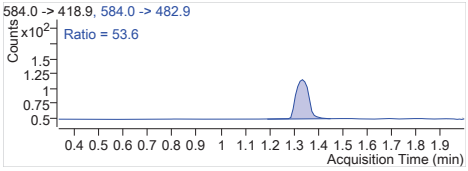

**13C9-PFDA IS** Internal Standard
RT (Exp. RT): 0.910 (0.900)
Concentration: 1 µg/L
Sample type: CC



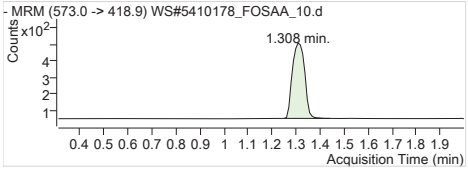



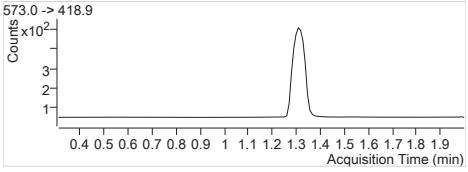

**MeFOSAA 1** 570.0 -> 418.9
RT (Exp. RT): 1.310 (1.310)
Calc. conc. 0.87 µg/L
Area ratio: 0.27030
Sample type: CC



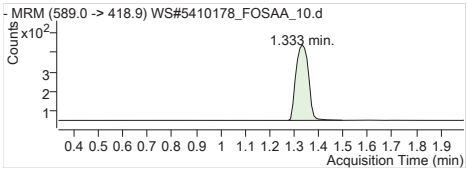



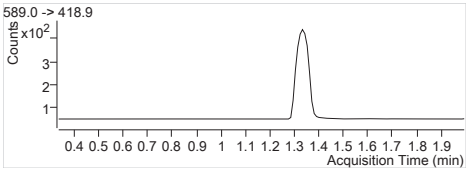

**EtFOSAA 1** 584.0 -> 418.9
RT (Exp. RT): 1.334 (1.334)
Calc. conc. 0.92 µg/L
Area ratio: 0.32727
Sample type: CC



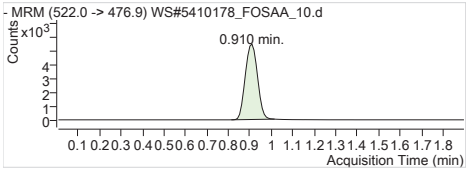



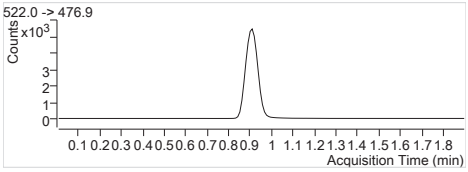

**D3-MeFOSAA** 573.0 -> 418.9
RT (Exp. RT): 1.308 (1.308)
Calc. conc. 107.37 µg/L
Area ratio: 0.07425
Sample type: CC




| | |
|---|---|
| **D5-EtFOSAA** | 589.0 -> 418.9 |
| RT (Exp. RT): | 1.333 (1.333) |
| Calc. conc. | 108.20 µg/L |
| Area ratio: | 0.06372 |
| Sample type: | CC |



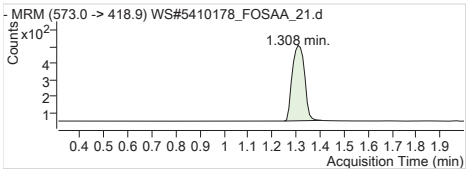

| | |
|---|---|
| **13C9-PFDA** | 522.0 -> 476.9 |
| RT (Exp. RT): | 0.910 (0.900) |
| Calc. conc. | 106.87 µg/L |
| Area ratio: | 0 |
| Sample type: | CC |

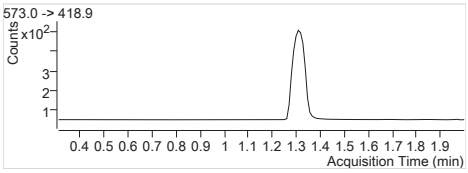
| | |
|---|---|
| **Batch Path** | T:\lcms4\PFC\20180223\WS#5410178_FOSAA\QuantResults\PFC_Water_Low_180223_WS#5410178_FOSAA_ETOxics |

| | | | |
|---|---|---|---|
| **Sample Name** | **CCV** | **Instrument** | LCMS04 |
| **Data File** | WS#5410178_FOSAA_21.d | **Operator** | |
| **Sample Type** | CC | **Dilution** | 1 |
| **Acq. Method** | PFC_Water_Low_FOSAA.m | **Position** | P1-A5 |
| **Acq. Date** | 2018/02/24 3:56:44 AM | **Injection Volume** | Per Method |
| **Sample Annotation** | - | | |

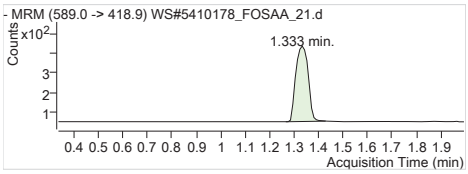
| ISTD Compounds | Response | RT | Target conc. | | |
|---|---|---|---|---|---|
| D3-MeFOSAA IS | 1624 | 1.31 | 1 µg/L | | |
| D5-EtFOSAA IS | 1374 | 1.33 | 1 µg/L | | |
| 13C9-PFDA IS | 21263 | 0.91 | 1 µg/L | | |

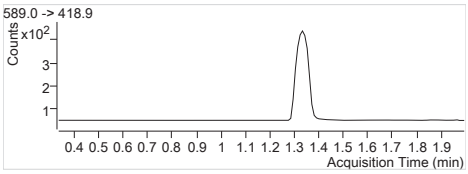
| Compound | Response | RT | Target Conc. | Calc. Conc. | Accuracy |
|---|---|---|---|---|---|
| MeFOSAA 1 | 6678 | 1.31 | 12.50 | 11.35 µg/L | 90.81 |
| EtFOSAA 1 | 6532 | 1.33 | 12.50 | 11.22 µg/L | 89.75 |
| D3-MeFOSAA | 1648 | 1.31 | 100.00 | 112.08 µg/L | 112.08 |
| D5-EtFOSAA | 1386 | 1.33 | 100.00 | 110.69 µg/L | 110.69 |
| 13C9-PFDA | 20901 | 0.91 | 100.00 | 104.07 µg/L | 104.07 |



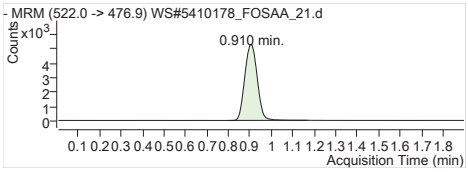



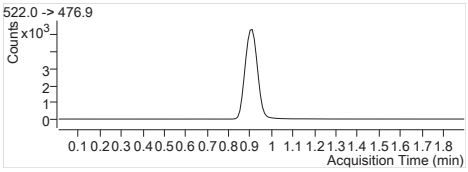

**D3-MeFOSAA IS** Internal Standard
RT (Exp. RT): 1.308 (1.308)
Concentration: 1 µg/L
Sample type: CC



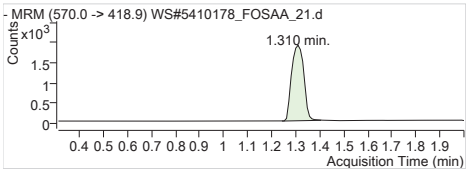



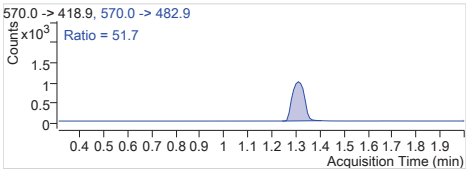

**D5-EtFOSAA IS** Internal Standard
RT (Exp. RT): 1.333 (1.333)
Concentration: 1 µg/L
Sample type: CC



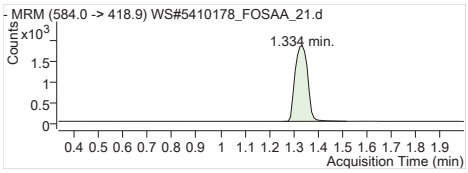



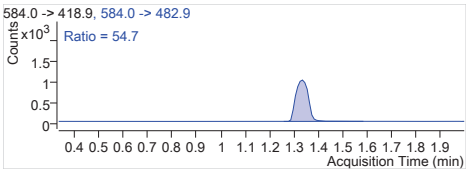

**13C9-PFDA IS** Internal Standard
RT (Exp. RT): 0.910 (0.900)
Concentration: 1 µg/L
Sample type: CC



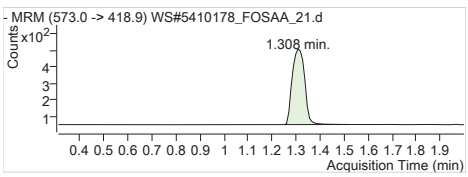



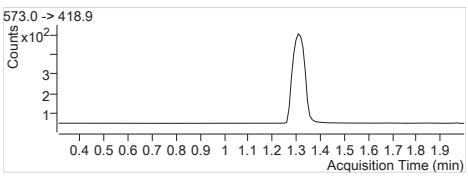

**MeFOSAA 1** 570.0 -> 418.9
RT (Exp. RT): 1.310 (1.310)
Calc. conc. 11.35 µg/L
Area ratio: 4.11207
Sample type: CC



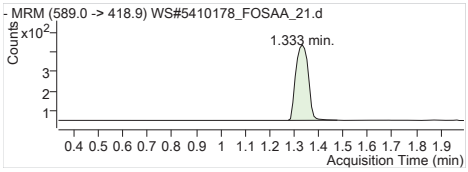



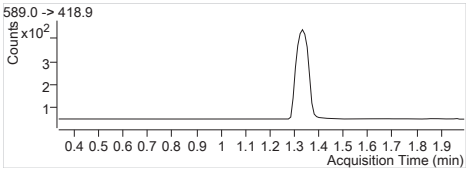

**EtFOSAA 1** 584.0 -> 418.9
RT (Exp. RT): 1.334 (1.334)
Calc. conc. 11.22 µg/L
Area ratio: 4.75400
Sample type: CC



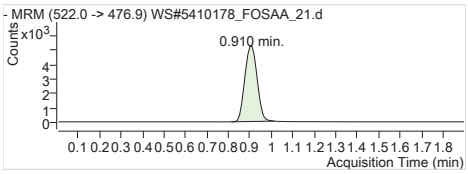



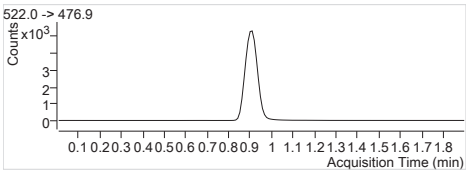

**D3-MeFOSAA** 573.0 -> 418.9
RT (Exp. RT): 1.308 (1.308)
Calc. conc. 112.08 µg/L
Area ratio: 0.07751
Sample type: CC




| | |
|---|---|
| **D5-EtFOSAA** | 589.0 -> 418.9 |
| RT (Exp. RT): | 1.333 (1.333) |
| Calc. conc. | 110.69 µg/L |
| Area ratio: | 0.06518 |
| Sample type: | CC |



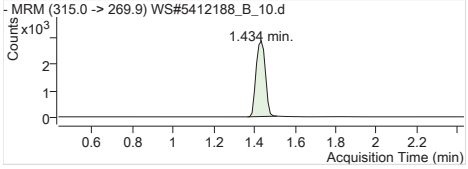

| | |
|---|---|
| **13C9-PFDA** | 522.0 -> 476.9 |
| RT (Exp. RT): | 0.910 (0.900) |
| Calc. conc. | 104.07 µg/L |
| Area ratio: | 0 |
| Sample type: | CC |

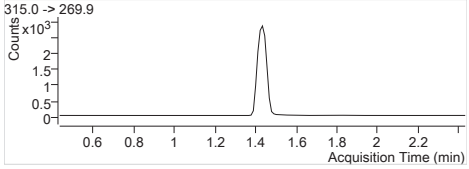
| | |
|---|---|
| **Batch Path** | T:\lcms4\PFC\20180226\WS#5412188_B\QuantResults\PFC_Water_Low_180227_WS#5412188_B_EToxics |

| | | | |
|---|---|---|---|
| **Sample Name** | **ISC** | **Instrument** | LCMS04 |
| **Data File** | WS#5412188_B_10.d | **Operator** | |
| **Sample Type** | CC | **Dilution** | 1 |
| **Acq. Method** | PFC_Water_Low.m | **Position** | P1-C1 |
| **Acq. Date** | 2018/02/27 1:57:12 PM | **Injection Volume** | Per Method |
| **Sample Annotation** | - | | |

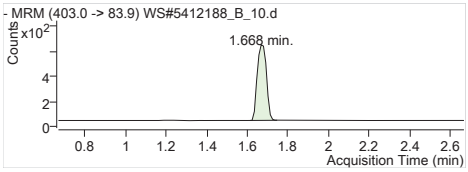
| ISTD Compounds | Response | RT | Target conc. | | |
|---|---|---|---|---|---|
| MPFHxA | 8929 | 1.43 | 1 µg/L | | |
| MPFHxS | 1908 | 1.67 | 1 µg/L | | |
| MPFHpA | 10151 | 1.69 | 1 µg/L | | |
| MPFOA | 10194 | 1.87 | 1 µg/L | | |
| MPFOS | 2093 | 1.97 | 1 µg/L | | |
| MPFNA | 10139 | 2.01 | 1 µg/L | | |
| MPFDA | 8777 | 2.14 | 1 µg/L | | |
| MPFUnA | 9933 | 2.23 | 1 µg/L | | |
| MPFDoA | 13128 | 2.31 | 1 µg/L | | |
| MPFTeDA | 14025 | 2.46 | 1 µg/L | | |
| 13C6-PFHxA IS | 36178 | 1.43 | 1 µg/L | | |
| 13C9-PFDA IS | 42855 | 2.13 | 1 µg/L | | |

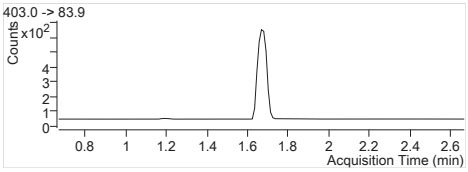
| Compound | Response | RT | Target Conc. | Calc. Conc. | Accuracy |
|---|---|---|---|---|---|
| PFBS 1 | 789 | 1.09 | 0.83 | 0.74 µg/L | 88.72 |
| PFHxA 1 | 3280 | 1.43 | 0.83 | 0.78 µg/L | 93.86 |
| PFHxS 1 | 767 | 1.67 | 0.83 | 0.75 µg/L | 90.29 |
| PFHpA 1 | 4087 | 1.69 | 0.83 | 0.84 µg/L | 101.68 |
| PFOA 1 | 4474 | 1.87 | 0.83 | 0.85 µg/L | 102.65 |
| PFOS 1 | 652 | 1.96 | 0.83 | 0.92 µg/L | 111.10 |
| PFNA 1 | 3981 | 2.01 | 0.83 | 0.89 µg/L | 107.77 |
| PFDA 1 | 4170 | 2.14 | 0.83 | 0.87 µg/L | 104.78 |
| PFUnA 1 | 4746 | 2.23 | 0.83 | 0.99 µg/L | 119.52 |
| PFDoA 1 | 5922 | 2.31 | 0.83 | 0.97 µg/L | 116.37 |
| PFTrDA 1 | 6418 | 2.39 | 0.83 | 0.91 µg/L | 109.59 |
| PFTeDA 1 | 5423 | 2.46 | 0.83 | 0.92 µg/L | 111.08 |
| 13C2-PFHxA | 8929 | 1.43 | 100.00 | 99.29 µg/L | 99.29 |
| 18O2-PFHxS | 1908 | 1.67 | 100.00 | 101.56 µg/L | 101.56 |
| 13C4-PFHpA | 10151 | 1.69 | 100.00 | 97.46 µg/L | 97.46 |
| 13C4-PFOA | 10194 | 1.87 | 100.00 | 94.88 µg/L | 94.88 |
| 13C4-PFOS | 2093 | 1.97 | 100.00 | 96.22 µg/L | 96.22 |
| 13C5-PFNA | 10139 | 2.01 | 100.00 | 97.43 µg/L | 97.43 |
| 13C2-PFDA | 8666 | 2.14 | 100.00 | 91.81 µg/L | 91.81 |
| 13C2-PFUnA | 9933 | 2.23 | 100.00 | 90.49 µg/L | 90.49 |
| 13C2-PFDoA | 13128 | 2.31 | 100.00 | 94.41 µg/L | 94.41 |
| 13C2-PFTeDA | 14249 | 2.46 | 100.00 | 93.21 µg/L | 93.21 |
| 13C6-PFHxA | 36178 | 1.43 | 100.00 | 115.47 µg/L | 115.47 |
| 13C9-PFDA | 42855 | 2.13 | 100.00 | 115.00 µg/L | 115.00 |



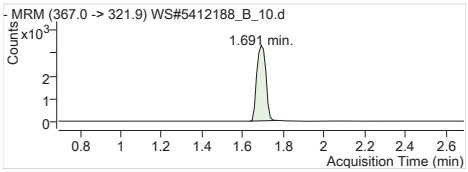



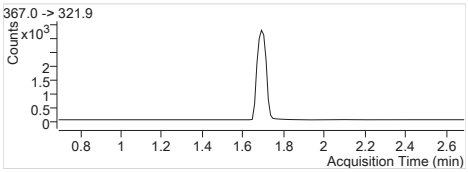

| | |
|---|---|
| **MPFHxA** | Internal Standard |
| RT (Exp. RT): | 1.434 (1.434) |
| Concentration: | 1 µg/L |
| Sample type: | CC |



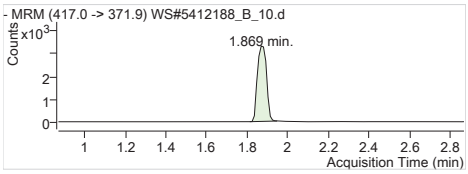



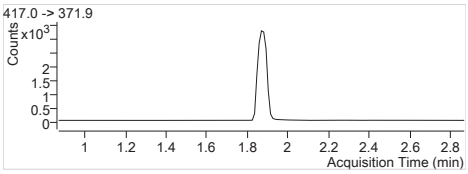

**MPFHxS** Internal Standard
RT (Exp. RT): 1.668 (1.668)
Concentration: 1 µg/L
Sample type: CC



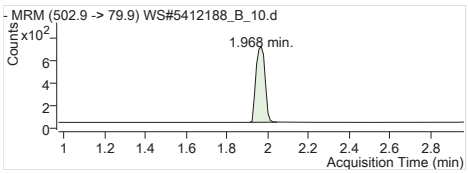



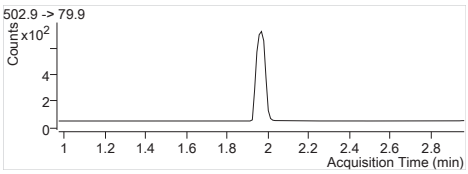

**MPFHpA** Internal Standard
RT (Exp. RT): 1.691 (1.691)
Concentration: 1 µg/L
Sample type: CC



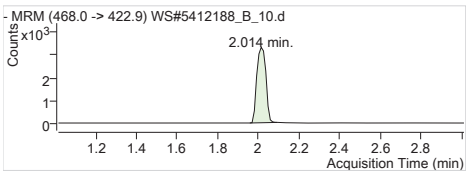



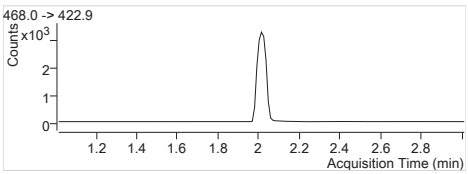

**MPFOA** Internal Standard
RT (Exp. RT): 1.869 (1.869)
Concentration: 1 µg/L
Sample type: CC



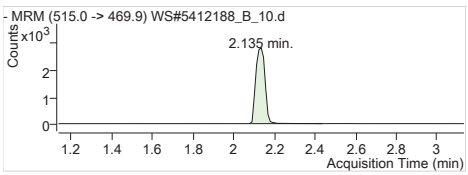



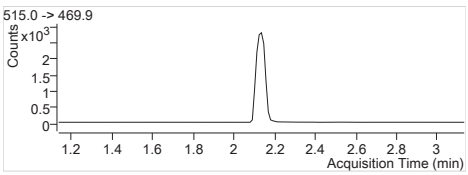

**MPFOS** Internal Standard
RT (Exp. RT): 1.968 (1.968)
Concentration: 1 µg/L
Sample type: CC



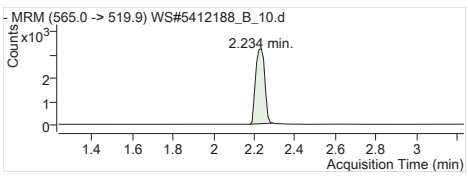



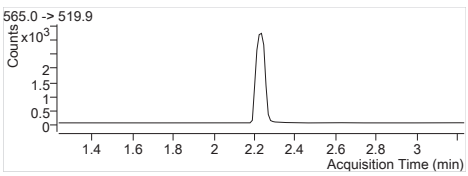

**MPFNA** Internal Standard
RT (Exp. RT): 2.014 (2.014)
Concentration: 1 µg/L
Sample type: CC



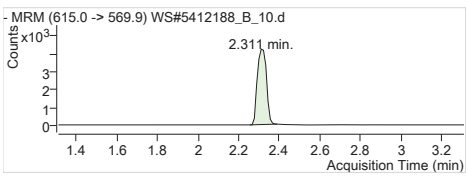



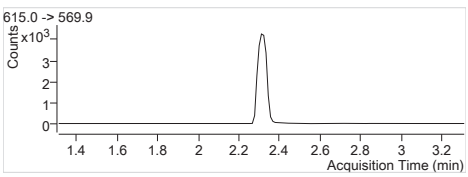

**MPFDA** Internal Standard
RT (Exp. RT): 2.135 (2.135)
Concentration: 1 µg/L
Sample type: CC



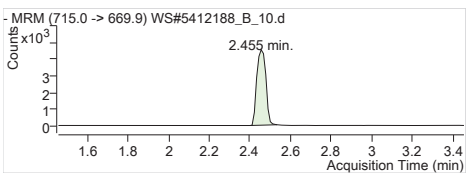



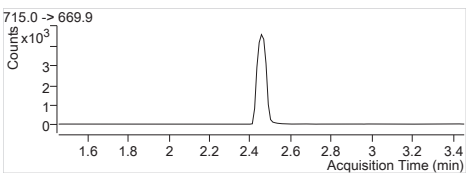

**MPFUnA** Internal Standard
RT (Exp. RT): 2.234 (2.234)
Concentration: 1 µg/L
Sample type: CC



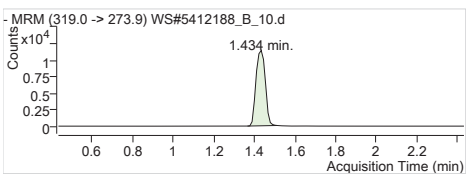



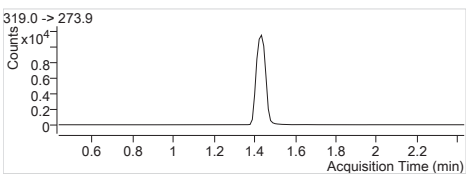

**MPFDoA** Internal Standard
RT (Exp. RT): 2.311 (2.311)
Concentration: 1 µg/L
Sample type: CC



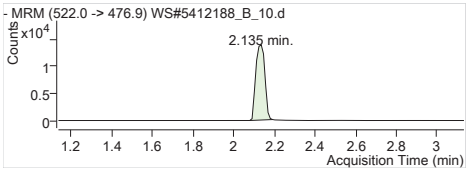



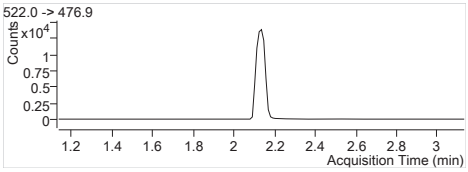

**MPFTeDA** Internal Standard
RT (Exp. RT): 2.455 (2.455)
Concentration: 1 µg/L
Sample type: CC



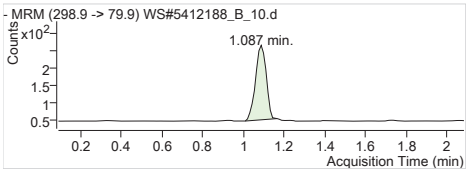



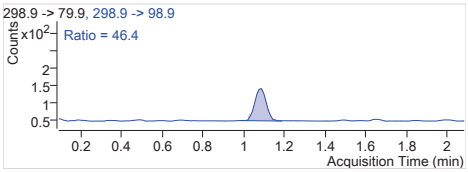

**13C6-PFHxA IS** Internal Standard
RT (Exp. RT): 1.434 (1.434)
Concentration: 1 µg/L
Sample type: CC



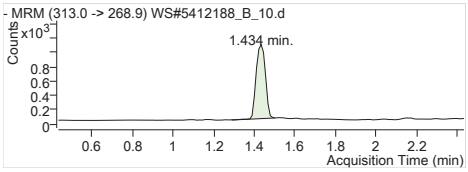



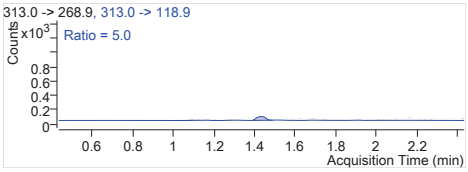

**13C9-PFDA IS** Internal Standard
RT (Exp. RT): 2.135 (2.135)
Concentration: 1 µg/L
Sample type: CC



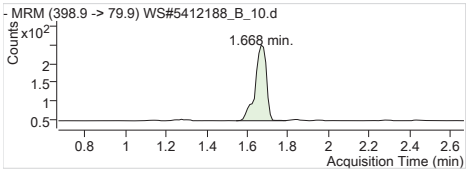



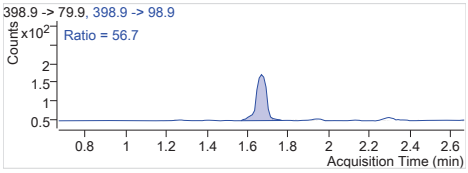

**PFBS 1** 298.9 -> 79.9
RT (Exp. RT): 1.087 (1.087)
Calc. conc. 0.74 µg/L
Area ratio: 0.41352
Sample type: CC



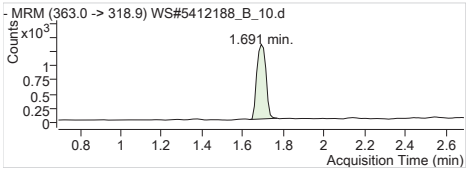



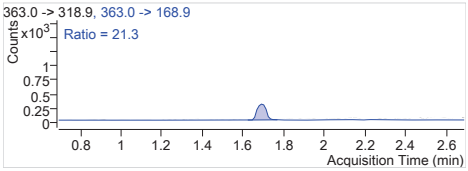

**PFHxA 1** 313.0 -> 268.9
RT (Exp. RT): 1.434 (1.434)
Calc. conc. 0.78 µg/L
Area ratio: 0.36734
Sample type: CC



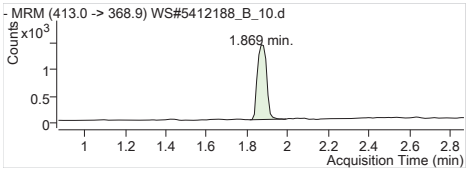



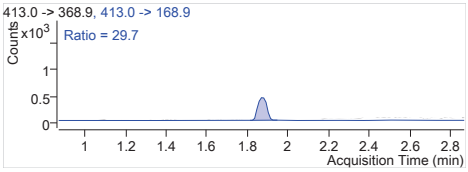

**PFHxS 1** 398.9 -> 79.9
RT (Exp. RT): 1.668 (1.668)
Calc. conc. 0.75 µg/L
Area ratio: 0.40199
Sample type: CC



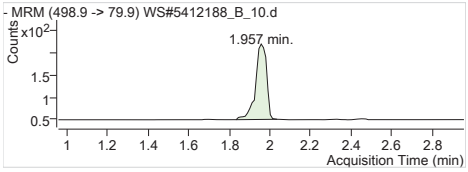



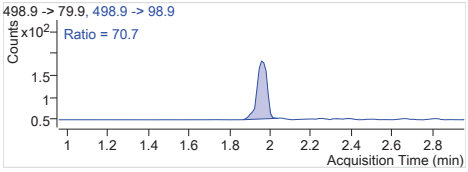

**PFHpA 1** 363.0 -> 318.9
RT (Exp. RT): 1.691 (1.691)
Calc. conc. 0.84 µg/L
Area ratio: 0.40262
Sample type: CC



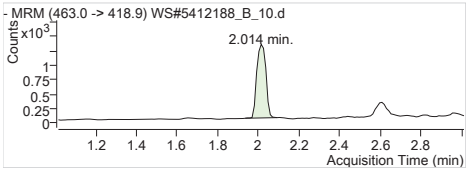



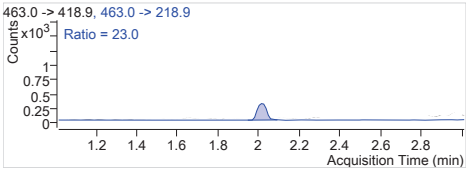

**PFOA 1** 413.0 -> 368.9
RT (Exp. RT): 1.869 (1.869)
Calc. conc. 0.85 µg/L
Area ratio: 0.43889
Sample type: CC



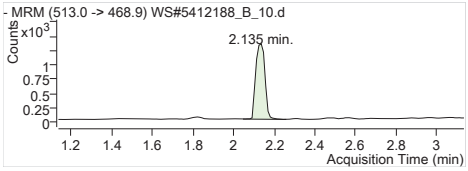



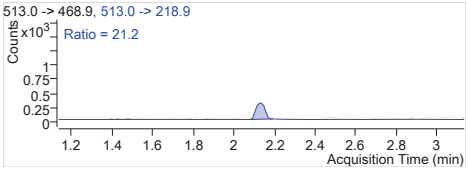

**PFOS 1** 498.9 -> 79.9
RT (Exp. RT): 1.957 (1.957)
Calc. conc. 0.92 µg/L
Area ratio: 0.31151
Sample type: CC



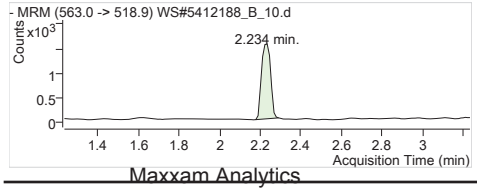



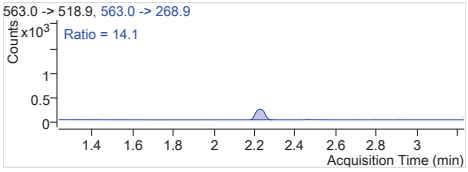

**PFNA 1** 463.0 -> 418.9
RT (Exp. RT): 2.014 (2.014)
Calc. conc. 0.89 µg/L
Area ratio: 0.39264
Sample type: CC



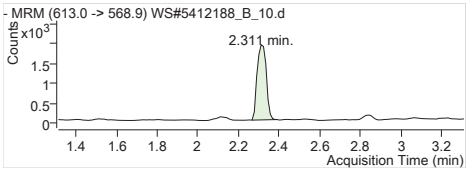



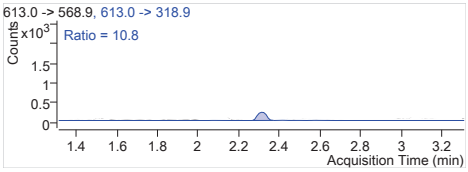

**PFDA 1** 513.0 -> 468.9
RT (Exp. RT): 2.135 (2.135)
Calc. conc. 0.87 µg/L
Area ratio: 0.47511
Sample type: CC



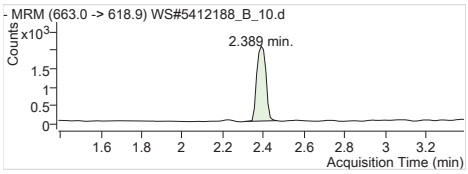



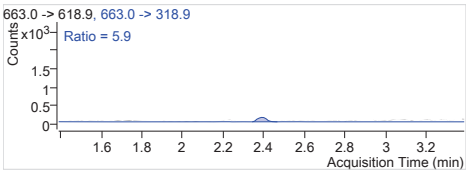

**PFUnA 1** 563.0 -> 518.9
RT (Exp. RT): 2.234 (2.234)
Calc. conc. 0.99 µg/L
Area ratio: 0.47780
Sample type: CC



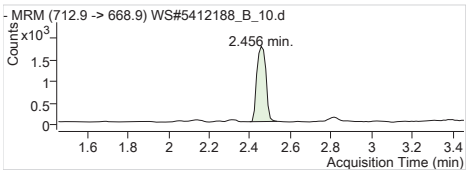



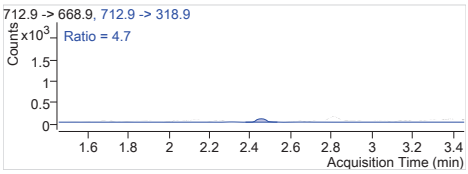

**PFDoA 1** 613.0 -> 568.9
RT (Exp. RT): 2.311 (2.311)
Calc. conc. 0.97 µg/L
Area ratio: 0.45110
Sample type: CC



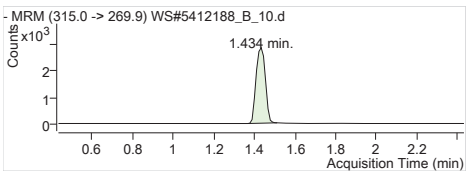



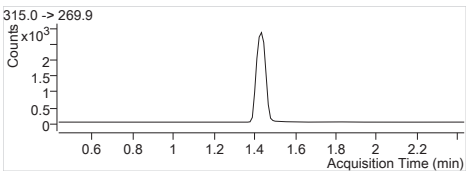

**PFTrDA 1** 663.0 -> 618.9
RT (Exp. RT): 2.389 (2.389)
Calc. conc. 0.91 µg/L
Area ratio: 0.45761
Sample type: CC



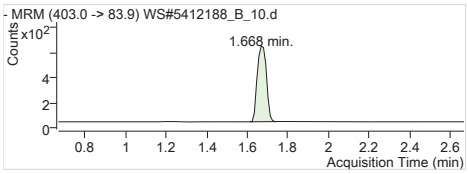



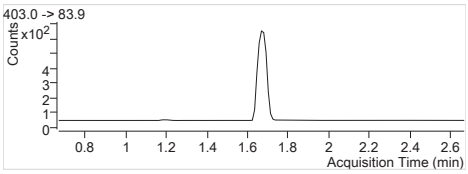

**PFTeDA 1** 712.9 -> 668.9
RT (Exp. RT): 2.456 (2.456)
Calc. conc. 0.92 µg/L
Area ratio: 0.38667
Sample type: CC



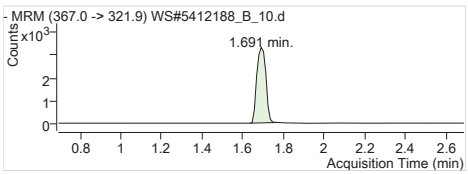



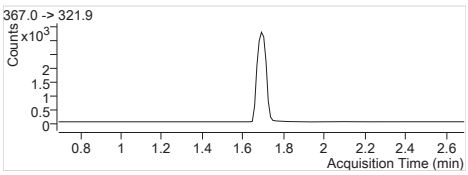

**13C2-PFHxA** 315.0 -> 269.9
RT (Exp. RT): 1.434 (1.434)
Calc. conc. 99.29 µg/L
Area ratio: 0.24681
Sample type: CC



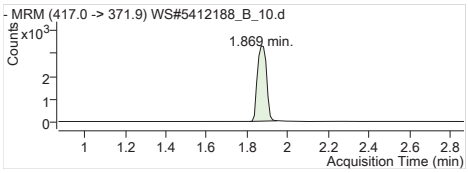



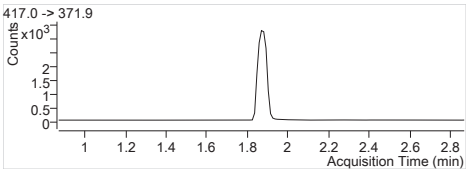

**18O2-PFHxS** 403.0 -> 83.9
RT (Exp. RT): 1.668 (1.668)
Calc. conc. 101.56 µg/L
Area ratio: 0.05274
Sample type: CC



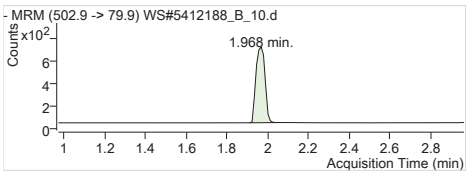



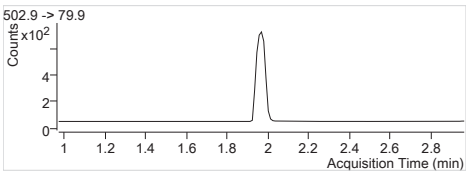

**13C4-PFHpA** 367.0 -> 321.9
RT (Exp. RT): 1.691 (1.691)
Calc. conc. 97.46 µg/L
Area ratio: 0.28058
Sample type: CC



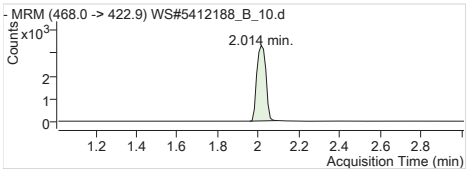



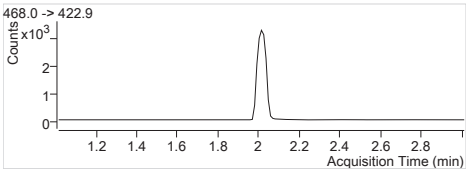

**13C4-PFOA** 417.0 -> 371.9
RT (Exp. RT): 1.869 (1.869)
Calc. conc. 94.88 µg/L
Area ratio: 0.28177
Sample type: CC



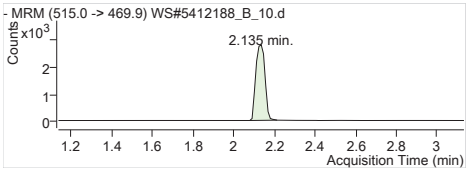



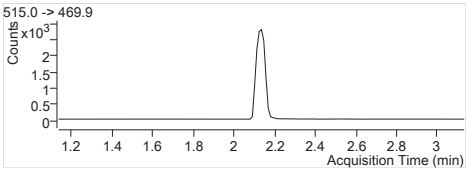

**13C4-PFOS** 502.9 -> 79.9
RT (Exp. RT): 1.968 (1.968)
Calc. conc. 96.22 µg/L
Area ratio: 0.05785
Sample type: CC



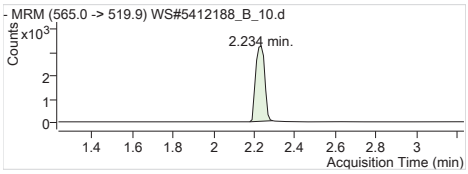



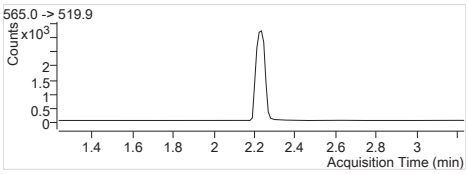

**13C5-PFNA** 468.0 -> 422.9
RT (Exp. RT): 2.014 (2.014)
Calc. conc. 97.43 µg/L
Area ratio: 0.28025
Sample type: CC



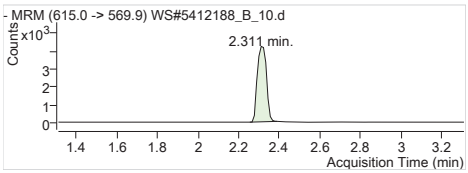



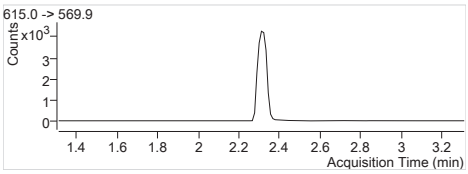

**13C2-PFDA** 515.0 -> 469.9
RT (Exp. RT): 2.135 (2.135)
Calc. conc. 91.81 µg/L
Area ratio: 0.20222
Sample type: CC



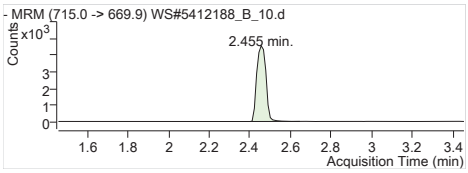



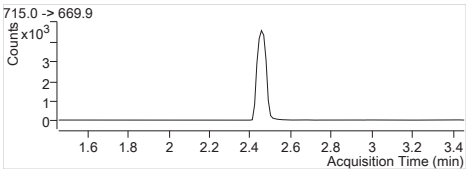

**13C2-PFUnA** 565.0 -> 519.9
RT (Exp. RT): 2.234 (2.234)
Calc. conc. 90.49 µg/L
Area ratio: 0.23178
Sample type: CC



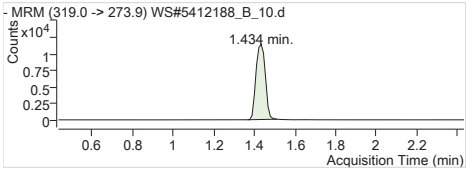



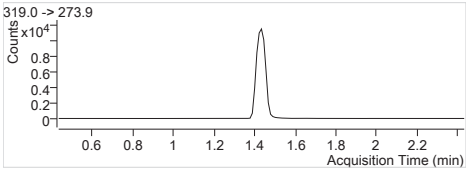

**13C2-PFDoA** 615.0 -> 569.9
RT (Exp. RT): 2.311 (2.311)
Calc. conc. 94.41 µg/L
Area ratio: 0.30634
Sample type: CC



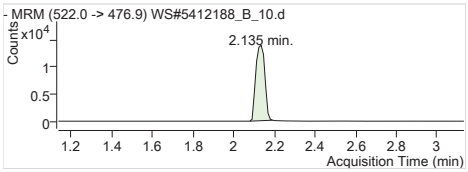



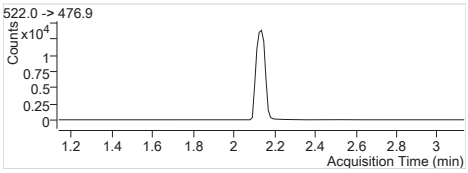

**13C2-PFTeDA** 715.0 -> 669.9
RT (Exp. RT): 2.455 (2.455)
Calc. conc. 93.21 µg/L
Area ratio: 0.33249
Sample type: CC




**13C6-PFHxA** 319.0 -> 273.9
RT (Exp. RT): 1.434 (1.434)
Calc. conc. 115.47 µg/L
Area ratio: 0
Sample type: CC



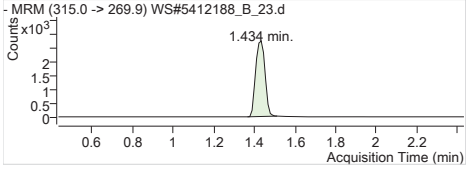

**13C9-PFDA** 522.0 -> 476.9
RT (Exp. RT): 2.135 (2.135)
Calc. conc. 115.00 µg/L
Area ratio: 0
Sample type: CC

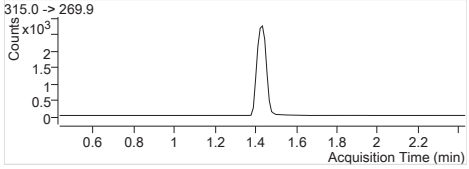
| | |
|---|---|
| **Batch Path** | T:\lcms4\PFC\20180226\WS#5412188_B\QuantResults\PFC_Water_Low_180227_WS#5412188_B_EToxics |

| | | | |
|---|---|---|---|
| **Sample Name** | **CCV** | **Instrument** | LCMS04 |
| **Data File** | WS#5412188_B_23.d | **Operator** | |
| **Sample Type** | CC | **Dilution** | 1 |
| **Acq. Method** | PFC_Water_Low.m | **Position** | P1-C4 |
| **Acq. Date** | 2018/02/27 3:01:20 PM | **Injection Volume** | Per Method |
| **Sample Annotation** | - | | |

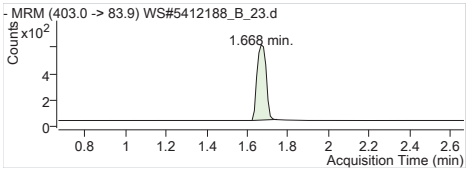
| ISTD Compounds | Response | RT | Target conc. | | |
|---|---|---|---|---|---|
| MPFHxA | 8700 | 1.43 | 1 µg/L | | |
| MPFHxS | 1760 | 1.67 | 1 µg/L | | |
| MPFHpA | 10180 | 1.69 | 1 µg/L | | |
| MPFOA | 9786 | 1.87 | 1 µg/L | | |
| MPFOS | 2086 | 1.97 | 1 µg/L | | |
| MPFNA | 9585 | 2.01 | 1 µg/L | | |
| MPFDA | 8718 | 2.14 | 1 µg/L | | |
| MPFUnA | 10179 | 2.23 | 1 µg/L | | |
| MPFDoA | 13248 | 2.31 | 1 µg/L | | |
| MPFTeDA | 14843 | 2.46 | 1 µg/L | | |
| 13C6-PFHxA IS | 33127 | 1.43 | 1 µg/L | | |
| 13C9-PFDA IS | 37914 | 2.13 | 1 µg/L | | |

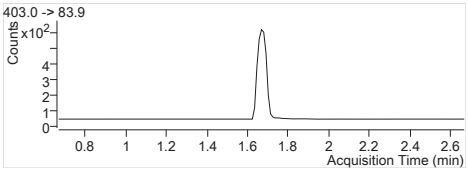
| Compound | Response | RT | Target Conc. | Calc. Conc. | Accuracy |
|---|---|---|---|---|---|
| PFBS 1 | 10312 | 1.09 | 12.50 | 12.90 µg/L | 103.16 |
| PFHxA 1 | 41531 | 1.43 | 12.50 | 11.49 µg/L | 91.95 |
| PFHxS 1 | 10412 | 1.67 | 12.50 | 13.17 µg/L | 105.32 |
| PFHpA 1 | 51169 | 1.69 | 12.50 | 11.06 µg/L | 88.51 |
| PFOA 1 | 58936 | 1.87 | 12.50 | 13.25 µg/L | 106.01 |
| PFOS 1 | 9603 | 1.96 | 12.50 | 11.15 µg/L | 89.18 |
| PFNA 1 | 48828 | 2.01 | 12.50 | 11.86 µg/L | 94.90 |
| PFDA 1 | 53163 | 2.14 | 12.50 | 12.65 µg/L | 101.17 |
| PFUnA 1 | 57221 | 2.23 | 12.50 | 12.44 µg/L | 99.56 |
| PFDoA 1 | 70130 | 2.31 | 12.50 | 11.95 µg/L | 95.63 |
| PFTrDA 1 | 77616 | 2.39 | 12.50 | 11.48 µg/L | 91.85 |
| PFTeDA 1 | 68059 | 2.46 | 12.50 | 12.07 µg/L | 96.54 |
| 13C2-PFHxA | 8700 | 1.43 | 100.00 | 105.66 µg/L | 105.66 |
| 18O2-PFHxS | 1760 | 1.67 | 100.00 | 102.31 µg/L | 102.31 |
| 13C4-PFHpA | 10180 | 1.69 | 100.00 | 106.73 µg/L | 106.73 |
| 13C4-PFOA | 9786 | 1.87 | 100.00 | 99.47 µg/L | 99.47 |
| 13C4-PFOS | 2086 | 1.97 | 100.00 | 104.73 µg/L | 104.73 |
| 13C5-PFNA | 9584 | 2.01 | 100.00 | 100.58 µg/L | 100.58 |
| 13C2-PFDA | 8601 | 2.14 | 100.00 | 103.00 µg/L | 103.00 |
| 13C2-PFUnA | 10179 | 2.23 | 100.00 | 104.82 µg/L | 104.82 |
| 13C2-PFDoA | 13248 | 2.31 | 100.00 | 107.68 µg/L | 107.68 |
| 13C2-PFTeDA | 15168 | 2.46 | 100.00 | 112.15 µg/L | 112.15 |
| 13C6-PFHxA | 33127 | 1.43 | 100.00 | 105.73 µg/L | 105.73 |
| 13C9-PFDA | 37914 | 2.13 | 100.00 | 101.74 µg/L | 101.74 |



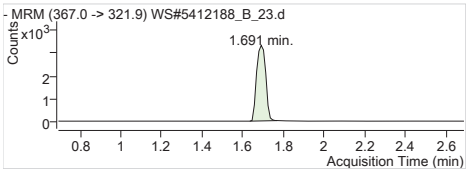



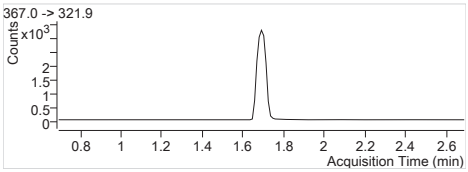

| | |
|---|---|
| **MPFHxA** | Internal Standard |
| RT (Exp. RT): | 1.434 (1.434) |
| Concentration: | 1 µg/L |
| Sample type: | CC |



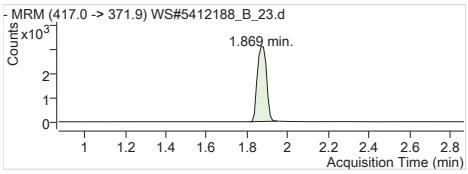



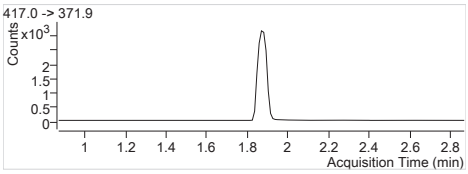

**MPFHxS** Internal Standard
RT (Exp. RT): 1.668 (1.668)
Concentration: 1 µg/L
Sample type: CC



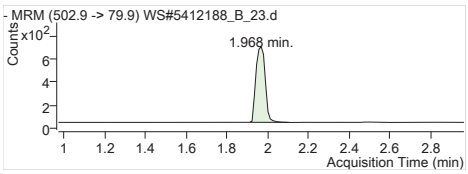



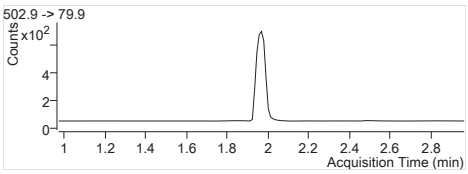

**MPFHpA** Internal Standard
RT (Exp. RT): 1.691 (1.691)
Concentration: 1 µg/L
Sample type: CC



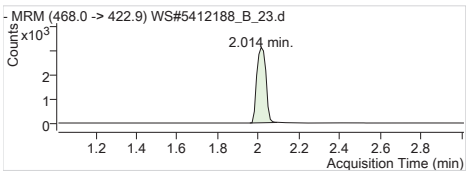



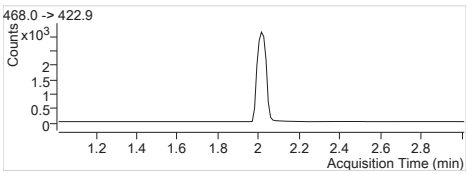

**MPFOA** Internal Standard
RT (Exp. RT): 1.869 (1.869)
Concentration: 1 µg/L
Sample type: CC



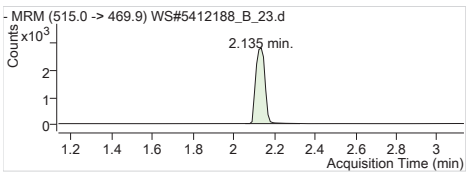



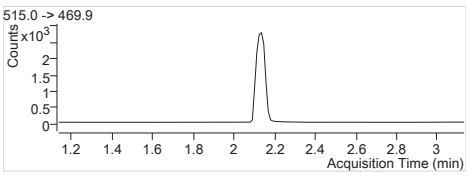

**MPFOS** Internal Standard
RT (Exp. RT): 1.968 (1.968)
Concentration: 1 µg/L
Sample type: CC



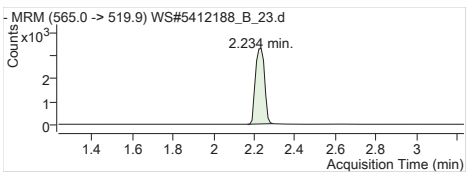



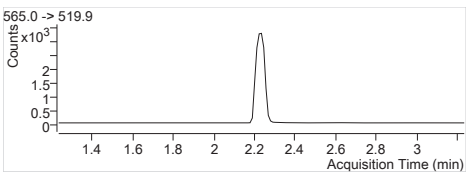

**MPFNA** Internal Standard
RT (Exp. RT): 2.014 (2.014)
Concentration: 1 µg/L
Sample type: CC



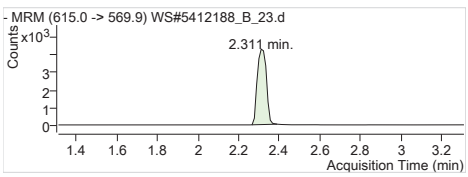



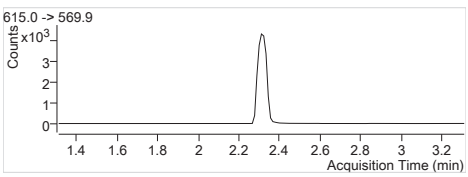

**MPFDA** Internal Standard
RT (Exp. RT): 2.135 (2.135)
Concentration: 1 µg/L
Sample type: CC



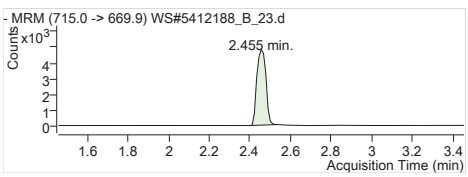



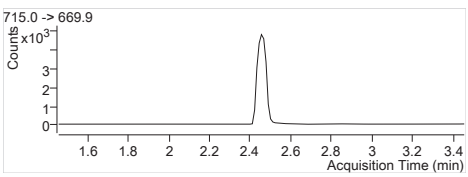

**MPFUnA** Internal Standard
RT (Exp. RT): 2.234 (2.234)
Concentration: 1 µg/L
Sample type: CC



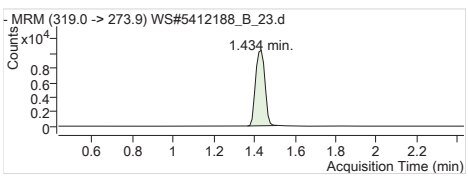



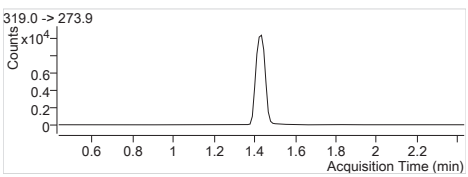

**MPFDoA** Internal Standard
RT (Exp. RT): 2.311 (2.311)
Concentration: 1 µg/L
Sample type: CC



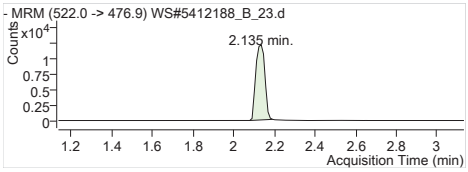



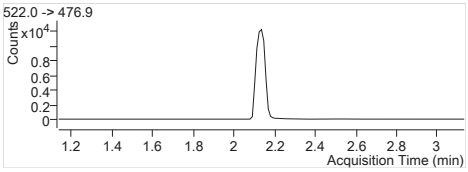

**MPFTeDA** Internal Standard
RT (Exp. RT): 2.455 (2.455)
Concentration: 1 µg/L
Sample type: CC



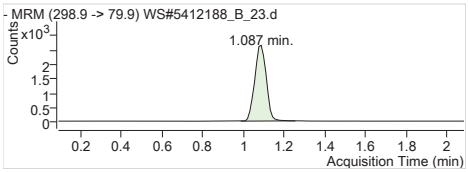



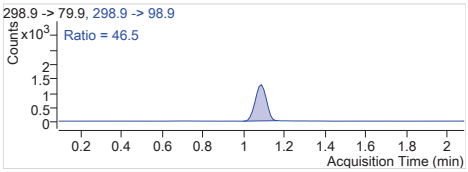

**13C6-PFHxA IS** Internal Standard
RT (Exp. RT): 1.434 (1.434)
Concentration: 1 µg/L
Sample type: CC



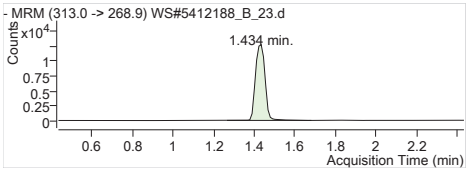



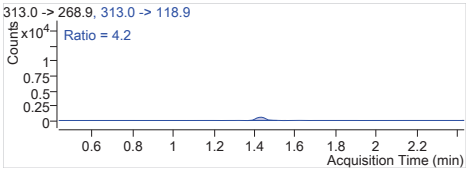

**13C9-PFDA IS** Internal Standard
RT (Exp. RT): 2.135 (2.135)
Concentration: 1 µg/L
Sample type: CC



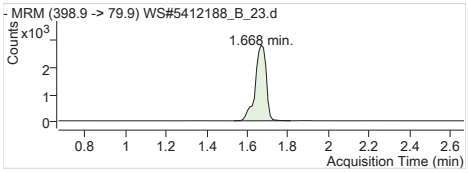



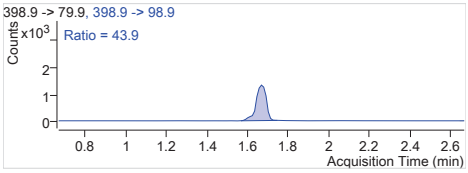

**PFBS 1** 298.9 -> 79.9
RT (Exp. RT): 1.087 (1.087)
Calc. conc. 12.90 µg/L
Area ratio: 5.85909
Sample type: CC



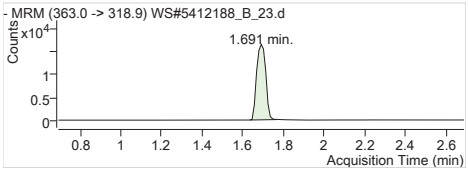



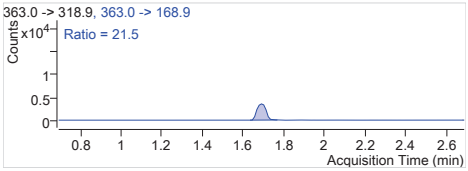

**PFHxA 1** 313.0 -> 268.9
RT (Exp. RT): 1.434 (1.434)
Calc. conc. 11.49 µg/L
Area ratio: 4.77368
Sample type: CC



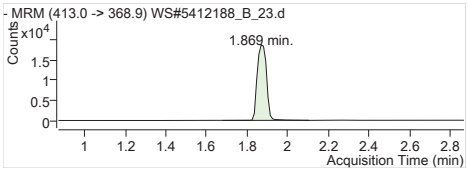



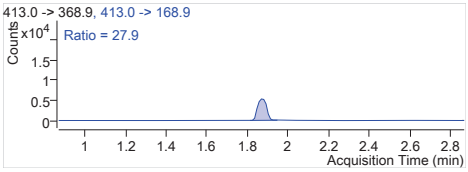

**PFHxS 1** 398.9 -> 79.9
RT (Exp. RT): 1.668 (1.668)
Calc. conc. 13.17 µg/L
Area ratio: 5.91591
Sample type: CC



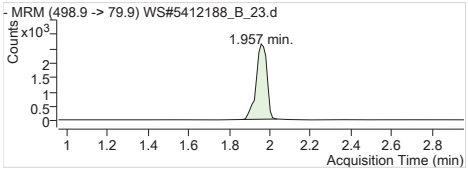



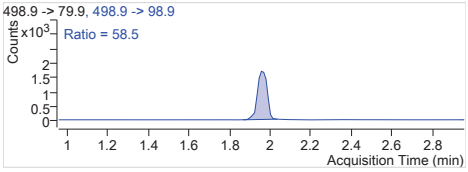

**PFHpA 1** 363.0 -> 318.9
RT (Exp. RT): 1.691 (1.691)
Calc. conc. 11.06 µg/L
Area ratio: 5.02642
Sample type: CC



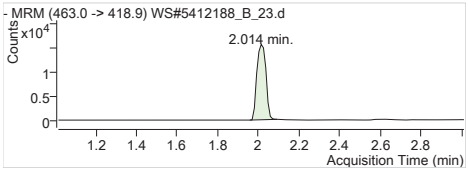



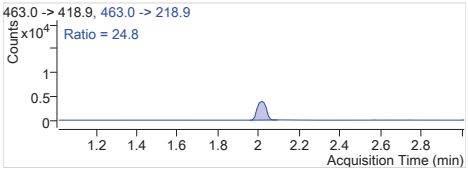

**PFOA 1** 413.0 -> 368.9
RT (Exp. RT): 1.869 (1.869)
Calc. conc. 13.25 µg/L
Area ratio: 6.02248
Sample type: CC



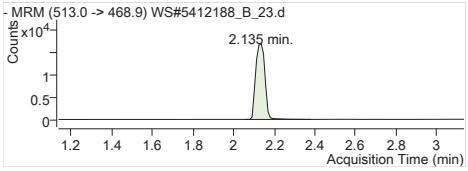



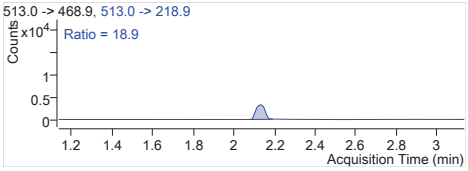

**PFOS 1** 498.9 -> 79.9
RT (Exp. RT): 1.957 (1.957)
Calc. conc. 11.15 µg/L
Area ratio: 4.60355
Sample type: CC



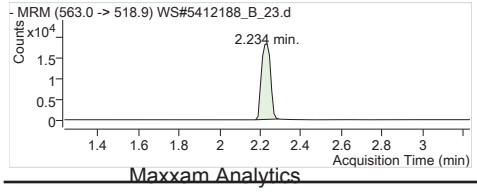



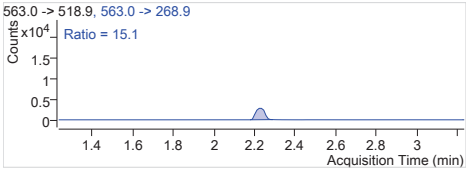

**PFNA 1** 463.0 -> 418.9
RT (Exp. RT): 2.014 (2.014)
Calc. conc. 11.86 µg/L
Area ratio: 5.09421
Sample type: CC



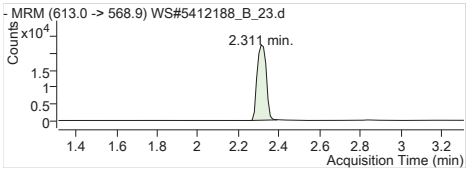



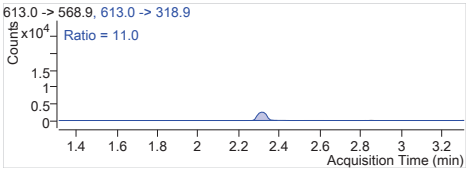

**PFDA 1** 513.0 -> 468.9
RT (Exp. RT): 2.135 (2.135)
Calc. conc. 12.65 µg/L
Area ratio: 6.09807
Sample type: CC



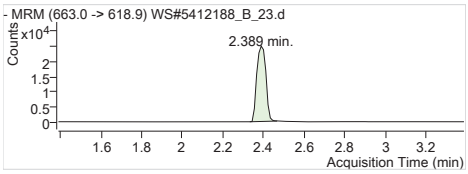



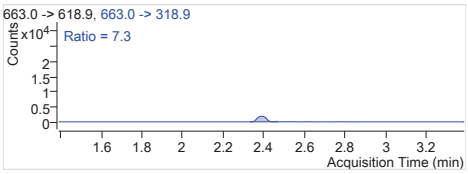

**PFUnA 1** 563.0 -> 518.9
RT (Exp. RT): 2.234 (2.234)
Calc. conc. 12.44 µg/L
Area ratio: 5.62148
Sample type: CC



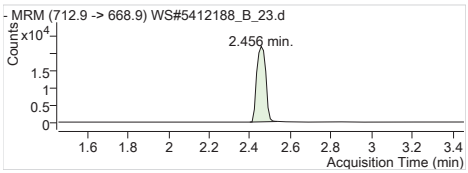



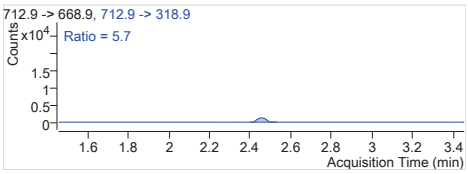

| | |
|---|---|
| **PFDoA 1** | 613.0 -> 568.9 |
| RT (Exp. RT): | 2.311 (2.311) |
| Calc. conc. | 11.95 µg/L |
| Area ratio: | 5.29363 |
| Sample type: | CC |



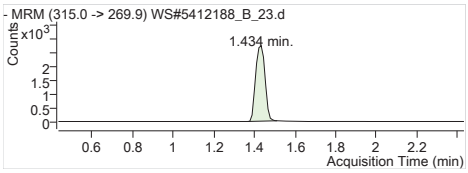



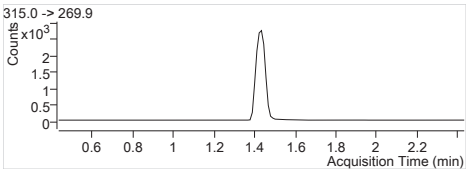

| | |
|---|---|
| **PFTrDA 1** | 663.0 -> 618.9 |
| RT (Exp. RT): | 2.389 (2.389) |
| Calc. conc. | 11.48 µg/L |
| Area ratio: | 5.22913 |
| Sample type: | CC |



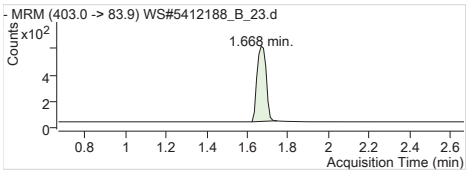



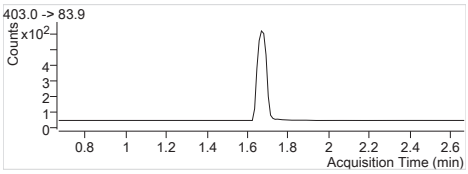

| | |
|---|---|
| **PFTeDA 1** | 712.9 -> 668.9 |
| RT (Exp. RT): | 2.456 (2.456) |
| Calc. conc. | 12.07 µg/L |
| Area ratio: | 4.58526 |
| Sample type: | CC |



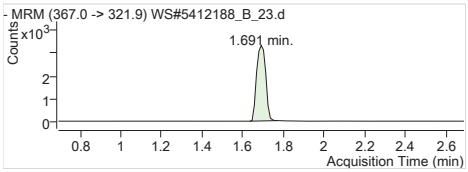



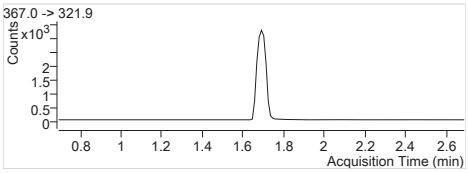

| | |
|---|---|
| **13C2-PFHxA** | 315.0 -> 269.9 |
| RT (Exp. RT): | 1.434 (1.434) |
| Calc. conc. | 105.66 µg/L |
| Area ratio: | 0.26263 |
| Sample type: | CC |



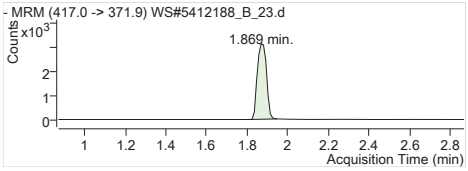



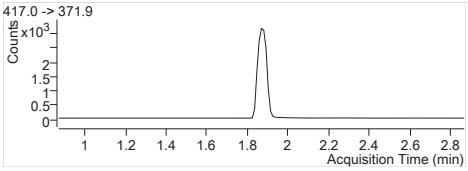

| | |
|---|---|
| **18O2-PFHxS** | 403.0 -> 83.9 |
| RT (Exp. RT): | 1.668 (1.668) |
| Calc. conc. | 102.31 µg/L |
| Area ratio: | 0.05313 |
| Sample type: | CC |



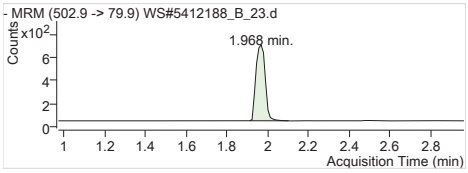



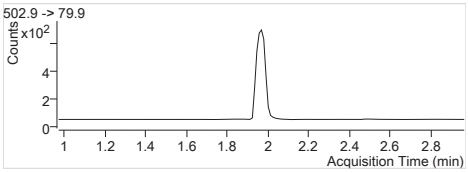

| | |
|---|---|
| **13C4-PFHpA** | 367.0 -> 321.9 |
| RT (Exp. RT): | 1.691 (1.691) |
| Calc. conc. | 106.73 µg/L |
| Area ratio: | 0.30730 |
| Sample type: | CC |



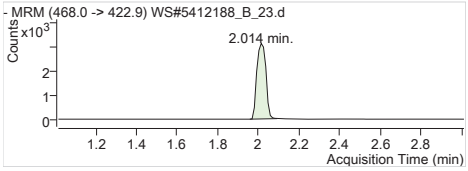



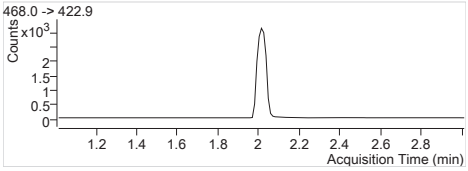

| | |
|---|---|
| **13C4-PFOA** | 417.0 -> 371.9 |
| RT (Exp. RT): | 1.869 (1.869) |
| Calc. conc. | 99.47 µg/L |
| Area ratio: | 0.29541 |
| Sample type: | CC |



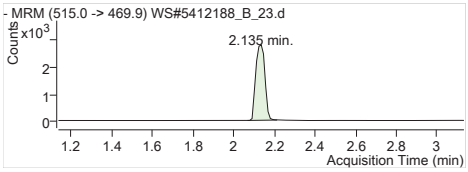



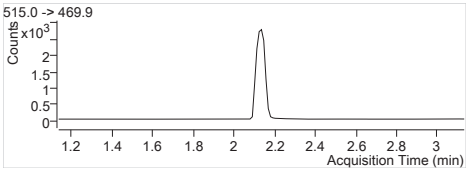

| | |
|---|---|
| **13C4-PFOS** | 502.9 -> 79.9 |
| RT (Exp. RT): | 1.968 (1.968) |
| Calc. conc. | 104.73 µg/L |
| Area ratio: | 0.06297 |
| Sample type: | CC |



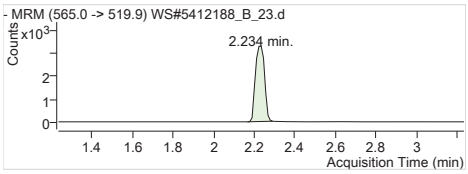



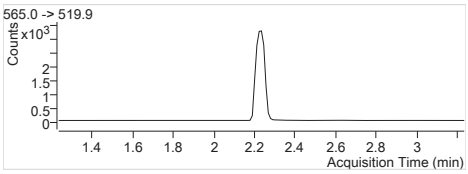

| | |
|---|---|
| **13C5-PFNA** | 468.0 -> 422.9 |
| RT (Exp. RT): | 2.014 (2.014) |
| Calc. conc. | 100.58 µg/L |
| Area ratio: | 0.28931 |
| Sample type: | CC |



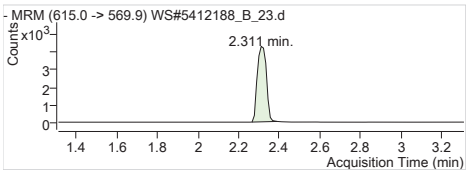



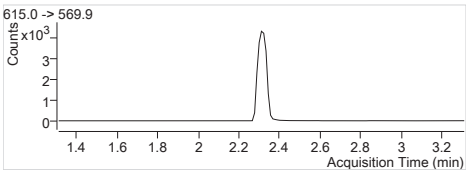

**13C2-PFDA** 515.0 -> 469.9
RT (Exp. RT): 2.135 (2.135)
Calc. conc. 103.00 µg/L
Area ratio: 0.22686
Sample type: CC



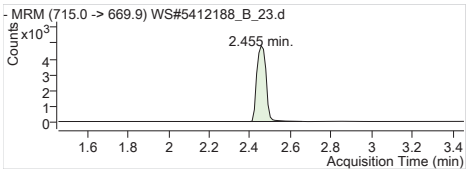



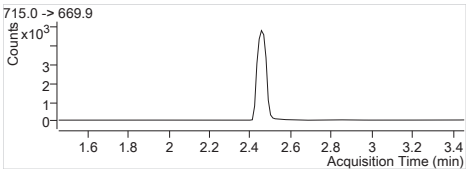

**13C2-PFUnA** 565.0 -> 519.9
RT (Exp. RT): 2.234 (2.234)
Calc. conc. 104.82 µg/L
Area ratio: 0.26848
Sample type: CC



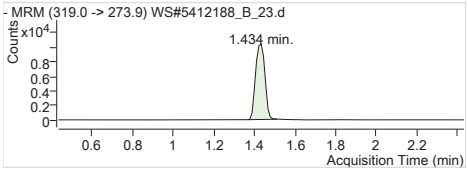



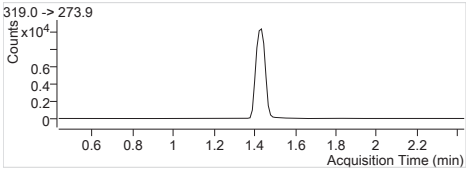

**13C2-PFDoA** 615.0 -> 569.9
RT (Exp. RT): 2.311 (2.311)
Calc. conc. 107.68 µg/L
Area ratio: 0.34942
Sample type: CC



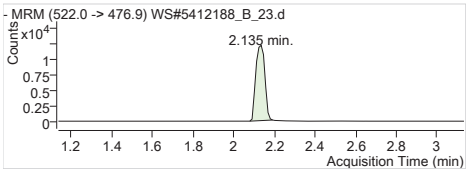



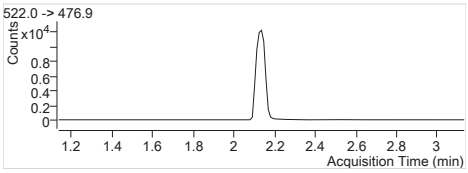

**13C2-PFTeDA** 715.0 -> 669.9
RT (Exp. RT): 2.455 (2.455)
Calc. conc. 112.15 µg/L
Area ratio: 0.40006
Sample type: CC




**13C6-PFHxA** 319.0 -> 273.9
RT (Exp. RT): 1.434 (1.434)
Calc. conc. 105.73 µg/L
Area ratio: 0
Sample type: CC



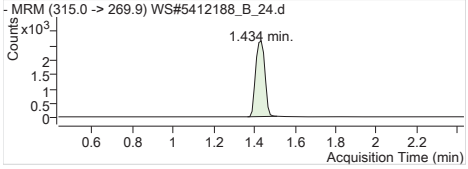

**13C9-PFDA** 522.0 -> 476.9
RT (Exp. RT): 2.135 (2.135)
Calc. conc. 101.74 µg/L
Area ratio: 0
Sample type: CC

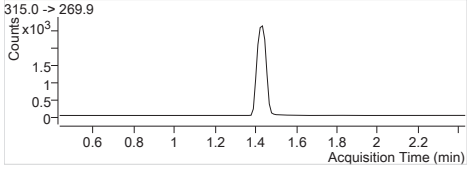
| | |
|---|---|
| **Batch Path** | T:\lcms4\PFC\20180226\WS#5412188_B\QuantResults\PFC_Water_Low_180227_WS#5412188_B_EToxics |

| | | | |
|---|---|---|---|
| **Sample Name** | **ISC** | **Instrument** | LCMS04 |
| **Data File** | WS#5412188_B_24.d | **Operator** | |
| **Sample Type** | CC | **Dilution** | 1 |
| **Acq. Method** | PFC_Water_Low.m | **Position** | P1-C1 |
| **Acq. Date** | 2018/02/27 3:52:41 PM | **Injection Volume** | Per Method |
| **Sample Annotation** | - | | |

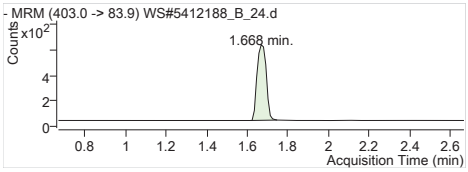
| ISTD Compounds | Response | RT | Target conc. | | |
|---|---|---|---|---|---|
| MPFHxA | 8254 | 1.43 | 1 µg/L | | |
| MPFHxS | 1864 | 1.67 | 1 µg/L | | |
| MPFHpA | 9834 | 1.69 | 1 µg/L | | |
| MPFOA | 10189 | 1.87 | 1 µg/L | | |
| MPFOS | 2173 | 1.97 | 1 µg/L | | |
| MPFNA | 9608 | 2.01 | 1 µg/L | | |
| MPFDA | 8465 | 2.14 | 1 µg/L | | |
| MPFUnA | 9742 | 2.23 | 1 µg/L | | |
| MPFDoA | 12830 | 2.31 | 1 µg/L | | |
| MPFTeDA | 13995 | 2.46 | 1 µg/L | | |
| 13C6-PFHxA IS | 37375 | 1.43 | 1 µg/L | | |
| 13C9-PFDA IS | 42905 | 2.13 | 1 µg/L | | |

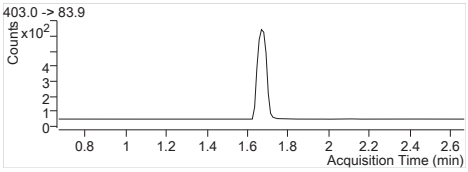
| Compound | Response | RT | Target Conc. | Calc. Conc. | Accuracy |
|---|---|---|---|---|---|
| PFBS 1 | 691 | 1.08 | 0.83 | 0.64 µg/L | 77.21 |
| PFHxA 1 | 3077 | 1.43 | 0.83 | 0.79 µg/L | 95.46 |
| PFHxS 1 | 830 | 1.67 | 0.83 | 0.85 µg/L | 102.03 |
| PFHpA 1 | 3615 | 1.69 | 0.83 | 0.77 µg/L | 92.35 |
| PFOA 1 | 4858 | 1.87 | 0.83 | 0.94 µg/L | 112.79 |
| PFOS 1 | 818 | 1.96 | 0.83 | 1.08 µg/L | 129.73 |
| PFNA 1 | 4057 | 2.01 | 0.83 | 0.96 µg/L | 116.09 |
| PFDA 1 | 4125 | 2.14 | 0.83 | 0.90 µg/L | 107.85 |
| PFUnA 1 | 4267 | 2.22 | 0.83 | 0.90 µg/L | 108.85 |
| PFDoA 1 | 5428 | 2.31 | 0.83 | 0.90 µg/L | 108.71 |
| PFTrDA 1 | 5941 | 2.39 | 0.83 | 0.84 µg/L | 100.75 |
| PFTeDA 1 | 4744 | 2.46 | 0.83 | 0.80 µg/L | 95.83 |
| 13C2-PFHxA | 8254 | 1.43 | 100.00 | 88.85 µg/L | 88.85 |
| 18O2-PFHxS | 1864 | 1.67 | 100.00 | 96.04 µg/L | 96.04 |
| 13C4-PFHpA | 9834 | 1.69 | 100.00 | 91.39 µg/L | 91.39 |
| 13C4-PFOA | 10189 | 1.87 | 100.00 | 91.79 µg/L | 91.79 |
| 13C4-PFOS | 2173 | 1.97 | 100.00 | 96.70 µg/L | 96.70 |
| 13C5-PFNA | 9609 | 2.01 | 100.00 | 89.38 µg/L | 89.38 |
| 13C2-PFDA | 8338 | 2.14 | 100.00 | 88.24 µg/L | 88.24 |
| 13C2-PFUnA | 9742 | 2.23 | 100.00 | 88.65 µg/L | 88.65 |
| 13C2-PFDoA | 12830 | 2.31 | 100.00 | 92.16 µg/L | 92.16 |
| 13C2-PFTeDA | 14172 | 2.46 | 100.00 | 92.60 µg/L | 92.60 |
| 13C6-PFHxA | 37375 | 1.43 | 100.00 | 119.29 µg/L | 119.29 |
| 13C9-PFDA | 42905 | 2.13 | 100.00 | 115.14 µg/L | 115.14 |



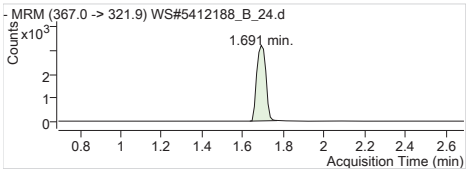



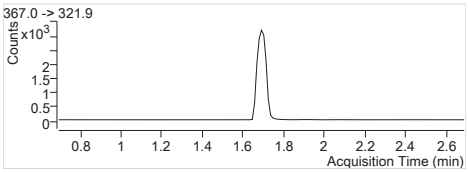

| | |
|---|---|
| **MPFHxA** | Internal Standard |
| RT (Exp. RT): | 1.434 (1.434) |
| Concentration: | 1 µg/L |
| Sample type: | CC |



