



**Groundwater Sample Results,  
Level 2 Laboratory Report, Level 4 Laboratory Report,  
Electronic Data Deliverable, Data Validation Report,  
and the Sample Location Report, SDG 1600903**

*Naval Air Station Oceana  
Virginia Beach, Virginia*

July 2019



July 24, 2016

**Vista Work Order No. 1600903**

Ms. Tiffany Hill  
CH2M Hill  
1100 NE Circle Blvd. Suite 300  
Corvallis, OR 97330

Dear Ms. Hill,

Enclosed are the results for the sample set received at Vista Analytical Laboratory on July 15, 2016. This sample set was analyzed on a rush turn-around time, under your Project Name 'NALF Fentress PFC'.

Vista Analytical Laboratory is committed to serving you effectively. If you require additional information, please contact me at 916-673-1520 or by email at [mmaier@vista-analytical.com](mailto:mmaier@vista-analytical.com).

Thank you for choosing Vista as part of your analytical support team.

Sincerely,

A handwritten signature in black ink that reads "Martha Maier". The signature is fluid and cursive, with the first name and last name clearly distinguishable.

Martha Maier  
Laboratory Director



*Vista Analytical Laboratory certifies that the report herein meets all the requirements set forth by NELAP for those applicable test methods. Results relate only to the samples as received by the laboratory. This report should not be reproduced except in full without the written approval of Vista.*

**Vista Work Order No. 1600903****Case Narrative****Sample Condition on Receipt:**

Nine aqueous samples were received in good condition and within the method temperature requirements. The samples were received and stored securely in accordance with Vista standard operating procedures and EPA methodology.

**Analytical Notes:****Modified EPA Method 537**

The samples were extracted and analyzed for a selected list of six PFAS using Modified EPA Method 537. The results for PFBS, PFHxS, PFOA and PFOS include both linear and branched isomers. Results for PFHpA and PFNA results include the linear isomer only.

**Holding Times**

The samples were extracted and analyzed within the method hold times.

**Quality Control**

The Initial Calibration and Continuing Calibration Verifications met the acceptance criteria.

A Method Blank and Ongoing Precision and Recovery (OPR) sample were extracted and analyzed with the preparation batch. No analytes were detected in the Method Blank above the Reporting Limit. The OPR recoveries were within the method acceptance criteria.

The recoveries of all internal standards in the QC and field samples were within the acceptance criteria.

As requested, an MS/MSD was performed on sample "OF-MW29-0716". The recoveries and/or RPDs of PFHxS, PFOA and PFOS were outside of the acceptance criteria.

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# Sample Inventory Report

| Vista<br>Sample ID | Client<br>Sample ID |        | Sampled         | Received        | Components/Containers                      |
|--------------------|---------------------|--------|-----------------|-----------------|--------------------------------------------|
| 1600903-01         | OF-MW30-0716        |        | 13-Jul-16 09:25 | 15-Jul-16 08:51 | HDPE Bottle, 125 mL<br>HDPE Bottle, 125 mL |
| 1600903-02         | OF-MW30P-0716       |        | 13-Jul-16 09:30 | 15-Jul-16 08:51 | HDPE Bottle, 125 mL<br>HDPE Bottle, 125 mL |
| 1600903-03         | OF-MW30D-0716       |        | 13-Jul-16 11:25 | 15-Jul-16 08:51 | HDPE Bottle, 125 mL<br>HDPE Bottle, 125 mL |
| 1600903-04         | OF-MW28D-0716       |        | 13-Jul-16 14:45 | 15-Jul-16 08:51 | HDPE Bottle, 125 mL<br>HDPE Bottle, 125 mL |
| 1600903-05         | OF-MW32-0716        |        | 13-Jul-16 16:15 | 15-Jul-16 08:51 | HDPE Bottle, 125 mL<br>HDPE Bottle, 125 mL |
| 1600903-06         | OF-MW29-0716        | MS/MSD | 14-Jul-16 09:10 | 15-Jul-16 08:51 | HDPE Bottle, 125 mL                        |
|                    |                     | MS/MSD |                 |                 | HDPE Bottle, 125 mL                        |
|                    |                     | MS/MSD |                 |                 | HDPE Bottle, 125 mL                        |
|                    |                     | MS/MSD |                 |                 | HDPE Bottle, 125 mL                        |
|                    |                     | MS/MSD |                 |                 | HDPE Bottle, 125 mL                        |
|                    |                     | MS/MSD |                 |                 | HDPE Bottle, 125 mL                        |
| 1600903-07         | OF-MW08D-0716       |        | 14-Jul-16 11:20 | 15-Jul-16 08:51 | HDPE Bottle, 125 mL<br>HDPE Bottle, 125 mL |
| 1600903-08         | OF-MW34-0716        |        | 14-Jul-16 13:30 | 15-Jul-16 08:51 | HDPE Bottle, 125 mL<br>HDPE Bottle, 125 mL |
| 1600903-09         | OF-MW31D-0716       |        | 14-Jul-16 15:40 | 15-Jul-16 08:51 | HDPE Bottle, 125 mL<br>HDPE Bottle, 125 mL |

## **ANALYTICAL RESULTS**

| Sample ID:    Method Blank                        |              |                                                                  |      |      |            | Modified EPA Method 537                                                                              |     |          |            |
|---------------------------------------------------|--------------|------------------------------------------------------------------|------|------|------------|------------------------------------------------------------------------------------------------------|-----|----------|------------|
| Matrix:        Aqueous<br>Sample Size:    0.125 L |              | QC Batch:        B6G0068<br>Date Extracted:   18-Jul-2016   9:06 |      |      |            | Lab Sample:       B6G0068-BLK1<br>Date Analyzed:    18-Jul-16 18:07   Column: BEH C18   Analyst: PBW |     |          |            |
| Analyte                                           | Conc. (ng/L) | MDL                                                              | LOD  | LOQ  | Qualifiers | Labeled Standard                                                                                     | %R  | LCL-UCL  | Qualifiers |
| PFBS                                              | ND           | 1.79                                                             | 4.00 | 8.00 |            | IS    13C3-PFBS                                                                                      | 117 | 60 - 150 |            |
| PFHpA                                             | ND           | 0.591                                                            | 4.00 | 8.00 |            | IS    13C4-PFHpA                                                                                     | 105 | 25 - 175 |            |
| PFHxS                                             | ND           | 0.947                                                            | 4.00 | 8.00 |            | IS    18O2-PFHxS                                                                                     | 104 | 60 - 150 |            |
| PFOA                                              | ND           | 0.651                                                            | 4.00 | 8.00 |            | IS    13C2-PFOA                                                                                      | 103 | 60 - 150 |            |
| PFOS                                              | ND           | 0.807                                                            | 4.00 | 8.00 |            | IS    13C8-PFOS                                                                                      | 112 | 60 - 150 |            |
| PFNA                                              | ND           | 0.810                                                            | 4.00 | 8.00 |            | IS    13C5-PFNA                                                                                      | 108 | 50 - 150 |            |

LCL-UCL - Lower control limit - upper control limit  
Results reported to MDL.  
The results for PFBS, PFHxS, PFOA and PFOS include both linear and branched isomers.

| Sample ID:    OPR       |                  |                                      |      |          | Modified EPA Method 537                                            |            |     |          |
|-------------------------|------------------|--------------------------------------|------|----------|--------------------------------------------------------------------|------------|-----|----------|
| Matrix:        Aqueous  |                  | QC Batch:        B6G0068             |      |          | Lab Sample:        B6G0068-BS1                                     |            |     |          |
| Sample Size:    0.125 L |                  | Date Extracted:   18-Jul-2016   9:06 |      |          | Date Analyzed:    18-Jul-16 17:43   Column: BEH C18   Analyst: PBW |            |     |          |
| Analyte                 | Amt Found (ng/L) | Spike Amt                            | %R   | Limits   | Labeled Standard                                                   |            | %R  | LCL-UCL  |
| PFBS                    | 79.7             | 80.0                                 | 99.6 | 60 - 130 | IS                                                                 | 13C3-PFBS  | 113 | 60 - 150 |
| PFHpA                   | 79.3             | 80.0                                 | 99.1 | 70 - 130 | IS                                                                 | 13C4-PFHpA | 106 | 25 - 175 |
| PFHxS                   | 88.7             | 80.0                                 | 111  | 70 - 130 | IS                                                                 | 18O2-PFHxS | 101 | 60 - 150 |
| PFOA                    | 84.1             | 80.0                                 | 105  | 70 - 130 | IS                                                                 | 13C2-PFOA  | 106 | 60 - 150 |
| PFOS                    | 84.9             | 80.0                                 | 106  | 70 - 130 | IS                                                                 | 13C8-PFOS  | 103 | 60 - 150 |
| PFNA                    | 78.6             | 80.0                                 | 98.2 | 50 - 130 | IS                                                                 | 13C5-PFNA  | 102 | 50 - 150 |

LCL-UCL - Lower control limit - upper control limit

| Sample ID: OF-MW30-0716 |                   |       |              |         |            | Modified EPA Method 537 |                 |                 |                  |            |
|-------------------------|-------------------|-------|--------------|---------|------------|-------------------------|-----------------|-----------------|------------------|------------|
| Client Data             |                   |       | Sample Data  |         |            | Laboratory Data         |                 |                 |                  |            |
| Name:                   | CH2M Hill         |       | Matrix:      | Aqueous |            | Lab Sample:             | 1600903-01      | Date Received:  | 15-Jul-2016 8:51 |            |
| Project:                | NALF Fentress PFC |       | Sample Size: | 0.115 L |            | QC Batch:               | B6G0068         | Date Extracted: | 18-Jul-2016 9:06 |            |
| Date Collected:         | 13-Jul-2016 9:25  |       |              |         |            | Date Analyzed:          | 18-Jul-16 18:20 | Column:         | BEH C18          |            |
| Location:               | NALF Fentress     |       |              |         |            | Analyst: PBW            |                 |                 |                  |            |
| Analyte                 | Conc. (ng/L)      | MDL   | LOD          | LOQ     | Qualifiers | Labeled Standard        |                 | %R              | LCL-UCL          | Qualifiers |
| PFBS                    | ND                | 1.94  | 4.35         | 8.67    |            | IS                      | 13C3-PFBS       | 117             | 60 - 150         |            |
| PFHpA                   | ND                | 0.641 | 4.35         | 8.67    |            | IS                      | 13C4-PFHpA      | 105             | 25 - 175         |            |
| PFHxS                   | ND                | 1.03  | 4.35         | 8.67    |            | IS                      | 18O2-PFHxS      | 105             | 60 - 150         |            |
| PFOA                    | ND                | 0.706 | 4.35         | 8.67    |            | IS                      | 13C2-PFOA       | 111             | 60 - 150         |            |
| PFOS                    | ND                | 0.875 | 4.35         | 8.67    |            | IS                      | 13C8-PFOS       | 97.0            | 60 - 150         |            |
| PFNA                    | ND                | 0.878 | 4.35         | 8.67    |            | IS                      | 13C5-PFNA       | 104             | 50 - 150         |            |

LCL-UCL - Lower control limit - upper control limit  
Results reported to MDL.  
The results for PFBS, PFHxS, PFOA and PFOS include both linear and branched isomers.

| Sample ID: OF-MW30P-0716                                                                                               |              |       |                                         |      |            | Modified EPA Method 537                                                                                                                                                                     |      |          |            |
|------------------------------------------------------------------------------------------------------------------------|--------------|-------|-----------------------------------------|------|------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|----------|------------|
| Client Data                                                                                                            |              |       | Sample Data                             |      |            | Laboratory Data                                                                                                                                                                             |      |          |            |
| Sample Name: Cs 2M s ill<br>Matrix: j ALF FentrePP WFC<br>Date Collected: 10-Jul-2016 9:00<br>Location: j ALF FentrePP |              |       | Matrix: ARueHuP<br>Sample Size: 0.119 L |      |            | Lab Sample: 160090o-02      Date received: 1N-Jul-2016 8:NI<br>QC Batch: B6G0068      Date Extracted: 18-Jul-2016 9:06<br>Date Analyzed: 18-Jul-16 18:o2    Column: BEs C18    Analyte: WBq |      |          |            |
| Analyte                                                                                                                | Conc. (ng/L) | MDL   | LOD                                     | LOQ  | Qualifiers | Labeled Standard                                                                                                                                                                            | %R   | LCL-UCL  | Qualifiers |
| WBS                                                                                                                    | j D          | 1.87  | 4.20                                    | 8.o7 |            | IS 1oCo-WBS                                                                                                                                                                                 | 11N  | 60 - 1N0 |            |
| Ws pA                                                                                                                  | j D          | 0.618 | 4.20                                    | 8.o7 |            | IS 1oC4-Ws pA                                                                                                                                                                               | 104  | 2N- 17N  |            |
| Ws xS                                                                                                                  | j D          | 0.991 | 4.20                                    | 8.o7 |            | IS 18O2-Ws xS                                                                                                                                                                               | 98.N | 60 - 1N0 |            |
| WFOA                                                                                                                   | j D          | 0.681 | 4.20                                    | 8.o7 |            | IS 1oC2-WFOA                                                                                                                                                                                | 107  | 60 - 1N0 |            |
| WFOS                                                                                                                   | j D          | 0.844 | 4.20                                    | 8.o7 |            | IS 1oC8-WFOS                                                                                                                                                                                | 10o  | 60 - 1N0 |            |
| WFj A                                                                                                                  | j D          | 0.847 | 4.20                                    | 8.o7 |            | IS 1oCN-WFj A                                                                                                                                                                               | 106  | N0 - 1N0 |            |

LCL-UCL - Lower cHtrH limit - upper cHtrH limit  
 veRultPrepHted thMDL.  
 The reRultPth WBS, Ws xS, WFOA and WFOS include bHh linear and branched iPhnerP.

| Sample ID: OF-MW30D-0716                                                                                                |              |      |                                         |     |            | Modified EPA Method 537                                                                                                                                                              |     |          |            |
|-------------------------------------------------------------------------------------------------------------------------|--------------|------|-----------------------------------------|-----|------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|----------|------------|
| Client Data                                                                                                             |              |      | Sample Data                             |     |            | Laboratory Data                                                                                                                                                                      |     |          |            |
| Sample Name: Cs 2M s ill<br>Matrix: j AL. . entrePPWC<br>Date Collected: 1F-Jul-2016 11:2N<br>Location: j AL. . entrePP |              |      | Matrix: ARueHuP<br>Sample Size: 07119 L |     |            | Lab Sample: 160090F-0F<br>QC Batch: B6G0068<br>Date Analyzed: 18-Jul-16 18:00<br>Date received: 1N-Jul-2016 8:NI<br>Date Extracted: 18-Jul-2016 9:06<br>Column: BEs C18 Analyte: WBq |     |          |            |
| Analyte                                                                                                                 | Conc. (ng/L) | MDL  | LOD                                     | LOQ | Qualifiers | Labeled Standard                                                                                                                                                                     | %R  | LCL-UCL  | Qualifiers |
| WBS                                                                                                                     | j D          | 184  | 020                                     | 8F8 |            | IS 1FCF-WBS                                                                                                                                                                          | 116 | 60 - 1N0 |            |
| W s pA                                                                                                                  | 2719         | 0619 | 020                                     | 8F8 | J          | IS 1FCo-W s pA                                                                                                                                                                       | 10N | 2N- 14N  |            |
| W s xS                                                                                                                  | j D          | 0992 | 020                                     | 8F8 |            | IS 18O2-W s xS                                                                                                                                                                       | 116 | 60 - 1N0 |            |
| W OA                                                                                                                    | 26N          | 0682 | 020                                     | 8F8 | J          | IS 1FC2-W OA                                                                                                                                                                         | 10o | 60 - 1N0 |            |
| W OS                                                                                                                    | 208          | 08oN | 020                                     | 8F8 | J          | IS 1FC8-W OS                                                                                                                                                                         | 110 | 60 - 1N0 |            |
| W j A                                                                                                                   | 108          | 08o8 | 020                                     | 8F8 | J          | IS 1FCN-W j A                                                                                                                                                                        | 106 | N0 - 1N0 |            |

LCL-UCL - Lower cHtrH limit - upper cHtrH limit  
 veRultPrepHted tHMDL7  
 The reRultPflf WBS, W s xS, W OA and W OS include bHh linear and branched iPhnerP7

| Sample ID: OF-MW28D-0716 |                   |      |              |         |            | Modified EPA Method 537 |                 |                 |                     |            |
|--------------------------|-------------------|------|--------------|---------|------------|-------------------------|-----------------|-----------------|---------------------|------------|
| Client Data              |                   |      | Sample Data  |         |            | Laboratory Data         |                 |                 |                     |            |
| Name:                    | Cs 2M s ill       |      | Matrix:      | ARueHuP |            | Lab Sample:             | 1600903-0F      | Date v ecei5ed: | 1o-Jul-2016 8:o1    |            |
| WHject:                  | NAL. . entrePPWC  |      | Sample Size: | 0719 L  |            | QC Batch:               | B6G0068         | Date Extracted: | 18-Jul-2016 9:06    |            |
| Date CHlected:           | 13-Jul-2016 1F:Fo |      |              |         |            | Date Analyzed:          | 18-Jul-16 18:o6 | CHumn:          | BEs C18 AnalyR: WBq |            |
| LHatiH:                  | NAL. . entrePP    |      |              |         |            |                         |                 |                 |                     |            |
| Analyte                  | Conc. (ng/L)      | MDL  | LOD          | LOQ     | Qualifiers | Labeled Standard        |                 | %R              | LCL-UCL             | Qualifiers |
| W BS                     | ND                | 174  | F20          | 878     |            | IS                      | 13C3-W BS       | 11o             | 60 - 1o0            |            |
| W s pA                   | 170               | 0719 | F20          | 878     | J          | IS                      | 13CF-W s pA     | 10F             | 2o - 14o            |            |
| W s xS                   | ND                | 0791 | F20          | 878     |            | IS                      | 18O2-W s xS     | 987             | 60 - 1o0            |            |
| W OA                     | 273               | 0782 | F20          | 878     | J          | IS                      | 13C2-W OA       | 103             | 60 - 1o0            |            |
| W OS                     | 670               | 07Fo | F20          | 878     | J          | IS                      | 13C8-W OS       | 987             | 60 - 1o0            |            |
| W NA                     | 172               | 07F8 | F20          | 878     | J          | IS                      | 13Co-W NA       | 91b             | o0 - 1o0            |            |

LCL-UCL - LHver cHtrH limit - upper cHtrH limit  
veRultPrepHted tHMDL7  
The reRultP fH WBS, W s xS, W OA and W OS include bHh linear and branched iPHnerP7



| Sample ID: OF-MW32-0716 |                   |       |              |         |            | Modified EPA Method 537 |                 |                 |                  |            |
|-------------------------|-------------------|-------|--------------|---------|------------|-------------------------|-----------------|-----------------|------------------|------------|
| Client Data             |                   |       | Sample Data  |         |            | Laboratory Data         |                 |                 |                  |            |
| Name:                   | CH2M Hill         |       | Matrix:      | Aqueous |            | Lab Sample:             | 1600903-05      | Date Received:  | 15-Jul-2016 8:51 |            |
| Project:                | NALF Fentress PFC |       | Sample Size: | 0.127 L |            | QC Batch:               | B6G0068         | Date Extracted: | 18-Jul-2016 9:06 |            |
| Date Collected:         | 13-Jul-2016 16:15 |       |              |         |            | Date Analyzed:          | 18-Jul-16 19:09 | Column:         | BEH C18          |            |
| Location:               | NALF Fentress     |       |              |         |            |                         |                 | Analyst:        | PBW              |            |
| Analyte                 | Conc. (ng/L)      | MDL   | LOD          | LOQ     | Qualifiers | Labeled Standard        |                 | %R              | LCL-UCL          | Qualifiers |
| PFBS                    | ND                | 1.76  | 3.94         | 7.88    |            | IS                      | 13C3-PFBS       | 117             | 60 - 150         |            |
| PFHpA                   | ND                | 0.582 | 3.94         | 7.88    |            | IS                      | 13C4-PFHpA      | 101             | 25 - 175         |            |
| PFHxS                   | 1.16              | 0.932 | 3.94         | 7.88    | J          | IS                      | 18O2-PFHxS      | 115             | 60 - 150         |            |
| PFOA                    | 0.712             | 0.641 | 3.94         | 7.88    | J          | IS                      | 13C2-PFOA       | 105             | 60 - 150         |            |
| PFOS                    | ND                | 0.795 | 3.94         | 7.88    |            | IS                      | 13C8-PFOS       | 112             | 60 - 150         |            |
| PFNA                    | ND                | 0.797 | 3.94         | 7.88    |            | IS                      | 13C5-PFNA       | 106             | 50 - 150         |            |

LCL-UCL - Lower control limit - upper control limit  
Results reported to MDL.  
The results for PFBS, PFHxS, PFOA and PFOS include both linear and branched isomers.

Sample ID: OF-MW29-0716

Modified EPA Method 537

| Client Data     |                   |       | Sample Data  |         |            | Laboratory Data  |                 |     |                 |                      |
|-----------------|-------------------|-------|--------------|---------|------------|------------------|-----------------|-----|-----------------|----------------------|
| Name:           | CH2M Hill         |       | Matrix:      | Aqueous |            | Lab Sample:      | 1600907-06      |     | Date Received:  | 15-Jul-2016 8:51     |
| Project:        | NALF Fentress PFC |       | Sample Size: | 0.121 L |            | QC Batch:        | B6G0068         |     | Date Extracted: | 18-Jul-2016 9:06     |
| Date Collected: | 13-Jul-2016 9:10  |       |              |         |            | Date Analyzed:   | 18-Jul-16 19:21 |     | Column:         | BEH C18 Analyst: PBW |
| Location:       | NALF Fentress     |       |              |         |            |                  | 19-Jul-16 16:02 |     | Column:         | BEH C18 Analyst: PBW |
| Analyte         | Conc. (ng/L)      | MDL   | LOD          | LOQ     | Qualifiers | Labeled Standard |                 | %R  | LCL-UCL         | Qualifiers           |
| PFBS            | 387               | 1.83  | 3.17         | 8.23    |            | IS               | 17C7-PFBS       | 121 | 60 - 150        |                      |
| PFHpA           | 731               | 0.609 | 3.17         | 8.23    |            | IS               | 17C3-PFHpA      | 115 | 25 - 145        |                      |
| PFHxS           | 3490              | 9.45  | 31.7         | 82.3    | D          | IS               | 18O2-PFHxS      | 121 | 60 - 150        | D                    |
| PFOA            | 872               | 0.641 | 3.17         | 8.23    |            | IS               | 17C2-PFOA       | 108 | 60 - 150        |                      |
| PFOS            | 2960              | 0.871 | 3.17         | 8.23    |            | IS               | 17C8-PFOS       | 115 | 60 - 150        |                      |
| PFNA            | 22.0              | 0.873 | 3.17         | 8.23    |            | IS               | 17C5-PFNA       | 109 | 50 - 150        |                      |

LCL-UCL - Lower control limit - upper control limit

Results reported to MDL.

The results for PFBS, PFHxS, PFOA and PFOS include both linear and branched isomers.