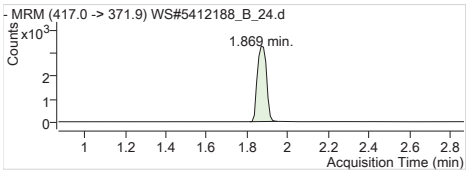



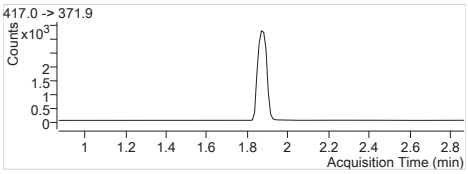

**MPFHxS** Internal Standard
RT (Exp. RT): 1.668 (1.668)
Concentration: 1 µg/L
Sample type: CC



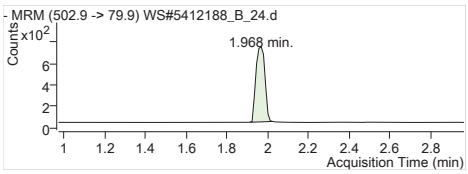



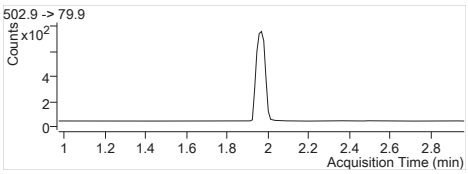

**MPFHpA** Internal Standard
RT (Exp. RT): 1.691 (1.691)
Concentration: 1 µg/L
Sample type: CC



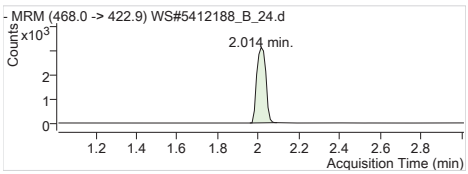



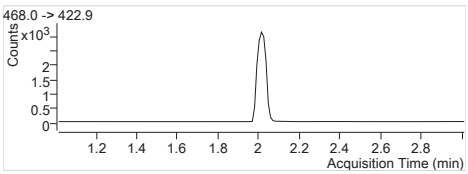

**MPFOA** Internal Standard
RT (Exp. RT): 1.869 (1.869)
Concentration: 1 µg/L
Sample type: CC



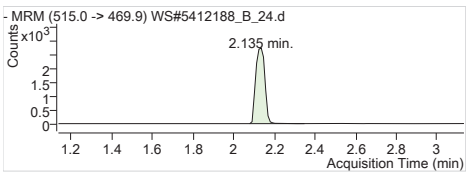



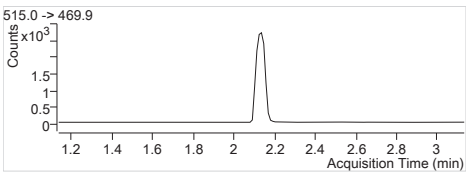

**MPFOS** Internal Standard
RT (Exp. RT): 1.968 (1.968)
Concentration: 1 µg/L
Sample type: CC



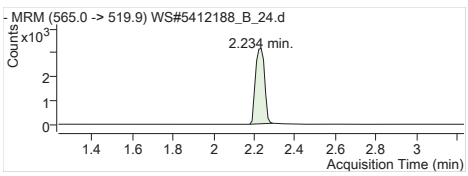



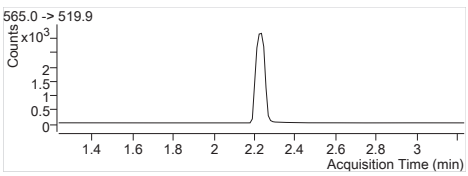

**MPFNA** Internal Standard
RT (Exp. RT): 2.014 (2.014)
Concentration: 1 µg/L
Sample type: CC



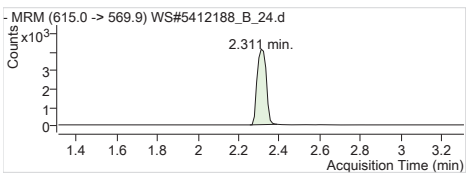



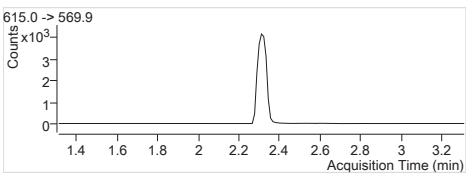

**MPFDA** Internal Standard
RT (Exp. RT): 2.135 (2.135)
Concentration: 1 µg/L
Sample type: CC



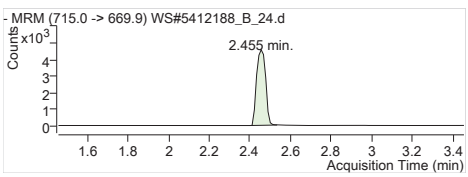



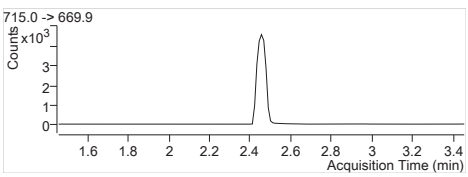

**MPFUnA** Internal Standard
RT (Exp. RT): 2.234 (2.234)
Concentration: 1 µg/L
Sample type: CC



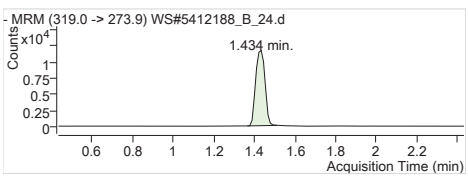



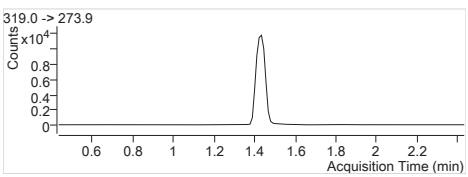

**MPFDoA** Internal Standard
RT (Exp. RT): 2.311 (2.311)
Concentration: 1 µg/L
Sample type: CC



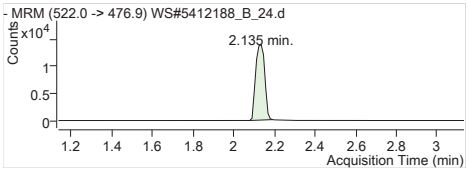



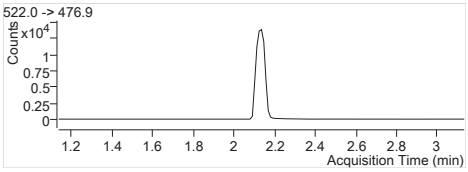

**MPFTeDA** Internal Standard
RT (Exp. RT): 2.455 (2.455)
Concentration: 1 µg/L
Sample type: CC



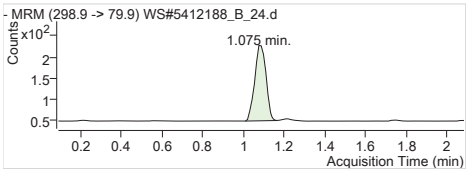



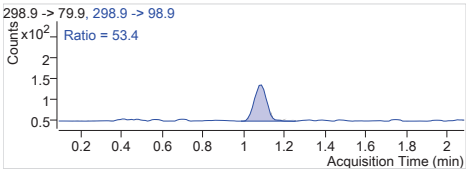

**13C6-PFHxA IS** Internal Standard
RT (Exp. RT): 1.434 (1.434)
Concentration: 1 µg/L
Sample type: CC



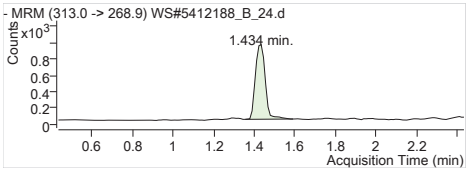



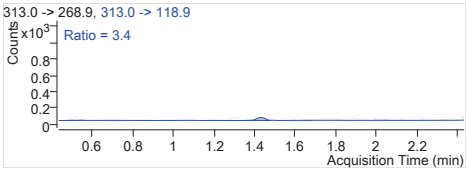

**13C9-PFDA IS** Internal Standard
RT (Exp. RT): 2.135 (2.135)
Concentration: 1 µg/L
Sample type: CC



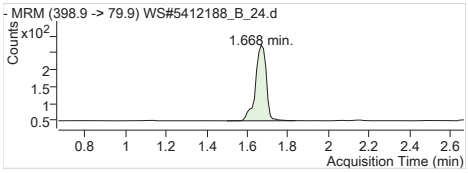



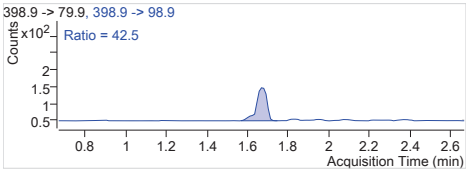

**PFBS 1** 298.9 -> 79.9
RT (Exp. RT): 1.075 (1.087)
Calc. conc. 0.64 µg/L
Area ratio: 0.37071
Sample type: CC



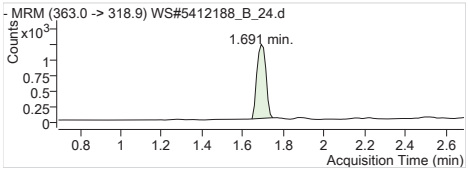



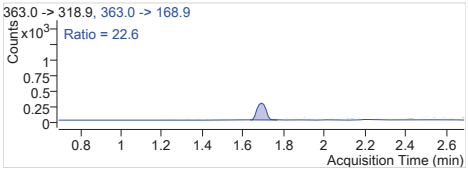

**PFHxA 1** 313.0 -> 268.9
RT (Exp. RT): 1.434 (1.434)
Calc. conc. 0.79 µg/L
Area ratio: 0.37279
Sample type: CC



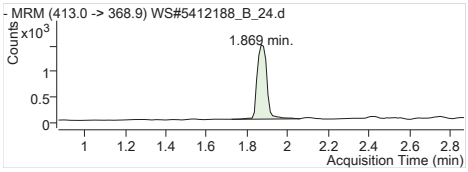



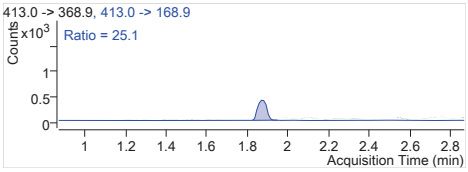

**PFHxS 1** 398.9 -> 79.9
RT (Exp. RT): 1.668 (1.668)
Calc. conc. 0.85 µg/L
Area ratio: 0.44528
Sample type: CC



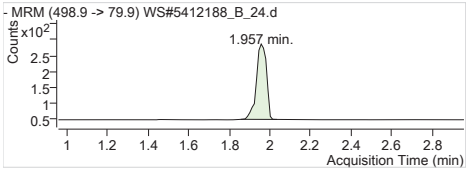



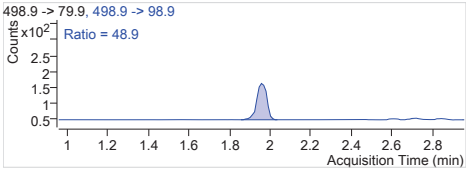

**PFHpA 1** 363.0 -> 318.9
RT (Exp. RT): 1.691 (1.691)
Calc. conc. 0.77 µg/L
Area ratio: 0.36760
Sample type: CC



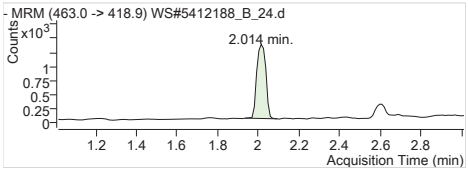



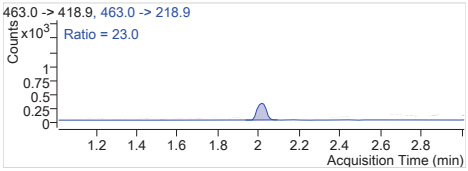

**PFOA 1** 413.0 -> 368.9
RT (Exp. RT): 1.869 (1.869)
Calc. conc. 0.94 µg/L
Area ratio: 0.47679
Sample type: CC



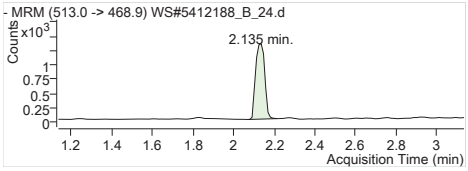



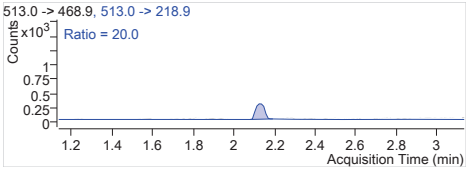

**PFOS 1** 498.9 -> 79.9
RT (Exp. RT): 1.957 (1.957)
Calc. conc. 1.08 µg/L
Area ratio: 0.37644
Sample type: CC



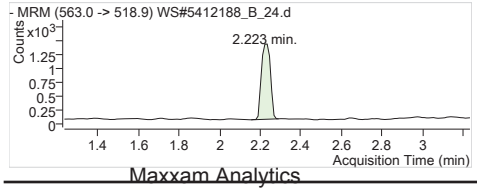



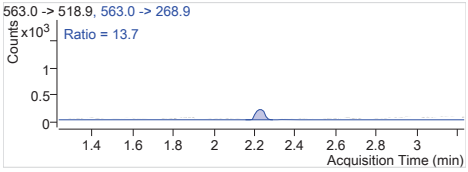

**PFNA 1** 463.0 -> 418.9
RT (Exp. RT): 2.014 (2.014)
Calc. conc. 0.96 µg/L
Area ratio: 0.42225
Sample type: CC



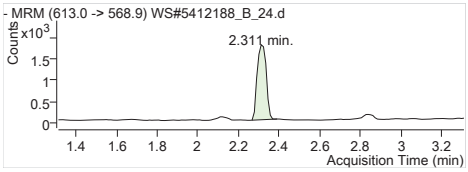



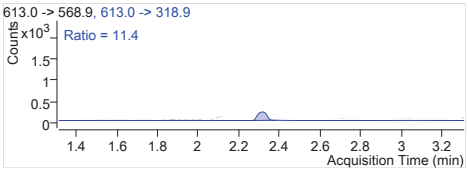

**PFDA 1** 513.0 -> 468.9
RT (Exp. RT): 2.135 (2.135)
Calc. conc. 0.90 µg/L
Area ratio: 0.48730
Sample type: CC



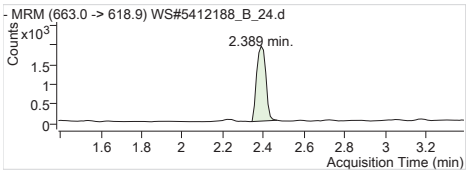



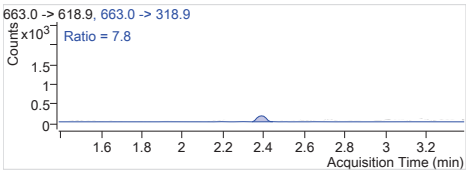

**PFUnA 1** 563.0 -> 518.9
RT (Exp. RT): 2.223 (2.234)
Calc. conc. 0.90 µg/L
Area ratio: 0.43800
Sample type: CC



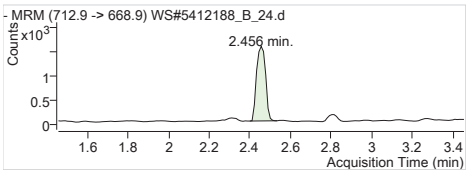



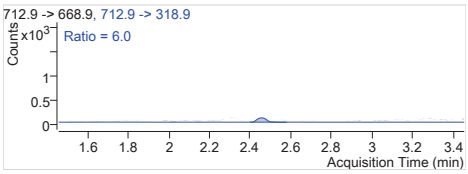

**PFDoA 1** 613.0 -> 568.9
RT (Exp. RT): 2.311 (2.311)
Calc. conc. 0.90 µg/L
Area ratio: 0.42307
Sample type: CC



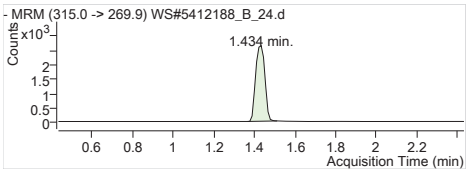



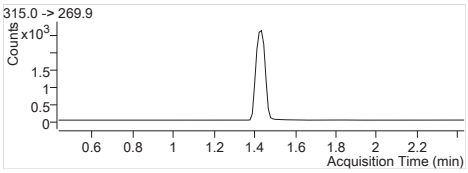

**PFTrDA 1** 663.0 -> 618.9
RT (Exp. RT): 2.389 (2.389)
Calc. conc. 0.84 µg/L
Area ratio: 0.42451
Sample type: CC



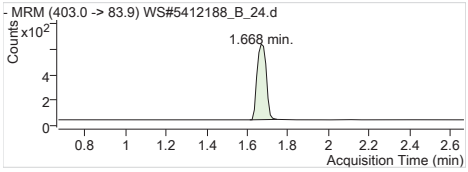



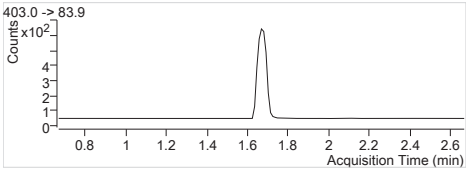

**PFTeDA 1** 712.9 -> 668.9
RT (Exp. RT): 2.456 (2.456)
Calc. conc. 0.80 µg/L
Area ratio: 0.33898
Sample type: CC



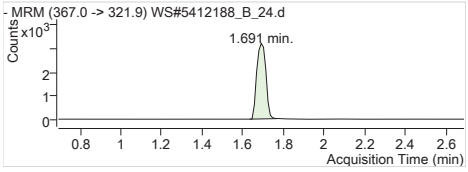



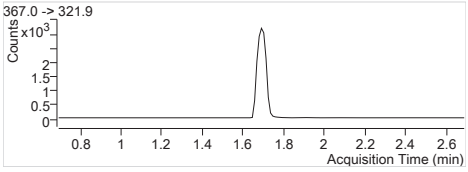

**13C2-PFHxA** 315.0 -> 269.9
RT (Exp. RT): 1.434 (1.434)
Calc. conc. 88.85 µg/L
Area ratio: 0.22084
Sample type: CC



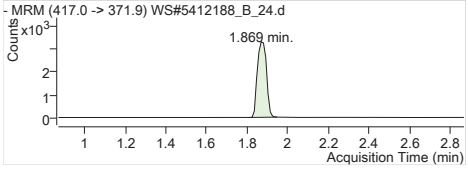



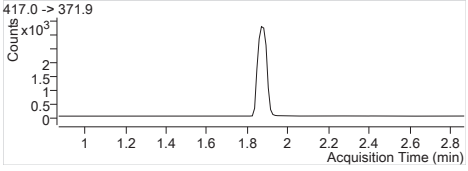

**18O2-PFHxS** 403.0 -> 83.9
RT (Exp. RT): 1.668 (1.668)
Calc. conc. 96.04 µg/L
Area ratio: 0.04987
Sample type: CC



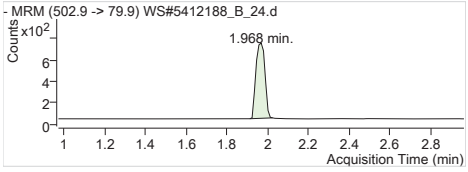



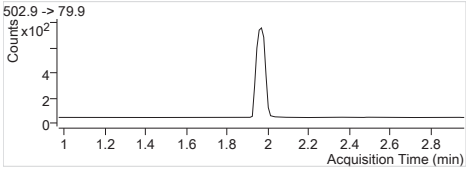

**13C4-PFHpA** 367.0 -> 321.9
RT (Exp. RT): 1.691 (1.691)
Calc. conc. 91.39 µg/L
Area ratio: 0.26312
Sample type: CC



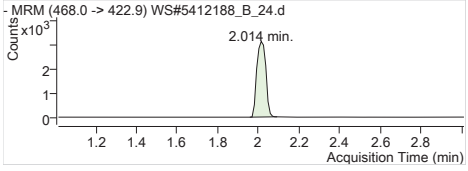



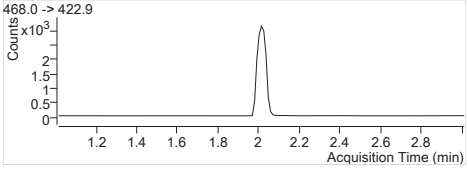

**13C4-PFOA** 417.0 -> 371.9
RT (Exp. RT): 1.869 (1.869)
Calc. conc. 91.79 µg/L
Area ratio: 0.27262
Sample type: CC



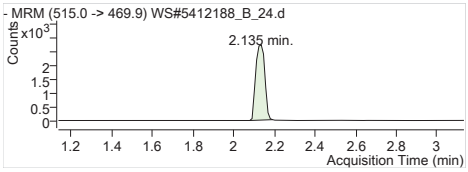



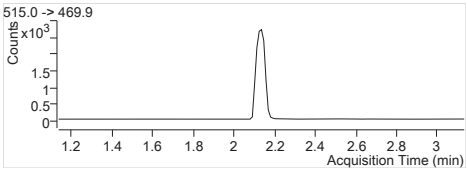

**13C4-PFOS** 502.9 -> 79.9
RT (Exp. RT): 1.968 (1.968)
Calc. conc. 96.70 µg/L
Area ratio: 0.05814
Sample type: CC



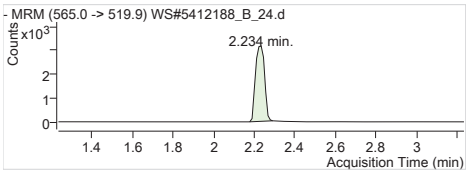



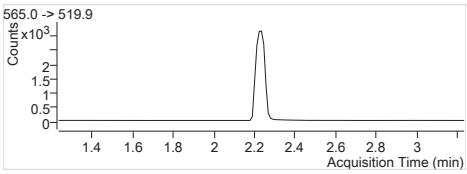

**13C5-PFNA** 468.0 -> 422.9
RT (Exp. RT): 2.014 (2.014)
Calc. conc. 89.38 µg/L
Area ratio: 0.25710
Sample type: CC



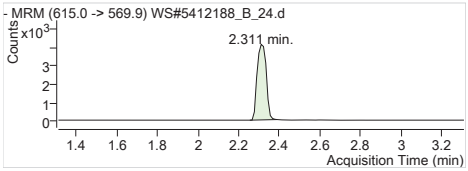



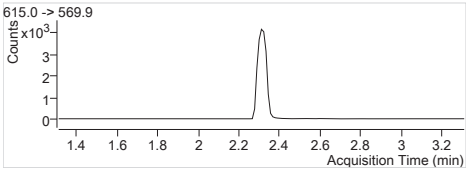

**13C2-PFDA** 515.0 -> 469.9
RT (Exp. RT): 2.135 (2.135)
Calc. conc. 88.24 µg/L
Area ratio: 0.19434
Sample type: CC



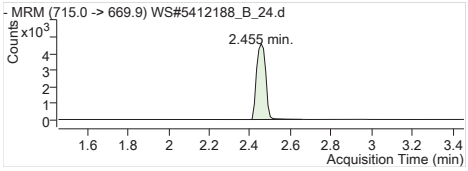



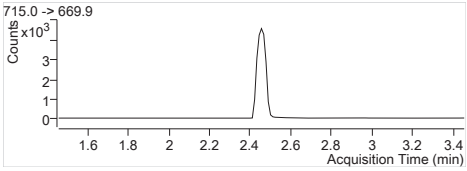

**13C2-PFUnA** 565.0 -> 519.9
RT (Exp. RT): 2.234 (2.234)
Calc. conc. 88.65 µg/L
Area ratio: 0.22706
Sample type: CC



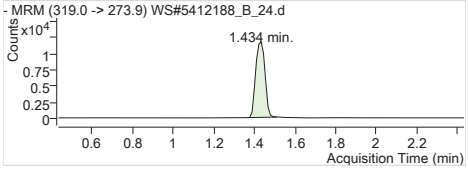



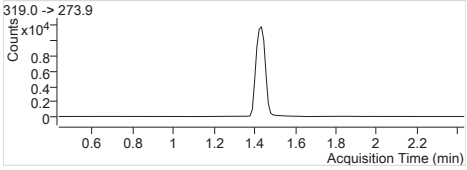

**13C2-PFDoA** 615.0 -> 569.9
RT (Exp. RT): 2.311 (2.311)
Calc. conc. 92.16 µg/L
Area ratio: 0.29903
Sample type: CC



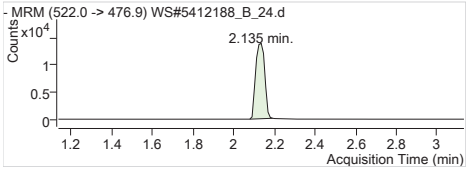



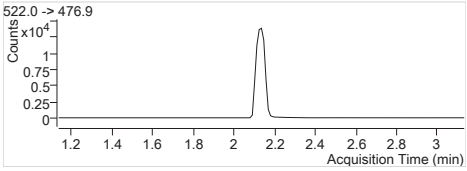

**13C2-PFTeDA** 715.0 -> 669.9
RT (Exp. RT): 2.455 (2.455)
Calc. conc. 92.60 µg/L
Area ratio: 0.33031
Sample type: CC




**13C6-PFHxA** 319.0 -> 273.9
RT (Exp. RT): 1.434 (1.434)
Calc. conc. 119.29 µg/L
Area ratio: 0
Sample type: CC



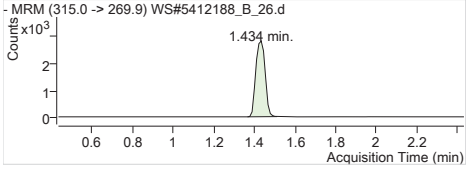

**13C9-PFDA** 522.0 -> 476.9
RT (Exp. RT): 2.135 (2.135)
Calc. conc. 115.14 µg/L
Area ratio: 0
Sample type: CC

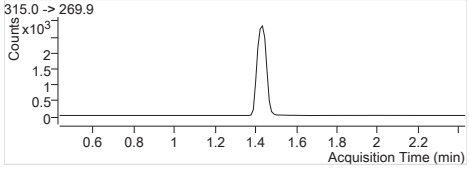
**Batch Path** T:\lcms4\PFC\20180226\WS#5412188_B\QuantResults\PFC_Water_Low_180227_WS#5412188_B_EToxics

| | | | |
|---|---|---|---|
| **Sample Name** | **CCV** | **Instrument** | LCMS04 |
| **Data File** | WS#5412188_B_26.d | **Operator** | |
| **Sample Type** | CC | **Dilution** | 1 |
| **Acq. Method** | PFC_Water_Low.m | **Position** | P1-C4 |
| **Acq. Date** | 2018/02/27 4:05:42 PM | **Injection Volume** | Per Method |
| **Sample Annotation** | - | | |

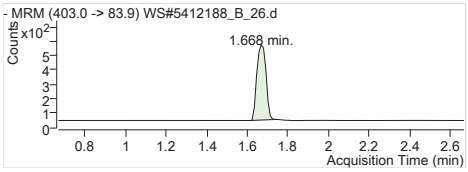
| ISTD Compounds | Response | RT | Target conc. | | |
|---|---|---|---|---|---|
| MPFHxA | 8942 | 1.43 | 1 µg/L | | |
| MPFHxS | 1636 | 1.67 | 1 µg/L | | |
| MPFHpA | 10206 | 1.69 | 1 µg/L | | |
| MPFOA | 9905 | 1.87 | 1 µg/L | | |
| MPFOS | 2269 | 1.97 | 1 µg/L | | |
| MPFNA | 10486 | 2.01 | 1 µg/L | | |
| MPFDA | 8884 | 2.14 | 1 µg/L | | |
| MPFUnA | 10456 | 2.23 | 1 µg/L | | |
| MPFDoA | 13296 | 2.31 | 1 µg/L | | |
| MPFTeDA | 14837 | 2.46 | 1 µg/L | | |
| 13C6-PFHxA IS | 33996 | 1.43 | 1 µg/L | | |
| 13C9-PFDA IS | 38214 | 2.13 | 1 µg/L | | |

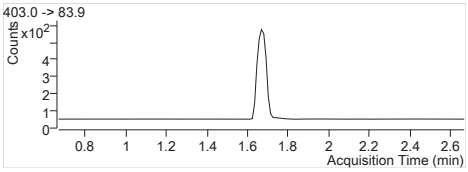
| Compound | Response | RT | Target Conc. | Calc. Conc. | Accuracy |
|---|---|---|---|---|---|
| PFBS 1 | 10354 | 1.09 | 12.50 | 13.94 µg/L | 111.55 |
| PFHxA 1 | 42197 | 1.43 | 12.50 | 11.36 µg/L | 90.88 |
| PFHxS 1 | 10319 | 1.67 | 12.50 | 14.05 µg/L | 112.37 |
| PFHpA 1 | 52411 | 1.69 | 12.50 | 11.30 µg/L | 90.44 |
| PFOA 1 | 58092 | 1.87 | 12.50 | 12.90 µg/L | 103.21 |
| PFOS 1 | 9998 | 1.96 | 12.50 | 10.68 µg/L | 85.42 |
| PFNA 1 | 50160 | 2.01 | 12.50 | 11.14 µg/L | 89.10 |
| PFDA 1 | 54548 | 2.14 | 12.50 | 12.73 µg/L | 101.87 |
| PFUnA 1 | 57154 | 2.23 | 12.50 | 12.10 µg/L | 96.79 |
| PFDoA 1 | 69935 | 2.31 | 12.50 | 11.88 µg/L | 95.02 |
| PFTrDA 1 | 77938 | 2.39 | 12.50 | 11.53 µg/L | 92.27 |
| PFTeDA 1 | 67793 | 2.46 | 12.50 | 12.02 µg/L | 96.20 |
| 13C2-PFHxA | 8942 | 1.43 | 100.00 | 105.82 µg/L | 105.82 |
| 18O2-PFHxS | 1636 | 1.67 | 100.00 | 92.67 µg/L | 92.67 |
| 13C4-PFHpA | 10206 | 1.69 | 100.00 | 104.27 µg/L | 104.27 |
| 13C4-PFOA | 9905 | 1.87 | 100.00 | 98.10 µg/L | 98.10 |
| 13C4-PFOS | 2269 | 1.97 | 100.00 | 111.00 µg/L | 111.00 |
| 13C5-PFNA | 10487 | 2.01 | 100.00 | 107.24 µg/L | 107.24 |
| 13C2-PFDA | 8752 | 2.14 | 100.00 | 103.99 µg/L | 103.99 |
| 13C2-PFUnA | 10456 | 2.23 | 100.00 | 106.83 µg/L | 106.83 |
| 13C2-PFDoA | 13296 | 2.31 | 100.00 | 107.23 µg/L | 107.23 |
| 13C2-PFTeDA | 14945 | 2.46 | 100.00 | 109.63 µg/L | 109.63 |
| 13C6-PFHxA | 33996 | 1.43 | 100.00 | 108.50 µg/L | 108.50 |
| 13C9-PFDA | 38214 | 2.13 | 100.00 | 102.55 µg/L | 102.55 |



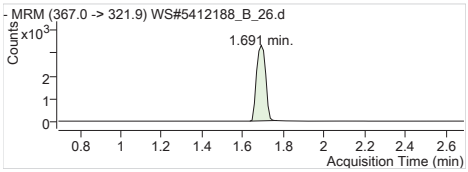



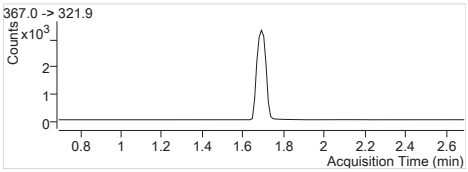

| | |
|---|---|
| **MPFHxA** | Internal Standard |
| RT (Exp. RT): | 1.434 (1.434) |
| Concentration: | 1 µg/L |
| Sample type: | CC |



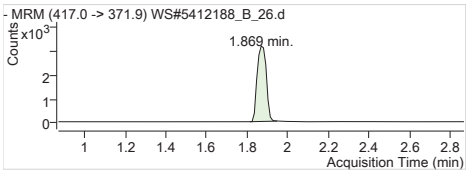



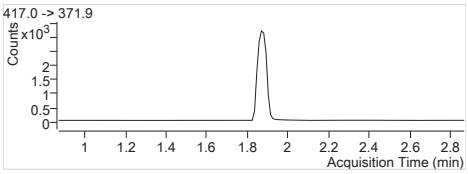

**MPFHxS** Internal Standard
RT (Exp. RT): 1.668 (1.668)
Concentration: 1 µg/L
Sample type: CC



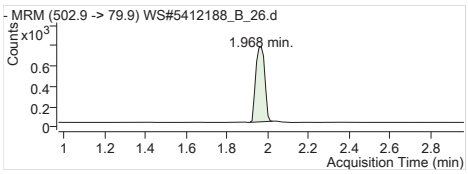



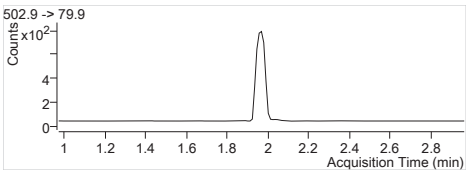

**MPFHpA** Internal Standard
RT (Exp. RT): 1.691 (1.691)
Concentration: 1 µg/L
Sample type: CC



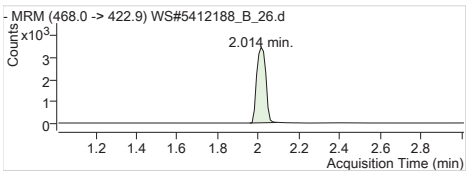



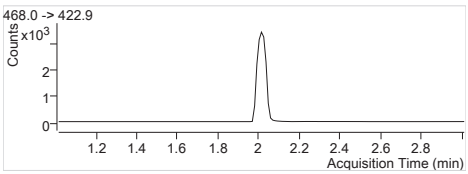

**MPFOA** Internal Standard
RT (Exp. RT): 1.869 (1.869)
Concentration: 1 µg/L
Sample type: CC



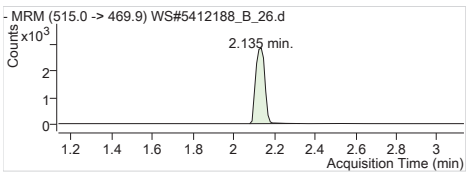



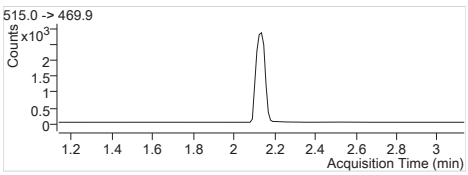

**MPFOS** Internal Standard
RT (Exp. RT): 1.968 (1.968)
Concentration: 1 µg/L
Sample type: CC



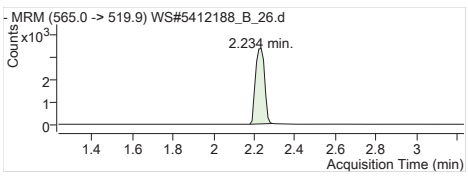



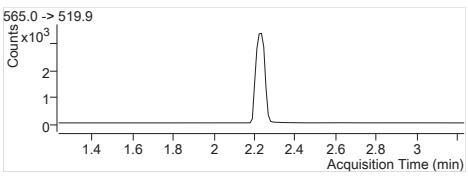

**MPFNA** Internal Standard
RT (Exp. RT): 2.014 (2.014)
Concentration: 1 µg/L
Sample type: CC



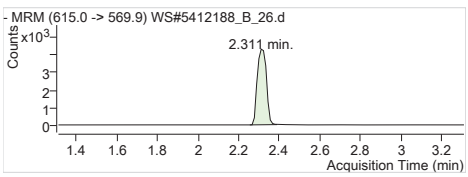



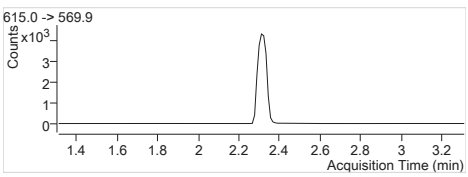

**MPFDA** Internal Standard
RT (Exp. RT): 2.135 (2.135)
Concentration: 1 µg/L
Sample type: CC



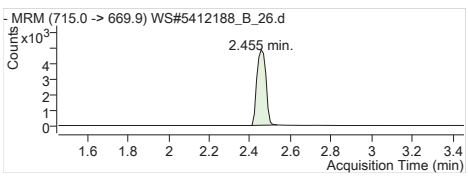



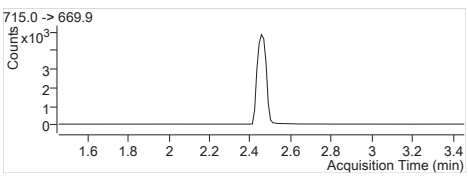

**MPFUnA** Internal Standard
RT (Exp. RT): 2.234 (2.234)
Concentration: 1 µg/L
Sample type: CC



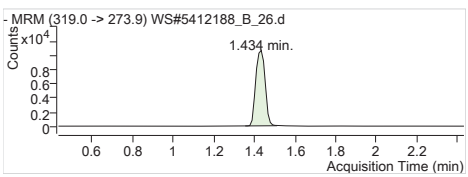



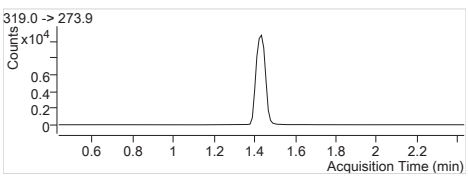

**MPFDoA** Internal Standard
RT (Exp. RT): 2.311 (2.311)
Concentration: 1 µg/L
Sample type: CC



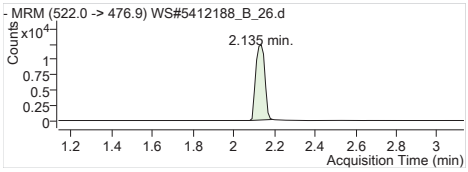



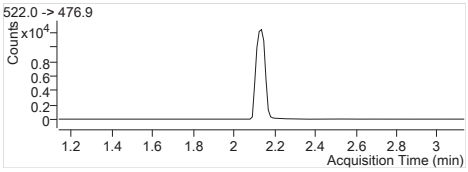

**MPFTeDA** Internal Standard
RT (Exp. RT): 2.455 (2.455)
Concentration: 1 µg/L
Sample type: CC



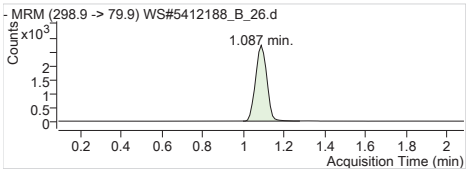



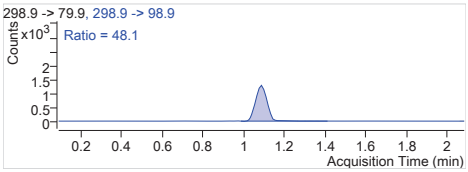

**13C6-PFHxA IS** Internal Standard
RT (Exp. RT): 1.434 (1.434)
Concentration: 1 µg/L
Sample type: CC



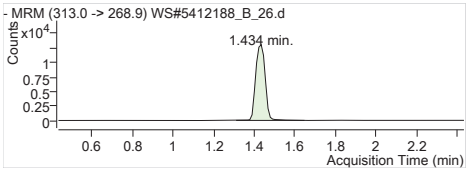



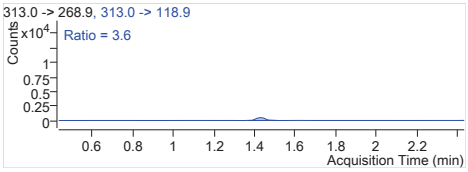

**13C9-PFDA IS** Internal Standard
RT (Exp. RT): 2.135 (2.135)
Concentration: 1 µg/L
Sample type: CC



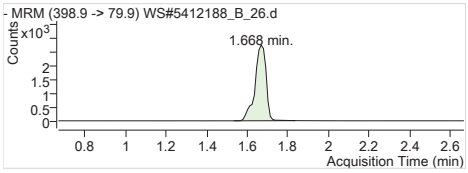



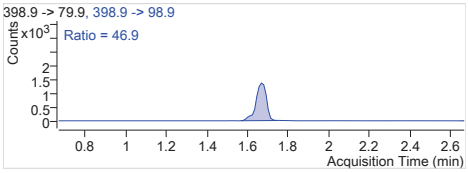

**PFBS 1** 298.9 -> 79.9
RT (Exp. RT): 1.087 (1.087)
Calc. conc. 13.94 µg/L
Area ratio: 6.32885
Sample type: CC



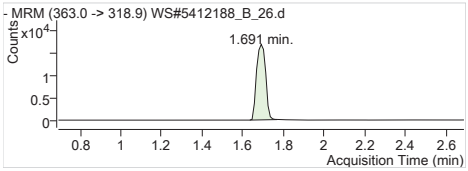



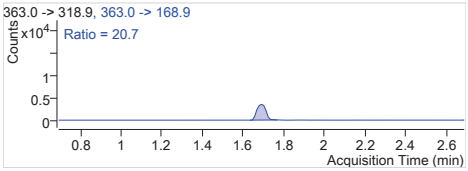

**PFHxA 1** 313.0 -> 268.9
RT (Exp. RT): 1.434 (1.434)
Calc. conc. 11.36 µg/L
Area ratio: 4.71897
Sample type: CC



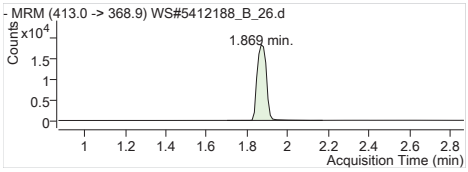



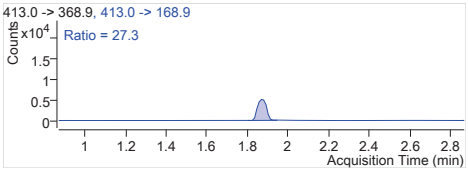

**PFHxS 1** 398.9 -> 79.9
RT (Exp. RT): 1.668 (1.668)
Calc. conc. 14.05 µg/L
Area ratio: 6.30746
Sample type: CC



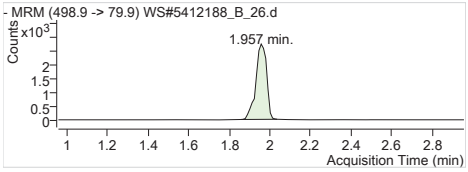



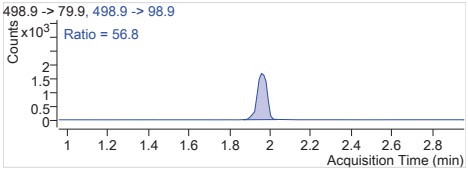

**PFHpA 1** 363.0 -> 318.9
RT (Exp. RT): 1.691 (1.691)
Calc. conc. 11.30 µg/L
Area ratio: 5.13531
Sample type: CC



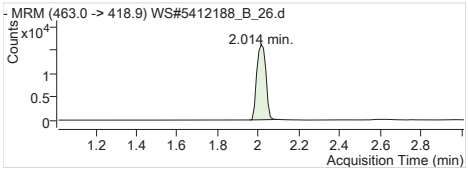



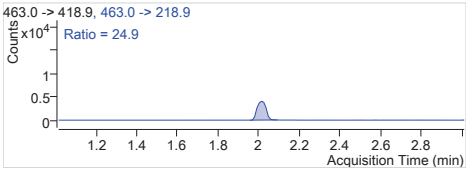

**PFOA 1** 413.0 -> 368.9
RT (Exp. RT): 1.869 (1.869)
Calc. conc. 12.90 µg/L
Area ratio: 5.86492
Sample type: CC



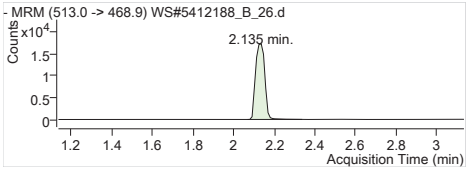



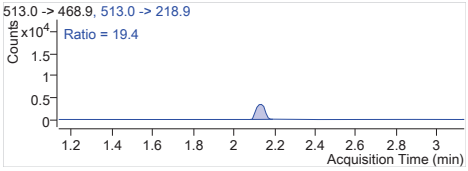

**PFOS 1** 498.9 -> 79.9
RT (Exp. RT): 1.957 (1.957)
Calc. conc. 10.68 µg/L
Area ratio: 4.40635
Sample type: CC



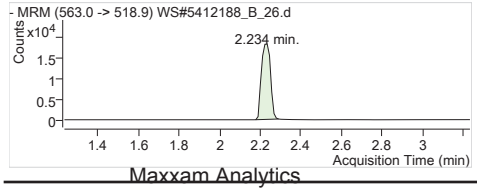



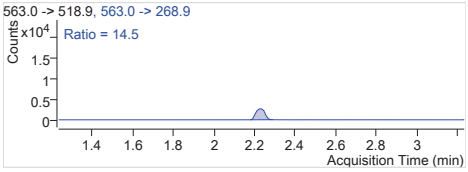

**PFNA 1** 463.0 -> 418.9
RT (Exp. RT): 2.014 (2.014)
Calc. conc. 11.14 µg/L
Area ratio: 4.78352
Sample type: CC



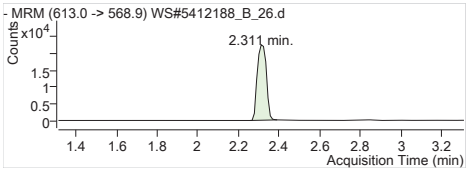



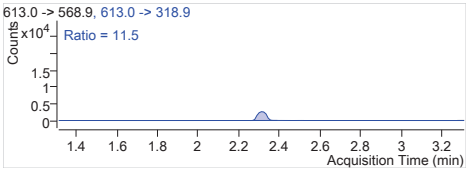

**PFDA 1** 513.0 -> 468.9
RT (Exp. RT): 2.135 (2.135)
Calc. conc. 12.73 µg/L
Area ratio: 6.14003
Sample type: CC



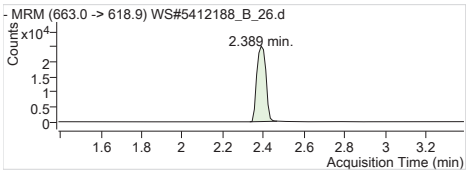



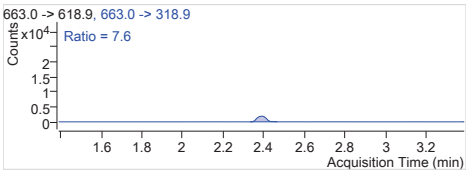

**PFUnA 1** 563.0 -> 518.9
RT (Exp. RT): 2.234 (2.234)
Calc. conc. 12.10 µg/L
Area ratio: 5.46614
Sample type: CC



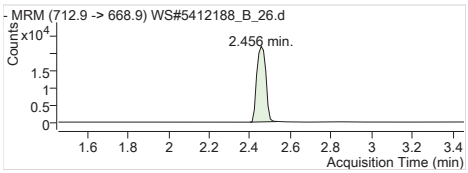



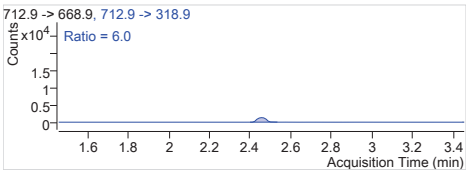

**PFDoA 1** 613.0 -> 568.9
RT (Exp. RT): 2.311 (2.311)
Calc. conc. 11.88 µg/L
Area ratio: 5.25985
Sample type: CC



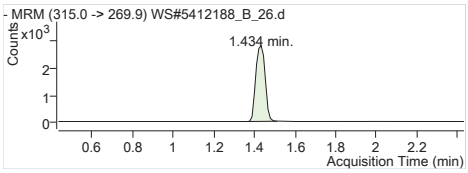



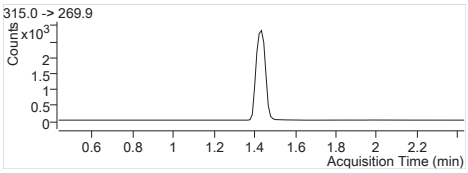

**PFTrDA 1** 663.0 -> 618.9
RT (Exp. RT): 2.389 (2.389)
Calc. conc. 11.53 µg/L
Area ratio: 5.25295
Sample type: CC



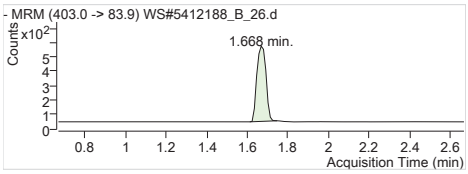



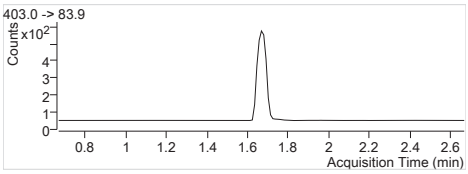

**PFTeDA 1** 712.9 -> 668.9
RT (Exp. RT): 2.456 (2.456)
Calc. conc. 12.02 µg/L
Area ratio: 4.56919
Sample type: CC



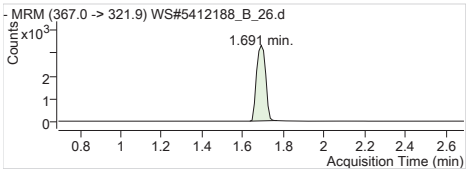



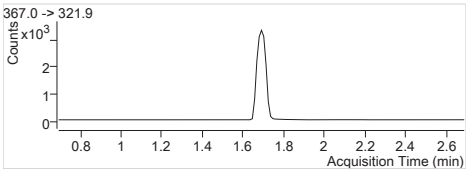

**13C2-PFHxA** 315.0 -> 269.9
RT (Exp. RT): 1.434 (1.434)
Calc. conc. 105.82 µg/L
Area ratio: 0.26303
Sample type: CC



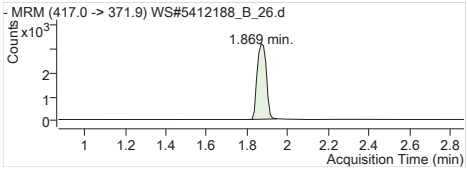



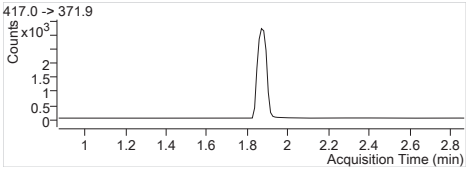

**18O2-PFHxS** 403.0 -> 83.9
RT (Exp. RT): 1.668 (1.668)
Calc. conc. 92.67 µg/L
Area ratio: 0.04812
Sample type: CC



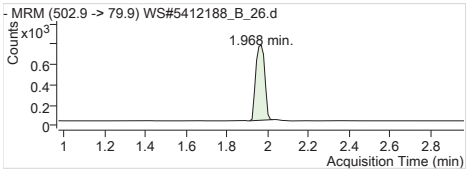



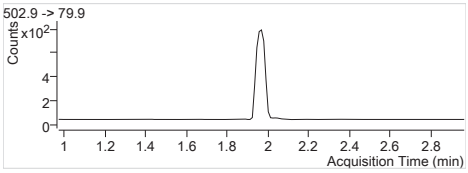

**13C4-PFHpA** 367.0 -> 321.9
RT (Exp. RT): 1.691 (1.691)
Calc. conc. 104.27 µg/L
Area ratio: 0.30021
Sample type: CC



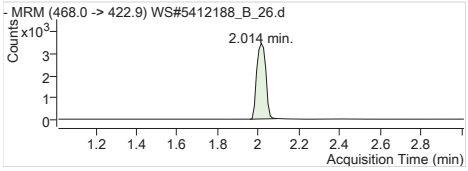



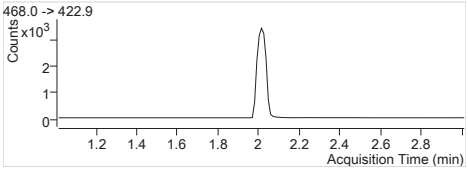

**13C4-PFOA** 417.0 -> 371.9
RT (Exp. RT): 1.869 (1.869)
Calc. conc. 98.10 µg/L
Area ratio: 0.29136
Sample type: CC



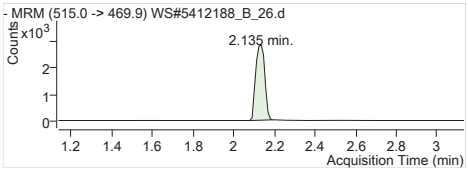



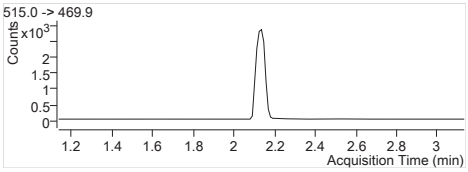

**13C4-PFOS** 502.9 -> 79.9
RT (Exp. RT): 1.968 (1.968)
Calc. conc. 111.00 µg/L
Area ratio: 0.06674
Sample type: CC



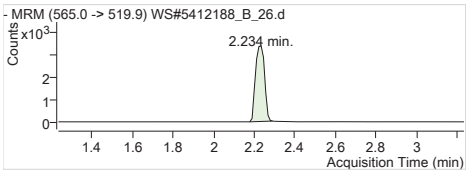



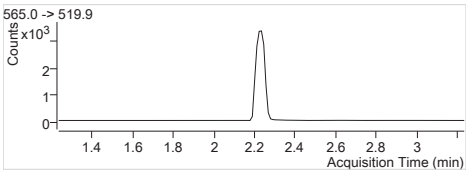

**13C5-PFNA** 468.0 -> 422.9
RT (Exp. RT): 2.014 (2.014)
Calc. conc. 107.24 µg/L
Area ratio: 0.30848
Sample type: CC



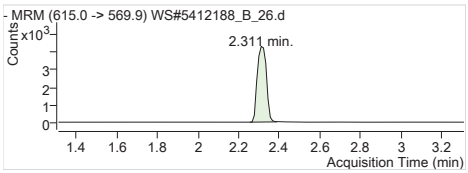



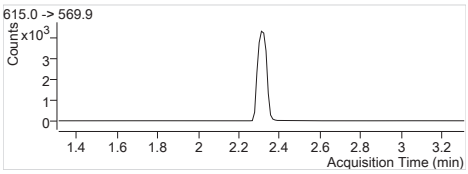

**13C2-PFDA** 515.0 -> 469.9
RT (Exp. RT): 2.135 (2.135)
Calc. conc. 103.99 µg/L
Area ratio: 0.22903
Sample type: CC



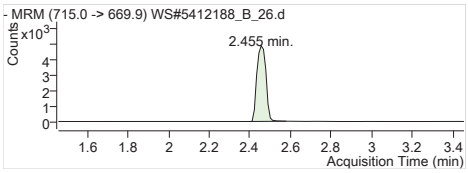



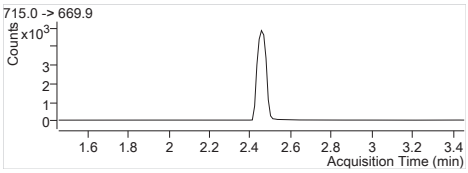

**13C2-PFUnA** 565.0 -> 519.9
RT (Exp. RT): 2.234 (2.234)
Calc. conc. 106.83 µg/L
Area ratio: 0.27362
Sample type: CC



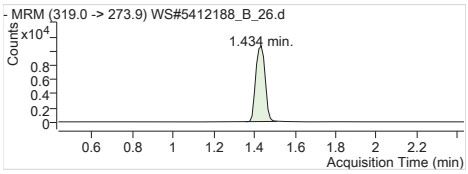



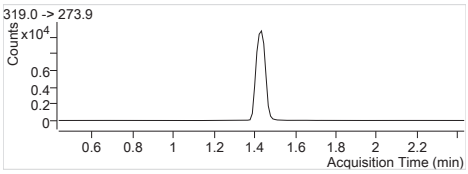

**13C2-PFDoA** 615.0 -> 569.9
RT (Exp. RT): 2.311 (2.311)
Calc. conc. 107.23 µg/L
Area ratio: 0.34794
Sample type: CC



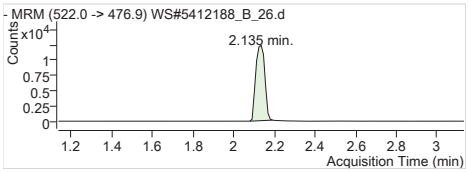



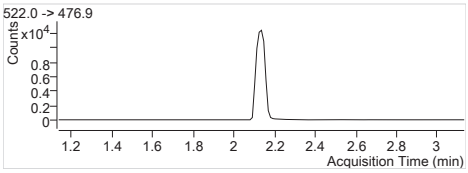

**13C2-PFTeDA** 715.0 -> 669.9
RT (Exp. RT): 2.455 (2.455)
Calc. conc. 109.63 µg/L
Area ratio: 0.39109
Sample type: CC




**13C6-PFHxA** 319.0 -> 273.9
RT (Exp. RT): 1.434 (1.434)
Calc. conc. 108.50 µg/L
Area ratio: 0
Sample type: CC




**13C9-PFDA** 522.0 -> 476.9
RT (Exp. RT): 2.135 (2.135)
Calc. conc. 102.55 µg/L
Area ratio: 0
Sample type: CC

# Quantitation Results

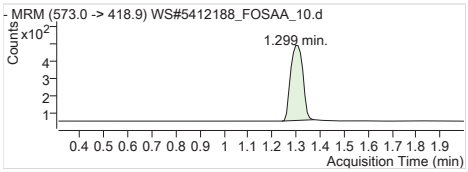
Agilent Technologies

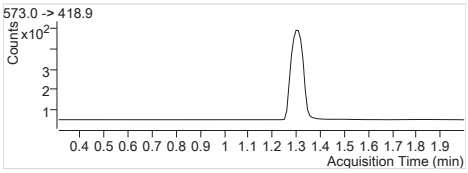
| | |
|---|---|
| **Batch Path** | T:\lcms4\PFC\20180226\WS#5412188_FOSAA\QuantResults\PFC_Water_Low_180226_WS#5412188_FOSAA_ETOxics |

| | | | |
|---|---|---|---|
| **Sample Name** | **ISC** | **Instrument** | LCMS04 |
| **Data File** | WS#5412188_FOSAA_10.d | **Operator** | |
| **Sample Type** | CC | **Dilution** | 1 |
| **Acq. Method** | PFC_Water_Low_FOSAA.m | **Position** | P1-C1 |
| **Acq. Date** | 2018/02/27 4:58:53 AM | **Injection Volume** | Per Method |
| **Sample Annotation** | - | | |

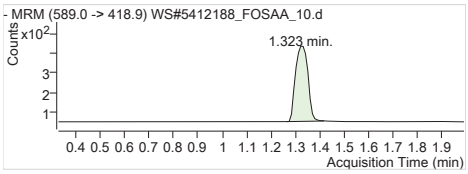
| ISTD Compounds | Response | RT | Target conc. | | |
|---|---|---|---|---|---|
| D3-MeFOSAA IS | 1568 | 1.30 | 1 µg/L | | |
| D5-EtFOSAA IS | 1373 | 1.32 | 1 µg/L | | |
| 13C9-PFDA IS | 28516 | 0.89 | 1 µg/L | | |

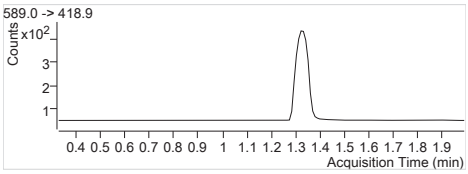
| Compound | Response | RT | Target Conc. | Calc. Conc. | Accuracy |
|---|---|---|---|---|---|
| MeFOSAA 1 | 597 | 1.30 | 0.83 | 0.86 µg/L | 103.80 |
| EtFOSAA 1 | 589 | 1.32 | 0.83 | 0.83 µg/L | 100.55 |
| D3-MeFOSAA | 1605 | 1.30 | 100.00 | 92.54 µg/L | 92.54 |
| D5-EtFOSAA | 1393 | 1.32 | 100.00 | 94.32 µg/L | 94.32 |
| 13C9-PFDA | 27998 | 0.89 | 100.00 | 110.12 µg/L | 110.12 |



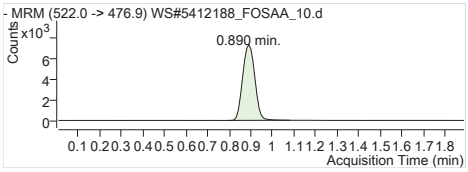



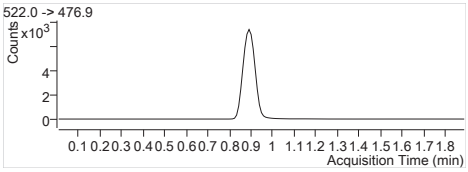

**D3-MeFOSAA IS** Internal Standard
RT (Exp. RT): 1.299 (1.308)
Concentration: 1 µg/L
Sample type: CC



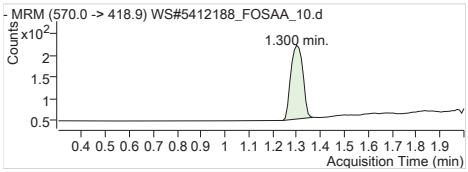



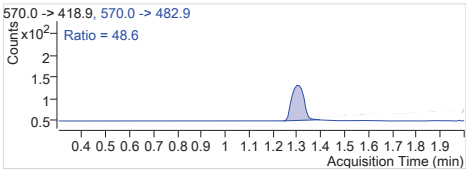

**D5-EtFOSAA IS** Internal Standard
RT (Exp. RT): 1.323 (1.323)
Concentration: 1 µg/L
Sample type: CC



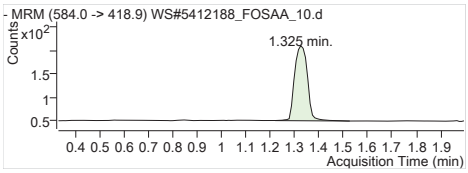



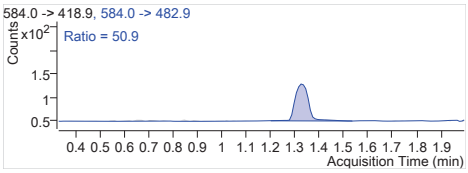

**13C9-PFDA IS** Internal Standard
RT (Exp. RT): 0.890 (0.890)
Concentration: 1 µg/L
Sample type: CC



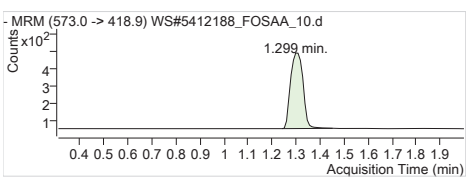



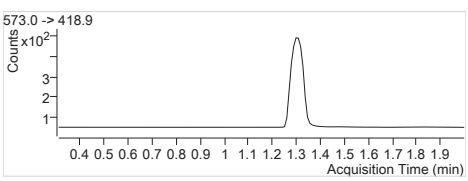

**MeFOSAA 1** 570.0 -> 418.9
RT (Exp. RT): 1.300 (1.300)
Calc. conc. 0.86 µg/L
Area ratio: 0.38074
Sample type: CC



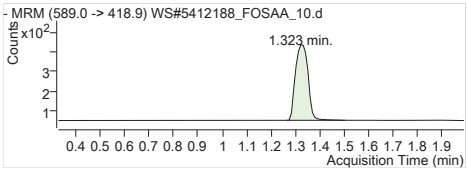



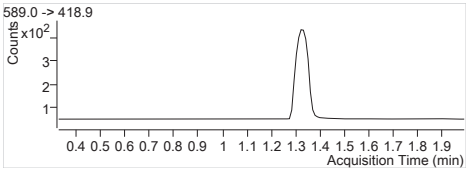

**EtFOSAA 1** 584.0 -> 418.9
RT (Exp. RT): 1.325 (1.325)
Calc. conc. 0.83 µg/L
Area ratio: 0.42899
Sample type: CC



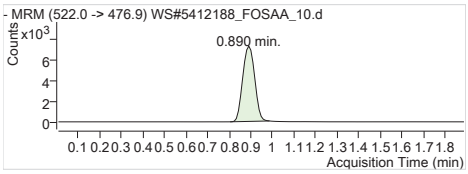



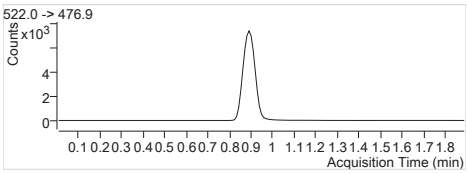

**D3-MeFOSAA** 573.0 -> 418.9
RT (Exp. RT): 1.299 (1.308)
Calc. conc. 92.54 µg/L
Area ratio: 0.05628
Sample type: CC




| | |
|---|---|
| **D5-EtFOSAA** | 589.0 -> 418.9 |
| RT (Exp. RT): | 1.323 (1.323) |
| Calc. conc. | 94.32 µg/L |
| Area ratio: | 0.04885 |
| Sample type: | CC |



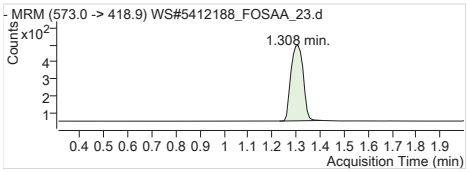

| | |
|---|---|
| **13C9-PFDA** | 522.0 -> 476.9 |
| RT (Exp. RT): | 0.890 (0.890) |
| Calc. conc. | 110.12 µg/L |
| Area ratio: | 0 |
| Sample type: | CC |

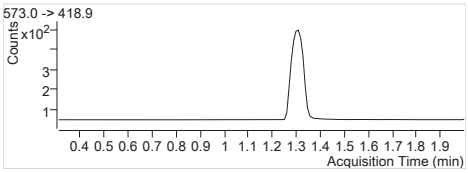
| | |
|---|---|
| **Batch Path** | T:\lcms4\PFC\20180226\WS#5412188_FOSAA\QuantResults\PFC_Water_Low_180226_WS#5412188_FOSAA_EToxics |

| | | | |
|---|---|---|---|
| **Sample Name** | **CCV** | **Instrument** | LCMS04 |
| **Data File** | WS#5412188_FOSAA_23.d | **Operator** | |
| **Sample Type** | CC | **Dilution** | 1 |
| **Acq. Method** | PFC_Water_Low_FOSAA.m | **Position** | P1-C4 |
| **Acq. Date** | 2018/02/27 5:30:12 AM | **Injection Volume** | Per Method |
| **Sample Annotation** | - | | |

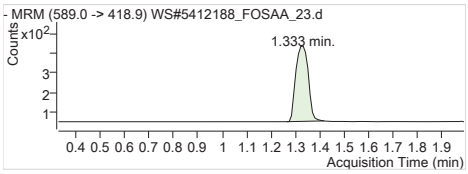
| ISTD Compounds | Response | RT | Target conc. | | |
|---|---|---|---|---|---|
| D3-MeFOSAA IS | 1594 | 1.31 | 1 µg/L | | |
| D5-EtFOSAA IS | 1385 | 1.33 | 1 µg/L | | |
| 13C9-PFDA IS | 25487 | 0.89 | 1 µg/L | | |

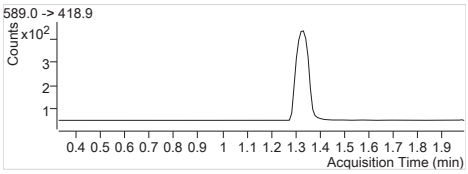
| Compound | Response | RT | Target Conc. | Calc. Conc. | Accuracy |
|---|---|---|---|---|---|
| MeFOSAA 1 | 7416 | 1.30 | 12.50 | 12.26 µg/L | 98.08 |
| EtFOSAA 1 | 7374 | 1.32 | 12.50 | 11.99 µg/L | 95.94 |
| D3-MeFOSAA | 1613 | 1.31 | 100.00 | 104.05 µg/L | 104.05 |
| D5-EtFOSAA | 1400 | 1.33 | 100.00 | 106.06 µg/L | 106.06 |
| 13C9-PFDA | 24937 | 0.89 | 100.00 | 98.08 µg/L | 98.08 |



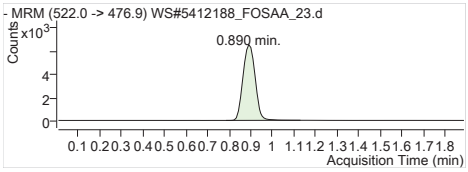



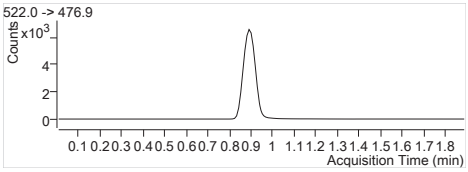

**D3-MeFOSAA IS** Internal Standard
RT (Exp. RT): 1.308 (1.308)
Concentration: 1 µg/L
Sample type: CC



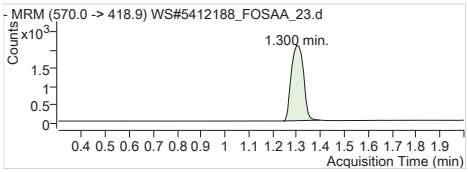



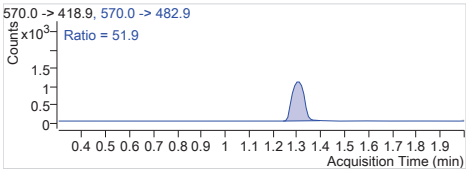

**D5-EtFOSAA IS** Internal Standard
RT (Exp. RT): 1.333 (1.323)
Concentration: 1 µg/L
Sample type: CC



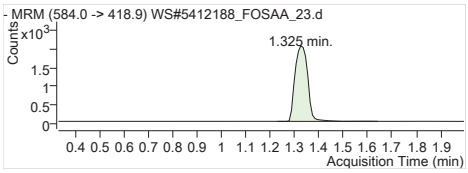



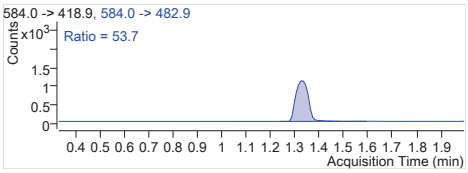

**13C9-PFDA IS** Internal Standard
RT (Exp. RT): 0.890 (0.890)
Concentration: 1 µg/L
Sample type: CC



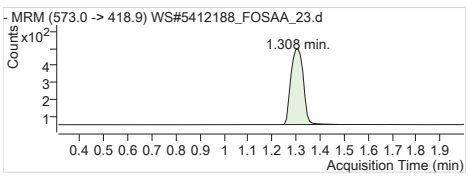



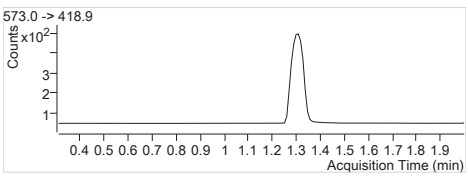

**MeFOSAA 1** 570.0 -> 418.9
RT (Exp. RT): 1.300 (1.300)
Calc. conc. 12.26 µg/L
Area ratio: 4.65245
Sample type: CC



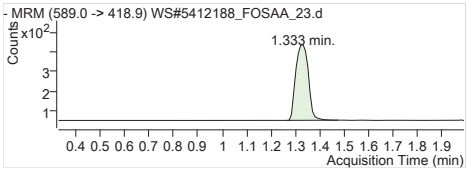



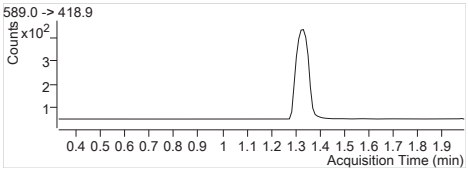

**EtFOSAA 1** 584.0 -> 418.9
RT (Exp. RT): 1.325 (1.325)
Calc. conc. 11.99 µg/L
Area ratio: 5.32419
Sample type: CC



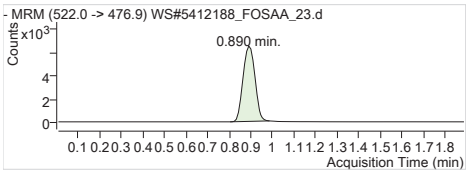



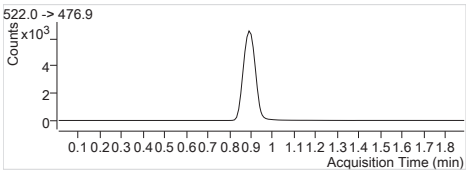

**D3-MeFOSAA** 573.0 -> 418.9
RT (Exp. RT): 1.308 (1.308)
Calc. conc. 104.05 µg/L
Area ratio: 0.06329
Sample type: CC




| | |
|---|---|
| **D5-EtFOSAA** | 589.0 -> 418.9 |
| RT (Exp. RT): | 1.333 (1.323) |
| Calc. conc. | 106.06 µg/L |
| Area ratio: | 0.05493 |
| Sample type: | CC |




| | |
|---|---|
| **13C9-PFDA** | 522.0 -> 476.9 |
| RT (Exp. RT): | 0.890 (0.890) |
| Calc. conc. | 98.08 µg/L |
| Area ratio: | 0 |
| Sample type: | CC |



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

"EB-CEF-MFS-020818-17","E537","IN","GBV345","MAXXAM","13C2PFDA","13C2-Perfluorodecanoic acid","99","%","","-99","NA","","SUR","99","","-99","NA","YES","-99","","1","1","-99","TEST"
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"EB-CEF-MFS-020818-17","E537","IN","GBV345","MAXXAM","13C2PFHXA","13C2-Perfluorohexanoic acid","105","%","","-99","NA","","SUR","105","","-99","NA","YES","-99","","1","1","-99","TEST"
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"EB-CEF-MFS-020818-17","E537","IN","GBV345","MAXXAM","13C2PFUA","13C2-Perfluoroundecanoic acid","94","%","","-99","NA","","SUR","94","","-99","NA","YES","-99","","1","1","-99","TEST"
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"EB-CEF-MFS-020818-17","E537","IN","GBV345","MAXXAM","18O2PFHXS","18O2-Perfluorohexanesulfonate","103","%","","-99","NA","","SUR","103","","-99","NA","YES","-99","","1","1","-99","TEST"
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"EB-CEF-MFS-020818-17","E537","IN","GBV345","MAXXAM","375-73-5","Perfluorobutanesulfonic acid","5.4","ng/L","U","5.4","MDL","","NM","","","20","PQL","YES","-99","","1","1","20","TEST"
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"EB-CEF-MFS-020818-17","E537","IN","GBV345","MAXXAM","355-46-4","Perfluorohexanesulfonic acid","5.6","ng/L","U","5.6","MDL","","NM","","","20","PQL","YES","-99","","1","1","20","TEST"
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"EB-CEF-MFS-020818-17","E537","IN","GBV345","MAXXAM","335-67-1","Perfluorooctanoic acid","3.3","ng/L","U","3.3","MDL","","NM","","","20","PQL","YES","-99","","1","1","20","TEST"
"EB-CEF-MFS-020818-17","E537","IN","GBV345","MAXXAM","375-95-1","Perfluorononanoic acid","8.7","ng/L","U","8.7","MDL","","NM","","","20","PQL","YES","-99","","1","1","20","TEST"
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"EB-CEF-MFS-020818-17","E537","IN","GBV345","MAXXAM","376-06-7","Perfluorotetradecanoic acid","2.7","ng/L","U","2.7","MDL","","NM","","","20","PQL","YES","-99","","1","1","20","TEST"

"EB-CEF-MFS-020818-17","E537","IN","GBV345","MAXXAM","72629-94-8","Perfluorotridecanoic acid","3.8","ng/L","U","3.8","MDL","","NM","","","20","PQL","YES","-99","","1","1","20","TEST"
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"EB-CEF-MFS-020818-18","E537","IN","GBV346","MAXXAM","13C2PFDOA","13C2-Perfluorododecanoic acid","79","%","","-99","NA","","SUR","79","","-99","NA","YES","-99","","1","1","-99","TEST"
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"EB-CEF-MFS-020818-18","E537","IN","GBV346","MAXXAM","355-46-4","Perfluorohexanesulfonic acid","5.6","ng/L","U","5.6","MDL","","NM","","","20","PQL","YES","-99","","1","1","20","TEST"
"EB-CEF-MFS-020818-18","E537","IN","GBV346","MAXXAM","307-24-4","Perfluorohexanoic acid","3.5","ng/L","U","3.5","MDL","","NM","","","20","PQL","YES","-99","","1","1","20","TEST"
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"EB-CEF-MFS-020818-18","E537","IN","GBV346","MAXXAM","375-95-1","Perfluorononanoic acid","8.7","ng/L","U","8.7","MDL","","NM","","","20","PQL","YES","-99","","1","1","20","TEST"
"EB-CEF-MFS-020818-18","E537","IN","GBV346","MAXXAM","1763-23-1","Perfluorooctanesulfonic acid","21","ng/L","","6.0","MDL","","NM","","","20","PQL","YES","-99","","1","1","20","TEST"
"EB-CEF-MFS-020818-18","E537","IN","GBV346","MAXXAM","376-06-7","Perfluorotetradecanoic

acid","2.7","ng/L","U","2.7","MDL","","NM","","","20","PQL","YES","-99","","1","1","20","TEST"
"EB-CEF-MFS-020818-18","E537","IN","GBV346","MAXXAM","72629-94-8","Perfluorotridecanoic
acid","3.8","ng/L","U","3.8","MDL","","NM","","","20","PQL","YES","-99","","1","1","20","TEST"
"EB-CEF-MFS-020818-18","E537","IN","GBV346","MAXXAM","2058-94-8","Perfluoroundecanoic
acid","2.5","ng/L","U","2.5","MDL","","NM","","","20","PQL","YES","-99","","1","1","20","TEST"
"EB-CEF-MFS-020818-19","E537","IN","GBV347","MAXXAM","13C2PFDA","13C2-Perfluorodecanoic
acid","91","%","","-99","NA","","SUR","91","","-99","NA","YES","-99","","1","1","-99","TEST"
"EB-CEF-MFS-020818-19","E537","IN","GBV347","MAXXAM","13C2PFDOA","13C2-Perfluorododecanoic
acid","76","%","","-99","NA","","SUR","76","","-99","NA","YES","-99","","1","1","-99","TEST"
"EB-CEF-MFS-020818-19","E537","IN","GBV347","MAXXAM","13C2PFHXA","13C2-Perfluorohexanoic
acid","97","%","","-99","NA","","SUR","97","","-99","NA","YES","-99","","1","1","-99","TEST"
"EB-CEF-MFS-020818-19","E537","IN","GBV347","MAXXAM","13C2PFTDA","13C2-Perfluorotetradecanoic
acid","76","%","","-99","NA","","SUR","76","","-99","NA","YES","-99","","1","1","-99","TEST"
"EB-CEF-MFS-020818-19","E537","IN","GBV347","MAXXAM","13C2PFUA","13C2-Perfluoroundecanoic
acid","82","%","","-99","NA","","SUR","82","","-99","NA","YES","-99","","1","1","-99","TEST"
"EB-CEF-MFS-020818-19","E537","IN","GBV347","MAXXAM","375-22-4-13C","13C4-Perflurobutanoic
acid","88","%","","-99","NA","","SUR","88","","-99","NA","YES","-99","","1","1","-99","TEST"
"EB-CEF-MFS-020818-19","E537","IN","GBV347","MAXXAM","13C4PFHPA","13C4-Perfluoroheptanoic
acid","95","%","","-99","NA","","SUR","95","","-99","NA","YES","-99","","1","1","-99","TEST"
"EB-CEF-MFS-020818-19","E537","IN","GBV347","MAXXAM","1763-23-1_13","13C4-
Perfluorooctanesulfonate","83","%","","-99","NA","","SUR","83","","-99","NA","YES","-99","","1","1","-99","TEST"
"EB-CEF-MFS-020818-19","E537","IN","GBV347","MAXXAM","335-67-1_13C","13C4-Perfluorooctanoic
acid","92","%","","-99","NA","","SUR","92","","-99","NA","YES","-99","","1","1","-99","TEST"
"EB-CEF-MFS-020818-19","E537","IN","GBV347","MAXXAM","13C4PFNA","13C5-Perfluorononanoic
acid","88","%","","-99","NA","","SUR","88","","-99","NA","YES","-99","","1","1","-99","TEST"
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Perfluorohexanesulfonate","96","%","","-99","NA","","SUR","96","","-99","NA","YES","-99","","1","1","-99","TEST"
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PERFLUOROOCTANESULFONAMIDOACETIC
ACID","74","%","","-99","NA","","SUR","74","","-99","NA","YES","-99","","1","1","-99","TEST"
"EB-CEF-MFS-020818-19","E537","IN","GBV347","MAXXAM","D5-ETFOSAA","D5-
ETFOSAA","71","%","","-99","NA","","SUR","71","","-99","NA","YES","-99","","1","1","-99","TEST"
"EB-CEF-MFS-020818-19","E537","IN","GBV347","MAXXAM","2991-50-
6","EtFOSAA","3.3","ng/L","U","3.3","MDL","","NM","","","20","PQL","YES","-99","","1","1","20","TEST"
"EB-CEF-MFS-020818-19","E537","IN","GBV347","MAXXAM","2355-31-
9","MeFOSAA","2.9","ng/L","U","2.9","MDL","","NM","","","20","PQL","YES","-99","","1","1","20","TEST"
"EB-CEF-MFS-020818-19","E537","IN","GBV347","MAXXAM","375-73-5","Perfluorobutanesulfonic
acid","5.4","ng/L","U","5.4","MDL","","NM","","","20","PQL","YES","-99","","1","1","20","TEST"
"EB-CEF-MFS-020818-19","E537","IN","GBV347","MAXXAM","335-76-2","Perfluorodecanoic
acid","6.1","ng/L","U","6.1","MDL","","NM","","","20","PQL","YES","-99","","1","1","20","TEST"
"EB-CEF-MFS-020818-19","E537","IN","GBV347","MAXXAM","307-55-1","Perfluorododecanoic
acid","5.0","ng/L","U","5.0","MDL","","NM","","","20","PQL","YES","-99","","1","1","20","TEST"
"EB-CEF-MFS-020818-19","E537","IN","GBV347","MAXXAM","375-85-9","Perfluoroheptanoic
acid","7.4","ng/L","U","7.4","MDL","","NM","","","20","PQL","YES","-99","","1","1","20","TEST"
"EB-CEF-MFS-020818-19","E537","IN","GBV347","MAXXAM","355-46-4","Perfluorohexanesulfonic
acid","5.6","ng/L","U","5.6","MDL","","NM","","","20","PQL","YES","-99","","1","1","20","TEST"
"EB-CEF-MFS-020818-19","E537","IN","GBV347","MAXXAM","307-24-4","Perfluorohexanoic
acid","3.5","ng/L","U","3.5","MDL","","NM","","","20","PQL","YES","-99","","1","1","20","TEST"
"EB-CEF-MFS-020818-19","E537","IN","GBV347","MAXXAM","335-67-1","Perfluorooctanoic
acid","3.3","ng/L","U","3.3","MDL","","NM","","","20","PQL","YES","-99","","1","1","20","TEST"
"EB-CEF-MFS-020818-19","E537","IN","GBV347","MAXXAM","375-95-1","Perfluorononanoic
acid","8.7","ng/L","U","8.7","MDL","","NM","","","20","PQL","YES","-99","","1","1","20","TEST"
"EB-CEF-MFS-020818-19","E537","IN","GBV347","MAXXAM","1763-23-1","Perfluorooctanesulfonic
acid","6.0","ng/L","U","6.0","MDL","","NM","","","20","PQL","YES","-99","","1","1","20","TEST"

"EB-CEF-MFS-020818-19","E537","IN","GBV347","MAXXAM","376-06-7","Perfluorotetradecanoic acid","2.7","ng/L","U","2.7","MDL","","NM","","","20","PQL","YES","-99","","1","1","20","TEST"
"EB-CEF-MFS-020818-19","E537","IN","GBV347","MAXXAM","72629-94-8","Perfluorotridecanoic acid","3.8","ng/L","U","3.8","MDL","","NM","","","20","PQL","YES","-99","","1","1","20","TEST"
"EB-CEF-MFS-020818-19","E537","IN","GBV347","MAXXAM","2058-94-8","Perfluoroundecanoic acid","2.5","ng/L","U","2.5","MDL","","NM","","","20","PQL","YES","-99","","1","1","20","TEST"
"FB-CEF-MFS-020818-12","E537","IN","GBV348","MAXXAM","13C2PFDA","13C2-Perfluorodecanoic acid","85","%","","-99","NA","","SUR","85","","-99","NA","YES","-99","","1","1","-99","TEST"
"FB-CEF-MFS-020818-12","E537","IN","GBV348","MAXXAM","13C2PFDOA","13C2-Perfluorododecanoic acid","76","%","","-99","NA","","SUR","76","","-99","NA","YES","-99","","1","1","-99","TEST"
"FB-CEF-MFS-020818-12","E537","IN","GBV348","MAXXAM","13C2PFHXA","13C2-Perfluorohexanoic acid","91","%","","-99","NA","","SUR","91","","-99","NA","YES","-99","","1","1","-99","TEST"
"FB-CEF-MFS-020818-12","E537","IN","GBV348","MAXXAM","13C2PFTDA","13C2-Perfluorotetradecanoic acid","69","%","","-99","NA","","SUR","69","","-99","NA","YES","-99","","1","1","-99","TEST"
"FB-CEF-MFS-020818-12","E537","IN","GBV348","MAXXAM","13C2PFUA","13C2-Perfluoroundecanoic acid","84","%","","-99","NA","","SUR","84","","-99","NA","YES","-99","","1","1","-99","TEST"
"FB-CEF-MFS-020818-12","E537","IN","GBV348","MAXXAM","375-22-4-13C","13C4-Perflurobutanoic acid","84","%","","-99","NA","","SUR","84","","-99","NA","YES","-99","","1","1","-99","TEST"
"FB-CEF-MFS-020818-12","E537","IN","GBV348","MAXXAM","13C4PFHPA","13C4-Perfluoroheptanoic acid","89","%","","-99","NA","","SUR","89","","-99","NA","YES","-99","","1","1","-99","TEST"
"FB-CEF-MFS-020818-12","E537","IN","GBV348","MAXXAM","1763-23-1_13","13C4-Perfluorooctanesulfonate","87","%","","-99","NA","","SUR","87","","-99","NA","YES","-99","","1","1","-99","TEST"
"FB-CEF-MFS-020818-12","E537","IN","GBV348","MAXXAM","335-67-1_13C","13C4-Perfluorooctanoic acid","93","%","","-99","NA","","SUR","93","","-99","NA","YES","-99","","1","1","-99","TEST"
"FB-CEF-MFS-020818-12","E537","IN","GBV348","MAXXAM","13C4PFNA","13C5-Perfluorononanoic acid","89","%","","-99","NA","","SUR","89","","-99","NA","YES","-99","","1","1","-99","TEST"
"FB-CEF-MFS-020818-12","E537","IN","GBV348","MAXXAM","18O2PFHXS","18O2-Perfluorohexanesulfonate","89","%","","-99","NA","","SUR","89","","-99","NA","YES","-99","","1","1","-99","TEST"
"FB-CEF-MFS-020818-12","E537","IN","GBV348","MAXXAM","D3-MEFOSAA","N-METHYL-D3-PERFLUOROOCTANESULFONAMIDOACETIC ACID","76","%","","-99","NA","","SUR","76","","-99","NA","YES","-99","","1","1","-99","TEST"
"FB-CEF-MFS-020818-12","E537","IN","GBV348","MAXXAM","D5-ETFOSAA","D5-ETFOSAA","76","%","","-99","NA","","SUR","76","","-99","NA","YES","-99","","1","1","-99","TEST"
"FB-CEF-MFS-020818-12","E537","IN","GBV348","MAXXAM","2991-50-6","EtFOSAA","3.3","ng/L","U","3.3","MDL","","NM","","","20","PQL","YES","-99","","1","1","20","TEST"
"FB-CEF-MFS-020818-12","E537","IN","GBV348","MAXXAM","2355-31-9","MeFOSAA","2.9","ng/L","U","2.9","MDL","","NM","","","20","PQL","YES","-99","","1","1","20","TEST"
"FB-CEF-MFS-020818-12","E537","IN","GBV348","MAXXAM","375-73-5","Perfluorobutanesulfonic acid","5.4","ng/L","U","5.4","MDL","","NM","","","20","PQL","YES","-99","","1","1","20","TEST"
"FB-CEF-MFS-020818-12","E537","IN","GBV348","MAXXAM","335-76-2","Perfluorodecanoic acid","6.1","ng/L","U","6.1","MDL","","NM","","","20","PQL","YES","-99","","1","1","20","TEST"
"FB-CEF-MFS-020818-12","E537","IN","GBV348","MAXXAM","307-55-1","Perfluorododecanoic acid","5.0","ng/L","U","5.0","MDL","","NM","","","20","PQL","YES","-99","","1","1","20","TEST"
"FB-CEF-MFS-020818-12","E537","IN","GBV348","MAXXAM","375-85-9","Perfluoroheptanoic acid","7.4","ng/L","U","7.4","MDL","","NM","","","20","PQL","YES","-99","","1","1","20","TEST"
"FB-CEF-MFS-020818-12","E537","IN","GBV348","MAXXAM","355-46-4","Perfluorohexanesulfonic acid","5.6","ng/L","U","5.6","MDL","","NM","","","20","PQL","YES","-99","","1","1","20","TEST"
"FB-CEF-MFS-020818-12","E537","IN","GBV348","MAXXAM","307-24-4","Perfluorohexanoic acid","3.5","ng/L","U","3.5","MDL","","NM","","","20","PQL","YES","-99","","1","1","20","TEST"
"FB-CEF-MFS-020818-12","E537","IN","GBV348","MAXXAM","335-67-1","Perfluorooctanoic acid","3.3","ng/L","U","3.3","MDL","","NM","","","20","PQL","YES","-99","","1","1","20","TEST"
"FB-CEF-MFS-020818-12","E537","IN","GBV348","MAXXAM","375-95-1","Perfluorononanoic acid","8.7","ng/L","U","8.7","MDL","","NM","","","20","PQL","YES","-99","","1","1","20","TEST"
"FB-CEF-MFS-020818-12","E537","IN","GBV348","MAXXAM","1763-23-1","Perfluorooctanesulfonic

acid","6.0","ng/L","U","6.0","MDL","","NM","","","20","PQL","YES","-99","","1","1","20","TEST"
"FB-CEF-MFS-020818-12","E537","IN","GBV348","MAXXAM","376-06-7","Perfluorotetradecanoic
acid","2.7","ng/L","U","2.7","MDL","","NM","","","20","PQL","YES","-99","","1","1","20","TEST"
"FB-CEF-MFS-020818-12","E537","IN","GBV348","MAXXAM","72629-94-8","Perfluorotridecanoic
acid","3.8","ng/L","U","3.8","MDL","","NM","","","20","PQL","YES","-99","","1","1","20","TEST"
"FB-CEF-MFS-020818-12","E537","IN","GBV348","MAXXAM","2058-94-8","Perfluoroundecanoic
acid","2.5","ng/L","U","2.5","MDL","","NM","","","20","PQL","YES","-99","","1","1","20","TEST"
"CEF-1820-TW02-0218","E537","IN","GBV349","MAXXAM","13C2PFDA","13C2-Perfluorodecanoic
acid","83","%","","-99","NA","","SUR","83","","-99","NA","YES","-99","","1","1","-99","TEST"
"CEF-1820-TW02-0218","E537","IN","GBV349","MAXXAM","13C2PFDOA","13C2-Perfluorododecanoic
acid","84","%","","-99","NA","","SUR","84","","-99","NA","YES","-99","","1","1","-99","TEST"
"CEF-1820-TW02-0218","E537","IN","GBV349","MAXXAM","13C2PFHXA","13C2-Perfluorohexanoic
acid","84","%","","-99","NA","","SUR","84","","-99","NA","YES","-99","","1","1","-99","TEST"
"CEF-1820-TW02-0218","E537","IN","GBV349","MAXXAM","13C2PFTDA","13C2-Perfluorotetradecanoic
acid","83","%","","-99","NA","","SUR","83","","-99","NA","YES","-99","","1","1","-99","TEST"
"CEF-1820-TW02-0218","E537","IN","GBV349","MAXXAM","13C2PFUA","13C2-Perfluoroundecanoic
acid","79","%","","-99","NA","","SUR","79","","-99","NA","YES","-99","","1","1","-99","TEST"
"CEF-1820-TW02-0218","E537","IN","GBV349","MAXXAM","375-22-4-13C","13C4-Perflurobutanoic
acid","81","%","","-99","NA","","SUR","81","","-99","NA","YES","-99","","1","1","-99","TEST"
"CEF-1820-TW02-0218","E537","IN","GBV349","MAXXAM","13C4PFHPA","13C4-Perfluoroheptanoic
acid","85","%","","-99","NA","","SUR","85","","-99","NA","YES","-99","","1","1","-99","TEST"
"CEF-1820-TW02-0218","E537","IN","GBV349","MAXXAM","1763-23-1_13","13C4-
Perfluorooctanesulfonate","73","%","","-99","NA","","SUR","73","","-99","NA","YES","-99","","1","1","-99","TEST"
"CEF-1820-TW02-0218","E537","IN","GBV349","MAXXAM","335-67-1_13C","13C4-Perfluorooctanoic
acid","89","%","","-99","NA","","SUR","89","","-99","NA","YES","-99","","1","1","-99","TEST"
"CEF-1820-TW02-0218","E537","IN","GBV349","MAXXAM","13C4PFNA","13C5-Perfluorononanoic
acid","89","%","","-99","NA","","SUR","89","","-99","NA","YES","-99","","1","1","-99","TEST"
"CEF-1820-TW02-0218","E537","IN","GBV349","MAXXAM","18O2PFHXS","18O2-
Perfluorohexanesulfonate","83","%","","-99","NA","","SUR","83","","-99","NA","YES","-99","","1","1","-99","TEST"
"CEF-1820-TW02-0218","E537","IN","GBV349","MAXXAM","D3-MEFOSAA","N-METHYL-D3-
PERFLUOROOCTANESULFONAMIDOACETIC
ACID","83","%","","-99","NA","","SUR","83","","-99","NA","YES","-99","","1","1","-99","TEST"
"CEF-1820-TW02-0218","E537","IN","GBV349","MAXXAM","D5-ETFOSAA","D5-
ETFOSAA","81","%","","-99","NA","","SUR","81","","-99","NA","YES","-99","","1","1","-99","TEST"
"CEF-1820-TW02-0218","E537","IN","GBV349","MAXXAM","2991-50-
6","EtFOSAA","3.3","ng/L","U","3.3","MDL","","NM","","","20","PQL","YES","-99","","1","1","20","TEST"
"CEF-1820-TW02-0218","E537","IN","GBV349","MAXXAM","2355-31-
9","MeFOSAA","2.9","ng/L","U","2.9","MDL","","NM","","","20","PQL","YES","-99","","1","1","20","TEST"
"CEF-1820-TW02-0218","E537","IN","GBV349","MAXXAM","375-73-5","Perfluorobutanesulfonic
acid","31","ng/L","","5.4","MDL","","NM","","","20","PQL","YES","-99","","1","1","20","TEST"
"CEF-1820-TW02-0218","E537","IN","GBV349","MAXXAM","335-76-2","Perfluorodecanoic
acid","6.1","ng/L","U","6.1","MDL","","NM","","","20","PQL","YES","-99","","1","1","20","TEST"
"CEF-1820-TW02-0218","E537","IN","GBV349","MAXXAM","307-55-1","Perfluorododecanoic
acid","5.0","ng/L","U","5.0","MDL","","NM","","","20","PQL","YES","-99","","1","1","20","TEST"
"CEF-1820-TW02-0218","E537","IN","GBV349","MAXXAM","375-85-9","Perfluoroheptanoic
acid","80","ng/L","","7.4","MDL","","NM","","","20","PQL","YES","-99","","1","1","20","TEST"
"CEF-1820-TW02-0218","E537","IN","GBV349","MAXXAM","355-46-4","Perfluorohexanesulfonic
acid","1200","ng/L","","56","MDL","","NM","","","200","PQL","YES","-99","","1","1","200","Due to high
concentration of the target analyte, a reduced sample volume was extracted and analyzed. Detection limit was adjusted
accordingly (10x)."
"CEF-1820-TW02-0218","E537","IN","GBV349","MAXXAM","307-24-4","Perfluorohexanoic
acid","190","ng/L","","3.5","MDL","","NM","","","20","PQL","YES","-99","","1","1","20","TEST"
"CEF-1820-TW02-0218","E537","IN","GBV349","MAXXAM","335-67-1","Perfluorooctanoic
acid","67","ng/L","","3.3","MDL","","NM","","","20","PQL","YES","-99","","1","1","20","TEST"