# Matrix Spike Results

# Modified EPA Method 537

| Source Client ID: OF-MW29-0716<br>Source LabNumber: 1600903-06<br>Matrix: Aqueous<br>Sample Size: 0.119/0.118 L |                    |          |             | QC Batch: B6G0068<br>Date Extracted: 18-Jul-2016 9:06 |           |            |              |             |               | Lab Sample: B6G0068-MS1/B6G0068-MSD1<br>Date Analyzed: 19-Jul-16 16:55 Column: BEH C18 Analyst: PBW<br>19-Jul-16 17:08 Column: BEH C18 Analyst: PBW |            |          |                  |           |             |
|-----------------------------------------------------------------------------------------------------------------|--------------------|----------|-------------|-------------------------------------------------------|-----------|------------|--------------|-------------|---------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|------------|----------|------------------|-----------|-------------|
| Analyte                                                                                                         | Spike-MS<br>(ng/L) | MS<br>%R | MS<br>Qual. | Spike-MSD<br>(ng/L)                                   | MSD<br>%R | MSD<br>RPD | MSD<br>Qual. | %R<br>Limit | %RPD<br>Limit | Labeled Standard                                                                                                                                    |            | MS<br>%R | MS<br>Qualifiers | MSD<br>%R | MS<br>Qual. |
| PFBS                                                                                                            | 83.8               | 125      |             | 84.9                                                  | 106       | 16.5       |              | 60 - 130    | 25            | IS                                                                                                                                                  | 13C3-PFBS  | 116      |                  | 116       |             |
| PFHpA                                                                                                           | 83.8               | 94.2     |             | 84.9                                                  | 106       | 11.8       |              | 70 - 130    | 25            | IS                                                                                                                                                  | 13C4-PFHpA | 112      |                  | 109       |             |
| PFHxS                                                                                                           | 83.8               | 379      | D, H        | 84.9                                                  | 561       | 38.7       | D, H         | 70 - 130    | 25            | IS                                                                                                                                                  | 18O2-PFHxS | 114      | D                | 103       | D           |
| PFOA                                                                                                            | 83.8               | 59.0     | H           | 84.9                                                  | 217       | 114        | H            | 70 - 130    | 25            | IS                                                                                                                                                  | 13C2-PFOA  | 114      |                  | 102       |             |
| PFOS                                                                                                            | 83.8               | 140      | H           | 84.9                                                  | -28.5     | 302        | H            | 70 - 130    | 25            | IS                                                                                                                                                  | 13C8-PFOS  | 107      |                  | 115       |             |
| PFNA                                                                                                            | 83.8               | 98.0     |             | 84.9                                                  | 98.4      | 0.407      |              | 50 - 130    | 25            | IS                                                                                                                                                  | 13C5-PFNA  | 103      |                  | 111       |             |

| Sample ID: OF-MW08D-0716 |                     |      |              |         |            | Modified EPA Method 537 |                 |                 |                    |
|--------------------------|---------------------|------|--------------|---------|------------|-------------------------|-----------------|-----------------|--------------------|
| Client Data              |                     |      | Sample Data  |         |            | Laboratory Data         |                 |                 |                    |
| Sample:                  | Cs 2M s ill         |      | Matrix:      | AvueHuP |            | Lab Sample:             | 160090o-04      | Date Received:  | 1j -Jul-2016 8:j 1 |
| Effect:                  | 3 AL. . entrePP W C |      | Sample Size: | 0720 L  |            | QC Batch:               | B6G0068         | Date Extracted: | 18-Jul-2016 9:06   |
| Date Collected:          | 1R-Jul-2016 11:20   |      |              |         |            | Date Analyzed:          | 18-Jul-16 19:oo | Column: BEs     | C18 Analyte: WBq   |
| Location:                | 3 AL. . entrePP     |      |              |         |            | 19-Jul-16 16:1R         |                 | Column: BEs     | C18 Analyte: WBq   |
| Analyte                  | Conc. (ng/L)        | MDL  | LOD          | LOQ     | Qualifiers | Labeled Standard        | %R              | LCL-UCL         | Qualifiers         |
| WBS                      | 26j                 | 186  | R74          | 870     | D          | IS 1oCo-WBS             | 11R             | 60 - 1j 0       |                    |
| W s pA                   | 99R                 | 071o | R74          | 870     |            | IS 1oCR-W s pA          | 101             | 2j - 14j        |                    |
| W s xS                   | j 1R                | 098o | R74          | 870     |            | IS 18O2-W s xS          | 102             | 60 - 1j 0       |                    |
| W OA                     | 617                 | 0746 | R74          | 870     |            | IS 1oC2-W OA            | 109             | 60 - 1j 0       |                    |
| W OS                     | 6880                | 878  | R17          | 8o7     |            | IS 1oC8-W OS            | 109             | 60 - 1j 0       | D                  |
| W 3 A                    | 217                 | 08R1 | R74          | 870     |            | IS 1oCj -W 3 A          | 104             | j 0 - 1j 0      |                    |

LCL-UCL - Lower cHtrH limit - upper cHtrH limit  
5 ePultPrepHted tHMDL7  
The rePultP fH WBS, W s xS, W OA and W OS include bHh linear and branched iPHnerP7

| Sample ID:    OF-MW34-0716              |              |      |                            |     |            | Modified EPA Method 537                             |  |                                        |          |            |
|-----------------------------------------|--------------|------|----------------------------|-----|------------|-----------------------------------------------------|--|----------------------------------------|----------|------------|
| Client Data                             |              |      | Sample Data                |     |            | Laboratory Data                                     |  |                                        |          |            |
| j ame:            CP 2M P ill           |              |      | Matrix:            AvuesuW |     |            | Lab Sample:        160090F-08                       |  | Date 5 eceiNed:    1HJul-2016    8:HI  |          |            |
| qrs Æct:        j AL. . entreWq. C      |              |      | Sample Size:       072F L  |     |            | QC Batch:           B6G0068                         |  | Date Extracted:    18-Jul-2016    9:06 |          |            |
| Date Csllected:    1o-Jul-2016    1F:F0 |              |      |                            |     |            | Date Analyzed:     18-Jul-16 19:oH Cs lumn: BEP C18 |  | AnalyW qBR                             |          |            |
| Lscatisn:        j AL. . entreWW        |              |      |                            |     |            |                                                     |  |                                        |          |            |
| Analyte                                 | Conc. (ng/L) | MDL  | LOD                        | LOQ | Qualifiers | Labeled Standard                                    |  | %R                                     | LCL-UCL  | Qualifiers |
| q. BS                                   | j D          | 181  | o04                        | 871 |            | IS 1FCF-q. BS                                       |  | 11o                                    | 60 - 1HD |            |
| q. P pA                                 | j D          | 0709 | o04                        | 871 |            | IS 1FCo-q. P pA                                     |  | 10F                                    | 2H- 14H  |            |
| q. P xS                                 | F6H          | 0960 | o04                        | 871 | J          | IS 18O2-q. P xS                                     |  | 110                                    | 60 - 1HD |            |
| q. OA                                   | 08H          | 0660 | o04                        | 871 | J          | IS 1FC2-q. OA                                       |  | 9F6                                    | 60 - 1HD |            |
| q. OS                                   | 67H          | 0818 | o04                        | 871 | J          | IS 1FC8-q. OS                                       |  | 112                                    | 60 - 1HD |            |
| q. j A                                  | j D          | 0821 | o04                        | 871 |            | IS 1FCHq. j A                                       |  | 106                                    | HD - 1HD |            |

LCL-UCL - Lower control limit - upper control limit  
 5 sigma  
 The results for q. BS, q. P xS, q. OA and q. OS include both linear and branched isomers

| Sample ID: OF-MW31D-0716          |              |      |                     |     |            | Modified EPA Method 537        |  |                                  |          |            |
|-----------------------------------|--------------|------|---------------------|-----|------------|--------------------------------|--|----------------------------------|----------|------------|
| Client Data                       |              |      | Sample Data         |     |            | Laboratory Data                |  |                                  |          |            |
| Sample Name: CP 2M Pill           |              |      | Matrix: AvuesuW     |     |            | Lab Sample: 1600904-09         |  | Date Received: 10-Jul-2016 8:01  |          |            |
| Project: j AL. . entreWq. C       |              |      | Sample Size: 0711 L |     |            | QC Batch: B6G0068              |  | Date Extracted: 18-Jul-2016 9:06 |          |            |
| Date Collected: 1F-Jul-2016 10:F0 |              |      |                     |     |            | Date Analyzed: 18-Jul-16 19:0H |  | Column: BEP C18 Analyte: qBR     |          |            |
| Location: j AL. . entreW          |              |      |                     |     |            |                                |  |                                  |          |            |
| Analyte                           | Conc. (ng/L) | MDL  | LOD                 | LOQ | Qualifiers | Labeled Standard               |  | %R                               | LCL-UCL  | Qualifiers |
| q. BS                             | j D          | 202  | F00                 | 90F |            | IS 14C4-q. BS                  |  | 121                              | 60 - 100 |            |
| q. PpA                            | 494          | 0668 | F00                 | 90F | J          | IS 14CF-q. PpA                 |  | 108                              | 20 - 1H  |            |
| q. PxS                            | 449          | 10H  | F00                 | 90F | J          | IS 18O2-q. PxS                 |  | 11H                              | 60 - 100 |            |
| q. OA                             | F0F          | 0746 | F00                 | 90F | J          | IS 14C2-q. OA                  |  | 928                              | 60 - 100 |            |
| q. OS                             | 067          | 0912 | F00                 | 90F |            | IS 14C8-q. OS                  |  | 114                              | 60 - 100 |            |
| q. j A                            | 2F2          | 0910 | F00                 | 90F | J          | IS 14Co-q. j A                 |  | 110                              | 00 - 100 |            |

LCL-UCL - Lower concentration limit - upper concentration limit  
5 eWtWpsrted ts MDL7  
The reWtWsr q. BS, q. PxS, q. OA and q. OS include both linear and branched iWmerW

## **DATA QUALIFIERS & ABBREVIATIONS**

|              |                                                                                                |
|--------------|------------------------------------------------------------------------------------------------|
| <b>B</b>     | <b>This compound was also detected in the method blank.</b>                                    |
| <b>D</b>     | <b>Dilution</b>                                                                                |
| <b>E</b>     | <b>The associated compound concentration exceeded the calibration range of the instrument.</b> |
| <b>H</b>     | <b>Recovery and/or RPD was outside laboratory acceptance limits.</b>                           |
| <b>I</b>     | <b>Chemical Interference</b>                                                                   |
| <b>J</b>     | <b>The amount detected is below the Reporting Limit/LOQ.</b>                                   |
| <b>*</b>     | <b>See Cover Letter</b>                                                                        |
| <b>Conc.</b> | <b>Concentration</b>                                                                           |
| <b>NA</b>    | <b>Not applicable</b>                                                                          |
| <b>ND</b>    | <b>Not Detected</b>                                                                            |
| <b>TEQ</b>   | <b>Toxic Equivalency</b>                                                                       |

**Unless otherwise noted, solid sample results are reported in dry weight. Tissue samples are reported in wet weight.**

## **CERTIFICATIONS**

| <b>Accrediting Authority</b>                        | <b>Certificate Number</b> |
|-----------------------------------------------------|---------------------------|
| California Department of Health – ELAP              | 2892                      |
| DoD ELAP - A2LA Accredited - ISO/IEC 17025:2005     | 3091.01                   |
| Florida Department of Health                        | E87777                    |
| Hawaii Department of Health                         | N/A                       |
| Louisiana Department of Environmental Quality       | 01977                     |
| Maine Department of Health                          | 2014022                   |
| Nevada Division of Environmental Protection         | CA004132015-1             |
| New Jersey Department of Environmental Protection   | CA003                     |
| New York Department of Health                       | 11411                     |
| Oregon Laboratory Accreditation Program             | 4042-004                  |
| Pennsylvania Department of Environmental Protection | 012                       |
| South Carolina Department of Health                 | 87002001                  |
| Texas Commission on Environmental Quality           | T104704189-15-6           |
| Virginia Department of General Services             | 7923                      |
| Washington Department of Ecology                    | C584                      |
| Wisconsin Department of Natural Resources           | 998036160                 |

*Current certificates and lists of licensed parameters are located in the Quality Assurance office and are available upon request*



## NELAP Accredited Test Methods

| MATRIX: Air                                                                |        |
|----------------------------------------------------------------------------|--------|
| Description of Test                                                        | Method |
| Determination of Polychlorinated p-Dioxins & Polychlorinated Dibenzofurans | EPA 23 |

| MATRIX: Biological Tissue                                                                   |                |
|---------------------------------------------------------------------------------------------|----------------|
| Description of Test                                                                         | Method         |
| Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope Dilution GC/HRMS              | EPA 1613B      |
| Brominated Diphenyl Ethers by HRGC/HRMS                                                     | EPA 1614A      |
| Chlorinated Biphenyl Congeners in Water, Soil, Sediment, and Tissue by GC/HRMS              | EPA 1668A/C    |
| Pesticides in Water, Soil, Sediment, Biosolids, and Tissue by HRGC/HRMS                     | EPA 1699       |
| Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS                            | EPA 537        |
| Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans by GC/HRMS              | EPA 8280A/B    |
| Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated Dibenzofurans (PCDFs) by GC/HRMS | EPA 8290/8290A |

| MATRIX: Drinking Water                                           |          |
|------------------------------------------------------------------|----------|
| Description of Test                                              | Method   |
| 2,3,7,8-Tetrachlorodibenzo- p-dioxin (2,3,7,8-TCDD) GC/HRMS      | EPA 1613 |
| Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS | EPA 537  |

| MATRIX: Non-Potable Water                                                                   |                |
|---------------------------------------------------------------------------------------------|----------------|
| Description of Test                                                                         | Method         |
| Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope Dilution GC/HRMS              | EPA 1613B      |
| Brominated Diphenyl Ethers by HRGC/HRMS                                                     | EPA 1614A      |
| Chlorinated Biphenyl Congeners in Water, Soil, Sediment, and Tissue by GC/HRMS              | EPA 1668A/C    |
| Pesticides in Water, Soil, Sediment, Biosolids, and Tissue by HRGC/HRMS                     | EPA 1699       |
| Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS                            | EPA 537        |
| Dioxin by GC/HRMS                                                                           | EPA 613        |
| Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans by GC/HRMS              | EPA 8280A/B    |
| Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated Dibenzofurans (PCDFs) by GC/HRMS | EPA 8290/8290A |

| MATRIX: Solids                                                        |           |
|-----------------------------------------------------------------------|-----------|
| Description of Test                                                   | Method    |
| Tetra-Octa Chlorinated Dioxins and Furans by Isotope Dilution GC/HRMS | EPA 1613  |
| Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope         | EPA 1613B |

|                                                                                             |                |
|---------------------------------------------------------------------------------------------|----------------|
| Dilution GC/HRMS                                                                            |                |
| Brominated Diphenyl Ethers by HRGC/HRMS                                                     | EPA 1614A      |
| Chlorinated Biphenyl Congeners in Water, Soil, Sediment, and Tissue by GC/HRMS              | EPA 1668A/C    |
| Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS                            | EPA 537        |
| Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans by GC/HRMS              | EPA 8280A/B    |
| Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated Dibenzofurans (PCDFs) by GC/HRMS | EPA 8290/8290A |



# CHAIN OF CUSTODY

FOR LABORATORY USE ONLY

Storage Secured

Laboratory Project ID: 1600903

Yes ☒ No ☐

Storage ID: WR-2 E4

Temp -0.9 °C

CTO - WE07

Project I.D.: NAIS FORTRESS PFC P.O.# 10026-7-105444

Sampler: ML OSI / AK / [Signature]  
(Name)

TAT: (Check One): Per Contract

Standard: ☐ 21 Days

Rush (surcharge may apply):

☐ 14 days ☐ 7 days Specify: \_\_\_\_\_

Invoice to: Name CH2M HILL Company

Address

City

State

Zip

Ph#

Fax#

Relinquished by: (Signature and Printed Name)

Date:

Time:

Received by: (Signature and Printed Name)

Date:

Time:

Relinquished by: (Signature and Printed Name)

Date:

Time:

Received by: (Signature and Printed Name)

Date:

Time:

## See "Sample Log-in Checklist" for additional sample information

SHIP TO: Vista Analytical Laboratory  
1104 Windfield Way  
El Dorado Hills, CA 95762  
(916) 673-1520 • Fax (916) 673-0106

Method of Shipment:

FedEx

Tracking No.:

ATTN: MARTHA MAIER

Add Analysis(es) Requested

Container(s)

Quantity Type Matrix

2318-TCDD

2318-TCDD/TCDF

PCDD/PCDF

2318-TCDD

2318-TCDD/TCDF

PCDD/PCDF

2318-TCDD

2318-TCDD/TCDF

PCDD/PCDF

TOTALS

COPLANAR PCB's

209 CONGENERS

PBDE

PAH

WHO 29 PFC's

125 MW PFC's

2318-TCDD

2318-TCDD/TCDF

PCDD/PCDF

2318-TCDD

2318-TCDD/TCDF

PCDD/PCDF

TOTALS

COPLANAR PCB's

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125 MW PFC's

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2318-TCDD/TCDF

PCDD/PCDF

2318-TCDD

2318-TCDD/TCDF

PCDD/PCDF

TOTALS

COPLANAR PCB's

209 CONGENERS

PBDE



Temp -0.9 °C☐ 14 days ☐ 7 days Specify: \_\_\_\_\_

Page 23 of 24



# SAMPLE LOG-IN CHECKLIST



Vista Project #: 1600903 TAT 14 day

|                             |                                           |                                         |                                  |
|-----------------------------|-------------------------------------------|-----------------------------------------|----------------------------------|
| Samples Arrival:            | Date/Time<br>7/15/16 0851                 | Initials:<br>JF GR                      | Location:<br>WR-2                |
|                             |                                           |                                         | Shelf/Rack:<br>N/A               |
| Logged In:                  | Date/Time<br>7/15/16 1015                 | Initials:<br>SR JF                      | Location:<br>WR-2                |
|                             |                                           |                                         | Shelf/Rack:<br>E4                |
| Delivered By:               | <input checked="" type="checkbox"/> FedEx | <input type="checkbox"/> UPS            | <input type="checkbox"/> On Trac |
|                             | <input type="checkbox"/> DHL              | <input type="checkbox"/> Hand Delivered | <input type="checkbox"/> Other   |
| Preservation:               | <input checked="" type="checkbox"/> Ice   | <input type="checkbox"/> Blue Ice       | <input type="checkbox"/> Dry Ice |
|                             | <input type="checkbox"/> None             |                                         |                                  |
| Temp °C: -0.6 (uncorrected) | Time: 0919                                |                                         | Thermometer ID: IR-2             |
| Temp °C: -0.9 (corrected)   |                                           |                                         |                                  |

|                                                                        |                      | YES                                        | NO                                       | NA                                  |
|------------------------------------------------------------------------|----------------------|--------------------------------------------|------------------------------------------|-------------------------------------|
| Adequate Sample Volume Received?                                       |                      | <input checked="" type="checkbox"/>        | <input type="checkbox"/>                 | <input type="checkbox"/>            |
| Holding Time Acceptable?                                               |                      | <input checked="" type="checkbox"/>        | <input type="checkbox"/>                 | <input type="checkbox"/>            |
| Shipping Container(s) Intact?                                          |                      | <input checked="" type="checkbox"/>        | <input type="checkbox"/>                 | <input type="checkbox"/>            |
| Shipping Custody Seals Intact?                                         |                      | <input checked="" type="checkbox"/>        | <input type="checkbox"/>                 | <input type="checkbox"/>            |
| Shipping Documentation Present?                                        |                      | <input checked="" type="checkbox"/>        | <input type="checkbox"/>                 | <input type="checkbox"/>            |
| Airbill                                                                | Trk # 7835 9215 6624 | <input checked="" type="checkbox"/>        | <input type="checkbox"/>                 | <input type="checkbox"/>            |
| Sample Container Intact?                                               |                      | <input checked="" type="checkbox"/>        | <input type="checkbox"/>                 | <input type="checkbox"/>            |
| Sample Custody Seals Intact?                                           |                      | <input type="checkbox"/>                   | <input type="checkbox"/>                 | <input checked="" type="checkbox"/> |
| Chain of Custody / Sample Documentation Present?                       |                      | <input checked="" type="checkbox"/>        | <input type="checkbox"/>                 | <input type="checkbox"/>            |
| COC Anomaly/Sample Acceptance Form completed?                          |                      | <input type="checkbox"/>                   | <input checked="" type="checkbox"/>      | <input type="checkbox"/>            |
| If Chlorinated or Drinking Water Samples, Acceptable Preservation?     |                      | <input type="checkbox"/>                   | <input type="checkbox"/>                 | <input checked="" type="checkbox"/> |
| Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> Preservation Documented? | COC                  | Sample Container                           | <input checked="" type="checkbox"/> None |                                     |
| Shipping Container                                                     | Vista                | <input checked="" type="checkbox"/> Client | Retain                                   | Return                              |
|                                                                        |                      |                                            |                                          | Dispose                             |

## Comments:

0F-MW30-0716 A,B  
 0F-MW30P-0716 A,B  
 0F-MW30D-0716 A,B  
 0F-MW28D-0716 A,B  
 0F-MW32-0716 A,B  
 0F-MW29-0716 A,B  
 0F-MW29-0716-MS A,B  
 0F-MW29-0716-SD A,B

0F-MW08D-0716 A,B  
 0F-MW34-0716 A,B  
 (A) 0F-MW31D-0716 A,B

(A) Sample is a dark color of 07/15/16



July 24, 2016

**Vista Work Order No. 1600903**

Ms. Tiffany Hill  
CH2M Hill  
1100 NE Circle Blvd. Suite 300  
Corvallis, OR 97330

Dear Ms. Hill,

Enclosed are the results for the sample set received at Vista Analytical Laboratory on July 15, 2016. This sample set was analyzed on a rush turn-around time, under your Project Name 'NALF Fentress PFC'.

Vista Analytical Laboratory is committed to serving you effectively. If you require additional information, please contact me at 916-673-1520 or by email at [mmaier@vista-analytical.com](mailto:mmaier@vista-analytical.com).

Thank you for choosing Vista as part of your analytical support team.

Sincerely,

A handwritten signature in black ink that reads "Martha Maier". The signature is fluid and cursive, with the first and last names clearly legible.

Martha Maier  
Laboratory Director



*Vista Analytical Laboratory certifies that the report herein meets all the requirements set forth by NELAP for those applicable test methods. Results relate only to the samples as received by the laboratory. This report should not be reproduced except in full without the written approval of Vista.*

**Vista Work Order No. 1600903****Case Narrative****Sample Condition on Receipt:**

Nine aqueous samples were received in good condition and within the method temperature requirements. The samples were received and stored securely in accordance with Vista standard operating procedures and EPA methodology.

**Analytical Notes:****Modified EPA Method 537**

The samples were extracted and analyzed for a selected list of six PFAS using Modified EPA Method 537. The results for PFBS, PFHxS, PFOA and PFOS include both linear and branched isomers. Results for PFHpA and PFNA results include the linear isomer only.

**Holding Times**

The samples were extracted and analyzed within the method hold times.

**Quality Control**

The Initial Calibration and Continuing Calibration Verifications met the acceptance criteria.

A Method Blank and Ongoing Precision and Recovery (OPR) sample were extracted and analyzed with the preparation batch. No analytes were detected in the Method Blank above the Reporting Limit. The OPR recoveries were within the method acceptance criteria.

The recoveries of all internal standards in the QC and field samples were within the acceptance criteria.

As requested, an MS/MSD was performed on sample "OF-MW29-0716". The recoveries and/or RPDs of PFHxS, PFOA and PFOS were outside of the acceptance criteria.