"CEF-1820-TW02-0218","E537","IN","GBV349","MAXXAM","375-95-1","Perfluorononanoic acid","20","ng/L","J","8.7","MDL","","NM","","","20","PQL","YES","-99","","1","1","20","TEST"
"CEF-1820-TW02-0218","E537","IN","GBV349","MAXXAM","1763-23-1","Perfluorooctanesulfonic acid","2400","ng/L","","60","MDL","","NM","","","200","PQL","YES","-99","","1","1","200","Due to high concentration of the target analyte, a reduced sample volume was extracted and analyzed. Detection limit was adjusted accordingly (10x)."
"CEF-1820-TW02-0218","E537","IN","GBV349","MAXXAM","376-06-7","Perfluorotetradecanoic acid","2.7","ng/L","U","2.7","MDL","","NM","","","20","PQL","YES","-99","","1","1","20","TEST"
"CEF-1820-TW02-0218","E537","IN","GBV349","MAXXAM","72629-94-8","Perfluorotridecanoic acid","3.8","ng/L","U","3.8","MDL","","NM","","","20","PQL","YES","-99","","1","1","20","TEST"
"CEF-1820-TW02-0218","E537","IN","GBV349","MAXXAM","2058-94-8","Perfluoroundecanoic acid","2.5","ng/L","U","2.5","MDL","","NM","","","20","PQL","YES","-99","","1","1","20","TEST"
"CEF-S3-TW01-0218","E537","DL1","GBV350","MAXXAM","13C2PFDA","13C2-Perfluorodecanoic acid","96","%","","-99","NA","","SUR","96","","-99","NA","YES","-99","","1","1","-99","TEST"
"CEF-S3-TW01-0218","E537","DL1","GBV350","MAXXAM","13C2PFDOA","13C2-Perfluorododecanoic acid","98","%","","-99","NA","","SUR","98","","-99","NA","YES","-99","","1","1","-99","TEST"
"CEF-S3-TW01-0218","E537","DL1","GBV350","MAXXAM","13C2PFHXA","13C2-Perfluorohexanoic acid","106","%","","-99","NA","","SUR","106","","-99","NA","YES","-99","","1","1","-99","TEST"
"CEF-S3-TW01-0218","E537","DL1","GBV350","MAXXAM","13C2PFTDA","13C2-Perfluorotetradecanoic acid","74","%","","-99","NA","","SUR","74","","-99","NA","YES","-99","","1","1","-99","TEST"
"CEF-S3-TW01-0218","E537","DL1","GBV350","MAXXAM","13C2PFUA","13C2-Perfluoroundecanoic acid","91","%","","-99","NA","","SUR","91","","-99","NA","YES","-99","","1","1","-99","TEST"
"CEF-S3-TW01-0218","E537","DL1","GBV350","MAXXAM","375-22-4-13C","13C4-Perflurobutanoic acid","112","%","","-99","NA","","SUR","112","","-99","NA","YES","-99","","1","1","-99","TEST"
"CEF-S3-TW01-0218","E537","DL1","GBV350","MAXXAM","13C4PFHPA","13C4-Perfluoroheptanoic acid","105","%","","-99","NA","","SUR","105","","-99","NA","YES","-99","","1","1","-99","TEST"
"CEF-S3-TW01-0218","E537","DL1","GBV350","MAXXAM","1763-23-1_13","13C4-Perfluorooctanesulfonate","108","%","","-99","NA","","SUR","108","","-99","NA","YES","-99","","1","1","-99","TEST"
"CEF-S3-TW01-0218","E537","DL1","GBV350","MAXXAM","335-67-1_13C","13C4-Perfluorooctanoic acid","106","%","","-99","NA","","SUR","106","","-99","NA","YES","-99","","1","1","-99","TEST"
"CEF-S3-TW01-0218","E537","DL1","GBV350","MAXXAM","13C4PFNA","13C5-Perfluorononanoic acid","106","%","","-99","NA","","SUR","106","","-99","NA","YES","-99","","1","1","-99","TEST"
"CEF-S3-TW01-0218","E537","DL1","GBV350","MAXXAM","18O2PFHXS","18O2-Perfluorohexanesulfonate","104","%","","-99","NA","","SUR","104","","-99","NA","YES","-99","","1","1","-99","TEST"
"CEF-S3-TW01-0218","E537","DL1","GBV350","MAXXAM","D3-MEFOSAA","N-METHYL-D3-PERFLUOROOCTANESULFONAMIDOACETIC ACID","92","%","","-99","NA","","SUR","92","","-99","NA","YES","-99","","1","1","-99","TEST"
"CEF-S3-TW01-0218","E537","DL1","GBV350","MAXXAM","D5-ETFOSAA","D5-ETFOSAA","89","%","","-99","NA","","SUR","89","","-99","NA","YES","-99","","1","1","-99","TEST"
"CEF-S3-TW01-0218","E537","DL1","GBV350","MAXXAM","2991-50-6","EtFOSAA","33","ng/L","U","33","MDL","","NM","","","200","PQL","YES","-99","","1","1","200","TEST"
"CEF-S3-TW01-0218","E537","DL1","GBV350","MAXXAM","2355-31-9","MeFOSAA","29","ng/L","U","29","MDL","","NM","","","200","PQL","YES","-99","","1","1","200","TEST"
"CEF-S3-TW01-0218","E537","DL1","GBV350","MAXXAM","375-73-5","Perfluorobutanesulfonic acid","54","ng/L","U","54","MDL","","NM","","","200","PQL","YES","-99","","1","1","200","TEST"
"CEF-S3-TW01-0218","E537","DL1","GBV350","MAXXAM","335-76-2","Perfluorodecanoic acid","61","ng/L","U","61","MDL","","NM","","","200","PQL","YES","-99","","1","1","200","TEST"
"CEF-S3-TW01-0218","E537","DL1","GBV350","MAXXAM","307-55-1","Perfluorododecanoic acid","50","ng/L","U","50","MDL","","NM","","","200","PQL","YES","-99","","1","1","200","TEST"
"CEF-S3-TW01-0218","E537","DL1","GBV350","MAXXAM","375-85-9","Perfluoroheptanoic acid","74","ng/L","U","74","MDL","","NM","","","200","PQL","YES","-99","","1","1","200","TEST"
"CEF-S3-TW01-0218","E537","DL1","GBV350","MAXXAM","355-46-4","Perfluorohexanesulfonic

acid","56","ng/L","U","56","MDL","","NM","","","200","PQL","YES","-99","","1","1","200","TEST"
"CEF-S3-TW01-0218","E537","DL1","GBV350","MAXXAM","307-24-4","Perfluorohexanoic
acid","35","ng/L","U","35","MDL","","NM","","","200","PQL","YES","-99","","1","1","200","TEST"
"CEF-S3-TW01-0218","E537","DL1","GBV350","MAXXAM","335-67-1","Perfluorooctanoic
acid","33","ng/L","U","33","MDL","","NM","","","200","PQL","YES","-99","","1","1","200","TEST"
"CEF-S3-TW01-0218","E537","DL1","GBV350","MAXXAM","375-95-1","Perfluorononanoic
acid","87","ng/L","U","87","MDL","","NM","","","200","PQL","YES","-99","","1","1","200","TEST"
"CEF-S3-TW01-0218","E537","DL1","GBV350","MAXXAM","1763-23-1","Perfluorooctanesulfonic
acid","60","ng/L","U","60","MDL","","NM","","","200","PQL","YES","-99","","1","1","200","TEST"
"CEF-S3-TW01-0218","E537","DL1","GBV350","MAXXAM","376-06-7","Perfluorotetradecanoic
acid","27","ng/L","U","27","MDL","","NM","","","200","PQL","YES","-99","","1","1","200","TEST"
"CEF-S3-TW01-0218","E537","DL1","GBV350","MAXXAM","72629-94-8","Perfluorotridecanoic
acid","38","ng/L","U","38","MDL","","NM","","","200","PQL","YES","-99","","1","1","200","TEST"
"CEF-S3-TW01-0218","E537","DL1","GBV350","MAXXAM","2058-94-8","Perfluoroundecanoic
acid","25","ng/L","U","25","MDL","","NM","","","200","PQL","YES","-99","","1","1","200","TEST"
"FB-CEF-S3-020918-13","E537","IN","GBV351","MAXXAM","13C2PFDA","13C2-Perfluorodecanoic
acid","111","%","","-99","NA","","SUR","111","","-99","NA","YES","-99","","1","1","-99","TEST"
"FB-CEF-S3-020918-13","E537","IN","GBV351","MAXXAM","13C2PFDOA","13C2-Perfluorododecanoic
acid","98","%","","-99","NA","","SUR","98","","-99","NA","YES","-99","","1","1","-99","TEST"
"FB-CEF-S3-020918-13","E537","IN","GBV351","MAXXAM","13C2PFHXA","13C2-Perfluorohexanoic
acid","116","%","","-99","NA","","SUR","116","","-99","NA","YES","-99","","1","1","-99","TEST"
"FB-CEF-S3-020918-13","E537","IN","GBV351","MAXXAM","13C2PFTDA","13C2-Perfluorotetradecanoic
acid","97","%","","-99","NA","","SUR","97","","-99","NA","YES","-99","","1","1","-99","TEST"
"FB-CEF-S3-020918-13","E537","IN","GBV351","MAXXAM","13C2PFUA","13C2-Perfluoroundecanoic
acid","106","%","","-99","NA","","SUR","106","","-99","NA","YES","-99","","1","1","-99","TEST"
"FB-CEF-S3-020918-13","E537","IN","GBV351","MAXXAM","375-22-4-13C","13C4-Perflurobutanoic
acid","108","%","","-99","NA","","SUR","108","","-99","NA","YES","-99","","1","1","-99","TEST"
"FB-CEF-S3-020918-13","E537","IN","GBV351","MAXXAM","13C4PFHPA","13C4-Perfluoroheptanoic
acid","112","%","","-99","NA","","SUR","112","","-99","NA","YES","-99","","1","1","-99","TEST"
"FB-CEF-S3-020918-13","E537","IN","GBV351","MAXXAM","1763-23-1_13","13C4-
Perfluorooctanesulfonate","119","%","","-99","NA","","SUR","119","","-99","NA","YES","-99","","1","1","-99","TES
T"
"FB-CEF-S3-020918-13","E537","IN","GBV351","MAXXAM","335-67-1_13C","13C4-Perfluorooctanoic
acid","111","%","","-99","NA","","SUR","111","","-99","NA","YES","-99","","1","1","-99","TEST"
"FB-CEF-S3-020918-13","E537","IN","GBV351","MAXXAM","13C4PFNA","13C5-Perfluorononanoic
acid","116","%","","-99","NA","","SUR","116","","-99","NA","YES","-99","","1","1","-99","TEST"
"FB-CEF-S3-020918-13","E537","IN","GBV351","MAXXAM","18O2PFHXS","18O2-
Perfluorohexanesulfonate","110","%","","-99","NA","","SUR","110","","-99","NA","YES","-99","","1","1","-99","TES
T"
"FB-CEF-S3-020918-13","E537","IN","GBV351","MAXXAM","D3-MEFOSAA","N-METHYL-D3-
PERFLUOROOCTANESULFONAMIDOACETIC
ACID","94","%","","-99","NA","","SUR","94","","-99","NA","YES","-99","","1","1","-99","TEST"
"FB-CEF-S3-020918-13","E537","IN","GBV351","MAXXAM","D5-ETFOSAA","D5-
ETFOSAA","89","%","","-99","NA","","SUR","89","","-99","NA","YES","-99","","1","1","-99","TEST"
"FB-CEF-S3-020918-13","E537","IN","GBV351","MAXXAM","2991-50-
6","EtFOSAA","3.3","ng/L","U","3.3","MDL","","NM","","","20","PQL","YES","-99","","1","1","20","TEST"
"FB-CEF-S3-020918-13","E537","IN","GBV351","MAXXAM","2355-31-
9","MeFOSAA","2.9","ng/L","U","2.9","MDL","","NM","","","20","PQL","YES","-99","","1","1","20","TEST"
"FB-CEF-S3-020918-13","E537","IN","GBV351","MAXXAM","375-73-5","Perfluorobutanesulfonic
acid","5.4","ng/L","U","5.4","MDL","","NM","","","20","PQL","YES","-99","","1","1","20","TEST"
"FB-CEF-S3-020918-13","E537","IN","GBV351","MAXXAM","335-76-2","Perfluorodecanoic
acid","6.1","ng/L","U","6.1","MDL","","NM","","","20","PQL","YES","-99","","1","1","20","TEST"
"FB-CEF-S3-020918-13","E537","IN","GBV351","MAXXAM","307-55-1","Perfluorododecanoic
acid","5.0","ng/L","U","5.0","MDL","","NM","","","20","PQL","YES","-99","","1","1","20","TEST"

"FB-CEF-S3-020918-13","E537","IN","GBV351","MAXXAM","375-85-9","Perfluoroheptanoic
acid","7.4","ng/L","U","7.4","MDL","","NM","","","20","PQL","YES","-99","","1","1","20","TEST"
"FB-CEF-S3-020918-13","E537","IN","GBV351","MAXXAM","355-46-4","Perfluorohexanesulfonic
acid","5.6","ng/L","U","5.6","MDL","","NM","","","20","PQL","YES","-99","","1","1","20","TEST"
"FB-CEF-S3-020918-13","E537","IN","GBV351","MAXXAM","307-24-4","Perfluorohexanoic
acid","3.5","ng/L","U","3.5","MDL","","NM","","","20","PQL","YES","-99","","1","1","20","TEST"
"FB-CEF-S3-020918-13","E537","IN","GBV351","MAXXAM","335-67-1","Perfluorooctanoic
acid","3.3","ng/L","U","3.3","MDL","","NM","","","20","PQL","YES","-99","","1","1","20","TEST"
"FB-CEF-S3-020918-13","E537","IN","GBV351","MAXXAM","375-95-1","Perfluorononanoic
acid","8.7","ng/L","U","8.7","MDL","","NM","","","20","PQL","YES","-99","","1","1","20","TEST"
"FB-CEF-S3-020918-13","E537","IN","GBV351","MAXXAM","1763-23-1","Perfluorooctanesulfonic
acid","6.0","ng/L","U","6.0","MDL","","NM","","","20","PQL","YES","-99","","1","1","20","TEST"
"FB-CEF-S3-020918-13","E537","IN","GBV351","MAXXAM","376-06-7","Perfluorotetradecanoic
acid","2.7","ng/L","U","2.7","MDL","","NM","","","20","PQL","YES","-99","","1","1","20","TEST"
"FB-CEF-S3-020918-13","E537","IN","GBV351","MAXXAM","72629-94-8","Perfluorotridecanoic
acid","3.8","ng/L","U","3.8","MDL","","NM","","","20","PQL","YES","-99","","1","1","20","TEST"
"FB-CEF-S3-020918-13","E537","IN","GBV351","MAXXAM","2058-94-8","Perfluoroundecanoic
acid","2.5","ng/L","U","2.5","MDL","","NM","","","20","PQL","YES","-99","","1","1","20","TEST"
"CEF-MFS-TW01-0218","E537","IN","GBV352","MAXXAM","13C2PFDA","13C2-Perfluorodecanoic
acid","98","%","","-99","NA","","SUR","98","","-99","NA","YES","-99","","1","1","-99","TEST"
"CEF-MFS-TW01-0218","E537","IN","GBV352","MAXXAM","13C2PFDOA","13C2-Perfluorododecanoic
acid","98","%","","-99","NA","","SUR","98","","-99","NA","YES","-99","","1","1","-99","TEST"
"CEF-MFS-TW01-0218","E537","IN","GBV352","MAXXAM","13C2PFHXA","13C2-Perfluorohexanoic
acid","107","%","","-99","NA","","SUR","107","","-99","NA","YES","-99","","1","1","-99","TEST"
"CEF-MFS-TW01-0218","E537","IN","GBV352","MAXXAM","13C2PFTDA","13C2-Perfluorotetradecanoic
acid","84","%","","-99","NA","","SUR","84","","-99","NA","YES","-99","","1","1","-99","TEST"
"CEF-MFS-TW01-0218","E537","IN","GBV352","MAXXAM","13C2PFUA","13C2-Perfluoroundecanoic
acid","101","%","","-99","NA","","SUR","101","","-99","NA","YES","-99","","1","1","-99","TEST"
"CEF-MFS-TW01-0218","E537","IN","GBV352","MAXXAM","375-22-4-13C","13C4-Perflurobutanoic
acid","105","%","","-99","NA","","SUR","105","","-99","NA","YES","-99","","1","1","-99","TEST"
"CEF-MFS-TW01-0218","E537","IN","GBV352","MAXXAM","13C4PFHPA","13C4-Perfluoroheptanoic
acid","103","%","","-99","NA","","SUR","103","","-99","NA","YES","-99","","1","1","-99","TEST"
"CEF-MFS-TW01-0218","E537","IN","GBV352","MAXXAM","1763-23-1_13","13C4-
Perfluorooctanesulfonate","112","%","","-99","NA","","SUR","112","","-99","NA","YES","-99","","1","1","-99","TES
T"
"CEF-MFS-TW01-0218","E537","IN","GBV352","MAXXAM","335-67-1_13C","13C4-Perfluorooctanoic
acid","106","%","","-99","NA","","SUR","106","","-99","NA","YES","-99","","1","1","-99","TEST"
"CEF-MFS-TW01-0218","E537","IN","GBV352","MAXXAM","13C4PFNA","13C5-Perfluorononanoic
acid","105","%","","-99","NA","","SUR","105","","-99","NA","YES","-99","","1","1","-99","TEST"
"CEF-MFS-TW01-0218","E537","IN","GBV352","MAXXAM","18O2PFHXS","18O2-
Perfluorohexanesulfonate","104","%","","-99","NA","","SUR","104","","-99","NA","YES","-99","","1","1","-99","TES
T"
"CEF-MFS-TW01-0218","E537","IN","GBV352","MAXXAM","D3-MEFOSAA","N-METHYL-D3-
PERFLUOROOCTANESULFONAMIDOACETIC
ACID","96","%","","-99","NA","","SUR","96","","-99","NA","YES","-99","","1","1","-99","TEST"
"CEF-MFS-TW01-0218","E537","IN","GBV352","MAXXAM","D5-ETFOSAA","D5-
ETFOSAA","93","%","","-99","NA","","SUR","93","","-99","NA","YES","-99","","1","1","-99","TEST"
"CEF-MFS-TW01-0218","E537","IN","GBV352","MAXXAM","2991-50-
6","EtFOSAA","3.3","ng/L","U","3.3","MDL","","NM","","","20","PQL","YES","-99","","1","1","20","TEST"
"CEF-MFS-TW01-0218","E537","IN","GBV352","MAXXAM","2355-31-
9","MeFOSAA","2.9","ng/L","U","2.9","MDL","","NM","","","20","PQL","YES","-99","","1","1","20","TEST"
"CEF-MFS-TW01-0218","E537","IN","GBV352","MAXXAM","375-73-5","Perfluorobutanesulfonic
acid","11","ng/L","J","5.4","MDL","","NM","","","20","PQL","YES","-99","","1","1","20","TEST"
"CEF-MFS-TW01-0218","E537","IN","GBV352","MAXXAM","335-76-2","Perfluorodecanoic

acid","7.0","ng/L","J","6.1","MDL","","NM","","","20","PQL","YES","-99","","1","1","20","TEST"
"CEF-MFS-TW01-0218","E537","IN","GBV352","MAXXAM","307-55-1","Perfluorododecanoic
acid","5.0","ng/L","U","5.0","MDL","","NM","","","20","PQL","YES","-99","","1","1","20","TEST"
"CEF-MFS-TW01-0218","E537","IN","GBV352","MAXXAM","375-85-9","Perfluoroheptanoic
acid","330","ng/L","","7.4","MDL","","NM","","","20","PQL","YES","-99","","1","1","20","TEST"
"CEF-MFS-TW01-0218","E537","IN","GBV352","MAXXAM","355-46-4","Perfluorohexanesulfonic
acid","710","ng/L","","5.6","MDL","","NM","","","20","PQL","YES","-99","","1","1","20","TEST"
"CEF-MFS-TW01-0218","E537","IN","GBV352","MAXXAM","307-24-4","Perfluorohexanoic
acid","310","ng/L","","3.5","MDL","","NM","","","20","PQL","YES","-99","","1","1","20","TEST"
"CEF-MFS-TW01-0218","E537","IN","GBV352","MAXXAM","335-67-1","Perfluorooctanoic
acid","210","ng/L","","3.3","MDL","","NM","","","20","PQL","YES","-99","","1","1","20","TEST"
"CEF-MFS-TW01-0218","E537","IN","GBV352","MAXXAM","375-95-1","Perfluorononanoic
acid","63","ng/L","","8.7","MDL","","NM","","","20","PQL","YES","-99","","1","1","20","TEST"
"CEF-MFS-TW01-0218","E537","IN","GBV352","MAXXAM","1763-23-1","Perfluorooctanesulfonic
acid","810","ng/L","","6.0","MDL","","NM","","","20","PQL","YES","-99","","1","1","20","TEST"
"CEF-MFS-TW01-0218","E537","IN","GBV352","MAXXAM","376-06-7","Perfluorotetradecanoic
acid","2.7","ng/L","U","2.7","MDL","","NM","","","20","PQL","YES","-99","","1","1","20","TEST"
"CEF-MFS-TW01-0218","E537","IN","GBV352","MAXXAM","72629-94-8","Perfluorotridecanoic
acid","3.8","ng/L","U","3.8","MDL","","NM","","","20","PQL","YES","-99","","1","1","20","TEST"
"CEF-MFS-TW01-0218","E537","IN","GBV352","MAXXAM","2058-94-8","Perfluoroundecanoic
acid","2.5","ng/L","U","2.5","MDL","","NM","","","20","PQL","YES","-99","","1","1","20","TEST"
"CEF-MFS-TW02-0218","E537","IN","GBV353","MAXXAM","13C2PFDA","13C2-Perfluorodecanoic
acid","103","%","","-99","NA","","SUR","103","","-99","NA","YES","-99","","1","1","-99","TEST"
"CEF-MFS-TW02-0218","E537","IN","GBV353","MAXXAM","13C2PFDOA","13C2-Perfluorododecanoic
acid","95","%","","-99","NA","","SUR","95","","-99","NA","YES","-99","","1","1","-99","TEST"
"CEF-MFS-TW02-0218","E537","IN","GBV353","MAXXAM","13C2PFHXA","13C2-Perfluorohexanoic
acid","112","%","","-99","NA","","SUR","112","","-99","NA","YES","-99","","1","1","-99","TEST"
"CEF-MFS-TW02-0218","E537","IN","GBV353","MAXXAM","13C2PFTDA","13C2-Perfluorotetradecanoic
acid","85","%","","-99","NA","","SUR","85","","-99","NA","YES","-99","","1","1","-99","TEST"
"CEF-MFS-TW02-0218","E537","IN","GBV353","MAXXAM","13C2PFUA","13C2-Perfluoroundecanoic
acid","106","%","","-99","NA","","SUR","106","","-99","NA","YES","-99","","1","1","-99","TEST"
"CEF-MFS-TW02-0218","E537","IN","GBV353","MAXXAM","375-22-4-13C","13C4-Perflurobutanoic
acid","105","%","","-99","NA","","SUR","105","","-99","NA","YES","-99","","1","1","-99","TEST"
"CEF-MFS-TW02-0218","E537","IN","GBV353","MAXXAM","13C4PFHPA","13C4-Perfluoroheptanoic
acid","111","%","","-99","NA","","SUR","111","","-99","NA","YES","-99","","1","1","-99","TEST"
"CEF-MFS-TW02-0218","E537","IN","GBV353","MAXXAM","1763-23-1_13","13C4-
Perfluorooctanesulfonate","111","%","","-99","NA","","SUR","111","","-99","NA","YES","-99","","1","1","-99","TES
T"
"CEF-MFS-TW02-0218","E537","IN","GBV353","MAXXAM","335-67-1_13C","13C4-Perfluorooctanoic
acid","109","%","","-99","NA","","SUR","109","","-99","NA","YES","-99","","1","1","-99","TEST"
"CEF-MFS-TW02-0218","E537","IN","GBV353","MAXXAM","13C4PFNA","13C5-Perfluorononanoic
acid","109","%","","-99","NA","","SUR","109","","-99","NA","YES","-99","","1","1","-99","TEST"
"CEF-MFS-TW02-0218","E537","IN","GBV353","MAXXAM","18O2PFHXS","18O2-
Perfluorohexanesulfonate","116","%","","-99","NA","","SUR","116","","-99","NA","YES","-99","","1","1","-99","TES
T"
"CEF-MFS-TW02-0218","E537","IN","GBV353","MAXXAM","D3-MEFOSAA","N-METHYL-D3-
PERFLUOROOCTANESULFONAMIDOACETIC
ACID","92","%","","-99","NA","","SUR","92","","-99","NA","YES","-99","","1","1","-99","TEST"
"CEF-MFS-TW02-0218","E537","IN","GBV353","MAXXAM","D5-ETFOSAA","D5-
ETFOSAA","92","%","","-99","NA","","SUR","92","","-99","NA","YES","-99","","1","1","-99","TEST"
"CEF-MFS-TW02-0218","E537","IN","GBV353","MAXXAM","2991-50-
6","EtFOSAA","3.3","ng/L","U","3.3","MDL","","NM","","","20","PQL","YES","-99","","1","1","20","TEST"
"CEF-MFS-TW02-0218","E537","IN","GBV353","MAXXAM","2355-31-
9","MeFOSAA","2.9","ng/L","U","2.9","MDL","","NM","","","20","PQL","YES","-99","","1","1","20","TEST"

"CEF-MFS-TW02-0218","E537","IN","GBV353","MAXXAM","375-73-5","Perfluorobutanesulfonic acid","5.4","ng/L","U","5.4","MDL","","NM","","","20","PQL","YES","-99","","1","1","20","TEST"
"CEF-MFS-TW02-0218","E537","IN","GBV353","MAXXAM","335-76-2","Perfluorodecanoic acid","6.1","ng/L","U","6.1","MDL","","NM","","","20","PQL","YES","-99","","1","1","20","TEST"
"CEF-MFS-TW02-0218","E537","IN","GBV353","MAXXAM","307-55-1","Perfluorododecanoic acid","5.0","ng/L","U","5.0","MDL","","NM","","","20","PQL","YES","-99","","1","1","20","TEST"
"CEF-MFS-TW02-0218","E537","IN","GBV353","MAXXAM","375-85-9","Perfluoroheptanoic acid","52","ng/L","","7.4","MDL","","NM","","","20","PQL","YES","-99","","1","1","20","TEST"
"CEF-MFS-TW02-0218","E537","IN","GBV353","MAXXAM","355-46-4","Perfluorohexanesulfonic acid","8.1","ng/L","J","5.6","MDL","","NM","","","20","PQL","YES","-99","","1","1","20","TEST"
"CEF-MFS-TW02-0218","E537","IN","GBV353","MAXXAM","307-24-4","Perfluorohexanoic acid","64","ng/L","","3.5","MDL","","NM","","","20","PQL","YES","-99","","1","1","20","TEST"
"CEF-MFS-TW02-0218","E537","IN","GBV353","MAXXAM","335-67-1","Perfluorooctanoic acid","14","ng/L","J","3.3","MDL","","NM","","","20","PQL","YES","-99","","1","1","20","TEST"
"CEF-MFS-TW02-0218","E537","IN","GBV353","MAXXAM","375-95-1","Perfluorononanoic acid","8.7","ng/L","U","8.7","MDL","","NM","","","20","PQL","YES","-99","","1","1","20","TEST"
"CEF-MFS-TW02-0218","E537","IN","GBV353","MAXXAM","1763-23-1","Perfluorooctanesulfonic acid","24","ng/L","","6.0","MDL","","NM","","","20","PQL","YES","-99","","1","1","20","TEST"
"CEF-MFS-TW02-0218","E537","IN","GBV353","MAXXAM","376-06-7","Perfluorotetradecanoic acid","2.7","ng/L","U","2.7","MDL","","NM","","","20","PQL","YES","-99","","1","1","20","TEST"
"CEF-MFS-TW02-0218","E537","IN","GBV353","MAXXAM","72629-94-8","Perfluorotridecanoic acid","3.8","ng/L","U","3.8","MDL","","NM","","","20","PQL","YES","-99","","1","1","20","TEST"
"CEF-MFS-TW02-0218","E537","IN","GBV353","MAXXAM","2058-94-8","Perfluoroundecanoic acid","2.9","ng/L","J","2.5","MDL","","NM","","","20","PQL","YES","-99","","1","1","20","TEST"
"CEF-S3-TW02-0209","E537","DL1","GBV354","MAXXAM","13C2PFDA","13C2-Perfluorodecanoic acid","90","%","","-99","NA","","SUR","90","","-99","NA","YES","-99","","1","1","-99","TEST"
"CEF-S3-TW02-0209","E537","DL1","GBV354","MAXXAM","13C2PFDOA","13C2-Perfluorododecanoic acid","86","%","","-99","NA","","SUR","86","","-99","NA","YES","-99","","1","1","-99","TEST"
"CEF-S3-TW02-0209","E537","DL1","GBV354","MAXXAM","13C2PFHXA","13C2-Perfluorohexanoic acid","115","%","","-99","NA","","SUR","115","","-99","NA","YES","-99","","1","1","-99","TEST"
"CEF-S3-TW02-0209","E537","DL1","GBV354","MAXXAM","13C2PFTDA","13C2-Perfluorotetradecanoic acid","68","%","","-99","NA","","SUR","68","","-99","NA","YES","-99","","1","1","-99","TEST"
"CEF-S3-TW02-0209","E537","DL1","GBV354","MAXXAM","13C2PFUA","13C2-Perfluoroundecanoic acid","95","%","","-99","NA","","SUR","95","","-99","NA","YES","-99","","1","1","-99","TEST"
"CEF-S3-TW02-0209","E537","DL1","GBV354","MAXXAM","375-22-4-13C","13C4-Perflurobutanoic acid","106","%","","-99","NA","","SUR","106","","-99","NA","YES","-99","","1","1","-99","TEST"
"CEF-S3-TW02-0209","E537","DL1","GBV354","MAXXAM","13C4PFHPA","13C4-Perfluoroheptanoic acid","107","%","","-99","NA","","SUR","107","","-99","NA","YES","-99","","1","1","-99","TEST"
"CEF-S3-TW02-0209","E537","DL1","GBV354","MAXXAM","1763-23-1_13","13C4-Perfluorooctanesulfonate","106","%","","-99","NA","","SUR","106","","-99","NA","YES","-99","","1","1","-99","TEST"
"CEF-S3-TW02-0209","E537","DL1","GBV354","MAXXAM","335-67-1_13C","13C4-Perfluorooctanoic acid","99","%","","-99","NA","","SUR","99","","-99","NA","YES","-99","","1","1","-99","TEST"
"CEF-S3-TW02-0209","E537","DL1","GBV354","MAXXAM","13C4PFNA","13C5-Perfluorononanoic acid","102","%","","-99","NA","","SUR","102","","-99","NA","YES","-99","","1","1","-99","TEST"
"CEF-S3-TW02-0209","E537","DL1","GBV354","MAXXAM","18O2PFHXS","18O2-Perfluorohexanesulfonate","101","%","","-99","NA","","SUR","101","","-99","NA","YES","-99","","1","1","-99","TEST"
"CEF-S3-TW02-0209","E537","DL1","GBV354","MAXXAM","D3-MEFOSAA","N-METHYL-D3-PERFLUOROOCTANESULFONAMIDOACETIC ACID","89","%","","-99","NA","","SUR","89","","-99","NA","YES","-99","","1","1","-99","TEST"
"CEF-S3-TW02-0209","E537","DL1","GBV354","MAXXAM","D5-ETFOSAA","D5-ETFOSAA","86","%","","-99","NA","","SUR","86","","-99","NA","YES","-99","","1","1","-99","TEST"
"CEF-S3-TW02-0209","E537","DL1","GBV354","MAXXAM","2991-50-

6","EtFOSAA","33","ng/L","U","33","MDL","","NM","","","200","PQL","YES","-99","","1","1","200","TEST"
"CEF-S3-TW02-0209","E537","DL1","GBV354","MAXXAM","2355-31-
9","MeFOSAA","29","ng/L","U","29","MDL","","NM","","","200","PQL","YES","-99","","1","1","200","TEST"
"CEF-S3-TW02-0209","E537","DL1","GBV354","MAXXAM","375-73-5","Perfluorobutanesulfonic
acid","54","ng/L","U","54","MDL","","NM","","","200","PQL","YES","-99","","1","1","200","TEST"
"CEF-S3-TW02-0209","E537","DL1","GBV354","MAXXAM","335-76-2","Perfluorodecanoic
acid","61","ng/L","U","61","MDL","","NM","","","200","PQL","YES","-99","","1","1","200","TEST"
"CEF-S3-TW02-0209","E537","DL1","GBV354","MAXXAM","307-55-1","Perfluorododecanoic
acid","50","ng/L","U","50","MDL","","NM","","","200","PQL","YES","-99","","1","1","200","TEST"
"CEF-S3-TW02-0209","E537","DL1","GBV354","MAXXAM","375-85-9","Perfluoroheptanoic
acid","74","ng/L","U","74","MDL","","NM","","","200","PQL","YES","-99","","1","1","200","TEST"
"CEF-S3-TW02-0209","E537","DL1","GBV354","MAXXAM","355-46-4","Perfluorohexanesulfonic
acid","56","ng/L","U","56","MDL","","NM","","","200","PQL","YES","-99","","1","1","200","TEST"
"CEF-S3-TW02-0209","E537","DL1","GBV354","MAXXAM","307-24-4","Perfluorohexanoic
acid","35","ng/L","U","35","MDL","","NM","","","200","PQL","YES","-99","","1","1","200","TEST"
"CEF-S3-TW02-0209","E537","DL1","GBV354","MAXXAM","335-67-1","Perfluorooctanoic
acid","33","ng/L","U","33","MDL","","NM","","","200","PQL","YES","-99","","1","1","200","TEST"
"CEF-S3-TW02-0209","E537","DL1","GBV354","MAXXAM","375-95-1","Perfluorononanoic
acid","87","ng/L","U","87","MDL","","NM","","","200","PQL","YES","-99","","1","1","200","TEST"
"CEF-S3-TW02-0209","E537","DL1","GBV354","MAXXAM","1763-23-1","Perfluorooctanesulfonic
acid","60","ng/L","U","60","MDL","","NM","","","200","PQL","YES","-99","","1","1","200","TEST"
"CEF-S3-TW02-0209","E537","DL1","GBV354","MAXXAM","376-06-7","Perfluorotetradecanoic
acid","27","ng/L","U","27","MDL","","NM","","","200","PQL","YES","-99","","1","1","200","TEST"
"CEF-S3-TW02-0209","E537","DL1","GBV354","MAXXAM","72629-94-8","Perfluorotridecanoic
acid","38","ng/L","U","38","MDL","","NM","","","200","PQL","YES","-99","","1","1","200","TEST"
"CEF-S3-TW02-0209","E537","DL1","GBV354","MAXXAM","2058-94-8","Perfluoroundecanoic
acid","25","ng/L","U","25","MDL","","NM","","","200","PQL","YES","-99","","1","1","200","TEST"
"5410178:Spiked Blank","E537","IN","5410178:Spiked Blank","MAXXAM","13C2PFDA","13C2-Perfluorodecanoic
acid","112","%","","-99","NA","","SUR","112","","-99","NA","YES","-99","","1","1","-99","TEST"
"5410178:Spiked Blank","E537","IN","5410178:Spiked Blank","MAXXAM","13C2PFDOA","13C2-
Perfluorododecanoic acid","93","%","","-99","NA","","SUR","93","","-99","NA","YES","-99","","1","1","-99","TEST"
"5410178:Spiked Blank","E537","IN","5410178:Spiked Blank","MAXXAM","13C2PFHXA","13C2-
Perfluorohexanoic acid","107","%","","-99","NA","","SUR","107","","-99","NA","YES","-99","","1","1","-99","TEST"
"5410178:Spiked Blank","E537","IN","5410178:Spiked Blank","MAXXAM","13C2PFTDA","13C2-
Perfluorotetradecanoic
acid","96","%","","-99","NA","","SUR","96","","-99","NA","YES","-99","","1","1","-99","TEST"
"5410178:Spiked Blank","E537","IN","5410178:Spiked Blank","MAXXAM","13C2PFUA","13C2-
Perfluoroundecanoic acid","97","%","","-99","NA","","SUR","97","","-99","NA","YES","-99","","1","1","-99","TEST"
"5410178:Spiked Blank","E537","IN","5410178:Spiked Blank","MAXXAM","375-22-4-13C","13C4-Perflurobutanoic
acid","104","%","","-99","NA","","SUR","104","","-99","NA","YES","-99","","1","1","-99","TEST"
"5410178:Spiked Blank","E537","IN","5410178:Spiked Blank","MAXXAM","13C4PFHPA","13C4-
Perfluoroheptanoic
acid","101","%","","-99","NA","","SUR","101","","-99","NA","YES","-99","","1","1","-99","TEST"
"5410178:Spiked Blank","E537","IN","5410178:Spiked Blank","MAXXAM","1763-23-1_13","13C4-
Perfluorooctanesulfonate","113","%","","-99","NA","","SUR","113","","-99","NA","YES","-99","","1","1","-99","TES
T"
"5410178:Spiked Blank","E537","IN","5410178:Spiked Blank","MAXXAM","335-67-1_13C","13C4-
Perfluorooctanoic acid","109","%","","-99","NA","","SUR","109","","-99","NA","YES","-99","","1","1","-99","TEST"
"5410178:Spiked Blank","E537","IN","5410178:Spiked Blank","MAXXAM","13C4PFNA","13C5-Perfluorononanoic
acid","110","%","","-99","NA","","SUR","110","","-99","NA","YES","-99","","1","1","-99","TEST"
"5410178:Spiked Blank","E537","IN","5410178:Spiked Blank","MAXXAM","18O2PFHXS","18O2-
Perfluorohexanesulfonate","98","%","","-99","NA","","SUR","98","","-99","NA","YES","-99","","1","1","-99","TEST"
"5410178:Spiked Blank","E537","IN","5410178:Spiked Blank","MAXXAM","D3-MEFOSAA","N-METHYL-D3-
PERFLUOROOCTANESULFONAMIDOACETIC

ACID","89","%","","-99","NA","","SUR","89","","-99","NA","YES","-99","","1","1","-99","TEST"
"5410178:Spiked Blank","E537","IN","5410178:Spiked Blank","MAXXAM","D5-ETFOSAA","D5-
ETFOSAA","90","%","","-99","NA","","SUR","90","","-99","NA","YES","-99","","1","1","-99","TEST"
"5410178:Spiked Blank","E537","IN","5410178:Spiked Blank","MAXXAM","2991-50-
6","EtFOSAA","98","ng/L","","3.3","MDL","","PDSPK","98","","20","PQL","YES","-99","","1","1","20","TEST"
"5410178:Spiked Blank","E537","IN","5410178:Spiked Blank","MAXXAM","2355-31-
9","MeFOSAA","98","ng/L","","2.9","MDL","","PDSPK","98","","20","PQL","YES","-99","","1","1","20","TEST"
"5410178:Spiked Blank","E537","IN","5410178:Spiked Blank","MAXXAM","375-73-5","Perfluorobutanesulfonic
acid","115","ng/L","","5.4","MDL","","PDSPK","115","","20","PQL","YES","-99","","1","1","20","TEST"
"5410178:Spiked Blank","E537","IN","5410178:Spiked Blank","MAXXAM","335-76-2","Perfluorodecanoic
acid","97","ng/L","","6.1","MDL","","PDSPK","97","","20","PQL","YES","-99","","1","1","20","TEST"
"5410178:Spiked Blank","E537","IN","5410178:Spiked Blank","MAXXAM","307-55-1","Perfluorododecanoic
acid","104","ng/L","","5.0","MDL","","PDSPK","104","","20","PQL","YES","-99","","1","1","20","TEST"
"5410178:Spiked Blank","E537","IN","5410178:Spiked Blank","MAXXAM","375-85-9","Perfluoroheptanoic
acid","105","ng/L","","7.4","MDL","","PDSPK","105","","20","PQL","YES","-99","","1","1","20","TEST"
"5410178:Spiked Blank","E537","IN","5410178:Spiked Blank","MAXXAM","355-46-4","Perfluorohexanesulfonic
acid","114","ng/L","","5.6","MDL","","PDSPK","114","","20","PQL","YES","-99","","1","1","20","TEST"
"5410178:Spiked Blank","E537","IN","5410178:Spiked Blank","MAXXAM","307-24-4","Perfluorohexanoic
acid","102","ng/L","","3.5","MDL","","PDSPK","102","","20","PQL","YES","-99","","1","1","20","TEST"
"5410178:Spiked Blank","E537","IN","5410178:Spiked Blank","MAXXAM","335-67-1","Perfluorooctanoic
acid","101","ng/L","","3.3","MDL","","PDSPK","101","","20","PQL","YES","-99","","1","1","20","TEST"
"5410178:Spiked Blank","E537","IN","5410178:Spiked Blank","MAXXAM","375-95-1","Perfluorononanoic
acid","103","ng/L","","8.7","MDL","","PDSPK","103","","20","PQL","YES","-99","","1","1","20","TEST"
"5410178:Spiked Blank","E537","IN","5410178:Spiked Blank","MAXXAM","1763-23-1","Perfluorooctanesulfonic
acid","93","ng/L","","6.0","MDL","","PDSPK","93","","20","PQL","YES","-99","","1","1","20","TEST"
"5410178:Spiked Blank","E537","IN","5410178:Spiked Blank","MAXXAM","376-06-7","Perfluorotetradecanoic
acid","102","ng/L","","2.7","MDL","","PDSPK","102","","20","PQL","YES","-99","","1","1","20","TEST"
"5410178:Spiked Blank","E537","IN","5410178:Spiked Blank","MAXXAM","72629-94-8","Perfluorotridecanoic
acid","103","ng/L","","3.8","MDL","","PDSPK","103","","20","PQL","YES","-99","","1","1","20","TEST"
"5410178:Spiked Blank","E537","IN","5410178:Spiked Blank","MAXXAM","2058-94-8","Perfluoroundecanoic
acid","101","ng/L","","2.5","MDL","","PDSPK","101","","20","PQL","YES","-99","","1","1","20","TEST"
"5410178:LCSD","E537","IN","5410178:LCSD","MAXXAM","13C2PFDA","13C2-Perfluorodecanoic
acid","91","%","","-99","NA","","SUR","91","","-99","NA","YES","-99","","1","1","-99","TEST"
"5410178:LCSD","E537","IN","5410178:LCSD","MAXXAM","13C2PFDOA","13C2-Perfluorododecanoic
acid","90","%","","-99","NA","","SUR","90","","-99","NA","YES","-99","","1","1","-99","TEST"
"5410178:LCSD","E537","IN","5410178:LCSD","MAXXAM","13C2PFHXA","13C2-Perfluorohexanoic
acid","98","%","","-99","NA","","SUR","98","","-99","NA","YES","-99","","1","1","-99","TEST"
"5410178:LCSD","E537","IN","5410178:LCSD","MAXXAM","13C2PFTDA","13C2-Perfluorotetradecanoic
acid","89","%","","-99","NA","","SUR","89","","-99","NA","YES","-99","","1","1","-99","TEST"
"5410178:LCSD","E537","IN","5410178:LCSD","MAXXAM","13C2PFUA","13C2-Perfluoroundecanoic
acid","91","%","","-99","NA","","SUR","91","","-99","NA","YES","-99","","1","1","-99","TEST"
"5410178:LCSD","E537","IN","5410178:LCSD","MAXXAM","375-22-4-13C","13C4-Perflurobutanoic
acid","94","%","","-99","NA","","SUR","94","","-99","NA","YES","-99","","1","1","-99","TEST"
"5410178:LCSD","E537","IN","5410178:LCSD","MAXXAM","13C4PFHPA","13C4-Perfluoroheptanoic
acid","95","%","","-99","NA","","SUR","95","","-99","NA","YES","-99","","1","1","-99","TEST"
"5410178:LCSD","E537","IN","5410178:LCSD","MAXXAM","1763-23-1_13","13C4-
Perfluorooctanesulfonate","95","%","","-99","NA","","SUR","95","","-99","NA","YES","-99","","1","1","-99","TEST"
"5410178:LCSD","E537","IN","5410178:LCSD","MAXXAM","335-67-1_13C","13C4-Perfluorooctanoic
acid","100","%","","-99","NA","","SUR","100","","-99","NA","YES","-99","","1","1","-99","TEST"
"5410178:LCSD","E537","IN","5410178:LCSD","MAXXAM","13C4PFNA","13C5-Perfluorononanoic
acid","101","%","","-99","NA","","SUR","101","","-99","NA","YES","-99","","1","1","-99","TEST"
"5410178:LCSD","E537","IN","5410178:LCSD","MAXXAM","18O2PFHXS","18O2-
Perfluorohexanesulfonate","93","%","","-99","NA","","SUR","93","","-99","NA","YES","-99","","1","1","-99","TEST"
"5410178:LCSD","E537","IN","5410178:LCSD","MAXXAM","D3-MEFOSAA","N-METHYL-D3-

PERFLUOROOCTANESULFONAMIDOACETIC
ACID","87","%","","-99","NA","","SUR","87","","-99","NA","YES","-99","","1","1","-99","TEST"
"5410178:LCSD","E537","IN","5410178:LCSD","MAXXAM","D5-ETFOSAA","D5-
ETFOSAA","87","%","","-99","NA","","SUR","87","","-99","NA","YES","-99","","1","1","-99","TEST"
"5410178:LCSD","E537","IN","5410178:LCSD","MAXXAM","2991-50-
6","EtFOSAA","97","ng/L","","3.3","MDL","","PDSPK","97","0.72","20","PQL","YES","-99","","1","1","20","TEST"
"5410178:LCSD","E537","IN","5410178:LCSD","MAXXAM","2355-31-
9","MeFOSAA","99","ng/L","","2.9","MDL","","PDSPK","99","1.3","20","PQL","YES","-99","","1","1","20","TEST"
"5410178:LCSD","E537","IN","5410178:LCSD","MAXXAM","375-73-5","Perfluorobutanesulfonic
acid","111","ng/L","","5.4","MDL","","PDSPK","111","3.8","20","PQL","YES","-99","","1","1","20","TEST"
"5410178:LCSD","E537","IN","5410178:LCSD","MAXXAM","335-76-2","Perfluorodecanoic
acid","106","ng/L","","6.1","MDL","","PDSPK","106","9.2","20","PQL","YES","-99","","1","1","20","TEST"
"5410178:LCSD","E537","IN","5410178:LCSD","MAXXAM","307-55-1","Perfluorododecanoic
acid","99","ng/L","","5.0","MDL","","PDSPK","99","5.4","20","PQL","YES","-99","","1","1","20","TEST"
"5410178:LCSD","E537","IN","5410178:LCSD","MAXXAM","375-85-9","Perfluoroheptanoic
acid","102","ng/L","","7.4","MDL","","PDSPK","102","3.5","20","PQL","YES","-99","","1","1","20","TEST"
"5410178:LCSD","E537","IN","5410178:LCSD","MAXXAM","355-46-4","Perfluorohexanesulfonic
acid","102","ng/L","","5.6","MDL","","PDSPK","102","11","20","PQL","YES","-99","","1","1","20","TEST"
"5410178:LCSD","E537","IN","5410178:LCSD","MAXXAM","307-24-4","Perfluorohexanoic
acid","101","ng/L","","3.5","MDL","","PDSPK","101","0.74","20","PQL","YES","-99","","1","1","20","TEST"
"5410178:LCSD","E537","IN","5410178:LCSD","MAXXAM","335-67-1","Perfluorooctanoic
acid","96","ng/L","","3.3","MDL","","PDSPK","96","5.5","20","PQL","YES","-99","","1","1","20","TEST"
"5410178:LCSD","E537","IN","5410178:LCSD","MAXXAM","375-95-1","Perfluorononanoic
acid","101","ng/L","","8.7","MDL","","PDSPK","101","2.8","20","PQL","YES","-99","","1","1","20","TEST"
"5410178:LCSD","E537","IN","5410178:LCSD","MAXXAM","1763-23-1","Perfluorooctanesulfonic
acid","95","ng/L","","6.0","MDL","","PDSPK","95","2.4","20","PQL","YES","-99","","1","1","20","TEST"
"5410178:LCSD","E537","IN","5410178:LCSD","MAXXAM","376-06-7","Perfluorotetradecanoic
acid","98","ng/L","","2.7","MDL","","PDSPK","98","3.6","20","PQL","YES","-99","","1","1","20","TEST"
"5410178:LCSD","E537","IN","5410178:LCSD","MAXXAM","72629-94-8","Perfluorotridecanoic
acid","98","ng/L","","3.8","MDL","","PDSPK","98","4.7","20","PQL","YES","-99","","1","1","20","TEST"
"5410178:LCSD","E537","IN","5410178:LCSD","MAXXAM","2058-94-8","Perfluoroundecanoic
acid","102","ng/L","","2.5","MDL","","PDSPK","102","1.3","20","PQL","YES","-99","","1","1","20","TEST"
"5412188:Spiked Blank","E537","IN","5412188:Spiked Blank","MAXXAM","13C2PFDA","13C2-Perfluorodecanoic
acid","105","%","","-99","NA","","SUR","105","","-99","NA","YES","-99","","1","1","-99","TEST"
"5412188:Spiked Blank","E537","IN","5412188:Spiked Blank","MAXXAM","13C2PFDOA","13C2-
Perfluorododecanoic
acid","102","%","","-99","NA","","SUR","102","","-99","NA","YES","-99","","1","1","-99","TEST"
"5412188:Spiked Blank","E537","IN","5412188:Spiked Blank","MAXXAM","13C2PFHXA","13C2-
Perfluorohexanoic acid","110","%","","-99","NA","","SUR","110","","-99","NA","YES","-99","","1","1","-99","TEST"
"5412188:Spiked Blank","E537","IN","5412188:Spiked Blank","MAXXAM","13C2PFTDA","13C2-
Perfluorotetradecanoic
acid","91","%","","-99","NA","","SUR","91","","-99","NA","YES","-99","","1","1","-99","TEST"
"5412188:Spiked Blank","E537","IN","5412188:Spiked Blank","MAXXAM","13C2PFUA","13C2-
Perfluoroundecanoic
acid","108","%","","-99","NA","","SUR","108","","-99","NA","YES","-99","","1","1","-99","TEST"
"5412188:Spiked Blank","E537","IN","5412188:Spiked Blank","MAXXAM","375-22-4-13C","13C4-Perflurobutanoic
acid","101","%","","-99","NA","","SUR","101","","-99","NA","YES","-99","","1","1","-99","TEST"
"5412188:Spiked Blank","E537","IN","5412188:Spiked Blank","MAXXAM","13C4PFHPA","13C4-
Perfluoroheptanoic
acid","105","%","","-99","NA","","SUR","105","","-99","NA","YES","-99","","1","1","-99","TEST"
"5412188:Spiked Blank","E537","IN","5412188:Spiked Blank","MAXXAM","1763-23-1_13","13C4-
Perfluorooctanesulfonate","109","%","","-99","NA","","SUR","109","","-99","NA","YES","-99","","1","1","-99","TES
T"
"5412188:Spiked Blank","E537","IN","5412188:Spiked Blank","MAXXAM","335-67-1_13C","13C4-

Perfluorooctanoic acid","104","%","","-99","NA","","SUR","104","","-99","NA","YES","-99","","1","1","-99","TEST"
"5412188:Spiked Blank","E537","IN","5412188:Spiked Blank","MAXXAM","13C4PFNA","13C5-Perfluorononanoic
acid","109","%","","-99","NA","","SUR","109","","-99","NA","YES","-99","","1","1","-99","TEST"
"5412188:Spiked Blank","E537","IN","5412188:Spiked Blank","MAXXAM","18O2PFHXS","18O2-
Perfluorohexanesulfonate","102","%","","-99","NA","","SUR","102","","-99","NA","YES","-99","","1","1","-99","TES
T"
"5412188:Spiked Blank","E537","IN","5412188:Spiked Blank","MAXXAM","D3-MEFOSAA","N-METHYL-D3-
PERFLUOROOCTANESULFONAMIDOACETIC
ACID","92","%","","-99","NA","","SUR","92","","-99","NA","YES","-99","","1","1","-99","TEST"
"5412188:Spiked Blank","E537","IN","5412188:Spiked Blank","MAXXAM","D5-ETFOSAA","D5-
ETFOSAA","89","%","","-99","NA","","SUR","89","","-99","NA","YES","-99","","1","1","-99","TEST"
"5412188:Spiked Blank","E537","IN","5412188:Spiked Blank","MAXXAM","2991-50-
6","EtFOSAA","95","ng/L","","3.3","MDL","","PDSPK","95","","20","PQL","YES","-99","","1","1","20","TEST"
"5412188:Spiked Blank","E537","IN","5412188:Spiked Blank","MAXXAM","2355-31-
9","MeFOSAA","94","ng/L","","2.9","MDL","","PDSPK","94","","20","PQL","YES","-99","","1","1","20","TEST"
"5412188:Spiked Blank","E537","IN","5412188:Spiked Blank","MAXXAM","375-73-5","Perfluorobutanesulfonic
acid","102","ng/L","","5.4","MDL","","PDSPK","102","","20","PQL","YES","-99","","1","1","20","TEST"
"5412188:Spiked Blank","E537","IN","5412188:Spiked Blank","MAXXAM","335-76-2","Perfluorodecanoic
acid","105","ng/L","","6.1","MDL","","PDSPK","105","","20","PQL","YES","-99","","1","1","20","TEST"
"5412188:Spiked Blank","E537","IN","5412188:Spiked Blank","MAXXAM","307-55-1","Perfluorododecanoic
acid","94","ng/L","","5.0","MDL","","PDSPK","94","","20","PQL","YES","-99","","1","1","20","TEST"
"5412188:Spiked Blank","E537","IN","5412188:Spiked Blank","MAXXAM","375-85-9","Perfluoroheptanoic
acid","95","ng/L","","7.4","MDL","","PDSPK","95","","20","PQL","YES","-99","","1","1","20","TEST"
"5412188:Spiked Blank","E537","IN","5412188:Spiked Blank","MAXXAM","355-46-4","Perfluorohexanesulfonic
acid","106","ng/L","","5.6","MDL","","PDSPK","106","","20","PQL","YES","-99","","1","1","20","TEST"
"5412188:Spiked Blank","E537","IN","5412188:Spiked Blank","MAXXAM","307-24-4","Perfluorohexanoic
acid","93","ng/L","","3.5","MDL","","PDSPK","93","","20","PQL","YES","-99","","1","1","20","TEST"
"5412188:Spiked Blank","E537","IN","5412188:Spiked Blank","MAXXAM","335-67-1","Perfluorooctanoic
acid","101","ng/L","","3.3","MDL","","PDSPK","101","","20","PQL","YES","-99","","1","1","20","TEST"
"5412188:Spiked Blank","E537","IN","5412188:Spiked Blank","MAXXAM","375-95-1","Perfluorononanoic
acid","93","ng/L","","8.7","MDL","","PDSPK","93","","20","PQL","YES","-99","","1","1","20","TEST"
"5412188:Spiked Blank","E537","IN","5412188:Spiked Blank","MAXXAM","1763-23-1","Perfluorooctanesulfonic
acid","86","ng/L","","6.0","MDL","","PDSPK","86","","20","PQL","YES","-99","","1","1","20","TEST"
"5412188:Spiked Blank","E537","IN","5412188:Spiked Blank","MAXXAM","376-06-7","Perfluorotetradecanoic
acid","101","ng/L","","2.7","MDL","","PDSPK","101","","20","PQL","YES","-99","","1","1","20","TEST"
"5412188:Spiked Blank","E537","IN","5412188:Spiked Blank","MAXXAM","72629-94-8","Perfluorotridecanoic
acid","103","ng/L","","3.8","MDL","","PDSPK","103","","20","PQL","YES","-99","","1","1","20","TEST"
"5412188:Spiked Blank","E537","IN","5412188:Spiked Blank","MAXXAM","2058-94-8","Perfluoroundecanoic
acid","97","ng/L","","2.5","MDL","","PDSPK","97","","20","PQL","YES","-99","","1","1","20","TEST"
"5412188:LCSD","E537","IN","5412188:LCSD","MAXXAM","13C2PFDA","13C2-Perfluorodecanoic
acid","108","%","","-99","NA","","SUR","108","","-99","NA","YES","-99","","1","1","-99","TEST"
"5412188:LCSD","E537","IN","5412188:LCSD","MAXXAM","13C2PFDOA","13C2-Perfluorododecanoic
acid","105","%","","-99","NA","","SUR","105","","-99","NA","YES","-99","","1","1","-99","TEST"
"5412188:LCSD","E537","IN","5412188:LCSD","MAXXAM","13C2PFHXA","13C2-Perfluorohexanoic
acid","115","%","","-99","NA","","SUR","115","","-99","NA","YES","-99","","1","1","-99","TEST"
"5412188:LCSD","E537","IN","5412188:LCSD","MAXXAM","13C2PFTDA","13C2-Perfluorotetradecanoic
acid","95","%","","-99","NA","","SUR","95","","-99","NA","YES","-99","","1","1","-99","TEST"
"5412188:LCSD","E537","IN","5412188:LCSD","MAXXAM","13C2PFUA","13C2-Perfluoroundecanoic
acid","113","%","","-99","NA","","SUR","113","","-99","NA","YES","-99","","1","1","-99","TEST"
"5412188:LCSD","E537","IN","5412188:LCSD","MAXXAM","375-22-4-13C","13C4-Perflurobutanoic
acid","115","%","","-99","NA","","SUR","115","","-99","NA","YES","-99","","1","1","-99","TEST"
"5412188:LCSD","E537","IN","5412188:LCSD","MAXXAM","13C4PFHPA","13C4-Perfluoroheptanoic
acid","112","%","","-99","NA","","SUR","112","","-99","NA","YES","-99","","1","1","-99","TEST"
"5412188:LCSD","E537","IN","5412188:LCSD","MAXXAM","1763-23-1_13","13C4-

Perfluorooctanesulfonate","114","%","","-99","NA","","SUR","114","","-99","NA","YES","-99","","1","1","-99","TEST"
"5412188:LCSD","E537","IN","5412188:LCSD","MAXXAM","335-67-1_13C","13C4-Perfluorooctanoic acid","107","%","","-99","NA","","SUR","107","","-99","NA","YES","-99","","1","1","-99","TEST"
"5412188:LCSD","E537","IN","5412188:LCSD","MAXXAM","13C4PFNA","13C5-Perfluorononanoic acid","110","%","","-99","NA","","SUR","110","","-99","NA","YES","-99","","1","1","-99","TEST"
"5412188:LCSD","E537","IN","5412188:LCSD","MAXXAM","18O2PFHXS","18O2-Perfluorohexanesulfonate","111","%","","-99","NA","","SUR","111","","-99","NA","YES","-99","","1","1","-99","TEST"
"5412188:LCSD","E537","IN","5412188:LCSD","MAXXAM","D3-MEFOSAA","N-METHYL-D3-PERFLUOROOCTANESULFONAMIDOACETIC ACID","95","%","","-99","NA","","SUR","95","","-99","NA","YES","-99","","1","1","-99","TEST"
"5412188:LCSD","E537","IN","5412188:LCSD","MAXXAM","D5-ETFOSAA","D5-ETFOSAA","92","%","","-99","NA","","SUR","92","","-99","NA","YES","-99","","1","1","-99","TEST"
"5412188:LCSD","E537","IN","5412188:LCSD","MAXXAM","2991-50-6","EtFOSAA","94","ng/L","","3.3","MDL","","PDSPK","94","1.1","20","PQL","YES","-99","","1","1","20","TEST"
"5412188:LCSD","E537","IN","5412188:LCSD","MAXXAM","2355-31-9","MeFOSAA","91","ng/L","","2.9","MDL","","PDSPK","91","2.8","20","PQL","YES","-99","","1","1","20","TEST"
"5412188:LCSD","E537","IN","5412188:LCSD","MAXXAM","375-73-5","Perfluorobutanesulfonic acid","110","ng/L","","5.4","MDL","","PDSPK","110","7.4","20","PQL","YES","-99","","1","1","20","TEST"
"5412188:LCSD","E537","IN","5412188:LCSD","MAXXAM","335-76-2","Perfluorodecanoic acid","98","ng/L","","6.1","MDL","","PDSPK","98","6.3","20","PQL","YES","-99","","1","1","20","TEST"
"5412188:LCSD","E537","IN","5412188:LCSD","MAXXAM","307-55-1","Perfluorododecanoic acid","97","ng/L","","5.0","MDL","","PDSPK","97","2.8","20","PQL","YES","-99","","1","1","20","TEST"
"5412188:LCSD","E537","IN","5412188:LCSD","MAXXAM","375-85-9","Perfluoroheptanoic acid","88","ng/L","","7.4","MDL","","PDSPK","88","7.8","20","PQL","YES","-99","","1","1","20","TEST"
"5412188:LCSD","E537","IN","5412188:LCSD","MAXXAM","355-46-4","Perfluorohexanesulfonic acid","100","ng/L","","5.6","MDL","","PDSPK","100","6.2","20","PQL","YES","-99","","1","1","20","TEST"
"5412188:LCSD","E537","IN","5412188:LCSD","MAXXAM","307-24-4","Perfluorohexanoic acid","91","ng/L","","3.5","MDL","","PDSPK","91","1.6","20","PQL","YES","-99","","1","1","20","TEST"
"5412188:LCSD","E537","IN","5412188:LCSD","MAXXAM","335-67-1","Perfluorooctanoic acid","100","ng/L","","3.3","MDL","","PDSPK","100","0.64","20","PQL","YES","-99","","1","1","20","TEST"
"5412188:LCSD","E537","IN","5412188:LCSD","MAXXAM","375-95-1","Perfluorononanoic acid","92","ng/L","","8.7","MDL","","PDSPK","92","0.95","20","PQL","YES","-99","","1","1","20","TEST"
"5412188:LCSD","E537","IN","5412188:LCSD","MAXXAM","1763-23-1","Perfluorooctanesulfonic acid","89","ng/L","","6.0","MDL","","PDSPK","89","2.6","20","PQL","YES","-99","","1","1","20","TEST"
"5412188:LCSD","E537","IN","5412188:LCSD","MAXXAM","376-06-7","Perfluorotetradecanoic acid","98","ng/L","","2.7","MDL","","PDSPK","98","3.0","20","PQL","YES","-99","","1","1","20","TEST"
"5412188:LCSD","E537","IN","5412188:LCSD","MAXXAM","72629-94-8","Perfluorotridecanoic acid","102","ng/L","","3.8","MDL","","PDSPK","102","0.53","20","PQL","YES","-99","","1","1","20","TEST"
"5412188:LCSD","E537","IN","5412188:LCSD","MAXXAM","2058-94-8","Perfluoroundecanoic acid","94","ng/L","","2.5","MDL","","PDSPK","94","3.1","20","PQL","YES","-99","","1","1","20","TEST"
"5410178:Method Blank","E537","IN","5410178:Method Blank","MAXXAM","13C2PFDA","13C2-Perfluorodecanoic acid","98","%","","-99","NA","","SUR","98","","-99","NA","YES","-99","","1","1","-99","TEST"
"5410178:Method Blank","E537","IN","5410178:Method Blank","MAXXAM","13C2PFDOA","13C2-Perfluorododecanoic acid","92","%","","-99","NA","","SUR","92","","-99","NA","YES","-99","","1","1","-99","TEST"
"5410178:Method Blank","E537","IN","5410178:Method Blank","MAXXAM","13C2PFHXA","13C2-Perfluorohexanoic acid","103","%","","-99","NA","","SUR","103","","-99","NA","YES","-99","","1","1","-99","TEST"
"5410178:Method Blank","E537","IN","5410178:Method Blank","MAXXAM","13C2PFTDA","13C2-Perfluorotetradecanoic acid","85","%","","-99","NA","","SUR","85","","-99","NA","YES","-99","","1","1","-99","TEST"
"5410178:Method Blank","E537","IN","5410178:Method Blank","MAXXAM","13C2PFUA","13C2-Perfluoroundecanoic acid","93","%","","-99","NA","","SUR","93","","-99","NA","YES","-99","","1","1","-99","TEST"
"5410178:Method Blank","E537","IN","5410178:Method Blank","MAXXAM","375-22-4-13C","13C4-

Perflurobutanoic acid","99","%","","-99","NA","","SUR","99","","-99","NA","YES","-99","","1","1","-99","TEST"
"5410178:Method Blank","E537","IN","5410178:Method Blank","MAXXAM","13C4PFHPA","13C4-
Perfluoroheptanoic acid","96","%","","-99","NA","","SUR","96","","-99","NA","YES","-99","","1","1","-99","TEST"
"5410178:Method Blank","E537","IN","5410178:Method Blank","MAXXAM","1763-23-1_13","13C4-
Perfluorooctanesulfonate","101","%","","-99","NA","","SUR","101","","-99","NA","YES","-99","","1","1","-99","TES
T"
"5410178:Method Blank","E537","IN","5410178:Method Blank","MAXXAM","335-67-1_13C","13C4-
Perfluorooctanoic acid","97","%","","-99","NA","","SUR","97","","-99","NA","YES","-99","","1","1","-99","TEST"
"5410178:Method Blank","E537","IN","5410178:Method Blank","MAXXAM","13C4PFNA","13C5-
Perfluorononanoic acid","104","%","","-99","NA","","SUR","104","","-99","NA","YES","-99","","1","1","-99","TEST"
"5410178:Method Blank","E537","IN","5410178:Method Blank","MAXXAM","18O2PFHXS","18O2-
Perfluorohexanesulfonate","101","%","","-99","NA","","SUR","101","","-99","NA","YES","-99","","1","1","-99","TES
T"
"5410178:Method Blank","E537","IN","5410178:Method Blank","MAXXAM","D3-MEFOSAA","N-METHYL-D3-
PERFLUOROOCTANESULFONAMIDOACETIC
ACID","86","%","","-99","NA","","SUR","86","","-99","NA","YES","-99","","1","1","-99","TEST"
"5410178:Method Blank","E537","IN","5410178:Method Blank","MAXXAM","D5-ETFOSAA","D5-
ETFOSAA","81","%","","-99","NA","","SUR","81","","-99","NA","YES","-99","","1","1","-99","TEST"
"5410178:Method Blank","E537","IN","5410178:Method Blank","MAXXAM","2991-50-
6","EtFOSAA","3.3","ng/L","U","3.3","MDL","","NM","","","20","PQL","YES","-99","","1","1","20","TEST"
"5410178:Method Blank","E537","IN","5410178:Method Blank","MAXXAM","2355-31-
9","MeFOSAA","2.9","ng/L","U","2.9","MDL","","NM","","","20","PQL","YES","-99","","1","1","20","TEST"
"5410178:Method Blank","E537","IN","5410178:Method Blank","MAXXAM","375-73-5","Perfluorobutanesulfonic
acid","5.4","ng/L","U","5.4","MDL","","NM","","","20","PQL","YES","-99","","1","1","20","TEST"
"5410178:Method Blank","E537","IN","5410178:Method Blank","MAXXAM","335-76-2","Perfluorodecanoic
acid","6.1","ng/L","U","6.1","MDL","","NM","","","20","PQL","YES","-99","","1","1","20","TEST"
"5410178:Method Blank","E537","IN","5410178:Method Blank","MAXXAM","307-55-1","Perfluorododecanoic
acid","5.0","ng/L","U","5.0","MDL","","NM","","","20","PQL","YES","-99","","1","1","20","TEST"
"5410178:Method Blank","E537","IN","5410178:Method Blank","MAXXAM","375-85-9","Perfluoroheptanoic
acid","7.4","ng/L","U","7.4","MDL","","NM","","","20","PQL","YES","-99","","1","1","20","TEST"
"5410178:Method Blank","E537","IN","5410178:Method Blank","MAXXAM","355-46-4","Perfluorohexanesulfonic
acid","5.6","ng/L","U","5.6","MDL","","NM","","","20","PQL","YES","-99","","1","1","20","TEST"
"5410178:Method Blank","E537","IN","5410178:Method Blank","MAXXAM","307-24-4","Perfluorohexanoic
acid","3.5","ng/L","U","3.5","MDL","","NM","","","20","PQL","YES","-99","","1","1","20","TEST"
"5410178:Method Blank","E537","IN","5410178:Method Blank","MAXXAM","335-67-1","Perfluorooctanoic
acid","3.3","ng/L","U","3.3","MDL","","NM","","","20","PQL","YES","-99","","1","1","20","TEST"
"5410178:Method Blank","E537","IN","5410178:Method Blank","MAXXAM","375-95-1","Perfluorononanoic
acid","8.7","ng/L","U","8.7","MDL","","NM","","","20","PQL","YES","-99","","1","1","20","TEST"
"5410178:Method Blank","E537","IN","5410178:Method Blank","MAXXAM","1763-23-1","Perfluorooctanesulfonic
acid","6.0","ng/L","U","6.0","MDL","","NM","","","20","PQL","YES","-99","","1","1","20","TEST"
"5410178:Method Blank","E537","IN","5410178:Method Blank","MAXXAM","376-06-7","Perfluorotetradecanoic
acid","2.7","ng/L","U","2.7","MDL","","NM","","","20","PQL","YES","-99","","1","1","20","TEST"
"5410178:Method Blank","E537","IN","5410178:Method Blank","MAXXAM","72629-94-8","Perfluorotridecanoic
acid","3.8","ng/L","U","3.8","MDL","","NM","","","20","PQL","YES","-99","","1","1","20","TEST"
"5410178:Method Blank","E537","IN","5410178:Method Blank","MAXXAM","2058-94-8","Perfluoroundecanoic
acid","2.5","ng/L","U","2.5","MDL","","NM","","","20","PQL","YES","-99","","1","1","20","TEST"
"5412188:Method Blank","E537","IN","5412188:Method Blank","MAXXAM","13C2PFDA","13C2-Perfluorodecanoic
acid","108","%","","-99","NA","","SUR","108","","-99","NA","YES","-99","","1","1","-99","TEST"
"5412188:Method Blank","E537","IN","5412188:Method Blank","MAXXAM","13C2PFDOA","13C2-
Perfluorododecanoic
acid","104","%","","-99","NA","","SUR","104","","-99","NA","YES","-99","","1","1","-99","TEST"
"5412188:Method Blank","E537","IN","5412188:Method Blank","MAXXAM","13C2PFHXA","13C2-
Perfluorohexanoic acid","110","%","","-99","NA","","SUR","110","","-99","NA","YES","-99","","1","1","-99","TEST"
"5412188:Method Blank","E537","IN","5412188:Method Blank","MAXXAM","13C2PFTDA","13C2-

Perfluorotetradecanoic
acid","98","%","","-99","NA","","SUR","98","","-99","NA","YES","-99","","1","1","-99","TEST"
"5412188:Method Blank","E537","IN","5412188:Method Blank","MAXXAM","13C2PFUA","13C2-
Perfluoroundecanoic
acid","108","%","","-99","NA","","SUR","108","","-99","NA","YES","-99","","1","1","-99","TEST"
"5412188:Method Blank","E537","IN","5412188:Method Blank","MAXXAM","375-22-4-13C","13C4-
Perflurobutanoic acid","106","%","","-99","NA","","SUR","106","","-99","NA","YES","-99","","1","1","-99","TEST"
"5412188:Method Blank","E537","IN","5412188:Method Blank","MAXXAM","13C4PFHPA","13C4-
Perfluoroheptanoic
acid","107","%","","-99","NA","","SUR","107","","-99","NA","YES","-99","","1","1","-99","TEST"
"5412188:Method Blank","E537","IN","5412188:Method Blank","MAXXAM","1763-23-1_13","13C4-
Perfluorooctanesulfonate","97","%","","-99","NA","","SUR","97","","-99","NA","YES","-99","","1","1","-99","TEST"
"5412188:Method Blank","E537","IN","5412188:Method Blank","MAXXAM","335-67-1_13C","13C4-
Perfluorooctanoic acid","104","%","","-99","NA","","SUR","104","","-99","NA","YES","-99","","1","1","-99","TEST"
"5412188:Method Blank","E537","IN","5412188:Method Blank","MAXXAM","13C4PFNA","13C5-
Perfluorononanoic acid","106","%","","-99","NA","","SUR","106","","-99","NA","YES","-99","","1","1","-99","TEST"
"5412188:Method Blank","E537","IN","5412188:Method Blank","MAXXAM","18O2PFHXS","18O2-
Perfluorohexanesulfonate","108","%","","-99","NA","","SUR","108","","-99","NA","YES","-99","","1","1","-99","TES
T"
"5412188:Method Blank","E537","IN","5412188:Method Blank","MAXXAM","D3-MEFOSAA","N-METHYL-D3-
PERFLUOROOCTANESULFONAMIDOACETIC
ACID","89","%","","-99","NA","","SUR","89","","-99","NA","YES","-99","","1","1","-99","TEST"
"5412188:Method Blank","E537","IN","5412188:Method Blank","MAXXAM","D5-ETFOSAA","D5-
ETFOSAA","93","%","","-99","NA","","SUR","93","","-99","NA","YES","-99","","1","1","-99","TEST"
"5412188:Method Blank","E537","IN","5412188:Method Blank","MAXXAM","2991-50-
6","EtFOSAA","3.3","ng/L","U","3.3","MDL","","NM","","","20","PQL","YES","-99","","1","1","20","TEST"
"5412188:Method Blank","E537","IN","5412188:Method Blank","MAXXAM","2355-31-
9","MeFOSAA","2.9","ng/L","U","2.9","MDL","","NM","","","20","PQL","YES","-99","","1","1","20","TEST"
"5412188:Method Blank","E537","IN","5412188:Method Blank","MAXXAM","375-73-5","Perfluorobutanesulfonic
acid","5.4","ng/L","U","5.4","MDL","","NM","","","20","PQL","YES","-99","","1","1","20","TEST"
"5412188:Method Blank","E537","IN","5412188:Method Blank","MAXXAM","335-76-2","Perfluorodecanoic
acid","6.1","ng/L","U","6.1","MDL","","NM","","","20","PQL","YES","-99","","1","1","20","TEST"
"5412188:Method Blank","E537","IN","5412188:Method Blank","MAXXAM","307-55-1","Perfluorododecanoic
acid","5.0","ng/L","U","5.0","MDL","","NM","","","20","PQL","YES","-99","","1","1","20","TEST"
"5412188:Method Blank","E537","IN","5412188:Method Blank","MAXXAM","375-85-9","Perfluoroheptanoic
acid","7.4","ng/L","U","7.4","MDL","","NM","","","20","PQL","YES","-99","","1","1","20","TEST"
"5412188:Method Blank","E537","IN","5412188:Method Blank","MAXXAM","355-46-4","Perfluorohexanesulfonic
acid","5.6","ng/L","U","5.6","MDL","","NM","","","20","PQL","YES","-99","","1","1","20","TEST"
"5412188:Method Blank","E537","IN","5412188:Method Blank","MAXXAM","307-24-4","Perfluorohexanoic
acid","3.5","ng/L","U","3.5","MDL","","NM","","","20","PQL","YES","-99","","1","1","20","TEST"
"5412188:Method Blank","E537","IN","5412188:Method Blank","MAXXAM","335-67-1","Perfluorooctanoic
acid","3.3","ng/L","U","3.3","MDL","","NM","","","20","PQL","YES","-99","","1","1","20","TEST"
"5412188:Method Blank","E537","IN","5412188:Method Blank","MAXXAM","375-95-1","Perfluorononanoic
acid","8.7","ng/L","U","8.7","MDL","","NM","","","20","PQL","YES","-99","","1","1","20","TEST"
"5412188:Method Blank","E537","IN","5412188:Method Blank","MAXXAM","1763-23-1","Perfluorooctanesulfonic
acid","6.0","ng/L","U","6.0","MDL","","NM","","","20","PQL","YES","-99","","1","1","20","TEST"
"5412188:Method Blank","E537","IN","5412188:Method Blank","MAXXAM","376-06-7","Perfluorotetradecanoic
acid","2.7","ng/L","U","2.7","MDL","","NM","","","20","PQL","YES","-99","","1","1","20","TEST"
"5412188:Method Blank","E537","IN","5412188:Method Blank","MAXXAM","72629-94-8","Perfluorotridecanoic
acid","3.8","ng/L","U","3.8","MDL","","NM","","","20","PQL","YES","-99","","1","1","20","TEST"
"5412188:Method Blank","E537","IN","5412188:Method Blank","MAXXAM","2058-94-8","Perfluoroundecanoic
acid","2.5","ng/L","U","2.5","MDL","","NM","","","20","PQL","YES","-99","","1","1","20","TEST"
"JM10 CECIL","JM10 CECIL","EB-CEF-MFS-020818-17","02/08/2018
09:20","W","GBV345","NM","3187","4.191","E537","E537","IN","02/22/2018 09:57","02/24/2018

03:39","MAXXAM","COA","NA","NA","1","NA","NA","00/00/0000
00:00","-99","5410178","5410178","1","02232018","B833226","02/13/2018 14:10","03/02/2018 09:43",""
"JM10 CECIL","JM10 CECIL","EB-CEF-MFS-020818-18","02/08/2018
09:25","W","GBV346","NM","3187","4.191","E537","E537","IN","02/22/2018 09:57","02/24/2018
03:42","MAXXAM","COA","NA","NA","1","NA","NA","00/00/0000
00:00","-99","5410178","5410178","1","02232018","B833226","02/13/2018 14:10","03/02/2018 09:43",""
"JM10 CECIL","JM10 CECIL","EB-CEF-MFS-020818-19","02/08/2018
09:30","W","GBV347","NM","3187","4.191","E537","E537","IN","02/22/2018 09:57","02/24/2018
03:44","MAXXAM","COA","NA","NA","1","NA","NA","00/00/0000
00:00","-99","5410178","5410178","1","02232018","B833226","02/13/2018 14:10","03/02/2018 09:43",""
"JM10 CECIL","JM10 CECIL","FB-CEF-MFS-020818-12","02/08/2018
09:40","W","GBV348","NM","3187","4.191","E537","E537","IN","02/22/2018 09:57","02/24/2018
03:47","MAXXAM","COA","NA","NA","1","NA","NA","00/00/0000
00:00","-99","5410178","5410178","1","02232018","B833226","02/13/2018 14:10","03/02/2018 09:43",""
"JM10 CECIL","JM10 CECIL","CEF-1820-TW02-0218","02/08/2018
16:30","W","GBV349","NM","3187","4.191","E537","E537","IN","02/22/2018 09:57","02/24/2018
03:49","MAXXAM","COA","NA","NA","1","NA","NA","00/00/0000
00:00","-99","5410178","5410178","1","02232018","B833226","02/13/2018 14:10","03/02/2018 09:43",""
"JM10 CECIL","JM10 CECIL","CEF-S3-TW01-0218","02/09/2018
11:25","W","GBV350","NM","3187","4.191","E537","E537","DL1","02/23/2018 10:07","02/27/2018
14:16","MAXXAM","COA","NA","NA","10","NA","NA","00/00/0000
00:00","-99","5412188","5412188","1","02272018","B833226","02/13/2018 14:10","03/02/2018 09:43","Due to
sample matrix, a reduced sample volume was extracted. Detection limits were adjusted accordingly."
"JM10 CECIL","JM10 CECIL","FB-CEF-S3-020918-13","02/09/2018
12:00","W","GBV351","NM","3187","4.191","E537","E537","IN","02/23/2018 10:07","02/27/2018
14:26","MAXXAM","COA","NA","NA","1","NA","NA","00/00/0000
00:00","-99","5412188","5412188","1","02272018","B833226","02/13/2018 14:10","03/02/2018 09:43",""
"JM10 CECIL","JM10 CECIL","CEF-MFS-TW01-0218","02/09/2018
11:05","W","GBV352","NM","3187","4.191","E537","E537","IN","02/23/2018 10:07","02/27/2018
14:31","MAXXAM","COA","NA","NA","1","NA","NA","00/00/0000
00:00","-99","5412188","5412188","1","02272018","B833226","02/13/2018 14:10","03/02/2018 09:43",""
"JM10 CECIL","JM10 CECIL","CEF-MFS-TW02-0218","02/09/2018
15:38","W","GBV353","NM","3187","4.191","E537","E537","IN","02/23/2018 10:07","02/27/2018
14:46","MAXXAM","COA","NA","NA","1","NA","NA","00/00/0000
00:00","-99","5412188","5412188","1","02272018","B833226","02/13/2018 14:10","03/02/2018 09:43",""
"JM10 CECIL","JM10 CECIL","CEF-S3-TW02-0209","02/09/2018
13:50","W","GBV354","NM","3187","4.191","E537","E537","DL1","02/23/2018 10:07","02/27/2018
14:51","MAXXAM","COA","NA","NA","10","NA","NA","00/00/0000
00:00","-99","5412188","5412188","1","02272018","B833226","02/13/2018 14:10","03/02/2018 09:43","Due to
sample matrix, a reduced sample volume was extracted. Detection limits were adjusted accordingly."
"JM10 CECIL","JM10 CECIL","5410178:Spiked Blank","00/00/0000 00:00","WQ","5410178:Spiked
Blank","LCS","3187","4.191","E537","E537","IN","02/22/2018 23:59","02/24/2018
03:34","MAXXAM","COA","NA","NA","1","NA","NA","00/00/0000
00:00","-99","5410178","5410178","1","02232018","B833226","02/13/2018 14:10","03/02/2018 09:43",""
"JM10 CECIL","JM10 CECIL","5410178:LCSD","00/00/0000
00:00","WQ","5410178:LCSD","LCSD","3187","4.191","E537","E537","IN","02/22/2018 09:58","02/24/2018
03:37","MAXXAM","COA","NA","NA","1","NA","NA","00/00/0000
00:00","-99","5410178","5410178","1","02232018","B833226","02/13/2018 14:10","03/02/2018 09:43",""
"JM10 CECIL","JM10 CECIL","5412188:Spiked Blank","00/00/0000 00:00","WQ","5412188:Spiked
Blank","LCS","3187","4.191","E537","E537","IN","02/23/2018 23:59","02/27/2018
14:07","MAXXAM","COA","NA","NA","1","NA","NA","00/00/0000
00:00","-99","5412188","5412188","1","02272018","B833226","02/13/2018 14:10","03/02/2018 09:43",""
"JM10 CECIL","JM10 CECIL","5412188:LCSD","00/00/0000
00:00","WQ","5412188:LCSD","LCSD","3187","4.191","E537","E537","IN","02/23/2018 12:57","02/27/2018

14:12","MAXXAM","COA","NA","NA","1","NA","NA","00/00/0000
00:00","-99","5412188","5412188","1","02272018","B833226","02/13/2018 14:10","03/02/2018 09:43",""
"JM10 CECIL","JM10 CECIL","5410178:Method Blank","00/00/0000 00:00","WQ","5410178:Method
Blank","MB","3187","4.191","E537","E537","IN","02/22/2018 23:59","02/24/2018
03:32","MAXXAM","COA","NA","NA","1","NA","NA","00/00/0000
00:00","-99","5410178","5410178","1","02232018","B833226","02/13/2018 14:10","03/02/2018 09:43",""
"JM10 CECIL","JM10 CECIL","5412188:Method Blank","00/00/0000 00:00","WQ","5412188:Method
Blank","MB","3187","4.191","E537","E537","IN","02/23/2018 10:07","02/27/2018
14:02","MAXXAM","COA","NA","NA","1","NA","NA","00/00/0000
00:00","-99","5412188","5412188","1","02272018","B833226","02/13/2018 14:10","03/02/2018 09:43",""

TETRA TECH

# INTERNAL CORRESPONDENCE

**TO:** **M. VED** **DATE:** **APRIL 24, 2018**

**FROM:** **MICHELLE L. WOEBER** **COPIES:** **DV FILE**

**SUBJECT:** **ORGANIC DATA VALIDATION – POLYFLUOROALKYL SUBSTANCES (PFAS)**
**NAVAL AIR STATION (NAS), CECIL FIELD**
**SAMPLE DELIVERY GROUP (SDG) B833226**

**SAMPLES:** 10/Aqueous/PFAS

| | | |
|---|---|---|
| CEF-1820-TW02-0218 | CEF-MFS-TW01-0218 | CEF-MFS-TW02-0218 |
| CEF-S3-TW01-0218 | CEF-S3-TW02-0209 | EB-CEF-MFS-020818-17 |
| EB-CEF-MFS-020818-18 | EB-CEF-MFS-020818-19 | FB-CEF-MFS-020818-12 |
| FB-CEF-S3-020918-13 | | |

**Overview**

The sample set for NAS Cecil Field, SDG B833226 consisted of five (5) aqueous environmental samples, three (3) equipment blanks, and two (2) Field Reagent Blanks (FRBs). All ten (10) samples were analyzed for polyfluoroalkyl substances (PFAS). No field duplicate sample pair was included in this SDG.