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# Sample Inventory Report

| Vista<br>Sample ID | Client<br>Sample ID |        | Sampled         | Received        | Components/Containers                      |
|--------------------|---------------------|--------|-----------------|-----------------|--------------------------------------------|
| 1600903-01         | OF-MW30-0716        |        | 13-Jul-16 09:25 | 15-Jul-16 08:51 | HDPE Bottle, 125 mL<br>HDPE Bottle, 125 mL |
| 1600903-02         | OF-MW30P-0716       |        | 13-Jul-16 09:30 | 15-Jul-16 08:51 | HDPE Bottle, 125 mL<br>HDPE Bottle, 125 mL |
| 1600903-03         | OF-MW30D-0716       |        | 13-Jul-16 11:25 | 15-Jul-16 08:51 | HDPE Bottle, 125 mL<br>HDPE Bottle, 125 mL |
| 1600903-04         | OF-MW28D-0716       |        | 13-Jul-16 14:45 | 15-Jul-16 08:51 | HDPE Bottle, 125 mL<br>HDPE Bottle, 125 mL |
| 1600903-05         | OF-MW32-0716        |        | 13-Jul-16 16:15 | 15-Jul-16 08:51 | HDPE Bottle, 125 mL<br>HDPE Bottle, 125 mL |
| 1600903-06         | OF-MW29-0716        | MS/MSD | 14-Jul-16 09:10 | 15-Jul-16 08:51 | HDPE Bottle, 125 mL                        |
|                    |                     | MS/MSD |                 |                 | HDPE Bottle, 125 mL                        |
|                    |                     | MS/MSD |                 |                 | HDPE Bottle, 125 mL                        |
|                    |                     | MS/MSD |                 |                 | HDPE Bottle, 125 mL                        |
|                    |                     | MS/MSD |                 |                 | HDPE Bottle, 125 mL                        |
|                    |                     | MS/MSD |                 |                 | HDPE Bottle, 125 mL                        |
| 1600903-07         | OF-MW08D-0716       |        | 14-Jul-16 11:20 | 15-Jul-16 08:51 | HDPE Bottle, 125 mL<br>HDPE Bottle, 125 mL |
| 1600903-08         | OF-MW34-0716        |        | 14-Jul-16 13:30 | 15-Jul-16 08:51 | HDPE Bottle, 125 mL<br>HDPE Bottle, 125 mL |
| 1600903-09         | OF-MW31D-0716       |        | 14-Jul-16 15:40 | 15-Jul-16 08:51 | HDPE Bottle, 125 mL<br>HDPE Bottle, 125 mL |

## **ANALYTICAL RESULTS**

| Sample ID:    Method Blank                        |              |                                                                  |      |      |            | Modified EPA Method 537                                                                              |     |          |            |
|---------------------------------------------------|--------------|------------------------------------------------------------------|------|------|------------|------------------------------------------------------------------------------------------------------|-----|----------|------------|
| Matrix:        Aqueous<br>Sample Size:    0.125 L |              | QC Batch:        B6G0068<br>Date Extracted:   18-Jul-2016   9:06 |      |      |            | Lab Sample:       B6G0068-BLK1<br>Date Analyzed:    18-Jul-16 18:07   Column: BEH C18   Analyst: PBW |     |          |            |
| Analyte                                           | Conc. (ng/L) | MDL                                                              | LOD  | LOQ  | Qualifiers | Labeled Standard                                                                                     | %R  | LCL-UCL  | Qualifiers |
| PFBS                                              | ND           | 1.79                                                             | 4.00 | 8.00 |            | IS    13C3-PFBS                                                                                      | 117 | 60 - 150 |            |
| PFHpA                                             | ND           | 0.591                                                            | 4.00 | 8.00 |            | IS    13C4-PFHpA                                                                                     | 105 | 25 - 175 |            |
| PFHxS                                             | ND           | 0.947                                                            | 4.00 | 8.00 |            | IS    18O2-PFHxS                                                                                     | 104 | 60 - 150 |            |
| PFOA                                              | ND           | 0.651                                                            | 4.00 | 8.00 |            | IS    13C2-PFOA                                                                                      | 103 | 60 - 150 |            |
| PFOS                                              | ND           | 0.807                                                            | 4.00 | 8.00 |            | IS    13C8-PFOS                                                                                      | 112 | 60 - 150 |            |
| PFNA                                              | ND           | 0.810                                                            | 4.00 | 8.00 |            | IS    13C5-PFNA                                                                                      | 108 | 50 - 150 |            |

LCL-UCL - Lower control limit - upper control limit  
Results reported to MDL.  
The results for PFBS, PFHxS, PFOA and PFOS include both linear and branched isomers.

| Sample ID:    OPR       |                  |                                      |      |          | Modified EPA Method 537                                            |            |     |          |
|-------------------------|------------------|--------------------------------------|------|----------|--------------------------------------------------------------------|------------|-----|----------|
| Matrix:        Aqueous  |                  | QC Batch:        B6G0068             |      |          | Lab Sample:        B6G0068-BS1                                     |            |     |          |
| Sample Size:    0.125 L |                  | Date Extracted:   18-Jul-2016   9:06 |      |          | Date Analyzed:    18-Jul-16 17:43   Column: BEH C18   Analyst: PBW |            |     |          |
| Analyte                 | Amt Found (ng/L) | Spike Amt                            | %R   | Limits   | Labeled Standard                                                   |            | %R  | LCL-UCL  |
| PFBS                    | 79.7             | 80.0                                 | 99.6 | 60 - 130 | IS                                                                 | 13C3-PFBS  | 113 | 60 - 150 |
| PFHpA                   | 79.3             | 80.0                                 | 99.1 | 70 - 130 | IS                                                                 | 13C4-PFHpA | 106 | 25 - 175 |
| PFHxS                   | 88.7             | 80.0                                 | 111  | 70 - 130 | IS                                                                 | 18O2-PFHxS | 101 | 60 - 150 |
| PFOA                    | 84.1             | 80.0                                 | 105  | 70 - 130 | IS                                                                 | 13C2-PFOA  | 106 | 60 - 150 |
| PFOS                    | 84.9             | 80.0                                 | 106  | 70 - 130 | IS                                                                 | 13C8-PFOS  | 103 | 60 - 150 |
| PFNA                    | 78.6             | 80.0                                 | 98.2 | 50 - 130 | IS                                                                 | 13C5-PFNA  | 102 | 50 - 150 |

LCL-UCL - Lower control limit - upper control limit

Sample ID: OF-MW30-0716

Modified EPA Method 537

| <b>Client Data</b><br>Name: CH2M Hill<br>Project: NALF Fentress PFC<br>Date Collected: 13-Jul-2016 9:25<br>Location: NALF Fentress |              |       | <b>Sample Data</b><br>Matrix: Aqueous<br>Sample Size: 0.115 L |      |            | <b>Laboratory Data</b><br>Lab Sample: 1600903-01      Date Received: 15-Jul-2016 8:51<br>QC Batch: B6G0068      Date Extracted: 18-Jul-2016 9:06<br>Date Analyzed: 18-Jul-16 18:20    Column: BEH C18    Analyst: PBW |      |          |            |
|------------------------------------------------------------------------------------------------------------------------------------|--------------|-------|---------------------------------------------------------------|------|------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|----------|------------|
| Analyte                                                                                                                            | Conc. (ng/L) | MDL   | LOD                                                           | LOQ  | Qualifiers | Labeled Standard                                                                                                                                                                                                      | %R   | LCL-UCL  | Qualifiers |
| PFBS                                                                                                                               | ND           | 1.94  | 4.35                                                          | 8.67 |            | IS 13C3-PFBS                                                                                                                                                                                                          | 117  | 60 - 150 |            |
| PFHpA                                                                                                                              | ND           | 0.641 | 4.35                                                          | 8.67 |            | IS 13C4-PFHpA                                                                                                                                                                                                         | 105  | 25 - 175 |            |
| PFHxS                                                                                                                              | ND           | 1.03  | 4.35                                                          | 8.67 |            | IS 18O2-PFHxS                                                                                                                                                                                                         | 105  | 60 - 150 |            |
| PFOA                                                                                                                               | ND           | 0.706 | 4.35                                                          | 8.67 |            | IS 13C2-PFOA                                                                                                                                                                                                          | 111  | 60 - 150 |            |
| PFOS                                                                                                                               | ND           | 0.875 | 4.35                                                          | 8.67 |            | IS 13C8-PFOS                                                                                                                                                                                                          | 97.0 | 60 - 150 |            |
| PFNA                                                                                                                               | ND           | 0.878 | 4.35                                                          | 8.67 |            | IS 13C5-PFNA                                                                                                                                                                                                          | 104  | 50 - 150 |            |

LCL-UCL - Lower control limit - upper control limit  
Results reported to MDL.  
The results for PFBS, PFHxS, PFOA and PFOS include both linear and branched isomers.

| Sample ID: OF-MW30P-0716                                                                                               |              |       |                                         |      |            | Modified EPA Method 537                                                                                                                                                                     |      |          |            |
|------------------------------------------------------------------------------------------------------------------------|--------------|-------|-----------------------------------------|------|------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|----------|------------|
| Client Data                                                                                                            |              |       | Sample Data                             |      |            | Laboratory Data                                                                                                                                                                             |      |          |            |
| Sample Name: Cs 2M s ill<br>Matrix: j ALF FentrePP WFC<br>Date Collected: 10-Jul-2016 9:00<br>Location: j ALF FentrePP |              |       | Matrix: ARueHuP<br>Sample Size: 0.119 L |      |            | Lab Sample: 160090o-02      Date received: 1N-Jul-2016 8:NI<br>QC Batch: B6G0068      Date Extracted: 18-Jul-2016 9:06<br>Date Analyzed: 18-Jul-16 18:o2    Column: BEs C18    Analyte: WBq |      |          |            |
| Analyte                                                                                                                | Conc. (ng/L) | MDL   | LOD                                     | LOQ  | Qualifiers | Labeled Standard                                                                                                                                                                            | %R   | LCL-UCL  | Qualifiers |
| WBS                                                                                                                    | j D          | 1.87  | 4.20                                    | 8.o7 |            | IS 1oCo-WBS                                                                                                                                                                                 | 11N  | 60 - 1N0 |            |
| Ws pA                                                                                                                  | j D          | 0.618 | 4.20                                    | 8.o7 |            | IS 1oC4-Ws pA                                                                                                                                                                               | 104  | 2N- 17N  |            |
| Ws xS                                                                                                                  | j D          | 0.991 | 4.20                                    | 8.o7 |            | IS 18O2-Ws xS                                                                                                                                                                               | 98.N | 60 - 1N0 |            |
| WFOA                                                                                                                   | j D          | 0.681 | 4.20                                    | 8.o7 |            | IS 1oC2-WFOA                                                                                                                                                                                | 107  | 60 - 1N0 |            |
| WFOS                                                                                                                   | j D          | 0.844 | 4.20                                    | 8.o7 |            | IS 1oC8-WFOS                                                                                                                                                                                | 10o  | 60 - 1N0 |            |
| WFj A                                                                                                                  | j D          | 0.847 | 4.20                                    | 8.o7 |            | IS 1oCN-WFj A                                                                                                                                                                               | 106  | N0 - 1N0 |            |

LCL-UCL - Lower cHtrH limit - upper cHtrH limit  
 veRultPrepHted thMDL.  
 The reRultPth WBS, Ws xS, WFOA and WFOS include bHh linear and branched iPhnerP.

| Sample ID: OF-MW30D-0716                                                                                               |              |      |                                         |     |            | Modified EPA Method 537                                                                                                                                                              |     |          |            |
|------------------------------------------------------------------------------------------------------------------------|--------------|------|-----------------------------------------|-----|------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|----------|------------|
| Client Data                                                                                                            |              |      | Sample Data                             |     |            | Laboratory Data                                                                                                                                                                      |     |          |            |
| Sample Name: Cs 2M s ill<br>Matrix: j AL. . entrePPWC<br>Date Collected: 1F-Jul-2016 11:2N<br>Labeled: j AL. . entrePP |              |      | Matrix: ARueHuP<br>Sample Size: 07119 L |     |            | Lab Sample: 160090F-0F<br>QC Batch: B6G0068<br>Date Analyzed: 18-Jul-16 18:00<br>Date received: 1N-Jul-2016 8:NI<br>Date Extracted: 18-Jul-2016 9:06<br>Column: BEs C18 Analyte: WBq |     |          |            |
| Analyte                                                                                                                | Conc. (ng/L) | MDL  | LOD                                     | LOQ | Qualifiers | Labeled Standard                                                                                                                                                                     | %R  | LCL-UCL  | Qualifiers |
| WBS                                                                                                                    | j D          | 184  | o20                                     | 8F8 |            | IS 1FCF-WBS                                                                                                                                                                          | 116 | 60 - 1N0 |            |
| W s pA                                                                                                                 | 2719         | 0719 | o20                                     | 8F8 | J          | IS 1FCo-W s pA                                                                                                                                                                       | 10N | 2N- 14N  |            |
| W s xS                                                                                                                 | j D          | 0992 | o20                                     | 8F8 |            | IS 18O2-W s xS                                                                                                                                                                       | 116 | 60 - 1N0 |            |
| W OA                                                                                                                   | 26N          | 0782 | o20                                     | 8F8 | J          | IS 1FC2-W OA                                                                                                                                                                         | 10o | 60 - 1N0 |            |
| W OS                                                                                                                   | 208          | 08oN | o20                                     | 8F8 | J          | IS 1FC8-W OS                                                                                                                                                                         | 110 | 60 - 1N0 |            |
| W j A                                                                                                                  | 108          | 08o8 | o20                                     | 8F8 | J          | IS 1FCN-W j A                                                                                                                                                                        | 106 | N0 - 1N0 |            |

LCL-UCL - Lower cHtrH limit - upper cHtrH limit  
 veRultPrepHted thMDL7  
 The reRultPflf WBS, W s xS, W OA and W OS include bHh linear and branched iPhnerP7

Sample ID: OF-MW28D-0716

Modified EPA Method 537

| Client Data    |                   | Sample Data  |         | Laboratory Data |                 |                 |             |             |
|----------------|-------------------|--------------|---------|-----------------|-----------------|-----------------|-------------|-------------|
| Name:          | Cs 2M s ill       | Matrix:      | ARueHuP | Lab Sample:     | 1600903-0F      | Date v ecei5ed: | 1o-Jul-2016 | 8:o1        |
| WHject:        | NAL. . entrePPWC  | Sample Size: | 07119 L | QC Batch:       | B6G0068         | Date Extracted: | 18-Jul-2016 | 9:06        |
| Date CHlected: | 13-Jul-2016 1F:Fo |              |         | Date Analyzed:  | 18-Jul-16 18:o6 | CHumn:          | BEs C18     | AnalyR: WBq |
| LHatiH:        | NAL. . entrePP    |              |         |                 |                 |                 |             |             |

| Analyte | Conc. (ng/L) | MDL  | LOD | LOQ | Qualifiers | Labeled Standard | %R  | LCL-UCL  | Qualifiers |
|---------|--------------|------|-----|-----|------------|------------------|-----|----------|------------|
| WBS     | ND           | 174  | F20 | 878 |            | IS 13C3-WBS      | 11o | 60 - 1o0 |            |
| W s pA  | 170          | 0719 | F20 | 878 | J          | IS 13CF-W s pA   | 10F | 2o - 14o |            |
| W s xS  | ND           | 0791 | F20 | 878 |            | IS 18O2-W s xS   | 987 | 60 - 1o0 |            |
| W OA    | 273          | 0782 | F20 | 878 | J          | IS 13C2-W OA     | 103 | 60 - 1o0 |            |
| W OS    | 670          | 07Fo | F20 | 878 | J          | IS 13C8-W OS     | 987 | 60 - 1o0 |            |
| W NA    | 172          | 07F8 | F20 | 878 | J          | IS 13Co-W NA     | 917 | o0 - 1o0 |            |

LCL-UCL - LHver cHtrH limit - upper cHtrH limit  
v eRultPrepHted tHMDL7  
The reRultP fH WBS, W s xS, W OA and W OS include bHh linear and branched iPHnerP7



Sample ID: OF-MW32-0716

Modified EPA Method 537

| Client Data                       |              |       |      |      |            | Sample Data          |            |     |          | Laboratory Data                                             |  |  |  |
|-----------------------------------|--------------|-------|------|------|------------|----------------------|------------|-----|----------|-------------------------------------------------------------|--|--|--|
| Name: CH2M Hill                   |              |       |      |      |            | Matrix: Aqueous      |            |     |          | Lab Sample: 1600903-05                                      |  |  |  |
| Project: NALF Fentress PFC        |              |       |      |      |            | Sample Size: 0.127 L |            |     |          | Date Received: 15-Jul-2016 8:51                             |  |  |  |
| Date Collected: 13-Jul-2016 16:15 |              |       |      |      |            |                      |            |     |          | Date Extracted: 18-Jul-2016 9:06                            |  |  |  |
| Location: NALF Fentress           |              |       |      |      |            |                      |            |     |          | Date Analyzed: 18-Jul-16 19:09 Column: BEH C18 Analyst: PBW |  |  |  |
| Analyte                           | Conc. (ng/L) | MDL   | LOD  | LOQ  | Qualifiers | Labeled Standard     |            | %R  | LCL-UCL  | Qualifiers                                                  |  |  |  |
| PFBS                              | ND           | 1.76  | 3.94 | 7.88 |            | IS                   | 13C3-PFBS  | 117 | 60 - 150 |                                                             |  |  |  |
| PFHpA                             | ND           | 0.582 | 3.94 | 7.88 |            | IS                   | 13C4-PFHpA | 101 | 25 - 175 |                                                             |  |  |  |
| PFHxS                             | 1.16         | 0.932 | 3.94 | 7.88 | J          | IS                   | 18O2-PFHxS | 115 | 60 - 150 |                                                             |  |  |  |
| PFOA                              | 0.712        | 0.641 | 3.94 | 7.88 | J          | IS                   | 13C2-PFOA  | 105 | 60 - 150 |                                                             |  |  |  |
| PFOS                              | ND           | 0.795 | 3.94 | 7.88 |            | IS                   | 13C8-PFOS  | 112 | 60 - 150 |                                                             |  |  |  |
| PFNA                              | ND           | 0.797 | 3.94 | 7.88 |            | IS                   | 13C5-PFNA  | 106 | 50 - 150 |                                                             |  |  |  |

LCL-UCL - Lower control limit - upper control limit

Results reported to MDL.

The results for PFBS, PFHxS, PFOA and PFOS include both linear and branched isomers.

| Sample ID: OF-MW29-0716 |                   |       |              |         |            |                  | Modified EPA Method 537 |                 |                 |                      |                      |  |
|-------------------------|-------------------|-------|--------------|---------|------------|------------------|-------------------------|-----------------|-----------------|----------------------|----------------------|--|
| Client Data             |                   |       | Sample Data  |         |            | Laboratory Data  |                         |                 |                 |                      |                      |  |
| Name:                   | CH2M Hill         |       | Matrix:      | Aqueous |            | Lab Sample:      | 1600907-06              |                 | Date Received:  | 15-Jul-2016 8:51     |                      |  |
| Project:                | NALF Fentress PFC |       | Sample Size: | 0.121 L |            | QC Batch:        | B6G0068                 |                 | Date Extracted: | 18-Jul-2016 9:06     |                      |  |
| Date Collected:         | 13-Jul-2016 9:10  |       |              |         |            | Date Analyzed:   | 18-Jul-16 19:21         |                 | Column:         | BEH C18 Analyst: PBW |                      |  |
| Location:               | NALF Fentress     |       |              |         |            |                  |                         | 19-Jul-16 16:02 |                 | Column:              | BEH C18 Analyst: PBW |  |
| Analyte                 | Conc. (ng/L)      | MDL   | LOD          | LOQ     | Qualifiers | Labeled Standard |                         | %R              | LCL-UCL         | Qualifiers           |                      |  |
| PFBS                    | 387               | 1.83  | 3.17         | 8.23    | D          | IS               | 17C7-PFBS               | 121             | 60 - 150        |                      |                      |  |
| PFHpA                   | 731               | 0.609 | 3.17         | 8.23    |            | IS               | 17C3-PFHpA              | 115             | 25 - 145        |                      |                      |  |
| PFHxS                   | 3490              | 9.45  | 31.7         | 82.3    |            | IS               | 18O2-PFHxS              | 121             | 60 - 150        |                      |                      |  |
| PFOA                    | 872               | 0.641 | 3.17         | 8.23    |            | IS               | 17C2-PFOA               | 108             | 60 - 150        |                      |                      |  |
| PFOS                    | 2960              | 0.871 | 3.17         | 8.23    |            | IS               | 17C8-PFOS               | 115             | 60 - 150        |                      |                      |  |
| PFNA                    | 22.0              | 0.873 | 3.17         | 8.23    |            | IS               | 17C5-PFNA               | 109             | 50 - 150        |                      |                      |  |

LCL-UCL - Lower control limit - upper control limit  
Results reported to MDL.  
The results for PFBS, PFHxS, PFOA and PFOS include both linear and branched isomers.

## Matrix Spike Results

## Modified EPA Method 537

Source Client ID: OF-MW29-0716  
Source LabNumber: 1600903-06  
Matrix: Aqueous  
Sample Size: 0.119/0.118 L

QC Batch: B6G0068  
Date Extracted: 18-Jul-2016 9:06

Lab Sample: B6G0068-MS1/B6G0068-MSD1  
Date Analyzed: 19-Jul-16 16:55 Column: BEH C18 Analyst: PBW  
19-Jul-16 17:08 Column: BEH C18 Analyst: PBW

| Analyte | Spike-MS<br>(ng/L) | MS<br>%R | MS<br>Qual. | Spike-MSD<br>(ng/L) | MSD<br>%R | MSD<br>RPD | MSD<br>Qual. | %R<br>Limit | %RPD<br>Limit | Labeled Standard | MS<br>%R | MS<br>Qualifiers | MSD<br>%R | MS<br>Qual. |
|---------|--------------------|----------|-------------|---------------------|-----------|------------|--------------|-------------|---------------|------------------|----------|------------------|-----------|-------------|
| PFBS    | 83.8               | 125      |             | 84.9                | 106       | 16.5       |              | 60 - 130    | 25            | IS 13C3-PFBS     | 116      |                  | 116       |             |
| PFHpA   | 83.8               | 94.2     |             | 84.9                | 106       | 11.8       |              | 70 - 130    | 25            | IS 13C4-PFHpA    | 112      |                  | 109       |             |
| PFHxS   | 83.8               | 379      | D, H        | 84.9                | 561       | 38.7       | D, H         | 70 - 130    | 25            | IS 18O2-PFHxS    | 114      | D                | 103       | D           |
| PFOA    | 83.8               | 59.0     | H           | 84.9                | 217       | 114        | H            | 70 - 130    | 25            | IS 13C2-PFOA     | 114      |                  | 102       |             |
| PFOS    | 83.8               | 140      | H           | 84.9                | -28.5     | 302        | H            | 70 - 130    | 25            | IS 13C8-PFOS     | 107      |                  | 115       |             |
| PFNA    | 83.8               | 98.0     |             | 84.9                | 98.4      | 0.407      |              | 50 - 130    | 25            | IS 13C5-PFNA     | 103      |                  | 111       |             |

| Sample ID: OF-MW08D-0716 |                     |      |              |         |            | Modified EPA Method 537                      |                 |                 |                    |
|--------------------------|---------------------|------|--------------|---------|------------|----------------------------------------------|-----------------|-----------------|--------------------|
| Client Data              |                     |      | Sample Data  |         |            | Laboratory Data                              |                 |                 |                    |
| Sample:                  | Cs 2M s ill         |      | Matrix:      | AvueHuP |            | Lab Sample:                                  | 160090o-04      | Date Received:  | 1j -Jul-2016 8:j 1 |
| Effect:                  | 3 AL. . entrePP W C |      | Sample Size: | 0720 L  |            | QC Batch:                                    | B6G0068         | Date Extracted: | 18-Jul-2016 9:06   |
| Date Collected:          | 1R-Jul-2016 11:20   |      |              |         |            | Date Analyzed:                               | 18-Jul-16 19:00 | Column: BEs C18 | Analyte: WBq       |
| Location:                | 3 AL. . entrePP     |      |              |         |            | 19-Jul-16 16:1R Column: BEs C18 Analyte: WBq |                 |                 |                    |
| Analyte                  | Conc. (ng/L)        | MDL  | LOD          | LOQ     | Qualifiers | Labeled Standard                             | %R              | LCL-UCL         | Qualifiers         |
| WBS                      | 26j                 | 186  | R74          | 870     |            | IS 1oCo-WBS                                  | 11R             | 60 - 1j 0       |                    |
| W s pA                   | 99R                 | 071o | R74          | 870     |            | IS 1oCR-W s pA                               | 101             | 2j - 14j        |                    |
| W s xS                   | j 1R                | 098o | R74          | 870     |            | IS 18O2-W s xS                               | 102             | 60 - 1j 0       |                    |
| W OA                     | 617                 | 0746 | R74          | 870     |            | IS 1oC2-W OA                                 | 109             | 60 - 1j 0       |                    |
| W OS                     | 6880                | 878  | R17          | 8o7     | D          | IS 1oC8-W OS                                 | 109             | 60 - 1j 0       | D                  |
| W 3 A                    | 217                 | 08R1 | R74          | 870     |            | IS 1oCj -W 3 A                               | 104             | j 0 - 1j 0      |                    |

LCL-UCL - Lower cHtrH limit - upper cHtrH limit  
5 ePultPrepHted tHMDL7  
The rePultP fH WBS, W s xS, W OA and W OS include bHh linear and branched iPHnerP7

| Sample ID: OF-MW34-0716           |              |       |                      |      |            | Modified EPA Method 537        |  |                                  |         |            |
|-----------------------------------|--------------|-------|----------------------|------|------------|--------------------------------|--|----------------------------------|---------|------------|
| Client Data                       |              |       | Sample Data          |      |            | Laboratory Data                |  |                                  |         |            |
| Sample Name: CP 2M Pill           |              |       | Matrix: AvuesuW      |      |            | Lab Sample: 160090F-08         |  | Date Received: 18-Jul-2016 8:11  |         |            |
| Project: j AL. . entreWq. C       |              |       | Sample Size: 0.12 FL |      |            | QC Batch: B6G0068              |  | Date Extracted: 18-Jul-2016 9:06 |         |            |
| Date Collected: 10-Jul-2016 1F:F0 |              |       |                      |      |            | Date Analyzed: 18-Jul-16 19:0H |  | Column: BEP C18 Analyte: qBR     |         |            |
| Location: j AL. . entreW          |              |       |                      |      |            |                                |  |                                  |         |            |
| Analyte                           | Conc. (ng/L) | MDL   | LOD                  | LOQ  | Qualifiers | Labeled Standard               |  | %R                               | LCL-UCL | Qualifiers |
| q. BS                             | j D          | 1.81  | 0.04                 | 8.11 |            | IS 1FCF-q. BS                  |  | 110                              | 60 - 1H |            |
| q. PpA                            | j D          | 0.199 | 0.04                 | 8.11 |            | IS 1FCo-q. PpA                 |  | 10F                              | 2H- 14H |            |
| q. PxS                            | F.6H         | 0.960 | 0.04                 | 8.11 | J          | IS 18O2-q. PxS                 |  | 110                              | 60 - 1H |            |
| q. OA                             | 0.8H         | 0.660 | 0.04                 | 8.11 | J          | IS 1FC2-q. OA                  |  | 9F.6                             | 60 - 1H |            |
| q. OS                             | 6.1H         | 0.818 | 0.04                 | 8.11 | J          | IS 1FC8-q. OS                  |  | 112                              | 60 - 1H |            |
| q. j A                            | j D          | 0.821 | 0.04                 | 8.11 |            | IS 1FCH-q. j A                 |  | 106                              | H - 1H  |            |

LCL-UCL - Lower controls limit - upper controls limit

5 eWtWpsrted ts MDL7

The reWtWsr q. BS, q. PxS, q. OA and q. OS include both linear and branched iWmerW

| Sample ID: OF-MW31D-0716          |              |      |                     |     |            | Modified EPA Method 537        |  |                                  |          |            |
|-----------------------------------|--------------|------|---------------------|-----|------------|--------------------------------|--|----------------------------------|----------|------------|
| Client Data                       |              |      | Sample Data         |     |            | Laboratory Data                |  |                                  |          |            |
| j ame: CP 2M P ill                |              |      | Matrix: AvuesuW     |     |            | Lab Sample: 1600904-09         |  | Date 5eeiNed: 1o-Jul-2016 8:o1   |          |            |
| qrsæct: j AL. . entreWq. C        |              |      | Sample Size: 0711 L |     |            | QC Batch: B6G0068              |  | Date Extracted: 18-Jul-2016 9:06 |          |            |
| Date Csllected: 1F-Jul-2016 1o:F0 |              |      |                     |     |            | Date Analyzed: 18-Jul-16 19:oH |  | Cs lumn: BEP C18 AnalyW qBR      |          |            |
| Lscatisn: j AL. . entreW          |              |      |                     |     |            |                                |  |                                  |          |            |
| Analyte                           | Conc. (ng/L) | MDL  | LOD                 | LOQ | Qualifiers | Labeled Standard               |  | %R                               | LCL-UCL  | Qualifiers |
| q. BS                             | j D          | 202  | F00                 | 90F |            | IS 14C4-q. BS                  |  | 121                              | 60 - 1o0 |            |
| q. P pA                           | 494          | 0668 | F00                 | 90F | J          | IS 14CF-q. P pA                |  | 108                              | 2o - 1Hb |            |
| q. P xS                           | 449          | 10H  | F00                 | 90F | J          | IS 18O2-q. P xS                |  | 11H                              | 60 - 1o0 |            |
| q. OA                             | F0F          | 0746 | F00                 | 90F | J          | IS 14C2-q. OA                  |  | 928                              | 60 - 1o0 |            |
| q. OS                             | o67          | 0912 | F00                 | 90F |            | IS 14C8-q. OS                  |  | 114                              | 60 - 1o0 |            |
| q. j A                            | 2F2          | 091o | F00                 | 90F | J          | IS 14Co-q. j A                 |  | 110                              | o0 - 1o0 |            |

LCL-UCL - Lower control limit - upper control limit

5 eWtWpsrted ts MDL7

The reWtWsr q. BS, q. PxS, q. OA and q. OS include both linear and branched iWmerW

## **DATA QUALIFIERS & ABBREVIATIONS**

|              |                                                                                                |
|--------------|------------------------------------------------------------------------------------------------|
| <b>B</b>     | <b>This compound was also detected in the method blank.</b>                                    |
| <b>D</b>     | <b>Dilution</b>                                                                                |
| <b>E</b>     | <b>The associated compound concentration exceeded the calibration range of the instrument.</b> |
| <b>H</b>     | <b>Recovery and/or RPD was outside laboratory acceptance limits.</b>                           |
| <b>I</b>     | <b>Chemical Interference</b>                                                                   |
| <b>J</b>     | <b>The amount detected is below the Reporting Limit/LOQ.</b>                                   |
| <b>*</b>     | <b>See Cover Letter</b>                                                                        |
| <b>Conc.</b> | <b>Concentration</b>                                                                           |
| <b>NA</b>    | <b>Not applicable</b>                                                                          |
| <b>ND</b>    | <b>Not Detected</b>                                                                            |
| <b>TEQ</b>   | <b>Toxic Equivalency</b>                                                                       |

**Unless otherwise noted, solid sample results are reported in dry weight. Tissue samples are reported in wet weight.**

## **CERTIFICATIONS**

| <b>Accrediting Authority</b>                        | <b>Certificate Number</b> |
|-----------------------------------------------------|---------------------------|
| California Department of Health – ELAP              | 2892                      |
| DoD ELAP - A2LA Accredited - ISO/IEC 17025:2005     | 3091.01                   |
| Florida Department of Health                        | E87777                    |
| Hawaii Department of Health                         | N/A                       |
| Louisiana Department of Environmental Quality       | 01977                     |
| Maine Department of Health                          | 2014022                   |
| Nevada Division of Environmental Protection         | CA004132015-1             |
| New Jersey Department of Environmental Protection   | CA003                     |
| New York Department of Health                       | 11411                     |
| Oregon Laboratory Accreditation Program             | 4042-004                  |
| Pennsylvania Department of Environmental Protection | 012                       |
| South Carolina Department of Health                 | 87002001                  |
| Texas Commission on Environmental Quality           | T104704189-15-6           |
| Virginia Department of General Services             | 7923                      |
| Washington Department of Ecology                    | C584                      |
| Wisconsin Department of Natural Resources           | 998036160                 |

*Current certificates and lists of licensed parameters are located in the Quality Assurance office and are available upon request*



## NELAP Accredited Test Methods

| MATRIX: Air                                                                |        |
|----------------------------------------------------------------------------|--------|
| Description of Test                                                        | Method |
| Determination of Polychlorinated p-Dioxins & Polychlorinated Dibenzofurans | EPA 23 |

| MATRIX: Biological Tissue                                                                   |                |
|---------------------------------------------------------------------------------------------|----------------|
| Description of Test                                                                         | Method         |
| Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope Dilution GC/HRMS              | EPA 1613B      |
| Brominated Diphenyl Ethers by HRGC/HRMS                                                     | EPA 1614A      |
| Chlorinated Biphenyl Congeners in Water, Soil, Sediment, and Tissue by GC/HRMS              | EPA 1668A/C    |
| Pesticides in Water, Soil, Sediment, Biosolids, and Tissue by HRGC/HRMS                     | EPA 1699       |
| Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS                            | EPA 537        |
| Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans by GC/HRMS              | EPA 8280A/B    |
| Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated Dibenzofurans (PCDFs) by GC/HRMS | EPA 8290/8290A |

| MATRIX: Drinking Water                                           |          |
|------------------------------------------------------------------|----------|
| Description of Test                                              | Method   |
| 2,3,7,8-Tetrachlorodibenzo- p-dioxin (2,3,7,8-TCDD) GC/HRMS      | EPA 1613 |
| Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS | EPA 537  |

| MATRIX: Non-Potable Water                                                                   |                |
|---------------------------------------------------------------------------------------------|----------------|
| Description of Test                                                                         | Method         |
| Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope Dilution GC/HRMS              | EPA 1613B      |
| Brominated Diphenyl Ethers by HRGC/HRMS                                                     | EPA 1614A      |
| Chlorinated Biphenyl Congeners in Water, Soil, Sediment, and Tissue by GC/HRMS              | EPA 1668A/C    |
| Pesticides in Water, Soil, Sediment, Biosolids, and Tissue by HRGC/HRMS                     | EPA 1699       |
| Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS                            | EPA 537        |
| Dioxin by GC/HRMS                                                                           | EPA 613        |
| Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans by GC/HRMS              | EPA 8280A/B    |
| Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated Dibenzofurans (PCDFs) by GC/HRMS | EPA 8290/8290A |

| MATRIX: Solids                                                        |           |
|-----------------------------------------------------------------------|-----------|
| Description of Test                                                   | Method    |
| Tetra-Octa Chlorinated Dioxins and Furans by Isotope Dilution GC/HRMS | EPA 1613  |
| Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope         | EPA 1613B |

|                                                                                             |                |
|---------------------------------------------------------------------------------------------|----------------|
| Dilution GC/HRMS                                                                            |                |
| Brominated Diphenyl Ethers by HRGC/HRMS                                                     | EPA 1614A      |
| Chlorinated Biphenyl Congeners in Water, Soil, Sediment, and Tissue by GC/HRMS              | EPA 1668A/C    |
| Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS                            | EPA 537        |
| Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans by GC/HRMS              | EPA 8280A/B    |
| Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated Dibenzofurans (PCDFs) by GC/HRMS | EPA 8290/8290A |



# CHAIN OF CUSTODY

FOR LABORATORY USE ONLY

Storage  
Secured

Laboratory Project ID: 1600903

Yes ☒ No ☐

Storage ID: WR-2 E4

Temp -0.9 °C

CTO - WE07

Project I.D.: NAIS FRONTRESS PFC P.O.# 10026-7-105444

Sampler: ML OSI / AK / [Signature]  
(Name)

TAT: (Check One): Per Contract

Standard: ☐ 21 Days

Rush (surcharge may apply):

☐ 14 days ☐ 7 days Specify: \_\_\_\_\_

Invoice to: Name CH2M HILL Company

Address

City

State

Zip

Ph#

Fax#

Relinquished by: (Signature and Printed Name)

Date:

Time:

Received by: (Signature and Printed Name)

Date:

Time:

Relinquished by: (Signature and Printed Name)

Date:

Time:

Received by: (Signature and Printed Name)

Date:

Time:

## See "Sample Log-in Checklist" for additional sample information

SHIP TO: Vista Analytical Laboratory  
1104 Windfield Way  
El Dorado Hills, CA 95762  
(916) 673-1520 • Fax (916) 673-0106

Method of Shipment:

Tracking No.:

Add Analysis(es) Requested

Container(s)

ATTN: MARTHA MAIER

| Sample ID        | Date    | Time | Location/Sample Description | Quantity | Type | Matrix | 2318-TCDD | 2318-TCDD/TCDF | PCDD/PCDF | 2318-TCDD | 2318-TCDD/TCDF | PCDD/PCDF | 2318-TCDD | 2318-TCDD/TCDF | PCDD/PCDF | TOTALS | COPLANAR PCB's | 209 CONGENERS | PBDE | PAH | WHO 29 | CARB 49 |
|------------------|---------|------|-----------------------------|----------|------|--------|-----------|----------------|-----------|-----------|----------------|-----------|-----------|----------------|-----------|--------|----------------|---------------|------|-----|--------|---------|
| OF-MW 30-0716    | 7/13/16 | 0925 | NAIS FRONTRESS              | 2        | Ag   |        |           |                |           |           |                |           |           |                |           |        |                |               |      |     | 2      |         |
| OF-MW 30P-0716   | 7/13/16 | 0930 |                             | 2        | Ag   |        |           |                |           |           |                |           |           |                |           |        |                |               |      |     | 2      |         |
| OF-MW 300-0716   | 7/13/16 | 1125 |                             | 2        | Ag   |        |           |                |           |           |                |           |           |                |           |        |                |               |      |     | 2      |         |
| OF-MW 280-0716   | 7/13/16 | 1445 |                             | 2        | Ag   |        |           |                |           |           |                |           |           |                |           |        |                |               |      |     | 2      |         |
| OF-MW 32-0716    | 7/13/16 | 1615 |                             | 2        | Ag   |        |           |                |           |           |                |           |           |                |           |        |                |               |      |     | 2      |         |
| OF-MW 29-0716    | 7/14/16 | 0910 |                             | 2        | Ag   |        |           |                |           |           |                |           |           |                |           |        |                |               |      |     | 2      |         |
| OF-MW 29-0716-MS | 7/14/16 | 0910 |                             | 2        | Ag   |        |           |                |           |           |                |           |           |                |           |        |                |               |      |     | 2      |         |
| OF-MW 29-0716-SD | 7/14/16 | 0910 |                             | 2        | Ag   |        |           |                |           |           |                |           |           |                |           |        |                |               |      |     | 2      |         |
| OF-MW 080-0716   | 7/14/16 | 1120 |                             | 2        | Ag   |        |           |                |           |           |                |           |           |                |           |        |                |               |      |     | 2      |         |
| OF-MW 34-0716    | 7/14/16 | 1330 |                             | 2        | Ag   |        |           |                |           |           |                |           |           |                |           |        |                |               |      |     | 2      |         |

Special Instructions/Comments: \_\_\_\_\_

SEND  
DOCUMENTATION  
AND RESULTS TO:

Name: Tiffany Hill

Company: CH2M HILL

Address: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_

Phone: 541 768 3129 Fax: \_\_\_\_\_

Email: \_\_\_\_\_

Container Types: A = 1 Liter Amber, G = Glass Jar

\*Bottle Preservative Type: T = Thiosulfate,

P = PUF, T = MMS Train, O = Other \_\_\_\_\_

O = Other \_\_\_\_\_

Matrix Types: DW = Drinking Water, EF = Effluent, PP = Pulp/Paper,

SD = Sediment, SL = Sludge, SO = Soil, WW = Wastewater, B = Blood/Serum

AQ = Aqueous, O = Other \_\_\_\_\_







# SAMPLE LOG-IN CHECKLIST



Vista Project #: 1600903 TAT 14 day

|                             |                                           |                                         |                                  |
|-----------------------------|-------------------------------------------|-----------------------------------------|----------------------------------|
| Samples Arrival:            | Date/Time<br>7/15/16 0851                 | Initials:<br>JF GR                      | Location:<br>WR-2                |
|                             |                                           |                                         | Shelf/Rack:<br>N/A               |
| Logged In:                  | Date/Time<br>7/15/16 1015                 | Initials:<br>SR JF                      | Location:<br>WR-2                |
|                             |                                           |                                         | Shelf/Rack:<br>E4                |
| Delivered By:               | <input checked="" type="checkbox"/> FedEx | <input type="checkbox"/> UPS            | <input type="checkbox"/> On Trac |
|                             | <input type="checkbox"/> DHL              | <input type="checkbox"/> Hand Delivered | <input type="checkbox"/> Other   |
| Preservation:               | <input checked="" type="checkbox"/> Ice   | <input type="checkbox"/> Blue Ice       | <input type="checkbox"/> Dry Ice |
|                             | <input type="checkbox"/> None             |                                         |                                  |
| Temp °C: -0.6 (uncorrected) | Time: 0919                                |                                         | Thermometer ID: IR-2             |
| Temp °C: -0.9 (corrected)   |                                           |                                         |                                  |

|                                                                        |                      | YES                                        | NO                                       | NA                                  |
|------------------------------------------------------------------------|----------------------|--------------------------------------------|------------------------------------------|-------------------------------------|
| Adequate Sample Volume Received?                                       |                      | <input checked="" type="checkbox"/>        | <input type="checkbox"/>                 | <input type="checkbox"/>            |
| Holding Time Acceptable?                                               |                      | <input checked="" type="checkbox"/>        | <input type="checkbox"/>                 | <input type="checkbox"/>            |
| Shipping Container(s) Intact?                                          |                      | <input checked="" type="checkbox"/>        | <input type="checkbox"/>                 | <input type="checkbox"/>            |
| Shipping Custody Seals Intact?                                         |                      | <input checked="" type="checkbox"/>        | <input type="checkbox"/>                 | <input type="checkbox"/>            |
| Shipping Documentation Present?                                        |                      | <input checked="" type="checkbox"/>        | <input type="checkbox"/>                 | <input type="checkbox"/>            |
| Airbill                                                                | Trk # 7835 9215 6624 | <input checked="" type="checkbox"/>        | <input type="checkbox"/>                 | <input type="checkbox"/>            |
| Sample Container Intact?                                               |                      | <input checked="" type="checkbox"/>        | <input type="checkbox"/>                 | <input type="checkbox"/>            |
| Sample Custody Seals Intact?                                           |                      | <input type="checkbox"/>                   | <input type="checkbox"/>                 | <input checked="" type="checkbox"/> |
| Chain of Custody / Sample Documentation Present?                       |                      | <input checked="" type="checkbox"/>        | <input type="checkbox"/>                 | <input type="checkbox"/>            |
| COC Anomaly/Sample Acceptance Form completed?                          |                      | <input type="checkbox"/>                   | <input checked="" type="checkbox"/>      | <input type="checkbox"/>            |
| If Chlorinated or Drinking Water Samples, Acceptable Preservation?     |                      | <input type="checkbox"/>                   | <input type="checkbox"/>                 | <input checked="" type="checkbox"/> |
| Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> Preservation Documented? | COC                  | Sample Container                           | <input checked="" type="checkbox"/> None |                                     |
| Shipping Container                                                     | Vista                | <input checked="" type="checkbox"/> Client | Retain                                   | Return                              |
|                                                                        |                      |                                            |                                          | Dispose                             |

## Comments:

OF-MW30-0716 A,B  
 OF-MW30P-0716 A,B  
 OF-MW30D-0716 A,B  
 OF-MW28D-0716 A,B  
 OF-MW32-0716 A,B  
 OF-MW29-0716 A,B  
 OF-MW29-0716-MS A,B  
 OF-MW29-0716-SD A,B

OF-MW08D-0716 A,B  
 OF-MW34-0716 A,B  
 (A) OF-MW31D-0716 A,B

(A) Sample is a dark color of 07/15/16

## **EXTRACTION INFORMATION**

Process Sheet  
Workorder: **1600903**

Prep Expiration: 07/27/2016  
Client: CH2M Hill

Workorder Due: 29-Jul-16 00:00

TAT: 14

Method: 537 PFAS 6 DOD (LOQ as mRL)  
Matrix: Aqueous

Prep Batch: B6G0068

Prep Data Entered: 7/20/16 NK  
Date and Initials

Initial Sequence: S6G0030

| LabSampleID | Recon                               | ClientSampleID | Date Received   | Location | Comments |
|-------------|-------------------------------------|----------------|-----------------|----------|----------|
| 1600903-01  | <input checked="" type="checkbox"/> | OF-MW30-0716   | 15-Jul-16 08:51 | WR-2 E-4 |          |
| 1600903-02  | <input checked="" type="checkbox"/> | OF-MW30P-0716  | 15-Jul-16 08:51 | WR-2 E-4 |          |
| 1600903-03  | <input checked="" type="checkbox"/> | OF-MW30D-0716  | 15-Jul-16 08:51 | WR-2 E-4 |          |
| 1600903-04  | <input checked="" type="checkbox"/> | OF-MW28D-0716  | 15-Jul-16 08:51 | WR-2 E-4 |          |
| 1600903-05  | <input checked="" type="checkbox"/> | OF-MW32-0716   | 15-Jul-16 08:51 | WR-2 E-4 |          |
| 1600903-06  | <input checked="" type="checkbox"/> | OF-MW29-0716   | 15-Jul-16 08:51 | WR-2 E-4 | MS/MSD   |
| 1600903-07  | <input checked="" type="checkbox"/> | OF-MW08D-0716  | 15-Jul-16 08:51 | WR-2 E-4 |          |
| 1600903-08  | <input checked="" type="checkbox"/> | OF-MW34-0716   | 15-Jul-16 08:51 | WR-2 E-4 |          |
| 1600903-09  | <input checked="" type="checkbox"/> | OF-MW31D-0716  | 15-Jul-16 08:51 | WR-2 E-4 |          |

WO Comments: **List of 6, include Total PFOA.**

Vista PM: Martha Maier

Vial Box ID: Waffle

Sample Reconciled By: ES 7/18/16



**Balance ID:** N/A

### Procedure:

- Notes:**

\* 4 drops HCl added. 8/7/8/16

- *Methods* 8280, 613, 1613, 8290, 1614 – pH <9
- *Methods* 1668/PCN – pH 2-3
- NCASI 551 – pH 1



# PREPARATION BENCH SHEET

Matrix: Aqueous

Method: 537 PFAS 6 DOD (LOO as mR

B6G0068

Chemist: ESchneider

Prep Date/Time: 18-Jul-16 09:06

Prepared using: LCMS - SPE Extraction-LCMS

| CGG0080                  |                            |                     |                 |                 |                     |            |                  |
|--------------------------|----------------------------|---------------------|-----------------|-----------------|---------------------|------------|------------------|
| C                        | VISTA Sample ID            | Bottle + Sample (g) | Bottle Only (g) | Sample Amt. (L) | IS/NS CHEM/WIT DATE | SPE        | RS CHEM/WIT DATE |
| <input type="checkbox"/> | B6G0068-BLK1               | NA                  | NA              | (0.125)         | ES 7/18/16          | ES 7/18/16 | ES 7/18/16       |
| <input type="checkbox"/> | B6G0068-BS1                | ↓                   | ↓               | ↓               | ↓                   | ↓          | ↓                |
| <input type="checkbox"/> | B6G0068-MS1<br>1600903-06  | 146.54              | 27.14           | 0.11940         |                     |            |                  |
| <input type="checkbox"/> | B6G0068-MSD1<br>1600903-06 | 144.86              | 27.10           | 0.11776         |                     |            |                  |
| <input type="checkbox"/> | 1600903-01 (B)             | 142.33              | 27.02           | 0.11531         |                     |            |                  |
| <input type="checkbox"/> | 1600903-02                 | 146.58              | 27.11           | 0.11947         |                     |            |                  |
| <input type="checkbox"/> | 1600903-03                 | 146.51              | 27.14           | 0.11937         |                     |            |                  |
| <input type="checkbox"/> | 1600903-04                 | 146.30              | 26.90           | 0.11940         |                     |            |                  |
| <input type="checkbox"/> | 1600903-05 (A)             | 153.65              | 26.69           | 0.12696         |                     |            |                  |
| <input type="checkbox"/> | 1600903-06                 | 148.58              | 27.22           | 0.12136         |                     |            |                  |
| <input type="checkbox"/> | 1600903-07 (B) 7/18/16     | 154.147.47          | 27.05           | 0.12042         |                     |            |                  |
| <input type="checkbox"/> | 1600903-08 (A) ↓           | 149.45              | 26.13           | 0.12332         |                     |            |                  |
| <input type="checkbox"/> | 1600903-09 (A)             | 137.11              | 26.51           | 0.11060         | ✓                   | ✓          | ✓                |

(A) Centrifuged to remove particulate - ES 7/18/16

(B) Light yellow in color. 7/18/16

|                                             |                                             |                                             |                                                                                                                        |                                                                                                                       |
|---------------------------------------------|---------------------------------------------|---------------------------------------------|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------|
| IS Name <u>(V4)</u><br><u>16E0520, 10µL</u> | NS Name <u>(V2)</u><br><u>16E0701, 10µL</u> | RS Name <u>(V4)</u><br><u>16F0203, 10µL</u> | SPE Chem: <u>Strata X4w 33µm 200mg/bul</u><br>Ele SOLV: <u>0.5% NHyOH in MeOH + MeOH</u><br>Final Volume(s) <u>1mL</u> | Check Out: <u>ES 7/18/16</u><br>Chemist/Date:<br>Check In: <u>Empty</u><br>Chemist/Date:<br>Balance ID: <u>HPM5-9</u> |
|---------------------------------------------|---------------------------------------------|---------------------------------------------|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------|

Comments: Assume 1 g = 1 mL

**SAMPLE DATA – MODIFIED EPA METHOD 537**

Dataset: U:\Q2.PRO\Results\160718J1\160718J1\_17.qld

Last Altered: Tuesday, July 19, 2016 11:58:18 Pacific Daylight Time

Printed: Tuesday, July 19, 2016 12:02:22 Pacific Daylight Time

Method: U:\Q2.PRO\MethDB\PFC List 6.mdb 08 Jul 2016 09:57:05

Calibration: U:\Q2.PRO\CurveDB\C18\_VAL-PFC\_Q2\_07-18-16\_L6.cdb 19 Jul 2016 08:45:41