The samples were collected by Tetra Tech, Inc. on February 8-9, 2018 and analyzed by Maxxam Analytics. All analyses were conducted in accordance with EPA 537 Modified analytical and reporting protocols. The data contained in this SDG was validated with regard to the following parameters:

* • Data completeness
* • Hold times/Sample Preservation
* • Mass Calibration
* • LC/MS/MS System Tuning and Performance
* • Mass Spectral Acquisition Rate
* • Instrument Sensitivity Check
* • Ion Transition Check
* • Initial/Continuing Calibrations
* • Laboratory Method Blank Results
• Field Reagent Blank and Equipment Blank Results
* • Extraction Internal Standard Recoveries
* • Injection Internal Standard Recoveries
* • Laboratory Control Sample Recoveries
* • Matrix Spike/Matrix Spike Sample Duplicate Results
* • Compound Identification
* • Compound Quantitation
* • Detection Limits

The symbol (*) indicates that all quality control criteria were met for this parameter. Qualified analytical results are presented in Appendix A, results as reported by the laboratory are presented in Appendix B, and documentation supporting these findings is presented in Appendix C.

**PFAS**

The following contaminant was detected in the equipment blank, EB-CEF-MFS-020818-18, at the following concentration:

| Compound | Concentration | Action Level |
|---|---|---|
| Perfluorooctane sulfonic acid (PFOS) | 21 ng/L | > LOQ |

The detected result at a similar concentration for PFOS in the associated sample, CEF-MFS-TW02-0218, was qualified as non-detected, (U).

**Additional Comments**

Samples CEF-S3-TW01-0218 and CEF-S3-TW02-0209 were diluted prior to analysis. The reporting limits were adjusted accordingly.

A reduced volume was used to reanalyze sample CEF-1820-TW02-0218 for perfluorohexanesulfonic acid and perfluorooctane sulfonic acid due to concentrations of these compounds. The results from the reduced volume analysis was reported by the laboratory.

Detected results reported below the Limit of Quantitation (LOQ) but above the Method Detection Limit (MDL) were qualified as estimated, (J). Non-detected results were reported to the MDL in the database.

**Executive Summary**

**Laboratory Performance Issues:** None.

**Other Factors Affecting Data Quality:** Three samples required dilutions. One equipment blank contained a contaminant greater than the LOQ. Detected results below the LOQ were estimated.

The data for these analyses were reviewed with reference to the "National Functional Guidelines for Organic Superfund Methods Data Review" (January 2017), EPA Method 537 Modified, and the Department of Defense (DoD) document entitled "Quality Systems Manual (QSM) for Environmental Laboratories" (2017). The text of this report has been formulated to address only those areas affecting data quality.

Michelle L. Woeber

Tetra Tech, Inc.
Michelle L. Woeber
Chemist/Data Validator

Joseph A. Samchuck

Tetra Tech, Inc.
Joseph A. Samchuck
Data Validation Manager

Attachments:
Appendix A - Qualified Analytical Results
Appendix B – Results as Reported by the Laboratory
Appendix C – Support Documentation

## Data Qualifier Definitions

The following definitions provide brief explanations of the validation qualifiers assigned to results in the data review process.

| | |
|---|---|
| **U** | The analyte was analyzed for, but was not detected at a level greater than or equal to the level of the adjusted method detection limit for sample and method. |
| **J** | The analyte was positively identified and the associated numerical value is the approximate concentration of the analyte in the sample (due either to the quality of the data generated because certain quality control criteria were not met, or the concentration of the analyte was below the reporting limit). |
| **J+** | The result is an estimated quantity, but the result may be biased high. |
| **J-** | The result is an estimated quantity, but the result may be biased low. |
| **UJ** | The analyte was analyzed for, but was not detected. The reported detection limit is approximate and may be inaccurate or imprecise. |
| **R** | The sample result (detected) is unusable due to the quality of the data generated because certain criteria were not met. The analyte may or may not be present in the sample. |
| **UR** | The sample result (nondetected) is unusable due to the quality of the data generated because certain criteria were not met. The analyte may or may not be present in the sample. |

# APPENDIX A

## QUALIFIED ANALYTICAL RESULTS

**Qualifier Codes:**

A = Lab Blank Contamination
B = Field Blank Contamination
C = Calibration Noncompliance (i.e., % RSDs, %Ds, ICVs, CCVs, RRFs, etc.)
C01 = GC/MS Tuning Noncompliance
D = MS/MSD Recovery Noncompliance
E = LCS/LCSD Recovery Noncompliance
F = Lab Duplicate Imprecision
G = Field Duplicate Imprecision
H = Holding Time Exceedance
I = ICP Serial Dilution Noncompliance
J = ICP PDS Recovery Noncompliance; MSA's r < 0.995
K = ICP Interference - includes ICS % R Noncompliance
L = Instrument Calibration Range Exceedance
M = Sample Preservation Noncompliance
N = Internal Standard Noncompliance
N01 = Internal Standard Recovery Noncompliance Dioxins
N02 = Recovery Standard Noncompliance Dioxins
N03 = Clean-up Standard Noncompliance Dioxins
O = Poor Instrument Performance (i.e., base-time drifting)
P = Uncertainty near detection limit (< 2 x IDL for inorganics and <CRQL for organics)
Q = Other problems (can encompass a number of issues; i.e.chromatography,interferences, etc.)
R = Surrogates Recovery Noncompliance
S = Pesticide/PCB Resolution
T = % Breakdown Noncompliance for DDT and Endrin
U = RPD between columns/detectors >40% for positive results determined via GC/HPLC
V = Non-linear calibrations; correlation coefficient r < 0.995
W = EMPC result
X = Signal to noise response drop
Y = Percent solids <30%
Z = Uncertainty at 2 standard deviations is greater than sample activity
Z1 = Tentatively Identified Compound considered presumptively present
Z2 = Tentatively Identified Compound column bleed
Z3 = Tentatively Identified Compound aldol condensate
Z4 = Sample activity is less than the at uncertainty at 3 standard deviations and greater than the MDC
Z5 = Sample activity is less than the at uncertainty at 3 standard deviations and less than the MDC

| **PROJ_NO: 08005-JM10** | NSAMPLE | CEF-1820-TW02-0218 | | | CEF-MFS-TW01-0218 | | | CEF-MFS-TW02-0218 | | | CEF-S3-TW01-0218 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **SDG: B833226** | LAB_ID | GBV349 | | | GBV352 | | | GBV353 | | | GBV350 | | |
| **FRACTION: PFAS** | SAMP_DATE | 2/8/2018 | | | 2/9/2018 | | | 2/9/2018 | | | 2/9/2018 | | |
| **MEDIA: WATER** | QC_TYPE | NM | | | NM | | | NM | | | NM | | |
| | UNITS | NG/L | | | NG/L | | | NG/L | | | NG/L | | |
| | PCT_SOLIDS | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | | |
| | DUP_OF | | | | | | | | | | | | |
| PARAMETER | | RESULT | VQL | QLCD | RESULT | VQL | QLCD | RESULT | VQL | QLCD | RESULT | VQL | QLCD |
| N-ETHYL PERFLUOROOCTANE SULFONAMIDOACETIC ACID | | 3.3 | U | | 3.3 | U | | 3.3 | U | | 33 | U | |
| N-METHYL PERFLUOROOCTANE SULFONAMIDOACETIC ACID | | 2.9 | U | | 2.9 | U | | 2.9 | U | | 29 | U | |
| PENTADECAFLUOROOCTANOIC ACID | | 67 | | | 210 | | | 14 | J | P | 33 | U | |
| PERFLUOROBUTANESULFONIC ACID | | 31 | | | 11 | J | P | 5.4 | U | | 54 | U | |
| PERFLUORODECANOIC ACID | | 6.1 | U | | 7 | J | P | 6.1 | U | | 61 | U | |
| PERFLUORODODECANOIC ACID | | 5 | U | | 5 | U | | 5 | U | | 50 | U | |
| PERFLUOROHEPTANOIC ACID | | 80 | | | 330 | | | 52 | | | 74 | U | |
| PERFLUOROHEXANESULFONIC ACID | | 1200 | | | 710 | | | 8.1 | J | P | 56 | U | |
| PERFLUOROHEXANOIC ACID | | 190 | | | 310 | | | 64 | | | 35 | U | |
| PERFLUORONONANOIC ACID | | 20 | J | P | 63 | | P | 8.7 | U | | 87 | U | |
| PERFLUOROOCTANE SULFONIC ACID | | 2400 | | | 810 | | | 24 | U | B | 60 | U | |
| PERFLUOROTETRADECANOIC ACID | | 2.7 | U | | 2.7 | U | | 2.7 | U | | 27 | U | |
| PERFLUOROTRIDECANOIC ACID | | 3.8 | U | | 3.8 | U | | 3.8 | U | | 38 | U | |
| PERFLUOROUNDECANOIC ACID | | 2.5 | U | | 2.5 | U | | 2.9 | J | P | 25 | U | |

| **PROJ_NO: 08005-JM10** | NSAMPLE | CEF-S3-TW02-0209 | | | EB-CEF-MFS-020818-17 | | | EB-CEF-MFS-020818-18 | | | EB-CEF-MFS-020818-19 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **SDG: B833226** | LAB_ID | GBV354 | | | GBV345 | | | GBV346 | | | GBV347 | | |
| **FRACTION: PFAS** | SAMP_DATE | 2/9/2018 | | | 2/8/2018 | | | 2/8/2018 | | | 2/8/2018 | | |
| **MEDIA: WATER** | QC_TYPE | NM | | | NM | | | NM | | | NM | | |
| | UNITS | NG/L | | | NG/L | | | NG/L | | | NG/L | | |
| | PCT_SOLIDS | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | | |
| | DUP_OF | | | | | | | | | | | | |
| PARAMETER | | RESULT | VQL | QLCD | RESULT | VQL | QLCD | RESULT | VQL | QLCD | RESULT | VQL | QLCD |
| N-ETHYL PERFLUOROOCTANE SULFONAMIDOACETIC ACID | | 33 | U | | 3.3 | U | | 3.3 | U | | 3.3 | U | |
| N-METHYL PERFLUOROOCTANE SULFONAMIDOACETIC ACID | | 29 | U | | 2.9 | U | | 2.9 | U | | 2.9 | U | |
| PENTADECAFLUOROOCTANOIC ACID | | 33 | U | | 3.3 | U | | 3.3 | U | | 3.3 | U | |
| PERFLUOROBUTANESULFONIC ACID | | 54 | U | | 5.4 | U | | 5.4 | U | | 5.4 | U | |
| PERFLUORODECANOIC ACID | | 61 | U | | 6.1 | U | | 6.1 | U | | 6.1 | U | |
| PERFLUORODODECANOIC ACID | | 50 | U | | 5 | U | | 5 | U | | 5 | U | |
| PERFLUOROHEPTANOIC ACID | | 74 | U | | 7.4 | U | | 7.4 | U | | 7.4 | U | |
| PERFLUOROHEXANESULFONIC ACID | | 56 | U | | 5.6 | U | | 5.6 | U | | 5.6 | U | |
| PERFLUOROHEXANOIC ACID | | 35 | U | | 3.5 | U | | 3.5 | U | | 3.5 | U | |
| PERFLUORONONANOIC ACID | | 87 | U | | 8.7 | U | | 8.7 | U | | 8.7 | U | |
| PERFLUOROOCTANE SULFONIC ACID | | 60 | U | | 6 | U | | 21 | | | 6 | U | |
| PERFLUOROTETRADECANOIC ACID | | 27 | U | | 2.7 | U | | 2.7 | U | | 2.7 | U | |
| PERFLUOROTRIDECANOIC ACID | | 38 | U | | 3.8 | U | | 3.8 | U | | 3.8 | U | |
| PERFLUOROUNDECANOIC ACID | | 25 | U | | 2.5 | U | | 2.5 | U | | 2.5 | U | |

| **PROJ_NO: 08005-JM10** | NSAMPLE | FB-CEF-MFS-020818-12 | | | FB-CEF-S3-020918-13 | | |
|---|---|---|---|---|---|---|---|
| **SDG: B833226** | LAB_ID | GBV348 | | | GBV351 | | |
| **FRACTION: PFAS** | SAMP_DATE | 2/8/2018 | | | 2/9/2018 | | |
| **MEDIA: WATER** | QC_TYPE | NM | | | NM | | |
| | UNITS | NG/L | | | NG/L | | |
| | PCT_SOLIDS | 0.0 | | | 0.0 | | |
| | DUP_OF | | | | | | |
| PARAMETER | | RESULT | VQL | QLCD | RESULT | VQL | QLCD |
| N-ETHYL PERFLUOROOCTANE SULFONAMIDOACETIC ACID | | 3.3 | U | | 3.3 | U | |
| N-METHYL PERFLUOROOCTANE SULFONAMIDOACETIC ACID | | 2.9 | U | | 2.9 | U | |
| PENTADECAFLUOROOCTANOIC ACID | | 3.3 | U | | 3.3 | U | |
| PERFLUOROBUTANESULFONIC ACID | | 5.4 | U | | 5.4 | U | |
| PERFLUORODECANOIC ACID | | 6.1 | U | | 6.1 | U | |
| PERFLUORODODECANOIC ACID | | 5 | U | | 5 | U | |
| PERFLUOROHEPTANOIC ACID | | 7.4 | U | | 7.4 | U | |
| PERFLUOROHEXANESULFONIC ACID | | 5.6 | U | | 5.6 | U | |
| PERFLUOROHEXANOIC ACID | | 3.5 | U | | 3.5 | U | |
| PERFLUORONONANOIC ACID | | 8.7 | U | | 8.7 | U | |
| PERFLUOROOCTANE SULFONIC ACID | | 6 | U | | 6 | U | |
| PERFLUOROTETRADECANOIC ACID | | 2.7 | U | | 2.7 | U | |
| PERFLUOROTRIDECANOIC ACID | | 3.8 | U | | 3.8 | U | |
| PERFLUOROUNDECANOIC ACID | | 2.5 | U | | 2.5 | U | |

# APPENDIX B

## RESULTS AS REPORTED BY THE LABORATORY

Maxxam Job #: B833226
Report Date: 2018/02/28

Earth Toxics Inc
Client Project #: JM10 CECIL

## RESULTS OF ANALYSES OF WATER

| Maxxam ID | | GBV345 | GBV346 | GBV347 | | | | |
|---|---|---|---|---|---|---|---|---|
| Sampling Date | | 2018/02/08 09:20 | 2018/02/08 09:25 | 2018/02/08 09:30 | | | | |
| COC Number | | 3187 | 3187 | 3187 | | | | |
| | UNITS | EB-CEF-MFS-020818-17 | EB-CEF-MFS-020818-18 | EB-CEF-MFS-020818-19 | DL | LOD | LOQ | QC Batch |
| **Miscellaneous Parameters** | | | | | | | | |
| EtFOSAA | ng/L | 10 U | 10 U | 10 U | 3.3 | 10 | 20 | 5410178 |
| MeFOSAA | ng/L | 10 U | 10 U | 10 U | 2.9 | 10 | 20 | 5410178 |
| Perfluorobutane Sulfonate (PFBS) | ng/L | 15 U | 15 U | 15 U | 5.4 | 15 | 20 | 5410178 |
| Perfluoroheptanoic Acid (PFHpA) | ng/L | 15 U | 15 U | 15 U | 7.4 | 15 | 20 | 5410178 |
| Perfluorohexanoic Acid (PFHxA) | ng/L | 10 U | 10 U | 10 U | 3.5 | 10 | 20 | 5410178 |
| Perfluorohexane Sulfonate (PFHxS) | ng/L | 15 U | 15 U | 15 U | 5.6 | 15 | 20 | 5410178 |
| Perfluorononanoic Acid (PFNA) | ng/L | 18 U | 18 U | 18 U | 8.7 | 18 | 20 | 5410178 |
| Perfluorotetradecanoic Acid | ng/L | 10 U | 10 U | 10 U | 2.7 | 10 | 20 | 5410178 |
| Perfluorotridecanoic Acid | ng/L | 10 U | 10 U | 10 U | 3.8 | 10 | 20 | 5410178 |
| Perfluoroundecanoic Acid (PFUnA) | ng/L | 10 U | 10 U | 10 U | 2.5 | 10 | 20 | 5410178 |
| Perfluorodecanoic Acid (PFDA) | ng/L | 15 U | 15 U | 15 U | 6.1 | 15 | 20 | 5410178 |
| Perfluorododecanoic Acid (PFDoA) | ng/L | 10 U | 10 U | 10 U | 5.0 | 10 | 20 | 5410178 |
| Perfluoro-n-Octanoic Acid (PFOA) | ng/L | 10 U | 10 U | 10 U | 3.3 | 10 | 20 | 5410178 |
| Perfluorooctane Sulfonate (PFOS) | ng/L | 15 U | 21 | 15 U | 6.0 | 15 | 20 | 5410178 |
| **Surrogate Recovery (%)** | | | | | | | | |
| 13C2-Perfluorodecanoic acid | % | 99 | 87 | 91 | | | | 5410178 |
| 13C2-Perfluorododecanoic acid | % | 87 | 79 | 76 | | | | 5410178 |
| 13C2-Perfluorohexanoic acid | % | 105 | 95 | 97 | | | | 5410178 |
| 13C2-perfluorotetradecanoic acid | % | 87 | 74 | 76 | | | | 5410178 |
| 13C2-Perfluoroundecanoic acid | % | 94 | 89 | 82 | | | | 5410178 |
| 13C4-Perfluorobutanoic acid | % | 107 | 89 | 88 | | | | 5410178 |
| 13C4-Perfluoroheptanoic acid | % | 107 | 91 | 95 | | | | 5410178 |
| 13C4-Perfluorooctanesulfonate | % | 108 | 91 | 83 | | | | 5410178 |
| 13C4-Perfluorooctanoic acid | % | 114 | 97 | 92 | | | | 5410178 |
| 13C5-Perfluorononanoic acid | % | 113 | 94 | 88 | | | | 5410178 |
| 18O2-Perfluorohexanesulfonate | % | 103 | 95 | 96 | | | | 5410178 |
| D3-MeFOSAA | % | 90 | 80 | 74 | | | | 5410178 |
| D5-EtFOSAA | % | 91 | 78 | 71 | | | | 5410178 |

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



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Maxxam Analytics

Maxxam Job #: B833226
Report Date: 2018/02/28

Earth Toxics Inc
Client Project #: JM10 CECIL

## RESULTS OF ANALYSES OF WATER

| Maxxam ID | | GBV348 | | | | GBV349 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Sampling Date | | 2018/02/08 09:40 | | | | 2018/02/08 16:30 | | | | |
| COC Number | | 3187 | | | | 3187 | | | | |
| | UNITS | FB-CEF-MFS-020818-12 | DL | LOD | LOQ | CEF-1820-TW02-0218 | DL | LOD | LOQ | QC Batch |
| **Miscellaneous Parameters** | | | | | | | | | | |
| EtFOSAA | ng/L | 10 U | 3.3 | 10 | 20 | 10 U | 3.3 | 10 | 20 | 5410178 |
| MeFOSAA | ng/L | 10 U | 2.9 | 10 | 20 | 10 U | 2.9 | 10 | 20 | 5410178 |
| Perfluorobutane Sulfonate (PFBS) | ng/L | 15 U | 5.4 | 15 | 20 | 31 | 5.4 | 15 | 20 | 5410178 |
| Perfluoroheptanoic Acid (PFHpA) | ng/L | 15 U | 7.4 | 15 | 20 | 80 | 7.4 | 15 | 20 | 5410178 |
| Perfluorohexanoic Acid (PFHxA) | ng/L | 10 U | 3.5 | 10 | 20 | 190 | 3.5 | 10 | 20 | 5410178 |
| Perfluorohexane Sulfonate (PFHxS) | ng/L | 15 U | 5.6 | 15 | 20 | 1200 (1) | 56 | 150 | 200 | 5410178 |
| Perfluorononanoic Acid (PFNA) | ng/L | 18 U | 8.7 | 18 | 20 | 20 J | 8.7 | 18 | 20 | 5410178 |
| Perfluorotetradecanoic Acid | ng/L | 10 U | 2.7 | 10 | 20 | 10 U | 2.7 | 10 | 20 | 5410178 |
| Perfluorotridecanoic Acid | ng/L | 10 U | 3.8 | 10 | 20 | 10 U | 3.8 | 10 | 20 | 5410178 |
| Perfluoroundecanoic Acid (PFUnA) | ng/L | 10 U | 2.5 | 10 | 20 | 10 U | 2.5 | 10 | 20 | 5410178 |
| Perfluorodecanoic Acid (PFDA) | ng/L | 15 U | 6.1 | 15 | 20 | 15 U | 6.1 | 15 | 20 | 5410178 |
| Perfluorododecanoic Acid (PFDoA) | ng/L | 10 U | 5.0 | 10 | 20 | 10 U | 5.0 | 10 | 20 | 5410178 |
| Perfluoro-n-Octanoic Acid (PFOA) | ng/L | 10 U | 3.3 | 10 | 20 | 67 | 3.3 | 10 | 20 | 5410178 |
| Perfluorooctane Sulfonate (PFOS) | ng/L | 15 U | 6.0 | 15 | 20 | 2400 (1) | 60 | 150 | 200 | 5410178 |
| **Surrogate Recovery (%)** | | | | | | | | | | |
| 13C2-Perfluorodecanoic acid | % | 85 | | | | 83 | | | | 5410178 |
| 13C2-Perfluorododecanoic acid | % | 76 | | | | 84 | | | | 5410178 |
| 13C2-Perfluorohexanoic acid | % | 91 | | | | 84 | | | | 5410178 |
| 13C2-perfluorotetradecanoic acid | % | 69 | | | | 83 | | | | 5410178 |
| 13C2-Perfluoroundecanoic acid | % | 84 | | | | 79 | | | | 5410178 |
| 13C4-Perfluorobutanoic acid | % | 84 | | | | 81 | | | | 5410178 |
| 13C4-Perfluoroheptanoic acid | % | 89 | | | | 85 | | | | 5410178 |
| 13C4-Perfluorooctanesulfonate | % | 87 | | | | 73 | | | | 5410178 |
| 13C4-Perfluorooctanoic acid | % | 93 | | | | 89 | | | | 5410178 |
| 13C5-Perfluorononanoic acid | % | 89 | | | | 89 | | | | 5410178 |
| 18O2-Perfluorohexanesulfonate | % | 89 | | | | 83 | | | | 5410178 |
| D3-MeFOSAA | % | 76 | | | | 83 | | | | 5410178 |
| D5-EtFOSAA | % | 76 | | | | 81 | | | | 5410178 |

DL = Detection Limit
LOD = Limit of Detection
LOQ = Limit of Quantitation
QC Batch = Quality Control Batch
N/A = Not Applicable
(1) Due to high concentration of the target analyte, a reduced sample volume was extracted and analyzed. Detection limit was adjusted accordingly (10x).

Maxxam Job #: B833226
Report Date: 2018/02/28

Earth Toxics Inc
Client Project #: JM10 CECIL

## RESULTS OF ANALYSES OF WATER

| Maxxam ID | | GBV350 | | | | GBV351 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Sampling Date | | 2018/02/09 11:25 | | | | 2018/02/09 12:00 | | | | |
| COC Number | | 3187 | | | | 3187 | | | | |
| | UNITS | CEF-S3-TW01-0218 | DL | LOD | LOQ | FB-CEF-S3-020918-13 | DL | LOD | LOQ | QC Batch |
| **Miscellaneous Parameters** | | | | | | | | | | |
| EtFOSAA | ng/L | 100 U | 33 | 100 | 200 | 10 U | 3.3 | 10 | 20 | 5412188 |
| MeFOSAA | ng/L | 100 U | 29 | 100 | 200 | 10 U | 2.9 | 10 | 20 | 5412188 |
| Perfluorobutane Sulfonate (PFBS) | ng/L | 150 U | 54 | 150 | 200 | 15 U | 5.4 | 15 | 20 | 5412188 |
| Perfluoroheptanoic Acid (PFHpA) | ng/L | 150 U | 74 | 150 | 200 | 15 U | 7.4 | 15 | 20 | 5412188 |
| Perfluorohexanoic Acid (PFHxA) | ng/L | 100 U | 35 | 100 | 200 | 10 U | 3.5 | 10 | 20 | 5412188 |
| Perfluorohexane Sulfonate (PFHxS) | ng/L | 150 U | 56 | 150 | 200 | 15 U | 5.6 | 15 | 20 | 5412188 |
| Perfluorononanoic Acid (PFNA) | ng/L | 180 U | 87 | 180 | 200 | 18 U | 8.7 | 18 | 20 | 5412188 |
| Perfluorotetradecanoic Acid | ng/L | 100 U | 27 | 100 | 200 | 10 U | 2.7 | 10 | 20 | 5412188 |
| Perfluorotridecanoic Acid | ng/L | 100 U | 38 | 100 | 200 | 10 U | 3.8 | 10 | 20 | 5412188 |
| Perfluoroundecanoic Acid (PFUnA) | ng/L | 100 U | 25 | 100 | 200 | 10 U | 2.5 | 10 | 20 | 5412188 |
| Perfluorodecanoic Acid (PFDA) | ng/L | 150 U | 61 | 150 | 200 | 15 U | 6.1 | 15 | 20 | 5412188 |
| Perfluorododecanoic Acid (PFDoA) | ng/L | 100 U | 50 | 100 | 200 | 10 U | 5.0 | 10 | 20 | 5412188 |
| Perfluoro-n-Octanoic Acid (PFOA) | ng/L | 100 U | 33 | 100 | 200 | 10 U | 3.3 | 10 | 20 | 5412188 |
| Perfluorooctane Sulfonate (PFOS) | ng/L | 150 U | 60 | 150 | 200 | 15 U | 6.0 | 15 | 20 | 5412188 |
| **Surrogate Recovery (%)** | | | | | | | | | | |
| 13C2-Perfluorodecanoic acid | % | 96 | | | | 111 | | | | 5412188 |
| 13C2-Perfluorododecanoic acid | % | 98 | | | | 98 | | | | 5412188 |
| 13C2-Perfluorohexanoic acid | % | 106 | | | | 116 | | | | 5412188 |
| 13C2-perfluorotetradecanoic acid | % | 74 | | | | 97 | | | | 5412188 |
| 13C2-Perfluoroundecanoic acid | % | 91 | | | | 106 | | | | 5412188 |
| 13C4-Perfluorobutanoic acid | % | 112 | | | | 108 | | | | 5412188 |
| 13C4-Perfluoroheptanoic acid | % | 105 | | | | 112 | | | | 5412188 |
| 13C4-Perfluorooctanesulfonate | % | 108 | | | | 119 | | | | 5412188 |
| 13C4-Perfluorooctanoic acid | % | 106 | | | | 111 | | | | 5412188 |
| 13C5-Perfluorononanoic acid | % | 106 | | | | 116 | | | | 5412188 |
| 18O2-Perfluorohexanesulfonate | % | 104 | | | | 110 | | | | 5412188 |
| D3-MeFOSAA | % | 92 | | | | 94 | | | | 5412188 |
| D5-EtFOSAA | % | 89 | | | | 89 | | | | 5412188 |

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



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

Maxxam Job #: B833226
Report Date: 2018/02/28

Earth Toxics Inc
Client Project #: JM10 CECIL

## RESULTS OF ANALYSES OF WATER

| Maxxam ID | | GBV352 | GBV353 | | | | |
|---|---|---|---|---|---|---|---|
| Sampling Date | | 2018/02/09 11:05 | 2018/02/09 15:38 | | | | |
| COC Number | | 3187 | 3187 | | | | |
| | UNITS | CEF-MFS-TW01-0218 | CEF-MFS-TW02-0218 | DL | LOD | LOQ | QC Batch |
| **Miscellaneous Parameters** | | | | | | | |
| EtFOSAA | ng/L | 10 U | 10 U | 3.3 | 10 | 20 | 5412188 |
| MeFOSAA | ng/L | 10 U | 10 U | 2.9 | 10 | 20 | 5412188 |
| Perfluorobutane Sulfonate (PFBS) | ng/L | 11 J | 15 U | 5.4 | 15 | 20 | 5412188 |
| Perfluoroheptanoic Acid (PFHpA) | ng/L | 330 | 52 | 7.4 | 15 | 20 | 5412188 |
| Perfluorohexanoic Acid (PFHxA) | ng/L | 310 | 64 | 3.5 | 10 | 20 | 5412188 |
| Perfluorohexane Sulfonate (PFHxS) | ng/L | 710 | 8.1 J | 5.6 | 15 | 20 | 5412188 |
| Perfluorononanoic Acid (PFNA) | ng/L | 63 | 18 U | 8.7 | 18 | 20 | 5412188 |
| Perfluorotetradecanoic Acid | ng/L | 10 U | 10 U | 2.7 | 10 | 20 | 5412188 |
| Perfluorotridecanoic Acid | ng/L | 10 U | 10 U | 3.8 | 10 | 20 | 5412188 |
| Perfluoroundecanoic Acid (PFUnA) | ng/L | 10 U | 2.9 J | 2.5 | 10 | 20 | 5412188 |
| Perfluorodecanoic Acid (PFDA) | ng/L | 7.0 J | 15 U | 6.1 | 15 | 20 | 5412188 |
| Perfluorododecanoic Acid (PFDoA) | ng/L | 10 U | 10 U | 5.0 | 10 | 20 | 5412188 |
| Perfluoro-n-Octanoic Acid (PFOA) | ng/L | 210 | 14 J | 3.3 | 10 | 20 | 5412188 |
| Perfluorooctane Sulfonate (PFOS) | ng/L | 810 | 24 | 6.0 | 15 | 20 | 5412188 |
| **Surrogate Recovery (%)** | | | | | | | |
| 13C2-Perfluorodecanoic acid | % | 98 | 103 | | | | 5412188 |
| 13C2-Perfluorododecanoic acid | % | 98 | 95 | | | | 5412188 |
| 13C2-Perfluorohexanoic acid | % | 107 | 112 | | | | 5412188 |
| 13C2-perfluorotetradecanoic acid | % | 84 | 85 | | | | 5412188 |
| 13C2-Perfluoroundecanoic acid | % | 101 | 106 | | | | 5412188 |
| 13C4-Perfluorobutanoic acid | % | 105 | 105 | | | | 5412188 |
| 13C4-Perfluoroheptanoic acid | % | 103 | 111 | | | | 5412188 |
| 13C4-Perfluorooctanesulfonate | % | 112 | 111 | | | | 5412188 |
| 13C4-Perfluorooctanoic acid | % | 106 | 109 | | | | 5412188 |
| 13C5-Perfluorononanoic acid | % | 105 | 109 | | | | 5412188 |
| 18O2-Perfluorohexanesulfonate | % | 104 | 116 | | | | 5412188 |
| D3-MeFOSAA | % | 96 | 92 | | | | 5412188 |
| D5-EtFOSAA | % | 93 | 92 | | | | 5412188 |

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



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## RESULTS OF ANALYSES OF WATER

| Maxxam ID | | GBV354 | | | | |
|---|---|---|---|---|---|---|
| Sampling Date | | 2018/02/09 13:50 | | | | |
| COC Number | | 3187 | | | | |
| | UNITS | CEF-S3-TW02-0209 | DL | LOD | LOQ | QC Batch |
| **Miscellaneous Parameters** | | | | | | |
| EtFOSAA | ng/L | 100 U | 33 | 100 | 200 | 5412188 |
| MeFOSAA | ng/L | 100 U | 29 | 100 | 200 | 5412188 |
| Perfluorobutane Sulfonate (PFBS) | ng/L | 150 U | 54 | 150 | 200 | 5412188 |
| Perfluoroheptanoic Acid (PFHpA) | ng/L | 150 U | 74 | 150 | 200 | 5412188 |
| Perfluorohexanoic Acid (PFHxA) | ng/L | 100 U | 35 | 100 | 200 | 5412188 |
| Perfluorohexane Sulfonate (PFHxS) | ng/L | 150 U | 56 | 150 | 200 | 5412188 |
| Perfluorononanoic Acid (PFNA) | ng/L | 180 U | 87 | 180 | 200 | 5412188 |
| Perfluorotetradecanoic Acid | ng/L | 100 U | 27 | 100 | 200 | 5412188 |
| Perfluorotridecanoic Acid | ng/L | 100 U | 38 | 100 | 200 | 5412188 |
| Perfluoroundecanoic Acid (PFUnA) | ng/L | 100 U | 25 | 100 | 200 | 5412188 |
| Perfluorodecanoic Acid (PFDA) | ng/L | 150 U | 61 | 150 | 200 | 5412188 |
| Perfluorododecanoic Acid (PFDoA) | ng/L | 100 U | 50 | 100 | 200 | 5412188 |
| Perfluoro-n-Octanoic Acid (PFOA) | ng/L | 100 U | 33 | 100 | 200 | 5412188 |
| Perfluorooctane Sulfonate (PFOS) | ng/L | 150 U | 60 | 150 | 200 | 5412188 |
| **Surrogate Recovery (%)** | | | | | | |
| 13C2-Perfluorodecanoic acid | % | 90 | | | | 5412188 |
| 13C2-Perfluorododecanoic acid | % | 86 | | | | 5412188 |
| 13C2-Perfluorohexanoic acid | % | 115 | | | | 5412188 |
| 13C2-perfluorotetradecanoic acid | % | 68 | | | | 5412188 |
| 13C2-Perfluoroundecanoic acid | % | 95 | | | | 5412188 |
| 13C4-Perfluorobutanoic acid | % | 106 | | | | 5412188 |
| 13C4-Perfluoroheptanoic acid | % | 107 | | | | 5412188 |
| 13C4-Perfluorooctanesulfonate | % | 106 | | | | 5412188 |
| 13C4-Perfluorooctanoic acid | % | 99 | | | | 5412188 |
| 13C5-Perfluorononanoic acid | % | 102 | | | | 5412188 |
| 18O2-Perfluorohexanesulfonate | % | 101 | | | | 5412188 |
| D3-MeFOSAA | % | 89 | | | | 5412188 |
| D5-EtFOSAA | % | 86 | | | | 5412188 |

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



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**APPENDIX C**

**SUPPORT DOCUMENTATION**

NAS CECIL FIELD
SDG B833226

| | | | |
|---|---|---|---|
| SAMPLE IDENTIFICATION | CEF-1820-TW02-0218 (GBV349) | | |
| COMPOUND | PERFLUOROOCTANE SULFONIC ACID | | |
| EXTRACTION | 3ml/12.5ml | | |
| INTERNAL STANDARD CONCENTRATION | 1 | | |

CONCENTRATION USING CALIBRATION CURVE

AREA*(IS CONCENTRATION/IS AREA)

5951*(1/1523) = 3.907419567

CALIBRATION CURVE y = 0.391941 * x - 0.087518 p. 595 of data package

3.90741956664478 = 0.391941 * x - 0.087518

x = 10.19270137

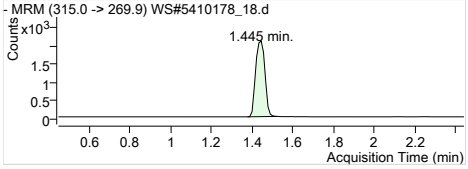
| | | |
|---|---|---|
| PFDA RESULT CONC = X/EXTRACTION | 2.45 | µg/L |
| DILUTION FACTOR | 1 | |
| FINAL RESULT | 2.45 | µg/L |
| | 2446 | ng/L |

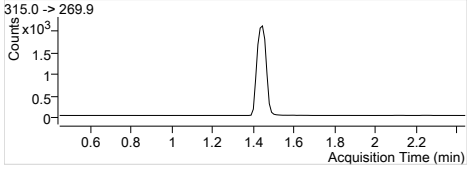
| | |
|---|---|
| **Batch Path** | T:\lcms4\PFC\20180223\WS#5410178\QuantResults\PFC_Water_Low_180223_WS#5410178_EToxics |

| | | | |
|---|---|---|---|
| **Sample Name** | **5410178:GBV349-01:10x** | **Instrument** | LCMS04 |
| **Data File** | WS#5410178_18.d | **Operator** | |
| **Sample Type** | Sample | **Dilution** | 0.24 |
| **Acq. Method** | PFC_Water_Low.m | **Position** | P1-B8 |
| **Acq. Date** | 2018/02/23 5:58:27 PM | **Injection Volume** | Per Method |
| **Sample Annotation** | Reported for PFHxS and PFOS only. | | |

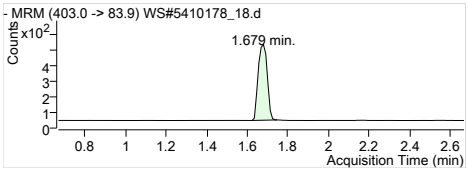
| ISTD Compounds | Response | RT | Target conc. | | |
|---|---|---|---|---|---|
| MPFHxA | 6614 | 1.44 | 1 µg/L | | |
| MPFHxS | 1493 | 1.68 | 1 µg/L | | |
| MPFHpA | 8043 | 1.70 | 1 µg/L | | |
| MPFOA | 8637 | 1.88 | 1 µg/L | | |
| MPFOS | 1523 | 1.97 | 1 µg/L | | |
| MPFNA | 8448 | 2.02 | 1 µg/L | | |
| MPFDA | 6330 | 2.14 | 1 µg/L | | |
| MPFUnA | 7792 | 2.23 | 1 µg/L | | |
| MPFDoA | 10680 | 2.32 | 1 µg/L | | |
| MPFTeDA | 11136 | 2.46 | 1 µg/L | | |
| 13C6-PFHxA IS | 26150 | 1.44 | 1 µg/L | | |
| 13C9-PFDA IS | 32520 | 2.13 | 1 µg/L | | |

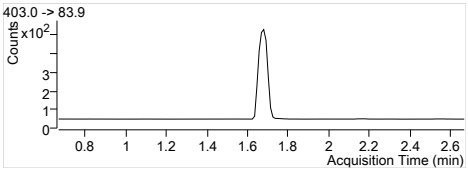
| Compound | Response | RT | Target Conc. | Calc. Conc. | Accuracy |
|---|---|---|---|---|---|
| PFBS 1 | | | - | ND | - |
| PFHxA 1 | 2041 | 1.45 | - | 0.21 µg/L | - |
| PFHxS 1 | 3493 | 1.68 | - | 1.25 µg/L | - |
| PFHpA 1 | 1084 | 1.70 | - | 0.14 µg/L | - |
| PFOA 1 | 1225 | 1.88 | - | 0.12 µg/L | - |
| PFOS 1 | 5951 | 1.96 | - | 2.45 µg/L | - |
| PFNA 1 | | | - | ND | - |
| PFDA 1 | | | - | ND | - |
| PFUnA 1 | | | - | ND | - |
| PFDoA 1 | | | - | ND | - |
| PFTrDA 1 | | | - | ND | - |
| PFTeDA 1 | | | - | ND | - |
| 13C2-PFHxA | 6614 | 1.44 | - | 85.50 µg/L | - |
| 18O2-PFHxS | 1493 | 1.68 | - | 82.77 µg/L | - |
| 13C4-PFHpA | 8043 | 1.70 | - | 83.03 µg/L | - |
| 13C4-PFOA | 8637 | 1.88 | - | 90.06 µg/L | - |
| 13C4-PFOS | 1523 | 1.97 | - | 72.50 µg/L | - |
| 13C5-PFNA | 8449 | 2.02 | - | 90.61 µg/L | - |
| 13C2-PFDA | 6275 | 2.14 | - | 80.07 µg/L | - |
| 13C2-PFUnA | 7792 | 2.23 | - | 76.95 µg/L | - |
| 13C2-PFDoA | 10680 | 2.32 | - | 83.19 µg/L | - |
| 13C2-PFTeDA | 11234 | 2.46 | - | 82.93 µg/L | - |
| 13C6-PFHxA | 26150 | 1.44 | - | 27.81 µg/L | - |
| 13C9-PFDA | 32520 | 2.13 | - | 28.75 µg/L | - |



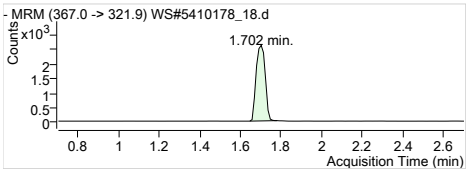



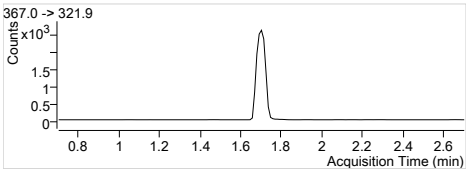

| | |
|---|---|
| **MPFHxA** | Internal Standard |
| RT (Exp. RT): | 1.445 (1.445) |
| Concentration: | 1 µg/L |
| Sample type: | Sample |



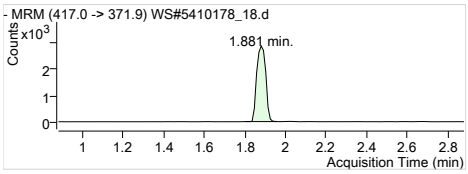



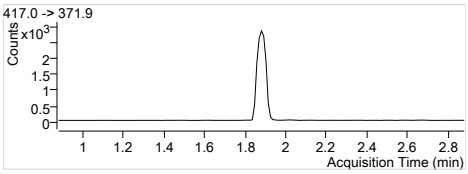

**MPFHxS** Internal Standard
RT (Exp. RT): 1.679 (1.668)
Concentration: 1 µg/L
Sample type: Sample



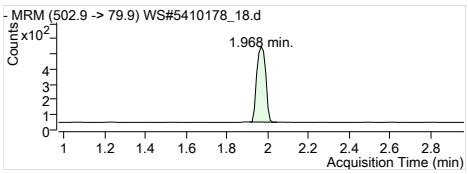



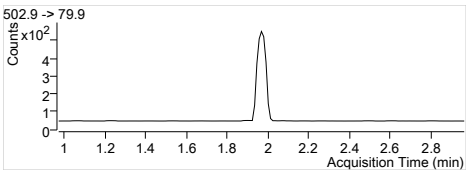

**MPFHpA** Internal Standard
RT (Exp. RT): 1.702 (1.702)
Concentration: 1 µg/L
Sample type: Sample



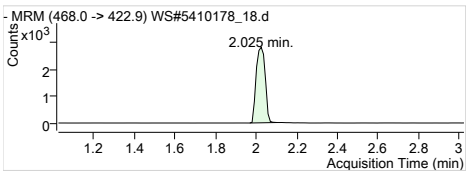



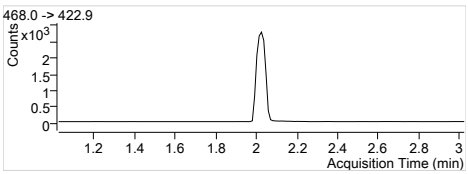

**MPFOA** Internal Standard
RT (Exp. RT): 1.881 (1.881)
Concentration: 1 µg/L
Sample type: Sample



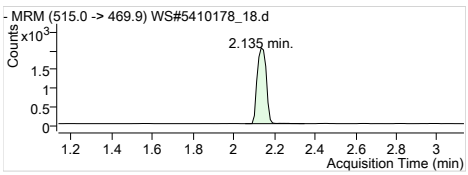



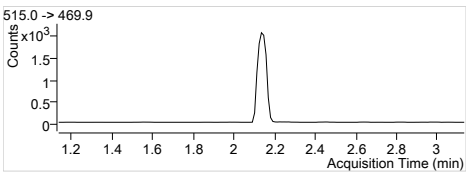

**MPFOS** Internal Standard
RT (Exp. RT): 1.968 (1.968)
Concentration: 1 µg/L
Sample type: Sample



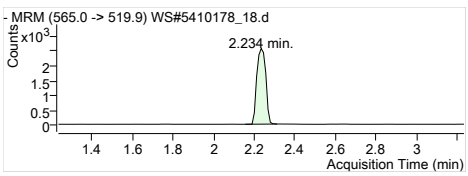



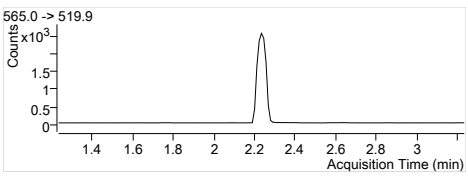

**MPFNA** Internal Standard
RT (Exp. RT): 2.025 (2.025)
Concentration: 1 µg/L
Sample type: Sample



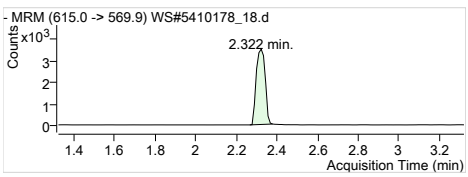



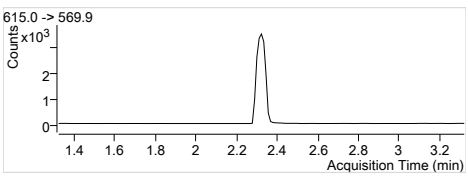

**MPFDA** Internal Standard
RT (Exp. RT): 2.135 (2.135)
Concentration: 1 µg/L
Sample type: Sample



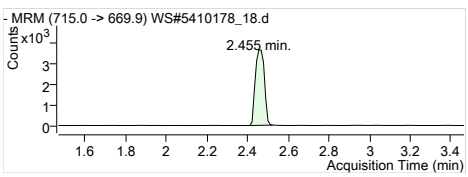



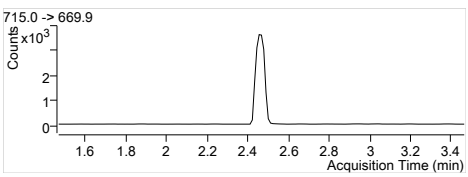

**MPFUnA** Internal Standard
RT (Exp. RT): 2.234 (2.234)
Concentration: 1 µg/L
Sample type: Sample



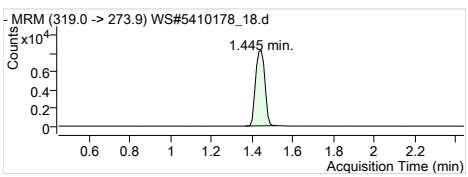



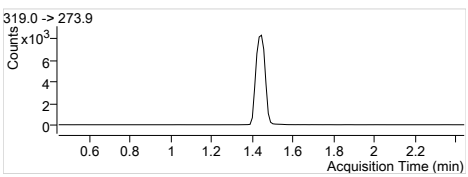

**MPFDoA** Internal Standard
RT (Exp. RT): 2.322 (2.322)
Concentration: 1 µg/L
Sample type: Sample



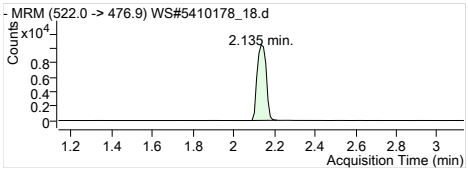



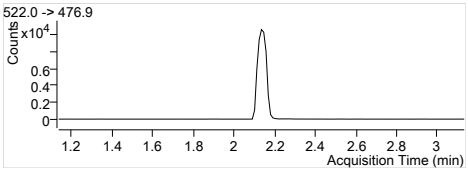

**MPFTeDA** Internal Standard
RT (Exp. RT): 2.455 (2.467)
Concentration: 1 µg/L
Sample type: Sample



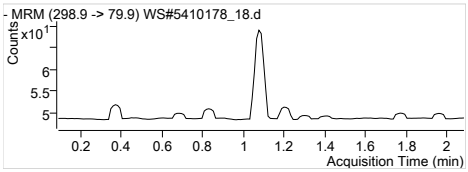



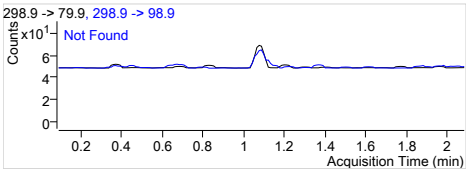

**13C6-PFHxA IS** Internal Standard
RT (Exp. RT): 1.445 (1.445)
Concentration: 1 µg/L
Sample type: Sample



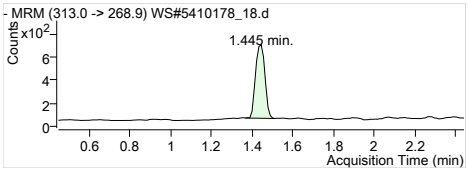



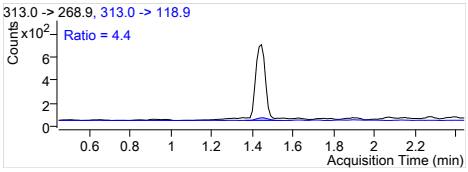

**13C9-PFDA IS** Internal Standard
RT (Exp. RT): 2.135 (2.135)
Concentration: 1 µg/L
Sample type: Sample



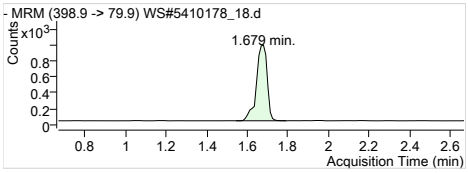



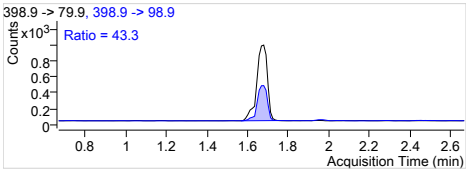

**PFBS 1** 298.9 -> 79.9
RT (Exp. RT): 0.000 (1.087)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



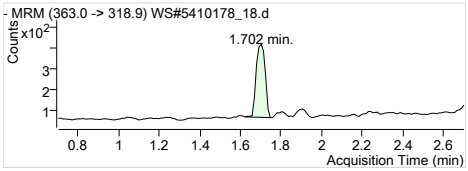



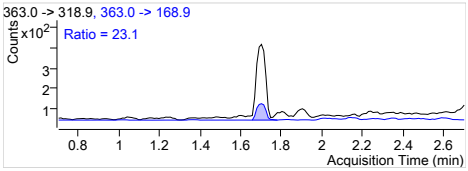

**PFHxA 1** 313.0 -> 268.9
RT (Exp. RT): 1.445 (1.445)
Calc. conc. 0.21 µg/L
Area ratio: 0.30859
Sample type: Sample



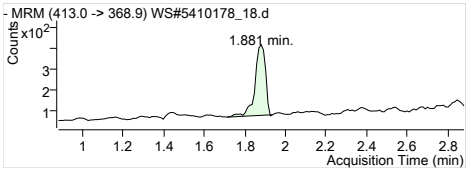



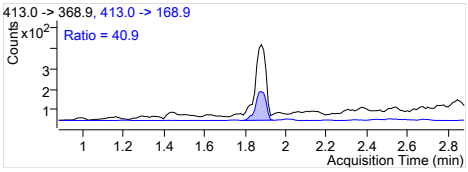

**PFHxS 1** 398.9 -> 79.9
RT (Exp. RT): 1.679 (1.668)
Calc. conc. 1.25 µg/L
Area ratio: 2.33958
Sample type: Sample



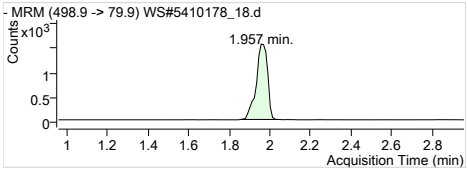



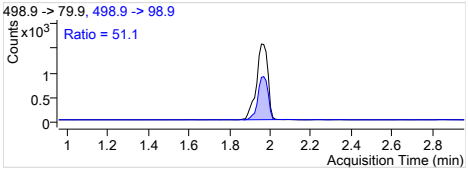

**PFHpA 1** 363.0 -> 318.9
RT (Exp. RT): 1.702 (1.702)
Calc. conc. 0.14 µg/L
Area ratio: 0.13478
Sample type: Sample



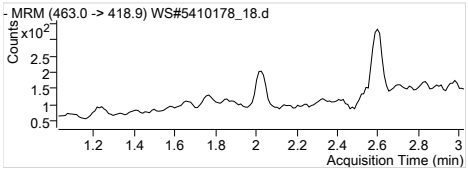



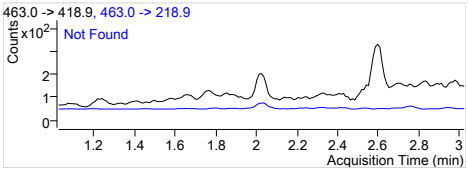

**PFOA 1** 413.0 -> 368.9
RT (Exp. RT): 1.881 (1.881)
Calc. conc. 0.12 µg/L
Area ratio: 0.14183
Sample type: Sample



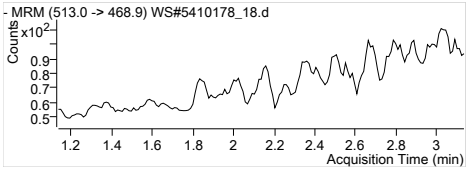



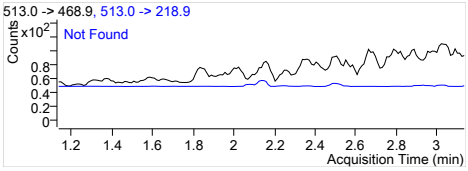

**PFOS 1** 498.9 -> 79.9
RT (Exp. RT): 1.957 (1.957)
Calc. conc. 2.45 µg/L
Area ratio: 3.90742
Sample type: Sample



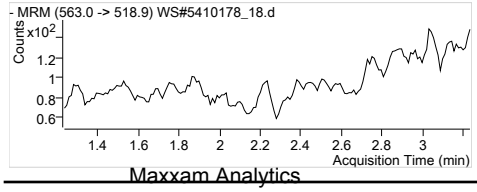



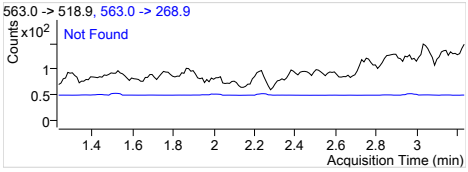

**PFNA 1** 463.0 -> 418.9
RT (Exp. RT): 0.000 (2.025)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



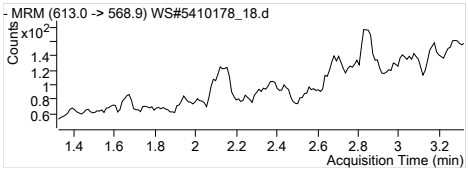



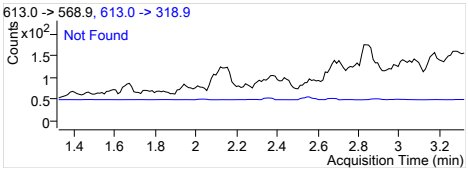

**PFDA 1** 513.0 -> 468.9
RT (Exp. RT): 0.000 (2.135)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



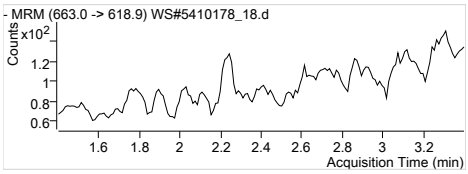



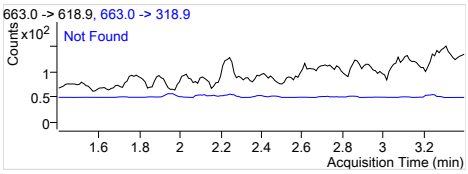

**PFUnA 1** 563.0 -> 518.9
RT (Exp. RT): 0.000 (2.234)
Calc. conc. N.D.
Area ratio: 0
Sample type: Sample



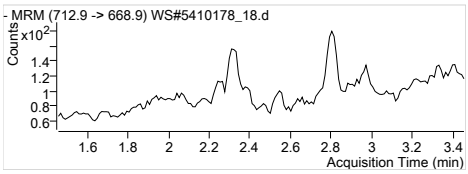



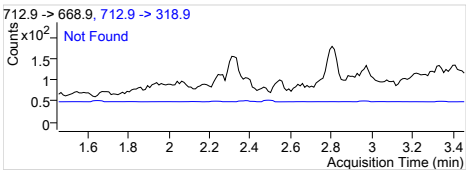

| | |
|---|---|
| **PFDoA 1** | 613.0 -> 568.9 |
| RT (Exp. RT): | 0.000 (2.323) |
| Calc. conc. | N.D. |
| Area ratio: | 0 |
| Sample type: | Sample |



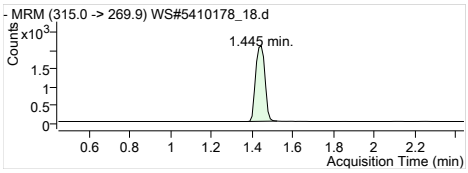



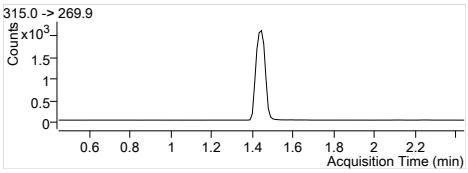

| | |
|---|---|
| **PFTrDA 1** | 663.0 -> 618.9 |
| RT (Exp. RT): | 0.000 (2.400) |
| Calc. conc. | N.D. |
| Area ratio: | 0 |
| Sample type: | Sample |



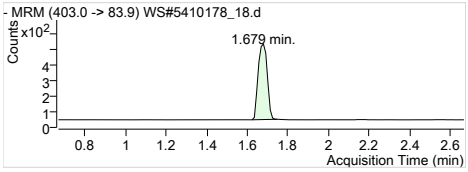



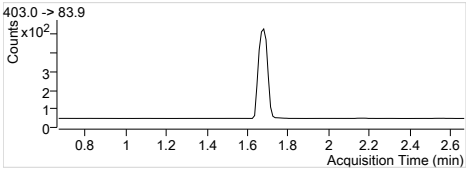

| | |
|---|---|
| **PFTeDA 1** | 712.9 -> 668.9 |
| RT (Exp. RT): | 0.000 (2.456) |
| Calc. conc. | N.D. |
| Area ratio: | 0 |
| Sample type: | Sample |



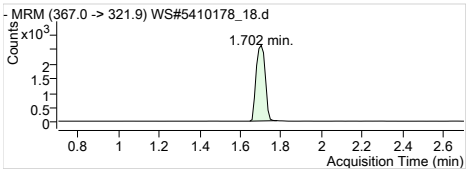



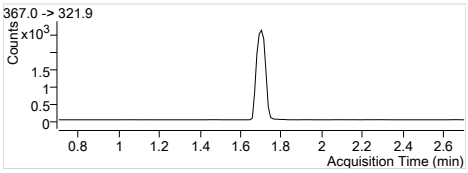

| | |
|---|---|
| **13C2-PFHxA** | 315.0 -> 269.9 |
| RT (Exp. RT): | 1.445 (1.445) |
| Calc. conc. | 85.50 µg/L |
| Area ratio: | 0.25293 |
| Sample type: | Sample |



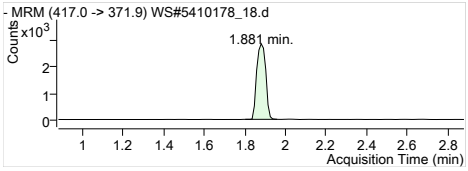



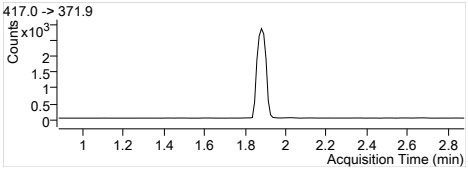

| | |
|---|---|
| **18O2-PFHxS** | 403.0 -> 83.9 |
| RT (Exp. RT): | 1.679 (1.668) |
| Calc. conc. | 82.77 µg/L |
| Area ratio: | 0.05709 |
| Sample type: | Sample |



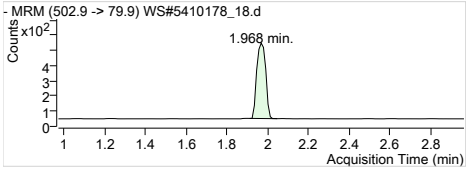



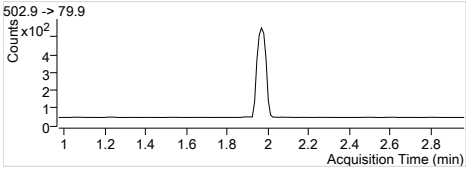

| | |
|---|---|
| **13C4-PFHpA** | 367.0 -> 321.9 |
| RT (Exp. RT): | 1.702 (1.702) |
| Calc. conc. | 83.03 µg/L |
| Area ratio: | 0.30757 |
| Sample type: | Sample |



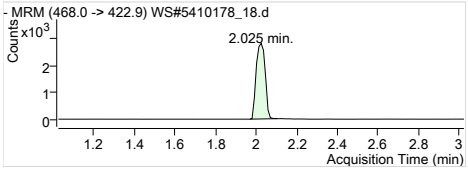



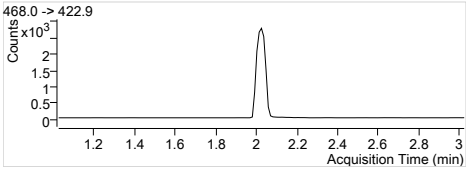

| | |
|---|---|
| **13C4-PFOA** | 417.0 -> 371.9 |
| RT (Exp. RT): | 1.881 (1.881) |
| Calc. conc. | 90.06 µg/L |
| Area ratio: | 0.33029 |
| Sample type: | Sample |



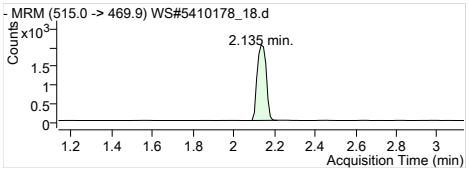



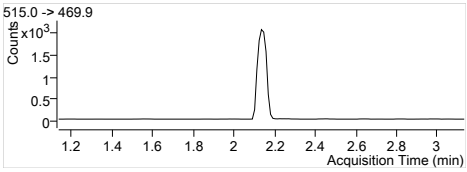

| | |
|---|---|
| **13C4-PFOS** | 502.9 -> 79.9 |
| RT (Exp. RT): | 1.968 (1.968) |
| Calc. conc. | 72.50 µg/L |
| Area ratio: | 0.05824 |
| Sample type: | Sample |



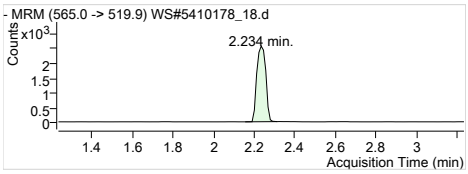



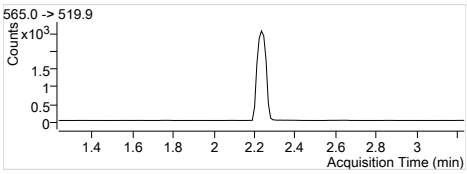

| | |
|---|---|
| **13C5-PFNA** | 468.0 -> 422.9 |
| RT (Exp. RT): | 2.025 (2.025) |
| Calc. conc. | 90.61 µg/L |
| Area ratio: | 0.32310 |
| Sample type: | Sample |



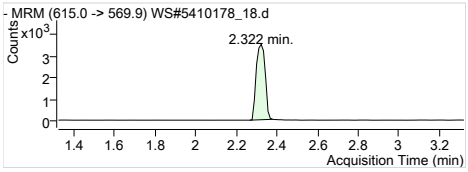



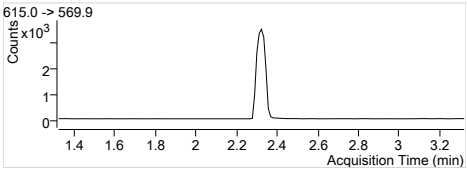

**13C2-PFDA** 515.0 -> 469.9
RT (Exp. RT): 2.135 (2.135)
Calc. conc. 80.07 µg/L
Area ratio: 0.19296
Sample type: Sample



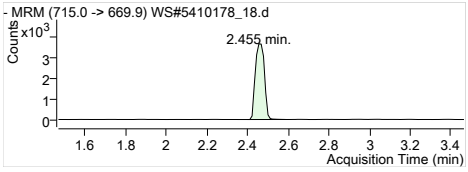



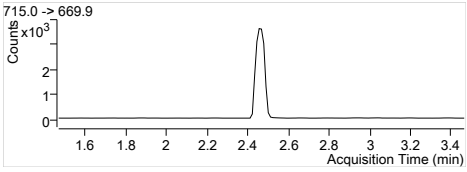

**13C2-PFUnA** 565.0 -> 519.9
RT (Exp. RT): 2.234 (2.234)
Calc. conc. 76.95 µg/L
Area ratio: 0.23961
Sample type: Sample



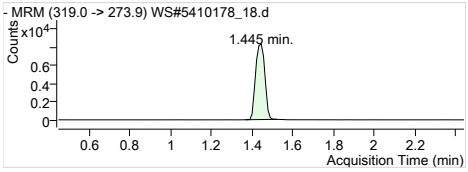



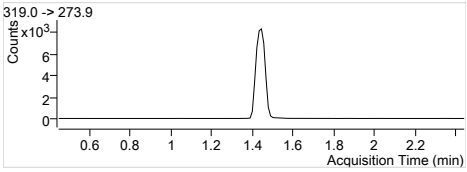

**13C2-PFDoA** 615.0 -> 569.9
RT (Exp. RT): 2.322 (2.322)
Calc. conc. 83.19 µg/L
Area ratio: 0.32841
Sample type: Sample



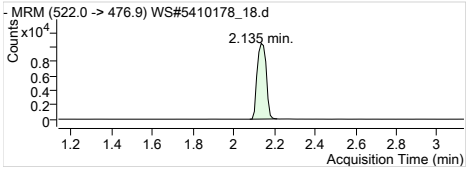



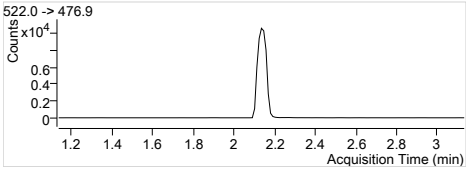

**13C2-PFTeDA** 715.0 -> 669.9
RT (Exp. RT): 2.455 (2.467)
Calc. conc. 82.93 µg/L
Area ratio: 0.34545
Sample type: Sample




**13C6-PFHxA** 319.0 -> 273.9
RT (Exp. RT): 1.445 (1.445)
Calc. conc. 27.81 µg/L
Area ratio: 0
Sample type: Sample

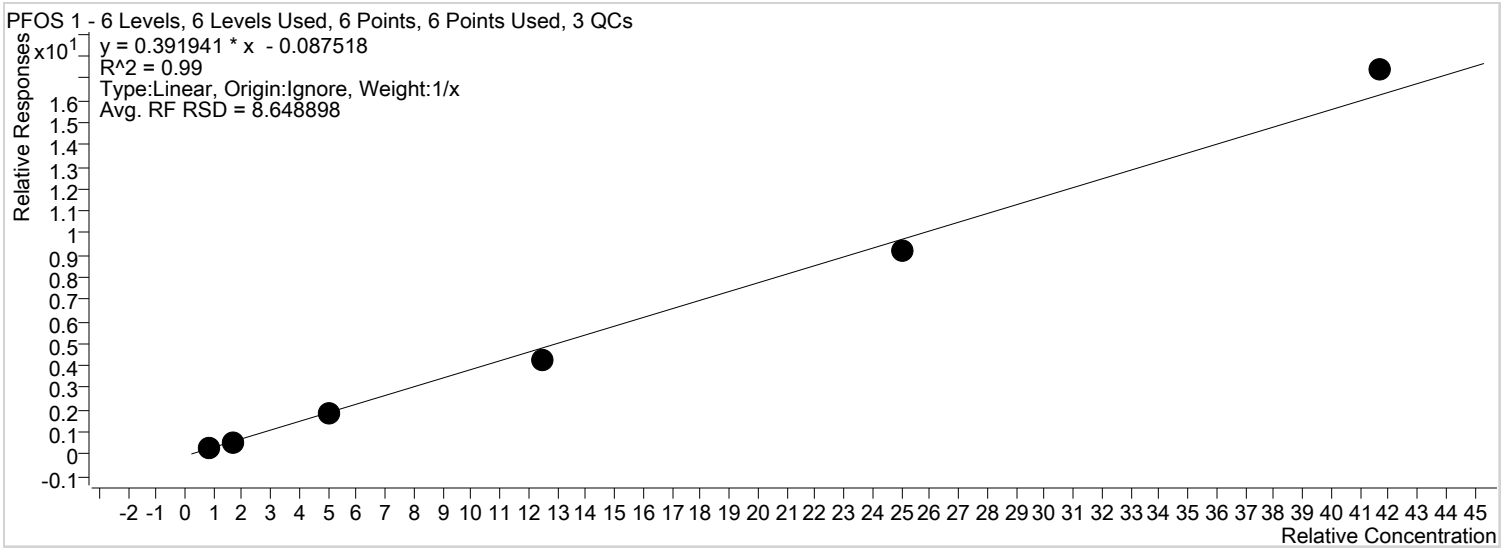



**13C9-PFDA** 522.0 -> 476.9
RT (Exp. RT): 2.135 (2.135)
Calc. conc. 28.75 µg/L
Area ratio: 0
Sample type: Sample

**Batch Path** T:\lcms4\PFC\20180223\WS#5410178\QuantResults\PFC_Water_Low_180223_WS#5410178_EToxics.batch.bin
**Last Calib Update** 2018/02/27 2:51:08 PM
**Instrument:** LCMS04

**Analyte:** PFOS 1
**Internal Standard:** MPFOS




| Sample | Level | Enabled | Acquisition Time | Exp. Conc. | Concentration | Response | RF | S/N | Accuracy |
|---|---|---|---|---|---|---|---|---|---|
| STD 1 | STD 1 | x | 2018/02/23 4:39:32 PM | 0.83 | 0.97 | 528 | 0.3520 | 161 | 116.7 |
| STD 2 | STD 2 | x | 2018/02/23 4:44:28 PM | 1.70 | 1.65 | 1058 | 0.3298 | 220 | 97.3 |
| STD 3 | STD 3 | x | 2018/02/23 4:49:24 PM | 5.00 | 4.83 | 3377 | 0.3608 | 267 | 96.5 |
| STD 4 | STD 4 | x | 2018/02/23 4:54:20 PM | 12.50 | 10.95 | 7484 | 0.3364 | 242 | 87.6 |
| STD 5 | STD 5 | x | 2018/02/23 4:59:16 PM | 25.00 | 23.73 | 16848 | 0.3685 | 165 | 94.9 |
| STD 6 | STD 6 | x | 2018/02/23 5:04:12 PM | 41.70 | 44.61 | 29328 | 0.4171 | 183 | 107.0 |

Tetra Tech, Inc. AIR CHAIN OF CUSTODY | NUMBER No. 3187 PAGE 1 OF 1

| | | | |
|---|---|---|---|
| PROJECT NO: JM10 | FACILITY: Cool | PROJECT MANAGER: Megan Vad | PHONE NUMBER: |
| LABORATORY NAME AND CONTACT: S. Pollen / Maxxam | | | |
| SAMPLERS (SIGNATURE): [signature] | | FIELD OPERATIONS LEADER: David Siefken | PHONE NUMBER: 904.334.7260 |
| ADDRESS: 6740 Campabello Rd | | | |
| CARRIER/WAYBILL NUMBER: Fed EX 8115-9773-0063 | | | CITY, STATE: Mississauga, Ontario, CA |

STANDARD TAT ☒
RUSH TAT ☐
☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

CONTAINER TYPE PLASTIC (P) or GLASS (G): P
PRESERVATIVE USED: –

| DATE YEAR 2018 | TIME | SAMPLE ID | LOCATION ID | TOP DEPTH (FT) | BOTTOM DEPTH (FT) | MATRIX (GW, SO, SW, SD, QC, ETC.) | COLLECTION METHOD GRAB (G) COMP (C) | No. OF CONTAINERS | TYPE OF ANALYSIS PFAS | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|
| 2/8 | 0920 | EB-CEF-MFS-020818-17 | | | | QC | | 2 | X | Cool 4° C |
| 2/8 | 0925 | EB-CEF-MFS-020818-18 | | | | | | 2 | X | |
| 2/8 | 0930 | EB-CEF-MFS-020818-19 | | | | | | 2 | X | |
| 2/8 | 0940 | FB-CEF-MFS-020818-12 | | | | | | 2 | X | |
| 2/8 | 1630 | CEF-1820-TW02-0218 | | | | GW | | 2 | X | |
| 2/9 | 1125 | CEF-S3-TW01-0218 | | | | GW | | 2 | X | |
| 2/9 | 1200 | FB-CEF-S3-020918-13 | | | | QC | | 2 | X | |
| 2/9 | 1105 | CEF-MFS-TW01-0218 | | | | GW | | 2 | X | |
| 2/9 | 1538 | CEF-MFS-TW02-0218 | | | | GW | | 2 | X | |
| 2/9 | 1350 | CEF-S3-TW02-0209 | | | | GW | | 2 | X | |

13-Feb-18 14:10
Gemarie Balatico
B833226
TSP ENV-1389

| | | | | | |
|---|---|---|---|---|---|
| 1. RELINQUISHED BY: [signature] | DATE: 2-12-18 | TIME: 1600 | 1. RECEIVED BY: Tanvir Bird Tanvir SFS 44 | DATE: 2018/04/13 | TIME: 14:10 |
| 2. RELINQUISHED BY: | DATE: | TIME: | 2. RECEIVED BY: | DATE: | TIME: |
| 3. RELINQUISHED BY: | DATE: | TIME: | 3. RECEIVED BY: | DATE: | TIME: |

COMMENTS: 4.3/50/3.3

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY) custody seal intact 4/02R
FORM NO. TINUS-001
HW 4/7036

## GENERAL COMMENTS

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

| | |
|---|---|
| Package 1 | 4.2°C |

Results reported in ng/L as per client request.

Sample GBV350 [CEF-S3-TW01-0218] : Due to sample matrix, a reduced sample volume was extracted. Detection limits were adjusted accordingly.

Sample GBV354 [CEF-S3-TW02-0209] : Due to sample matrix, a reduced sample volume was extracted. Detection limits were adjusted accordingly.

**Results relate only to the items tested.**



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

**Maxxam Job: B833226 - Analysis**

Sample Analysis

Samples were initially pre-screened and estimated concentrations were obtained so that appropriate sample volumes could be extracted on QC batches 5410178 (2018/02/23-24) and 5412188 (2018/02/27). Due to high concentrations, the following sample was analyzed for Perfluorohexanesulfonate (PFHxS) and Perfluorooctanesulfonate (PFOS) using reduced sample extraction volumes. Detection limits were adjusted accordingly.

Reduced sample volumes were also extracted for the following samples:

GBV350 *CEF-S3-TW01-0218*
GBV354 *CEF-S3-TW02-0209*

This was due to the discolored and turbid appearances of the sample matrices, which would likely have resulted in clogging of the solid phase extraction (SPE) cartridges if the full sample volumes had been extracted. Detection limits were adjusted accordingly.

Data Qualifiers

**U** – Analyte was not detected and is reported as less than the LOD or as defined by the customer. The LOD has been adjusted for any dilution or concentration of the sample.

**J** – The reported result is an estimated value (e.g., matrix interference was observed, or the analyte was detected at a concentration outside the calibration range).