Name: 160718J1\_17.wiff, Date: 18-Jul-2016, Time: 18:07:55, ID: B6G0068-BLK1, Description: Method Blank

|    | # Name         | Trace | Response | IS Resp | RRF    | Wt/Vol | RT   | Conc.  | %Rec  |
|----|----------------|-------|----------|---------|--------|--------|------|--------|-------|
| 1  | 1 PFBS         | 79.9  | 5.27e-1  | 6.39e3  |        | 0.125  | 3.48 | 0.0385 |       |
| 2  | 2 PFHpA        | 318.9 |          | 1.01e4  |        | 0.125  |      |        |       |
| 3  | 3 PFHxS        | 79.91 | 2.59e0   | 1.42e3  |        | 0.125  | 4.48 | 0.262  |       |
| 4  | 4 PFOA         | 368.9 | 1.11e1   | 8.67e3  |        | 0.125  | 4.75 | 0.280  |       |
| 5  | 5 PFOS         | 79.92 | 2.61e0   | 4.53e3  |        | 0.125  | 5.14 | 0.0739 |       |
| 6  | 6 PFNA         | 419.0 |          | 8.45e3  |        | 0.125  |      |        |       |
| 7  | 7 13C3-PFBS    | 79.95 | 6.39e3   | 1.17e4  | 0.469  | 0.125  | 3.49 | 117    | 116.7 |
| 8  | 8 13C4-PFHpA   | 321.9 | 1.01e4   | 1.17e4  | 0.822  | 0.125  | 4.36 | 105    | 105.1 |
| 9  | 9 18O2-PFHxS   | 102.9 | 1.42e3   | 5.36e3  | 0.256  | 0.125  | 4.48 | 104    | 103.8 |
| 10 | 10 13C2-PFOA   | 369.9 | 8.67e3   | 9.19e3  | 0.915  | 0.125  | 4.75 | 103    | 103.2 |
| 11 | 11 13C8-PFOS   | 79.93 | 4.53e3   | 4.91e3  | 0.822  | 0.125  | 5.13 | 112    | 112.1 |
| 12 | 12 13C5-PFNA   | 422.9 | 8.45e3   | 5.44e2  | 14.407 | 0.125  | 5.07 | 108    | 107.9 |
| 13 | 13 13C5-PFHxA  | 273.0 | 1.17e4   | 1.17e4  | 1.000  | 0.125  | 3.89 | 100    | 100.0 |
| 14 | 14 13C3-PFHxS  | 80.0  | 5.36e3   | 5.36e3  | 1.000  | 0.125  | 4.48 | 100    | 100.0 |
| 15 | 15 13C8-PFOA   | 375.9 | 9.19e3   | 9.19e3  | 1.000  | 0.125  | 4.75 | 100    | 100.0 |
| 16 | 16 13C4-PFOS   | 79.94 | 4.91e3   | 4.91e3  | 1.000  | 0.125  | 5.13 | 100    | 100.0 |
| 17 | 17 13C9-PFNA   | 427.0 | 5.44e2   | 5.44e2  | 1.000  | 0.125  | 5.07 | 100    | 100.0 |
| 18 | 18 Total PFBS  | 79.9  |          | 6.39e3  |        | 0.125  |      | 0.0385 |       |
| 19 | 19 Total PFHxS | 79.91 |          | 1.42e3  |        | 0.125  |      | 0.262  |       |
| 20 | 20 Total PFOA  | 368.9 |          | 8.67e3  |        | 0.125  |      | 0.280  |       |
| 21 | 21 Total PFOS  | 79.92 |          | 4.53e3  |        | 0.125  |      | 0.255  |       |

Vista Analytical Laboratory Q1

Dataset: U:\Q2.PRO\Results\160718J1\160718J1\_17.qld

Last Altered: Tuesday, July 19, 2016 11:58:18 Pacific Daylight Time

Printed: Tuesday, July 19, 2016 12:02:22 Pacific Daylight Time

Method: U:\Q2.PRO\MethDB\PFC List 6.mdb 08 Jul 2016 09:57:05

Calibration: U:\Q2.PRO\CurveDB\C18\_VAL-PFC\_Q2\_07-18-16\_L6.cdb 19 Jul 2016 08:45:41

Name: 160718J1\_17.wiff, Date: 18-Jul-2016, Time: 18:07:55, ID: B6G0068-BLK1, Description: Method Blank

## Total PFBS

|   | # Name | Trace | RT   | Area    | IS Area | Conc.  |
|---|--------|-------|------|---------|---------|--------|
| 1 | 1 PFBS | 79.9  | 3.48 | 5.27e-1 | 6.39e3  | 0.0385 |

## Total PFHxS

|   | # Name  | Trace | RT   | Area   | IS Area | Conc. |
|---|---------|-------|------|--------|---------|-------|
| 1 | 3 PFHxS | 79.91 | 4.48 | 2.59e0 | 1.42e3  | 0.262 |

## Total PFOA

|   | # Name | Trace | RT   | Area   | IS Area | Conc. |
|---|--------|-------|------|--------|---------|-------|
| 1 | 4 PFOA | 368.9 | 4.75 | 1.11e1 | 8.67e3  | 0.280 |

## Total PFOS

|   | # Name        | Trace | RT   | Area   | IS Area | Conc.  |
|---|---------------|-------|------|--------|---------|--------|
| 1 | 5 PFOS        | 79.92 | 5.14 | 2.61e0 | 4.53e3  | 0.0739 |
| 2 | 21 Total PFOS | 79.92 | 5.05 | 6.40e0 | 4.53e3  | 0.181  |

Vista Analytical Laboratory Q2

Dataset: U:\Q2.PRO\Results\160718J1\160718J1\_17.qld

Last Altered: Tuesday, July 19, 2016 11:58:18 Pacific Daylight Time

Printed: Tuesday, July 19, 2016 12:02:33 Pacific Daylight Time

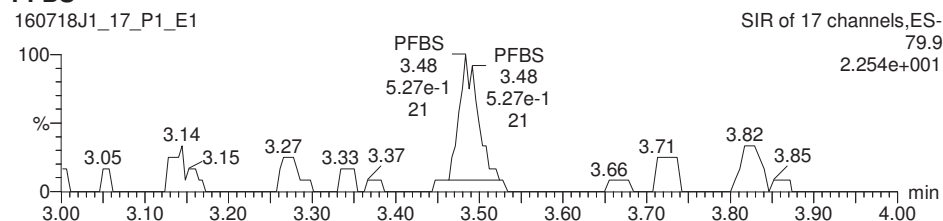
Method: U:\Q2.PRO\MethDB\PFC List 6.mdb 08 Jul 2016 09:57:05

Calibration: U:\Q2.PRO\CurveDB\C18\_VAL-PFC\_Q2\_07-18-16\_L6.cdb 19 Jul 2016 08:45:41

Name: 160718J1\_17.wiff, Date: 18-Jul-2016, Time: 18:07:55, ID: B6G0068-BLK1, Description: Method Blank

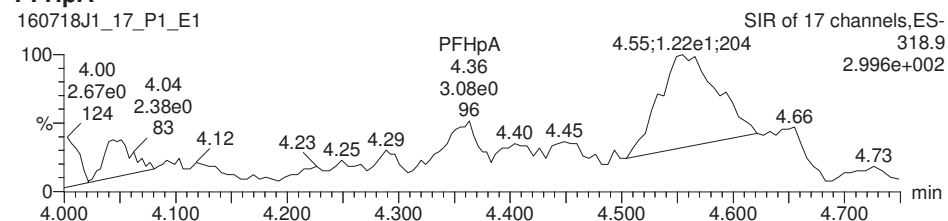
## PFBS

160718J1\_17\_P1\_E1



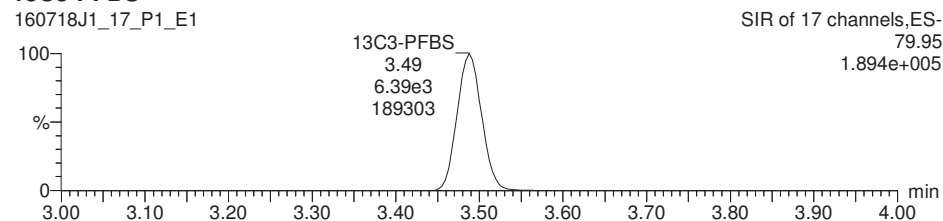
## PFHpA

160718J1\_17\_P1\_E1



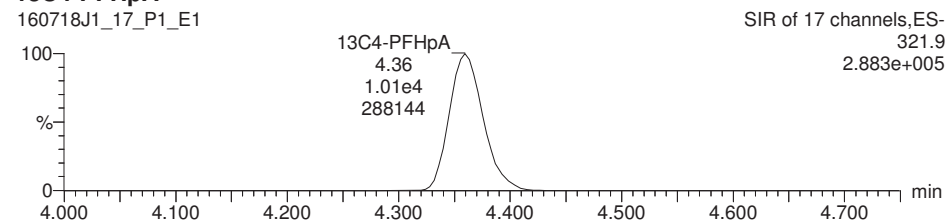
## 13C3-PFBS

160718J1\_17\_P1\_E1



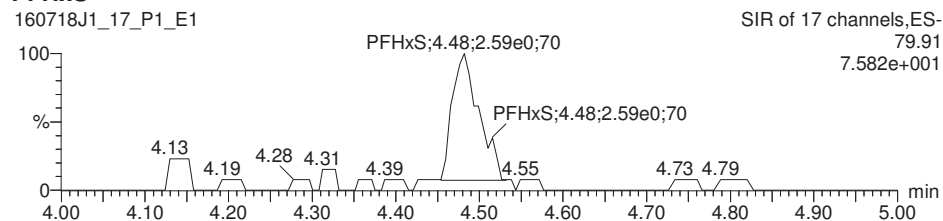
## 13C4-PFHpA

160718J1\_17\_P1\_E1



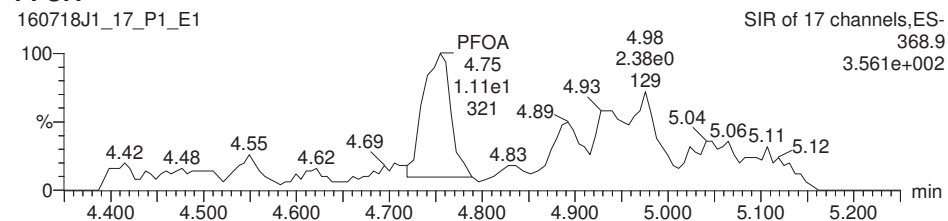
## PFHxS

160718J1\_17\_P1\_E1



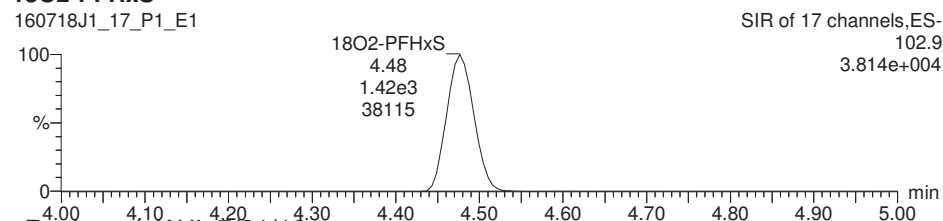
## PFOA

160718J1\_17\_P1\_E1



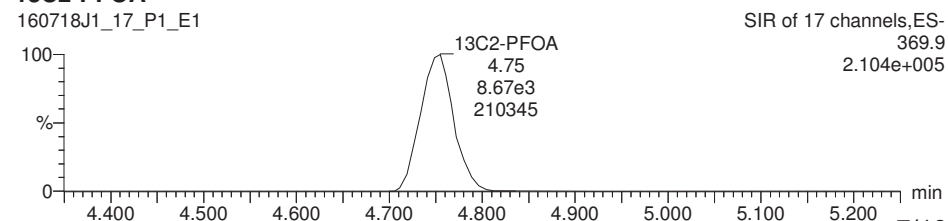
## 18O2-PFHxS

160718J1\_17\_P1\_E1



## 13C2-PFOA

160718J1\_17\_P1\_E1

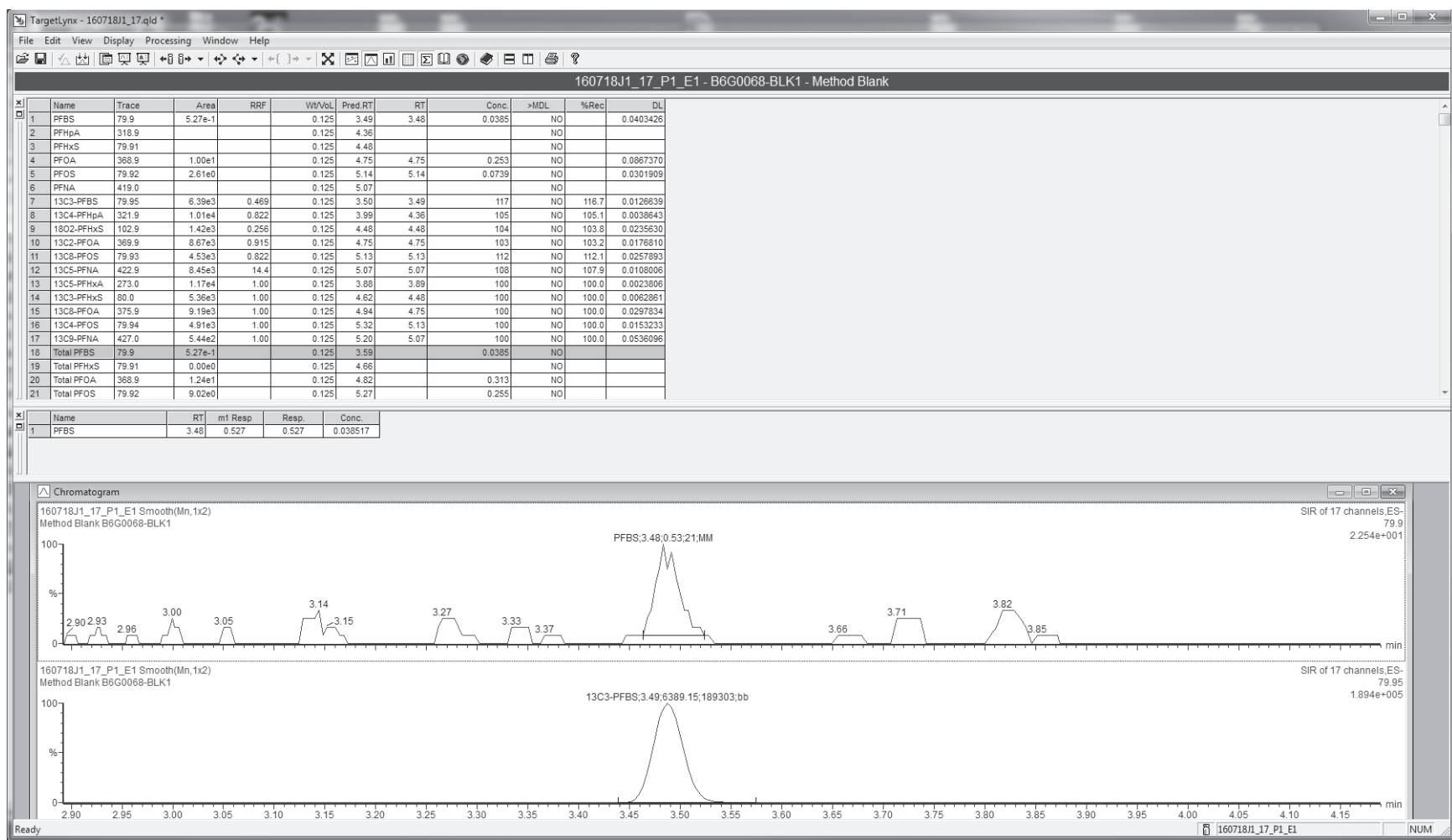


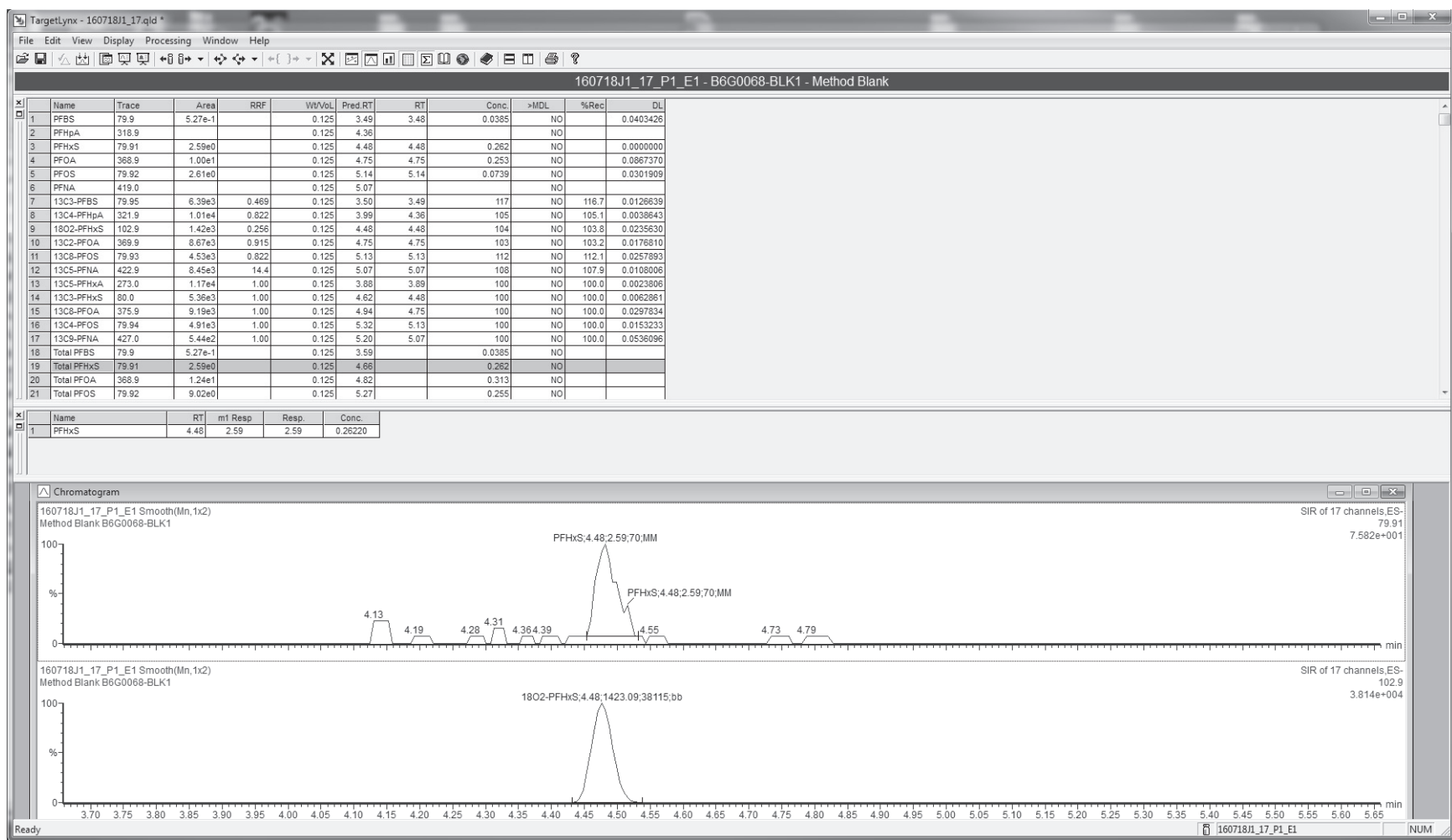
Reviewed: WJL 7/21/16

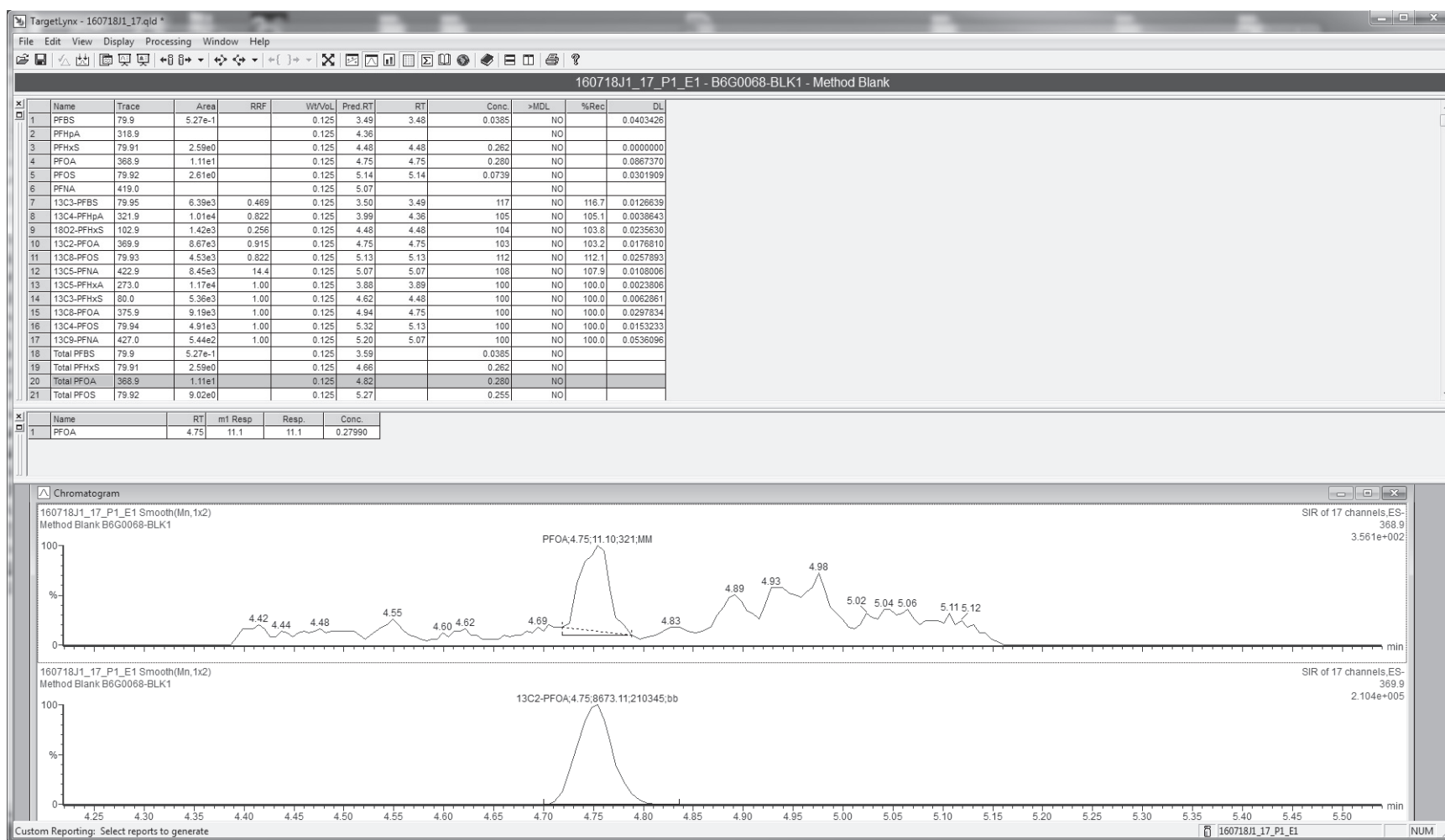
Work Order 1600903

pw 7/19/16

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Dataset:        U:\Q2.PRO\Results\160718J1\160718J1\_17.qld

Last Altered:   Tuesday, July 19, 2016 11:58:18 Pacific Daylight Time

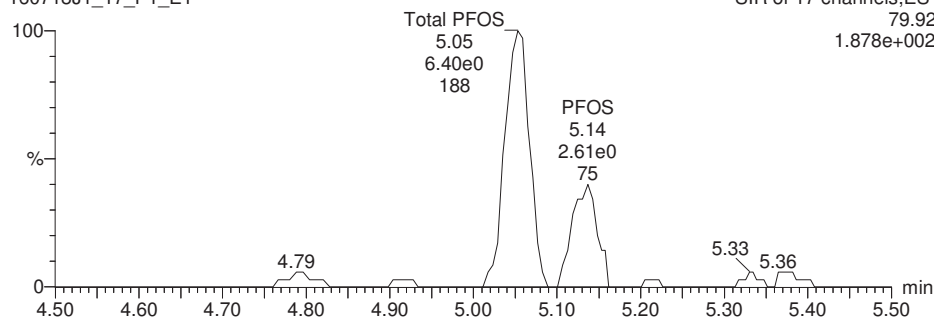
Printed:        Tuesday, July 19, 2016 12:02:33 Pacific Daylight Time