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

**PROJECT NARRATIVE**

**Maxxam Analytics**
**Client Project #: JM10 CECIL**

**Client: Earth Toxics Inc**
**Client Project: JM10 CECIL**

**I. SAMPLE RECEIPT/ANALYSIS**

a) Sample Listing

| Maxxam ID | Client Sample ID | Date Sampled | Date Received | Date Prepped | Date Run | Initial Calibration |
|---|---|---|---|---|---|---|
| **PFOS and PFOA in water by SPE/LCMS** | | | | | | |
| GBV345 | EB-CEF-MFS-020818-17 | 2018/02/08 | 2018/02/13 | 2018/02/22 | 2018/02/24 | 2018/02/23-24 |
| GBV346 | EB-CEF-MFS-020818-18 | 2018/02/08 | 2018/02/13 | 2018/02/22 | 2018/02/24 | 2018/02/23-24 |
| GBV347 | EB-CEF-MFS-020818-19 | 2018/02/08 | 2018/02/13 | 2018/02/22 | 2018/02/24 | 2018/02/23-24 |
| GBV348 | FB-CEF-MFS-020818-12 | 2018/02/08 | 2018/02/13 | 2018/02/22 | 2018/02/24 | 2018/02/23-24 |
| GBV349 | CEF-1820-TW02-0218 | 2018/02/08 | 2018/02/13 | 2018/02/22 | 2018/02/24 | 2018/02/23-24 |
| GBV350 | CEF-S3-TW01-0218 | 2018/02/09 | 2018/02/13 | 2018/02/23 | 2018/02/27 | 2018/02/27 |
| GBV351 | FB-CEF-S3-020918-13 | 2018/02/09 | 2018/02/13 | 2018/02/23 | 2018/02/27 | 2018/02/27 |
| GBV352 | CEF-MFS-TW01-0218 | 2018/02/09 | 2018/02/13 | 2018/02/23 | 2018/02/27 | 2018/02/27 |
| GBV353 | CEF-MFS-TW02-0218 | 2018/02/09 | 2018/02/13 | 2018/02/23 | 2018/02/27 | 2018/02/27 |
| GBV354 | CEF-S3-TW02-0209 | 2018/02/09 | 2018/02/13 | 2018/02/23 | 2018/02/27 | 2018/02/27 |

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

b) Shipping Problems: none encountered

c) Documentation Problems: none encountered

**II. SAMPLE PREP:**

No problems encountered

**III. SAMPLE ANALYSIS:**

See also comments within the appropriate Certificate of Analysis

a) Hold Times: all within recommended hold times

b) Instrument Calibration: all within control limits

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

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

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

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

Project Manager-Site Assessment and Remediation/ Ultra Trace

2018/03/13
Date

# Glossary of Terms

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

## INJECTION INTERNAL STANDARD PEAK AREAS

| Sample Name | Analyte | 13C6-PFHxA | 13C9-PFDA |
|---|---|---|---|
| | Mass labeled IS | STD 4 | STD 4 |
| | IS Area | 22133 | 25329 |
| | | IS Peak Area | IS Peak Area |
| STD 1 | | 23118 | 27510 |
| STD 2 | | 21245 | 25642 |
| STD 3 | | 23984 | 29535 |
| STD 4 | | 22133 | 25329 |
| STD 5 | | 23050 | 28850 |
| STD 6 | | 21853 | 25997 |
| IB | | 23454 | 29125 |
| ICV | | 25768 | 30429 |
| ISC | | 23606 | 29016 |
| 5410178:BLANK | | 23209 | 28413 |
| 5410178:SPIKE | | 21178 | 25614 |
| 5410178:SPIKE:D1 | | 23363 | 28328 |
| 5410178:GBV345-01 | | 21332 | 27416 |
| 5410178:GBV346-01 | | 24667 | 29817 |
| 5410178:GBV347-01 | | 25740 | 32643 |
| 5410178:GBV348-01 | | 24967 | 30015 |
| 5410178:GBV349-01:10x | | 26150 | 32520 |
| 5410178:GBV349-01 | | 25290 | 30125 |
| IB | | 23749 | 29605 |
| CCV | | 22063 | 27791 |

## INJECTION INTERNAL STANDARD PEAK AREAS

| Sample Name | Analyte | 13C9-PFDA |
|---|---|---|
| | Mass labeled IS | STD 4 |
| | IS Area | 19426 |
| | | IS Peak Area |
| STD 1 | | 19378 |
| STD 2 | | 18764 |
| STD 3 | | 21971 |
| STD 4 | | 19426 |
| STD 5 | | 21460 |
| STD 6 | | 19504 |
| IB | | 22186 |
| ICV | | 22698 |
| ISC | | 21463 |
| 5410178:BLANK | | 21974 |
| 5410178:SPIKE | | 19800 |
| 5410178:SPIKE:D1 | | 22217 |
| 5410178:GBV345-01 | | 20951 |
| 5410178:GBV346-01 | | 23739 |
| 5410178:GBV347-01 | | 25287 |
| 5410178:GBV348-01 | | 23633 |
| 5410178:GBV349-01:10x | | 25292 |
| 5410178:GBV349-01 | | 23778 |
| IB | | 23328 |
| CCV | | 20901 |

## INJECTION INTERNAL STANDARD PEAK AREAS

| Sample Name | Analyte | 13C6-PFHxA | 13C6-PFHxA | 13C9-PFDA | 13C9-PFDA |
|---|---|---|---|---|---|
| | Mass labeled IS | STD 4 | ISC/CCV | STD 4 | ISC/CCV |
| | IS Area | 31264 | 37375 | 38264 | 42905 |
| | | IS Peak Area | IS Peak Area | IS Peak Area | IS Peak Area |
| STD 1 | | 35446 | | 41836 | |
| STD 2 | | 29796 | | 35683 | |
| STD 3 | | 31917 | | 38219 | |
| STD 4 | | 31264 | | 38264 | |
| STD 5 | | 30279 | | 35645 | |
| STD 6 | | 29288 | | 33940 | |
| IB | | 31445 | | 37273 | |
| ICV | | 28962 | | 35009 | |
| ISC | | 36178 | | 42855 | |
| 5412188:BLANK | | 30908 | | 34891 | |
| 5412188:SPIKE | | 30023 | | 34110 | |
| 5412188:SPIKE:D1 | | 38181 | | 44883 | |
| 5412188:GBV350-01:10x | | 33310 | | 41490 | |
| IB | | 33232 | | 38020 | |
| 5412188:GBV351-01 | | 34821 | | 39875 | |
| 5412188:GBV352-01:10x | | 33872 | | 39496 | |
| 5412188:GBV352-01 | | 27565 | | 33315 | |
| IB | | 31125 | | 38015 | |
| 5412188:GBV353-01 | | 28213 | | 33355 | |
| 5412188:GBV354-01:10x | | 30186 | | 36409 | |
| IB | | 32635 | | 39107 | |
| CCV | | 33127 | | 37914 | |
| **ISC** | | | 37375 | | 42905 |
| 5412188:SPIKE:D1 | | | 38026 | | 41792 |
| CCV | | | 33996 | | 38214 |

## INJECTION INTERNAL STANDARD PEAK AREAS

| Sample Name | Analyte | 13C9-PFDA |
|---|---|---|
| | Mass labeled IS | STD 4 |
| | IS Area | 25442 |
| | | IS Peak Area |
| STD 1 | | 27647 |
| STD 2 | | 25053 |
| STD 3 | | 26021 |
| STD 4 | | 25442 |
| STD 5 | | 24594 |
| STD 6 | | 23798 |
| IB | | 25745 |
| ICV | | 24262 |
| ISC | | 27998 |
| 5412188:BLANK | | 25419 |
| 5412188:SPIKE | | 23793 |
| 5412188:SPIKE:D1 | | 28594 |
| 5412188:GBV350-01:10x | | 26493 |
| IB | | 25638 |
| 5412188:GBV351-01 | | 27020 |
| 5412188:GBV352-01:10x | | 25493 |
| 5412188:GBV352-01 | | 21738 |
| IB | | 25044 |
| 5412188:GBV353-01 | | 21903 |
| 5412188:GBV354-01:10x | | 23598 |
| IB | | 25397 |
| CCV | | 24937 |

## QUALITY ASSURANCE REPORT

| QA/QC Batch | Init | QC Type | Parameter | Date Analyzed | Value | % Recovery | UNITS | QC Limits |
|---|---|---|---|---|---|---|---|---|
| 5410178 | KC1 | Spiked Blank | 13C2-Perfluorodecanoic acid | 2018/02/24 | | 112 | % | 50 - 150 |
| | | | 13C2-Perfluorododecanoic acid | 2018/02/24 | | 93 | % | 50 - 150 |
| | | | 13C2-Perfluorohexanoic acid | 2018/02/24 | | 107 | % | 50 - 150 |
| | | | 13C2-perfluorotetradecanoic acid | 2018/02/24 | | 96 | % | 50 - 150 |
| | | | 13C2-Perfluoroundecanoic acid | 2018/02/24 | | 97 | % | 50 - 150 |
| | | | 13C4-Perfluorobutanoic acid | 2018/02/24 | | 104 | % | 50 - 150 |
| | | | 13C4-Perfluoroheptanoic acid | 2018/02/24 | | 101 | % | 50 - 150 |
| | | | 13C4-Perfluorooctanesulfonate | 2018/02/24 | | 113 | % | 50 - 150 |
| | | | 13C4-Perfluorooctanoic acid | 2018/02/24 | | 109 | % | 50 - 150 |
| | | | 13C5-Perfluorononanoic acid | 2018/02/24 | | 110 | % | 50 - 150 |
| | | | 18O2-Perfluorohexanesulfonate | 2018/02/24 | | 98 | % | 50 - 150 |
| | | | D3-MeFOSAA | 2018/02/24 | | 89 | % | 50 - 150 |
| | | | D5-EtFOSAA | 2018/02/24 | | 90 | % | 50 - 150 |
| | | | EtFOSAA | 2018/02/24 | | 98 | % | 73 - 128 |
| | | | MeFOSAA | 2018/02/24 | | 98 | % | 77 - 127 |
| | | | Perfluorobutane Sulfonate (PFBS) | 2018/02/24 | | 115 | % | 65 - 135 |
| | | | Perfluoroheptanoic Acid (PFHpA) | 2018/02/24 | | 105 | % | 73 - 129 |
| | | | Perfluorohexanoic Acid (PFHxA) | 2018/02/24 | | 102 | % | 74 - 129 |
| | | | Perfluorohexane Sulfonate (PFHxS) | 2018/02/24 | | 114 | % | 67 - 132 |
| | | | Perfluorononanoic Acid (PFNA) | 2018/02/24 | | 103 | % | 72 - 131 |
| | | | Perfluorotetradecanoic Acid | 2018/02/24 | | 102 | % | 70 - 134 |
| | | | Perfluorotridecanoic Acid | 2018/02/24 | | 103 | % | 67 - 143 |
| | | | Perfluoroundecanoic Acid (PFUnA) | 2018/02/24 | | 101 | % | 71 - 133 |
| | | | Perfluorodecanoic Acid (PFDA) | 2018/02/24 | | 97 | % | 71 - 133 |
| | | | Perfluorododecanoic Acid (PFDoA) | 2018/02/24 | | 104 | % | 71 - 131 |
| | | | Perfluoro-n-Octanoic Acid (PFOA) | 2018/02/24 | | 101 | % | 71 - 130 |
| | | | Perfluorooctane Sulfonate (PFOS) | 2018/02/24 | | 93 | % | 72 - 131 |
| 5410178 | KC1 | Spiked Blank DUP | 13C2-Perfluorodecanoic acid | 2018/02/24 | | 91 | % | 50 - 150 |
| | | | 13C2-Perfluorododecanoic acid | 2018/02/24 | | 90 | % | 50 - 150 |
| | | | 13C2-Perfluorohexanoic acid | 2018/02/24 | | 98 | % | 50 - 150 |
| | | | 13C2-perfluorotetradecanoic acid | 2018/02/24 | | 89 | % | 50 - 150 |
| | | | 13C2-Perfluoroundecanoic acid | 2018/02/24 | | 91 | % | 50 - 150 |
| | | | 13C4-Perfluorobutanoic acid | 2018/02/24 | | 94 | % | 50 - 150 |
| | | | 13C4-Perfluoroheptanoic acid | 2018/02/24 | | 95 | % | 50 - 150 |
| | | | 13C4-Perfluorooctanesulfonate | 2018/02/24 | | 95 | % | 50 - 150 |
| | | | 13C4-Perfluorooctanoic acid | 2018/02/24 | | 100 | % | 50 - 150 |
| | | | 13C5-Perfluorononanoic acid | 2018/02/24 | | 101 | % | 50 - 150 |
| | | | 18O2-Perfluorohexanesulfonate | 2018/02/24 | | 93 | % | 50 - 150 |
| | | | D3-MeFOSAA | 2018/02/24 | | 87 | % | 50 - 150 |
| | | | D5-EtFOSAA | 2018/02/24 | | 87 | % | 50 - 150 |
| | | | EtFOSAA | 2018/02/24 | | 97 | % | 73 - 128 |
| | | | MeFOSAA | 2018/02/24 | | 99 | % | 77 - 127 |
| | | | Perfluorobutane Sulfonate (PFBS) | 2018/02/24 | | 111 | % | 65 - 135 |
| | | | Perfluoroheptanoic Acid (PFHpA) | 2018/02/24 | | 102 | % | 73 - 129 |
| | | | Perfluorohexanoic Acid (PFHxA) | 2018/02/24 | | 101 | % | 74 - 129 |
| | | | Perfluorohexane Sulfonate (PFHxS) | 2018/02/24 | | 102 | % | 67 - 132 |
| | | | Perfluorononanoic Acid (PFNA) | 2018/02/24 | | 101 | % | 72 - 131 |
| | | | Perfluorotetradecanoic Acid | 2018/02/24 | | 98 | % | 70 - 134 |
| | | | Perfluorotridecanoic Acid | 2018/02/24 | | 98 | % | 67 - 143 |
| | | | Perfluoroundecanoic Acid (PFUnA) | 2018/02/24 | | 102 | % | 71 - 133 |
| | | | Perfluorodecanoic Acid (PFDA) | 2018/02/24 | | 106 | % | 71 - 133 |
| | | | Perfluorododecanoic Acid (PFDoA) | 2018/02/24 | | 99 | % | 71 - 131 |
| | | | Perfluoro-n-Octanoic Acid (PFOA) | 2018/02/24 | | 96 | % | 71 - 130 |
| | | | Perfluorooctane Sulfonate (PFOS) | 2018/02/24 | | 95 | % | 72 - 131 |
| 5410178 | KC1 | RPD | EtFOSAA | 2018/02/24 | 0.72 | | % | 30 |

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## QUALITY ASSURANCE REPORT(CONT'D)

| QA/QC Batch | Init | QC Type | Parameter | Date Analyzed | Value | % Recovery | UNITS | QC Limits |
|---|---|---|---|---|---|---|---|---|
| | | | MeFOSAA | 2018/02/24 | 1.3 | | % | 30 |
| | | | Perfluorobutane Sulfonate (PFBS) | 2018/02/24 | 3.8 | | % | 30 |
| | | | Perfluoroheptanoic Acid (PFHpA) | 2018/02/24 | 3.5 | | % | 30 |
| | | | Perfluorohexanoic Acid (PFHxA) | 2018/02/24 | 0.74 | | % | 30 |
| | | | Perfluorohexane Sulfonate (PFHxS) | 2018/02/24 | 11 | | % | 30 |
| | | | Perfluorononanoic Acid (PFNA) | 2018/02/24 | 2.8 | | % | 30 |
| | | | Perfluorotetradecanoic Acid | 2018/02/24 | 3.6 | | % | 30 |
| | | | Perfluorotridecanoic Acid | 2018/02/24 | 4.7 | | % | 30 |
| | | | Perfluoroundecanoic Acid (PFUnA) | 2018/02/24 | 1.3 | | % | 30 |
| | | | Perfluorodecanoic Acid (PFDA) | 2018/02/24 | 9.2 | | % | 30 |
| | | | Perfluorododecanoic Acid (PFDoA) | 2018/02/24 | 5.4 | | % | 30 |
| | | | Perfluoro-n-Octanoic Acid (PFOA) | 2018/02/24 | 5.5 | | % | 30 |
| | | | Perfluorooctane Sulfonate (PFOS) | 2018/02/24 | 2.4 | | % | 30 |
| 5410178 | KC1 | Method Blank | 13C2-Perfluorodecanoic acid | 2018/02/24 | | 98 | % | 50 - 150 |
| | | | 13C2-Perfluorododecanoic acid | 2018/02/24 | | 92 | % | 50 - 150 |
| | | | 13C2-Perfluorohexanoic acid | 2018/02/24 | | 103 | % | 50 - 150 |
| | | | 13C2-perfluorotetradecanoic acid | 2018/02/24 | | 85 | % | 50 - 150 |
| | | | 13C2-Perfluoroundecanoic acid | 2018/02/24 | | 93 | % | 50 - 150 |
| | | | 13C4-Perfluorobutanoic acid | 2018/02/24 | | 99 | % | 50 - 150 |
| | | | 13C4-Perfluoroheptanoic acid | 2018/02/24 | | 96 | % | 50 - 150 |
| | | | 13C4-Perfluorooctanesulfonate | 2018/02/24 | | 101 | % | 50 - 150 |
| | | | 13C4-Perfluorooctanoic acid | 2018/02/24 | | 97 | % | 50 - 150 |
| | | | 13C5-Perfluorononanoic acid | 2018/02/24 | | 104 | % | 50 - 150 |
| | | | 18O2-Perfluorohexanesulfonate | 2018/02/24 | | 101 | % | 50 - 150 |
| | | | D3-MeFOSAA | 2018/02/24 | | 86 | % | 50 - 150 |
| | | | D5-EtFOSAA | 2018/02/24 | | 81 | % | 50 - 150 |
| | | | EtFOSAA | 2018/02/24 | 10 U, LOD=10 | | ng/L | |
| | | | MeFOSAA | 2018/02/24 | 10 U, LOD=10 | | ng/L | |
| | | | Perfluorobutane Sulfonate (PFBS) | 2018/02/24 | 15 U, LOD=15 | | ng/L | |
| | | | Perfluoroheptanoic Acid (PFHpA) | 2018/02/24 | 15 U, LOD=15 | | ng/L | |
| | | | Perfluorohexanoic Acid (PFHxA) | 2018/02/24 | 10 U, LOD=10 | | ng/L | |
| | | | Perfluorohexane Sulfonate (PFHxS) | 2018/02/24 | 15 U, LOD=15 | | ng/L | |
| | | | Perfluorononanoic Acid (PFNA) | 2018/02/24 | 18 U, LOD=18 | | ng/L | |
| | | | Perfluorotetradecanoic Acid | 2018/02/24 | 10 U, LOD=10 | | ng/L | |
| | | | Perfluorotridecanoic Acid | 2018/02/24 | 10 U, LOD=10 | | ng/L | |
| | | | Perfluoroundecanoic Acid (PFUnA) | 2018/02/24 | 10 U, LOD=10 | | ng/L | |
| | | | Perfluorodecanoic Acid (PFDA) | 2018/02/24 | 15 U, LOD=15 | | ng/L | |
| | | | Perfluorododecanoic Acid (PFDoA) | 2018/02/24 | 10 U, LOD=10 | | ng/L | |
| | | | Perfluoro-n-Octanoic Acid (PFOA) | 2018/02/24 | 10 U, LOD=10 | | ng/L | |
| | | | Perfluorooctane Sulfonate (PFOS) | 2018/02/24 | 15 U, LOD=15 | | ng/L | |
| 5412188 | KC1 | Spiked Blank | 13C2-Perfluorodecanoic acid | 2018/02/27 | | 105 | % | 50 - 150 |


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## QUALITY ASSURANCE REPORT(CONT'D)

| QA/QC Batch | Init | QC Type | Parameter | Date Analyzed | Value | % Recovery | UNITS | QC Limits |
|---|---|---|---|---|---|---|---|---|
| | | | 13C2-Perfluorododecanoic acid | 2018/02/27 | | 102 | % | 50 - 150 |
| | | | 13C2-Perfluorohexanoic acid | 2018/02/27 | | 110 | % | 50 - 150 |
| | | | 13C2-perfluorotetradecanoic acid | 2018/02/27 | | 91 | % | 50 - 150 |
| | | | 13C2-Perfluoroundecanoic acid | 2018/02/27 | | 108 | % | 50 - 150 |
| | | | 13C4-Perfluorobutanoic acid | 2018/02/27 | | 101 | % | 50 - 150 |
| | | | 13C4-Perfluoroheptanoic acid | 2018/02/27 | | 105 | % | 50 - 150 |
| | | | 13C4-Perfluorooctanesulfonate | 2018/02/27 | | 109 | % | 50 - 150 |
| | | | 13C4-Perfluorooctanoic acid | 2018/02/27 | | 104 | % | 50 - 150 |
| | | | 13C5-Perfluorononanoic acid | 2018/02/27 | | 109 | % | 50 - 150 |
| | | | 18O2-Perfluorohexanesulfonate | 2018/02/27 | | 102 | % | 50 - 150 |
| | | | D3-MeFOSAA | 2018/02/27 | | 92 | % | 50 - 150 |
| | | | D5-EtFOSAA | 2018/02/27 | | 89 | % | 50 - 150 |
| | | | EtFOSAA | 2018/02/27 | | 95 | % | 73 - 128 |
| | | | MeFOSAA | 2018/02/27 | | 94 | % | 77 - 127 |
| | | | Perfluorobutane Sulfonate (PFBS) | 2018/02/27 | | 102 | % | 65 - 135 |
| | | | Perfluoroheptanoic Acid (PFHpA) | 2018/02/27 | | 95 | % | 73 - 129 |
| | | | Perfluorohexanoic Acid (PFHxA) | 2018/02/27 | | 93 | % | 74 - 129 |
| | | | Perfluorohexane Sulfonate (PFHxS) | 2018/02/27 | | 106 | % | 67 - 132 |
| | | | Perfluorononanoic Acid (PFNA) | 2018/02/27 | | 93 | % | 72 - 131 |
| | | | Perfluorotetradecanoic Acid | 2018/02/27 | | 101 | % | 70 - 134 |
| | | | Perfluorotridecanoic Acid | 2018/02/27 | | 103 | % | 67 - 143 |
| | | | Perfluoroundecanoic Acid (PFUnA) | 2018/02/27 | | 97 | % | 71 - 133 |
| | | | Perfluorodecanoic Acid (PFDA) | 2018/02/27 | | 105 | % | 71 - 133 |
| | | | Perfluorododecanoic Acid (PFDoA) | 2018/02/27 | | 94 | % | 71 - 131 |
| | | | Perfluoro-n-Octanoic Acid (PFOA) | 2018/02/27 | | 101 | % | 71 - 130 |
| | | | Perfluorooctane Sulfonate (PFOS) | 2018/02/27 | | 86 | % | 72 - 131 |
| 5412188 | KC1 | Spiked Blank DUP | 13C2-Perfluorodecanoic acid | 2018/02/27 | | 108 | % | 50 - 150 |
| | | | 13C2-Perfluorododecanoic acid | 2018/02/27 | | 105 | % | 50 - 150 |
| | | | 13C2-Perfluorohexanoic acid | 2018/02/27 | | 115 | % | 50 - 150 |
| | | | 13C2-perfluorotetradecanoic acid | 2018/02/27 | | 95 | % | 50 - 150 |
| | | | 13C2-Perfluoroundecanoic acid | 2018/02/27 | | 113 | % | 50 - 150 |
| | | | 13C4-Perfluorobutanoic acid | 2018/02/27 | | 115 | % | 50 - 150 |
| | | | 13C4-Perfluoroheptanoic acid | 2018/02/27 | | 112 | % | 50 - 150 |
| | | | 13C4-Perfluorooctanesulfonate | 2018/02/27 | | 114 | % | 50 - 150 |
| | | | 13C4-Perfluorooctanoic acid | 2018/02/27 | | 107 | % | 50 - 150 |
| | | | 13C5-Perfluorononanoic acid | 2018/02/27 | | 110 | % | 50 - 150 |
| | | | 18O2-Perfluorohexanesulfonate | 2018/02/27 | | 111 | % | 50 - 150 |
| | | | D3-MeFOSAA | 2018/02/27 | | 95 | % | 50 - 150 |
| | | | D5-EtFOSAA | 2018/02/27 | | 92 | % | 50 - 150 |
| | | | EtFOSAA | 2018/02/27 | | 94 | % | 73 - 128 |
| | | | MeFOSAA | 2018/02/27 | | 91 | % | 77 - 127 |
| | | | Perfluorobutane Sulfonate (PFBS) | 2018/02/27 | | 110 | % | 65 - 135 |
| | | | Perfluoroheptanoic Acid (PFHpA) | 2018/02/27 | | 88 | % | 73 - 129 |
| | | | Perfluorohexanoic Acid (PFHxA) | 2018/02/27 | | 91 | % | 74 - 129 |
| | | | Perfluorohexane Sulfonate (PFHxS) | 2018/02/27 | | 100 | % | 67 - 132 |
| | | | Perfluorononanoic Acid (PFNA) | 2018/02/27 | | 92 | % | 72 - 131 |
| | | | Perfluorotetradecanoic Acid | 2018/02/27 | | 98 | % | 70 - 134 |
| | | | Perfluorotridecanoic Acid | 2018/02/27 | | 102 | % | 67 - 143 |
| | | | Perfluoroundecanoic Acid (PFUnA) | 2018/02/27 | | 94 | % | 71 - 133 |
| | | | Perfluorodecanoic Acid (PFDA) | 2018/02/27 | | 98 | % | 71 - 133 |
| | | | Perfluorododecanoic Acid (PFDoA) | 2018/02/27 | | 97 | % | 71 - 131 |
| | | | Perfluoro-n-Octanoic Acid (PFOA) | 2018/02/27 | | 100 | % | 71 - 130 |
| | | | Perfluorooctane Sulfonate (PFOS) | 2018/02/27 | | 89 | % | 72 - 131 |
| 5412188 | KC1 | RPD | EtFOSAA | 2018/02/27 | 1.1 | | % | 30 |
| | | | MeFOSAA | 2018/02/27 | 2.8 | | % | 30 |




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## QUALITY ASSURANCE REPORT(CONT'D)

| QA/QC Batch | Init | QC Type | Parameter | Date Analyzed | Value | % Recovery | UNITS | QC Limits |
|---|---|---|---|---|---|---|---|---|
| | | | Perfluorobutane Sulfonate (PFBS) | 2018/02/27 | 7.4 | | % | 30 |
| | | | Perfluoroheptanoic Acid (PFHpA) | 2018/02/27 | 7.8 | | % | 30 |
| | | | Perfluorohexanoic Acid (PFHxA) | 2018/02/27 | 1.6 | | % | 30 |
| | | | Perfluorohexane Sulfonate (PFHxS) | 2018/02/27 | 6.2 | | % | 30 |
| | | | Perfluorononanoic Acid (PFNA) | 2018/02/27 | 0.95 | | % | 30 |
| | | | Perfluorotetradecanoic Acid | 2018/02/27 | 3.0 | | % | 30 |
| | | | Perfluorotridecanoic Acid | 2018/02/27 | 0.53 | | % | 30 |
| | | | Perfluoroundecanoic Acid (PFUnA) | 2018/02/27 | 3.1 | | % | 30 |
| | | | Perfluorodecanoic Acid (PFDA) | 2018/02/27 | 6.3 | | % | 30 |
| | | | Perfluorododecanoic Acid (PFDoA) | 2018/02/27 | 2.8 | | % | 30 |
| | | | Perfluoro-n-Octanoic Acid (PFOA) | 2018/02/27 | 0.64 | | % | 30 |
| | | | Perfluorooctane Sulfonate (PFOS) | 2018/02/27 | 2.6 | | % | 30 |
| 5412188 | KC1 | Method Blank | 13C2-Perfluorodecanoic acid | 2018/02/27 | | 108 | % | 50 - 150 |
| | | | 13C2-Perfluorododecanoic acid | 2018/02/27 | | 104 | % | 50 - 150 |
| | | | 13C2-Perfluorohexanoic acid | 2018/02/27 | | 110 | % | 50 - 150 |
| | | | 13C2-perfluorotetradecanoic acid | 2018/02/27 | | 98 | % | 50 - 150 |
| | | | 13C2-Perfluoroundecanoic acid | 2018/02/27 | | 108 | % | 50 - 150 |
| | | | 13C4-Perfluorobutanoic acid | 2018/02/27 | | 106 | % | 50 - 150 |
| | | | 13C4-Perfluoroheptanoic acid | 2018/02/27 | | 107 | % | 50 - 150 |
| | | | 13C4-Perfluorooctanesulfonate | 2018/02/27 | | 97 | % | 50 - 150 |
| | | | 13C4-Perfluorooctanoic acid | 2018/02/27 | | 104 | % | 50 - 150 |
| | | | 13C5-Perfluorononanoic acid | 2018/02/27 | | 106 | % | 50 - 150 |
| | | | 18O2-Perfluorohexanesulfonate | 2018/02/27 | | 108 | % | 50 - 150 |
| | | | D3-MeFOSAA | 2018/02/27 | | 89 | % | 50 - 150 |
| | | | D5-EtFOSAA | 2018/02/27 | | 93 | % | 50 - 150 |
| | | | EtFOSAA | 2018/02/27 | 10 U, LOD=10 | | ng/L | |
| | | | MeFOSAA | 2018/02/27 | 10 U, LOD=10 | | ng/L | |
| | | | Perfluorobutane Sulfonate (PFBS) | 2018/02/27 | 15 U, LOD=15 | | ng/L | |
| | | | Perfluoroheptanoic Acid (PFHpA) | 2018/02/27 | 15 U, LOD=15 | | ng/L | |
| | | | Perfluorohexanoic Acid (PFHxA) | 2018/02/27 | 10 U, LOD=10 | | ng/L | |
| | | | Perfluorohexane Sulfonate (PFHxS) | 2018/02/27 | 15 U, LOD=15 | | ng/L | |
| | | | Perfluorononanoic Acid (PFNA) | 2018/02/27 | 18 U, LOD=18 | | ng/L | |
| | | | Perfluorotetradecanoic Acid | 2018/02/27 | 10 U, LOD=10 | | ng/L | |
| | | | Perfluorotridecanoic Acid | 2018/02/27 | 10 U, LOD=10 | | ng/L | |
| | | | Perfluoroundecanoic Acid (PFUnA) | 2018/02/27 | 10 U, LOD=10 | | ng/L | |
| | | | Perfluorodecanoic Acid (PFDA) | 2018/02/27 | 15 U, LOD=15 | | ng/L | |
| | | | Perfluorododecanoic Acid (PFDoA) | 2018/02/27 | 10 U, LOD=10 | | ng/L | |
| | | | Perfluoro-n-Octanoic Acid (PFOA) | 2018/02/27 | 10 U, LOD=10 | | ng/L | |


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## QUALITY ASSURANCE REPORT(CONT'D)

| QA/QC Batch | Init | QC Type | Parameter | Date Analyzed | Value | % Recovery | UNITS | QC Limits |
|---|---|---|---|---|---|---|---|---|
| | | | Perfluorooctane Sulfonate (PFOS) | 2018/02/27 | 15 U, LOD=15 | | ng/L | |

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

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

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

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


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# TUNE CHECK

**Instrument:** Agilent 6470 LC/MS/MS

**Instrument Serial Number:** SG1611G001

**Maxxam Instrument Identification:** LCMS04

**Mass Calibration Performed:** July 7, 2017

**Tune Check Performed:** July 10 & 11, 2017


Mass Assignment Reference Table ____ Page 2

Analyte Precursor Ion Verification ____ Page 4

Analyte Product Ion Verification ____ Page 31

Extracted and Injection Internal Standard Precursor Ion Verification ____ Page 59

Extracted and Injection Internal Standard Product Ion Verification ____ Page 83


Reviewed by:

Adam Robinson, Supervisor – Liquid Chromatography

July 12/2017
Date

# Mass Assignments – Analytes, Extracted Internal Standards and Injection Internal Standards

| Compound | Abbreviation | Precursor Ion (m/z) | Precursor Ion Formula | Quant Ion (m/z) | Quantitation Ion Formula | Confirmation Ion (m/z) | Confirmation Ion Formula |
|---|---|---|---|---|---|---|---|
| **Native Analytes** | | | | | | | |
| Perfluorobutanoic acid | PFBA | 212.9 | $[CF_3(CF_2)_2CO_2]^-$ | 169.0 | $[CF_3(CF_2)_2]^-$ | [1] N/A | N/A |
| Perfluorobutanesulfonate | PFBS | 298.9 | $[CF_3(CF_2)_3SO_3]^-$ | 79.9 | $[SO_3]^-$ | 98.9 | $[FSO_3]^-$ |
| Perfluoropentanoic acid | PFPeA | 262.9 | $[CF_3(CF_2)_3CO_2]^-$ | 218.9 | $[CF_3(CF_2)_3]^-$ | [1] N/A | N/A |
| Perfluorohexanoic acid | PFHxA | 313.0 | $[CF_3(CF_2)_4CO_2]^-$ | 269.0 | $[CF_3(CF_2)_4]^-$ | 119.0 | $[CF_3(CF_2)]^-$ |
| Perfluorohexanesulfonate | PFHxS | 398.9 | $[CF_3(CF_2)_5SO_3]^-$ | 79.9 | $[SO_3]^-$ | 98.9 | $[FSO_3]^-$ |
| Perfluoroheptanoic acid | PFHpA | 363.0 | $[CF_3(CF_2)_5CO_2]^-$ | 319.0 | $[CF_3(CF_2)_5]^-$ | 169.2 | $[CF_3(CF_2)_2]^-$ |
| Perfluoroheptanesulfonate | PFHpS | 448.9 | $[CF_3(CF_2)_6SO_3]^-$ | 79.9 | $[SO_3]^-$ | 99.0 | $[FSO_3]^-$ |
| Perfluorooctanoic acid | PFOA | 413.1 | $[CF_3(CF_2)_6CO_2]^-$ | 369.0 | $[CF_3(CF_2)_6]^-$ | 169.0 | $[CF_3(CF_2)_2]^-$ |
| Perfluorooctanesulfonate | PFOS | 498.8 | $[CF_3(CF_2)_7SO_3]^-$ | 79.9 | $[SO_3]^-$ | 98.9 | $[FSO_3]^-$ |
| Perfluorononanoic acid | PFNA | 462.9 | $[CF_3(CF_2)_7CO_2]^-$ | 419.0 | $[CF_3(CF_2)_7]^-$ | 219.1 | $[CF_3(CF_2)_3]^-$ |
| Perfluorodecanoic acid | PFDA | 513.0 | $[CF_3(CF_2)_8CO_2]^-$ | 469.1 | $[CF_3(CF_2)_8]^-$ | 218.9 | $[CF_3(CF_2)_3]^-$ |
| Perfluorodecanesulfonate | PFDS | 598.9 | $[CF_3(CF_2)_9SO_3]$- | 79.9 | $[SO_3]^-$ | 98.8 | $[FSO_3]^-$ |
| Perfluoroundecanoic acid | PFUnA | 562.9 | $[CF_3(CF_2)_9CO_2]^-$ | 519.0 | $[CF_3(CF_2)_9]^-$ | 269.2 | $[CF_3(CF_2)_4]^-$ |
| Perfluorododecanoic acid | PFDoA | 612.9 | $[CF_3(CF_2)_{10}CO_2]^-$ | 569.0 | $[CF_3(CF_2)_{10}]^-$ | 319.0 | $[CF_3(CF_2)_5]^-$ |
| Perfluorotridecanoic acid | PFTrDA | 663.0 | $[CF_3(CF_2)_{11}CO_2]^-$ | 619.0 | $[CF_3(CF_2)_{11}]^-$ | 318.9 | $[CF_3(CF_2)_5]^-$ |
| Perfluorotetradecanoic acid | PFTeDA | 713.0 | $[CF_3(CF_2)_{12}CO_2]^-$ | 669.0 | $[CF_3(CF_2)_{12}]^-$ | 319.2 | $[CF_3(CF_2)_5]^-$ |
| Perfluorooctane sulfonamide | PFOSA | 497.9 | $[CF_3(CF_2)_7SO_2NH]^-$ | 78.0 | $[SO_2N]^-$ | 478.0 | $[(CF_2)_8SO_2N]^-$ |
| N-methylperfluorooctane sulfonamide | MeFOSA | 511.9 | $[CF_3(CF_2)_7SO_2N(CH_3)]^-$ | 169.0 | $[CF_3(CF_2)_2]^-$ | 219.0 | $[CF_3(CF_2)_3]^-$ |
| N-ethylperfluorooctane sulfonamide | EtFOSA | 526.0 | $[CF_3(CF_2)_7SO_2N(C_2H_5)]^-$ | 169.0 | $[CF_3(CF_2)_2]^-$ | 219.0 | $[CF_3(CF_2)_3]^-$ |
| N-methylperfluorooctane sulfonamidoethanol | MeFOSE | 616.0 | $[CF_3(CF_2)_7SO_2N(CH_3)C_2H_4OH{\cdot}CH_3CO_2]^-$ | 59.0 | $[CH_3CO_2]^-$ | [1] N/A | N/A |
| N-ethylperfluorooctane sulfonamidoethanol | EtFOSE | 630.0 | $[CF_3(CF_2)_7SO_2N(C_2H_5)C_2H_4OH{\cdot}CH_3CO_2]^-$ | 59.0 | $[CH_3CO_2]^-$ | [1] N/A | N/A |
| N-methylperfluorooctanesufonamidoacetic acid | MeFOSAA | 570.1 | $[CF_3(CF_2)_7SO_2N(CH_3)CH_2CO_2]^-$ | 419.1 | $[CF_3(CF_2)_7]^-$ | 483.0 | $[CF_3(CF_2)_7SO_2]^-$ |
| N-ethylperfluorooctanesufonamidoacetic acid | EtFOSAA | 584.1 | $[CF_3(CF_2)_7SO_2N(CH_2CH_3)CH_2CO_2]^-$ | 419.1 | $[CF_3(CF_2)_7]^-$ | 483.0 | $[CF_3(CF_2)_7SO_2]^-$ |
| 6:2 Fluorotelomersulfonate | 6:2FTS | 427.0 | $[CF_3(CF_2)_5CH_2CH_2SO_3]^-$ | 407.0 | $[CF_3(CF_2)_4CFCHCH_2SO_3]^-$ | 80.9 | $[SO_2OH]^-$ |
| 8:2 Fluorotelomersulfonate | 8:2FTS | 526.9 | $[CF_3(CF_2)_7CH_2CH_2SO_3]^-$ | 507.0 | $[CF_3(CF_2)_6CFCHCH_2SO_3]^-$ | 80.9 | $[SO_2OH]^-$ |
| **Mass-labeled Extracted Internal Standards** | | | | | | | |
| $^{13}C_4$-Perfluorobutanoic acid | MPFBA | 216.9 | $[^{13}CF_3(^{13}CF_2)_2{}^{13}CO_2]^-$ | 172.0 | $[^{13}CF_3(^{13}CF_2)_2]^-$ | N/A | N/A |

| Compound | Abbreviation | Precursor Ion (m/z) | Precursor Ion Formula | Quant Ion (m/z) | Quantitation Ion Formula | Confirmation Ion (m/z) | Confirmation Ion Formula |
|---|---|---|---|---|---|---|---|
| $^{13}C_5$-Perfluoropentanoic acid | MPFPeA | 267.9 | $[^{13}CF_3(^{13}CF_2)_3{}^{13}CO_2]^-$ | 223.0 | $[^{13}CF_3(^{13}CF_2)_3]^-$ | N/A | N/A |
| $^{13}C_2$-Perfluorohexanoic acid | MPFHxA | 314.9 | $[CF_3(CF_2)_3(^{13}CF_2){}^{13}CO_2]^-$ | 270.0 | $[CF_3(CF_2)_3{}^{13}CF_2]^-$ | N/A | N/A |
| $^{18}O_2$-Perfluorohexanesulfonate | MPFHxS | 402.9 | $[CF_3(CF_2)_5S(^{18}O)_2O]^-$ | 84.0 | $[S(^{18}O)_2O]^-$ | N/A | N/A |
| $^{13}C_4$-Perfluoroheptanoic acid | MPFHpA | 366.9 | $[CF_3CF_2(^{13}CF_2)_3{}^{13}CO_2]^-$ | 322.0 | $[CF_3CF_2(^{13}CF_2)_4]^-$ | N/A | N/A |
| $^{13}C_4$-Perfluorooctanoic acid | MPFOA | 416.9 | $[CF_3(CF_2)_3(^{13}CF_2)_3{}^{13}CO_2]^-$ | 372.0 | $[CF_3(CF_2)_3(^{13}CF_2)_3]^-$ | N/A | N/A |
| $^{13}C_4$-Perfluorooctanesulfonate | MPFOS | 502.9 | $[CF_3(CF_2)_3(^{13}CF_2)_4SO_3]^-$ | 79.9 | $[SO_3]^-$ | N/A | N/A |
| $^{13}C_5$-Perfluorononanoic acid | MPFNA | 467.9 | $[CF_3(CF_2)_3(^{13}CF_2)_4{}^{13}CO_2]^-$ | 423.0 | $[CF_3(CF_2)_3(^{13}CF_2)_4]^-$ | N/A | N/A |
| $^{13}C_2$-Perfluorodecanoic acid | MPFDA | 514.9 | $[CF_3(CF_2)_7(^{13}CF_2){}^{13}CO_2]^-$ | 470.0 | $[CF_3(CF_2)_7{}^{13}CF_2]^-$ | N/A | N/A |
| $^{13}C_2$-Perfluoroundecanoic acid | MPFUnA | 564.9 | $[CF_3(CF_2)_8(^{13}CF_2){}^{13}CO_2]^-$ | 520.0 | $[CF_3(CF_2)_8{}^{13}CF_2]^-$ | N/A | N/A |
| $^{13}C_2$-Perfluorododecanoic acid | MPFDoA | 614.9 | $[CF_3(CF_2)_9(^{13}CF_2){}^{13}CO_2]^-$ | 570.0 | $[CF_3(CF_2)_9{}^{13}CF_2]^-$ | N/A | N/A |
| $^{13}C_2$-Perfluorotetradecanoic acid | MPFTeDA | 714.9 | $[CF_3(CF_2)_{12}(^{13}CF_2){}^{13}CO_2]^-$ | 669.9 | $[CF_3(CF_2)_{12}]^-$ | N/A | N/A |
| $^{13}C_8$-Perfluorooctane sulfonamide | MPFOSA | 505.8 | $[^{13}CF_3(^{13}CF_2)_7SO_2NH]^-$ | 77.9 | $[SO_2N]^-$ | N/A | N/A |
| N-methyl-$d_3$-perfluorooctanesulfonamide | $D_3$-MeFOSA | 514.9 | $[CF_3(CF_2)_7SO_2N(CD_3)]^-$ | 168.9 | $[CF_3(CF_2)_2]^-$ | N/A | N/A |
| N-ethyl-$d_5$-perfluorooctanesulfonamide | $D_5$-EtFOSA | 531.0 | $[CF_3(CF_2)_7SO_2N(C_2D_5)]^-$ | 168.9 | $[CF_3(CF_2)_2]^-$ | N/A | N/A |
| N-methyl-$d_3$-perfluorooctanesulfonamidoethanol-$d_4$ | $D_7$-MeFOSE | 623.1 | $[CF_3(CF_2)_7SO_2N(CD_3)CD_2CD_2OH \cdot CH_3CO_2]^-$ | 59.0 | $[CH_3CO_2]^-$ | N/A | N/A |
| N-ethyl-$d_5$-perfluorooctanesulfonamidoethanol-$d_4$ | $D_9$-EtFOSE | 639.1 | $[CF_3(CF_2)_7SO_2N(CD_2CD_3)CD_2CD_2OH \cdot CH_3CO_2]^-$ | 59.0 | $[CH_3CO_2]^-$ | N/A | N/A |
| N-methyl-$d_3$-perfluorooctanesulfonamidoacetic acid | $D_3$-MeFOSAA | 573.1 | $[CF_3(CF_2)_7SO_2N(CD_3)CH_2CO_2]^-$ | 419.1 | $[CF_3(CF_2)_7]^-$ | N/A | N/A |
| N-ethyl-$d_5$-perfluorooctanesulfonamidoacetic acid | $D_5$-EtFOSAA | 589.2 | $[CF_3(CF_2)_7SO_2N(CD_2CD_3)CH_2CO_2]^-$ | 419.0 | $[CF_3(CF_2)_7]^-$ | N/A | N/A |
| $^{13}C_2$-Fluorotelomersulfonate (6:2) | M2-6:2FTS | 429.0 | $[CF_3(CF_2)_5(^{13}CH_2)_2SO_3]^-$ | 80.9 | $[SO_2OH]^-$ | N/A | N/A |
| $^{13}C_2$-Fluorotelomersulfonate (8:2) | M2-8:2FTS | 528.9 | $[CF_3(CF_2)_7(^{13}CH_2)_2SO_3]^-$ | 80.9 | $[SO_2OH]^-$ | N/A | N/A |
| **Injection Internal Standards** | | | | | | | |
| $^{13}C_6$-Perfluorohexanoic acid | $^{13}C_6$-PFHxA | 318.9 | $[^{13}CF_3(^{13}CF_2)_4{}^{13}CO_2]^-$ | 274.0 | $[^{13}CF_3(^{13}CF_2)_4]^-$ | N/A | N/A |
| $^{13}C_9$-Perfluorodecanoic acid | $^{13}C_9$-PFDA | 521.9 | $[CF_3(^{13}CF_2)_8{}^{13}CO_2]^-$ | 477.1 | $[CF_3(^{13}CF_2)_8]^-$ | N/A | N/A |

# DoD Projects - Internal Data Validation Checklist

Run date: 2018/02/23

Worksheet # (s): 5410178

Analysis: PFOSALCM-W

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

Reviewed by: KC Date: 2018/02/27

Comments:

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

Reviewed by: [signature] Date: 2018/02/27

Comments:

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

# Worksheet Data Validation Checklist - Extractable Organics

Worksheet # 5410178 Testcode: PFOSALCM_W

## Sample Preparation

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

Reviewed by: [signature] Date: 2018/2/22

Comments:

## Worksheet Approval

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

FC 2018/02/22

See attached BRLFCD-00002 FC 2018/02/22

Reviewed by: Date:

Comments:

## Worksheet Validation

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

Reviewed by: Date:

Comments:

**WS# : 5410178**

Page #: 1/2

Report Name : Worksheet - (Liquids and Solids)

Assignment Date : Thursday, February 22, 2018

Assigned to : Shahbaz Ahmad

Test Code : PFOSALCM-W

Instrument Id:

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

Sediment cm ml ml SAD 2018/2/22

| Job Number | Sample Number | D | Sample ID | F | % Moisture | Wt or Vol | Final Vol | DF or AF | # Cont | Expiry Date | Test DeadLine | Criteria | Extract Date | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | SPIKE | 0 | PFC-W | | 0 | 125 | 3 | | | | | | 2018/02/22 | 29.1 |
| | SPIKE | 1 | PFC-W | | 0 | 125 | 3 | | | | | | 2018/02/22 | 29.2 |
| | BLANK | | | | 0 | 125 | 3 | | | | | | 2018/02/22 | 31.3 |
| B833226 | *GBV345-01R | | EB-CEF-MFS-0208* | | <0.1 | 125 | 3 | 1X | 2 | 2018/02/22 | 2018/02/27 23:00 | DOD | 2018/02/22 | 31.0 |
| B833226 | *GBV346-01R | | EB-CEF-MFS-0208* | | <0.1 | 125 | 3 | 1X | 2 | 2018/02/22 | 2018/02/27 23:00 | DOD | 2018/02/22 | 31.4 |
| B833226 | *GBV347-01R | | EB-CEF-MFS-0208* | | <0.1 | 125 | 3 | 1X | 2 | 2018/02/22 | 2018/02/27 23:00 | DOD | 2018/02/22 | 30.5 |
| B833226 | *GBV348-01R | | FB-CEF-MFS-0208* | | 0 | 125 | 3 | 1X | 2 | 2018/02/22 | 2018/02/27 23:00 | DOD | 2018/02/22 | 31.3 |
| B833226 | *GBV349-01R | | CEF-1820-TW02-0* | | <0.1 | 125 | 3 | 1X/10X | 2 | 2018/02/22 | 2018/02/27 23:00 | DOD | 2018/02/22 | 30.3 |

SAD 2018/2/22

Remarks:

Samples extracted by: Shahbaz Ahmad SAD 2018/2/22

Instrumentation performed by: KC Date: 2018/02/23

Calculations performed by: KC Date: 2018/02/26

Validated by: AA Date: 2018/02/27

| Job No. | Rep / Remarks | Client Name | Contact | Client Tier | National |
|---|---|---|---|---|---|
| GB833226 | SP8 | Earth Toxics Inc | Rick Carr | Tier 5 (Enviro.) | AECOM |

NREG. PFOSALCM-W Level IV Package and TetraTech EDD required f/c ZAL. 2018/02/20 Project #: JM10 CECIL

| Job | Sample | Lab Comments |
|---|---|---|
| | SPIKE | |
| | SPIKE | |
| | BLANK | |
| B833226 | GBV345-01R | |
| B833226 | GBV346-01R | |
| B833226 | GBV347-01R | |
| B833226 | GBV348-01R | |
| B833226 | GBV349-01R | |

| Standard | Vol. of Methanol | Spiked Amount | |
|---|---|---|---|
| S1 | 2825 | 25 | SK-7377 2/3 |
| S2 | 2800 | 50 | |
| S3 | 2700 | 150 | |
| S4 | 2813 | 37.5 | I-5297 2/3 |
| S5 | 2775 | 75 | |
| S6 | 2725 | 125 | |
| ICV | 2788 | 62.5 | — I-5299 3/3 |
| EB | 2850 | — | |

Worksheet Reagent Tracking Record  Worksheet # 5410178

| Surrogate/Spike solutions | √ | Solution ID # | Conc. | Volume (µL) Blk-Spk Solid | Blk-Spk Liquid | MS Solid | MS Liquid | Samples Solid | Samples Liquid |
|---|---|---|---|---|---|---|---|---|---|
| DGT Spike | | | 100 ug/mL | 60 | 30 | 60 | 30 | NA | NA |
| Diquat Dibromide | | | 50 ug/mL | NA | 350 | NA | 350 | NA | NA |
| Explosives Spiking solution A | | | 20 ug/mL | 250 | 100 | 250 | 100 | NA | NA |
| Explosives Spiking solution B | | | 20/80 ug/mL | 250 | 100 | 250 | 100 | NA | NA |
| Formaldehyde Spike | | | 100 ug/mL | 25 | 25 | 25 | 25 | NA | NA |
| Glyphosate Spike | | | 25 ug/mL | 500 | 20 | 500 | 20 | NA | NA |
| Nonylphenol Ethoxylate Spike | | | 100 ug/mL | 100 | 100 | 100 | 100 | NA | NA |
| Nonylphenol Spike | | | 10 ug/mL | 100 | 100 | 100 | 100 | NA | NA |
| Paraquat Cl Tetrahydrate | | | 20 ug/mL | NA | 125 | NA | 125 | NA | NA |
| Perchlorate Standard Spike | | | 10 ng/mL | NA | 100 | NA | 100 | NA | NA |
| Perchlorate Standard Spike | | | 500 ng/mL | 40 | NA | 40 | NA | NA | NA |
| Perchlorate O-18 Internal Standard | | | 0.10 ng/uL | 20 | 20 | 20 | 20 | 20 | 20 |
| Morpholine Second Source Working Std | | | 2500 ug/L | NA | 80 | NA | 80 | NA | NA |
| Morpholine-D8 Internal Standard | | | 10 ug/mL | NA | 50 | NA | 50 | NA | 50 |
| Steril Second Source Spiking Solution | | | NA | 20 | NA | 20 | NA | NA | NA |
| Sterilants Comp. IS Working Solution | | | 3 ug/mL | 50 | NA | 50 | NA | 50 | NA |
| Comp. PFC Working Solution A | ✓ | I-5299 3/3 DM3 | 1ug/mL | 75 | 21 (62.5) | 75 | 21 62.5 | NA | NA |
| PFC Internal Standard Solution | ✓ | SI-6801 3/4 DM3 | 50/125 ng/mL | 200 | 100 (150) | 200 | 100 150 | 200 | 100/(150) |
| PFC Injection IS | ✓ | SI 6770 1/2 | 400 ng/mL | 20 | 20 | 20 | 20 | 20 | 20 |
| ICV | ✓ | I-5299 3/3 | | | | | | | |

| Solvent/Reagent | √ | Lot No. | Date Opened | Solvent/Reagent | √ | Lot No. | Date Opened/ Prepared |
|---|---|---|---|---|---|---|---|
| DCM | | | | 50% NaOH | | | |
| Ottawa Sand | | | | o-Phosphoric Acid | | | |
| Methanol | ✓ | SHBJB485 | 2018/2/22 | Borax | | | |
| 2-Propanol (IPA) | | | | Calcium Chloride | | | |
| Acetonitrile | | | | EDTA | | | |
| Sodium Sulfate | | | | Phosphate Buffer | | | |
| 70:30 Methanol: Water | | | | Sodium Thiosulphate | | | |
| 60:40 Water: Methanol | ✓ | PRLRE | 108-371 | DNPH | | | |
| DCM:Ethyl Ether (75:25) | | | | FMOC | | | |
| Hexane:IPA (98:2) | | | | 5M Acetate Buffer | | | |
| 2% Formic Acid | ✓ | PRLRE | 108-370 | 0.2% $NH_4OH$ | ✓ | PRLRE | 108-365 |
| 0.2% Formic Acid | | | | Leachate Fluid | | | |
| 0.05M KOH | | | | Reagent Water | ✓ | 57297 | 2018/2/21 |
| 0.05M HCl | | | | | | | |
| | | | | | | | |
| | | | | | | | |

*Spiked by: SAP

Spike Date: 2018/2/22

Spike Syringe/Pipette ID#: M410111

Int. Std Syringe/Pipette ID#: G243906

*Spiking Witnessed by: DM3

Final pH:

| Equipment & ID | √ | Equipment | ID# | √ | Equipment | Lot # |
|---|---|---|---|---|---|---|
| Pipettor | | SPE Cartridge | | | QC Balance ID | |
| | | Filter | | | Thermometer ID &Temp | |
| Dispenser | | Centrifuge | | | | |
| | | Sonicator | | | | |

Bottle Tracking

Bottle# 18801

Cap# 18-778

Systems plus Lot# 18-01-31

Comments:

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

**Worksheet:** 5410178

## Dilution and Column Cleanup Worksheet

Maxxam Analytics

| Job Number | Sample ID | Sample: Initial Final Volume | Dilution Required | Sample added mL | Solvent Added mL | Int Stan Added uL | New Effective Final Volume | INITIAL DATE | Column Clean Up |
|---|---|---|---|---|---|---|---|---|---|
| B833226 | GBY349-01 | 1X | 10X | 12.5 | — | 150 | 12.5 | 2018/12/22 | — |
| | | | | | | | | | |
| | | | | | | | | | |
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| | | | | | | | | | |

2018/12/22

Worksheet Number: **5410178**

PFOS and PFOA in water by SPE/LCMS - Water

ug/L

| Parameter Name | Units | SPIKE | SPIKE Dup1 | BLANK | B833226 GBV345 | B833226 GBV346 | B833226 GBV347 |
|---|---|---|---|---|---|---|---|
| 6:2 Fluorotelomer sulfonate | ug/L | 104.57947 | 101.17622 | 0 | N/A******* | N/A******* | N/A******* |
| 8:2 Fluorotelomer sulfonate | ug/L | 112.21436 | 105.47088 | 0 | N/A******* | N/A******* | N/A******* |
| N-ethylperfluorooctane sulfonamide | ug/L | 93.85059 | 97.33535 | 0 | N/A******* | N/A******* | N/A******* |
| EtFOSAA | ug/L | 97.83049 | 97.13051 | 0 | 0 | 0 | 0 |
| N-ethylperfluorooctane sulfonamidoe | ug/L | 103.62933 | 97.71617 | 0 | N/A******* | N/A******* | N/A******* |
| N-methylperfluorooctane sulfonamide | ug/L | 96.44646 | 94.62339 | 0 | N/A******* | N/A******* | N/A******* |
| MeFOSAA | ug/L | 97.65427 | 98.97928 | 0 | 0 | 0 | 0 |
| N-methylperfluorooctanesulfonamidol | ug/L | 91.06951 | 96.32557 | 0 | N/A******* | N/A******* | N/A******* |
| Perfluorobutanoic acid | ug/L | 108.41214 | 106.23146 | 0 | N/A******* | N/A******* | N/A******* |
| Perfluorobutane Sulfonate (PFBS) | ug/L | 114.89115 | 110.55300 | 0 | 0 | 0 | 0 |
| Perfluorodecane Sulfonate | ug/L | 89.83545 | 94.41773 | 0 | N/A******* | N/A******* | N/A******* |
| Perfluoroheptanoic Acid (PFHpA) | ug/L | 105.22248 | 101.60261 | 0 | 0 | 0 | 0 |
| Perfluoroheptane sulfonate | ug/L | 104.63532 | 103.18603 | 0 | N/A******* | N/A******* | N/A******* |
| Perfluorohexanoic Acid (PFHxA) | ug/L | 101.86286 | 101.10933 | 0 | 0 | 0 | 0 |
| Perfluorohexane Sulfonate (PFHxS) | ug/L | 113.82603 | 102.18863 | 0 | 0 | 0 | 0 |
| Perfluorononanoic Acid (PFNA) | ug/L | 103.40302 | 100.51643 | 0 | 0 | 0 | 0 |
| Perfluorooctane Sulfonamide (PFOSA) | ug/L | 99.29490 | 100.67477 | 0 | N/A******* | N/A******* | N/A******* |
| Perfluoropentanoic Acid (PFPeA) | ug/L | 102.88732 | 102.99295 | 0 | N/A******* | N/A******* | N/A******* |
| Perfluorotetradecanoic Acid | ug/L | 101.60932 | 98.06120 | 0 | 0 | 0 | 0 |
| Perfluorotridecanoic Acid | ug/L | 102.84016 | 98.12275 | 0 | 0 | 0 | 0 |
| Perfluoroundecanoic Acid (PFUnA) | ug/L | 100.54371 | 101.82974 | 0 | 0 | 0 | 0 |
| Perfluorodecanoic Acid (PFDA) | ug/L | 96.65524 | 105.94541 | 0 | 0 | 0 | 0 |
| Perfluorododecanoic Acid (PFDoA) | ug/L | 104.48336 | 99.01245 | 0 | 0 | 0 | 0 |
| Perfluoro-n-Octanoic Acid (PFOA) | ug/L | 101.25898 | 95.79924 | 0 | 0 | 0 | 0 |
| Perfluorooctane Sulfonate (PFOS) | ug/L | 92.97346 | 95.26326 | 0 | 0 | 0.02144820 | 0 |
| 13C2-6:2 Fluorotelomer sulfonate | ug/L | 109.903851 | 97.8040593 | 101.577855 | N/A******* | N/A******* | N/A******* |
| 13C2-8:2 Fluorotelomer sulfonate | ug/L | 97.5136187 | 98.0955143 | 102.162548 | N/A******* | N/A******* | N/A******* |
| 13C2-perfluorotetradecanoic acid | ug/L | 95.5150982 | 88.9149930 | 84.9989419 | 87.3894649 | 74.3542136 | 76.4113922 |
| 13C4-Perfluorobutanoic acid | ug/L | 104.427663 | 94.0791785 | 99.1686284 | 107.033099 | 88.5247353 | 88.0325539 |
| D3-MeFOSAA | ug/L | 89.3689947 | 87.0132480 | 85.7309792 | 90.4197354 | 80.2407075 | 74.1822741 |
| D5-EtFOSAA | ug/L | 89.5158472 | 86.8403480 | 81.1638215 | 90.6290015 | 77.6895437 | 71.1418719 |
| N-methyl-d3-perfluorooctane sulfona | ug/L | 94.4913764 | 81.0531707 | 91.0627958 | N/A******* | N/A******* | N/A******* |
| N-ethyl-d5-perfluorooctane sulfonam | ug/L | 85.6581253 | 86.9008929 | 81.3518913 | N/A******* | N/A******* | N/A******* |
| 13C2-Perfluorodecanoic acid | ug/L | 111.745166 | 91.3425546 | 97.6556089 | 99.1334382 | 86.8924234 | 90.7211595 |
| 13C2-Perfluorododecanoic acid | ug/L | 92.5110675 | 89.7109265 | 92.4204003 | 87.0126131 | 79.0799091 | 75.9975202 |
| 13C2-Perfluorohexanoic acid | ug/L | 107.101155 | 97.5765668 | 102.884711 | 105.377199 | 95.3508725 | 96.6816050 |
| 13C2-Perfluoroundecanoic acid | ug/L | 97.3210856 | 90.7633221 | 92.5263351 | 93.5248775 | 89.4835601 | 81.8449279 |
| 13C4-Perfluoroheptanoic acid | ug/L | 100.943460 | 95.1310517 | 96.2159094 | 107.276204 | 91.3277585 | 94.8621187 |
| 13C5-Perfluorononanoic acid | ug/L | 109.541443 | 101.277347 | 104.003571 | 113.457209 | 94.3203245 | 87.8062621 |
| 13C4-Perfluorooctanoic acid | ug/L | 108.574604 | 100.369310 | 97.0996193 | 113.568255 | 97.4178486 | 91.6937645 |
| 13C4-Perfluorooctanesulfonate | ug/L | 112.746449 | 95.0616739 | 100.788171 | 108.255895 | 91.0456951 | 83.0426059 |
| 13C5-Perfluoropentanoic acid | ug/L | 108.350085 | 97.9500199 | 104.718098 | N/A******* | N/A******* | N/A******* |
| 13C8-Perfluorooctane Sulfonamide | ug/L | 95.0670807 | 83.2339234 | 91.2798153 | N/A******* | N/A******* | N/A******* |
| 18O2-Perfluorohexanesulfonate | ug/L | 98.2362389 | 93.2685320 | 101.196002 | 102.556321 | 94.7443833 | 95.6950791 |

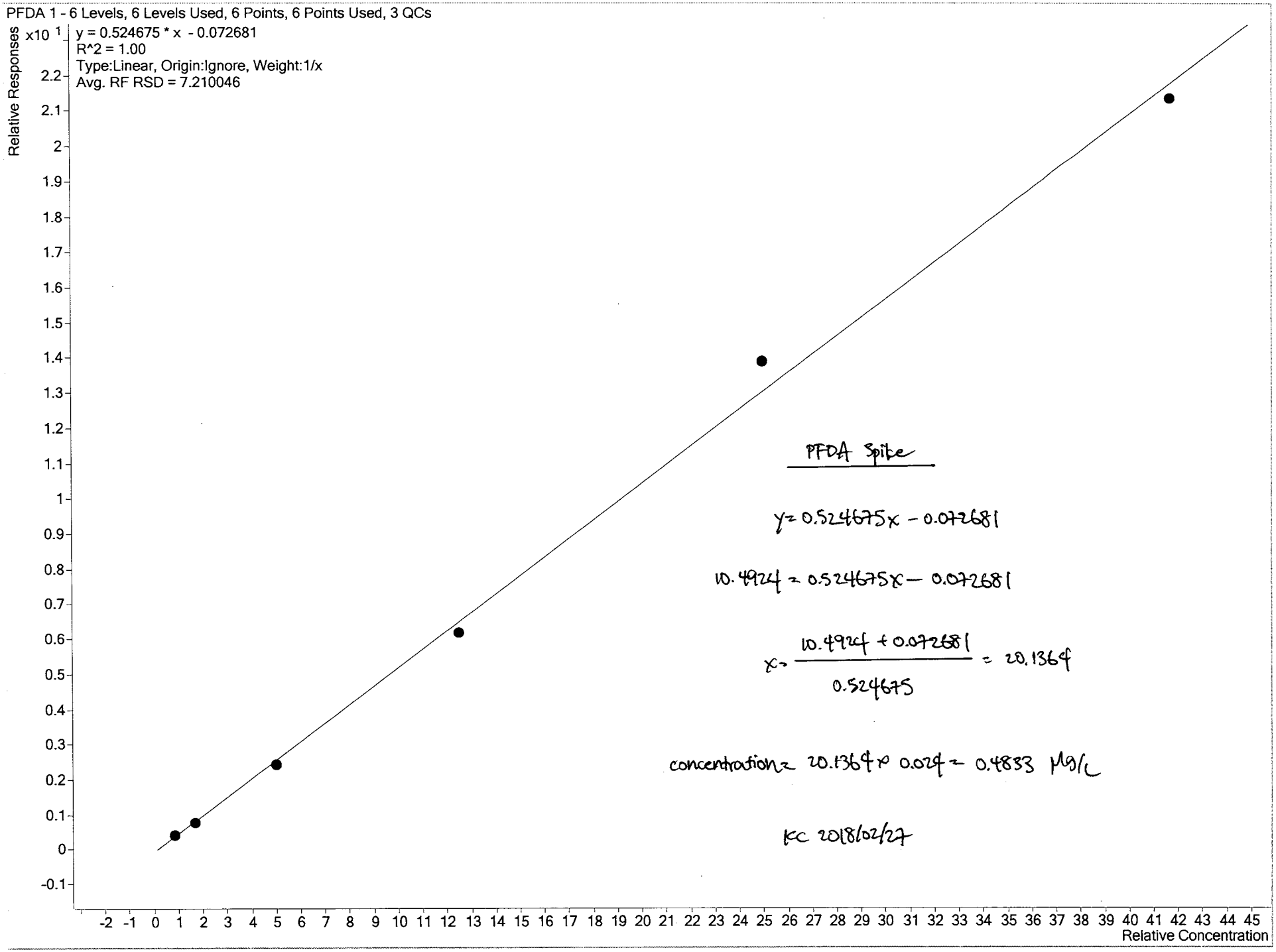
RC 2018/02/27

Worksheet Number: **5410178**

PFOS and PFOA in water by SPE/LCMS - Water

ug/L

| Parameter Name | B833226 GBV348 | DL | B833226 GBV349 | DL | RDL | MDL | IDL |
|---|---|---|---|---|---|---|---|
| 6:2 Fluorotelomer sulfonate | N/A******* | 0.02 | N/A******* | 0.02 | 0.02 | 0.0066 | 0 |
| 8:2 Fluorotelomer sulfonate | N/A******* | 0.02 | N/A******* | 0.02 | 0.02 | 0.0066 | 0 |
| N-ethylperfluorooctane sulfonamide | N/A******* | 0.02 | N/A******* | 0.02 | 0.02 | 0.01 | 0 |
| EtFOSAA | 0 | 0.02 | 0 | 0.02 | 0.02 | 0.0033 | 0 |
| N-ethylperfluorooctane sulfonamidoe | N/A******* | 0.02 | N/A******* | 0.02 | 0.02 | 0.0079 | 0 |
| N-methylperfluorooctane sulfonamide | N/A******* | 0.02 | N/A******* | 0.02 | 0.02 | 0.013 | 0 |
| MeFOSAA | 0 | 0.02 | 0 | 0.02 | 0.02 | 0.0029 | 0 |
| N-methylperfluorooctanesulfonamidol | N/A******* | 0.02 | N/A******* | 0.02 | 0.02 | 0.012 | 0 |
| Perfluorobutanoic acid | N/A******* | 0.02 | N/A******* | 0.02 | 0.02 | 0.0055 | 0 |
| Perfluorobutane Sulfonate (PFBS) | 0 | 0.02 | 0.03139091 | 0.02 | 0.02 | 0.0054 | 0 |
| Perfluorodecane Sulfonate | N/A******* | 0.02 | N/A******* | 0.02 | 0.02 | 0.006 | 0 |
| Perfluoroheptanoic Acid (PFHpA) | 0 | 0.02 | 0.07981266 | 0.02 | 0.02 | 0.0074 | 0 |
| Perfluoroheptane sulfonate | N/A******* | 0.02 | N/A******* | 0.02 | 0.02 | 0.008 | 0 |
| Perfluorohexanoic Acid (PFHxA) | 0 | 0.02 | 0.18538337 | 0.02 | 0.02 | 0.0035 | 0 |
| Perfluorohexane Sulfonate (PFHxS) | 0 | 0.02 | 1.24784359 | 0.20 | 0.02 | 0.0056 | 0 |
| Perfluorononanoic Acid (PFNA) | 0 | 0.02 | 0.01972712 | 0.02 | 0.02 | 0.0087 | 0 |
| Perfluorooctane Sulfonamide (PFOSA) | N/A******* | 0.02 | N/A******* | 0.02 | 0.02 | 0.0034 | 0 |
| Perfluoropentanoic Acid (PFPeA) | N/A******* | 0.02 | N/A******* | 0.02 | 0.02 | 0.0075 | 0 |
| Perfluorotetradecanoic Acid | 0 | 0.02 | 0 | 0.02 | 0.02 | 0.0027 | 0 |
| Perfluorotridecanoic Acid | 0 | 0.02 | 0 | 0.02 | 0.02 | 0.0038 | 0 |
| Perfluoroundecanoic Acid (PFUnA) | 0 | 0.02 | 0 | 0.02 | 0.02 | 0.0025 | 0 |
| Perfluorodecanoic Acid (PFDA) | 0 | 0.02 | 0 | 0.02 | 0.02 | 0.0061 | 0 |
| Perfluorododecanoic Acid (PFDoA) | 0 | 0.02 | 0 | 0.02 | 0.02 | 0.005 | 0 |
| Perfluoro-n-Octanoic Acid (PFOA) | 0 | 0.02 | 0.06696004 | 0.02 | 0.02 | 0.0033 | 0 |
| Perfluorooctane Sulfonate (PFOS) | 0 | 0.02 | 2.44624865 | 0.20 | 0.02 | 0.006 | 0 |
| 13C2-6:2 Fluorotelomer sulfonate | N/A******* | | N/A******* | | | | |
| 13C2-8:2 Fluorotelomer sulfonate | N/A******* | | N/A******* | | | | |
| 13C2-perfluorotetradecanoic acid | 69.0567804 | | 82.5751103 | | | | |
| 13C4-Perfluorobutanoic acid | 84.3258610 | | 80.8948204 | | | | |
| D3-MeFOSAA | 75.8982901 | | 82.9222374 | | | | |
| D5-EtFOSAA | 75.9835083 | | 81.3392062 | | | | |
| N-methyl-d3-perfluorooctane sulfona | N/A******* | | N/A******* | | | | |
| N-ethyl-d5-perfluorooctane sulfonam | N/A******* | | N/A******* | | | | |
| 13C2-Perfluorodecanoic acid | 84.8676636 | | 83.1941605 | | | | |
| 13C2-Perfluorododecanoic acid | 76.3976376 | | 84.2586309 | | | | |
| 13C2-Perfluorohexanoic acid | 90.7526758 | | 84.3941472 | | | | |
| 13C2-Perfluoroundecanoic acid | 83.7894978 | | 79.4005158 | | | | |
| 13C4-Perfluoroheptanoic acid | 88.9220635 | | 84.6587618 | | | | |
| 13C5-Perfluorononanoic acid | 89.4801735 | | 88.7032933 | | | | |
| 13C4-Perfluorooctanoic acid | 92.5778136 | | 89.4223954 | | | | |
| 13C4-Perfluorooctanesulfonate | 86.9100985 | | 72.5049115 | | | | |
| 13C5-Perfluoropentanoic acid | N/A******* | | N/A******* | | | | |
| 13C8-Perfluorooctane Sulfonamide | N/A******* | | N/A******* | | | | |
| 18O2-Perfluorohexanesulfonate | 89.1927643 | | 82.7737982 | | | | |




PFDA Spike

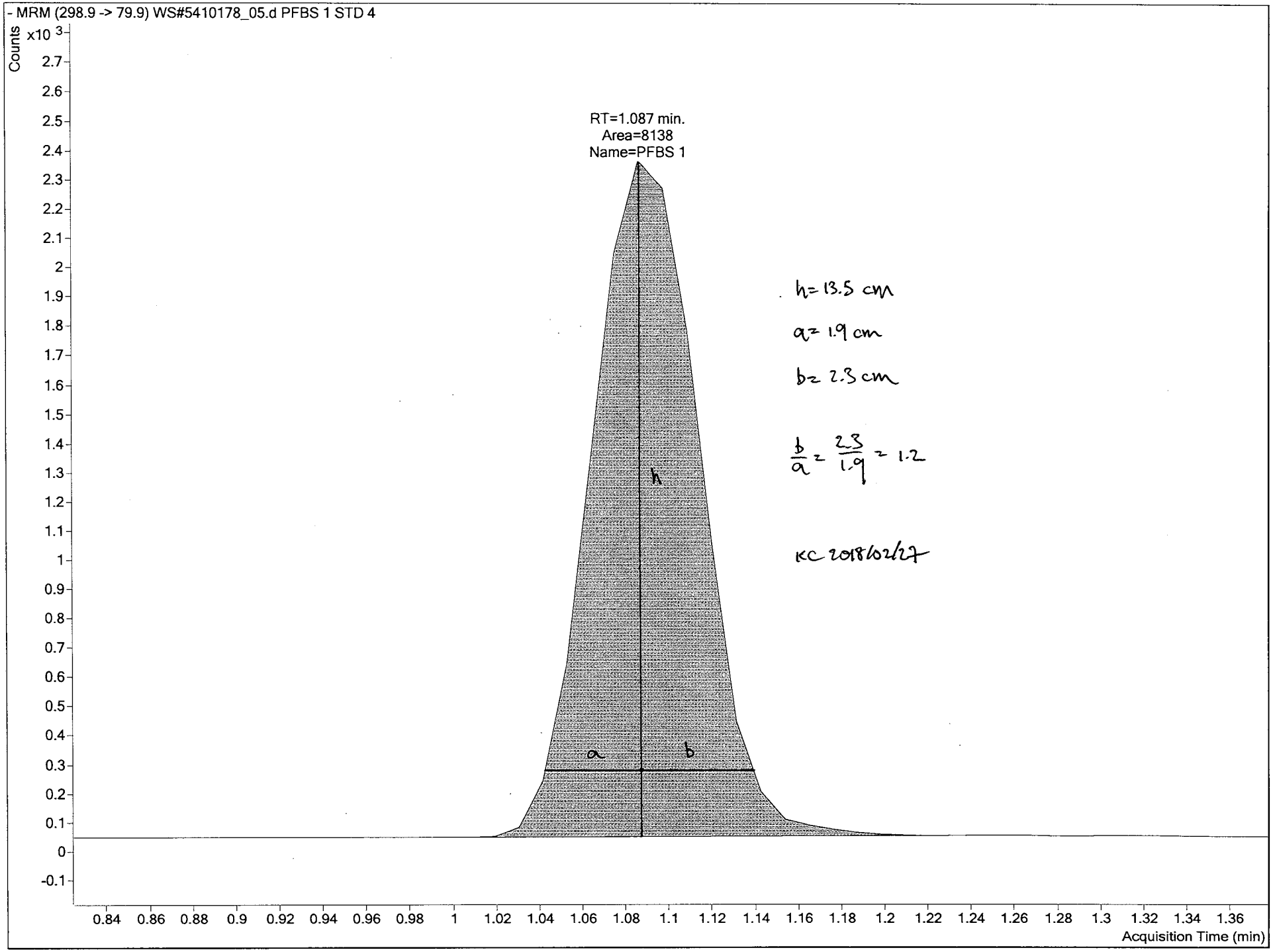
$y = 0.524675x - 0.072681$

$10.4924 = 0.524675x - 0.072681$

$x = \frac{10.4924 + 0.072681}{0.524675} = 20.1364$

concentration = $20.1364 \times 0.024 = 0.4833$ µg/L

KC 2018/02/27



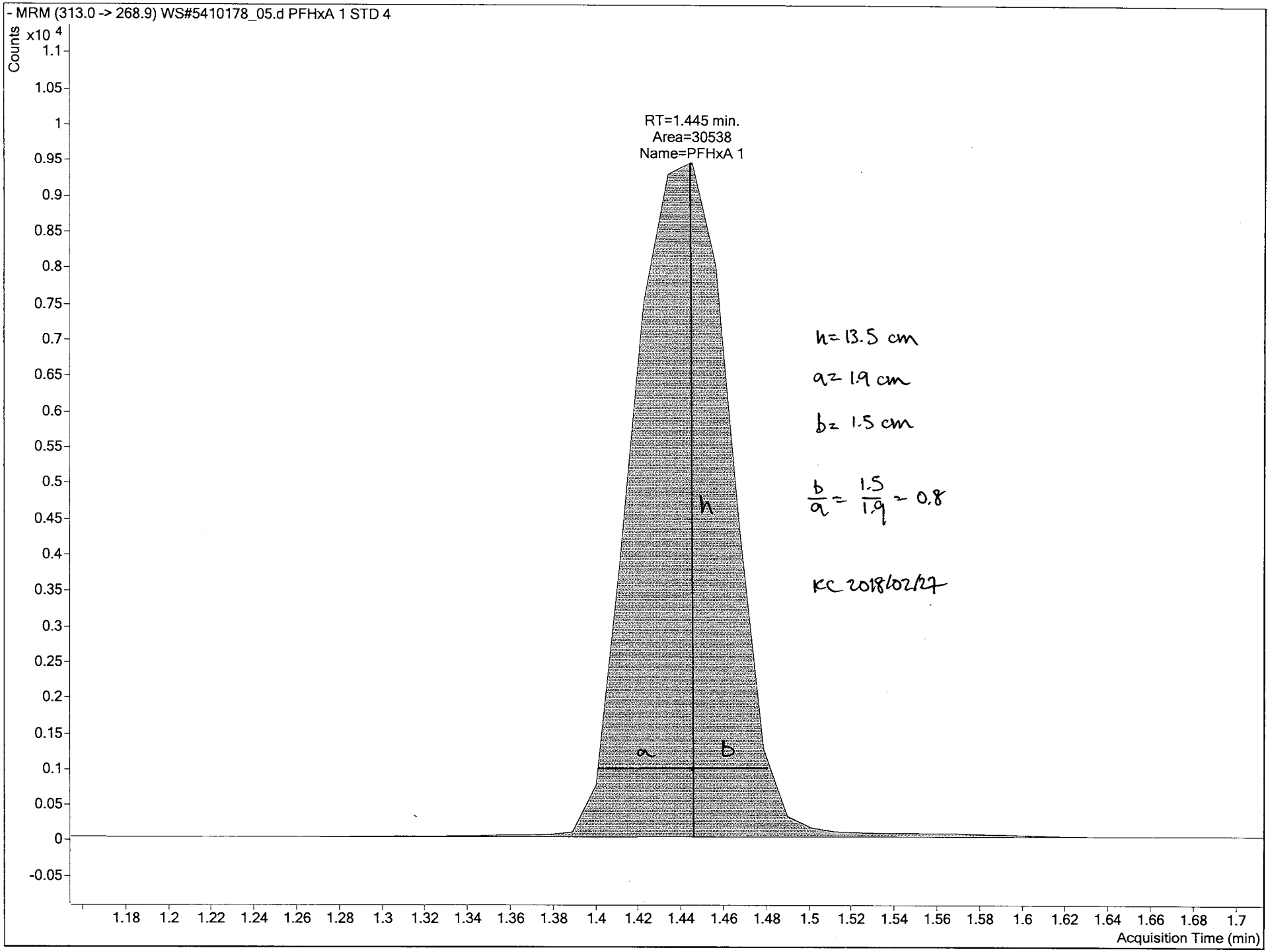

h = 13.5 cm

a = 1.9 cm

b = 2.3 cm

$\frac{b}{a} = \frac{2.3}{1.9} = 1.2$

KC 2018/02/27


- MRM (313.0 -> 268.9) WS#5410178_05.d PFHxA 1 STD 4
Counts
x10 4
RT=1.445 min.
Area=30538
Name=PFHxA 1
h
a
b
h= 13.5 cm
a= 1.9 cm
b= 1.5 cm
b/a = 1.5/1.9 = 0.8
KC 2018/02/27
Acquisition Time (min)

Report Name: Worksheet - Parameter Lists

Report Date: 2018/02/22

Test Code: **PFOSALCM-W**

Worksheet Number: **5410178**

| Sample Number | Parameter Code | Parameter | |
|---|---|---|---|
| GBV345-01 | ETFOSAA | EtFOSAA | * |
| GBV346-01 | MEFOSAA | MeFOSAA | * |
| GBV347-01 | PFBS | Perfluorobutane Sulfonate (PFBS) | |
| GBV348-01 | PFHPA | Perfluoroheptanoic Acid (PFHpA) | |
| GBV349-01 | PFHXA | Perfluorohexanoic Acid (PFHxA) | |
| | PFHXS | Perfluorohexane Sulfonate (PFHxS) | |
| | PFNA | Perfluorononanoic Acid (PFNA) | |
| | PFTEDA | Perfluorotetradecanoic Acid | |
| | PFTRDA | Perfluorotridecanoic Acid | |
| | PFUNA | Perfluoroundecanoic Acid (PFUnA) | |
| | PFDA | Perfluorodecanoic Acid (PFDA) | |
| | PFDOA | Perfluorododecanoic Acid (PFDoA) | |
| | PFOA | Perfluoro-n-Octanoic Acid (PFOA) | |
| | PFOS | Perfluorooctane Sulfonate (PFOS) | |

SAD
2018/2/12

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

# WorkSheet 5410178 Instrument Sequences

| | | |
|---|---|---|
| 1. | 5410178:SPIKE | SPIKE |
| 2. | 5410178:SPIKE:D1 | SPIKE :D1 |
| 3. | 5410178:BLANK | BLANK |
| 4. | 5410178:GBV345-01 | EB-CEF-MFS-020818-17 |
| 5. | 5410178:GBV346-01 | EB-CEF-MFS-020818-18 |
| 6. | 5410178:GBV347-01 | EB-CEF-MFS-020818-19 |
| 7. | 5410178:GBV348-01 | FB-CEF-MFS-020818-12 |
| 8. | 5410178:GBV349-01 | CEF-1820-TW02-0218 |



# Worklist Report

Agilent Technologies

**Instrument Name:** LCMS04 **Worklist Path:** D:\MassHunter\Worklists\PFCs\PFC_180223_Low.wkl

MaxEnt Analytics

**Operator Name:** ---
**Run Type:** Standard Start
**Part of Method to Run:** Acquisition Only
**Execution of Acquisition-DA:** Synchronous
**Acquisition Method Path:** D:\MassHunter\Acquisition Method
**DA Method Path:** D:\MassHunter\methods
**Data File Path:** D:\MassHunter\Data\PFC\20180223\WS#5410178
**Pre-Worklist Script:** ---
**Post-Worklist Script:** SCP_InstrumentStandby(){MH_Acq_Scripts.exe}
**Acquisition Clean Up Script:** ---
**Overlapped Injection:** Yes
**Clear Sample Selection After Run:** Yes
**Wait Time for Ready(Min):** 10
**Threshold Disk Value(GB):** 10
**Comment:** Column #199
MP A1: Solution# 280 (FSRE18)
MP B1: Methanol lot# SHBJ5451, Sigma

pc
2018/02/23

**Plate Barcode:**

| Plate | Barcode |
|---|---|
| P1 | |

**Worklist Table**

| | Sample Name | Sample Position | Method | Data File | Sample Type | Level Name | Inj Vol (µl) | Comment |
|---|---|---|---|---|---|---|---|---|
| 1 | Solvent | P1-A1 | PFC_Water_Low.m | WS#5410178_01.d | Sample | | As Method | - |
| 2 | STD 1 | P1-A2 | PFC_Water_Low.m | WS#5410178_02.d | Calibration | STD 1 | As Method | - |
| 3 | STD 2 | P1-A3 | PFC_Water_Low.m | WS#5410178_03.d | Calibration | STD 2 | As Method | - |
| 4 | STD 3 | P1-A4 | PFC_Water_Low.m | WS#5410178_04.d | Calibration | STD 3 | As Method | - |
| 5 | STD 4 | P1-A5 | PFC_Water_Low.m | WS#5410178_05.d | Calibration | STD 4 | As Method | - |
| 6 | STD 5 | P1-A6 | PFC_Water_Low.m | WS#5410178_06.d | Calibration | STD 5 | As Method | - |
| 7 | STD 6 | P1-A7 | PFC_Water_Low.m | WS#5410178_07.d | Calibration | STD 6 | As Method | - |

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# Worklist Report

Agilent Technologies

| | Sample Name | Sample Position | Method | Data File | Sample Type | Level Name | Inj Vol (µl) | Comment |
|---|---|---|---|---|---|---|---|---|
| 8 | IB | P1-A8 | PFC_Water_Low.m | WS#5410178_08.d | Sample | | As Method | - |
| 9 | ICV | P1-A9 | PFC_Water_Low.m | WS#5410178_09.d | QC | ICV | As Method | - |
| 10 | ISC | P1-A2 | PFC_Water_Low.m | WS#5410178_10.d | ConCal | STD 1 | As Method | - |
| 11 | 5410178:BLANK | P1-B1 | PFC_Water_Low.m | WS#5410178_11.d | Sample | | As Method | - |
| 12 | 5410178:SPIKE | P1-B2 | PFC_Water_Low.m | WS#5410178_12.d | QC | ICV | As Method | - |
| 13 | 5410178:SPIKE:D1 | P1-B3 | PFC_Water_Low.m | WS#5410178_13.d | QC | ICV | As Method | - |
| 14 | 5410178:GBV345-01 | P1-B4 | PFC_Water_Low.m | WS#5410178_14.d | Sample | | As Method | - |
| 15 | 5410178:GBV346-01 | P1-B5 | PFC_Water_Low.m | WS#5410178_15.d | Sample | | As Method | - |
| 16 | 5410178:GBV347-01 | P1-B6 | PFC_Water_Low.m | WS#5410178_16.d | Sample | | As Method | - |
| 17 | 5410178:GBV348-01 | P1-B7 | PFC_Water_Low.m | WS#5410178_17.d | Sample | | As Method | - |
| 18 | 5410178:GBV349-01:10x | P1-B8 | PFC_Water_Low.m | WS#5410178_18.d | Sample | | As Method | - |
| 19 | 5410178:GBV349-01 | P1-B9 | PFC_Water_Low.m | WS#5410178_19.d | Sample | | As Method | - |
| 20 | IB | P1-A8 | PFC_Water_Low.m | WS#5410178_20.d | Sample | | As Method | - |
| 21 | CCV | P1-A5 | PFC_Water_Low.m | WS#5410178_21.d | ConCal | STD 4 | As Method | - |

Maxxam Analytics

# Worklist Report

Agilent Technologies

**Instrument Name:** LCMS04 **Worklist Path:** D:\MassHunter\Worklists\PFCs\PFC_180223_Low_FOSAA.wkl

MaxxamAnalytics

**Operator Name:** ---
**Run Type:** Standard Start
**Part of Method to Run:** Acquisition Only
**Execution of Acquisition-DA:** Synchronous
**Acquisition Method Path:** D:\MassHunter\Acquisition Method
**DA Method Path:** D:\MassHunter\methods
**Data File Path:** D:\MassHunter\Data\PFC\20180223\WS#5410178_FOSAA
**Pre-Worklist Script:** ---
**Post-Worklist Script:** SCP_InstrumentStandby(){MH_Acq_Scripts.exe}
**Acquisition Clean Up Script:** ---
**Overlapped Injection:** Yes
**Clear Sample Selection After Run:** Yes
**Wait Time for Ready(Min):** 10
**Threshold Disk Value(GB):** 10
**Comment:** Column #199
MP A1: Solution# 280 (FSRE18)
MP B1: Solution# 290 (FSRE18)

KC 2018/02/23

**Plate Barcode:**

| Plate | Barcode |
|---|---|
| P1 | |

**Worklist Table**

| | Sample Name | Sample Position | Method | Data File | Sample Type | Level Name | Inj Vol (µl) | Comment |
|---|---|---|---|---|---|---|---|---|
| 1 | Solvent | P1-A1 | PFC_Water_Low_FOSAA.m | WS#5410178_FOSAA_01.d | Sample | | As Method | - |
| 2 | STD 1 | P1-A2 | PFC_Water_Low_FOSAA.m | WS#5410178_FOSAA_02.d | Calibration | STD 1 | As Method | - |
| 3 | STD 2 | P1-A3 | PFC_Water_Low_FOSAA.m | WS#5410178_FOSAA_03.d | Calibration | STD 2 | As Method | - |
| 4 | STD 3 | P1-A4 | PFC_Water_Low_FOSAA.m | WS#5410178_FOSAA_04.d | Calibration | STD 3 | As Method | - |
| 5 | STD 4 | P1-A5 | PFC_Water_Low_FOSAA.m | WS#5410178_FOSAA_05.d | Calibration | STD 4 | As Method | - |
| 6 | STD 5 | P1-A6 | PFC_Water_Low_FOSAA.m | WS#5410178_FOSAA_06.d | Calibration | STD 5 | As Method | - |
| 7 | STD 6 | P1-A7 | PFC_Water_Low_FOSAA.m | WS#5410178_FOSAA_07.d | Calibration | STD 6 | As Method | - |
| 8 | IB | P1-A8 | PFC_Water_Low_FOSAA.m | WS#5410178_FOSAA_08.d | Sample | | As Method | - |

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# Worklist Report

Agilent Technologies

| | Sample Name | Sample Position | Method | Data File | Sample Type | Level Name | Inj Vol (µl) | Comment |
|---|---|---|---|---|---|---|---|---|
| 9 | ICV | P1-A9 | PFC_Water_Low_FOSAA.m | WS#5410178_FOSAA_09.d | QC | ICV | As Method | - |
| 10 | ISC | P1-A2 | PFC_Water_Low_FOSAA.m | WS#5410178_FOSAA_10.d | ConCal | STD 1 | As Method | - |
| 11 | 5410178:BLANK | P1-B1 | PFC_Water_Low_FOSAA.m | WS#5410178_FOSAA_11.d | Sample | | As Method | - |
| 12 | 5410178:SPIKE | P1-B2 | PFC_Water_Low_FOSAA.m | WS#5410178_FOSAA_12.d | QC | ICV | As Method | - |
| 13 | 5410178:SPIKE:D1 | P1-B3 | PFC_Water_Low_FOSAA.m | WS#5410178_FOSAA_13.d | QC | ICV | As Method | - |
| 14 | 5410178:GBV345-01 | P1-B4 | PFC_Water_Low_FOSAA.m | WS#5410178_FOSAA_14.d | Sample | | As Method | - |
| 15 | 5410178:GBV346-01 | P1-B5 | PFC_Water_Low_FOSAA.m | WS#5410178_FOSAA_15.d | Sample | | As Method | - |
| 16 | 5410178:GBV347-01 | P1-B6 | PFC_Water_Low_FOSAA.m | WS#5410178_FOSAA_16.d | Sample | | As Method | - |
| 17 | 5410178:GBV348-01 | P1-B7 | PFC_Water_Low_FOSAA.m | WS#5410178_FOSAA_17.d | Sample | | As Method | - |
| 18 | 5410178:GBV349-01:10x | P1-B8 | PFC_Water_Low_FOSAA.m | WS#5410178_FOSAA_18.d | Sample | | As Method | - |
| 19 | 5410178:GBV349-01 | P1-B9 | PFC_Water_Low_FOSAA.m | WS#5410178_FOSAA_19.d | Sample | | As Method | - |
| 20 | IB | P1-A8 | PFC_Water_Low_FOSAA.m | WS#5410178_FOSAA_20.d | Sample | | As Method | - |
| 21 | CCV | P1-A5 | PFC_Water_Low_FOSAA.m | WS#5410178_FOSAA_21.d | ConCal | STD 4 | As Method | - |

Maxxam Analytics

## FINAL INJECTION SEQUENCE

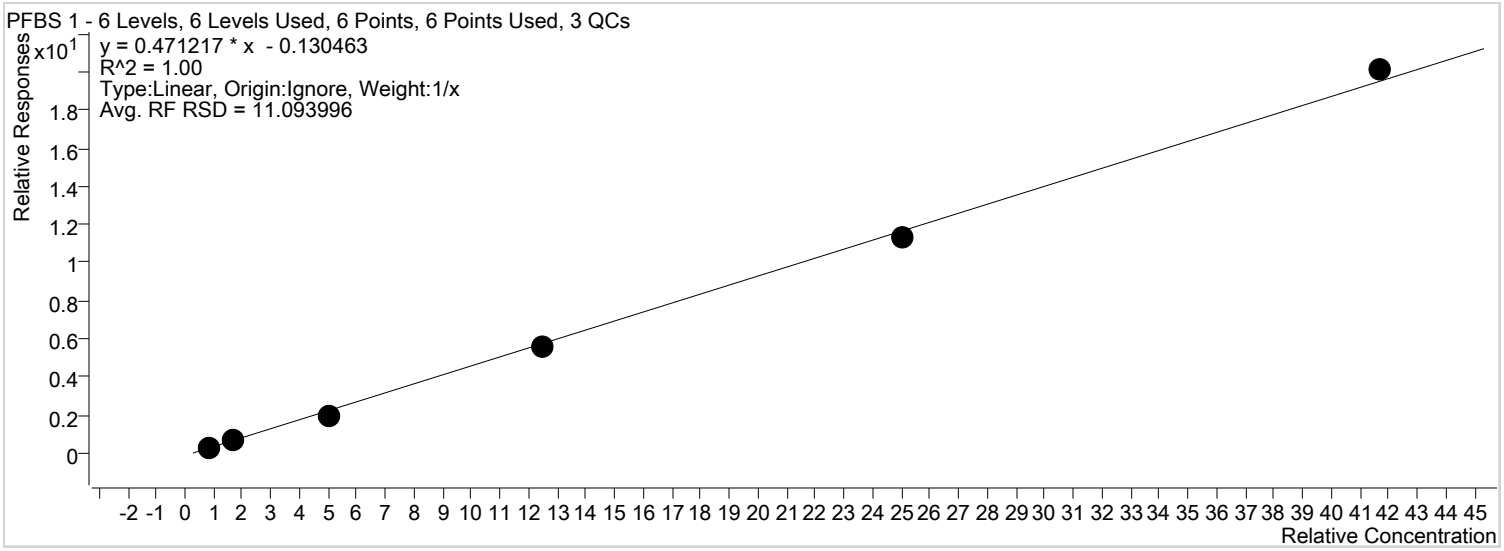
| Sample | | | | | |
|---|---|---|---|---|---|
| Name | Comment | Acq. Date-Time | Acq. Method File | Data File | Pos. |
| STD 1 | - | 2018/02/23 4:39 PM | PFC_Water_Low.m | WS#5410178_02.d | P1-A2 |
| STD 2 | - | 2018/02/23 4:44 PM | PFC_Water_Low.m | WS#5410178_03.d | P1-A3 |
| STD 3 | - | 2018/02/23 4:49 PM | PFC_Water_Low.m | WS#5410178_04.d | P1-A4 |
| STD 4 | - | 2018/02/23 4:54 PM | PFC_Water_Low.m | WS#5410178_05.d | P1-A5 |
| STD 5 | - | 2018/02/23 4:59 PM | PFC_Water_Low.m | WS#5410178_06.d | P1-A6 |
| STD 6 | - | 2018/02/23 5:04 PM | PFC_Water_Low.m | WS#5410178_07.d | P1-A7 |
| IB | - | 2018/02/23 5:09 PM | PFC_Water_Low.m | WS#5410178_08.d | P1-A8 |
| ICV | - | 2018/02/23 5:14 PM | PFC_Water_Low.m | WS#5410178_09.d | P1-A9 |
| ISC | - | 2018/02/23 5:19 PM | PFC_Water_Low.m | WS#5410178_10.d | P1-A2 |
| 5410178:BLANK | - | 2018/02/23 5:23 PM | PFC_Water_Low.m | WS#5410178_11.d | P1-B1 |
| 5410178:SPIKE | - | 2018/02/23 5:28 PM | PFC_Water_Low.m | WS#5410178_12.d | P1-B2 |
| 5410178:SPIKE:D1 | - | 2018/02/23 5:33 PM | PFC_Water_Low.m | WS#5410178_13.d | P1-B3 |
| 5410178:GBV345-01 | - | 2018/02/23 5:38 PM | PFC_Water_Low.m | WS#5410178_14.d | P1-B4 |
| 5410178:GBV346-01 | - | 2018/02/23 5:43 PM | PFC_Water_Low.m | WS#5410178_15.d | P1-B5 |
| 5410178:GBV347-01 | - | 2018/02/23 5:48 PM | PFC_Water_Low.m | WS#5410178_16.d | P1-B6 |
| 5410178:GBV348-01 | - | 2018/02/23 5:53 PM | PFC_Water_Low.m | WS#5410178_17.d | P1-B7 |
| 5410178:GBV349-01:10x | Reported for PFHxS and PFOS only. | 2018/02/23 5:58 PM | PFC_Water_Low.m | WS#5410178_18.d | P1-B8 |
| 5410178:GBV349-01 | Reported for all except PFHxS and PFOS. | 2018/02/23 6:03 PM | PFC_Water_Low.m | WS#5410178_19.d | P1-B9 |
| IB | - | 2018/02/23 6:08 PM | PFC_Water_Low.m | WS#5410178_20.d | P1-A8 |
| CCV | - | 2018/02/23 6:13 PM | PFC_Water_Low.m | WS#5410178_21.d | P1-A5 |