Name: 160718J1\_17.wiff, Date: 18-Jul-2016, Time: 18:07:55, ID: B6G0068-BLK1, Description: Method Blank

### PFOS

160718J1\_17\_P1\_E1

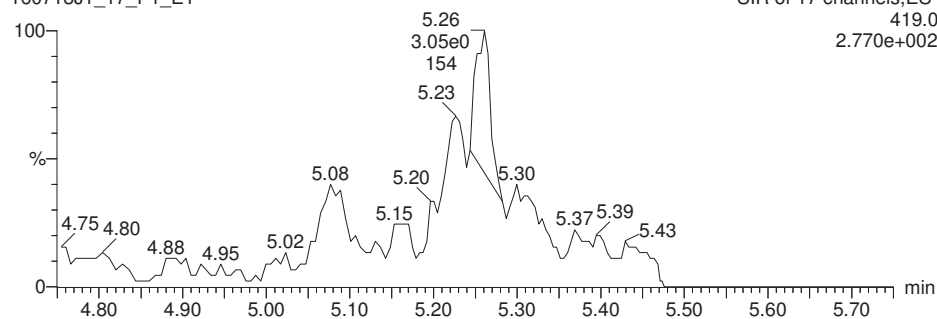
SIR of 17 channels,ES-  
79.92  
1.878e+002



### PFNA

160718J1\_17\_P1\_E1

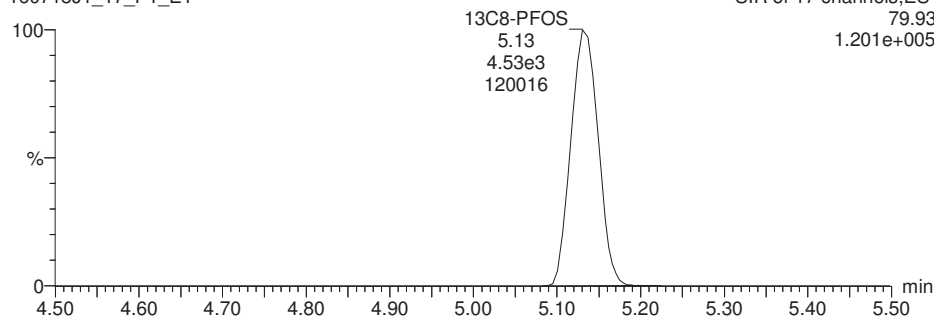
SIR of 17 channels,ES-  
419.0  
2.770e+002



### 13C8-PFOS

160718J1\_17\_P1\_E1

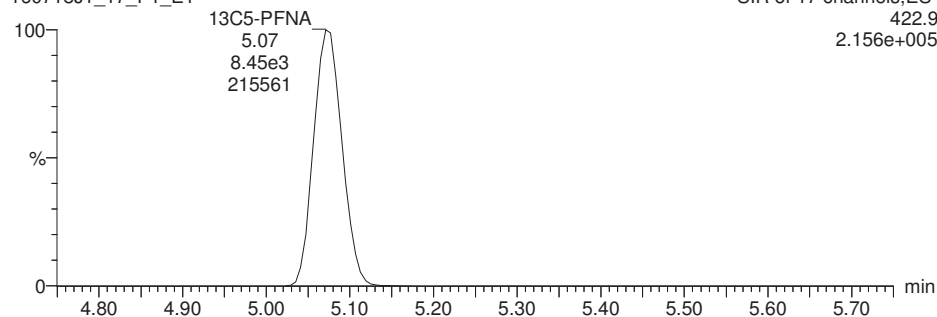
SIR of 17 channels,ES-  
79.93  
1.201e+005



### 13C5-PFNA

160718J1\_17\_P1\_E1

SIR of 17 channels,ES-  
422.9  
2.156e+005



Dataset:        U:\Q2.PRO\Results\160718J1\160718J1\_17.qld

Last Altered:   Tuesday, July 19, 2016 11:58:18 Pacific Daylight Time

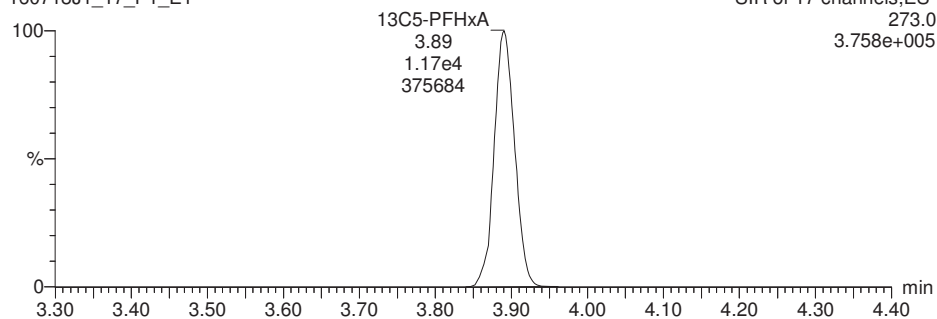
Printed:        Tuesday, July 19, 2016 12:02:33 Pacific Daylight Time

Name: 160718J1\_17.wiff, Date: 18-Jul-2016, Time: 18:07:55, ID: B6G0068-BLK1, Description: Method Blank

**13C5-PFHxA**

160718J1\_17\_P1\_E1

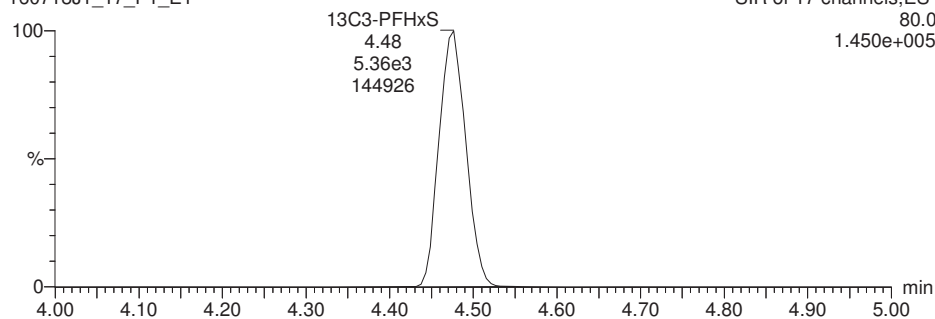
SIR of 17 channels,ES-  
273.0  
3.758e+005



**13C3-PFHxS**

160718J1\_17\_P1\_E1

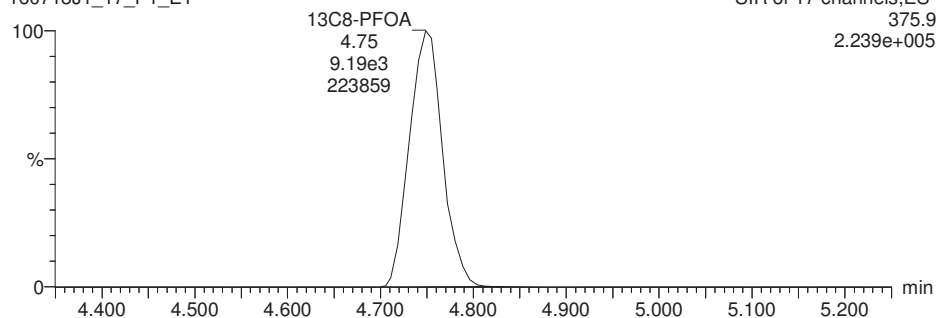
SIR of 17 channels,ES-  
80.0  
1.450e+005



**13C8-PFOA**

160718J1\_17\_P1\_E1

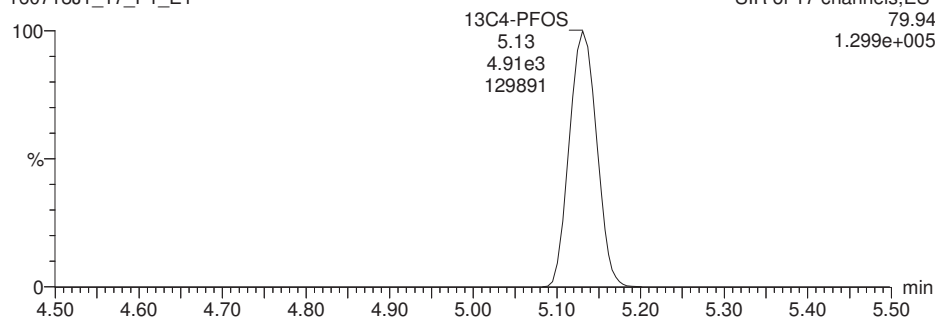
SIR of 17 channels,ES-  
375.9  
2.239e+005



**13C4-PFOS**

160718J1\_17\_P1\_E1

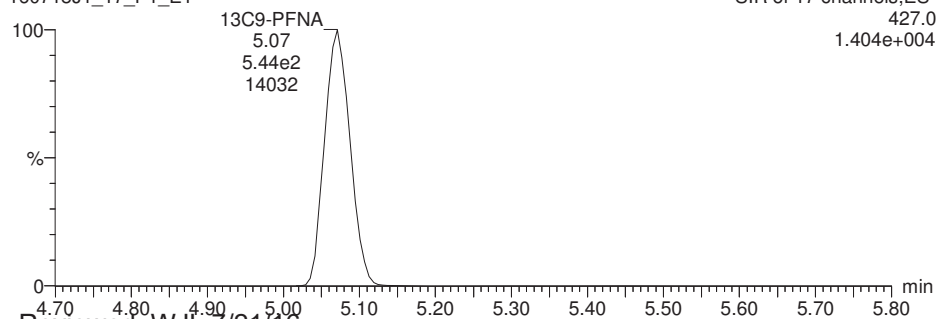
SIR of 17 channels,ES-  
79.94  
1.299e+005



**13C9-PFNA**

160718J1\_17\_P1\_E1

SIR of 17 channels,ES-  
427.0  
1.404e+004



Reviewed: WJL 7/21/16

pw 7/19/16

Dataset: U:\Q2.PRO\Results\160718J1\160718J1\_15.qld

Last Altered: Tuesday, July 19, 2016 11:42:06 Pacific Daylight Time

Printed: Tuesday, July 19, 2016 11:42:14 Pacific Daylight Time

Method: U:\Q2.PRO\MethDB\PFC List 6.mdb 08 Jul 2016 09:57:05

Calibration: U:\Q2.PRO\CurveDB\C18\_VAL-PFC\_Q2\_07-18-16\_L6.cdb 19 Jul 2016 08:45:41

Name: 160718J1\_15.wiff, Date: 18-Jul-2016, Time: 17:43:31, ID: B6G0068-BS1, Description: OPR

|    | # Name         | Trace | Response | IS Resp | RRF    | Wt/Vol | RT   | Conc. | %Rec  |
|----|----------------|-------|----------|---------|--------|--------|------|-------|-------|
| 1  | 1 PFBS         | 79.9  | 1.07e3   | 6.30e3  |        | 0.125  | 3.49 | 79.7  | 99.6  |
| 2  | 2 PFHpA        | 318.9 | 1.75e3   | 1.04e4  |        | 0.125  | 4.36 | 79.3  | 99.1  |
| 3  | 3 PFHxS        | 79.91 | 8.38e2   | 1.37e3  |        | 0.125  | 4.48 | 88.7  | 110.8 |
| 4  | 4 PFOA         | 368.9 | 3.35e3   | 8.84e3  |        | 0.125  | 4.75 | 84.1  | 105.1 |
| 5  | 5 PFOS         | 79.92 | 2.84e3   | 4.31e3  |        | 0.125  | 5.13 | 84.9  | 106.1 |
| 6  | 6 PFNA         | 419.0 | 4.40e3   | 8.45e3  |        | 0.125  | 5.07 | 78.6  | 98.2  |
| 7  | 7 13C3-PFBS    | 79.95 | 6.30e3   | 1.19e4  | 0.469  | 0.125  | 3.48 | 113   | 113.2 |
| 8  | 8 13C4-PFHpA   | 321.9 | 1.04e4   | 1.19e4  | 0.822  | 0.125  | 4.36 | 106   | 106.4 |
| 9  | 9 18O2-PFHxS   | 102.9 | 1.37e3   | 5.28e3  | 0.256  | 0.125  | 4.48 | 101   | 101.3 |
| 10 | 10 13C2-PFOA   | 369.9 | 8.84e3   | 9.12e3  | 0.915  | 0.125  | 4.75 | 106   | 106.0 |
| 11 | 11 13C8-PFOS   | 79.93 | 4.31e3   | 5.10e3  | 0.822  | 0.125  | 5.12 | 103   | 102.9 |
| 12 | 12 13C5-PFNA   | 422.9 | 8.45e3   | 5.76e2  | 14.407 | 0.125  | 5.07 | 102   | 101.8 |
| 13 | 13 13C5-PFHxA  | 273.0 | 1.19e4   | 1.19e4  | 1.000  | 0.125  | 3.89 | 100   | 100.0 |
| 14 | 14 13C3-PFHxS  | 80.0  | 5.28e3   | 5.28e3  | 1.000  | 0.125  | 4.48 | 100   | 100.0 |
| 15 | 15 13C8-PFOA   | 375.9 | 9.12e3   | 9.12e3  | 1.000  | 0.125  | 4.75 | 100   | 100.0 |
| 16 | 16 13C4-PFOS   | 79.94 | 5.10e3   | 5.10e3  | 1.000  | 0.125  | 5.12 | 100   | 100.0 |
| 17 | 17 13C9-PFNA   | 427.0 | 5.76e2   | 5.76e2  | 1.000  | 0.125  | 5.07 | 100   | 100.0 |
| 18 | 18 Total PFBS  | 79.9  |          | 6.30e3  |        | 0.125  |      | 79.7  |       |
| 19 | 19 Total PFHxS | 79.91 |          | 1.37e3  |        | 0.125  |      | 88.7  |       |
| 20 | 20 Total PFOA  | 368.9 |          | 8.84e3  |        | 0.125  |      | 84.1  |       |
| 21 | 21 Total PFOS  | 79.92 |          | 4.31e3  |        | 0.125  |      | 84.9  |       |

Vista Analytical Laboratory Q1

Dataset: U:\Q2.PRO\Results\160718J1\160718J1\_15.qld

Last Altered: Tuesday, July 19, 2016 11:42:06 Pacific Daylight Time

Printed: Tuesday, July 19, 2016 11:42:14 Pacific Daylight Time

Method: U:\Q2.PRO\MethDB\PFC List 6.mdb 08 Jul 2016 09:57:05

Calibration: U:\Q2.PRO\CurveDB\C18\_VAL-PFC\_Q2\_07-18-16\_L6.cdb 19 Jul 2016 08:45:41

Name: 160718J1\_15.wiff, Date: 18-Jul-2016, Time: 17:43:31, ID: B6G0068-BS1, Description: OPR

## Total PFBS

|   | # Name | Trace | RT   | Area   | IS Area | Conc. |
|---|--------|-------|------|--------|---------|-------|
| 1 | 1 PFBS | 79.9  | 3.49 | 1.07e3 | 6.30e3  | 79.7  |

## Total PFHxS

|   | # Name  | Trace | RT   | Area   | IS Area | Conc. |
|---|---------|-------|------|--------|---------|-------|
| 1 | 3 PFHxS | 79.91 | 4.48 | 8.38e2 | 1.37e3  | 88.7  |

## Total PFOA

|   | # Name | Trace | RT   | Area   | IS Area | Conc. |
|---|--------|-------|------|--------|---------|-------|
| 1 | 4 PFOA | 368.9 | 4.75 | 3.35e3 | 8.84e3  | 84.1  |

## Total PFOS

|   | # Name | Trace | RT   | Area   | IS Area | Conc. |
|---|--------|-------|------|--------|---------|-------|
| 1 | 5 PFOS | 79.92 | 5.13 | 2.84e3 | 4.31e3  | 84.9  |

Dataset: U:\Q2.PRO\Results\160718J1\160718J1\_15.qld

Last Altered: Tuesday, July 19, 2016 11:42:06 Pacific Daylight Time

Printed: Tuesday, July 19, 2016 11:42:25 Pacific Daylight Time

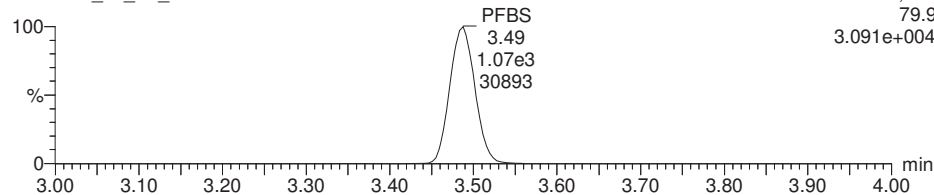
Method: U:\Q2.PRO\MethDB\PFC List 6.mdb 08 Jul 2016 09:57:05

Calibration: U:\Q2.PRO\CurveDB\C18\_VAL-PFC\_Q2\_07-18-16\_L6.cdb 19 Jul 2016 08:45:41

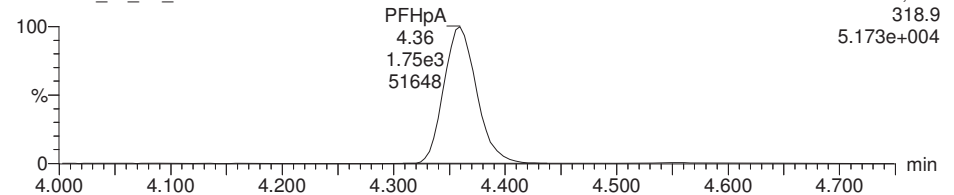
Name: 160718J1\_15.wiff, Date: 18-Jul-2016, Time: 17:43:31, ID: B6G0068-BS1, Description: OPR

**PFBS**

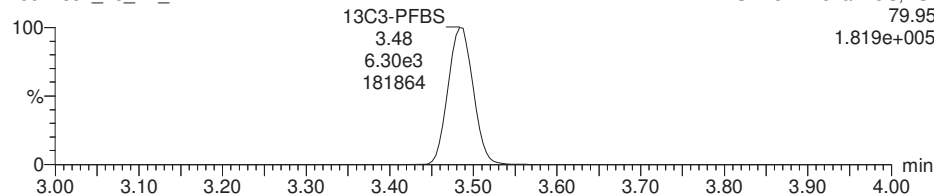
160718J1\_15\_P1\_E1

SIR of 17 channels, ES-  
79.9  
3.091e+004**PFHpA**

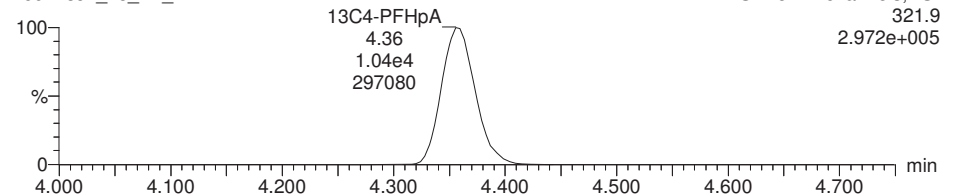
160718J1\_15\_P1\_E1

SIR of 17 channels, ES-  
318.9  
5.173e+004**13C3-PFBS**

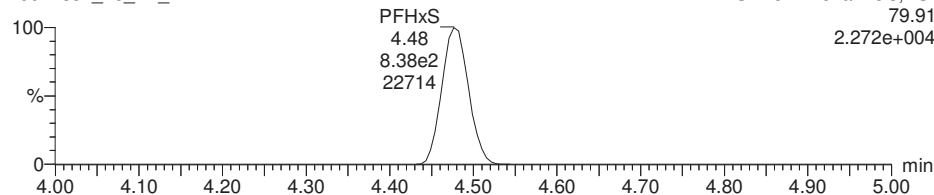
160718J1\_15\_P1\_E1

SIR of 17 channels, ES-  
79.95  
1.819e+005**13C4-PFHpA**

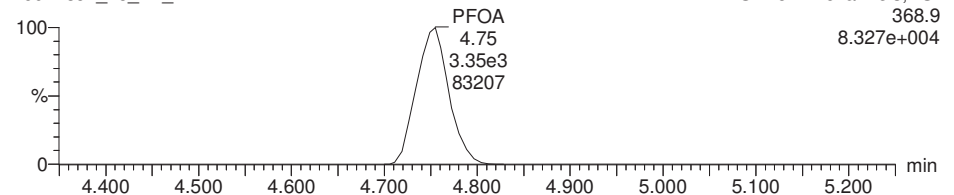
160718J1\_15\_P1\_E1

SIR of 17 channels, ES-  
321.9  
2.972e+005**PFHxS**

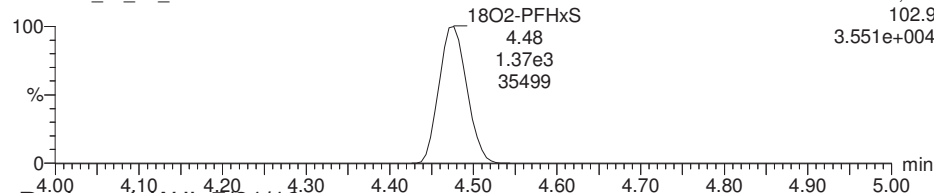
160718J1\_15\_P1\_E1

SIR of 17 channels, ES-  
79.91  
2.272e+004**PFOA**

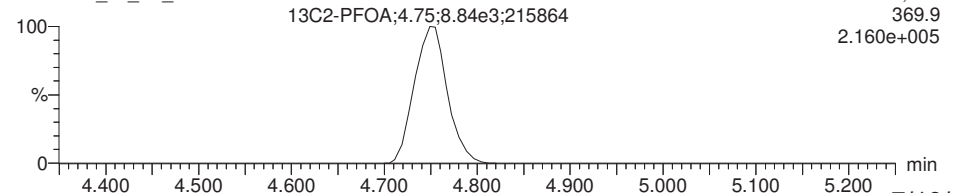
160718J1\_15\_P1\_E1

SIR of 17 channels, ES-  
368.9  
8.327e+004**18O2-PFHxS**

160718J1\_15\_P1\_E1

SIR of 17 channels, ES-  
102.9  
3.551e+004**13C2-PFOA**

160718J1\_15\_P1\_E1

SIR of 17 channels, ES-  
369.9  
2.160e+005

Reviewed: WJL 7/21/16

pw 7/19/16

Vista Analytical Laboratory Q2

Dataset: U:\Q2.PRO\Results\160718J1\160718J1\_15.qld

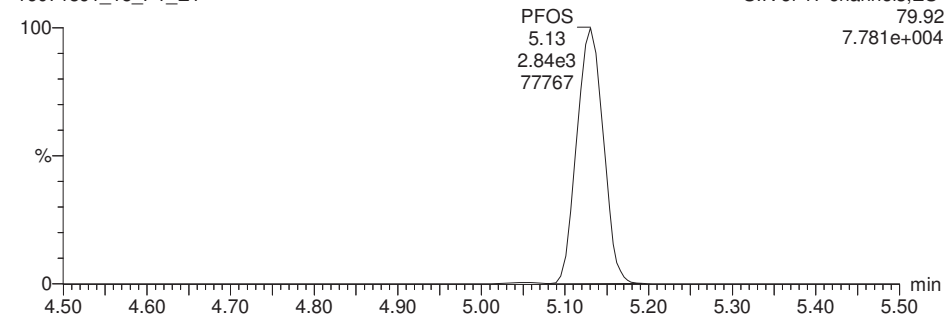
Last Altered: Tuesday, July 19, 2016 11:42:06 Pacific Daylight Time

Printed: Tuesday, July 19, 2016 11:42:25 Pacific Daylight Time

Name: 160718J1\_15.wiff, Date: 18-Jul-2016, Time: 17:43:31, ID: B6G0068-BS1, Description: OPR