## FINAL INJECTION SEQUENCE

| Sample | | | | | |
|---|---|---|---|---|---|
| Name | Comment | Acq. Date-Time | Acq. Method File | Data File | Pos. |
| STD 1 | - | 2018/02/24 3:10 AM | PFC_Water_Low_FOSAA.m | WS#5410178_FOSAA_02.d | P1-A2 |
| STD 2 | - | 2018/02/24 3:13 AM | PFC_Water_Low_FOSAA.m | WS#5410178_FOSAA_03.d | P1-A3 |
| STD 3 | - | 2018/02/24 3:15 AM | PFC_Water_Low_FOSAA.m | WS#5410178_FOSAA_04.d | P1-A4 |
| STD 4 | - | 2018/02/24 3:18 AM | PFC_Water_Low_FOSAA.m | WS#5410178_FOSAA_05.d | P1-A5 |
| STD 5 | - | 2018/02/24 3:20 AM | PFC_Water_Low_FOSAA.m | WS#5410178_FOSAA_06.d | P1-A6 |
| STD 6 | - | 2018/02/24 3:22 AM | PFC_Water_Low_FOSAA.m | WS#5410178_FOSAA_07.d | P1-A7 |
| IB | - | 2018/02/24 3:25 AM | PFC_Water_Low_FOSAA.m | WS#5410178_FOSAA_08.d | P1-A8 |
| ICV | - | 2018/02/24 3:27 AM | PFC_Water_Low_FOSAA.m | WS#5410178_FOSAA_09.d | P1-A9 |
| ISC | - | 2018/02/24 3:30 AM | PFC_Water_Low_FOSAA.m | WS#5410178_FOSAA_10.d | P1-A2 |
| 5410178:BLANK | - | 2018/02/24 3:32 AM | PFC_Water_Low_FOSAA.m | WS#5410178_FOSAA_11.d | P1-B1 |
| 5410178:SPIKE | - | 2018/02/24 3:34 AM | PFC_Water_Low_FOSAA.m | WS#5410178_FOSAA_12.d | P1-B2 |
| 5410178:SPIKE:D1 | - | 2018/02/24 3:37 AM | PFC_Water_Low_FOSAA.m | WS#5410178_FOSAA_13.d | P1-B3 |
| 5410178:GBV345-01 | - | 2018/02/24 3:39 AM | PFC_Water_Low_FOSAA.m | WS#5410178_FOSAA_14.d | P1-B4 |
| 5410178:GBV346-01 | - | 2018/02/24 3:42 AM | PFC_Water_Low_FOSAA.m | WS#5410178_FOSAA_15.d | P1-B5 |
| 5410178:GBV347-01 | - | 2018/02/24 3:44 AM | PFC_Water_Low_FOSAA.m | WS#5410178_FOSAA_16.d | P1-B6 |
| 5410178:GBV348-01 | - | 2018/02/24 3:47 AM | PFC_Water_Low_FOSAA.m | WS#5410178_FOSAA_17.d | P1-B7 |
| 5410178:GBV349-01:10x | Not used. | 2018/02/24 3:49 AM | PFC_Water_Low_FOSAA.m | WS#5410178_FOSAA_18.d | P1-B8 |
| 5410178:GBV349-01 | Reported for all. | 2018/02/24 3:51 AM | PFC_Water_Low_FOSAA.m | WS#5410178_FOSAA_19.d | P1-B9 |
| IB | - | 2018/02/24 3:54 AM | PFC_Water_Low_FOSAA.m | WS#5410178_FOSAA_20.d | P1-A8 |
| CCV | - | 2018/02/24 3:56 AM | PFC_Water_Low_FOSAA.m | WS#5410178_FOSAA_21.d | P1-A5 |

**Batch Path** T:\lcms4\PFC\20180223\WS#5410178\QuantResults\PFC_Water_Low_180223_WS#5410178_EToxics.batch.bin
**Last Calib Update** 2018/02/27 2:51:08 PM
**Instrument:** LCMS04

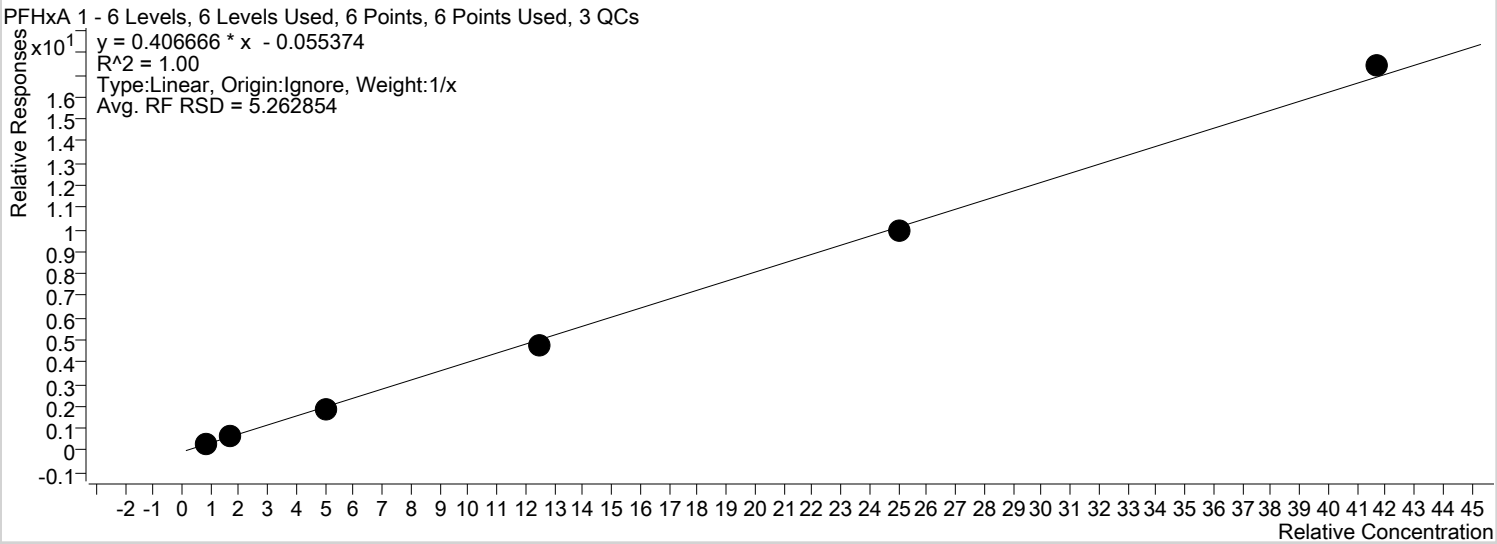
**Analyte:** PFBS 1
**Internal Standard:** MPFHxS




| Sample | Level | Enabled | Acquisition Time | Exp. Conc. | Concentration | Response | RF | S/N | Accuracy |
|---|---|---|---|---|---|---|---|---|---|
| STD 1 | STD 1 | x | 2018/02/23 4:39:32 PM | 0.83 | 0.89 | 485 | 0.3495 | 62 | 107.5 |
| STD 2 | STD 2 | x | 2018/02/23 4:44:28 PM | 1.70 | 1.77 | 1042 | 0.4128 | 83 | 103.9 |
| STD 3 | STD 3 | x | 2018/02/23 4:49:24 PM | 5.00 | 4.54 | 3317 | 0.4016 | 253 | 90.8 |
| STD 4 | STD 4 | x | 2018/02/23 4:54:20 PM | 12.50 | 12.14 | 8138 | 0.4471 | 753 | 97.1 |
| STD 5 | STD 5 | x | 2018/02/23 4:59:16 PM | 25.00 | 24.42 | 17495 | 0.4550 | 464 | 97.7 |
| STD 6 | STD 6 | x | 2018/02/23 5:04:12 PM | 41.70 | 42.98 | 30887 | 0.4825 | 168 | 103.1 |

**Batch Path** T:\lcms4\PFC\20180223\WS#5410178\QuantResults\PFC_Water_Low_180223_WS#5410178_EToxics.batch.bin
**Last Calib Update** 2018/02/27 2:51:08 PM
**Instrument:** LCMS04

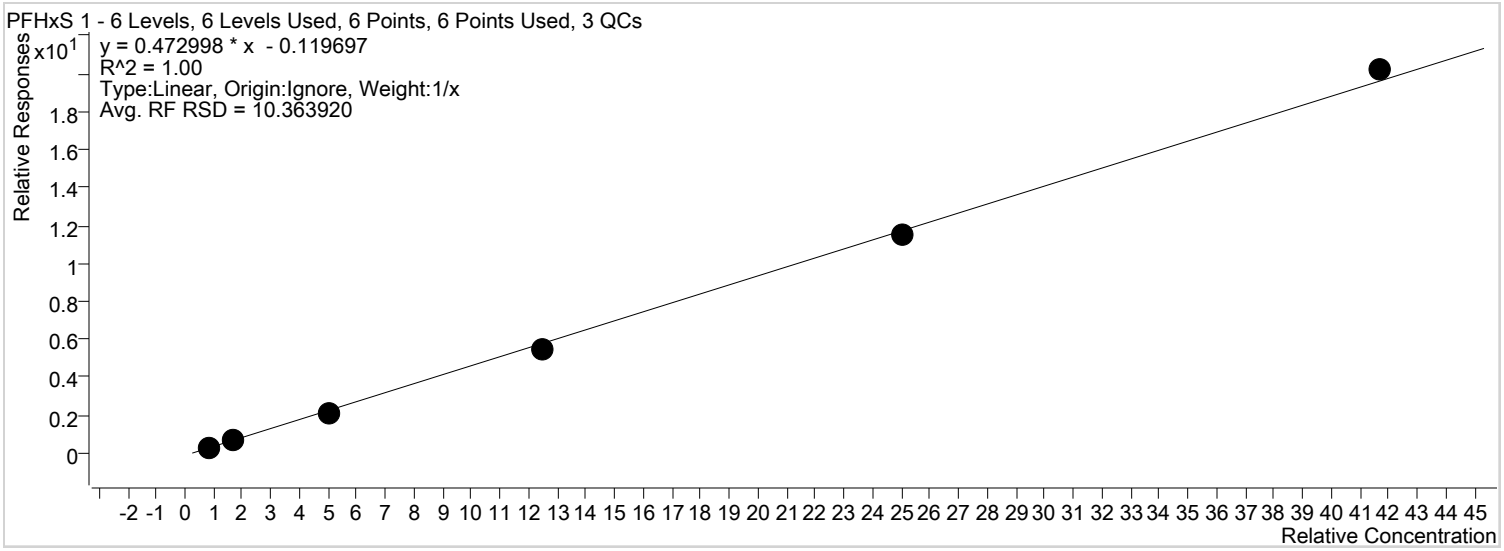
**Analyte:** PFHxA 1
**Internal Standard:** MPFHxA




| Sample | Level | Enabled | Acquisition Time | Exp. Conc. | Concentration | Response | RF | S/N | Accuracy |
|---|---|---|---|---|---|---|---|---|---|
| STD 1 | STD 1 | x | 2018/02/23 4:39:32 PM | 0.83 | 0.93 | 2229 | 0.3867 | 96 | 111.5 |
| STD 2 | STD 2 | x | 2018/02/23 4:44:28 PM | 1.70 | 1.63 | 4087 | 0.3563 | 159 | 95.6 |
| STD 3 | STD 3 | x | 2018/02/23 4:49:24 PM | 5.00 | 4.87 | 13016 | 0.3850 | 823 | 97.4 |
| STD 4 | STD 4 | x | 2018/02/23 4:54:20 PM | 12.50 | 11.76 | 30538 | 0.3782 | 1525 | 94.1 |
| STD 5 | STD 5 | x | 2018/02/23 4:59:16 PM | 25.00 | 24.59 | 65090 | 0.3978 | 3455 | 98.4 |
| STD 6 | STD 6 | x | 2018/02/23 5:04:12 PM | 41.70 | 42.96 | 113899 | 0.4176 | 5634 | 103.0 |

**Batch Path** T:\lcms4\PFC\20180223\WS#5410178\QuantResults\PFC_Water_Low_180223_WS#5410178_EToxics.batch.bin
**Last Calib Update** 2018/02/27 2:51:08 PM
**Instrument:** LCMS04

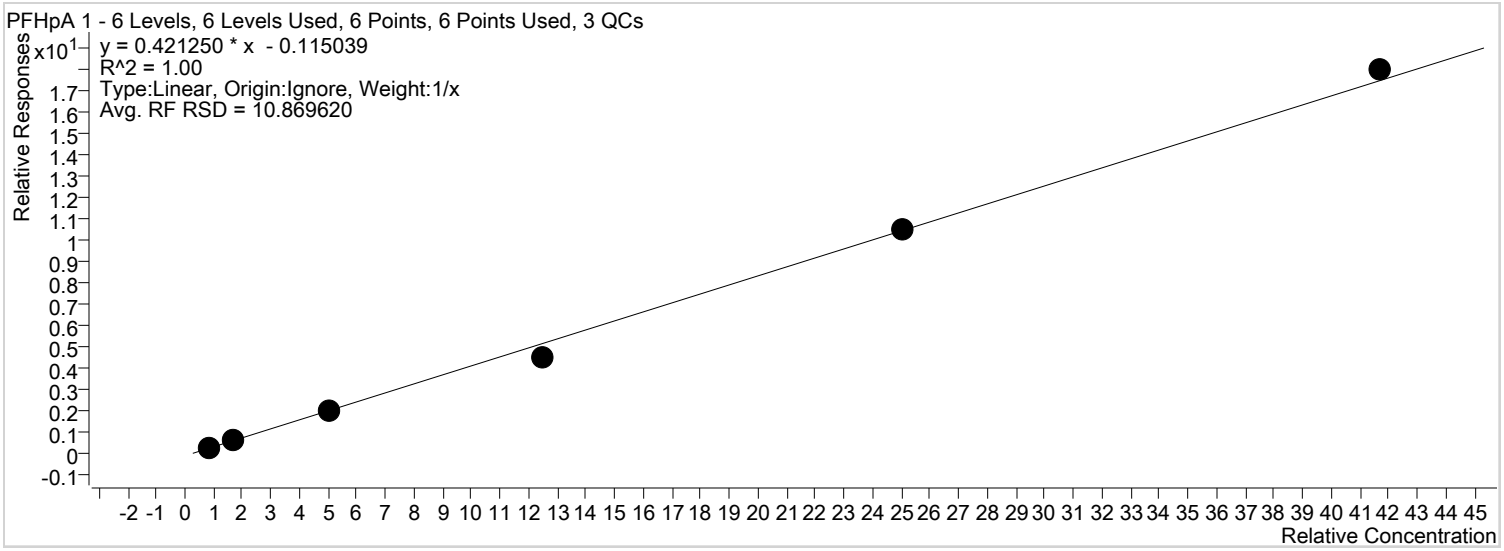
**Analyte:** PFHxS 1
**Internal Standard:** MPFHxS




| Sample | Level | Enabled | Acquisition Time | Exp. Conc. | Concentration | Response | RF | S/N | Accuracy |
|---|---|---|---|---|---|---|---|---|---|
| STD 1 | STD 1 | x | 2018/02/23 4:39:32 PM | 0.83 | 0.87 | 490 | 0.3531 | 546 | 105.1 |
| STD 2 | STD 2 | x | 2018/02/23 4:44:28 PM | 1.70 | 1.78 | 1070 | 0.4238 | 316 | 104.5 |
| STD 3 | STD 3 | x | 2018/02/23 4:49:24 PM | 5.00 | 4.71 | 3482 | 0.4215 | 2890 | 94.2 |
| STD 4 | STD 4 | x | 2018/02/23 4:54:20 PM | 12.50 | 11.88 | 8004 | 0.4398 | 3946 | 95.0 |
| STD 5 | STD 5 | x | 2018/02/23 4:59:16 PM | 25.00 | 24.55 | 17672 | 0.4596 | 19392 | 98.2 |
| STD 6 | STD 6 | x | 2018/02/23 5:04:12 PM | 41.70 | 42.95 | 31001 | 0.4843 | 42555 | 103.0 |

**Batch Path** T:\lcms4\PFC\20180223\WS#5410178\QuantResults\PFC_Water_Low_180223_WS#5410178_EToxics.batch.bin
**Last Calib Update** 2018/02/27 2:51:08 PM
**Instrument:** LCMS04

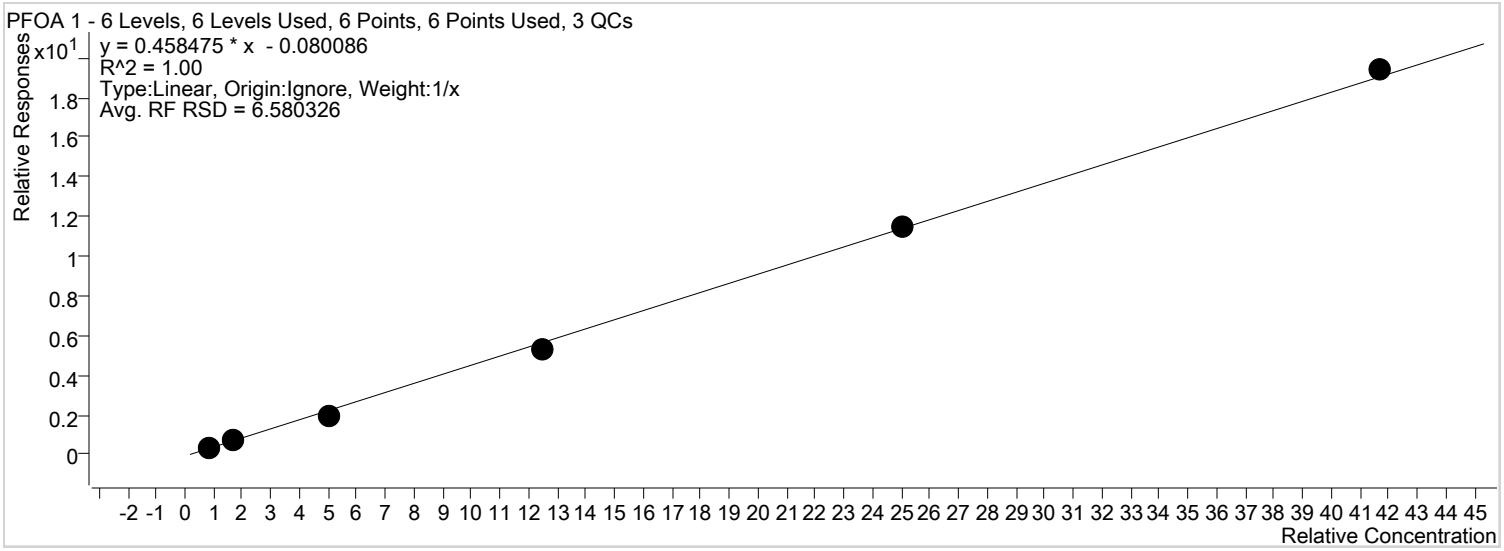
**Analyte:** PFHpA 1
**Internal Standard:** MPFHpA




| Sample | Level | Enabled | Acquisition Time | Exp. Conc. | Concentration | Response | RF | S/N | Accuracy |
|---|---|---|---|---|---|---|---|---|---|
| STD 1 | STD 1 | x | 2018/02/23 4:39:32 PM | 0.83 | 0.91 | 2296 | 0.3255 | 22 | 110.2 |
| STD 2 | STD 2 | x | 2018/02/23 4:44:28 PM | 1.70 | 1.69 | 5158 | 0.3500 | 55 | 99.1 |
| STD 3 | STD 3 | x | 2018/02/23 4:49:24 PM | 5.00 | 4.92 | 16518 | 0.3915 | 149 | 98.4 |
| STD 4 | STD 4 | x | 2018/02/23 4:54:20 PM | 12.50 | 11.04 | 38018 | 0.3630 | 333 | 88.4 |
| STD 5 | STD 5 | x | 2018/02/23 4:59:16 PM | 25.00 | 25.26 | 85776 | 0.4210 | 497 | 101.0 |
| STD 6 | STD 6 | x | 2018/02/23 5:04:12 PM | 41.70 | 42.91 | 142442 | 0.4307 | 449 | 102.9 |

**Batch Path** T:\lcms4\PFC\20180223\WS#5410178\QuantResults\PFC_Water_Low_180223_WS#5410178_EToxics.batch.bin
**Last Calib Update** 2018/02/27 2:51:08 PM
**Instrument:** LCMS04

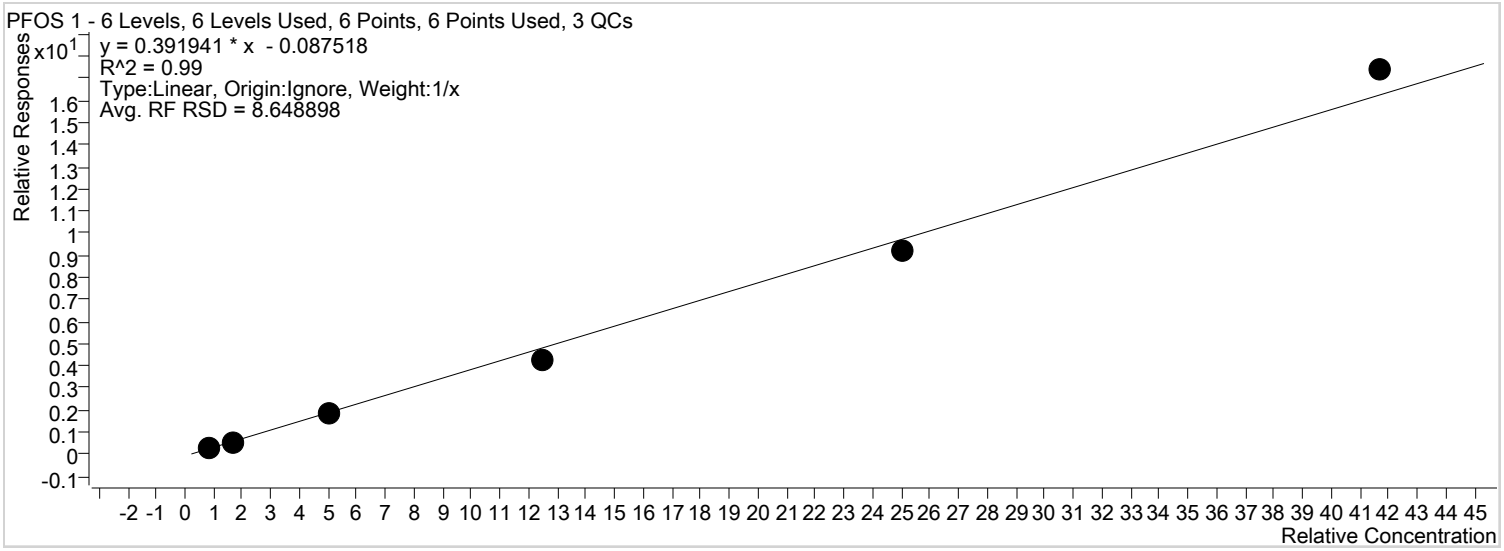
**Analyte:** PFOA 1
**Internal Standard:** MPFOA




| Sample | Level | Enabled | Acquisition Time | Exp. Conc. | Concentration | Response | RF | S/N | Accuracy |
|---|---|---|---|---|---|---|---|---|---|
| STD 1 | STD 1 | x | 2018/02/23 4:39:32 PM | 0.83 | 0.93 | 2837 | 0.4199 | 85 | 112.6 |
| STD 2 | STD 2 | x | 2018/02/23 4:44:28 PM | 1.70 | 1.71 | 6161 | 0.4139 | 119 | 100.6 |
| STD 3 | STD 3 | x | 2018/02/23 4:49:24 PM | 5.00 | 4.46 | 17457 | 0.3930 | 341 | 89.2 |
| STD 4 | STD 4 | x | 2018/02/23 4:54:20 PM | 12.50 | 11.78 | 41178 | 0.4258 | 1176 | 94.3 |
| STD 5 | STD 5 | x | 2018/02/23 4:59:16 PM | 25.00 | 25.37 | 94176 | 0.4620 | 1892 | 101.5 |
| STD 6 | STD 6 | x | 2018/02/23 5:04:12 PM | 41.70 | 42.47 | 153654 | 0.4651 | 3485 | 101.9 |

**Batch Path** T:\lcms4\PFC\20180223\WS#5410178\QuantResults\PFC_Water_Low_180223_WS#5410178_EToxics.batch.bin
**Last Calib Update** 2018/02/27 2:51:08 PM
**Instrument:** LCMS04

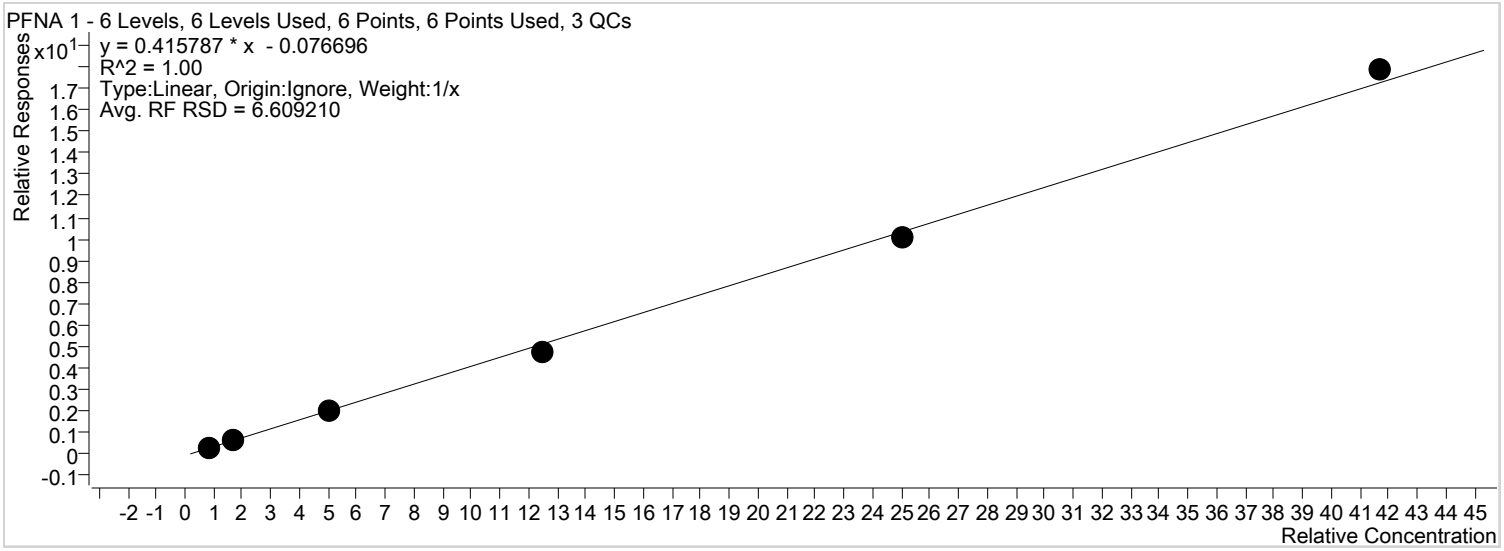
**Analyte:** PFOS 1
**Internal Standard:** MPFOS




| Sample | Level | Enabled | Acquisition Time | Exp. Conc. | Concentration | Response | RF | S/N | Accuracy |
|---|---|---|---|---|---|---|---|---|---|
| STD 1 | STD 1 | x | 2018/02/23 4:39:32 PM | 0.83 | 0.97 | 528 | 0.3520 | 161 | 116.7 |
| STD 2 | STD 2 | x | 2018/02/23 4:44:28 PM | 1.70 | 1.65 | 1058 | 0.3298 | 220 | 97.3 |
| STD 3 | STD 3 | x | 2018/02/23 4:49:24 PM | 5.00 | 4.83 | 3377 | 0.3608 | 267 | 96.5 |
| STD 4 | STD 4 | x | 2018/02/23 4:54:20 PM | 12.50 | 10.95 | 7484 | 0.3364 | 242 | 87.6 |
| STD 5 | STD 5 | x | 2018/02/23 4:59:16 PM | 25.00 | 23.73 | 16848 | 0.3685 | 165 | 94.9 |
| STD 6 | STD 6 | x | 2018/02/23 5:04:12 PM | 41.70 | 44.61 | 29328 | 0.4171 | 183 | 107.0 |

**Batch Path** T:\lcms4\PFC\20180223\WS#5410178\QuantResults\PFC_Water_Low_180223_WS#5410178_EToxics.batch.bin
**Last Calib Update** 2018/02/27 2:51:08 PM
**Instrument:** LCMS04

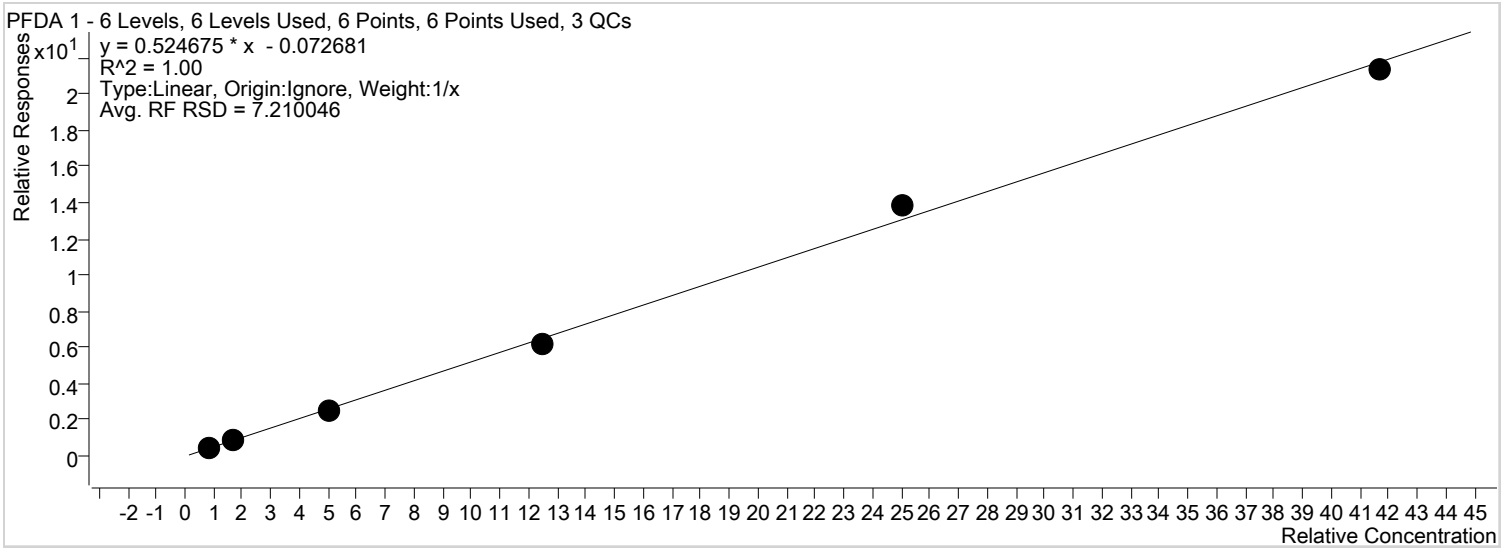
**Analyte:** PFNA 1
**Internal Standard:** MPFNA




| Sample | Level | Enabled | Acquisition Time | Exp. Conc. | Concentration | Response | RF | S/N | Accuracy |
|---|---|---|---|---|---|---|---|---|---|
| STD 1 | STD 1 | x | 2018/02/23 4:39:32 PM | 0.83 | 0.90 | 2364 | 0.3575 | 34 | 108.2 |
| STD 2 | STD 2 | x | 2018/02/23 4:44:28 PM | 1.70 | 1.69 | 5173 | 0.3691 | 82 | 99.6 |
| STD 3 | STD 3 | x | 2018/02/23 4:49:24 PM | 5.00 | 4.90 | 16356 | 0.3924 | 391 | 98.1 |
| STD 4 | STD 4 | x | 2018/02/23 4:54:20 PM | 12.50 | 11.58 | 37369 | 0.3790 | 745 | 92.6 |
| STD 5 | STD 5 | x | 2018/02/23 4:59:16 PM | 25.00 | 24.51 | 80139 | 0.4045 | 928 | 98.0 |
| STD 6 | STD 6 | x | 2018/02/23 5:04:12 PM | 41.70 | 43.15 | 140109 | 0.4284 | 2500 | 103.5 |

**Batch Path** T:\lcms4\PFC\20180223\WS#5410178\QuantResults\PFC_Water_Low_180223_WS#5410178_EToxics.batch.bin
**Last Calib Update** 2018/02/27 2:51:08 PM
**Instrument:** LCMS04

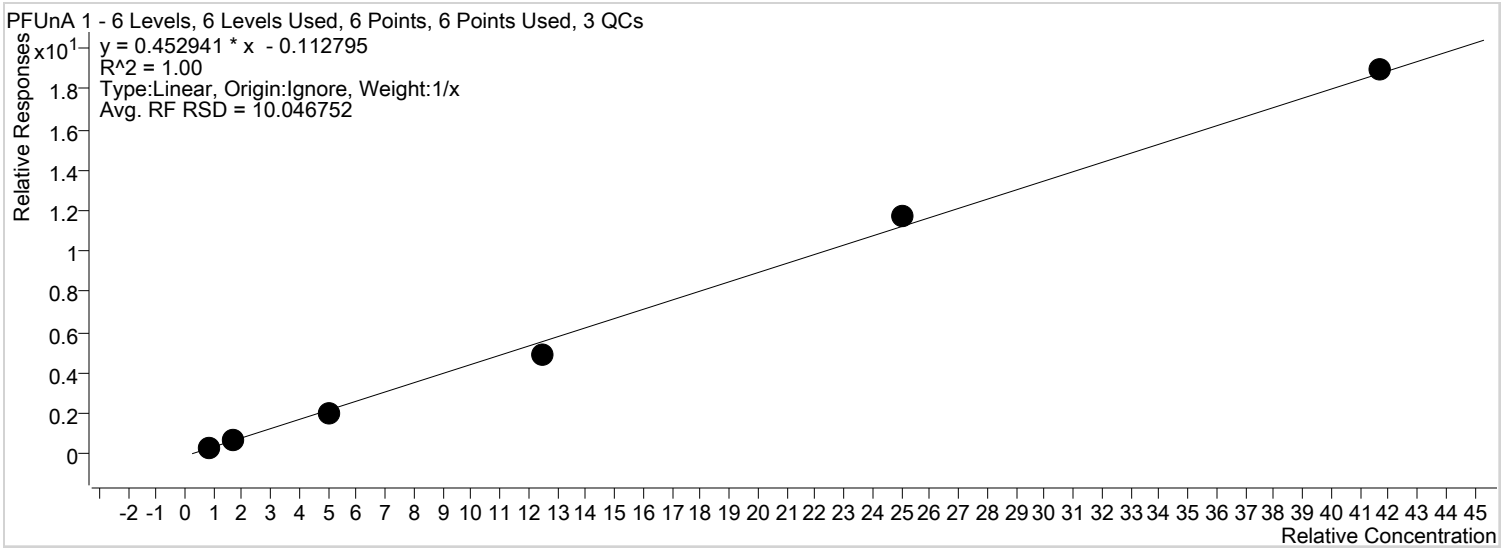
**Analyte:** PFDA 1
**Internal Standard:** MPFDA




| Sample | Level | Enabled | Acquisition Time | Exp. Conc. | Concentration | Response | RF | S/N | Accuracy |
|---|---|---|---|---|---|---|---|---|---|
| STD 1 | STD 1 | x | 2018/02/23 4:39:32 PM | 0.83 | 0.93 | 2591 | 0.4980 | 28 | 111.6 |
| STD 2 | STD 2 | x | 2018/02/23 4:44:28 PM | 1.70 | 1.59 | 5140 | 0.4465 | 60 | 93.2 |
| STD 3 | STD 3 | x | 2018/02/23 4:49:24 PM | 5.00 | 4.75 | 17010 | 0.4838 | 133 | 95.0 |
| STD 4 | STD 4 | x | 2018/02/23 4:54:20 PM | 12.50 | 11.95 | 39112 | 0.4956 | 253 | 95.6 |
| STD 5 | STD 5 | x | 2018/02/23 4:59:16 PM | 25.00 | 26.64 | 88140 | 0.5563 | 781 | 106.6 |
| STD 6 | STD 6 | x | 2018/02/23 5:04:12 PM | 41.70 | 40.88 | 144884 | 0.5126 | 1300 | 98.0 |

**Batch Path** T:\lcms4\PFC\20180223\WS#5410178\QuantResults\PFC_Water_Low_180223_WS#5410178_EToxics.batch.bin
**Last Calib Update** 2018/02/27 2:51:08 PM
**Instrument:** LCMS04

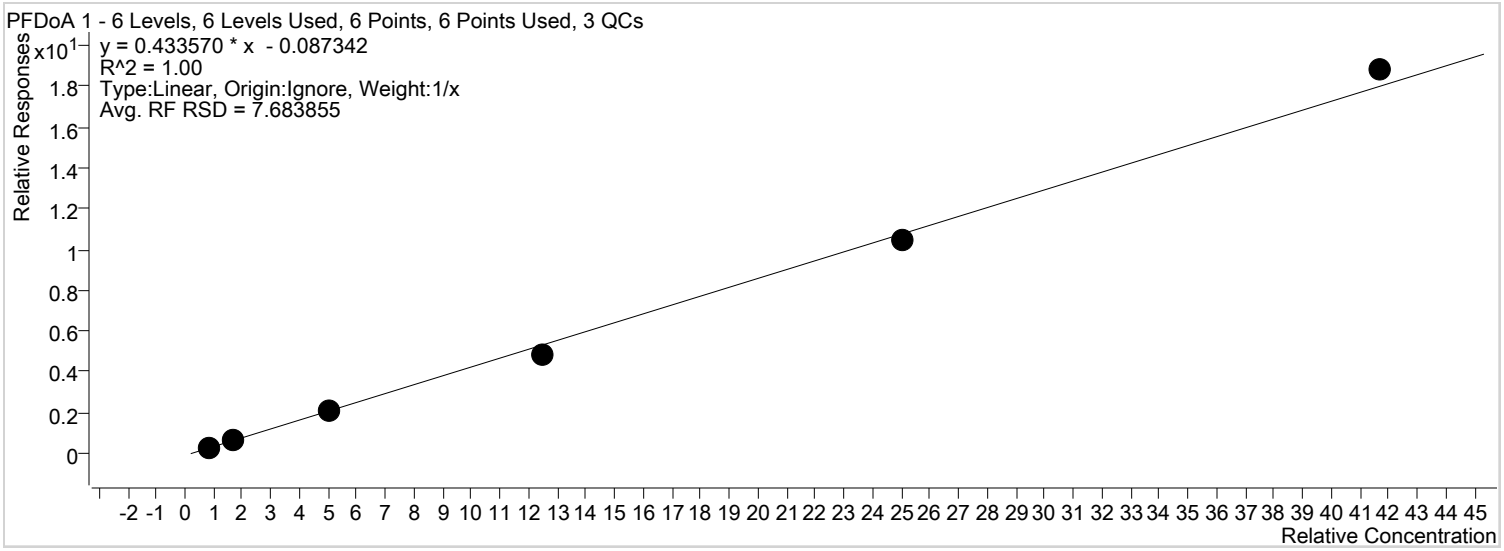
**Analyte:** PFUnA 1
**Internal Standard:** MPFUnA




| Sample | Level | Enabled | Acquisition Time | Exp. Conc. | Concentration | Response | RF | S/N | Accuracy |
|---|---|---|---|---|---|---|---|---|---|
| STD 1 | STD 1 | x | 2018/02/23 4:39:32 PM | 0.83 | 0.92 | 2643 | 0.3682 | 21 | 111.3 |
| STD 2 | STD 2 | x | 2018/02/23 4:44:28 PM | 1.70 | 1.70 | 5480 | 0.3867 | 39 | 100.0 |
| STD 3 | STD 3 | x | 2018/02/23 4:49:24 PM | 5.00 | 4.75 | 18088 | 0.4073 | 149 | 94.9 |
| STD 4 | STD 4 | x | 2018/02/23 4:54:20 PM | 12.50 | 10.95 | 41609 | 0.3877 | 230 | 87.6 |
| STD 5 | STD 5 | x | 2018/02/23 4:59:16 PM | 25.00 | 26.31 | 92104 | 0.4721 | 275 | 105.2 |
| STD 6 | STD 6 | x | 2018/02/23 5:04:12 PM | 41.70 | 42.11 | 157019 | 0.4547 | 356 | 101.0 |

**Batch Path** T:\lcms4\PFC\20180223\WS#5410178\QuantResults\PFC_Water_Low_180223_WS#5410178_EToxics.batch.bin
**Last Calib Update** 2018/02/27 2:51:08 PM
**Instrument:** LCMS04

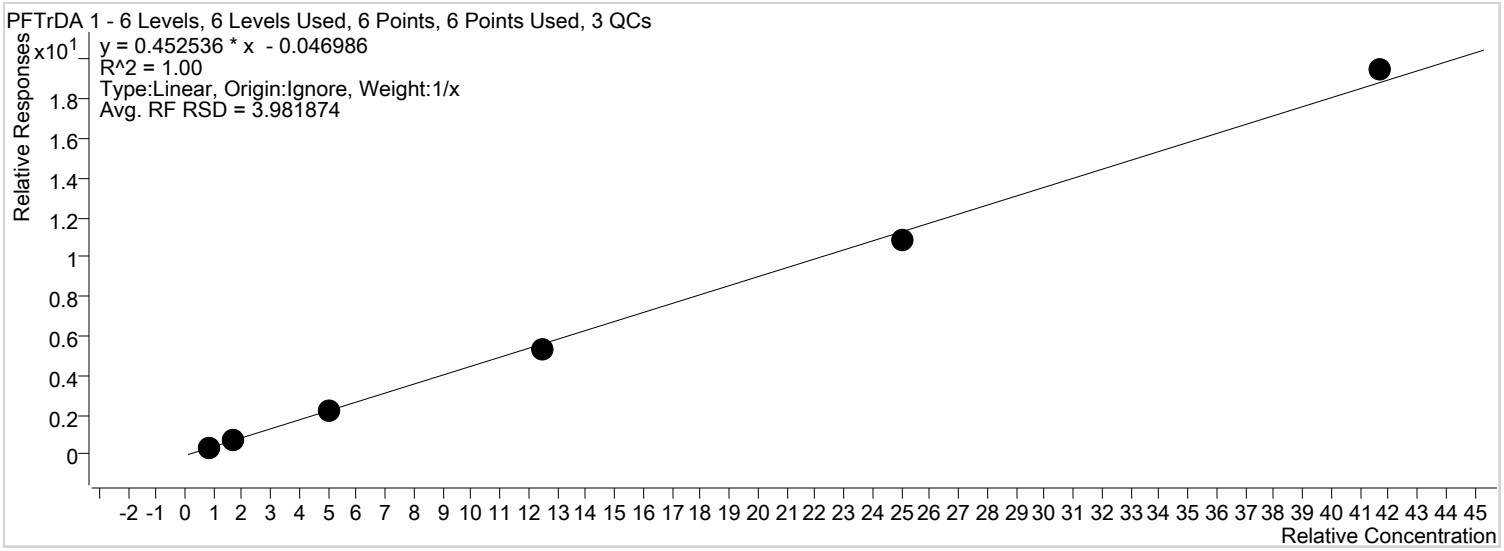
**Analyte:** PFDoA 1
**Internal Standard:** MPFDoA




| Sample | Level | Enabled | Acquisition Time | Exp. Conc. | Concentration | Response | RF | S/N | Accuracy |
|---|---|---|---|---|---|---|---|---|---|
| STD 1 | STD 1 | x | 2018/02/23 4:39:32 PM | 0.83 | 0.89 | 3316 | 0.3600 | 29 | 107.3 |
| STD 2 | STD 2 | x | 2018/02/23 4:44:28 PM | 1.70 | 1.72 | 6958 | 0.3879 | 171 | 101.3 |
| STD 3 | STD 3 | x | 2018/02/23 4:49:24 PM | 5.00 | 4.94 | 22806 | 0.4107 | 610 | 98.7 |
| STD 4 | STD 4 | x | 2018/02/23 4:54:20 PM | 12.50 | 11.42 | 49731 | 0.3892 | 1552 | 91.4 |
| STD 5 | STD 5 | x | 2018/02/23 4:59:16 PM | 25.00 | 24.19 | 113209 | 0.4161 | 2020 | 96.8 |
| STD 6 | STD 6 | x | 2018/02/23 5:04:12 PM | 41.70 | 43.56 | 193950 | 0.4509 | 3186 | 104.5 |

**Batch Path** T:\lcms4\PFC\20180223\WS#5410178\QuantResults\PFC_Water_Low_180223_WS#5410178_EToxics.batch.bin
**Last Calib Update** 2018/02/27 2:51:08 PM
**Instrument:** LCMS04

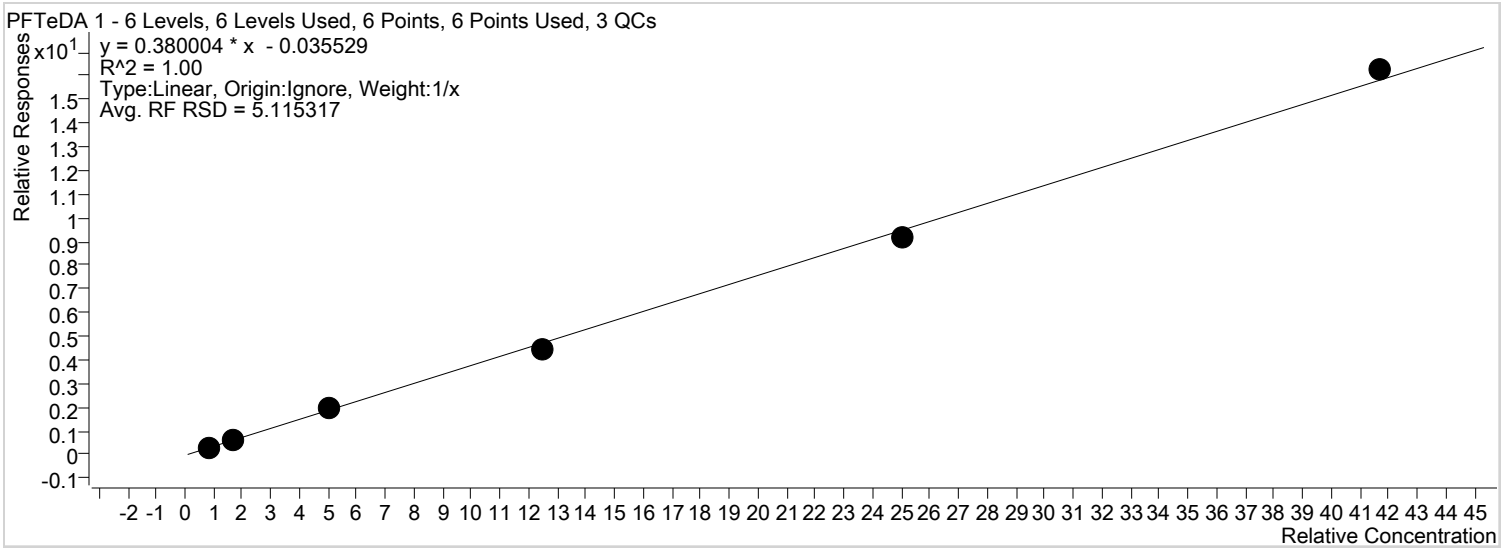
**Analyte:** PFTrDA 1
**Internal Standard:** MPFTeDA




| Sample | Level | Enabled | Acquisition Time | Exp. Conc. | Concentration | Response | RF | S/N | Accuracy |
|---|---|---|---|---|---|---|---|---|---|
| STD 1 | STD 1 | x | 2018/02/23 4:39:32 PM | 0.83 | 0.89 | 3748 | 0.4304 | 24 | 107.6 |
| STD 2 | STD 2 | x | 2018/02/23 4:44:28 PM | 1.70 | 1.67 | 8044 | 0.4165 | 43 | 98.1 |
| STD 3 | STD 3 | x | 2018/02/23 4:49:24 PM | 5.00 | 4.96 | 24430 | 0.4393 | 89 | 99.1 |
| STD 4 | STD 4 | x | 2018/02/23 4:54:20 PM | 12.50 | 11.84 | 58458 | 0.4249 | 238 | 94.7 |
| STD 5 | STD 5 | x | 2018/02/23 4:59:16 PM | 25.00 | 24.24 | 126816 | 0.4369 | 202 | 97.0 |
| STD 6 | STD 6 | x | 2018/02/23 5:04:12 PM | 41.70 | 43.13 | 218095 | 0.4669 | 216 | 103.4 |

**Batch Path** T:\lcms4\PFC\20180223\WS#5410178\QuantResults\PFC_Water_Low_180223_WS#5410178_EToxics.batch.bin
**Last Calib Update** 2018/02/27 2:51:08 PM
**Instrument:** LCMS04

**Analyte:** PFTeDA 1
**Internal Standard:** MPFTeDA




| Sample | Level | Enabled | Acquisition Time | Exp. Conc. | Concentration | Response | RF | S/N | Accuracy |
|---|---|---|---|---|---|---|---|---|---|
| STD 1 | STD 1 | x | 2018/02/23 4:39:32 PM | 0.83 | 0.86 | 3065 | 0.3519 | 14 | 103.9 |
| STD 2 | STD 2 | x | 2018/02/23 4:44:28 PM | 1.70 | 1.64 | 6688 | 0.3463 | 32 | 96.6 |
| STD 3 | STD 3 | x | 2018/02/23 4:49:24 PM | 5.00 | 5.23 | 21695 | 0.3901 | 141 | 104.5 |
| STD 4 | STD 4 | x | 2018/02/23 4:54:20 PM | 12.50 | 11.91 | 49421 | 0.3592 | 209 | 95.3 |
| STD 5 | STD 5 | x | 2018/02/23 4:59:16 PM | 25.00 | 24.23 | 106507 | 0.3669 | 264 | 96.9 |
| STD 6 | STD 6 | x | 2018/02/23 5:04:12 PM | 41.70 | 42.86 | 182013 | 0.3897 | 341 | 102.8 |

# By Compound Report

Agilent Technologies

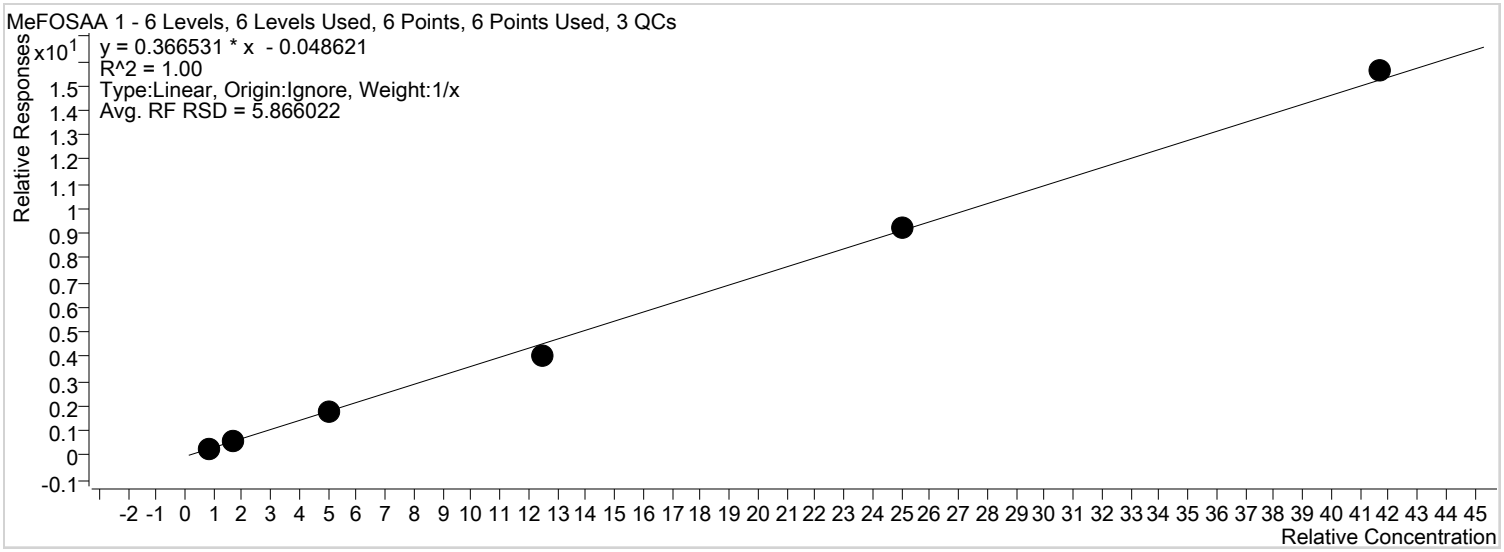
**Batch Path** T:\lcms4\PFC\20180223\WS#5410178_FOSAA\QuantResults\PFC_Water_Low_180223_WS#5410178_FOSAA_EToxics.batch.bin

**Last Calib Update** 2018/02/27 10:52:53 AM

**Instrument:** LCMS04

**Analyte:** MeFOSAA 1

**Internal Standard:** D3-MeFOSAA IS




| Sample | Level | Enabled | Acquisition Time | Exp. Conc. | Concentration | Response | RF | S/N | Accuracy |
|---|---|---|---|---|---|---|---|---|---|
| STD 1 | STD 1 | x | 2018/02/24 3:10:51 AM | 0.83 | 0.88 | 358 | 0.3300 | 20 | 106.0 |
| STD 2 | STD 2 | x | 2018/02/24 3:13:16 AM | 1.70 | 1.71 | 799 | 0.3401 | 33 | 100.6 |
| STD 3 | STD 3 | x | 2018/02/24 3:15:41 AM | 5.00 | 5.03 | 2599 | 0.3587 | 94 | 100.5 |
| STD 4 | STD 4 | x | 2018/02/24 3:18:06 AM | 12.50 | 11.21 | 5708 | 0.3248 | 278 | 89.7 |
| STD 5 | STD 5 | x | 2018/02/24 3:20:31 AM | 25.00 | 25.19 | 13098 | 0.3674 | 547 | 100.8 |
| STD 6 | STD 6 | x | 2018/02/24 3:22:56 AM | 41.70 | 42.71 | 22193 | 0.3743 | 422 | 102.4 |

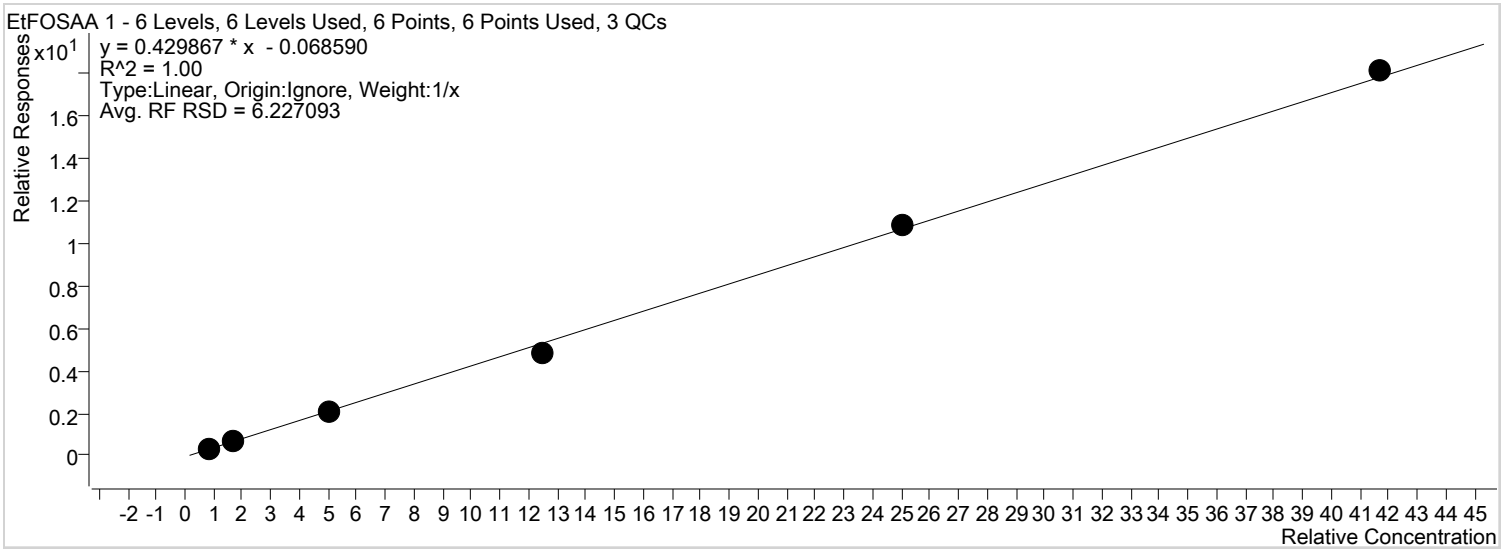
**Batch Path** T:\lcms4\PFC\20180223\WS#5410178_FOSAA\QuantResults\PFC_Water_Low_180223_WS#5410178_FOSAA_EToxics.batch.bin

**Last Calib Update** 2018/02/27 10:52:53 AM

**Instrument:** LCMS04

**Analyte:** EtFOSAA 1

**Internal Standard:** D5-EtFOSAA IS




| Sample | Level | Enabled | Acquisition Time | Exp. Conc. | Concentration | Response | RF | S/N | Accuracy |
|---|---|---|---|---|---|---|---|---|---|
| STD 1 | STD 1 | x | 2018/02/24 3:10:51 AM | 0.83 | 0.91 | 360 | 0.3876 | 42 | 109.4 |
| STD 2 | STD 2 | x | 2018/02/24 3:13:16 AM | 1.70 | 1.67 | 753 | 0.3822 | 82 | 98.3 |
| STD 3 | STD 3 | x | 2018/02/24 3:15:41 AM | 5.00 | 4.90 | 2575 | 0.4074 | 490 | 98.0 |
| STD 4 | STD 4 | x | 2018/02/24 3:18:06 AM | 12.50 | 11.32 | 5621 | 0.3837 | 875 | 90.5 |
| STD 5 | STD 5 | x | 2018/02/24 3:20:31 AM | 25.00 | 25.53 | 12933 | 0.4362 | 1311 | 102.1 |
| STD 6 | STD 6 | x | 2018/02/24 3:22:56 AM | 41.70 | 42.41 | 22502 | 0.4355 | 2283 | 101.7 |

# Quantitation Results

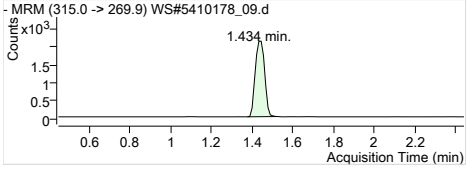
Agilent Technologies

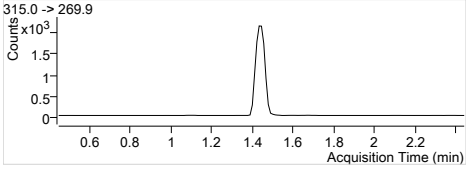
| | |
|---|---|
| **Batch Path** | T:\lcms4\PFC\20180223\WS#5410178\QuantResults\PFC_Water_Low_180223_WS#5410178_EToxics |

| | | | |
|---|---|---|---|
| **Sample Name** | **ICV** | **Instrument** | LCMS04 |
| **Data File** | WS#5410178_09.d | **Operator** | |
| **Sample Type** | QC | **Dilution** | 1 |
| **Acq. Method** | PFC_Water_Low.m | **Position** | P1-A9 |
| **Acq. Date** | 2018/02/23 5:14:04 PM | **Injection Volume** | Per Method |
| **Sample Annotation** | - | | |

| ISTD Compounds | Response | RT | Target conc. | | |
|---|---|---|---|---|---|
| MPFHxA | 6803 | 1.43 | 1 µg/L | | |
| MPFHxS | 1503 | 1.67 | 1 µg/L | | |
| MPFHpA | 8017 | 1.70 | 1 µg/L | | |
| MPFOA | 8444 | 1.88 | 1 µg/L | | |
| MPFOS | 1701 | 1.97 | 1 µg/L | | |
| MPFNA | 8462 | 2.02 | 1 µg/L | | |
| MPFDA | 6675 | 2.14 | 1 µg/L | | |
| MPFUnA | 8383 | 2.23 | 1 µg/L | | |
| MPFDoA | 10884 | 2.32 | 1 µg/L | | |
| MPFTeDA | 11575 | 2.47 | 1 µg/L | | |
| 13C6-PFHxA IS | 25768 | 1.44 | 1 µg/L | | |
| 13C9-PFDA IS | 30429 | 2.13 | 1 µg/L | | |

| Compound | Response | RT | Target Conc. | Calc. Conc. | Accuracy |
|---|---|---|---|---|---|
| PFBS 1 | 14490 | 1.09 | 20.80 | 20.74 µg/L | 99.69 |
| PFHxA 1 | 53348 | 1.45 | 20.80 | 19.42 µg/L | 93.36 |
| PFHxS 1 | 13739 | 1.67 | 20.80 | 19.58 µg/L | 94.13 |
| PFHpA 1 | 66090 | 1.70 | 20.80 | 19.84 µg/L | 95.40 |
| PFOA 1 | 79154 | 1.88 | 20.80 | 20.62 µg/L | 99.14 |
| PFOS 1 | 13627 | 1.96 | 20.80 | 20.66 µg/L | 99.34 |
| PFNA 1 | 67433 | 2.03 | 20.80 | 19.35 µg/L | 93.03 |
| PFDA 1 | 70358 | 2.14 | 20.80 | 20.23 µg/L | 97.25 |
| PFUnA 1 | 77503 | 2.23 | 20.80 | 20.66 µg/L | 99.33 |
| PFDoA 1 | 93466 | 2.32 | 20.80 | 20.01 µg/L | 96.19 |
| PFTrDA 1 | 108420 | 2.40 | 20.80 | 20.80 µg/L | 100.01 |
| PFTeDA 1 | 90301 | 2.47 | 20.80 | 20.62 µg/L | 99.15 |
| 13C2-PFHxA | 6803 | 1.43 | 100.00 | 89.24 µg/L | 89.24 |
| 18O2-PFHxS | 1503 | 1.67 | 100.00 | 84.56 µg/L | 84.56 |
| 13C4-PFHpA | 8017 | 1.70 | 100.00 | 83.99 µg/L | 83.99 |
| 13C4-PFOA | 8444 | 1.88 | 100.00 | 89.35 µg/L | 89.35 |
| 13C4-PFOS | 1701 | 1.97 | 100.00 | 82.18 µg/L | 82.18 |
| 13C5-PFNA | 8462 | 2.02 | 100.00 | 92.10 µg/L | 92.10 |
| 13C2-PFDA | 6619 | 2.14 | 100.00 | 90.26 µg/L | 90.26 |
| 13C2-PFUnA | 8383 | 2.23 | 100.00 | 88.48 µg/L | 88.48 |
| 13C2-PFDoA | 10884 | 2.32 | 100.00 | 90.61 µg/L | 90.61 |
| 13C2-PFTeDA | 11813 | 2.47 | 100.00 | 93.20 µg/L | 93.20 |
| 13C6-PFHxA | 25768 | 1.44 | 100.00 | 114.20 µg/L | 114.20 |
| 13C9-PFDA | 30429 | 2.13 | 100.00 | 112.10 µg/L | 112.10 |




| | |
|---|---|
| **MPFHxA** | Internal Standard |
| RT (Exp. RT): | 1.434 (1.445) |
| Concentration: | 1 µg/L |
| Sample type: | QC |

# Quantitation Results

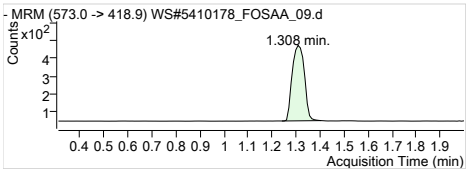
Agilent Technologies

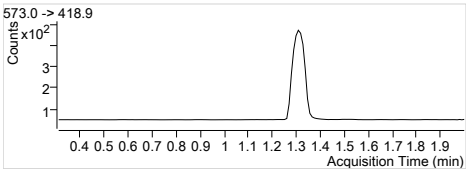
| | |
|---|---|
| **Batch Path** | T:\lcms4\PFC\20180223\WS#5410178_FOSAA\QuantResults\PFC_Water_Low_180223_WS#5410178_FOSAA_ETOxics |

| | | | |
|---|---|---|---|
| **Sample Name** | **ICV** | **Instrument** | LCMS04 |
| **Data File** | WS#5410178_FOSAA_09.d | **Operator** | |
| **Sample Type** | QC | **Dilution** | 1 |
| **Acq. Method** | PFC_Water_Low_FOSAA.m | **Position** | P1-A9 |
| **Acq. Date** | 2018/02/24 3:27:45 AM | **Injection Volume** | Per Method |
| **Sample Annotation** | - | | |

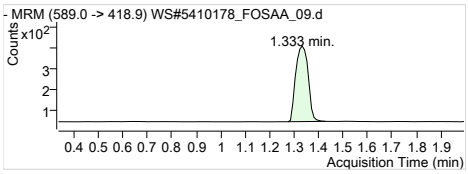
| ISTD Compounds | Response | RT | Target conc. | | |
|---|---|---|---|---|---|
| D3-MeFOSAA IS | 1492 | 1.31 | 1 µg/L | | |
| D5-EtFOSAA IS | 1279 | 1.33 | 1 µg/L | | |
| 13C9-PFDA IS | 22619 | 0.90 | 1 µg/L | | |

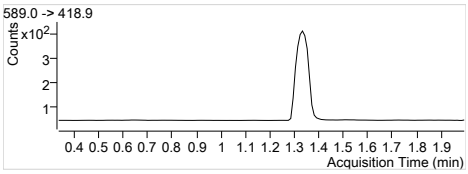
| Compound | Response | RT | Target Conc. | Calc. Conc. | Accuracy |
|---|---|---|---|---|---|
| MeFOSAA 1 | 11265 | 1.31 | 20.80 | 20.73 µg/L | 99.67 |
| EtFOSAA 1 | 11197 | 1.33 | 20.80 | 20.53 µg/L | 98.68 |
| D3-MeFOSAA | 1502 | 1.31 | 100.00 | 96.02 µg/L | 96.02 |
| D5-EtFOSAA | 1283 | 1.33 | 100.00 | 96.32 µg/L | 96.32 |
| 13C9-PFDA | 22698 | 0.90 | 100.00 | 113.02 µg/L | 113.02 |



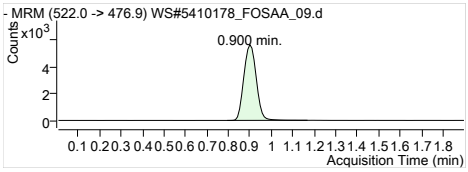



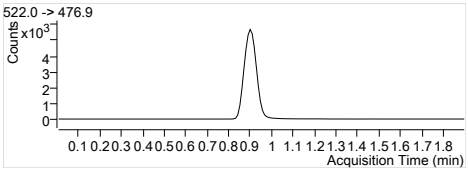

**D3-MeFOSAA IS** Internal Standard
RT (Exp. RT): 1.308 (1.308)
Concentration: 1 µg/L
Sample type: QC



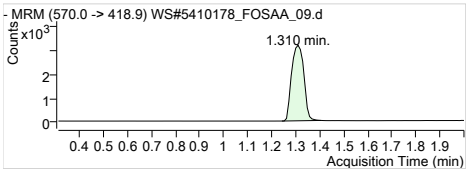



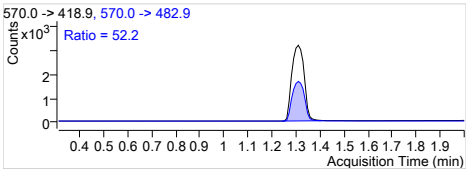

**D5-EtFOSAA IS** Internal Standard
RT (Exp. RT): 1.333 (1.333)
Concentration: 1 µg/L
Sample type: QC



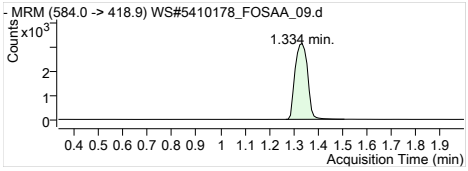



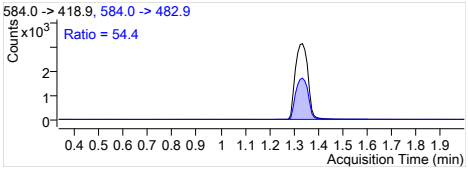

**13C9-PFDA IS** Internal Standard
RT (Exp. RT): 0.900 (0.900)
Concentration: 1 µg/L
Sample type: QC



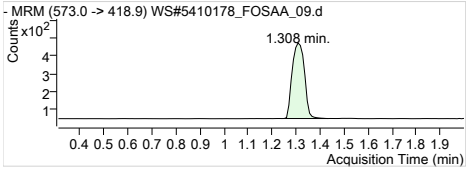



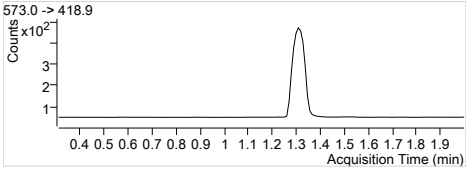

**MeFOSAA 1** 570.0 -> 418.9
RT (Exp. RT): 1.310 (1.310)
Calc. conc. 20.73 µg/L
Area ratio: 7.55027
Sample type: QC




**EtFOSAA 1** 584.0 -> 418.9
RT (Exp. RT): 1.334 (1.334)
Calc. conc. 20.53 µg/L
Area ratio: 8.75450
Sample type: QC



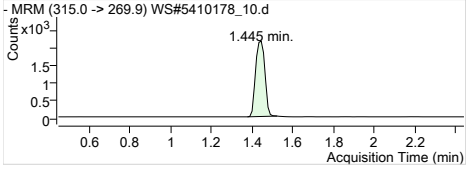

**D3-MeFOSAA** 573.0 -> 418.9
RT (Exp. RT): 1.308 (1.308)
Calc. conc. 96.02 µg/L
Area ratio: 0.06640
Sample type: QC

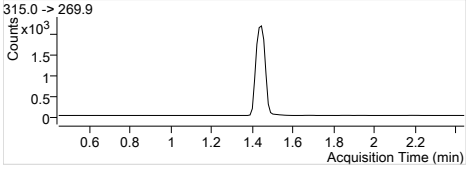
| | |
|---|---|
| **Batch Path** | T:\lcms4\PFC\20180223\WS#5410178\QuantResults\PFC_Water_Low_180223_WS#5410178_EToxics |

| | | | |
|---|---|---|---|
| **Sample Name** | **ISC** | **Instrument** | LCMS04 |
| **Data File** | WS#5410178_10.d | **Operator** | |
| **Sample Type** | CC | **Dilution** | 1 |
| **Acq. Method** | PFC_Water_Low.m | **Position** | P1-A2 |
| **Acq. Date** | 2018/02/23 5:19:00 PM | **Injection Volume** | Per Method |
| **Sample Annotation** | - | | |

| ISTD Compounds | Response | RT | Target conc. | | |
|---|---|---|---|---|---|
| MPFHxA | 6771 | 1.44 | 1 µg/L | | |
| MPFHxS | 1471 | 1.68 | 1 µg/L | | |
| MPFHpA | 8755 | 1.70 | 1 µg/L | | |
| MPFOA | 9106 | 1.88 | 1 µg/L | | |
| MPFOS | 1742 | 1.97 | 1 µg/L | | |
| MPFNA | 8143 | 2.02 | 1 µg/L | | |
| MPFDA | 6788 | 2.14 | 1 µg/L | | |
| MPFUnA | 8886 | 2.23 | 1 µg/L | | |
| MPFDoA | 11328 | 2.32 | 1 µg/L | | |
| MPFTeDA | 12030 | 2.47 | 1 µg/L | | |
| 13C6-PFHxA IS | 23606 | 1.44 | 1 µg/L | | |
| 13C9-PFDA IS | 29016 | 2.13 | 1 µg/L | | |

| Compound | Response | RT | Target Conc. | Calc. Conc. | Accuracy |
|---|---|---|---|---|---|
| PFBS 1 | 520 | 1.09 | 0.83 | 1.03 µg/L | 123.74 |
| PFHxA 1 | 2179 | 1.45 | 0.83 | 0.93 µg/L | 111.75 |
| PFHxS 1 | 515 | 1.68 | 0.83 | 0.99 µg/L | 119.67 |
| PFHpA 1 | 2509 | 1.70 | 0.83 | 0.95 µg/L | 114.87 |
| PFOA 1 | 2688 | 1.88 | 0.83 | 0.82 µg/L | 98.62 |
| PFOS 1 | 420 | 1.96 | 0.83 | 0.84 µg/L | 101.02 |
| PFNA 1 | 2669 | 2.03 | 0.83 | 0.97 µg/L | 117.20 |
| PFDA 1 | 2555 | 2.14 | 0.83 | 0.86 µg/L | 103.12 |
| PFUnA 1 | 2825 | 2.23 | 0.83 | 0.95 µg/L | 114.57 |
| PFDoA 1 | 3622 | 2.32 | 0.83 | 0.94 µg/L | 113.12 |
| PFTrDA 1 | 4004 | 2.40 | 0.83 | 0.84 µg/L | 101.12 |
| PFTeDA 1 | 3416 | 2.46 | 0.83 | 0.84 µg/L | 101.29 |
| 13C2-PFHxA | 6771 | 1.44 | 100.00 | 96.96 µg/L | 96.96 |
| 18O2-PFHxS | 1471 | 1.68 | 100.00 | 90.34 µg/L | 90.34 |
| 13C4-PFHpA | 8755 | 1.70 | 100.00 | 100.12 µg/L | 100.12 |
| 13C4-PFOA | 9106 | 1.88 | 100.00 | 105.18 µg/L | 105.18 |
| 13C4-PFOS | 1742 | 1.97 | 100.00 | 91.87 µg/L | 91.87 |
| 13C5-PFNA | 8142 | 2.02 | 100.00 | 96.73 µg/L | 96.73 |
| 13C2-PFDA | 6755 | 2.14 | 100.00 | 96.60 µg/L | 96.60 |
| 13C2-PFUnA | 8886 | 2.23 | 100.00 | 98.35 µg/L | 98.35 |
| 13C2-PFDoA | 11328 | 2.32 | 100.00 | 98.90 µg/L | 98.90 |
| 13C2-PFTeDA | 12137 | 2.47 | 100.00 | 100.42 µg/L | 100.42 |
| 13C6-PFHxA | 23606 | 1.44 | 100.00 | 104.62 µg/L | 104.62 |
| 13C9-PFDA | 29016 | 2.13 | 100.00 | 106.90 µg/L | 106.90 |



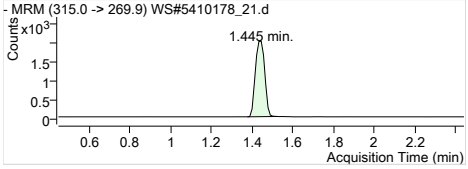

| | |
|---|---|
| **MPFHxA** | Internal Standard |
| RT (Exp. RT): | 1.445 (1.445) |
| Concentration: | 1 µg/L |
| Sample type: | CC |

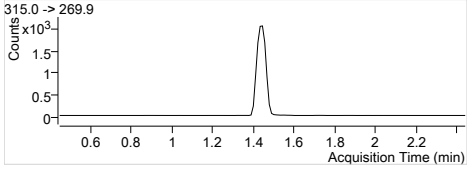
| | |
|---|---|
| **Batch Path** | T:\lcms4\PFC\20180223\WS#5410178\QuantResults\PFC_Water_Low_180223_WS#5410178_EToxics |

| | | | |
|---|---|---|---|
| **Sample Name** | **CCV** | **Instrument** | LCMS04 |
| **Data File** | WS#5410178_21.d | **Operator** | |
| **Sample Type** | CC | **Dilution** | 1 |
| **Acq. Method** | PFC_Water_Low.m | **Position** | P1-A5 |
| **Acq. Date** | 2018/02/23 6:13:15 PM | **Injection Volume** | Per Method |
| **Sample Annotation** | - | | |

| ISTD Compounds | Response | RT | Target conc. | | |
|---|---|---|---|---|---|
| MPFHxA | 6418 | 1.44 | 1 µg/L | | |
| MPFHxS | 1649 | 1.68 | 1 µg/L | | |
| MPFHpA | 8295 | 1.70 | 1 µg/L | | |
| MPFOA | 8311 | 1.88 | 1 µg/L | | |
| MPFOS | 1811 | 1.97 | 1 µg/L | | |
| MPFNA | 8207 | 2.02 | 1 µg/L | | |
| MPFDA | 6579 | 2.14 | 1 µg/L | | |
| MPFUnA | 8359 | 2.23 | 1 µg/L | | |
| MPFDoA | 10341 | 2.32 | 1 µg/L | | |
| MPFTeDA | 11208 | 2.46 | 1 µg/L | | |
| 13C6-PFHxA IS | 22063 | 1.43 | 1 µg/L | | |
| 13C9-PFDA IS | 27791 | 2.13 | 1 µg/L | | |

| Compound | Response | RT | Target Conc. | Calc. Conc. | Accuracy |
|---|---|---|---|---|---|
| PFBS 1 | 8076 | 1.09 | 12.50 | 10.67 µg/L | 85.36 |
| PFHxA 1 | 29783 | 1.43 | 12.50 | 11.55 µg/L | 92.38 |
| PFHxS 1 | 7777 | 1.67 | 12.50 | 10.22 µg/L | 81.79 |
| PFHpA 1 | 37428 | 1.70 | 12.50 | 10.98 µg/L | 87.87 |
| PFOA 1 | 41920 | 1.88 | 12.50 | 11.18 µg/L | 89.41 |
| PFOS 1 | 7659 | 1.96 | 12.50 | 11.01 µg/L | 88.11 |
| PFNA 1 | 37061 | 2.03 | 12.50 | 11.05 µg/L | 88.36 |
| PFDA 1 | 39773 | 2.14 | 12.50 | 11.66 µg/L | 93.29 |
| PFUnA 1 | 42649 | 2.23 | 12.50 | 11.51 µg/L | 92.11 |
| PFDoA 1 | 53921 | 2.32 | 12.50 | 12.23 µg/L | 97.82 |
| PFTrDA 1 | 59889 | 2.39 | 12.50 | 11.91 µg/L | 95.29 |
| PFTeDA 1 | 50652 | 2.46 | 12.50 | 11.99 µg/L | 95.89 |
| 13C2-PFHxA | 6418 | 1.44 | 100.00 | 98.33 µg/L | 98.33 |
| 18O2-PFHxS | 1649 | 1.68 | 100.00 | 108.36 µg/L | 108.36 |
| 13C4-PFHpA | 8295 | 1.70 | 100.00 | 101.49 µg/L | 101.49 |
| 13C4-PFOA | 8311 | 1.88 | 100.00 | 102.71 µg/L | 102.71 |
| 13C4-PFOS | 1811 | 1.97 | 100.00 | 102.19 µg/L | 102.19 |
| 13C5-PFNA | 8132 | 2.02 | 100.00 | 103.37 µg/L | 103.37 |
| 13C2-PFDA | 6498 | 2.14 | 100.00 | 97.02 µg/L | 97.02 |
| 13C2-PFUnA | 8359 | 2.23 | 100.00 | 96.60 µg/L | 96.60 |
| 13C2-PFDoA | 10341 | 2.32 | 100.00 | 94.26 µg/L | 94.26 |
| 13C2-PFTeDA | 11359 | 2.46 | 100.00 | 98.12 µg/L | 98.12 |
| 13C6-PFHxA | 22063 | 1.43 | 100.00 | 97.78 µg/L | 97.78 |
| 13C9-PFDA | 27791 | 2.13 | 100.00 | 102.38 µg/L | 102.38 |




| | |
|---|---|
| **MPFHxA** | Internal Standard |
| RT (Exp. RT): | 1.445 (1.445) |
| Concentration: | 1 µg/L |
| Sample type: | CC |

# Quantitation Results

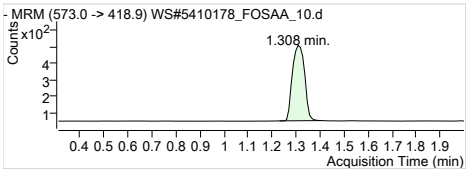
Agilent Technologies

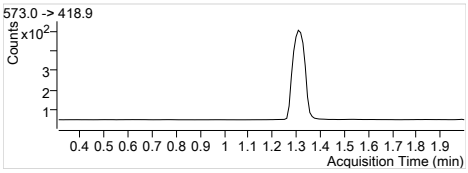
| | |
|---|---|
| **Batch Path** | T:\lcms4\PFC\20180223\WS#5410178_FOSAA\QuantResults\PFC_Water_Low_180223_WS#5410178_FOSAA_ETOxics |

| | | | |
|---|---|---|---|
| **Sample Name** | **ISC** | **Instrument** | LCMS04 |
| **Data File** | WS#5410178_FOSAA_10.d | **Operator** | |
| **Sample Type** | CC | **Dilution** | 1 |
| **Acq. Method** | PFC_Water_Low_FOSAA.m | **Position** | P1-A2 |
| **Acq. Date** | 2018/02/24 3:30:09 AM | **Injection Volume** | Per Method |
| **Sample Annotation** | - | | |

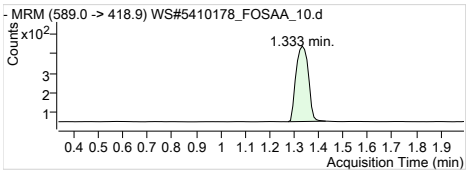
| ISTD Compounds | Response | RT | Target conc. | | |
|---|---|---|---|---|---|
| D3-MeFOSAA IS | 1613 | 1.31 | 1 µg/L | | |
| D5-EtFOSAA IS | 1375 | 1.33 | 1 µg/L | | |
| 13C9-PFDA IS | 21831 | 0.91 | 1 µg/L | | |

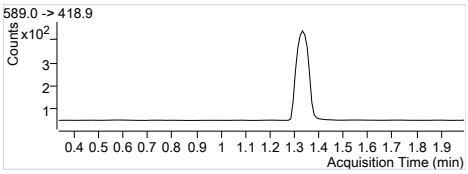
| Compound | Response | RT | Target Conc. | Calc. Conc. | Accuracy |
|---|---|---|---|---|---|
| MeFOSAA 1 | 436 | 1.31 | 0.83 | 0.87 µg/L | 104.83 |
| EtFOSAA 1 | 450 | 1.33 | 0.83 | 0.92 µg/L | 110.95 |
| D3-MeFOSAA | 1621 | 1.31 | 100.00 | 107.37 µg/L | 107.37 |
| D5-EtFOSAA | 1391 | 1.33 | 100.00 | 108.20 µg/L | 108.20 |
| 13C9-PFDA | 21463 | 0.91 | 100.00 | 106.87 µg/L | 106.87 |



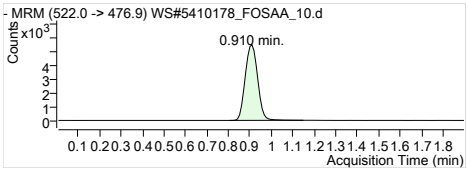



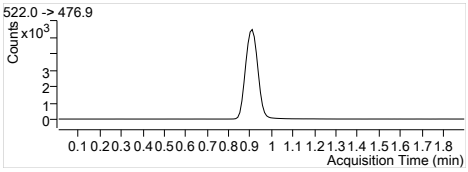

**D3-MeFOSAA IS** Internal Standard
RT (Exp. RT): 1.308 (1.308)
Concentration: 1 µg/L
Sample type: CC



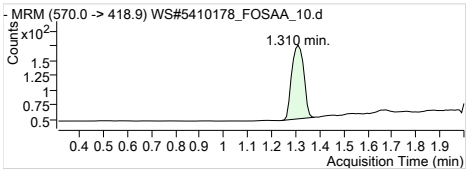



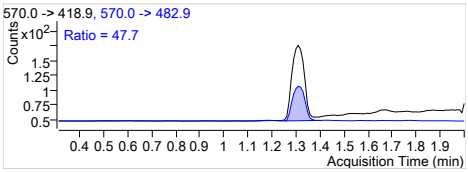

**D5-EtFOSAA IS** Internal Standard
RT (Exp. RT): 1.333 (1.333)
Concentration: 1 µg/L
Sample type: CC



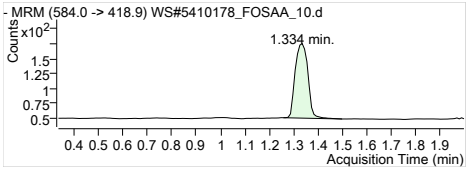



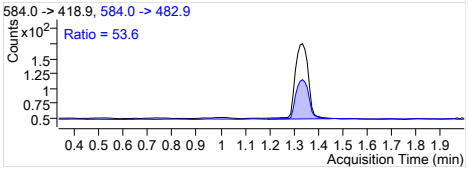

**13C9-PFDA IS** Internal Standard
RT (Exp. RT): 0.910 (0.900)
Concentration: 1 µg/L
Sample type: CC



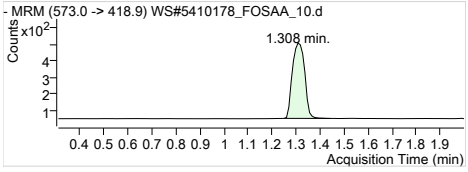



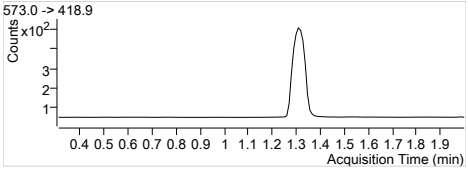

**MeFOSAA 1** 570.0 -> 418.9
RT (Exp. RT): 1.310 (1.310)
Calc. conc. 0.87 µg/L
Area ratio: 0.27030
Sample type: CC




**EtFOSAA 1** 584.0 -> 418.9
RT (Exp. RT): 1.334 (1.334)
Calc. conc. 0.92 µg/L
Area ratio: 0.32727
Sample type: CC



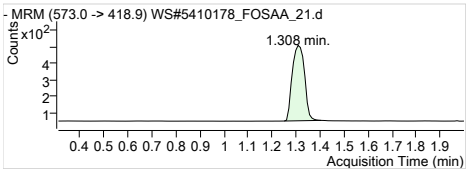

**D3-MeFOSAA** 573.0 -> 418.9
RT (Exp. RT): 1.308 (1.308)
Calc. conc. 107.37 µg/L
Area ratio: 0.07425
Sample type: CC

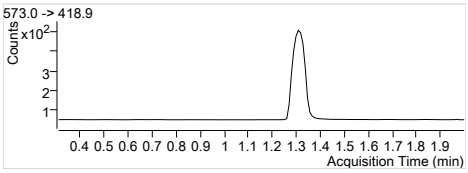
| | |
|---|---|
| **Batch Path** | T:\lcms4\PFC\20180223\WS#5410178_FOSAA\QuantResults\PFC_Water_Low_180223_WS#5410178_FOSAA_ETOxics |

| | | | |
|---|---|---|---|
| **Sample Name** | **CCV** | **Instrument** | LCMS04 |
| **Data File** | WS#5410178_FOSAA_21.d | **Operator** | |
| **Sample Type** | CC | **Dilution** | 1 |
| **Acq. Method** | PFC_Water_Low_FOSAA.m | **Position** | P1-A5 |
| **Acq. Date** | 2018/02/24 3:56:44 AM | **Injection Volume** | Per Method |
| **Sample Annotation** | - | | |

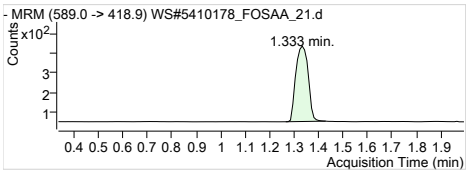
| ISTD Compounds | Response | RT | Target conc. | | |
|---|---|---|---|---|---|
| D3-MeFOSAA IS | 1624 | 1.31 | 1 µg/L | | |
| D5-EtFOSAA IS | 1374 | 1.33 | 1 µg/L | | |
| 13C9-PFDA IS | 21263 | 0.91 | 1 µg/L | | |

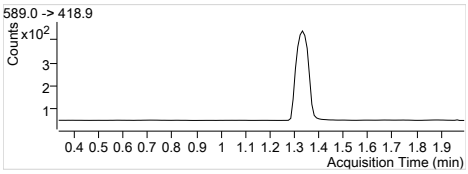
| Compound | Response | RT | Target Conc. | Calc. Conc. | Accuracy |
|---|---|---|---|---|---|
| MeFOSAA 1 | 6678 | 1.31 | 12.50 | 11.35 µg/L | 90.81 |
| EtFOSAA 1 | 6532 | 1.33 | 12.50 | 11.22 µg/L | 89.75 |
| D3-MeFOSAA | 1648 | 1.31 | 100.00 | 112.08 µg/L | 112.08 |
| D5-EtFOSAA | 1386 | 1.33 | 100.00 | 110.69 µg/L | 110.69 |
| 13C9-PFDA | 20901 | 0.91 | 100.00 | 104.07 µg/L | 104.07 |



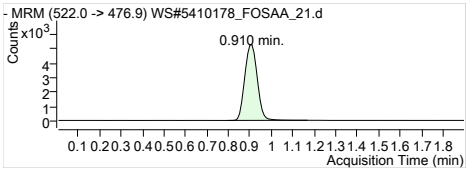



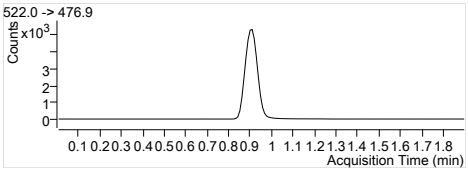

**D3-MeFOSAA IS** Internal Standard
RT (Exp. RT): 1.308 (1.308)
Concentration: 1 µg/L
Sample type: CC



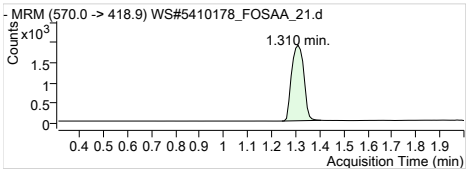



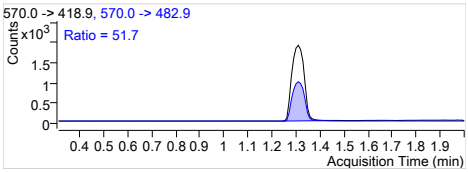

**D5-EtFOSAA IS** Internal Standard
RT (Exp. RT): 1.333 (1.333)
Concentration: 1 µg/L
Sample type: CC



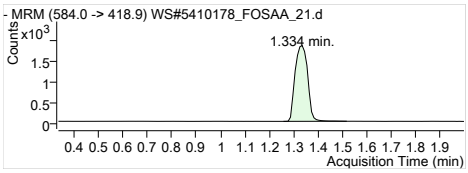



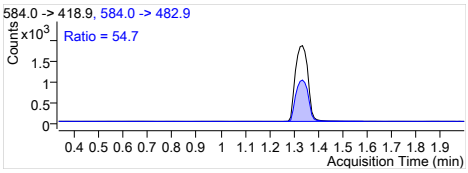

**13C9-PFDA IS** Internal Standard
RT (Exp. RT): 0.910 (0.900)
Concentration: 1 µg/L
Sample type: CC



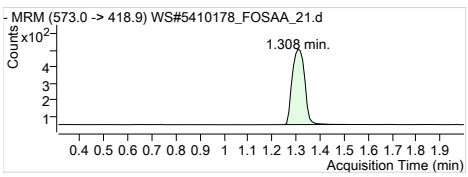



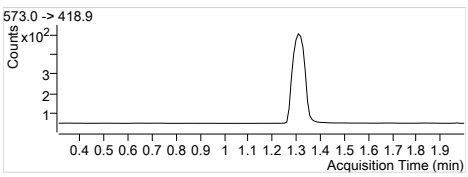

**MeFOSAA 1** 570.0 -> 418.9
RT (Exp. RT): 1.310 (1.310)
Calc. conc. 11.35 µg/L
Area ratio: 4.11207
Sample type: CC




**EtFOSAA 1** 584.0 -> 418.9
RT (Exp. RT): 1.334 (1.334)
Calc. conc. 11.22 µg/L
Area ratio: 4.75400
Sample type: CC




**D3-MeFOSAA** 573.0 -> 418.9
RT (Exp. RT): 1.308 (1.308)
Calc. conc. 112.08 µg/L
Area ratio: 0.07751
Sample type: CC

## DoD Projects - Internal Data Validation Checklist

Run date: 2018/02/27

Worksheet # (s): 5412188

Analysis: PTO SALEM-W

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

Reviewed by: [signature] Date: 2018/02/27

Comments:

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

Reviewed by: [signature] Date: 2018/02/27

Comments:

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

# Worksheet Data Validation Checklist - Extractable Organics

Worksheet # 5412188 Testcode: PFOSALCM-W

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

Reviewed by: SAM Date: 2018/12/23

Comments:

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

Reviewed by: Date:

Comments:

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

Reviewed by: Date:

Comments:

**WS# : 5412188**

Page #: 1/2

Report Name : Worksheet - (Liquids and Solids)

Assignment Date : Friday, February 23, 2018

Assigned to : Shahbaz Ahmad

Test Code : PFOSALCM-W

Instrument Id:

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

sediment gm ml SHD 2018/2/23

| Job Number | Sample Number | D | Sample ID | F | % Moisture | Wt or Vol | Final Vol | DF or AF | # Cont | Expiry Date | Test DeadLine | Criteria | Extract Date |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| B,3 | SPIKE | 0 | PFOS | | 0 | 125 | 3 | 1X | | | | | 2018/02/23 |
| 8.5 | SPIKE | 1 | PFOS | | 0 | 125 | 3 | 1X | | | | | 2018/02/23 |
| B,11 | BLANK | | | | 0 | 125 | 3 | 1X | | SHD 2018/2/23 | | | 2018/02/23 |
| B,7 | B833226 | *GBV350-01R | CEF-S3-TW01-0218 | | 60.1 | 12.5 | 3 | 1X/10X | 2 | 2018/02/23 | 2018/02/27 23:00 | DOD | 2018/02/23 |
| B,9 | B833226 | *GBV351-01R | FB-CEF-S3-020918* | | 60.1 | 125 | 3 | 1X | 2 | 2018/02/23 | 2018/02/27 23:00 | DOD | 2018/02/23 |
| B,11 | B833226 | *GBV352-01R | CEF-MFS-TW01-0* | | 60.1 | 125 | 3 | 1X/10X | 2 | 2018/02/23 | 2018/02/27 23:00 | DOD | 2018/02/23 |
| B,13 | B833226 | *GBV353-01R | CEF-MFS-TW02-0* | | 60.1 | 125 | 3 | 1X | 2 | 2018/02/23 | 2018/02/27 23:00 | DOD | 2018/02/23 |
| B,15 | B833226 | *GBV354-01R | CEF-S3-TW02-0209 | | 60.1 | 12.5 | 3 | 10X | 2 | 2018/02/23 | 2018/02/27 23:00 | DOD | 2018/02/23 |

SHD 2018/2/23

Remarks: Samples GBV 350-01 and GBV354-01 were dark and only 10X dilution was performed in extraction spike duplicate sample was extracted due to unavailability of extra samples.