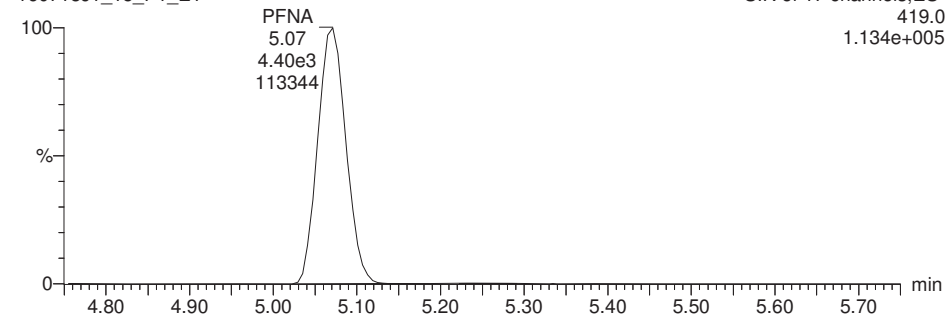
# PFOS

160718J1\_15\_P1\_E1



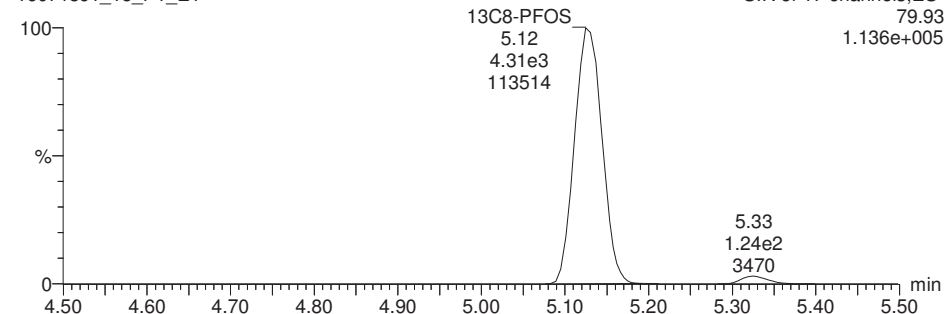
# PFNA

160718J1\_15\_P1\_E1



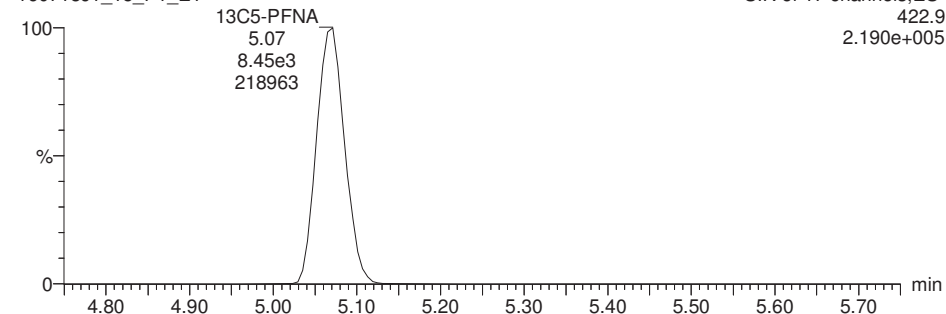
# 13C8-PFOS

160718J1\_15\_P1\_E1



# 13C5-PFNA

160718J1\_15\_P1\_E1



Dataset:        U:\Q2.PRO\Results\160718J1\160718J1\_15.qld

Last Altered:   Tuesday, July 19, 2016 11:42:06 Pacific Daylight Time

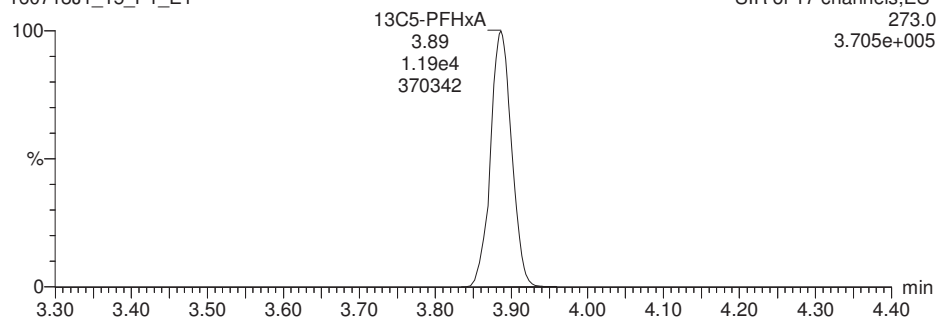
Printed:        Tuesday, July 19, 2016 11:42:25 Pacific Daylight Time

Name: 160718J1\_15.wiff, Date: 18-Jul-2016, Time: 17:43:31, ID: B6G0068-BS1, Description: OPR

**13C5-PFHxA**

160718J1\_15\_P1\_E1

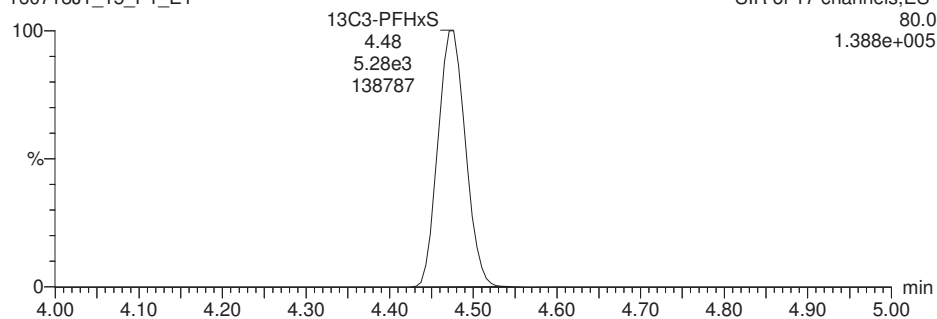
SIR of 17 channels,ES-  
273.0  
3.705e+005



**13C3-PFHxS**

160718J1\_15\_P1\_E1

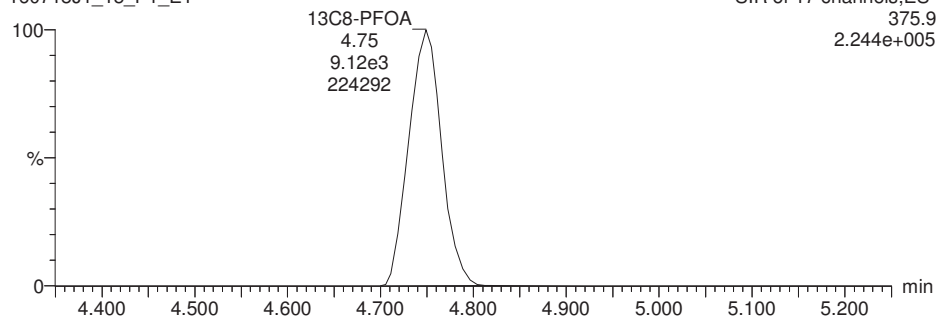
SIR of 17 channels,ES-  
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1.388e+005



**13C8-PFOA**

160718J1\_15\_P1\_E1

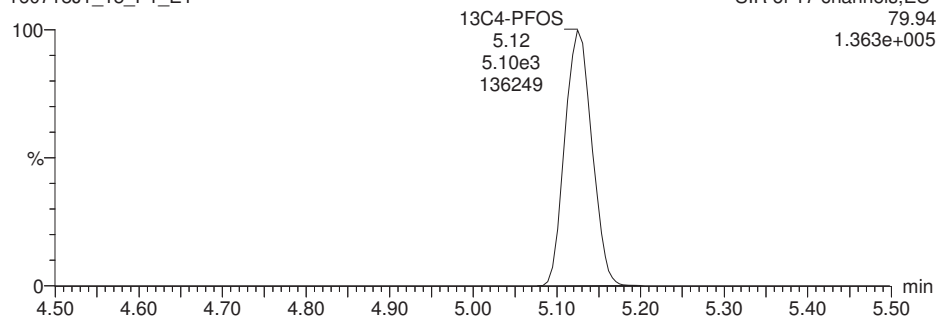
SIR of 17 channels,ES-  
375.9  
2.244e+005



**13C4-PFOS**

160718J1\_15\_P1\_E1

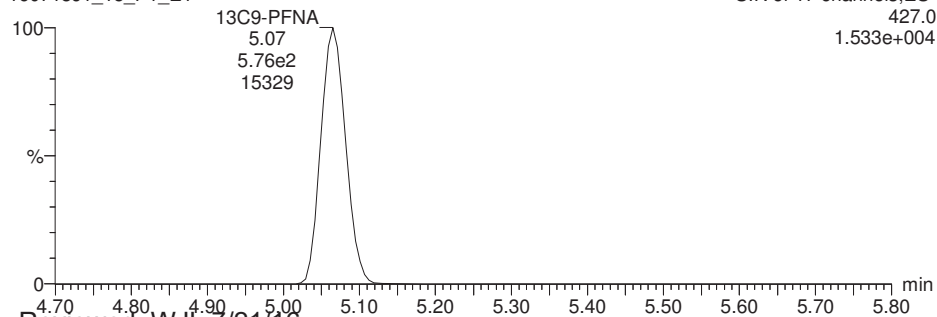
SIR of 17 channels,ES-  
79.94  
1.363e+005



**13C9-PFNA**

160718J1\_15\_P1\_E1

SIR of 17 channels,ES-  
427.0  
1.533e+004



Reviewed: WJL 7/21/16

pw 7/19/16

Dataset: U:\Q2.PRO\Results\160718J1\160718J1\_18.qld

Last Altered: Tuesday, July 19, 2016 09:58:30 Pacific Daylight Time

Printed: Tuesday, July 19, 2016 10:03:55 Pacific Daylight Time

Method: U:\Q2.PRO\MethDB\PFC List 6.mdb 08 Jul 2016 09:57:05

Calibration: U:\Q2.PRO\CurveDB\C18\_VAL-PFC\_Q2\_07-18-16\_L6.cdb 19 Jul 2016 08:45:41

Name: 160718J1\_18.wiff, Date: 18-Jul-2016, Time: 18:20:09, ID: 1600903-01, Description: OF-MW30-0716

|    | # Name         | Trace | Response | IS Resp | RRF    | Wt/Vol | RT   | Conc. | %Rec  |
|----|----------------|-------|----------|---------|--------|--------|------|-------|-------|
| 1  | 1 PFBS         | 79.9  |          | 6.17e3  |        | 0.115  |      |       |       |
| 2  | 2 PFHpA        | 318.9 |          | 9.72e3  |        | 0.115  |      |       |       |
| 3  | 3 PFHxS        | 79.91 | 3.25e0   | 1.31e3  |        | 0.115  | 4.47 | 0.387 |       |
| 4  | 4 PFOA         | 368.9 |          | 8.49e3  |        | 0.115  |      |       |       |
| 5  | 5 PFOS         | 79.92 |          | 3.82e3  |        | 0.115  |      |       |       |
| 6  | 6 PFNA         | 419.0 |          | 7.56e3  |        | 0.115  |      |       |       |
| 7  | 7 13C3-PFBS    | 79.95 | 6.17e3   | 1.13e4  | 0.469  | 0.115  | 3.48 | 126   | 116.7 |
| 8  | 8 13C4-PFHpA   | 321.9 | 9.72e3   | 1.13e4  | 0.822  | 0.115  | 4.36 | 114   | 104.7 |
| 9  | 9 18O2-PFHxS   | 102.9 | 1.31e3   | 4.89e3  | 0.256  | 0.115  | 4.47 | 114   | 104.8 |
| 10 | 10 13C2-PFOA   | 369.9 | 8.49e3   | 8.38e3  | 0.915  | 0.115  | 4.75 | 120   | 110.8 |
| 11 | 11 13C8-PFOS   | 79.93 | 3.82e3   | 4.79e3  | 0.822  | 0.115  | 5.12 | 105   | 97.0  |
| 12 | 12 13C5-PFNA   | 422.9 | 7.56e3   | 5.07e2  | 14.407 | 0.115  | 5.06 | 112   | 103.5 |
| 13 | 13 13C5-PFHxA  | 273.0 | 1.13e4   | 1.13e4  | 1.000  | 0.115  | 3.89 | 108   | 100.0 |
| 14 | 14 13C3-PFHxS  | 80.0  | 4.89e3   | 4.89e3  | 1.000  | 0.115  | 4.47 | 108   | 100.0 |
| 15 | 15 13C8-PFOA   | 375.9 | 8.38e3   | 8.38e3  | 1.000  | 0.115  | 4.74 | 108   | 100.0 |
| 16 | 16 13C4-PFOS   | 79.94 | 4.79e3   | 4.79e3  | 1.000  | 0.115  | 5.12 | 108   | 100.0 |
| 17 | 17 13C9-PFNA   | 427.0 | 5.07e2   | 5.07e2  | 1.000  | 0.115  | 5.06 | 108   | 100.0 |
| 18 | 18 Total PFBS  | 79.9  |          | 6.17e3  |        | 0.115  |      |       |       |
| 19 | 19 Total PFHxS | 79.91 |          | 1.31e3  |        | 0.115  |      | 0.387 |       |
| 20 | 20 Total PFOA  | 368.9 |          | 8.49e3  |        | 0.115  |      |       |       |
| 21 | 21 Total PFOS  | 79.92 |          | 3.82e3  |        | 0.115  |      | 0.196 |       |



Vista Analytical Laboratory Q1

Dataset: U:\Q2.PRO\Results\160718J1\160718J1\_18.qld

Last Altered: Tuesday, July 19, 2016 09:58:30 Pacific Daylight Time

Printed: Tuesday, July 19, 2016 10:03:55 Pacific Daylight Time

Method: U:\Q2.PRO\MethDB\PFC List 6.mdb 08 Jul 2016 09:57:05

Calibration: U:\Q2.PRO\CurveDB\C18\_VAL-PFC\_Q2\_07-18-16\_L6.cdb 19 Jul 2016 08:45:41

Name: 160718J1\_18.wiff, Date: 18-Jul-2016, Time: 18:20:09, ID: 1600903-01, Description: OF-MW30-0716

## Total PFBS

|   | # Name | Trace | RT | Area | IS Area | Conc. |
|---|--------|-------|----|------|---------|-------|
| 1 |        |       |    |      |         |       |

## Total PFHxS

|   | # Name  | Trace | RT   | Area   | IS Area | Conc. |
|---|---------|-------|------|--------|---------|-------|
| 1 | 3 PFHxS | 79.91 | 4.47 | 3.25e0 | 1.31e3  | 0.387 |

## Total PFOA

|   | # Name | Trace | RT | Area | IS Area | Conc. |
|---|--------|-------|----|------|---------|-------|
| 1 |        |       |    |      |         |       |

## Total PFOS

|   | # Name        | Trace | RT   | Area   | IS Area | Conc. |
|---|---------------|-------|------|--------|---------|-------|
| 1 | 21 Total PFOS | 79.92 | 5.04 | 5.38e0 | 3.82e3  | 0.196 |

Vista Analytical Laboratory Q2

Dataset: U:\Q2.PRO\Results\160718J1\160718J1\_18.qld

Last Altered: Tuesday, July 19, 2016 09:58:30 Pacific Daylight Time

Printed: Tuesday, July 19, 2016 10:04:08 Pacific Daylight Time

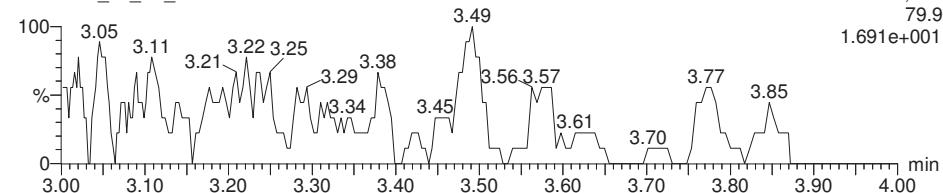
Method: U:\Q2.PRO\MethDB\PFC List 6.mdb 08 Jul 2016 09:57:05

Calibration: U:\Q2.PRO\CurveDB\C18\_VAL-PFC\_Q2\_07-18-16\_L6.cdb 19 Jul 2016 08:45:41

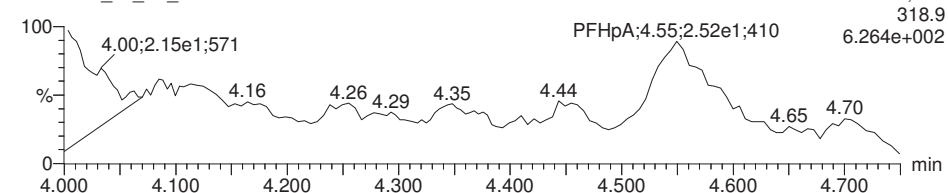
Name: 160718J1\_18.wiff, Date: 18-Jul-2016, Time: 18:20:09, ID: 1600903-01, Description: OF-MW30-0716

**PFBS**

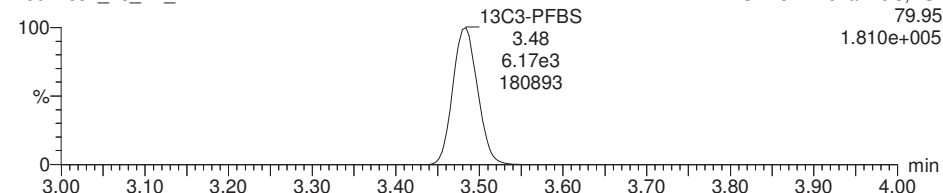
160718J1\_18\_P1\_E1

**PFHpA**

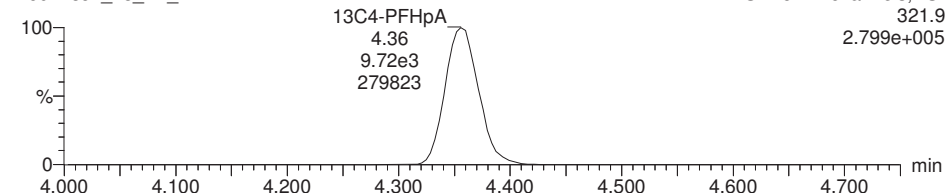
160718J1\_18\_P1\_E1

**13C3-PFBS**

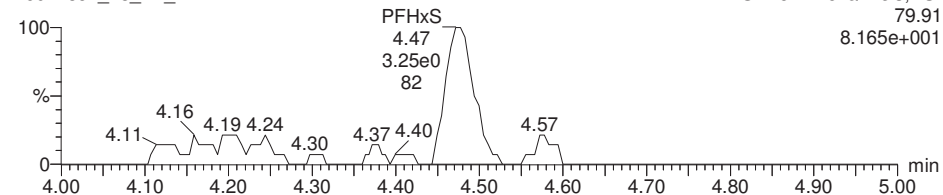
160718J1\_18\_P1\_E1

**13C4-PFHpA**

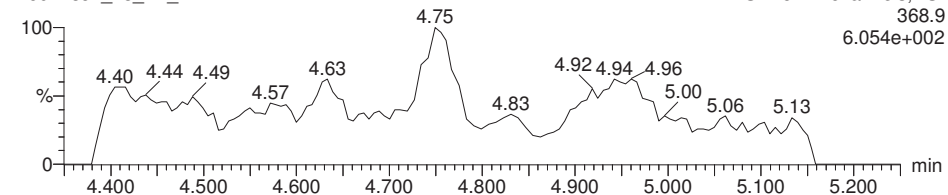
160718J1\_18\_P1\_E1

**PFHxS**

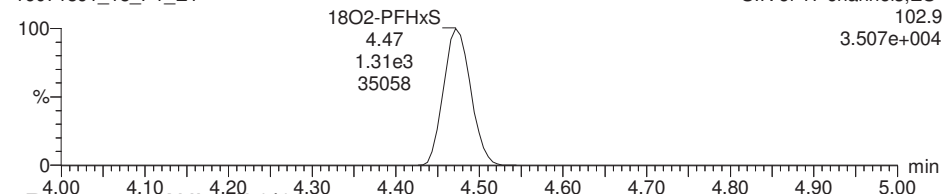
160718J1\_18\_P1\_E1

**PFOA**

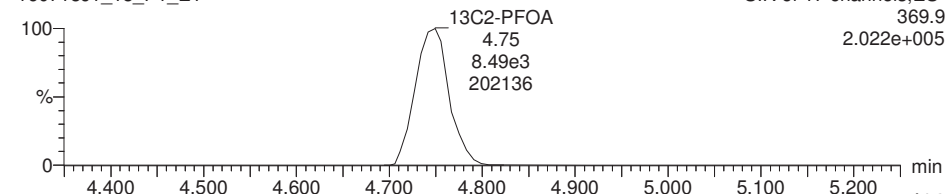
160718J1\_18\_P1\_E1

**18O2-PFHxS**

160718J1\_18\_P1\_E1

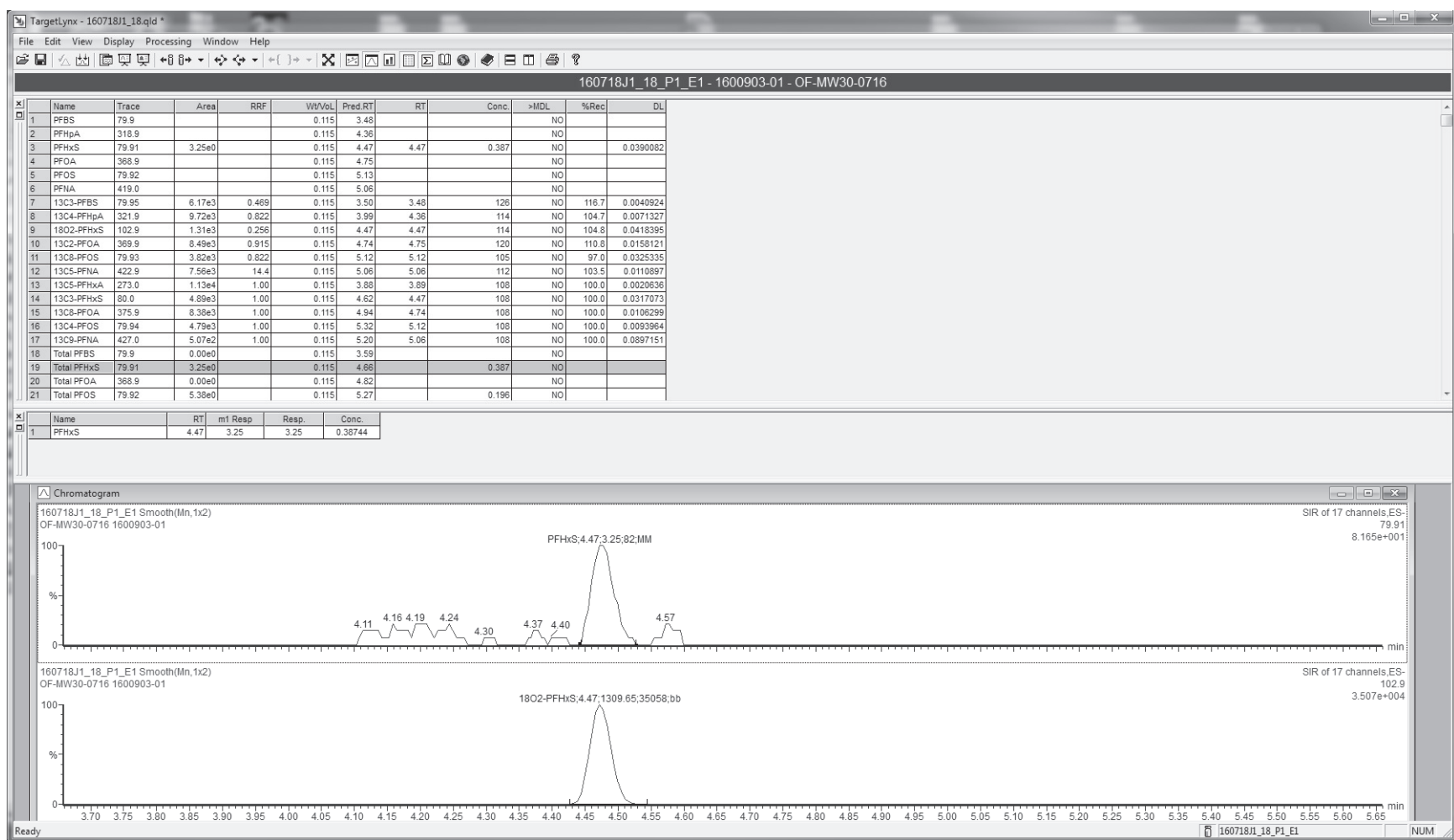
**13C2-PFOA**

160718J1\_18\_P1\_E1



Reviewed: WJL 7/21/16

pw 7/19/16



Dataset:        U:\Q2.PRO\Results\160718J1\160718J1\_18.qld

Last Altered:   Tuesday, July 19, 2016 09:58:30 Pacific Daylight Time

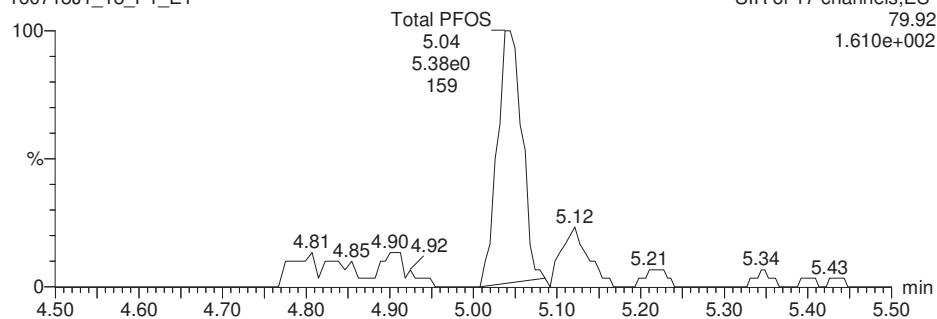
Printed:        Tuesday, July 19, 2016 10:04:08 Pacific Daylight Time