Samples extracted by: Shahbaz Ahmad SHD 2018/2/23

Instrumentation performed by: KC Date: 2018/02/26 SHD 2018/02/27

Calculations performed by: KC Date: 2018/02/27

Validated by: SM Date: 2018/02/27

| Job No. | Rep | Client Name | Contact | Client Tier | National |
|---|---|---|---|---|---|
| | Remarks | | | | |
| GB833226 | SP8 | Earth Toxics Inc | Rick Carr | Tier 5 (Enviro.) | AECOM |

NREG. PFOSALCM-W Level IV Package and TetraTech EDD required f/c ZAL. 2018/02/20 Project #: JM10 CECIL

SAD 2018/2/23

| Job | Sample | Lab Comments |
|---|---|---|
| | SPIKE | |
| | SPIKE | |
| | BLANK | |
| B833226 | GBV350-01R | |
| B833226 | GBV351-01R | |
| B833226 | GBV352-01R | |
| B833226 | GBV353-01R | |
| B833226 | GBV354-01R | |

| | | | |
|---|---|---|---|
| S1 | 2825 | 25 | SK7377 2/3 |
| S2 | 2800 | 50 | |
| S3 | 2700 | 150 | |
| S4 | 2813 | 37.5 | I-5297 3/3 |
| S5 | 2775 | 75 | |
| S6 | 2725 | 125 | |
| ICV | 2788 | 62.5 | I-5299 3/3 |
| IB | 2850 | — | |

SAD 2018/2/23

Spike code changed to PFC — SZ 2018/02/27

Maxxam Analytics 2018 02 26 2018/02/27

Worksheet Reagent Tracking Record  Worksheet # 5412188

| Surrogate/Spike solutions | √ | Solution ID # | Conc. | Blk-Spk Volume (µL) | | MS Volume (µL) | | Samples Volume (µL) | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Solid | Liquid | Solid | Liquid | Solid | Liquid |
| DGT Spike | | | 100 ug/mL | 60 | 30 | 60 | 30 | NA | NA |
| Diquat Dibromide | | | 50 ug/mL | NA | 350 | NA | 350 | NA | NA |
| Explosives Spiking solution A | | | 20 ug/mL | 250 | 100 | 250 | 100 | NA | NA |
| Explosives Spiking solution B | | | 20/80 ug/mL | 250 | 100 | 250 | 100 | NA | NA |
| Formaldehyde Spike | | | 100 ug/mL | 25 | 25 | 25 | 25 | NA | NA |
| Glyphosate Spike | | | 25 ug/mL | 500 | 20 | 500 | 20 | NA | NA |
| Nonylphenol Ethoxylate Spike | | | 100 ug/mL | 100 | 100 | 100 | 100 | NA | NA |
| Nonylphenol Spike | | | 10 ug/mL | 100 | 100 | 100 | 100 | NA | NA |
| Paraquat Cl Tetrahydrate | | | 20 ug/mL | NA | 125 | NA | 125 | NA | NA |
| Perchlorate Standard Spike | | | 10 ng/mL | NA | 100 | NA | 100 | NA | NA |
| Perchlorate Standard Spike | | | 500 ng/mL | 40 | NA | 40 | NA | NA | NA |
| Perchlorate O-18 Internal Standard | | | 0.10 ng/uL | 20 | 20 | 20 | 20 | 20 | 20 |
| Morpholine Second Source Working Std | | | 2500 ug/L | NA | 80 | NA | 80 | NA | NA |
| Morpholine-D8 Internal Standard | | | 10 ug/mL | NA | 50 | NA | 50 | NA | 50 |
| Steril Second Source Spiking Solution | | | NA | 20 | NA | 20 | NA | NA | NA |
| Sterilants Comp. IS Working Solution | | | 3 ug/mL | 50 | NA | 50 | NA | 50 | NA |
| Comp. PFC Working Solution A | ✓ | I-5299 3/3 | 1ug/mL | 75 | 21 62.5 | 75 | 21 62.5 | NA | NA |
| PFC Internal Standard Solution | — | ST 6801 4/4 LR | 50/125 ng/mL | 200 | 100 150 | 200 | 100 150 | 200 | 100/150 |
| PFC Injection IS | — | ST 6770 2/2-26 | 400 ng/mL | 20 | 20 | 20 | 20 | 20 | 20 |
| ICV | ✓ | I-5299 3/3 | | | | | | | |

| Solvent/Reagent | √ | Lot No. | Date Opened | Solvent/Reagent | √ | Lot No. | Date Opened/ Prepared |
|---|---|---|---|---|---|---|---|
| DCM | | | | 50% NaOH | | | |
| Ottawa Sand | | | | o-Phosphoric Acid | | | |
| Methanol | ✓ | SHBT 6485 | 2018/2/23 | Borax | | | |
| 2-Propanol (IPA) | | | | Calcium Chloride | | | |
| Acetonitrile | | | | EDTA | | | |
| Sodium Sulfate | | | | Phosphate Buffer | | | |
| 70:30 Methanol: Water | | | | Sodium Thiosulphate | | | |
| 60:40 Water: Methanol | ✓ | PRLRE | 108-380 | DNPH | | | |
| DCM:Ethyl Ether (75:25) | | | | FMOC | | | |
| Hexane:IPA (98:2) | | | | 5M Acetate Buffer | | | |
| 2% Formic Acid | ✓ | PRLRE | 108-377 | 0.2% $NH_4OH$ | ✓ | PRLRE | 108-382 |
| 0.2% Formic Acid | | | | Leachate Fluid | | | |
| 0.05M KOH | | | | Reagent Water | ✓ | 57297 | 2018/2/23 |
| 0.05M HCl | | | | | | | |
| | | | | | | | |
| | | | | | | | |

*Spiked by: SAP
Spike Date: 2018/2/23
Spike Syringe/Pipette ID#: H32773E
Int. Std Syringe/Pipette ID#: MM10111E
*Spiking Witnessed by: LR
Final pH:

| Equipment & ID | √ | Equipment | ID# | √ | Equipment | Lot # | Bottle Tracking |
|---|---|---|---|---|---|---|---|
| Pipettor | | SPE Cartridge | 0039372471A | | QC Balance ID | | Bottle# |
| | | Filter | | | Thermometer ID &Temp | | Cap# |
| Dispenser | | Centrifuge | | | | | Systems plus Lot# |
| | | Sonicator | | | | | |

Comments:

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

Worksheet: 5412188

## Dilution and Column Cleanup Worksheet

Maxxam Analytics

| Job Number | Sample ID | Sample: Initial Final Volume | Dilution Required | Sample added mL | Solvent Added mL | Int Stan Added uL | New Effective Final Volume | INITIAL DATE | Column Clean Up |
|---|---|---|---|---|---|---|---|---|---|
| B833226 | GBV350-01 | 1 X | 10X | 12.5 | SAP 2018/12/13 ~~150~~ N/A | 180 | 12.5 | SAP 2018/12/13 | — |
| B833226 | GBV352-01 | 1 X | 10X | 12.5 | — | 180 | 12.5 | SAP 2018/12/13 | — |
| B833226 | GBV354-01 | 1 X | 10X | 12.5 | — | 150 | 12.5 | SAP 2018/12/13 | — |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | ~~SAP~~ 2018/12/13 | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |

Worksheet Number: **5412188**

PFOS and PFOA in water by SPE/LCMS - Water

ug/L

| Parameter Name | Units | SPIKE | SPIKE Dup1 | BLANK | DL | B833226 GBV350 | DL |
|---|---|---|---|---|---|---|---|
| 6:2 Fluorotelomer sulfonate | ug/L | 104.42496 | 98.60025 | 0 | 0.02 | N/A******* | 0.2 |
| 8:2 Fluorotelomer sulfonate | ug/L | 104.55991 | 96.72520 | 0 | 0.02 | N/A******* | 0.2 |
| N-ethylperfluorooctane sulfonamide | ug/L | 86.23102 | 76.99686 | 0 | 0.02 | N/A******* | 0.2 |
| EtFOSAA | ug/L | 94.58628 | 93.57752 | 0 | 0.02 | 0 | 0.2 |
| N-ethylperfluorooctane sulfonamidoe | ug/L | 78.90311 | 87.64001 | 0 | 0.02 | N/A******* | 0.2 |
| N-methylperfluorooctane sulfonamide | ug/L | 78.41770 | 76.23924 | 0 | 0.02 | N/A******* | 0.2 |
| MeFOSAA | ug/L | 93.83276 | 91.27196 | 0 | 0.02 | 0 | 0.2 |
| N-methylperfluorooctanesulfonamidol | ug/L | 93.67721 | 80.21754 | 0 | 0.02 | N/A******* | 0.2 |
| Perfluorobutanoic acid | ug/L | 104.86545 | 94.98298 | 0 | 0.02 | N/A******* | 0.2 |
| Perfluorobutane Sulfonate (PFBS) | ug/L | 101.87054 | 109.68866 | 0 | 0.02 | 0 | 0.2 |
| Perfluorodecane Sulfonate | ug/L | 98.56268 | 101.94063 | 0 | 0.02 | N/A******* | 0.2 |
| Perfluoroheptanoic Acid (PFHpA) | ug/L | 95.40503 | 88.23637 | 0 | 0.02 | 0 | 0.2 |
| Perfluoroheptane sulfonate | ug/L | 99.36673 | 93.71539 | 0 | 0.02 | N/A******* | 0.2 |
| Perfluorohexanoic Acid (PFHxA) | ug/L | 92.59954 | 91.13050 | 0 | 0.02 | 0 | 0.2 |
| Perfluorohexane Sulfonate (PFHxS) | ug/L | 106.31779 | 99.88149 | 0 | 0.02 | 0 | 0.2 |
| Perfluorononanoic Acid (PFNA) | ug/L | 92.58521 | 91.71154 | 0 | 0.02 | 0 | 0.2 |
| Perfluorooctane Sulfonamide (PFOSA) | ug/L | 89.00341 | 87.72336 | 0 | 0.02 | N/A******* | 0.2 |
| Perfluoropentanoic Acid (PFPeA) | ug/L | 101.90009 | 96.84511 | 0 | 0.02 | N/A******* | 0.2 |
| Perfluorotetradecanoic Acid | ug/L | 100.73808 | 97.74157 | 0 | 0.02 | 0 | 0.2 |
| Perfluorotridecanoic Acid | ug/L | 102.88718 | 102.34364 | 0 | 0.02 | 0 | 0.2 |
| Perfluoroundecanoic Acid (PFUnA) | ug/L | 97.48155 | 94.47361 | 0 | 0.02 | 0 | 0.2 |
| Perfluorodecanoic Acid (PFDA) | ug/L | 104.78334 | 98.41671 | 0 | 0.02 | 0 | 0.2 |
| Perfluorododecanoic Acid (PFDoA) | ug/L | 94.38316 | 97.03922 | 0 | 0.02 | 0 | 0.2 |
| Perfluoro-n-Octanoic Acid (PFOA) | ug/L | 100.61661 | 99.97571 | 0 | 0.02 | 0 | 0.2 |
| Perfluorooctane Sulfonate (PFOS) | ug/L | 86.33191 | 88.58954 | 0 | 0.02 | 0 | 0.2 |
| 13C2-6:2 Fluorotelomer sulfonate | ug/L | 96.7343888 | 89.9581069 | 109.081884 | | N/A******* | |
| 13C2-8:2 Fluorotelomer sulfonate | ug/L | 101.528722 | 122.920056 | 97.5023268 | | N/A******* | |
| 13C2-perfluorotetradecanoic acid | ug/L | 91.1667241 | 95.4309467 | 97.9719675 | | 73.6667709 | |
| 13C4-Perfluorobutanoic acid | ug/L | 100.930694 | 114.889585 | 106.207496 | | 111.858682 | |
| D3-MeFOSAA | ug/L | 92.1832673 | 95.0006623 | 89.0103797 | | 91.7006179 | |
| D5-EtFOSAA | ug/L | 89.2208805 | 91.7255253 | 92.6065633 | | 89.4824432 | |
| N-methyl-d3-perfluorooctane sulfona | ug/L | 89.7546055 | 112.683497 | 84.8994768 | | N/A******* | |
| N-ethyl-d5-perfluorooctane sulfonam | ug/L | 98.3369429 | 99.4095278 | 89.6619800 | | N/A******* | |
| 13C2-Perfluorodecanoic acid | ug/L | 104.517896 | 107.892663 | 107.800000 | | 96.0603643 | |
| 13C2-Perfluorododecanoic acid | ug/L | 102.499831 | 105.434442 | 104.188963 | | 97.8382456 | |
| 13C2-Perfluorohexanoic acid | ug/L | 109.623931 | 114.630803 | 109.778112 | | 105.509376 | |
| 13C2-Perfluoroundecanoic acid | ug/L | 108.098489 | 112.985360 | 107.961583 | | 91.3360484 | |
| 13C4-Perfluoroheptanoic acid | ug/L | 104.523638 | 111.991663 | 107.025910 | | 104.657351 | |
| 13C5-Perfluorononanoic acid | ug/L | 108.672907 | 110.440251 | 105.876177 | | 105.661945 | |
| 13C4-Perfluorooctanoic acid | ug/L | 104.457997 | 106.992584 | 104.038004 | | 105.795122 | |
| 13C4-Perfluorooctanesulfonate | ug/L | 108.519978 | 114.372180 | 96.6417485 | | 108.196603 | |
| 13C5-Perfluoropentanoic acid | ug/L | 107.359276 | 117.889238 | 108.831232 | | N/A******* | |
| 13C8-Perfluorooctane Sulfonamide | ug/L | 101.786167 | 107.427616 | 106.813468 | | N/A******* | |
| 18O2-Perfluorohexanesulfonate | ug/L | 102.303617 | 111.410578 | 108.346046 | | 103.654950 | |

2018/02/27

PFOS and PFOA in water by SPE/LCMS - Water

ug/L

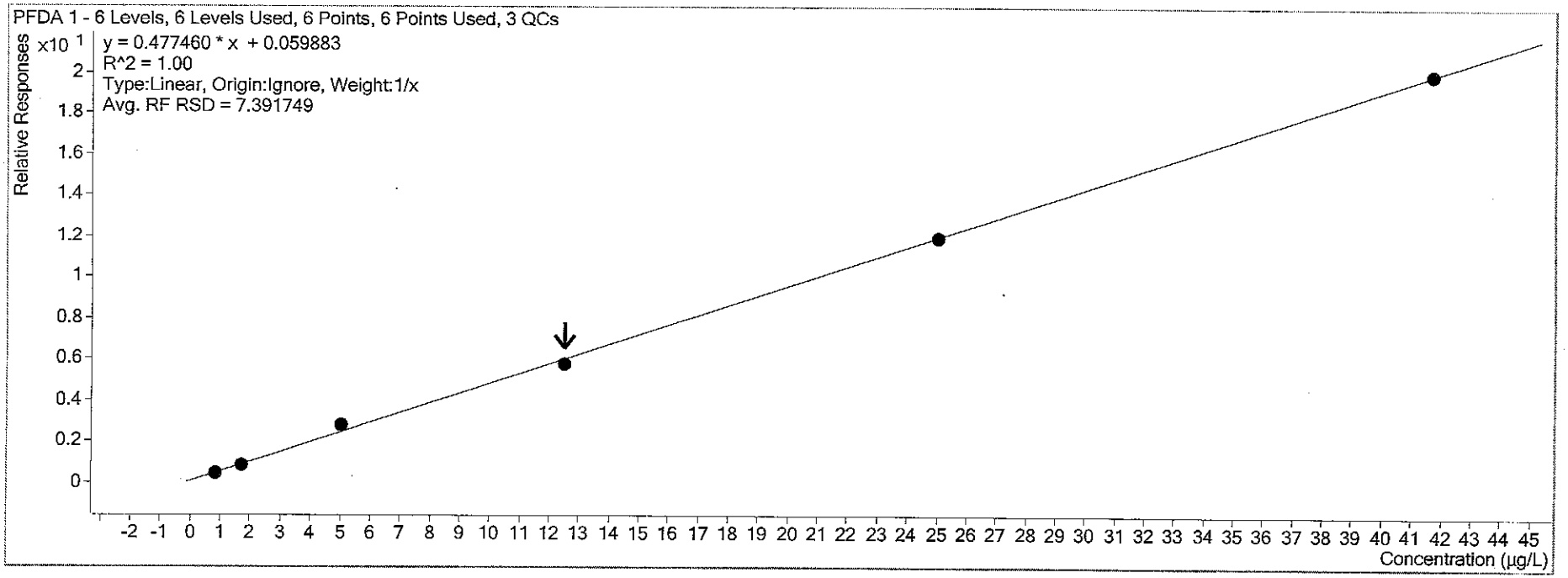
| Parameter Name | B833226 GBV351 | B833226 GBV352 | B833226 GBV353 | DL | B833226 GBV354 | DL | RDL |
|---|---|---|---|---|---|---|---|
| 6:2 Fluorotelomer sulfonate | N/A******* | N/A******* | N/A******* | 0.02 | N/A******* | 0.2 | 0.02 |
| 8:2 Fluorotelomer sulfonate | N/A******* | N/A******* | N/A******* | 0.02 | N/A******* | 0.2 | 0.02 |
| N-ethylperfluorooctane sulfonamide | N/A******* | N/A******* | N/A******* | 0.02 | N/A******* | 0.2 | 0.02 |
| EtFOSAA | 0 | 0 | 0 | 0.02 | 0 | 0.2 | 0.02 |
| N-ethylperfluorooctane sulfonamidoe | N/A******* | N/A******* | N/A******* | 0.02 | N/A******* | 0.2 | 0.02 |
| N-methylperfluorooctane sulfonamide | N/A******* | N/A******* | N/A******* | 0.02 | N/A******* | 0.2 | 0.02 |
| MeFOSAA | 0 | 0 | 0 | 0.02 | 0 | 0.2 | 0.02 |
| N-methylperfluorooctanesulfonamidol | N/A******* | N/A******* | N/A******* | 0.02 | N/A******* | 0.2 | 0.02 |
| Perfluorobutanoic acid | N/A******* | N/A******* | 0.03323401 | 0.02 | N/A******* | 0.2 | 0.02 |
| Perfluorobutane Sulfonate (PFBS) | 0 | 0.01109841 | 0 | 0.02 | 0 | 0.2 | 0.02 |
| Perfluorodecane Sulfonate | N/A******* | N/A******* | N/A******* | 0.02 | N/A******* | 0.2 | 0.02 |
| Perfluoroheptanoic Acid (PFHpA) | 0 | 0.32735107 | 0.05236113 | 0.02 | 0 | 0.2 | 0.02 |
| Perfluoroheptane sulfonate | N/A******* | N/A******* | N/A******* | 0.02 | N/A******* | 0.2 | 0.02 |
| Perfluorohexanoic Acid (PFHxA) | 0 | 0.30858314 | 0.06437103 | 0.02 | 0 | 0.2 | 0.02 |
| Perfluorohexane Sulfonate (PFHxS) | 0 | 0.70572253 | 0.00810832 | 0.02 | 0 | 0.2 | 0.02 |
| Perfluorononanoic Acid (PFNA) | 0 | 0.06309670 | 0.00528806 | 0.02 | 0 | 0.2 | 0.02 |
| Perfluorooctane Sulfonamide (PFOSA) | N/A******* | N/A******* | N/A******* | 0.02 | N/A******* | 0.2 | 0.02 |
| Perfluoropentanoic Acid (PFPeA) | N/A******* | N/A******* | N/A******* | 0.02 | N/A******* | 0.2 | 0.02 |
| Perfluorotetradecanoic Acid | 0 | 0 | 0 | 0.02 | 0 | 0.2 | 0.02 |
| Perfluorotridecanoic Acid | 0 | 0 | 0 | 0.02 | 0 | 0.2 | 0.02 |
| Perfluoroundecanoic Acid (PFUnA) | 0 | 0 | 0.00286868 | 0.02 | 0 | 0.2 | 0.02 |
| Perfluorodecanoic Acid (PFDA) | 0 | 0.00701185 | 0.00472718 | 0.02 | 0 | 0.2 | 0.02 |
| Perfluorododecanoic Acid (PFDoA) | 0 | 0 | 0 | 0.02 | 0 | 0.2 | 0.02 |
| Perfluoro-n-Octanoic Acid (PFOA) | 0 | 0.21016601 | 0.01444529 | 0.02 | 0 | 0.2 | 0.02 |
| Perfluorooctane Sulfonate (PFOS) | 0 | 0.80670736 | 0.02431257 | 0.02 | 0 | 0.2 | 0.02 |
| 13C2-6:2 Fluorotelomer sulfonate | N/A******* | N/A******* | N/A******* | | N/A******* | | |
| 13C2-8:2 Fluorotelomer sulfonate | N/A******* | N/A******* | N/A******* | | N/A******* | | |
| 13C2-perfluorotetradecanoic acid | 96.7286732 | 84.2293241 | 84.5485360 | | 68.3789102 | | |
| 13C4-Perfluorobutanoic acid | 107.655314 | 104.647773 | 105.498932 | | 105.853225 | | |
| D3-MeFOSAA | 94.2088789 | 95.9396680 | 91.6294426 | | 89.1905650 | | |
| D5-EtFOSAA | 88.8442510 | 92.8707494 | 92.3108581 | | 85.5326582 | | |
| N-methyl-d3-perfluorooctane sulfona | N/A******* | N/A******* | N/A******* | | N/A******* | | |
| N-ethyl-d5-perfluorooctane sulfonam | N/A******* | N/A******* | N/A******* | | N/A******* | | |
| 13C2-Perfluorodecanoic acid | 111.246397 | 98.1534088 | 102.990574 | | 90.0244296 | | |
| 13C2-Perfluorododecanoic acid | 97.9674725 | 97.9617448 | 95.3588933 | | 85.7688646 | | |
| 13C2-Perfluorohexanoic acid | 116.239297 | 106.701826 | 111.808610 | | 114.509565 | | |
| 13C2-Perfluoroundecanoic acid | 105.942918 | 101.290814 | 105.711020 | | 94.9673289 | | |
| 13C4-Perfluoroheptanoic acid | 111.716477 | 103.272431 | 111.093913 | | 106.916339 | | |
| 13C5-Perfluorononanoic acid | 115.773207 | 105.019915 | 109.150946 | | 101.751796 | | |
| 13C4-Perfluorooctanoic acid | 111.009512 | 105.576209 | 109.261869 | | 99.1197706 | | |
| 13C4-Perfluorooctanesulfonate | 118.881152 | 111.982285 | 110.589250 | | 105.675031 | | |
| 13C5-Perfluoropentanoic acid | N/A******* | N/A******* | N/A******* | | N/A******* | | |
| 13C8-Perfluorooctane Sulfonamide | N/A******* | N/A******* | N/A******* | | N/A******* | | |
| 18O2-Perfluorohexanesulfonate | 109.719752 | 103.531998 | 116.443204 | | 101.177048 | | |

Worksheet Number: **5412188**

PFOS and PFOA in water by SPE/LCMS - Water

ug/L

| Parameter Name | MDL | IDL | | | | | |
|---|---|---|---|---|---|---|---|
| 6:2 Fluorotelomer sulfonate | 0.0066 | 0 | | | | | |
| 8:2 Fluorotelomer sulfonate | 0.0066 | 0 | | | | | |
| N-ethylperfluorooctane sulfonamide | 0.01 | 0 | | | | | |
| EtFOSAA | 0.0033 | 0 | | | | | |
| N-ethylperfluorooctane sulfonamidoe | 0.0079 | 0 | | | | | |
| N-methylperfluorooctane sulfonamide | 0.013 | 0 | | | | | |
| MeFOSAA | 0.0029 | 0 | | | | | |
| N-methylperfluorooctanesulfonamidol | 0.012 | 0 | | | | | |
| Perfluorobutanoic acid | 0.0055 | 0 | | | | | |
| Perfluorobutane Sulfonate (PFBS) | 0.0054 | 0 | | | | | |
| Perfluorodecane Sulfonate | 0.006 | 0 | | | | | |
| Perfluoroheptanoic Acid (PFHpA) | 0.0074 | 0 | | | | | |
| Perfluoroheptane sulfonate | 0.008 | 0 | | | | | |
| Perfluorohexanoic Acid (PFHxA) | 0.0035 | 0 | | | | | |
| Perfluorohexane Sulfonate (PFHxS) | 0.0056 | 0 | | | | | |
| Perfluorononanoic Acid (PFNA) | 0.0087 | 0 | | | | | |
| Perfluorooctane Sulfonamide (PFOSA) | 0.0034 | 0 | | | | | |
| Perfluoropentanoic Acid (PFPeA) | 0.0075 | 0 | | | | | |
| Perfluorotetradecanoic Acid | 0.0027 | 0 | | | | | |
| Perfluorotridecanoic Acid | 0.0038 | 0 | | | | | |
| Perfluoroundecanoic Acid (PFUnA) | 0.0025 | 0 | | | | | |
| Perfluorodecanoic Acid (PFDA) | 0.0061 | 0 | | | | | |
| Perfluorododecanoic Acid (PFDoA) | 0.005 | 0 | | | | | |
| Perfluoro-n-Octanoic Acid (PFOA) | 0.0033 | 0 | | | | | |
| Perfluorooctane Sulfonate (PFOS) | 0.006 | 0 | | | | | |
| 13C2-6:2 Fluorotelomer sulfonate | | | | | | | |
| 13C2-8:2 Fluorotelomer sulfonate | | | | | | | |
| 13C2-perfluorotetradecanoic acid | | | | | | | |
| 13C4-Perfluorobutanoic acid | | | | | | | |
| D3-MeFOSAA | | | | | | | |
| D5-EtFOSAA | | | | | | | |
| N-methyl-d3-perfluorooctane sulfona | | | | | | | |
| N-ethyl-d5-perfluorooctane sulfonam | | | | | | | |
| 13C2-Perfluorodecanoic acid | | | | | | | |
| 13C2-Perfluorododecanoic acid | | | | | | | |
| 13C2-Perfluorohexanoic acid | | | | | | | |
| 13C2-Perfluoroundecanoic acid | | | | | | | |
| 13C4-Perfluoroheptanoic acid | | | | | | | |
| 13C5-Perfluorononanoic acid | | | | | | | |
| 13C4-Perfluorooctanoic acid | | | | | | | |
| 13C4-Perfluorooctanesulfonate | | | | | | | |
| 13C5-Perfluoropentanoic acid | | | | | | | |
| 13C8-Perfluorooctane Sulfonamide | | | | | | | |
| 18O2-Perfluorohexanesulfonate | | | | | | | |




Manual calculation for Spike:

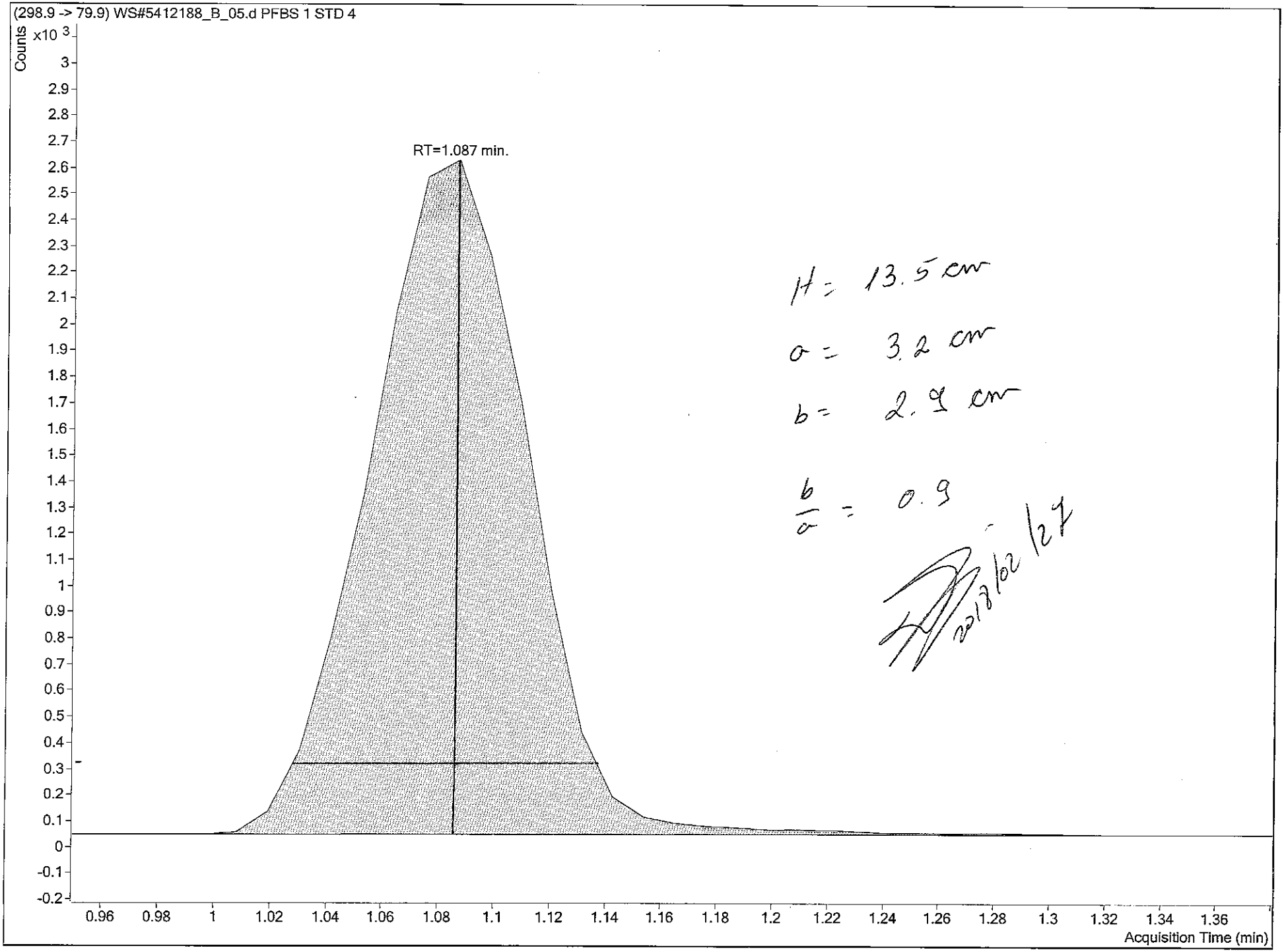
$10.4828 = 0.477460 \times + 0.059883$

$x = 21.829927 \times 0.024$

$= 0.5239\ \mu g/L$

$\frac{0.5239}{0.5} \times 100 = 104.8\ \%$

21/8/02/27



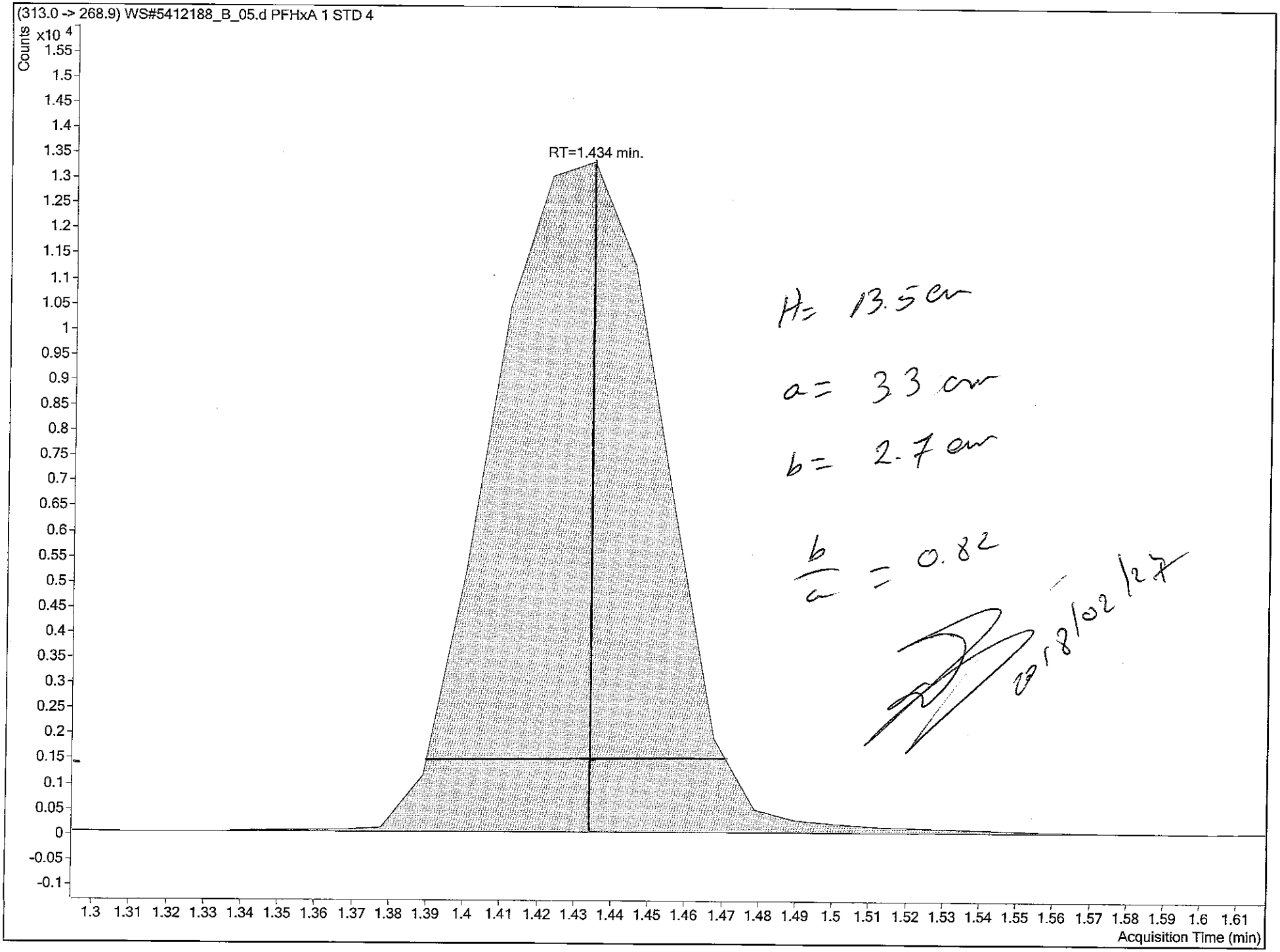

H = 13.5 cm

a = 3.2 cm

b = 2.9 cm

$\frac{b}{a}$ = 0.9

2018/02/27




H= 13.5 cm

a= 3.3 cm

b= 2.7 cm

$\frac{b}{a} = 0.82$

2018/02/27

Report Name: Worksheet - Parameter Lists

Report Date: 2018/02/23

Test Code: **PFOSALCM-W**

Worksheet Number: **5412188**

| Sample Number | Parameter Code | Parameter | |
|---|---|---|---|
| GBV350-01 | ETFOSAA | EtFOSAA | * |
| GBV351-01 | MEFOSAA | MeFOSAA | * |
| GBV352-01 | PFBS | Perfluorobutane Sulfonate (PFBS) | |
| GBV353-01 | PFHPA | Perfluoroheptanoic Acid (PFHpA) | |
| GBV354-01 | PFHXA | Perfluorohexanoic Acid (PFHxA) | |
| | PFHXS | Perfluorohexane Sulfonate (PFHxS) | |
| | PFNA | Perfluorononanoic Acid (PFNA) | |
| | PFTEDA | Perfluorotetradecanoic Acid | |
| | PFTRDA | Perfluorotridecanoic Acid | |
| | PFUNA | Perfluoroundecanoic Acid (PFUnA) | |
| | PFDA | Perfluorodecanoic Acid (PFDA) | |
| | PFDOA | Perfluorododecanoic Acid (PFDoA) | |
| | PFOA | Perfluoro-n-Octanoic Acid (PFOA) | |
| | PFOS | Perfluorooctane Sulfonate (PFOS) | |

RAD 2018/2/23

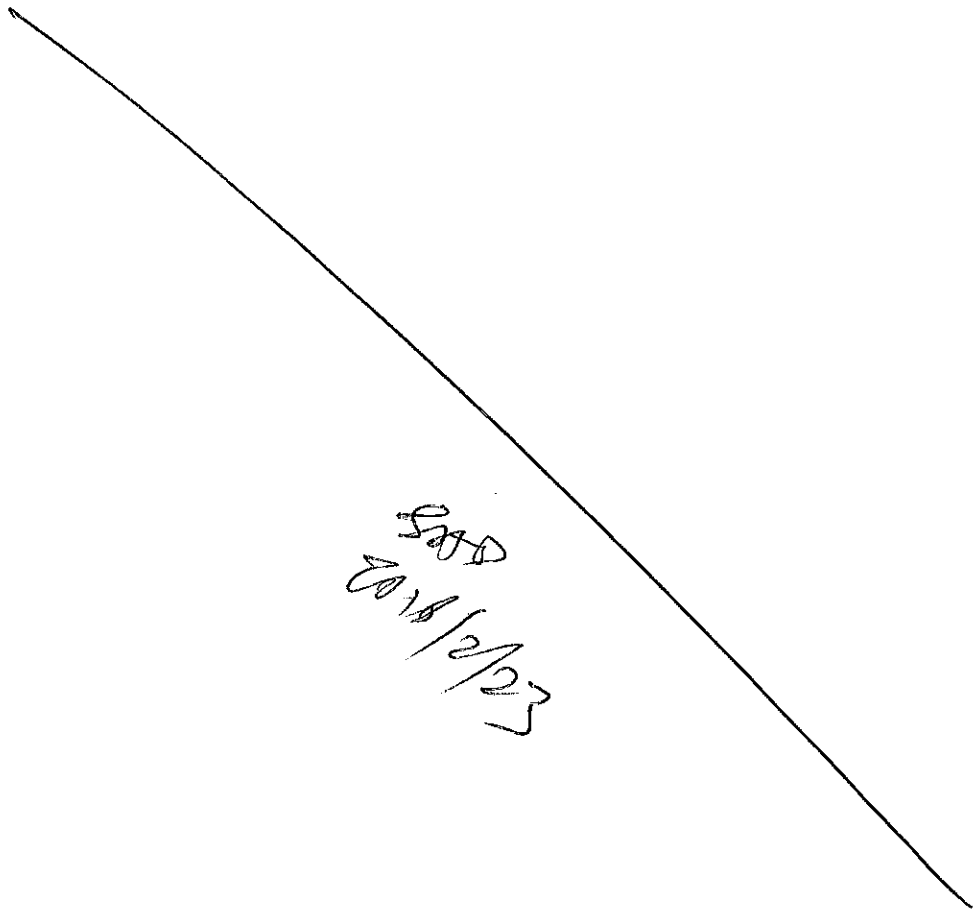
* - This parameter is usually off, but will be reported for this group of samples!



Folder 20180226 2018/02/27

# WorkSheet 5412188 Instrument Sequences

| | | |
|---|---|---|
| 1. | 5412188:SPIKE | SPIKE |
| 2. | 5412188:SPIKE:D1 | SPIKE :D1 |
| 3. | 5412188:BLANK | BLANK |
| 4. | 5412188:GBV350-01 | CEF-S3-TW01-0218 |
| 5. | 5412188:GBV351-01 | FB-CEF-S3-020918-13 |
| 6. | 5412188:GBV352-01 | CEF-MFS-TW01-0218 |
| 7. | 5412188:GBV353-01 | CEF-MFS-TW02-0218 |
| 8. | 5412188:GBV354-01 | CEF-S3-TW02-0209 |



# Worklist Report

Agilent Technologies

Maxxam Analytics

**Instrument Name:** LCMS04 **Worklist Path:** D:\MassHunter\Worklists\PFCs\PFC_180226_Low.wkl

**Operator Name:** ---
**Run Type:** Standard Start
**Part of Method to Run:** Acquisition Only
**Execution of Acquisition-DA:** Synchronous
**Acquisition Method Path:** D:\MassHunter\Acquisition Method
**DA Method Path:** D:\MassHunter\methods
**Data File Path:** D:\MassHunter\Data\PFC\20180226\WS#5412188
**Pre-Worklist Script:** ---
**Post-Worklist Script:** SCP_InstrumentStandby(){MH_Acq_Scripts.exe}
**Acquisition Clean Up Script:** ---
**Overlapped Injection:** Yes
**Clear Sample Selection After Run:** Yes
**Wait Time for Ready(Min):** 10
**Threshold Disk Value(GB):** 10
**Comment:** Column #199
MP A1: Solution# 280 (FSRE18)
MP B1: Methanol lot# SHBJ5451, Sigma

RC 20180226

**Plate Barcode:**

| Plate | Barcode |
|---|---|
| P1 | |

**Worklist Table**

| | Sample Name | Sample Position | Method | Data File | Sample Type | Level Name | Inj Vol (µl) | Comment |
|---|---|---|---|---|---|---|---|---|
| 1 | Solvent | P1-A1 | PFC_Water_Low.m | WS#5412188_01.d | Sample | | As Method | - |
| 2 | STD 1 | P1-C1 | PFC_Water_Low.m | WS#5412188_02.d | Calibration | STD 1 | As Method | - |
| 3 | STD 2 | P1-C2 | PFC_Water_Low.m | WS#5412188_03.d | Calibration | STD 2 | As Method | - |
| 4 | STD 3 | P1-C3 | PFC_Water_Low.m | WS#5412188_04.d | Calibration | STD 3 | As Method | - |
| 5 | STD 4 | P1-C4 | PFC_Water_Low.m | WS#5412188_05.d | Calibration | STD 4 | As Method | - |
| 6 | STD 5 | P1-C5 | PFC_Water_Low.m | WS#5412188_06.d | Calibration | STD 5 | As Method | - |
| 7 | STD 6 | P1-C6 | PFC_Water_Low.m | WS#5412188_07.d | Calibration | STD 6 | As Method | - |

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# Worklist Report

Agilent Technologies

Maxxam Analytics

| | Sample Name | Sample Position | Method | Data File | Sample Type | Level Name | Inj Vol (µl) | Comment |
|---|---|---|---|---|---|---|---|---|
| 8 | IB | P1-C7 | PFC_Water_Low.m | WS#5412188_08.d | Sample | | As Method | - |
| 9 | ICV | P1-C8 | PFC_Water_Low.m | WS#5412188_09.d | QC | ICV | As Method | - |
| 10 | ISC | P1-C1 | PFC_Water_Low.m | WS#5412188_10.d | ConCal | STD 1 | As Method | - |
| 11 | 5412188:BLANK | P1-C9 | PFC_Water_Low.m | WS#5412188_11.d | Sample | | As Method | - |
| 12 | 5412188:SPIKE | P1-D1 | PFC_Water_Low.m | WS#5412188_12.d | QC | ICV | As Method | - |
| 13 | 5412188:SPIKE:D1 | P1-D2 | PFC_Water_Low.m | WS#5412188_13.d | QC | ICV | As Method | - |
| 14 | 5412188:GBV350-01:10x | P1-D3 | PFC_Water_Low.m | WS#5412188_14.d | Sample | | As Method | - |
| 15 | IB | P1-C7 | PFC_Water_Low.m | WS#5412188_15.d | Sample | | As Method | - |
| 16 | 5412188:GBV351-01 | P1-D4 | PFC_Water_Low.m | WS#5412188_16.d | Sample | | As Method | - |
| 17 | 5412188:GBV352-01:10x | P1-D5 | PFC_Water_Low.m | WS#5412188_17.d | Sample | | As Method | - |
| 18 | 5412188:GBV352-01 | P1-D6 | PFC_Water_Low.m | WS#5412188_18.d | Sample | | As Method | - |
| 19 | IB | P1-C7 | PFC_Water_Low.m | WS#5412188_19.d | Sample | | As Method | - |
| 20 | 5412188:GBV353-01 | P1-D7 | PFC_Water_Low.m | WS#5412188_20.d | Sample | | As Method | - |
| 21 | 5412188:GBV354-01:10x | P1-D8 | PFC_Water_Low.m | WS#5412188_21.d | Sample | | As Method | - |
| 22 | IB | P1-C7 | PFC_Water_Low.m | WS#5412188_22.d | Sample | | As Method | - |
| 23 | CCV | P1-C4 | PFC_Water_Low.m | WS#5412188_23.d | ConCal | STD 4 | As Method | - |

# Worklist Report

Agilent Technologies

Maxxam Analytics

**Instrument Name:** LCMS04 **Worklist Path:** D:\MassHunter\Worklists\PFCs\PFC_180226_Low_FOSAA.wkl

**Operator Name:** ---
**Run Type:** Standard Start
**Part of Method to Run:** Acquisition Only
**Execution of Acquisition-DA:** Synchronous
**Acquisition Method Path:** D:\MassHunter\Acquisition Method
**DA Method Path:** D:\MassHunter\methods
**Data File Path:** D:\MassHunter\Data\PFC\20180226\WS#5412188_FOSAA
**Pre-Worklist Script:** ---
**Post-Worklist Script:** SCP_InstrumentStandby(){MH_Acq_Scripts.exe}
**Acquisition Clean Up Script:** ---
**Overlapped Injection:** Yes
**Clear Sample Selection After Run:** Yes
**Wait Time for Ready(Min):** 10
**Threshold Disk Value(GB):** 10
**Comment:** Column #199
MP A1: Solution# 280 (FSRE18)
MP B2: Solution# 290 (FSRE18)

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**Plate Barcode:**

| Plate | Barcode |
|---|---|
| P1 | |

**Worklist Table**

| | Sample Name | Sample Position | Method | Data File | Sample Type | Level Name | Inj Vol (µl) | Comment |
|---|---|---|---|---|---|---|---|---|
| 1 | Solvent | P1-A1 | PFC_Water_Low_FOSAA.m | WS#5412188_FOSAA_01.d | Sample | | As Method | - |
| 2 | STD 1 | P1-C1 | PFC_Water_Low_FOSAA.m | WS#5412188_FOSAA_02.d | Calibration | STD 1 | As Method | - |
| 3 | STD 2 | P1-C2 | PFC_Water_Low_FOSAA.m | WS#5412188_FOSAA_03.d | Calibration | STD 2 | As Method | - |
| 4 | STD 3 | P1-C3 | PFC_Water_Low_FOSAA.m | WS#5412188_FOSAA_04.d | Calibration | STD 3 | As Method | - |
| 5 | STD 4 | P1-C4 | PFC_Water_Low_FOSAA.m | WS#5412188_FOSAA_05.d | Calibration | STD 4 | As Method | - |
| 6 | STD 5 | P1-C5 | PFC_Water_Low_FOSAA.m | WS#5412188_FOSAA_06.d | Calibration | STD 5 | As Method | - |
| 7 | STD 6 | P1-C6 | PFC_Water_Low_FOSAA.m | WS#5412188_FOSAA_07.d | Calibration | STD 6 | As Method | - |
| 8 | IB | P1-C7 | PFC_Water_Low_FOSAA.m | WS#5412188_FOSAA_08.d | Sample | | As Method | - |

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| | Sample Name | Sample Position | Method | Data File | Sample Type | Level Name | Inj Vol (µl) | Comment |
|---|---|---|---|---|---|---|---|---|
| 9 | ICV | P1-C8 | PFC_Water_Low_FOSAA.m | WS#5412188_FOSAA_09.d | QC | ICV | As Method | - |
| 10 | ISC | P1-C1 | PFC_Water_Low_FOSAA.m | WS#5412188_FOSAA_10.d | ConCal | STD 1 | As Method | - |
| 11 | 5412188:BLANK | P1-C9 | PFC_Water_Low_FOSAA.m | WS#5412188_FOSAA_11.d | Sample | | As Method | - |
| 12 | 5412188:SPIKE | P1-D1 | PFC_Water_Low_FOSAA.m | WS#5412188_FOSAA_12.d | QC | ICV | As Method | - |
| 13 | 5412188:SPIKE:D1 | P1-D2 | PFC_Water_Low_FOSAA.m | WS#5412188_FOSAA_13.d | QC | ICV | As Method | - |
| 14 | 5412188:GBV350-01:10x | P1-D3 | PFC_Water_Low_FOSAA.m | WS#5412188_FOSAA_14.d | Sample | | As Method | - |
| 15 | IB | P1-C7 | PFC_Water_Low_FOSAA.m | WS#5412188_FOSAA_15.d | Sample | | As Method | - |
| 16 | 5412188:GBV351-01 | P1-D4 | PFC_Water_Low_FOSAA.m | WS#5412188_FOSAA_16.d | Sample | | As Method | - |
| 17 | 5412188:GBV352-01:10x | P1-D5 | PFC_Water_Low_FOSAA.m | WS#5412188_FOSAA_17.d | Sample | | As Method | - |
| 18 | 5412188:GBV352-01 | P1-D6 | PFC_Water_Low_FOSAA.m | WS#5412188_FOSAA_18.d | Sample | | As Method | - |
| 19 | IB | P1-C7 | PFC_Water_Low_FOSAA.m | WS#5412188_FOSAA_19.d | Sample | | As Method | - |
| 20 | 5412188:GBV353-01 | P1-D7 | PFC_Water_Low_FOSAA.m | WS#5412188_FOSAA_20.d | Sample | | As Method | - |
| 21 | 5412188:GBV354-01:10x | P1-D8 | PFC_Water_Low_FOSAA.m | WS#5412188_FOSAA_21.d | Sample | | As Method | - |
| 22 | IB | P1-C7 | PFC_Water_Low_FOSAA.m | WS#5412188_FOSAA_22.d | Sample | | As Method | - |
| 23 | CCV | P1-C4 | PFC_Water_Low_FOSAA.m | WS#5412188_FOSAA_23.d | ConCal | STD 4 | As Method | - |

## FINAL INJECTION SEQUENCE

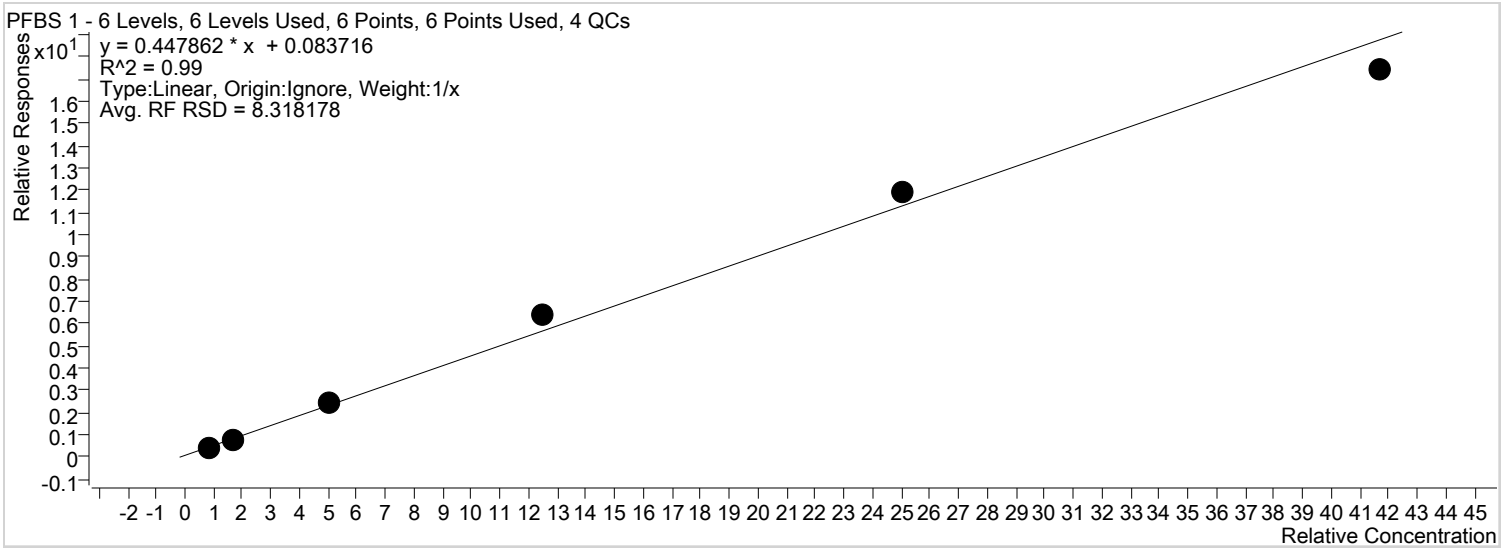
| Sample | | | | | |
|---|---|---|---|---|---|
| Name | Comment | Acq. Date-Time | Acq. Method File | Data File | Pos. |
| STD 1 | - | 2018/02/27 1:07 PM | PFC_Water_Low.m | WS#5412188_B_02.d | P1-C1 |
| STD 2 | - | 2018/02/27 1:12 PM | PFC_Water_Low.m | WS#5412188_B_03.d | P1-C2 |
| STD 3 | - | 2018/02/27 1:17 PM | PFC_Water_Low.m | WS#5412188_B_04.d | P1-C3 |
| STD 4 | - | 2018/02/27 1:21 PM | PFC_Water_Low.m | WS#5412188_B_05.d | P1-C4 |
| STD 5 | - | 2018/02/27 1:26 PM | PFC_Water_Low.m | WS#5412188_B_06.d | P1-C5 |
| STD 6 | - | 2018/02/27 1:31 PM | PFC_Water_Low.m | WS#5412188_B_07.d | P1-C6 |
| IB | - | 2018/02/27 1:36 PM | PFC_Water_Low.m | WS#5412188_B_08.d | P1-C7 |
| ICV | - | 2018/02/27 1:41 PM | PFC_Water_Low.m | WS#5412188_B_09.d | P1-C8 |
| ISC | - | 2018/02/27 1:57 PM | PFC_Water_Low.m | WS#5412188_B_10.d | P1-C1 |
| 5412188:BLANK | - | 2018/02/27 2:02 PM | PFC_Water_Low.m | WS#5412188_B_11.d | P1-C9 |
| 5412188:SPIKE | - | 2018/02/27 2:07 PM | PFC_Water_Low.m | WS#5412188_B_12.d | P1-D1 |
| 5412188:SPIKE:D1 | Reinjected to confirm analyte recovery | 2018/02/27 2:12 PM | PFC_Water_Low.m | WS#5412188_B_13.d | P1-D2 |
| 5412188:GBV350-01:10x | - | 2018/02/27 2:16 PM | PFC_Water_Low.m | WS#5412188_B_14.d | P1-D3 |
| IB | - | 2018/02/27 2:21 PM | PFC_Water_Low.m | WS#5412188_B_15.d | P1-C7 |
| 5412188:GBV351-01 | - | 2018/02/27 2:26 PM | PFC_Water_Low.m | WS#5412188_B_16.d | P1-D4 |
| 5412188:GBV352-01:10x | Not used | 2018/02/27 2:31 PM | PFC_Water_Low.m | WS#5412188_B_17.d | P1-D5 |
| 5412188:GBV352-01 | - | 2018/02/27 2:36 PM | PFC_Water_Low.m | WS#5412188_B_18.d | P1-D6 |
| IB | - | 2018/02/27 2:41 PM | PFC_Water_Low.m | WS#5412188_B_19.d | P1-C7 |
| 5412188:GBV353-01 | - | 2018/02/27 2:46 PM | PFC_Water_Low.m | WS#5412188_B_20.d | P1-D7 |
| 5412188:GBV354-01:10x | - | 2018/02/27 2:51 PM | PFC_Water_Low.m | WS#5412188_B_21.d | P1-D8 |
| IB | - | 2018/02/27 2:56 PM | PFC_Water_Low.m | WS#5412188_B_22.d | P1-C7 |
| CCV | - | 2018/02/27 3:01 PM | PFC_Water_Low.m | WS#5412188_B_23.d | P1-C4 |
| ISC | - | 2018/02/27 3:52 PM | PFC_Water_Low.m | WS#5412188_B_24.d | P1-C1 |
| 5412188:SPIKE:D1 | Reinjection, reported | 2018/02/27 4:00 PM | PFC_Water_Low.m | WS#5412188_B_25.d | P1-D2 |
| CCV | - | 2018/02/27 4:05 PM | PFC_Water_Low.m | WS#5412188_B_26.d | P1-C4 |

## FINAL INJECTION SEQUENCE

| Sample | | | | | |
|---|---|---|---|---|---|
| Name | Comment | Acq. Date-Time | Acq. Method File | Data File | Pos. |
| STD 1 | - | 2018/02/27 4:39 AM | PFC_Water_Low_FOSAA.m | WS#5412188_FOSAA_02.d | P1-C1 |
| STD 2 | - | 2018/02/27 4:41 AM | PFC_Water_Low_FOSAA.m | WS#5412188_FOSAA_03.d | P1-C2 |
| STD 3 | - | 2018/02/27 4:44 AM | PFC_Water_Low_FOSAA.m | WS#5412188_FOSAA_04.d | P1-C3 |
| STD 4 | - | 2018/02/27 4:46 AM | PFC_Water_Low_FOSAA.m | WS#5412188_FOSAA_05.d | P1-C4 |
| STD 5 | - | 2018/02/27 4:49 AM | PFC_Water_Low_FOSAA.m | WS#5412188_FOSAA_06.d | P1-C5 |
| STD 6 | - | 2018/02/27 4:51 AM | PFC_Water_Low_FOSAA.m | WS#5412188_FOSAA_07.d | P1-C6 |
| IB | - | 2018/02/27 4:54 AM | PFC_Water_Low_FOSAA.m | WS#5412188_FOSAA_08.d | P1-C7 |
| ICV | - | 2018/02/27 4:56 AM | PFC_Water_Low_FOSAA.m | WS#5412188_FOSAA_09.d | P1-C8 |
| ISC | - | 2018/02/27 4:58 AM | PFC_Water_Low_FOSAA.m | WS#5412188_FOSAA_10.d | P1-C1 |
| 5412188:BLANK | - | 2018/02/27 5:01 AM | PFC_Water_Low_FOSAA.m | WS#5412188_FOSAA_11.d | P1-C9 |
| 5412188:SPIKE | - | 2018/02/27 5:03 AM | PFC_Water_Low_FOSAA.m | WS#5412188_FOSAA_12.d | P1-D1 |
| 5412188:SPIKE:D1 | - | 2018/02/27 5:06 AM | PFC_Water_Low_FOSAA.m | WS#5412188_FOSAA_13.d | P1-D2 |
| 5412188:GBV350-01:10x | - | 2018/02/27 5:08 AM | PFC_Water_Low_FOSAA.m | WS#5412188_FOSAA_14.d | P1-D3 |
| IB | - | 2018/02/27 5:10 AM | PFC_Water_Low_FOSAA.m | WS#5412188_FOSAA_15.d | P1-C7 |
| 5412188:GBV351-01 | - | 2018/02/27 5:13 AM | PFC_Water_Low_FOSAA.m | WS#5412188_FOSAA_16.d | P1-D4 |
| 5412188:GBV352-01:10x | Not used | 2018/02/27 5:15 AM | PFC_Water_Low_FOSAA.m | WS#5412188_FOSAA_17.d | P1-D5 |
| 5412188:GBV352-01 | - | 2018/02/27 5:18 AM | PFC_Water_Low_FOSAA.m | WS#5412188_FOSAA_18.d | P1-D6 |
| IB | - | 2018/02/27 5:20 AM | PFC_Water_Low_FOSAA.m | WS#5412188_FOSAA_19.d | P1-C7 |
| 5412188:GBV353-01 | - | 2018/02/27 5:22 AM | PFC_Water_Low_FOSAA.m | WS#5412188_FOSAA_20.d | P1-D7 |
| 5412188:GBV354-01:10x | - | 2018/02/27 5:25 AM | PFC_Water_Low_FOSAA.m | WS#5412188_FOSAA_21.d | P1-D8 |
| IB | - | 2018/02/27 5:27 AM | PFC_Water_Low_FOSAA.m | WS#5412188_FOSAA_22.d | P1-C7 |
| CCV | - | 2018/02/27 5:30 AM | PFC_Water_Low_FOSAA.m | WS#5412188_FOSAA_23.d | P1-C4 |

**Batch Path** T:\lcms4\PFC\20180226\WS#5412188_B\QuantResults\PFC_Water_Low_180227_WS#5412188_B_EToxics.batch.bin
**Last Calib Update** 2018/02/28 8:26:12 AM
**Instrument:** LCMS04

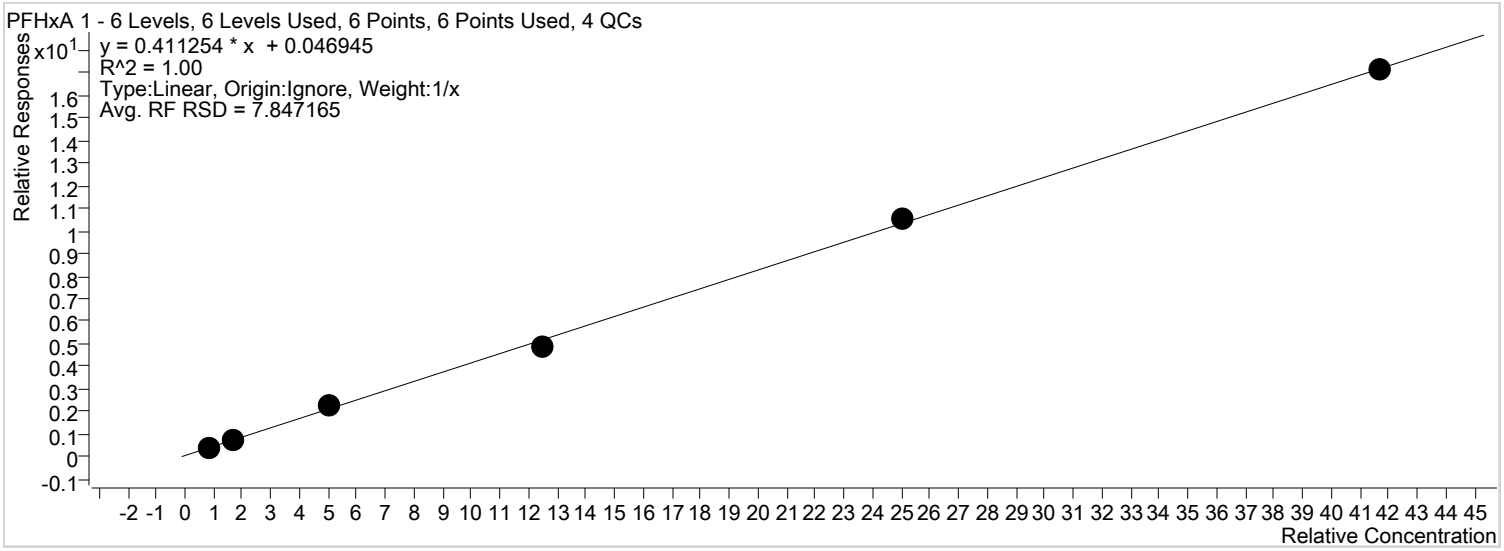
**Analyte:** PFBS 1
**Internal Standard:** MPFHxS




| Sample | Level | Enabled | Acquisition Time | Exp. Conc. | Concentration | Response | RF | S/N | Accuracy |
|---|---|---|---|---|---|---|---|---|---|
| STD 1 | STD 1 | x | 2018/02/27 1:07:08 PM | 0.83 | 0.78 | 769 | 0.5232 | 93 | 94.3 |
| STD 2 | STD 2 | x | 2018/02/27 1:12:04 PM | 1.70 | 1.52 | 1125 | 0.4487 | 129 | 89.2 |
| STD 3 | STD 3 | x | 2018/02/27 1:17:00 PM | 5.00 | 5.27 | 4042 | 0.4885 | 150 | 105.3 |
| STD 4 | STD 4 | x | 2018/02/27 1:21:56 PM | 12.50 | 14.13 | 10227 | 0.5130 | 802 | 113.0 |
| STD 5 | STD 5 | x | 2018/02/27 1:26:52 PM | 25.00 | 26.35 | 18716 | 0.4753 | 139 | 105.4 |
| STD 6 | STD 6 | x | 2018/02/27 1:31:47 PM | 41.70 | 38.69 | 29181 | 0.4175 | 124 | 92.8 |

**Batch Path** T:\lcms4\PFC\20180226\WS#5412188_B\QuantResults\PFC_Water_Low_180227_WS#5412188_B_EToxics.batch.bin
**Last Calib Update** 2018/02/28 8:26:12 AM
**Instrument:** LCMS04

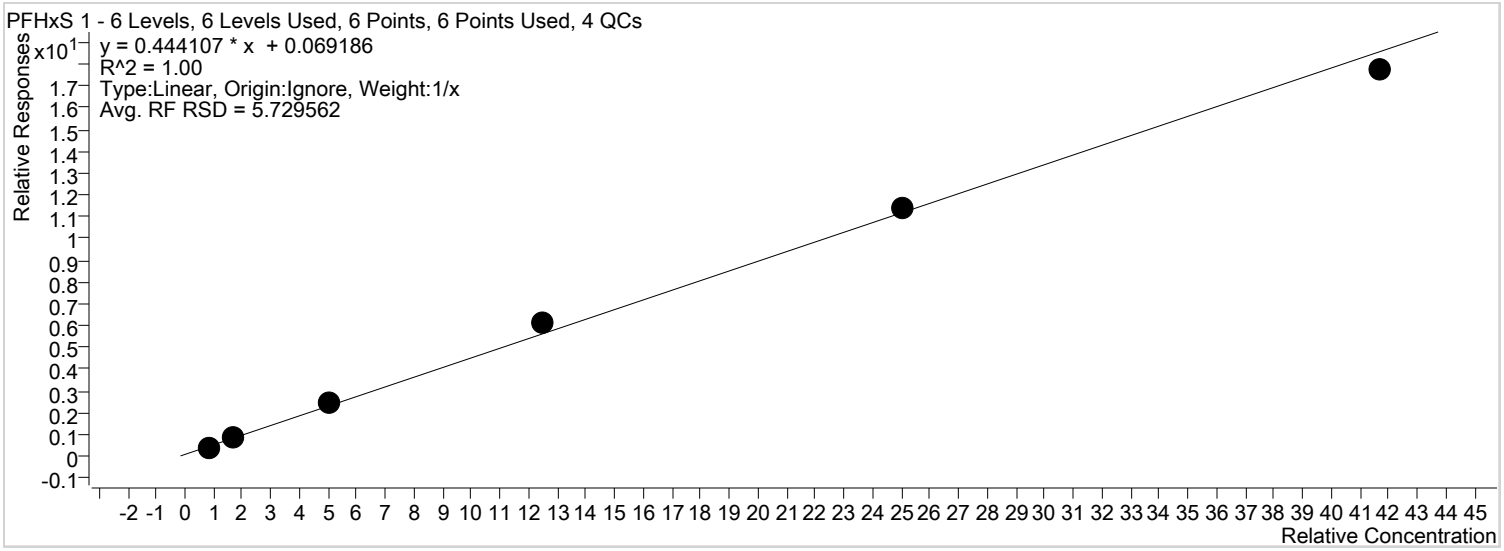
**Analyte:** PFHxA 1
**Internal Standard:** MPFHxA




| Sample | Level | Enabled | Acquisition Time | Exp. Conc. | Concentration | Response | RF | S/N | Accuracy |
|---|---|---|---|---|---|---|---|---|---|
| STD 1 | STD 1 | x | 2018/02/27 1:07:08 PM | 0.83 | 0.86 | 3245 | 0.4841 | 184 | 104.0 |
| STD 2 | STD 2 | x | 2018/02/27 1:12:04 PM | 1.70 | 1.58 | 5122 | 0.4089 | 171 | 92.7 |
| STD 3 | STD 3 | x | 2018/02/27 1:17:00 PM | 5.00 | 5.35 | 17235 | 0.4497 | 2704 | 107.1 |
| STD 4 | STD 4 | x | 2018/02/27 1:21:56 PM | 12.50 | 11.78 | 43010 | 0.3913 | 3441 | 94.2 |
| STD 5 | STD 5 | x | 2018/02/27 1:26:52 PM | 25.00 | 25.57 | 78659 | 0.4226 | 5928 | 102.3 |
| STD 6 | STD 6 | x | 2018/02/27 1:31:47 PM | 41.70 | 41.58 | 125050 | 0.4112 | 11256 | 99.7 |

**Batch Path** T:\lcms4\PFC\20180226\WS#5412188_B\QuantResults\PFC_Water_Low_180227_WS#5412188_B_EToxics.batch.bin
**Last Calib Update** 2018/02/28 8:26:12 AM
**Instrument:** LCMS04

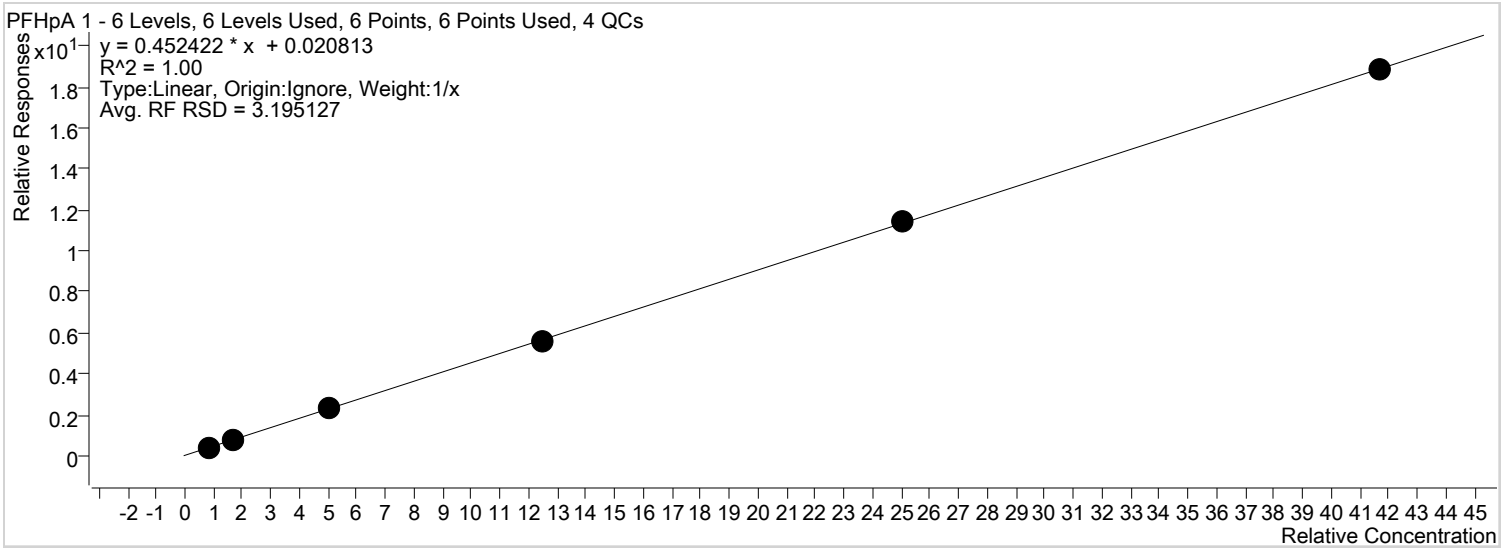
**Analyte:** PFHxS 1
**Internal Standard:** MPFHxS




| Sample | Level | Enabled | Acquisition Time | Exp. Conc. | Concentration | Response | RF | S/N | Accuracy |
|---|---|---|---|---|---|---|---|---|---|
| STD 1 | STD 1 | x | 2018/02/27 1:07:08 PM | 0.83 | 0.71 | 681 | 0.4633 | 102 | 85.5 |
| STD 2 | STD 2 | x | 2018/02/27 1:12:04 PM | 1.70 | 1.68 | 1203 | 0.4798 | 162 | 98.9 |
| STD 3 | STD 3 | x | 2018/02/27 1:17:00 PM | 5.00 | 5.47 | 4132 | 0.4993 | 235 | 109.3 |
| STD 4 | STD 4 | x | 2018/02/27 1:21:56 PM | 12.50 | 13.64 | 9773 | 0.4902 | 1233 | 109.1 |
| STD 5 | STD 5 | x | 2018/02/27 1:26:52 PM | 25.00 | 25.41 | 17883 | 0.4542 | 1237 | 101.6 |
| STD 6 | STD 6 | x | 2018/02/27 1:31:47 PM | 41.70 | 39.82 | 29756 | 0.4258 | 636 | 95.5 |

**Batch Path** T:\lcms4\PFC\20180226\WS#5412188_B\QuantResults\PFC_Water_Low_180227_WS#5412188_B_EToxics.batch.bin
**Last Calib Update** 2018/02/28 8:26:12 AM
**Instrument:** LCMS04

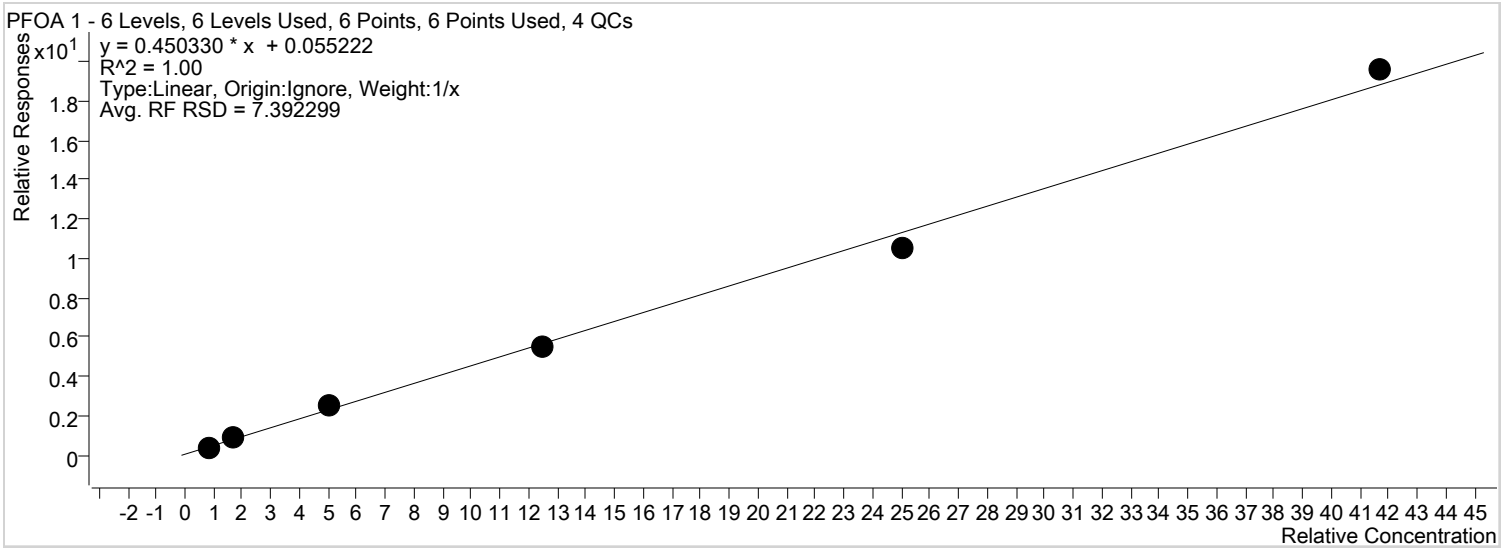
**Analyte:** PFHpA 1
**Internal Standard:** MPFHpA




| Sample | Level | Enabled | Acquisition Time | Exp. Conc. | Concentration | Response | RF | S/N | Accuracy |
|---|---|---|---|---|---|---|---|---|---|
| STD 1 | STD 1 | x | 2018/02/27 1:07:08 PM | 0.83 | 0.84 | 3853 | 0.4806 | 39 | 100.7 |
| STD 2 | STD 2 | x | 2018/02/27 1:12:04 PM | 1.70 | 1.64 | 6674 | 0.4475 | 80 | 96.2 |
| STD 3 | STD 3 | x | 2018/02/27 1:17:00 PM | 5.00 | 5.21 | 22441 | 0.4760 | 240 | 104.3 |
| STD 4 | STD 4 | x | 2018/02/27 1:21:56 PM | 12.50 | 12.32 | 53864 | 0.4475 | 232 | 98.5 |
| STD 5 | STD 5 | x | 2018/02/27 1:26:52 PM | 25.00 | 25.13 | 97076 | 0.4556 | 322 | 100.5 |
| STD 6 | STD 6 | x | 2018/02/27 1:31:47 PM | 41.70 | 41.60 | 152095 | 0.4518 | 289 | 99.8 |

**Batch Path** T:\lcms4\PFC\20180226\WS#5412188_B\QuantResults\PFC_Water_Low_180227_WS#5412188_B_EToxics.batch.bin
**Last Calib Update** 2018/02/28 8:26:12 AM
**Instrument:** LCMS04

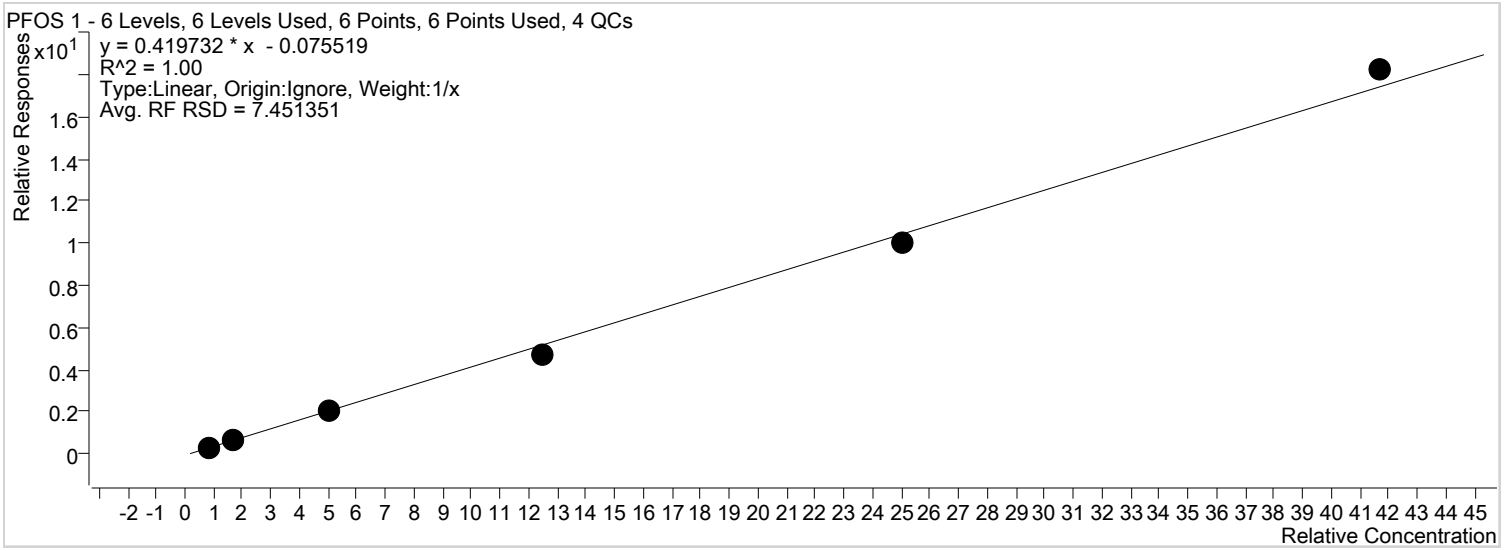
**Analyte:** PFOA 1
**Internal Standard:** MPFOA




| Sample | Level | Enabled | Acquisition Time | Exp. Conc. | Concentration | Response | RF | S/N | Accuracy |
|---|---|---|---|---|---|---|---|---|---|
| STD 1 | STD 1 | x | 2018/02/27 1:07:08 PM | 0.83 | 0.75 | 3976 | 0.4753 | 40 | 90.8 |
| STD 2 | STD 2 | x | 2018/02/27 1:12:04 PM | 1.70 | 1.82 | 7554 | 0.5136 | 83 | 106.8 |
| STD 3 | STD 3 | x | 2018/02/27 1:17:00 PM | 5.00 | 5.42 | 22992 | 0.4990 | 217 | 108.4 |
| STD 4 | STD 4 | x | 2018/02/27 1:21:56 PM | 12.50 | 12.14 | 56679 | 0.4419 | 541 | 97.1 |
| STD 5 | STD 5 | x | 2018/02/27 1:26:52 PM | 25.00 | 23.21 | 98798 | 0.4202 | 1124 | 92.8 |
| STD 6 | STD 6 | x | 2018/02/27 1:31:47 PM | 41.70 | 43.39 | 160551 | 0.4699 | 1484 | 104.1 |

**Batch Path** T:\lcms4\PFC\20180226\WS#5412188_B\QuantResults\PFC_Water_Low_180227_WS#5412188_B_EToxics.batch.bin
**Last Calib Update** 2018/02/28 8:26:12 AM
**Instrument:** LCMS04

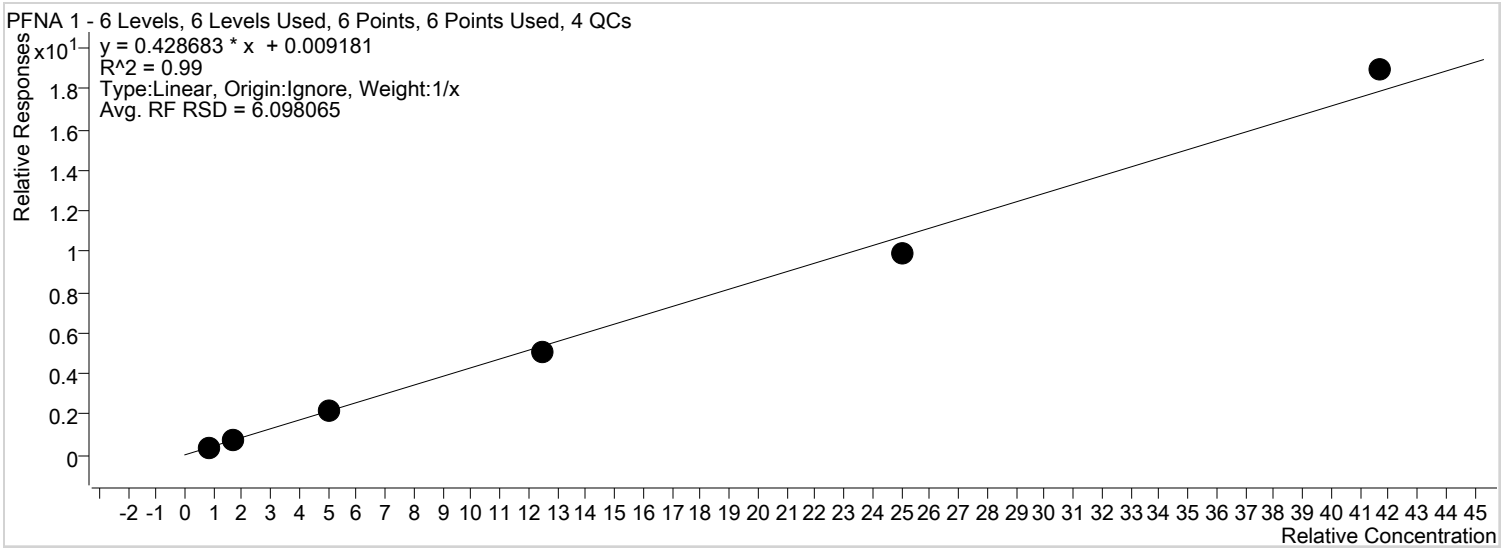
**Analyte:** PFOS 1
**Internal Standard:** MPFOS




| Sample | Level | Enabled | Acquisition Time | Exp. Conc. | Concentration | Response | RF | S/N | Accuracy |
|---|---|---|---|---|---|---|---|---|---|
| STD 1 | STD 1 | x | 2018/02/27 1:07:08 PM | 0.83 | 0.87 | 603 | 0.3479 | 127 | 104.6 |
| STD 2 | STD 2 | x | 2018/02/27 1:12:04 PM | 1.70 | 1.76 | 1204 | 0.3904 | 110 | 103.6 |
| STD 3 | STD 3 | x | 2018/02/27 1:17:00 PM | 5.00 | 4.96 | 3916 | 0.4010 | 207 | 99.1 |
| STD 4 | STD 4 | x | 2018/02/27 1:21:56 PM | 12.50 | 11.50 | 9967 | 0.3801 | 124 | 92.0 |
| STD 5 | STD 5 | x | 2018/02/27 1:26:52 PM | 25.00 | 24.02 | 17681 | 0.4002 | 164 | 96.1 |
| STD 6 | STD 6 | x | 2018/02/27 1:31:47 PM | 41.70 | 43.63 | 29013 | 0.4373 | 218 | 104.6 |

**Batch Path** T:\lcms4\PFC\20180226\WS#5412188_B\QuantResults\PFC_Water_Low_180227_WS#5412188_B_EToxics.batch.bin
**Last Calib Update** 2018/02/28 8:26:12 AM
**Instrument:** LCMS04

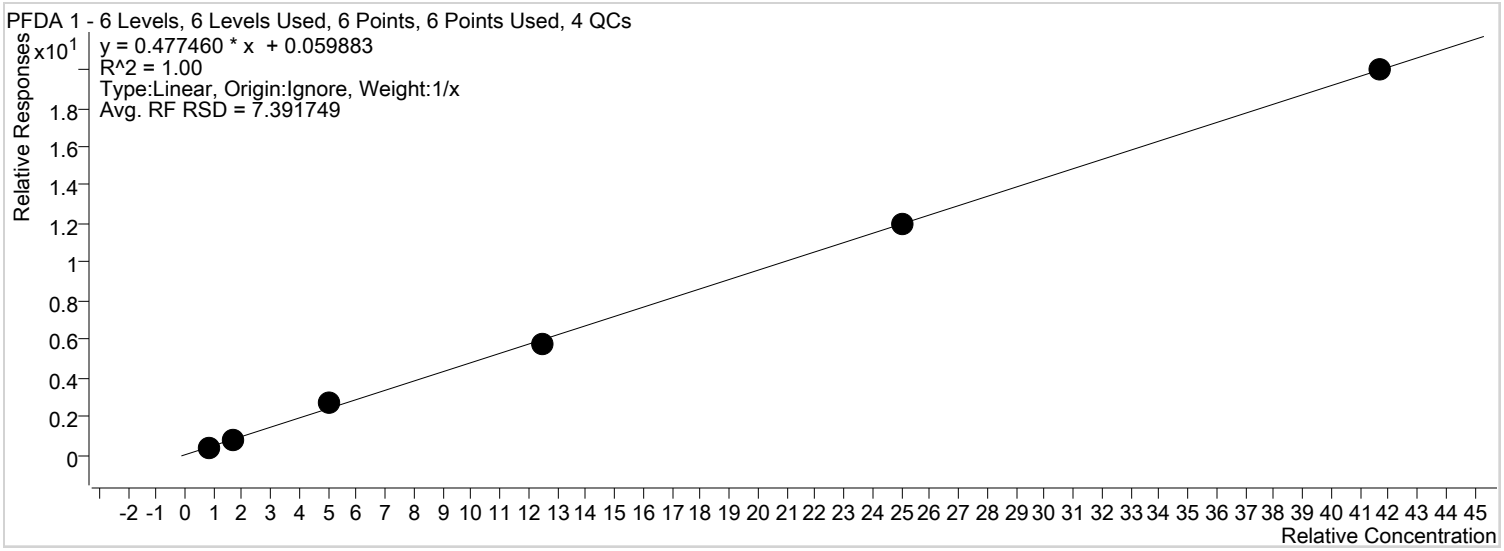
**Analyte:** PFNA 1
**Internal Standard:** MPFNA




| Sample | Level | Enabled | Acquisition Time | Exp. Conc. | Concentration | Response | RF | S/N | Accuracy |
|---|---|---|---|---|---|---|---|---|---|
| STD 1 | STD 1 | x | 2018/02/27 1:07:08 PM | 0.83 | 0.83 | 3631 | 0.4397 | 69 | 100.0 |
| STD 2 | STD 2 | x | 2018/02/27 1:12:04 PM | 1.70 | 1.78 | 6500 | 0.4537 | 153 | 104.6 |
| STD 3 | STD 3 | x | 2018/02/27 1:17:00 PM | 5.00 | 5.19 | 20382 | 0.4469 | 756 | 103.8 |
| STD 4 | STD 4 | x | 2018/02/27 1:21:56 PM | 12.50 | 11.66 | 49111 | 0.4005 | 708 | 93.3 |
| STD 5 | STD 5 | x | 2018/02/27 1:26:52 PM | 25.00 | 23.12 | 88434 | 0.3968 | 2448 | 92.5 |
| STD 6 | STD 6 | x | 2018/02/27 1:31:47 PM | 41.70 | 44.15 | 148789 | 0.4541 | 2808 | 105.9 |

**Batch Path** T:\lcms4\PFC\20180226\WS#5412188_B\QuantResults\PFC_Water_Low_180227_WS#5412188_B_EToxics.batch.bin
**Last Calib Update** 2018/02/28 8:26:12 AM
**Instrument:** LCMS04

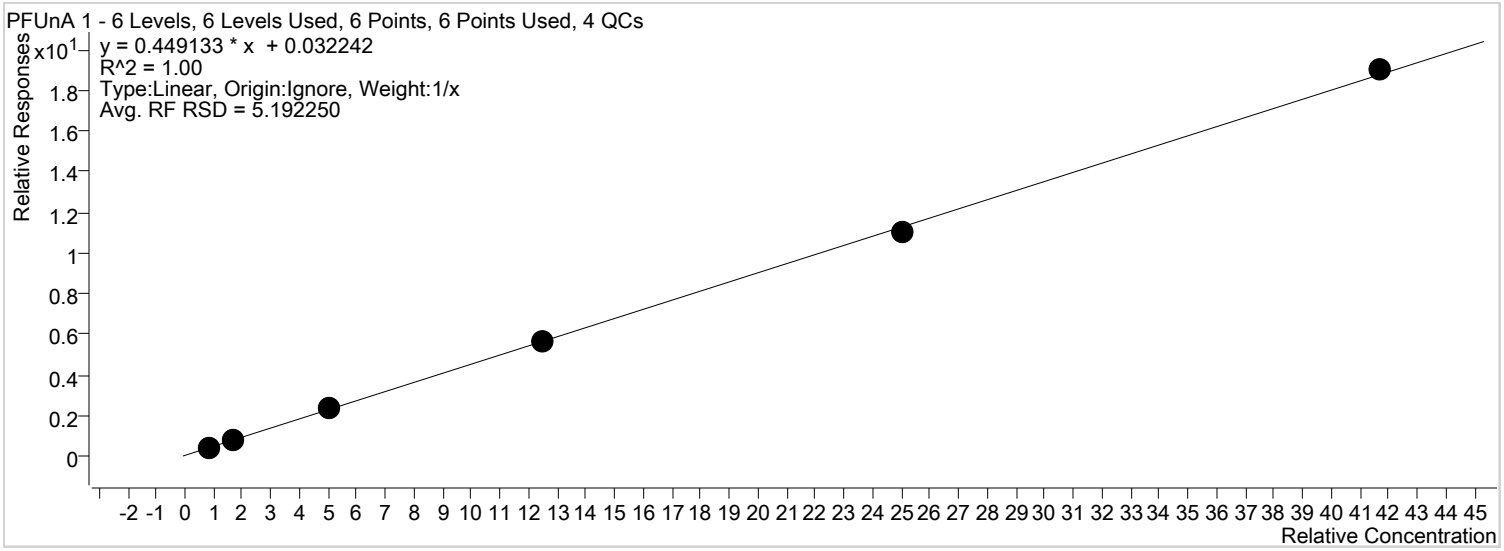
**Analyte:** PFDA 1
**Internal Standard:** MPFDA




| Sample | Level | Enabled | Acquisition Time | Exp. Conc. | Concentration | Response | RF | S/N | Accuracy |
|---|---|---|---|---|---|---|---|---|---|
| STD 1 | STD 1 | x | 2018/02/27 1:07:08 PM | 0.83 | 0.78 | 3863 | 0.5222 | 37 | 94.3 |
| STD 2 | STD 2 | x | 2018/02/27 1:12:04 PM | 1.70 | 1.62 | 6596 | 0.4903 | 77 | 95.3 |
| STD 3 | STD 3 | x | 2018/02/27 1:17:00 PM | 5.00 | 5.76 | 21934 | 0.5618 | 236 | 115.1 |
| STD 4 | STD 4 | x | 2018/02/27 1:21:56 PM | 12.50 | 11.96 | 53630 | 0.4616 | 581 | 95.7 |
| STD 5 | STD 5 | x | 2018/02/27 1:26:52 PM | 25.00 | 24.90 | 97888 | 0.4779 | 1007 | 99.6 |
| STD 6 | STD 6 | x | 2018/02/27 1:31:47 PM | 41.70 | 41.72 | 155246 | 0.4791 | 1459 | 100.0 |

**Batch Path** T:\lcms4\PFC\20180226\WS#5412188_B\QuantResults\PFC_Water_Low_180227_WS#5412188_B_EToxics.batch.bin
**Last Calib Update** 2018/02/28 8:26:12 AM
**Instrument:** LCMS04

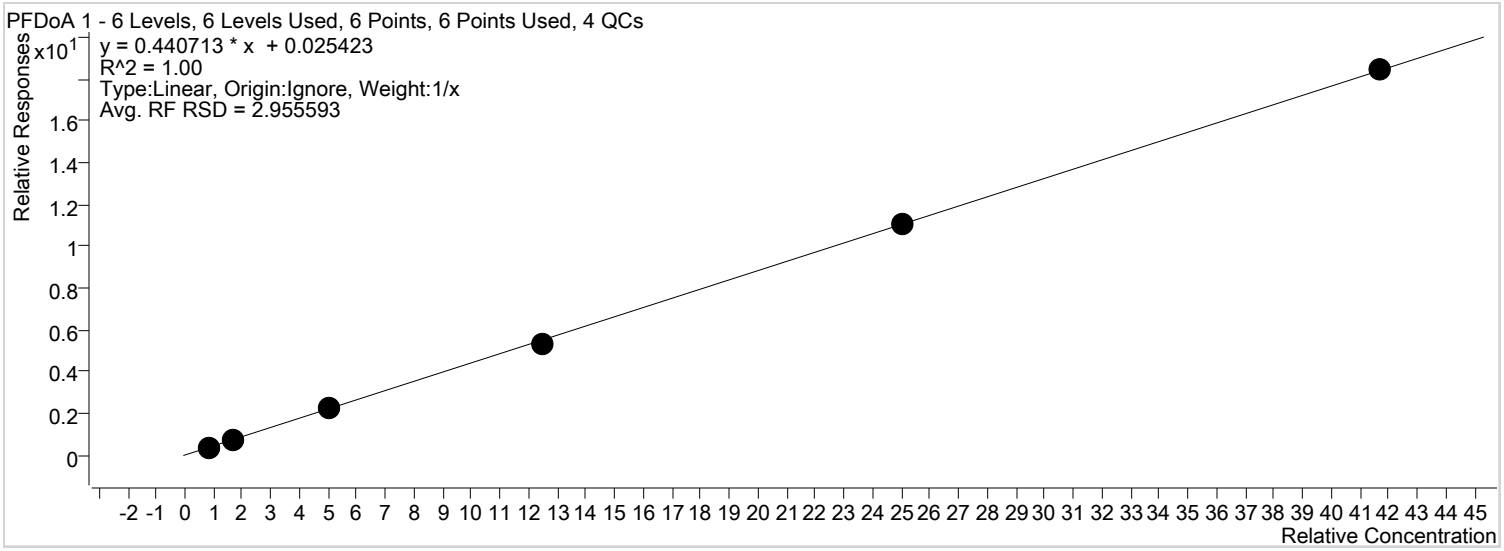
**Analyte:** PFUnA 1
**Internal Standard:** MPFUnA




| Sample | Level | Enabled | Acquisition Time | Exp. Conc. | Concentration | Response | RF | S/N | Accuracy |
|---|---|---|---|---|---|---|---|---|---|
| STD 1 | STD 1 | x | 2018/02/27 1:07:08 PM | 0.83 | 0.86 | 4147 | 0.5016 | 37 | 103.0 |
| STD 2 | STD 2 | x | 2018/02/27 1:12:04 PM | 1.70 | 1.60 | 6874 | 0.4421 | 56 | 94.2 |
| STD 3 | STD 3 | x | 2018/02/27 1:17:00 PM | 5.00 | 5.23 | 23349 | 0.4758 | 120 | 104.5 |
| STD 4 | STD 4 | x | 2018/02/27 1:21:56 PM | 12.50 | 12.43 | 58249 | 0.4491 | 145 | 99.4 |
| STD 5 | STD 5 | x | 2018/02/27 1:26:52 PM | 25.00 | 24.39 | 101812 | 0.4394 | 161 | 97.5 |
| STD 6 | STD 6 | x | 2018/02/27 1:31:47 PM | 41.70 | 42.23 | 164051 | 0.4556 | 177 | 101.3 |

**Batch Path** T:\lcms4\PFC\20180226\WS#5412188_B\QuantResults\PFC_Water_Low_180227_WS#5412188_B_EToxics.batch.bin
**Last Calib Update** 2018/02/28 8:26:12 AM
**Instrument:** LCMS04

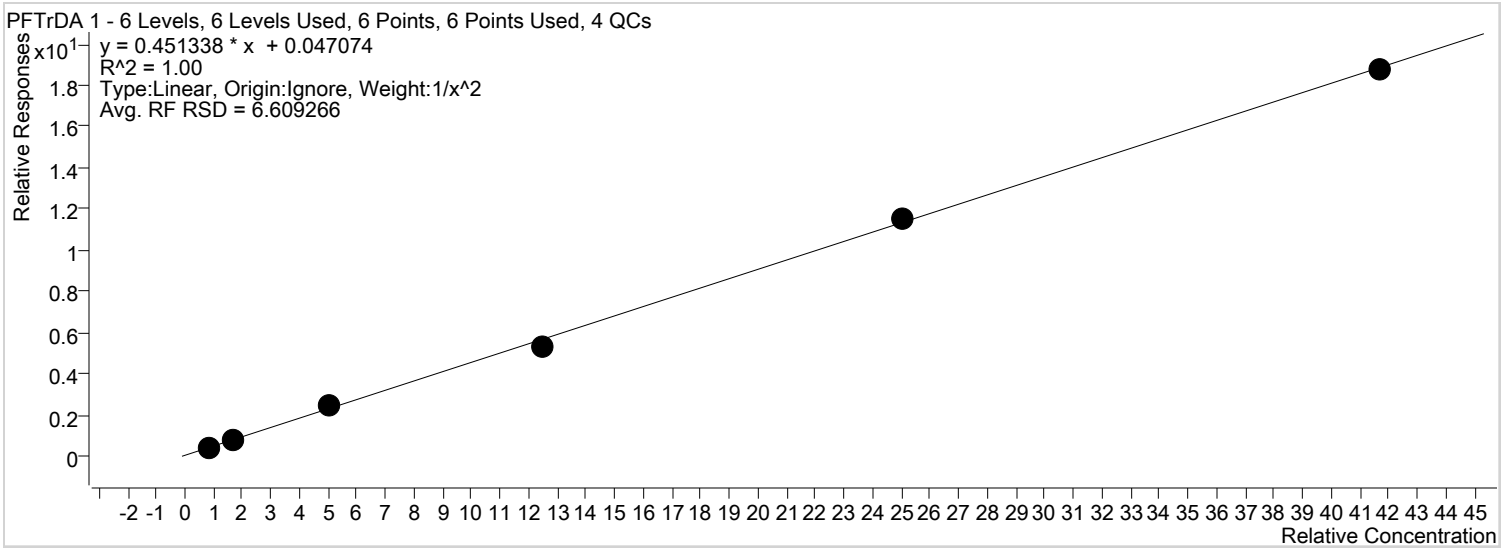
**Analyte:** PFDoA 1
**Internal Standard:** MPFDoA




| Sample | Level | Enabled | Acquisition Time | Exp. Conc. | Concentration | Response | RF | S/N | Accuracy |
|---|---|---|---|---|---|---|---|---|---|
| STD 1 | STD 1 | x | 2018/02/27 1:07:08 PM | 0.83 | 0.81 | 4902 | 0.4600 | 111 | 97.4 |
| STD 2 | STD 2 | x | 2018/02/27 1:12:04 PM | 1.70 | 1.74 | 8613 | 0.4658 | 254 | 102.3 |
| STD 3 | STD 3 | x | 2018/02/27 1:17:00 PM | 5.00 | 5.12 | 28482 | 0.4564 | 666 | 102.4 |
| STD 4 | STD 4 | x | 2018/02/27 1:21:56 PM | 12.50 | 12.14 | 71560 | 0.4300 | 1607 | 97.1 |
| STD 5 | STD 5 | x | 2018/02/27 1:26:52 PM | 25.00 | 25.15 | 128788 | 0.4443 | 1415 | 100.6 |
| STD 6 | STD 6 | x | 2018/02/27 1:31:47 PM | 41.70 | 41.78 | 209885 | 0.4421 | 2799 | 100.2 |

**Batch Path** T:\lcms4\PFC\20180226\WS#5412188_B\QuantResults\PFC_Water_Low_180227_WS#5412188_B_EToxics.batch.bin
**Last Calib Update** 2018/02/28 8:26:12 AM
**Instrument:** LCMS04

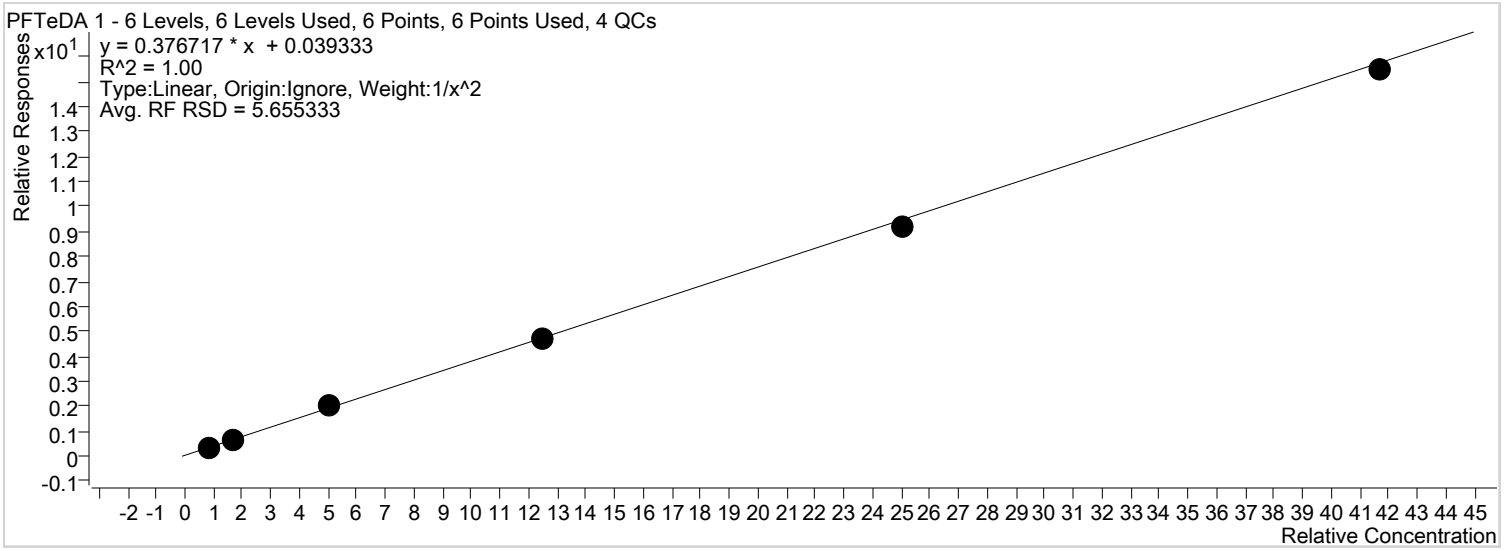
**Analyte:** PFTrDA 1
**Internal Standard:** MPFTeDA




| Sample | Level | Enabled | Acquisition Time | Exp. Conc. | Concentration | Response | RF | S/N | Accuracy |
|---|---|---|---|---|---|---|---|---|---|
| STD 1 | STD 1 | x | 2018/02/27 1:07:08 PM | 0.83 | 0.83 | 5678 | 0.5097 | 39 | 100.4 |
| STD 2 | STD 2 | x | 2018/02/27 1:12:04 PM | 1.70 | 1.66 | 9540 | 0.4676 | 58 | 97.5 |
| STD 3 | STD 3 | x | 2018/02/27 1:17:00 PM | 5.00 | 5.38 | 32849 | 0.4955 | 143 | 107.7 |
| STD 4 | STD 4 | x | 2018/02/27 1:21:56 PM | 12.50 | 11.64 | 78922 | 0.4241 | 172 | 93.1 |
| STD 5 | STD 5 | x | 2018/02/27 1:26:52 PM | 25.00 | 25.48 | 145384 | 0.4619 | 288 | 101.9 |
| STD 6 | STD 6 | x | 2018/02/27 1:31:47 PM | 41.70 | 41.45 | 231192 | 0.4498 | 266 | 99.4 |

**Batch Path** T:\lcms4\PFC\20180226\WS#5412188_B\QuantResults\PFC_Water_Low_180227_WS#5412188_B_EToxics.batch.bin
**Last Calib Update** 2018/02/28 8:26:12 AM
**Instrument:** LCMS04

**Analyte:** PFTeDA 1
**Internal Standard:** MPFTeDA




| Sample | Level | Enabled | Acquisition Time | Exp. Conc. | Concentration | Response | RF | S/N | Accuracy |
|---|---|---|---|---|---|---|---|---|---|
| STD 1 | STD 1 | x | 2018/02/27 1:07:08 PM | 0.83 | 0.82 | 4685 | 0.4205 | 13 | 99.1 |
| STD 2 | STD 2 | x | 2018/02/27 1:12:04 PM | 1.70 | 1.70 | 8172 | 0.4006 | 31 | 100.2 |
| STD 3 | STD 3 | x | 2018/02/27 1:17:00 PM | 5.00 | 5.32 | 27108 | 0.4089 | 105 | 106.5 |
| STD 4 | STD 4 | x | 2018/02/27 1:21:56 PM | 12.50 | 12.31 | 69591 | 0.3740 | 237 | 98.4 |
| STD 5 | STD 5 | x | 2018/02/27 1:26:52 PM | 25.00 | 24.41 | 116270 | 0.3694 | 208 | 97.6 |
| STD 6 | STD 6 | x | 2018/02/27 1:31:47 PM | 41.70 | 40.96 | 190672 | 0.3710 | 239 | 98.2 |

# By Compound Report

Agilent Technologies

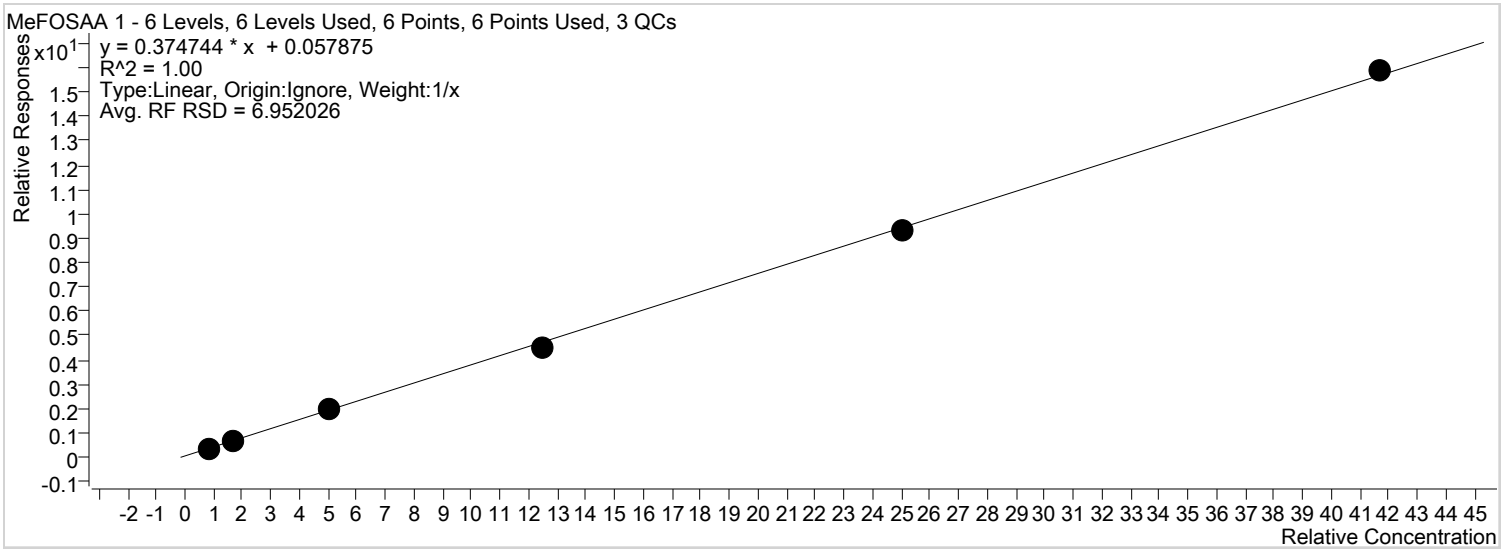
**Batch Path** T:\lcms4\PFC\20180226\WS#5412188_FOSAA\QuantResults\PFC_Water_Low_180226_WS#5412188_FOSAA_EToxics.batch.bin

**Last Calib Update** 2018/02/27 3:14:24 PM

**Instrument:** LCMS04

**Analyte:** MeFOSAA 1

**Internal Standard:** D3-MeFOSAA IS




| Sample | Level | Enabled | Acquisition Time | Exp. Conc. | Concentration | Response | RF | S/N | Accuracy |
|---|---|---|---|---|---|---|---|---|---|
| STD 1 | STD 1 | x | 2018/02/27 4:39:34 AM | 0.83 | 0.81 | 587 | 0.4344 | 35 | 97.3 |
| STD 2 | STD 2 | x | 2018/02/27 4:41:57 AM | 1.70 | 1.74 | 1047 | 0.4167 | 44 | 102.1 |
| STD 3 | STD 3 | x | 2018/02/27 4:44:22 AM | 5.00 | 5.23 | 3256 | 0.4035 | 89 | 104.6 |
| STD 4 | STD 4 | x | 2018/02/27 4:46:47 AM | 12.50 | 11.94 | 7771 | 0.3627 | 251 | 95.6 |
| STD 5 | STD 5 | x | 2018/02/27 4:49:12 AM | 25.00 | 24.81 | 14312 | 0.3742 | 302 | 99.2 |
| STD 6 | STD 6 | x | 2018/02/27 4:51:38 AM | 41.70 | 42.21 | 22748 | 0.3807 | 274 | 101.2 |

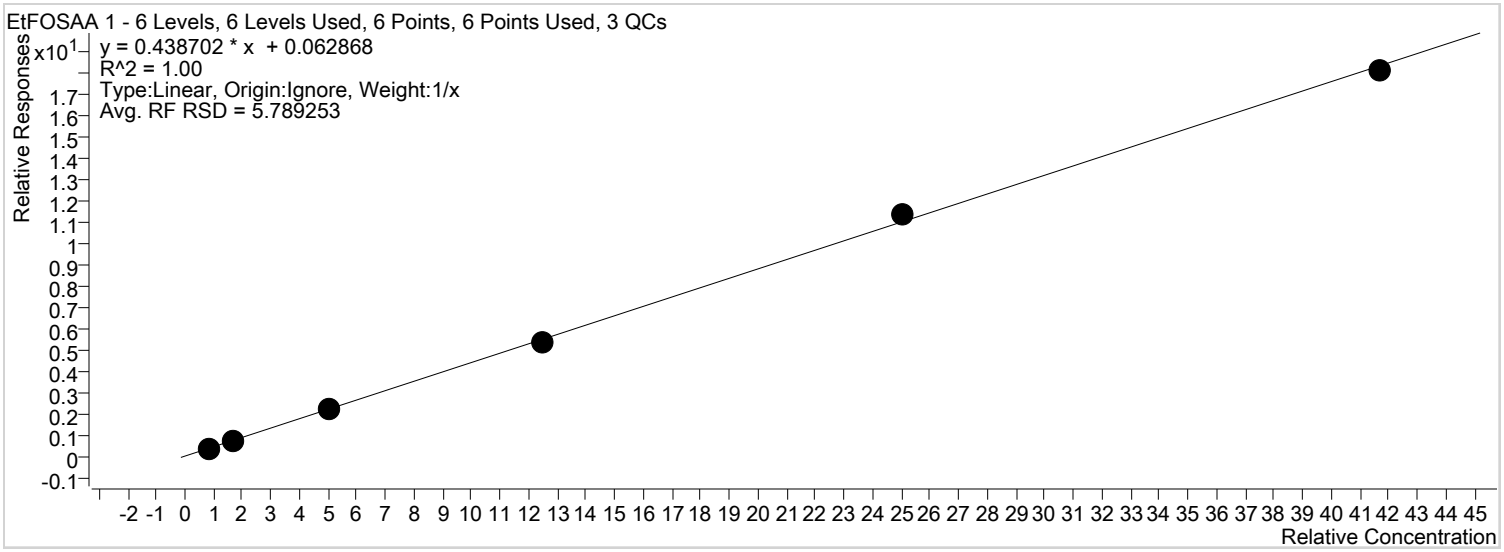
**Batch Path** T:\lcms4\PFC\20180226\WS#5412188_FOSAA\QuantResults\PFC_Water_Low_180226_WS#5412188_FOSAA_EToxics.batch.bin

**Last Calib Update** 2018/02/27 3:14:24 PM

**Instrument:** LCMS04

**Analyte:** EtFOSAA 1

**Internal Standard:** D5-EtFOSAA IS




| Sample | Level | Enabled | Acquisition Time | Exp. Conc. | Concentration | Response | RF | S/N | Accuracy |
|---|---|---|---|---|---|---|---|---|---|
| STD 1 | STD 1 | x | 2018/02/27 4:39:34 AM | 0.83 | 0.80 | 574 | 0.5011 | 46 | 97.0 |
| STD 2 | STD 2 | x | 2018/02/27 4:41:57 AM | 1.70 | 1.72 | 1053 | 0.4805 | 151 | 101.1 |
| STD 3 | STD 3 | x | 2018/02/27 4:44:22 AM | 5.00 | 5.14 | 3227 | 0.4640 | 336 | 102.9 |
| STD 4 | STD 4 | x | 2018/02/27 4:46:47 AM | 12.50 | 12.18 | 7645 | 0.4325 | 1017 | 97.4 |
| STD 5 | STD 5 | x | 2018/02/27 4:49:12 AM | 25.00 | 25.72 | 14182 | 0.4538 | 1502 | 102.9 |
| STD 6 | STD 6 | x | 2018/02/27 4:51:38 AM | 41.70 | 41.16 | 23104 | 0.4346 | 1714 | 98.7 |

# Quantitation Results

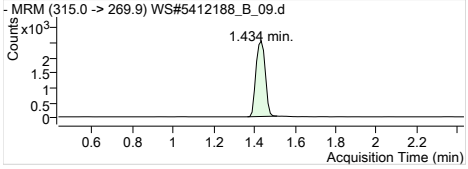
Agilent Technologies

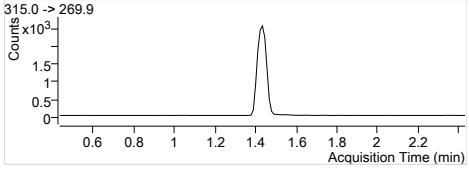
| | |
|---|---|
| **Batch Path** | T:\lcms4\PFC\20180226\WS#5412188_B\QuantResults\PFC_Water_Low_180227_WS#5412188_B_EToxics |

| | | | |
|---|---|---|---|
| **Sample Name** | **ICV** | **Instrument** | LCMS04 |
| **Data File** | WS#5412188_B_09.d | **Operator** | |
| **Sample Type** | QC | **Dilution** | 1 |
| **Acq. Method** | PFC_Water_Low.m | **Position** | P1-C8 |
| **Acq. Date** | 2018/02/27 1:41:40 PM | **Injection Volume** | Per Method |
| **Sample Annotation** | - | | |

| ISTD Compounds | Response | RT | Target conc. | | |
|---|---|---|---|---|---|
| MPFHxA | 7968 | 1.43 | 1 µg/L | | |
| MPFHxS | 1690 | 1.67 | 1 µg/L | | |
| MPFHpA | 8896 | 1.69 | 1 µg/L | | |
| MPFOA | 8910 | 1.87 | 1 µg/L | | |
| MPFOS | 1985 | 1.97 | 1 µg/L | | |
| MPFNA | 9070 | 2.01 | 1 µg/L | | |
| MPFDA | 8380 | 2.14 | 1 µg/L | | |
| MPFUnA | 9550 | 2.23 | 1 µg/L | | |
| MPFDoA | 12008 | 2.31 | 1 µg/L | | |
| MPFTeDA | 13403 | 2.46 | 1 µg/L | | |
| 13C6-PFHxA IS | 28962 | 1.43 | 1 µg/L | | |
| 13C9-PFDA IS | 35009 | 2.13 | 1 µg/L | | |

| Compound | Response | RT | Target Conc. | Calc. Conc. | Accuracy |
|---|---|---|---|---|---|
| PFBS 1 | 15344 | 1.09 | 20.80 | 20.09 µg/L | 96.57 |
| PFHxA 1 | 65605 | 1.43 | 20.80 | 19.91 µg/L | 95.70 |
| PFHxS 1 | 15620 | 1.67 | 20.80 | 20.66 µg/L | 99.31 |
| PFHpA 1 | 82360 | 1.69 | 20.80 | 20.42 µg/L | 98.16 |
| PFOA 1 | 88984 | 1.87 | 20.80 | 22.05 µg/L | 106.03 |
| PFOS 1 | 14903 | 1.96 | 20.80 | 18.07 µg/L | 86.86 |
| PFNA 1 | 78299 | 2.01 | 20.80 | 20.12 µg/L | 96.71 |
| PFDA 1 | 86032 | 2.14 | 20.80 | 21.38 µg/L | 102.77 |
| PFUnA 1 | 88547 | 2.23 | 20.80 | 20.57 µg/L | 98.91 |
| PFDoA 1 | 110877 | 2.31 | 20.80 | 20.89 µg/L | 100.45 |
| PFTrDA 1 | 127853 | 2.39 | 20.80 | 21.03 µg/L | 101.11 |
| PFTeDA 1 | 103766 | 2.46 | 20.80 | 20.45 µg/L | 98.30 |
| 13C2-PFHxA | 7968 | 1.43 | 100.00 | 110.68 µg/L | 110.68 |
| 18O2-PFHxS | 1690 | 1.67 | 100.00 | 112.37 µg/L | 112.37 |
| 13C4-PFHpA | 8896 | 1.69 | 100.00 | 106.69 µg/L | 106.69 |
| 13C4-PFOA | 8910 | 1.87 | 100.00 | 103.59 µg/L | 103.59 |
| 13C4-PFOS | 1985 | 1.97 | 100.00 | 113.99 µg/L | 113.99 |
| 13C5-PFNA | 9070 | 2.01 | 100.00 | 108.87 µg/L | 108.87 |
| 13C2-PFDA | 8359 | 2.14 | 100.00 | 108.41 µg/L | 108.41 |
| 13C2-PFUnA | 9550 | 2.23 | 100.00 | 106.50 µg/L | 106.50 |
| 13C2-PFDoA | 12008 | 2.31 | 100.00 | 105.70 µg/L | 105.70 |
| 13C2-PFTeDA | 13622 | 2.46 | 100.00 | 109.08 µg/L | 109.08 |
| 13C6-PFHxA | 28962 | 1.43 | 100.00 | 92.44 µg/L | 92.44 |
| 13C9-PFDA | 35009 | 2.13 | 100.00 | 93.95 µg/L | 93.95 |




| | |
|---|---|
| **MPFHxA** | Internal Standard |
| RT (Exp. RT): | 1.434 (1.434) |
| Concentration: | 1 µg/L |
| Sample type: | QC |

# Quantitation Results

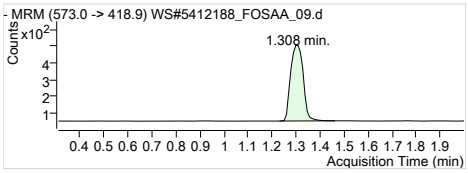
Agilent Technologies

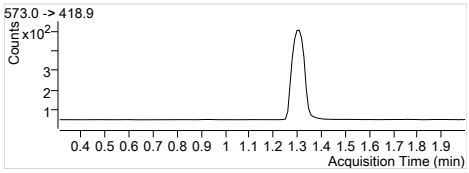
| | |
|---|---|
| **Batch Path** | T:\lcms4\PFC\20180226\WS#5412188_FOSAA\QuantResults\PFC_Water_Low_180226_WS#5412188_FOSAA_ETOxics |

| | | | |
|---|---|---|---|
| **Sample Name** | **ICV** | **Instrument** | LCMS04 |
| **Data File** | WS#5412188_FOSAA_09.d | **Operator** | |
| **Sample Type** | QC | **Dilution** | 1 |
| **Acq. Method** | PFC_Water_Low_FOSAA.m | **Position** | P1-C8 |
| **Acq. Date** | 2018/02/27 4:56:29 AM | **Injection Volume** | Per Method |
| **Sample Annotation** | - | | |

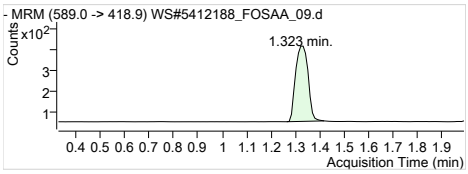
| ISTD Compounds | Response | RT | Target conc. | | |
|---|---|---|---|---|---|
| D3-MeFOSAA IS | 1669 | 1.31 | 1 µg/L | | |
| D5-EtFOSAA IS | 1323 | 1.32 | 1 µg/L | | |
| 13C9-PFDA IS | 24764 | 0.89 | 1 µg/L | | |

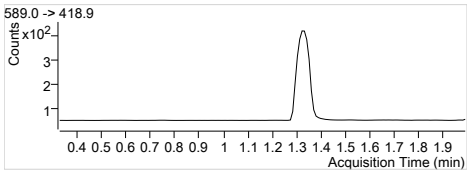
| Compound | Response | RT | Target Conc. | Calc. Conc. | Accuracy |
|---|---|---|---|---|---|
| MeFOSAA 1 | 12173 | 1.30 | 20.80 | 19.31 µg/L | 92.83 |
| EtFOSAA 1 | 12549 | 1.32 | 20.80 | 21.48 µg/L | 103.26 |
| D3-MeFOSAA | 1664 | 1.31 | 100.00 | 110.47 µg/L | 110.47 |
| D5-EtFOSAA | 1340 | 1.32 | 100.00 | 104.48 µg/L | 104.48 |
| 13C9-PFDA | 24262 | 0.89 | 100.00 | 95.42 µg/L | 95.42 |



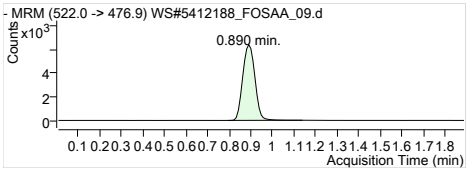



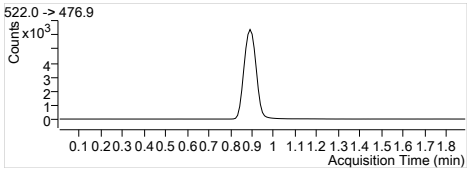

**D3-MeFOSAA IS** Internal Standard
RT (Exp. RT): 1.308 (1.308)
Concentration: 1 µg/L
Sample type: QC



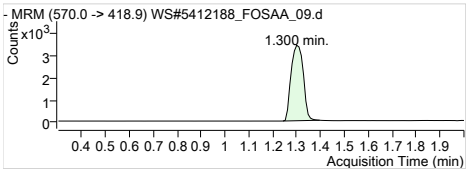



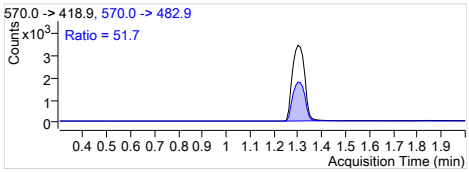

**D5-EtFOSAA IS** Internal Standard
RT (Exp. RT): 1.323 (1.323)
Concentration: 1 µg/L
Sample type: QC



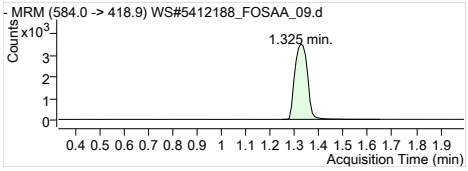



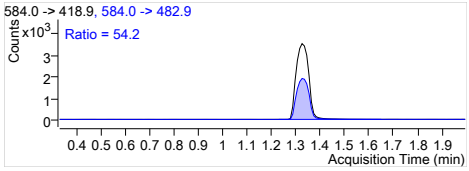

**13C9-PFDA IS** Internal Standard
RT (Exp. RT): 0.890 (0.890)
Concentration: 1 µg/L
Sample type: QC



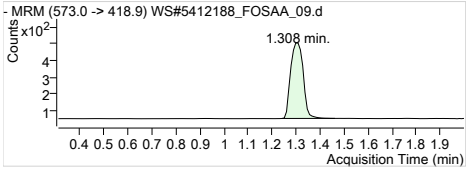



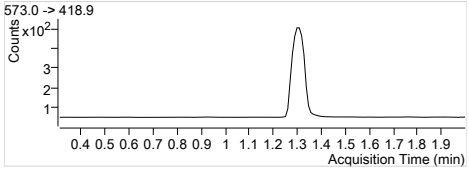

**MeFOSAA 1** 570.0 -> 418.9
RT (Exp. RT): 1.300 (1.300)
Calc. conc. 19.31 µg/L
Area ratio: 7.29359
Sample type: QC




**EtFOSAA 1** 584.0 -> 418.9
RT (Exp. RT): 1.325 (1.325)
Calc. conc. 21.48 µg/L
Area ratio: 9.48526
Sample type: QC



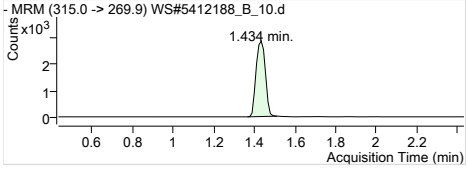

**D3-MeFOSAA** 573.0 -> 418.9
RT (Exp. RT): 1.308 (1.308)
Calc. conc. 110.47 µg/L
Area ratio: 0.06719
Sample type: QC

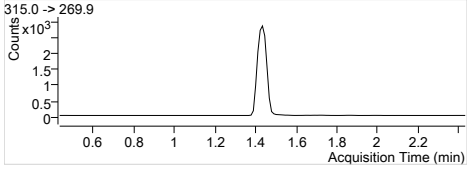
| | |
|---|---|
| **Batch Path** | T:\lcms4\PFC\20180226\WS#5412188_B\QuantResults\PFC_Water_Low_180227_WS#5412188_B_EToxics |

| | | | |
|---|---|---|---|
| **Sample Name** | **ISC** | **Instrument** | LCMS04 |
| **Data File** | WS#5412188_B_10.d | **Operator** | |
| **Sample Type** | CC | **Dilution** | 1 |
| **Acq. Method** | PFC_Water_Low.m | **Position** | P1-C1 |
| **Acq. Date** | 2018/02/27 1:57:12 PM | **Injection Volume** | Per Method |
| **Sample Annotation** | - | | |

| ISTD Compounds | Response | RT | Target conc. | | |
|---|---|---|---|---|---|
| MPFHxA | 8929 | 1.43 | 1 µg/L | | |
| MPFHxS | 1908 | 1.67 | 1 µg/L | | |
| MPFHpA | 10151 | 1.69 | 1 µg/L | | |
| MPFOA | 10194 | 1.87 | 1 µg/L | | |
| MPFOS | 2093 | 1.97 | 1 µg/L | | |
| MPFNA | 10139 | 2.01 | 1 µg/L | | |
| MPFDA | 8777 | 2.14 | 1 µg/L | | |
| MPFUnA | 9933 | 2.23 | 1 µg/L | | |
| MPFDoA | 13128 | 2.31 | 1 µg/L | | |
| MPFTeDA | 14025 | 2.46 | 1 µg/L | | |
| 13C6-PFHxA IS | 36178 | 1.43 | 1 µg/L | | |
| 13C9-PFDA IS | 42855 | 2.13 | 1 µg/L | | |

| Compound | Response | RT | Target Conc. | Calc. Conc. | Accuracy |
|---|---|---|---|---|---|
| PFBS 1 | 789 | 1.09 | 0.83 | 0.74 µg/L | 88.72 |
| PFHxA 1 | 3280 | 1.43 | 0.83 | 0.78 µg/L | 93.86 |
| PFHxS 1 | 767 | 1.67 | 0.83 | 0.75 µg/L | 90.29 |
| PFHpA 1 | 4087 | 1.69 | 0.83 | 0.84 µg/L | 101.68 |
| PFOA 1 | 4474 | 1.87 | 0.83 | 0.85 µg/L | 102.65 |
| PFOS 1 | 652 | 1.96 | 0.83 | 0.92 µg/L | 111.10 |
| PFNA 1 | 3981 | 2.01 | 0.83 | 0.89 µg/L | 107.77 |
| PFDA 1 | 4170 | 2.14 | 0.83 | 0.87 µg/L | 104.78 |
| PFUnA 1 | 4746 | 2.23 | 0.83 | 0.99 µg/L | 119.52 |
| PFDoA 1 | 5922 | 2.31 | 0.83 | 0.97 µg/L | 116.37 |
| PFTrDA 1 | 6418 | 2.39 | 0.83 | 0.91 µg/L | 109.59 |
| PFTeDA 1 | 5423 | 2.46 | 0.83 | 0.92 µg/L | 111.08 |
| 13C2-PFHxA | 8929 | 1.43 | 100.00 | 99.29 µg/L | 99.29 |
| 18O2-PFHxS | 1908 | 1.67 | 100.00 | 101.56 µg/L | 101.56 |
| 13C4-PFHpA | 10151 | 1.69 | 100.00 | 97.46 µg/L | 97.46 |
| 13C4-PFOA | 10194 | 1.87 | 100.00 | 94.88 µg/L | 94.88 |
| 13C4-PFOS | 2093 | 1.97 | 100.00 | 96.22 µg/L | 96.22 |
| 13C5-PFNA | 10139 | 2.01 | 100.00 | 97.43 µg/L | 97.43 |
| 13C2-PFDA | 8666 | 2.14 | 100.00 | 91.81 µg/L | 91.81 |
| 13C2-PFUnA | 9933 | 2.23 | 100.00 | 90.49 µg/L | 90.49 |
| 13C2-PFDoA | 13128 | 2.31 | 100.00 | 94.41 µg/L | 94.41 |
| 13C2-PFTeDA | 14249 | 2.46 | 100.00 | 93.21 µg/L | 93.21 |
| 13C6-PFHxA | 36178 | 1.43 | 100.00 | 115.47 µg/L | 115.47 |
| 13C9-PFDA | 42855 | 2.13 | 100.00 | 115.00 µg/L | 115.00 |



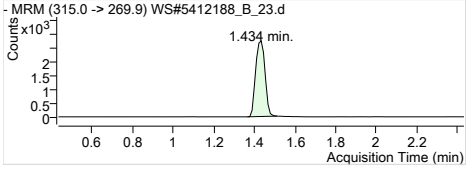

| | |
|---|---|
| **MPFHxA** | Internal Standard |
| RT (Exp. RT): | 1.434 (1.434) |
| Concentration: | 1 µg/L |
| Sample type: | CC |

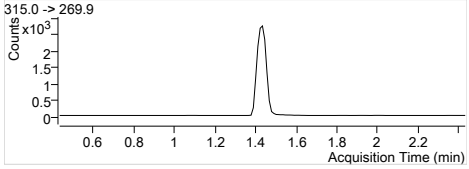
| | |
|---|---|
| **Batch Path** | T:\lcms4\PFC\20180226\WS#5412188_B\QuantResults\PFC_Water_Low_180227_WS#5412188_B_EToxics |

| | | | |
|---|---|---|---|
| **Sample Name** | **CCV** | **Instrument** | LCMS04 |
| **Data File** | WS#5412188_B_23.d | **Operator** | |
| **Sample Type** | CC | **Dilution** | 1 |
| **Acq. Method** | PFC_Water_Low.m | **Position** | P1-C4 |
| **Acq. Date** | 2018/02/27 3:01:20 PM | **Injection Volume** | Per Method |
| **Sample Annotation** | - | | |

| ISTD Compounds | Response | RT | Target conc. | | |
|---|---|---|---|---|---|
| MPFHxA | 8700 | 1.43 | 1 µg/L | | |
| MPFHxS | 1760 | 1.67 | 1 µg/L | | |
| MPFHpA | 10180 | 1.69 | 1 µg/L | | |
| MPFOA | 9786 | 1.87 | 1 µg/L | | |
| MPFOS | 2086 | 1.97 | 1 µg/L | | |
| MPFNA | 9585 | 2.01 | 1 µg/L | | |
| MPFDA | 8718 | 2.14 | 1 µg/L | | |
| MPFUnA | 10179 | 2.23 | 1 µg/L | | |
| MPFDoA | 13248 | 2.31 | 1 µg/L | | |
| MPFTeDA | 14843 | 2.46 | 1 µg/L | | |
| 13C6-PFHxA IS | 33127 | 1.43 | 1 µg/L | | |
| 13C9-PFDA IS | 37914 | 2.13 | 1 µg/L | | |

| Compound | Response | RT | Target Conc. | Calc. Conc. | Accuracy |
|---|---|---|---|---|---|
| PFBS 1 | 10312 | 1.09 | 12.50 | 12.90 µg/L | 103.16 |
| PFHxA 1 | 41531 | 1.43 | 12.50 | 11.49 µg/L | 91.95 |
| PFHxS 1 | 10412 | 1.67 | 12.50 | 13.17 µg/L | 105.32 |
| PFHpA 1 | 51169 | 1.69 | 12.50 | 11.06 µg/L | 88.51 |
| PFOA 1 | 58936 | 1.87 | 12.50 | 13.25 µg/L | 106.01 |
| PFOS 1 | 9603 | 1.96 | 12.50 | 11.15 µg/L | 89.18 |
| PFNA 1 | 48828 | 2.01 | 12.50 | 11.86 µg/L | 94.90 |
| PFDA 1 | 53163 | 2.14 | 12.50 | 12.65 µg/L | 101.17 |
| PFUnA 1 | 57221 | 2.23 | 12.50 | 12.44 µg/L | 99.56 |
| PFDoA 1 | 70130 | 2.31 | 12.50 | 11.95 µg/L | 95.63 |
| PFTrDA 1 | 77616 | 2.39 | 12.50 | 11.48 µg/L | 91.85 |
| PFTeDA 1 | 68059 | 2.46 | 12.50 | 12.07 µg/L | 96.54 |
| 13C2-PFHxA | 8700 | 1.43 | 100.00 | 105.66 µg/L | 105.66 |
| 18O2-PFHxS | 1760 | 1.67 | 100.00 | 102.31 µg/L | 102.31 |
| 13C4-PFHpA | 10180 | 1.69 | 100.00 | 106.73 µg/L | 106.73 |
| 13C4-PFOA | 9786 | 1.87 | 100.00 | 99.47 µg/L | 99.47 |
| 13C4-PFOS | 2086 | 1.97 | 100.00 | 104.73 µg/L | 104.73 |
| 13C5-PFNA | 9584 | 2.01 | 100.00 | 100.58 µg/L | 100.58 |
| 13C2-PFDA | 8601 | 2.14 | 100.00 | 103.00 µg/L | 103.00 |
| 13C2-PFUnA | 10179 | 2.23 | 100.00 | 104.82 µg/L | 104.82 |
| 13C2-PFDoA | 13248 | 2.31 | 100.00 | 107.68 µg/L | 107.68 |
| 13C2-PFTeDA | 15168 | 2.46 | 100.00 | 112.15 µg/L | 112.15 |
| 13C6-PFHxA | 33127 | 1.43 | 100.00 | 105.73 µg/L | 105.73 |
| 13C9-PFDA | 37914 | 2.13 | 100.00 | 101.74 µg/L | 101.74 |



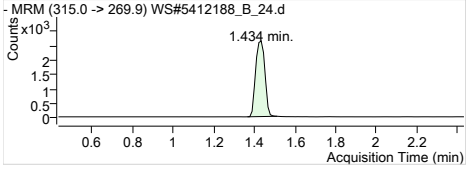

| | |
|---|---|
| **MPFHxA** | Internal Standard |
| RT (Exp. RT): | 1.434 (1.434) |
| Concentration: | 1 µg/L |
| Sample type: | CC |

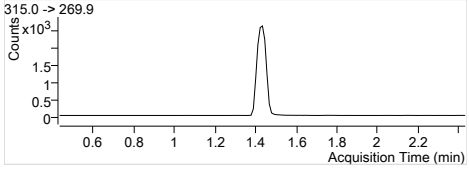
| | |
|---|---|
| **Batch Path** | T:\lcms4\PFC\20180226\WS#5412188_B\QuantResults\PFC_Water_Low_180227_WS#5412188_B_EToxics |

| | | | |
|---|---|---|---|
| **Sample Name** | **ISC** | **Instrument** | LCMS04 |
| **Data File** | WS#5412188_B_24.d | **Operator** | |
| **Sample Type** | CC | **Dilution** | 1 |
| **Acq. Method** | PFC_Water_Low.m | **Position** | P1-C1 |
| **Acq. Date** | 2018/02/27 3:52:41 PM | **Injection Volume** | Per Method |
| **Sample Annotation** | - | | |

| ISTD Compounds | Response | RT | Target conc. | | |
|---|---|---|---|---|---|
| MPFHxA | 8254 | 1.43 | 1 µg/L | | |
| MPFHxS | 1864 | 1.67 | 1 µg/L | | |
| MPFHpA | 9834 | 1.69 | 1 µg/L | | |
| MPFOA | 10189 | 1.87 | 1 µg/L | | |
| MPFOS | 2173 | 1.97 | 1 µg/L | | |
| MPFNA | 9608 | 2.01 | 1 µg/L | | |
| MPFDA | 8465 | 2.14 | 1 µg/L | | |
| MPFUnA | 9742 | 2.23 | 1 µg/L | | |
| MPFDoA | 12830 | 2.31 | 1 µg/L | | |
| MPFTeDA | 13995 | 2.46 | 1 µg/L | | |
| 13C6-PFHxA IS | 37375 | 1.43 | 1 µg/L | | |
| 13C9-PFDA IS | 42905 | 2.13 | 1 µg/L | | |

| Compound | Response | RT | Target Conc. | Calc. Conc. | Accuracy |
|---|---|---|---|---|---|
| PFBS 1 | 691 | 1.08 | 0.83 | 0.64 µg/L | 77.21 |
| PFHxA 1 | 3077 | 1.43 | 0.83 | 0.79 µg/L | 95.46 |
| PFHxS 1 | 830 | 1.67 | 0.83 | 0.85 µg/L | 102.03 |
| PFHpA 1 | 3615 | 1.69 | 0.83 | 0.77 µg/L | 92.35 |
| PFOA 1 | 4858 | 1.87 | 0.83 | 0.94 µg/L | 112.79 |
| PFOS 1 | 818 | 1.96 | 0.83 | 1.08 µg/L | 129.73 |
| PFNA 1 | 4057 | 2.01 | 0.83 | 0.96 µg/L | 116.09 |
| PFDA 1 | 4125 | 2.14 | 0.83 | 0.90 µg/L | 107.85 |
| PFUnA 1 | 4267 | 2.22 | 0.83 | 0.90 µg/L | 108.85 |
| PFDoA 1 | 5428 | 2.31 | 0.83 | 0.90 µg/L | 108.71 |
| PFTrDA 1 | 5941 | 2.39 | 0.83 | 0.84 µg/L | 100.75 |
| PFTeDA 1 | 4744 | 2.46 | 0.83 | 0.80 µg/L | 95.83 |
| 13C2-PFHxA | 8254 | 1.43 | 100.00 | 88.85 µg/L | 88.85 |
| 18O2-PFHxS | 1864 | 1.67 | 100.00 | 96.04 µg/L | 96.04 |
| 13C4-PFHpA | 9834 | 1.69 | 100.00 | 91.39 µg/L | 91.39 |
| 13C4-PFOA | 10189 | 1.87 | 100.00 | 91.79 µg/L | 91.79 |
| 13C4-PFOS | 2173 | 1.97 | 100.00 | 96.70 µg/L | 96.70 |
| 13C5-PFNA | 9609 | 2.01 | 100.00 | 89.38 µg/L | 89.38 |
| 13C2-PFDA | 8338 | 2.14 | 100.00 | 88.24 µg/L | 88.24 |
| 13C2-PFUnA | 9742 | 2.23 | 100.00 | 88.65 µg/L | 88.65 |
| 13C2-PFDoA | 12830 | 2.31 | 100.00 | 92.16 µg/L | 92.16 |
| 13C2-PFTeDA | 14172 | 2.46 | 100.00 | 92.60 µg/L | 92.60 |
| 13C6-PFHxA | 37375 | 1.43 | 100.00 | 119.29 µg/L | 119.29 |
| 13C9-PFDA | 42905 | 2.13 | 100.00 | 115.14 µg/L | 115.14 |



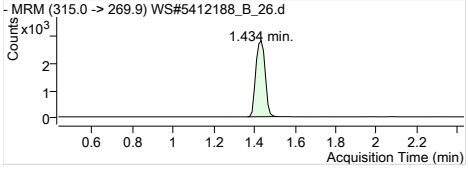

| | |
|---|---|
| **MPFHxA** | Internal Standard |
| RT (Exp. RT): | 1.434 (1.434) |
| Concentration: | 1 µg/L |
| Sample type: | CC |

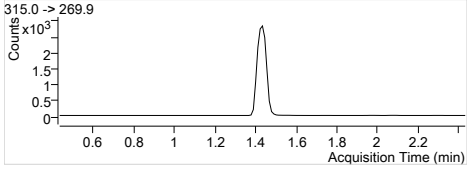
| | |
|---|---|
| **Batch Path** | T:\lcms4\PFC\20180226\WS#5412188_B\QuantResults\PFC_Water_Low_180227_WS#5412188_B_EToxics |

| | | | |
|---|---|---|---|
| **Sample Name** | **CCV** | **Instrument** | LCMS04 |
| **Data File** | WS#5412188_B_26.d | **Operator** | |
| **Sample Type** | CC | **Dilution** | 1 |
| **Acq. Method** | PFC_Water_Low.m | **Position** | P1-C4 |
| **Acq. Date** | 2018/02/27 4:05:42 PM | **Injection Volume** | Per Method |
| **Sample Annotation** | - | | |

| ISTD Compounds | Response | RT | Target conc. | | |
|---|---|---|---|---|---|
| MPFHxA | 8942 | 1.43 | 1 µg/L | | |
| MPFHxS | 1636 | 1.67 | 1 µg/L | | |
| MPFHpA | 10206 | 1.69 | 1 µg/L | | |
| MPFOA | 9905 | 1.87 | 1 µg/L | | |
| MPFOS | 2269 | 1.97 | 1 µg/L | | |
| MPFNA | 10486 | 2.01 | 1 µg/L | | |
| MPFDA | 8884 | 2.14 | 1 µg/L | | |
| MPFUnA | 10456 | 2.23 | 1 µg/L | | |
| MPFDoA | 13296 | 2.31 | 1 µg/L | | |
| MPFTeDA | 14837 | 2.46 | 1 µg/L | | |
| 13C6-PFHxA IS | 33996 | 1.43 | 1 µg/L | | |
| 13C9-PFDA IS | 38214 | 2.13 | 1 µg/L | | |

| Compound | Response | RT | Target Conc. | Calc. Conc. | Accuracy |
|---|---|---|---|---|---|
| PFBS 1 | 10354 | 1.09 | 12.50 | 13.94 µg/L | 111.55 |
| PFHxA 1 | 42197 | 1.43 | 12.50 | 11.36 µg/L | 90.88 |
| PFHxS 1 | 10319 | 1.67 | 12.50 | 14.05 µg/L | 112.37 |
| PFHpA 1 | 52411 | 1.69 | 12.50 | 11.30 µg/L | 90.44 |
| PFOA 1 | 58092 | 1.87 | 12.50 | 12.90 µg/L | 103.21 |
| PFOS 1 | 9998 | 1.96 | 12.50 | 10.68 µg/L | 85.42 |
| PFNA 1 | 50160 | 2.01 | 12.50 | 11.14 µg/L | 89.10 |
| PFDA 1 | 54548 | 2.14 | 12.50 | 12.73 µg/L | 101.87 |
| PFUnA 1 | 57154 | 2.23 | 12.50 | 12.10 µg/L | 96.79 |
| PFDoA 1 | 69935 | 2.31 | 12.50 | 11.88 µg/L | 95.02 |
| PFTrDA 1 | 77938 | 2.39 | 12.50 | 11.53 µg/L | 92.27 |
| PFTeDA 1 | 67793 | 2.46 | 12.50 | 12.02 µg/L | 96.20 |
| 13C2-PFHxA | 8942 | 1.43 | 100.00 | 105.82 µg/L | 105.82 |
| 18O2-PFHxS | 1636 | 1.67 | 100.00 | 92.67 µg/L | 92.67 |
| 13C4-PFHpA | 10206 | 1.69 | 100.00 | 104.27 µg/L | 104.27 |
| 13C4-PFOA | 9905 | 1.87 | 100.00 | 98.10 µg/L | 98.10 |
| 13C4-PFOS | 2269 | 1.97 | 100.00 | 111.00 µg/L | 111.00 |
| 13C5-PFNA | 10487 | 2.01 | 100.00 | 107.24 µg/L | 107.24 |
| 13C2-PFDA | 8752 | 2.14 | 100.00 | 103.99 µg/L | 103.99 |
| 13C2-PFUnA | 10456 | 2.23 | 100.00 | 106.83 µg/L | 106.83 |
| 13C2-PFDoA | 13296 | 2.31 | 100.00 | 107.23 µg/L | 107.23 |
| 13C2-PFTeDA | 14945 | 2.46 | 100.00 | 109.63 µg/L | 109.63 |
| 13C6-PFHxA | 33996 | 1.43 | 100.00 | 108.50 µg/L | 108.50 |
| 13C9-PFDA | 38214 | 2.13 | 100.00 | 102.55 µg/L | 102.55 |




| | |
|---|---|
| **MPFHxA** | Internal Standard |
| RT (Exp. RT): | 1.434 (1.434) |
| Concentration: | 1 µg/L |
| Sample type: | CC |

# Quantitation Results

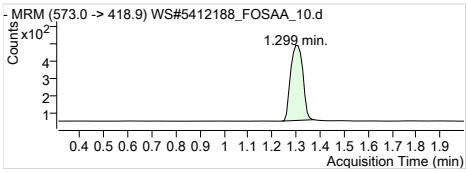
Agilent Technologies

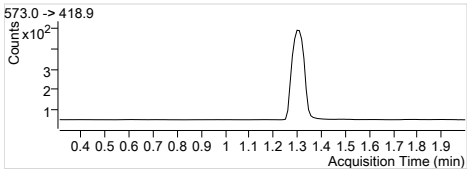
| | |
|---|---|
| **Batch Path** | T:\lcms4\PFC\20180226\WS#5412188_FOSAA\QuantResults\PFC_Water_Low_180226_WS#5412188_FOSAA_ETOxics |

| | | | |
|---|---|---|---|
| **Sample Name** | **ISC** | **Instrument** | LCMS04 |
| **Data File** | WS#5412188_FOSAA_10.d | **Operator** | |
| **Sample Type** | CC | **Dilution** | 1 |
| **Acq. Method** | PFC_Water_Low_FOSAA.m | **Position** | P1-C1 |
| **Acq. Date** | 2018/02/27 4:58:53 AM | **Injection Volume** | Per Method |
| **Sample Annotation** | - | | |

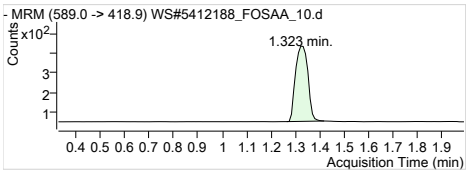
| ISTD Compounds | Response | RT | Target conc. | | |
|---|---|---|---|---|---|
| D3-MeFOSAA IS | 1568 | 1.30 | 1 µg/L | | |
| D5-EtFOSAA IS | 1373 | 1.32 | 1 µg/L | | |
| 13C9-PFDA IS | 28516 | 0.89 | 1 µg/L | | |

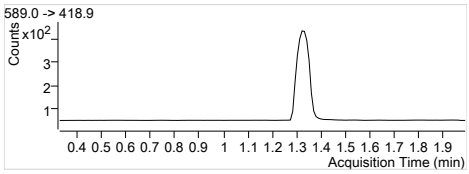
| Compound | Response | RT | Target Conc. | Calc. Conc. | Accuracy |
|---|---|---|---|---|---|
| MeFOSAA 1 | 597 | 1.30 | 0.83 | 0.86 µg/L | 103.80 |
| EtFOSAA 1 | 589 | 1.32 | 0.83 | 0.83 µg/L | 100.55 |
| D3-MeFOSAA | 1605 | 1.30 | 100.00 | 92.54 µg/L | 92.54 |
| D5-EtFOSAA | 1393 | 1.32 | 100.00 | 94.32 µg/L | 94.32 |
| 13C9-PFDA | 27998 | 0.89 | 100.00 | 110.12 µg/L | 110.12 |



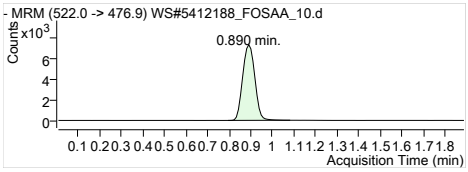



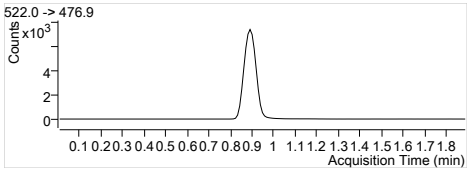

**D3-MeFOSAA IS** Internal Standard
RT (Exp. RT): 1.299 (1.308)
Concentration: 1 µg/L
Sample type: CC



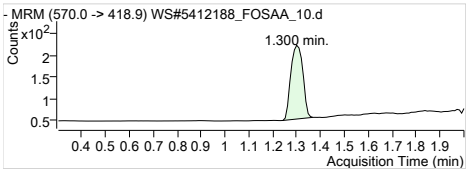



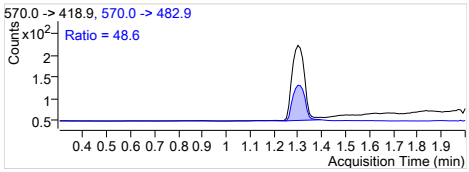

**D5-EtFOSAA IS** Internal Standard
RT (Exp. RT): 1.323 (1.323)
Concentration: 1 µg/L
Sample type: CC



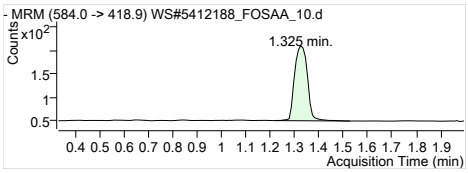



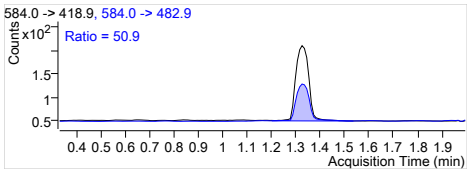

**13C9-PFDA IS** Internal Standard
RT (Exp. RT): 0.890 (0.890)
Concentration: 1 µg/L
Sample type: CC



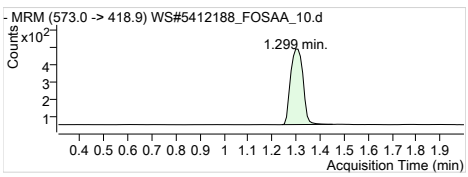



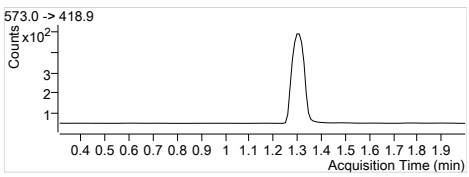

**MeFOSAA 1** 570.0 -> 418.9
RT (Exp. RT): 1.300 (1.300)
Calc. conc. 0.86 µg/L
Area ratio: 0.38074
Sample type: CC




**EtFOSAA 1** 584.0 -> 418.9
RT (Exp. RT): 1.325 (1.325)
Calc. conc. 0.83 µg/L
Area ratio: 0.42899
Sample type: CC



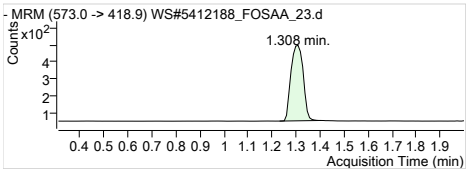

**D3-MeFOSAA** 573.0 -> 418.9
RT (Exp. RT): 1.299 (1.308)
Calc. conc. 92.54 µg/L
Area ratio: 0.05628
Sample type: CC

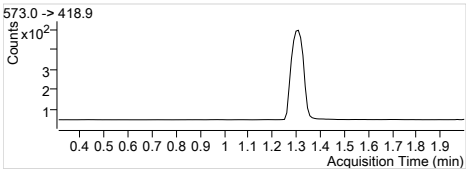
| | |
|---|---|
| **Batch Path** | T:\lcms4\PFC\20180226\WS#5412188_FOSAA\QuantResults\PFC_Water_Low_180226_WS#5412188_FOSAA_ETOxics |

| | | | |
|---|---|---|---|
| **Sample Name** | **CCV** | **Instrument** | LCMS04 |
| **Data File** | WS#5412188_FOSAA_23.d | **Operator** | |
| **Sample Type** | CC | **Dilution** | 1 |
| **Acq. Method** | PFC_Water_Low_FOSAA.m | **Position** | P1-C4 |
| **Acq. Date** | 2018/02/27 5:30:12 AM | **Injection Volume** | Per Method |
| **Sample Annotation** | - | | |

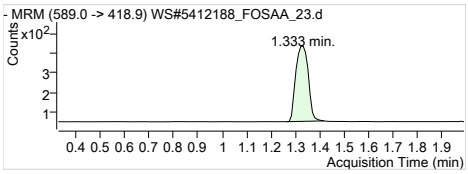
| ISTD Compounds | Response | RT | Target conc. | | |
|---|---|---|---|---|---|
| D3-MeFOSAA IS | 1594 | 1.31 | 1 µg/L | | |
| D5-EtFOSAA IS | 1385 | 1.33 | 1 µg/L | | |
| 13C9-PFDA IS | 25487 | 0.89 | 1 µg/L | | |

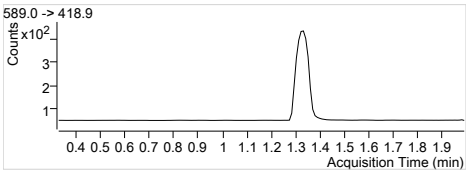
| Compound | Response | RT | Target Conc. | Calc. Conc. | Accuracy |
|---|---|---|---|---|---|
| MeFOSAA 1 | 7416 | 1.30 | 12.50 | 12.26 µg/L | 98.08 |
| EtFOSAA 1 | 7374 | 1.32 | 12.50 | 11.99 µg/L | 95.94 |
| D3-MeFOSAA | 1613 | 1.31 | 100.00 | 104.05 µg/L | 104.05 |
| D5-EtFOSAA | 1400 | 1.33 | 100.00 | 106.06 µg/L | 106.06 |
| 13C9-PFDA | 24937 | 0.89 | 100.00 | 98.08 µg/L | 98.08 |



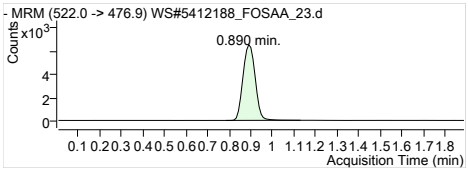



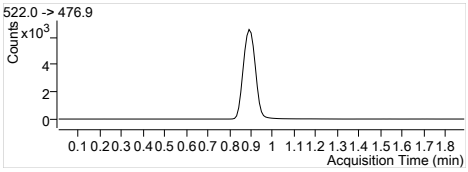

**D3-MeFOSAA IS** Internal Standard
RT (Exp. RT): 1.308 (1.308)
Concentration: 1 µg/L
Sample type: CC



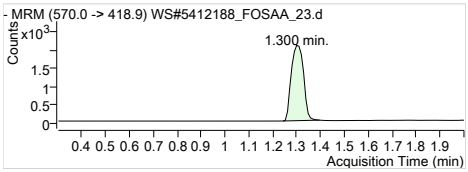



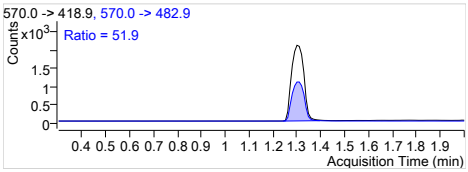

**D5-EtFOSAA IS** Internal Standard
RT (Exp. RT): 1.333 (1.323)
Concentration: 1 µg/L
Sample type: CC



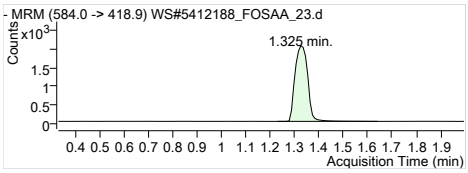



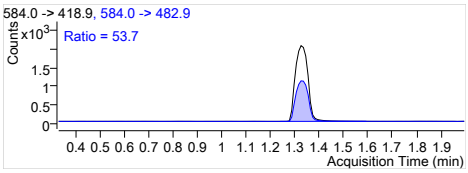

**13C9-PFDA IS** Internal Standard
RT (Exp. RT): 0.890 (0.890)
Concentration: 1 µg/L
Sample type: CC



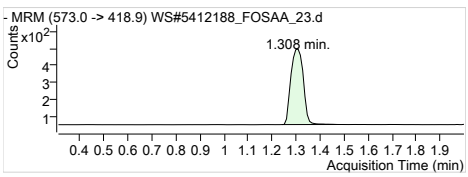



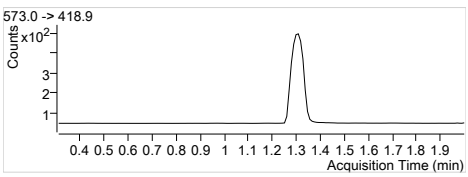

**MeFOSAA 1** 570.0 -> 418.9
RT (Exp. RT): 1.300 (1.300)
Calc. conc. 12.26 µg/L
Area ratio: 4.65245
Sample type: CC




**EtFOSAA 1** 584.0 -> 418.9
RT (Exp. RT): 1.325 (1.325)
Calc. conc. 11.99 µg/L
Area ratio: 5.32419
Sample type: CC




**D3-MeFOSAA** 573.0 -> 418.9
RT (Exp. RT): 1.308 (1.308)
Calc. conc. 104.05 µg/L
Area ratio: 0.06329
Sample type: CC

| DODCMD_ID | INSTALLATION_ID | SDG | SITE_NAME | NORM_SITE_NAME | LOCATION_NAME | LOCATION_TYPE_DESC | COORD_X | COORD_Y | CONTRACT_ID |
|---|---|---|---|---|---|---|---|---|---|
| SOUTHEAST | CECIL_FIELD_NAS | B833226 | BLDG 01820 | UST TNK0ZD | CEF-1820-TW02 | Temporary well point | 378328.209 | 2141955.696 | N6247008D1001 |
| SOUTHEAST | CECIL_FIELD_NAS | B833226 | SITE CRASH | UST 000005 | CEF-S3-TW02 | Temporary well point | 377519.954 | 2149521.91 | N6247008D1001 |
| SOUTHEAST | CECIL_FIELD_NAS | B833226 | SITE CRASH | UST 000005 | CEF-S3-TW01 | Temporary well point | 377462.274 | 2149629.874 | N6247008D1001 |
| SOUTHEAST | CECIL_FIELD_NAS | B833226 | UST 000007 | UST 000007 | CEF-MFS-TW02 | Temporary well point | 376469.759 | 2142424.725 | N6247008D1001 |
| SOUTHEAST | CECIL_FIELD_NAS | B833226 | UST 000007 | UST 000007 | CEF-MFS-TW01 | Temporary well point | 376350.936 | 2142566.425 | N6247008D1001 |
| SOUTHEAST | CECIL_FIELD_NAS | B833226 | | | | | | | N6247008D1001 |
| SOUTHEAST | CECIL_FIELD_NAS | B833226 | | | | | | | N6247008D1001 |
| SOUTHEAST | CECIL_FIELD_NAS | B833226 | | | | | | | N6247008D1001 |
| SOUTHEAST | CECIL_FIELD_NAS | B833226 | | | | | | | N6247008D1001 |
| SOUTHEAST | CECIL_FIELD_NAS | B833226 | | | | | | | N6247008D1001 |

| DODCMD_ID | INSTALLATION_ID | SDG | SITE_NAME | DO_CTO_NUMBER | CONTR_NAME | SAMPLE_NAME | SAMPLE_MATRIX_DESC | SAMPLE_TYPE_DESC |
|---|---|---|---|---|---|---|---|---|
| SOUTHEAST | CECIL_FIELD_NAS | B833226 | BLDG 01820 | JM10 | TETRA TECH NUS, INC. | CEF-1820-TW02-0218 | Ground water | Normal (Regular) |
| SOUTHEAST | CECIL_FIELD_NAS | B833226 | SITE CRASH | JM10 | TETRA TECH NUS, INC. | CEF-S3-TW02-0209 | Ground water | Normal (Regular) |
| SOUTHEAST | CECIL_FIELD_NAS | B833226 | SITE CRASH | JM10 | TETRA TECH NUS, INC. | CEF-S3-TW01-0218 | Ground water | Normal (Regular) |
| SOUTHEAST | CECIL_FIELD_NAS | B833226 | UST 000007 | JM10 | TETRA TECH NUS, INC. | CEF-MFS-TW02-0218 | Ground water | Normal (Regular) |
| SOUTHEAST | CECIL_FIELD_NAS | B833226 | UST 000007 | JM10 | TETRA TECH NUS, INC. | CEF-MFS-TW01-0218 | Ground water | Normal (Regular) |
| SOUTHEAST | CECIL_FIELD_NAS | B833226 | | JM10 | TETRA TECH NUS, INC. | FB-CEF-S3-020918-13 | Water for QC samples | QC Sample |
| SOUTHEAST | CECIL_FIELD_NAS | B833226 | | JM10 | TETRA TECH NUS, INC. | EB-CEF-MFS-020818-17 | Water for QC samples | QC Sample |
| SOUTHEAST | CECIL_FIELD_NAS | B833226 | | JM10 | TETRA TECH NUS, INC. | EB-CEF-MFS-020818-19 | Water for QC samples | QC Sample |
| SOUTHEAST | CECIL_FIELD_NAS | B833226 | | JM10 | TETRA TECH NUS, INC. | FB-CEF-MFS-020818-12 | Water for QC samples | QC Sample |
| SOUTHEAST | CECIL_FIELD_NAS | B833226 | | JM10 | TETRA TECH NUS, INC. | EB-CEF-MFS-020818-18 | Water for QC samples | QC Sample |

| DODCMD_ID | INSTALLATION_ID | SDG | SITE_NAME | COLLECT_DATE | ANALYTICAL_METHOD | ANALYTICAL_METHOD_GRP_DESC | RES_META_ID |
|---|---|---|---|---|---|---|---|
| SOUTHEAST | CECIL_FIELD_NAS | B833226 | BLDG 01820 | 8-Feb-18 | 537 | Perfluoroalkyl Compounds | 20190201053458.00 |
| SOUTHEAST | CECIL_FIELD_NAS | B833226 | SITE CRASH | 9-Feb-18 | 537 | Perfluoroalkyl Compounds | 20190201053458.00 |
| SOUTHEAST | CECIL_FIELD_NAS | B833226 | SITE CRASH | 9-Feb-18 | 537 | Perfluoroalkyl Compounds | 20190201053458.00 |
| SOUTHEAST | CECIL_FIELD_NAS | B833226 | UST 000007 | 9-Feb-18 | 537 | Perfluoroalkyl Compounds | 20190201053458.00 |
| SOUTHEAST | CECIL_FIELD_NAS | B833226 | UST 000007 | 9-Feb-18 | 537 | Perfluoroalkyl Compounds | 20190201053458.00 |
| SOUTHEAST | CECIL_FIELD_NAS | B833226 | | 9-Feb-18 | 537 | Perfluoroalkyl Compounds | 20190201053458.00 |
| SOUTHEAST | CECIL_FIELD_NAS | B833226 | | 8-Feb-18 | 537 | Perfluoroalkyl Compounds | 20190201053458.00 |
| SOUTHEAST | CECIL_FIELD_NAS | B833226 | | 8-Feb-18 | 537 | Perfluoroalkyl Compounds | 20190201053458.00 |
| SOUTHEAST | CECIL_FIELD_NAS | B833226 | | 8-Feb-18 | 537 | Perfluoroalkyl Compounds | 20190201053458.00 |
| SOUTHEAST | CECIL_FIELD_NAS | B833226 | | 8-Feb-18 | 537 | Perfluoroalkyl Compounds | 20190201053458.00 |