Name: 160718J1\_18.wiff, Date: 18-Jul-2016, Time: 18:20:09, ID: 1600903-01, Description: OF-MW30-0716

### PFOS

160718J1\_18\_P1\_E1

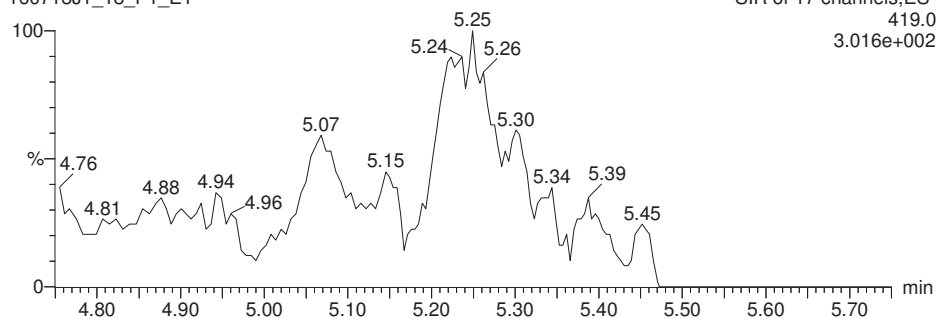
SIR of 17 channels,ES-  
79.92  
1.610e+002



### PFNA

160718J1\_18\_P1\_E1

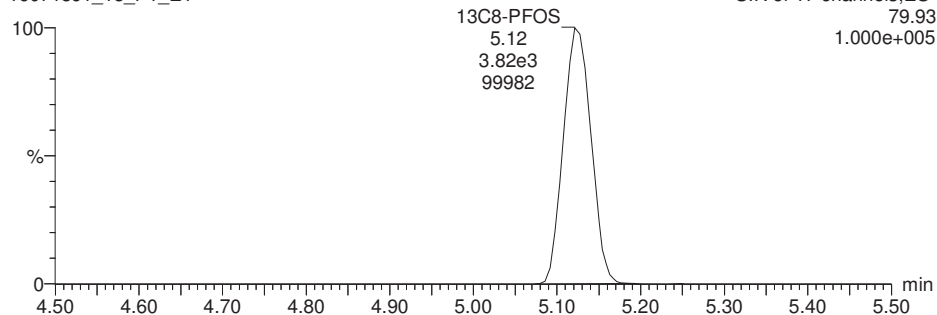
SIR of 17 channels,ES-  
419.0  
3.016e+002



### 13C8-PFOS

160718J1\_18\_P1\_E1

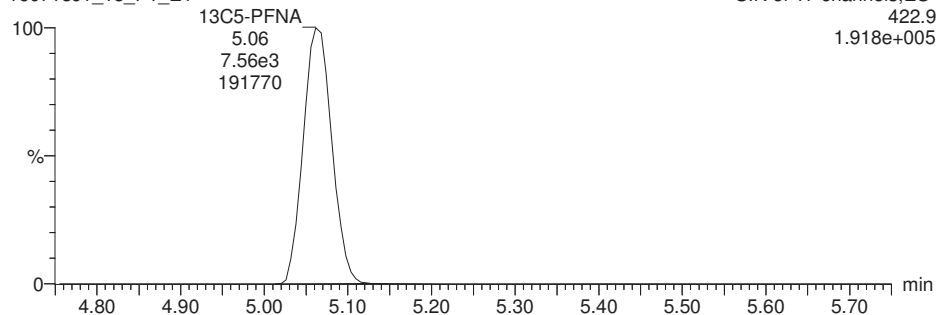
SIR of 17 channels,ES-  
79.93  
1.000e+005



### 13C5-PFNA

160718J1\_18\_P1\_E1

SIR of 17 channels,ES-  
422.9  
1.918e+005



Dataset:        U:\Q2.PRO\Results\160718J1\160718J1\_18.qld

Last Altered:   Tuesday, July 19, 2016 09:58:30 Pacific Daylight Time

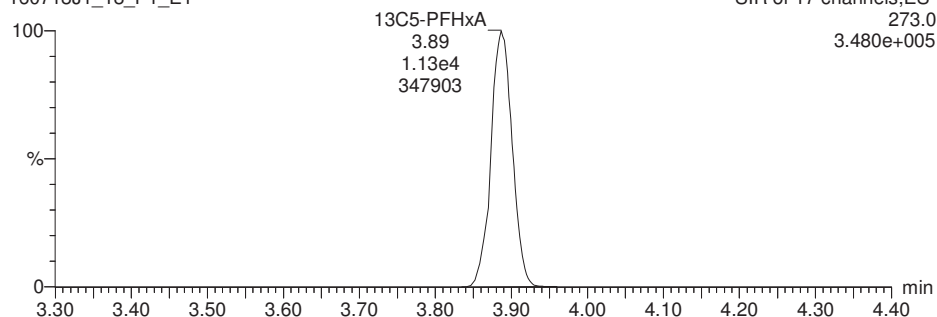
Printed:        Tuesday, July 19, 2016 10:04:08 Pacific Daylight Time

Name: 160718J1\_18.wiff, Date: 18-Jul-2016, Time: 18:20:09, ID: 1600903-01, Description: OF-MW30-0716

**13C5-PFHxA**

160718J1\_18\_P1\_E1

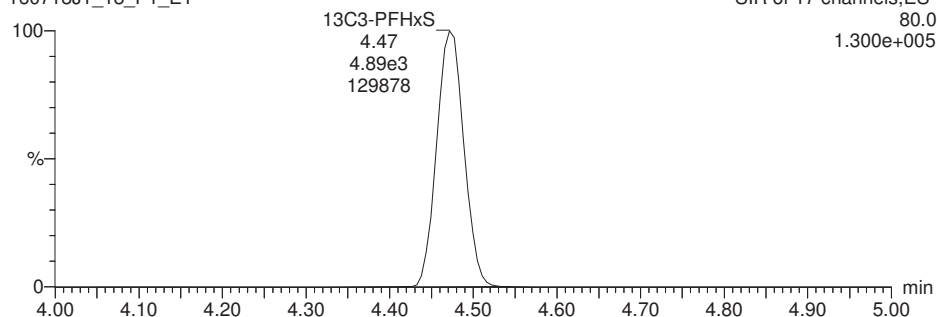
SIR of 17 channels,ES-  
273.0  
3.480e+005



**13C3-PFHxS**

160718J1\_18\_P1\_E1

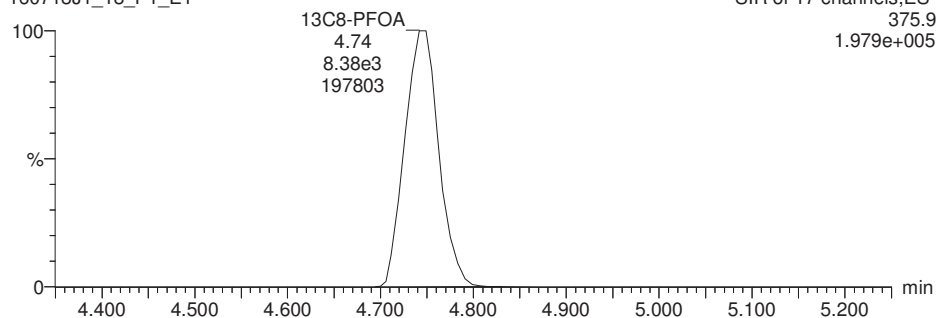
SIR of 17 channels,ES-  
80.0  
1.300e+005



**13C8-PFOA**

160718J1\_18\_P1\_E1

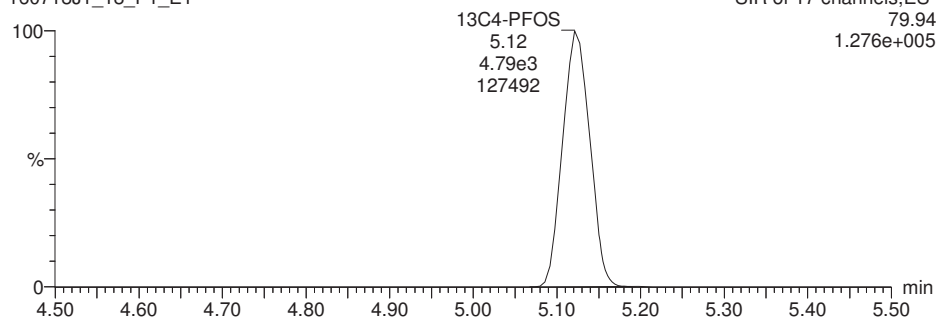
SIR of 17 channels,ES-  
375.9  
1.979e+005



**13C4-PFOS**

160718J1\_18\_P1\_E1

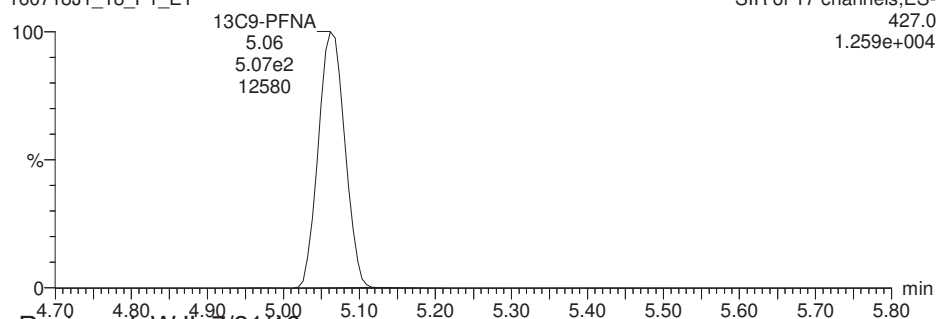
SIR of 17 channels,ES-  
79.94  
1.276e+005



**13C9-PFNA**

160718J1\_18\_P1\_E1

SIR of 17 channels,ES-  
427.0  
1.259e+004



Reviewed: WJL 7/21/16

pw 7/19/16

Dataset: U:\Q2.PRO\Results\160718J1\160718J1\_19.qld

Last Altered: Tuesday, July 19, 2016 10:23:26 Pacific Daylight Time

Printed: Tuesday, July 19, 2016 10:24:13 Pacific Daylight Time

Method: U:\Q2.PRO\MethDB\PFC List 6.mdb 08 Jul 2016 09:57:05

Calibration: U:\Q2.PRO\CurveDB\C18\_VAL-PFC\_Q2\_07-18-16\_L6.cdb 19 Jul 2016 08:45:41

Name: 160718J1\_19.wiff, Date: 18-Jul-2016, Time: 18:32:23, ID: 1600903-02, Description: OF-MW30P-0716

|    | # Name         | Trace | Response | IS Resp | RRF    | Wt/Vol | RT   | Conc. | %Rec  |
|----|----------------|-------|----------|---------|--------|--------|------|-------|-------|
| 1  | 1 PFBS         | 79.9  |          | 6.58e3  |        | 0.119  |      |       |       |
| 2  | 2 PFHpA        | 318.9 |          | 1.04e4  |        | 0.119  |      |       |       |
| 3  | 3 PFHxS        | 79.91 | 4.17e0   | 1.40e3  |        | 0.119  | 4.47 | 0.449 |       |
| 4  | 4 PFOA         | 368.9 |          | 8.99e3  |        | 0.119  |      |       |       |
| 5  | 5 PFOS         | 79.92 |          | 4.23e3  |        | 0.119  |      |       |       |
| 6  | 6 PFNA         | 419.0 |          | 7.80e3  |        | 0.119  |      |       |       |
| 7  | 7 13C3-PFBS    | 79.95 | 6.58e3   | 1.22e4  | 0.469  | 0.119  | 3.48 | 121   | 115.4 |
| 8  | 8 13C4-PFHpA   | 321.9 | 1.04e4   | 1.22e4  | 0.822  | 0.119  | 4.36 | 109   | 103.8 |
| 9  | 9 18O2-PFHxS   | 102.9 | 1.40e3   | 5.54e3  | 0.256  | 0.119  | 4.48 | 103   | 98.5  |
| 10 | 10 13C2-PFOA   | 369.9 | 8.99e3   | 9.23e3  | 0.915  | 0.119  | 4.76 | 111   | 106.5 |
| 11 | 11 13C8-PFOS   | 79.93 | 4.23e3   | 5.00e3  | 0.822  | 0.119  | 5.13 | 108   | 103.1 |
| 12 | 12 13C5-PFNA   | 422.9 | 7.80e3   | 5.10e2  | 14.407 | 0.119  | 5.07 | 111   | 106.1 |
| 13 | 13 13C5-PFHxA  | 273.0 | 1.22e4   | 1.22e4  | 1.000  | 0.119  | 3.89 | 105   | 100.0 |
| 14 | 14 13C3-PFHxS  | 80.0  | 5.54e3   | 5.54e3  | 1.000  | 0.119  | 4.48 | 105   | 100.0 |
| 15 | 15 13C8-PFOA   | 375.9 | 9.23e3   | 9.23e3  | 1.000  | 0.119  | 4.75 | 105   | 100.0 |
| 16 | 16 13C4-PFOS   | 79.94 | 5.00e3   | 5.00e3  | 1.000  | 0.119  | 5.13 | 105   | 100.0 |
| 17 | 17 13C9-PFNA   | 427.0 | 5.10e2   | 5.10e2  | 1.000  | 0.119  | 5.07 | 105   | 100.0 |
| 18 | 18 Total PFBS  | 79.9  |          | 6.58e3  |        | 0.119  |      |       |       |
| 19 | 19 Total PFHxS | 79.91 |          | 1.40e3  |        | 0.119  |      | 0.449 |       |
| 20 | 20 Total PFOA  | 368.9 |          | 8.99e3  |        | 0.119  |      |       |       |
| 21 | 21 Total PFOS  | 79.92 |          | 4.23e3  |        | 0.119  |      | 0.223 |       |

Vista Analytical Laboratory Q1

Dataset: U:\Q2.PRO\Results\160718J1\160718J1\_19.qld

Last Altered: Tuesday, July 19, 2016 10:23:26 Pacific Daylight Time

Printed: Tuesday, July 19, 2016 10:24:13 Pacific Daylight Time

Method: U:\Q2.PRO\MethDB\PFC List 6.mdb 08 Jul 2016 09:57:05

Calibration: U:\Q2.PRO\CurveDB\C18\_VAL-PFC\_Q2\_07-18-16\_L6.cdb 19 Jul 2016 08:45:41

Name: 160718J1\_19.wiff, Date: 18-Jul-2016, Time: 18:32:23, ID: 1600903-02, Description: OF-MW30P-0716

## Total PFBS

|   | # Name | Trace | RT | Area | IS Area | Conc. |
|---|--------|-------|----|------|---------|-------|
| 1 |        |       |    |      |         |       |

## Total PFHxS

|   | # Name  | Trace | RT   | Area   | IS Area | Conc. |
|---|---------|-------|------|--------|---------|-------|
| 1 | 3 PFHxS | 79.91 | 4.47 | 4.17e0 | 1.40e3  | 0.449 |

## Total PFOA

|   | # Name | Trace | RT | Area | IS Area | Conc. |
|---|--------|-------|----|------|---------|-------|
| 1 |        |       |    |      |         |       |

## Total PFOS

|   | # Name        | Trace | RT   | Area   | IS Area | Conc. |
|---|---------------|-------|------|--------|---------|-------|
| 1 | 21 Total PFOS | 79.92 | 5.06 | 7.05e0 | 4.23e3  | 0.223 |

Vista Analytical Laboratory Q2

Dataset: U:\Q2.PRO\Results\160718J1\160718J1\_19.qld

Last Altered: Tuesday, July 19, 2016 10:23:26 Pacific Daylight Time

Printed: Tuesday, July 19, 2016 10:24:02 Pacific Daylight Time

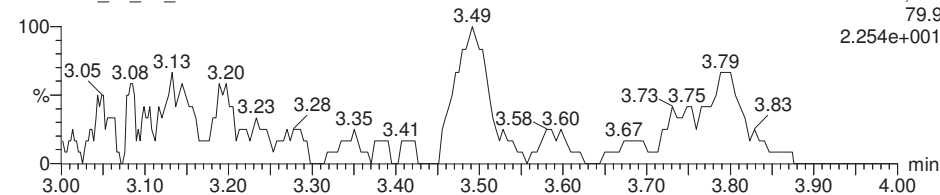
Method: U:\Q2.PRO\MethDB\PFC List 6.mdb 08 Jul 2016 09:57:05

Calibration: U:\Q2.PRO\CurveDB\C18\_VAL-PFC\_Q2\_07-18-16\_L6.cdb 19 Jul 2016 08:45:41

Name: 160718J1\_19.wiff, Date: 18-Jul-2016, Time: 18:32:23, ID: 1600903-02, Description: OF-MW30P-0716

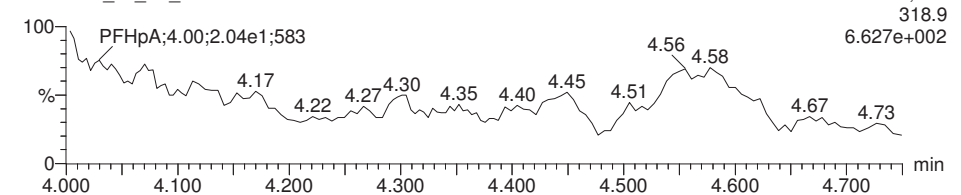
## PFBS

160718J1\_19\_P1\_E1

SIR of 17 channels, ES-  
79.9  
2.254e+001

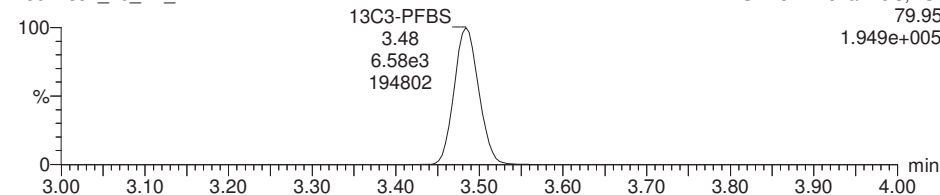
## PFHpA

160718J1\_19\_P1\_E1

SIR of 17 channels, ES-  
318.9  
6.627e+002

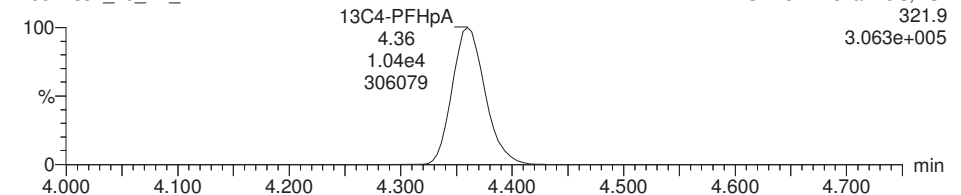
## 13C3-PFBS

160718J1\_19\_P1\_E1

SIR of 17 channels, ES-  
79.95  
1.949e+005

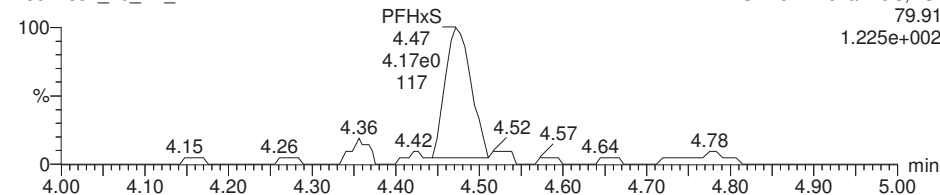
## 13C4-PFHpA

160718J1\_19\_P1\_E1

SIR of 17 channels, ES-  
321.9  
3.063e+005

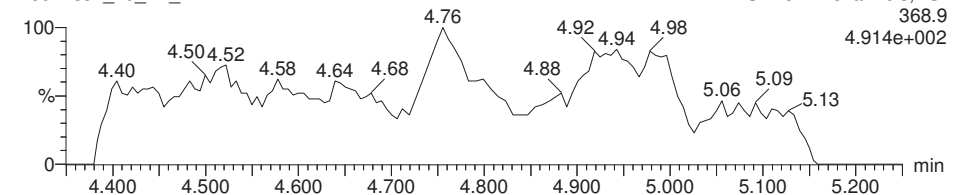
## PFHxS

160718J1\_19\_P1\_E1

SIR of 17 channels, ES-  
79.91  
1.225e+002

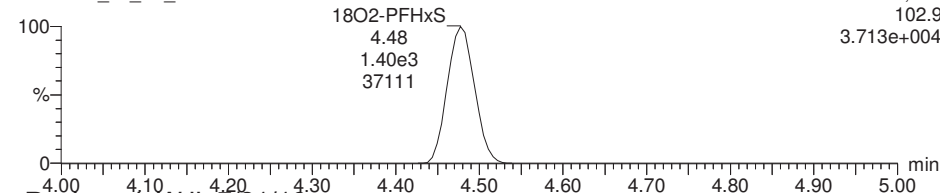
## PFOA

160718J1\_19\_P1\_E1

SIR of 17 channels, ES-  
368.9  
4.914e+002

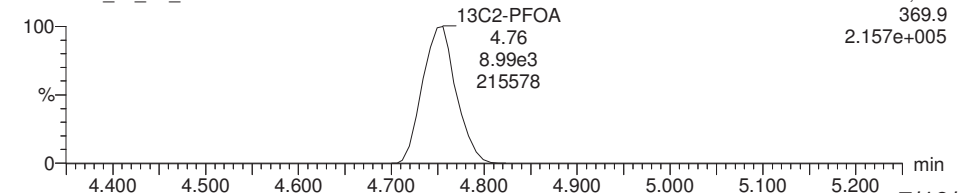
## 18O2-PFHxS

160718J1\_19\_P1\_E1

SIR of 17 channels, ES-  
102.9  
3.713e+004

## 13C2-PFOA

160718J1\_19\_P1\_E1

SIR of 17 channels, ES-  
369.9  
2.157e+005

Reviewed: WJL 7/21/16

pw 7/19/16



Dataset:        U:\Q2.PRO\Results\160718J1\160718J1\_19.qld

Last Altered:   Tuesday, July 19, 2016 10:23:26 Pacific Daylight Time

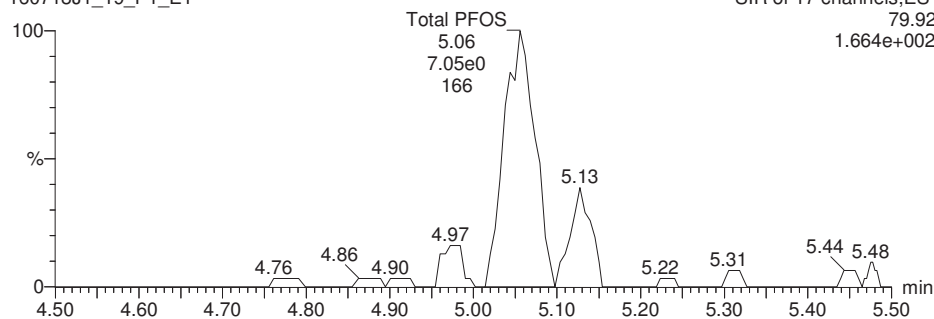
Printed:        Tuesday, July 19, 2016 10:24:02 Pacific Daylight Time

Name: 160718J1\_19.wiff, Date: 18-Jul-2016, Time: 18:32:23, ID: 1600903-02, Description: OF-MW30P-0716

## PFOS

160718J1\_19\_P1\_E1

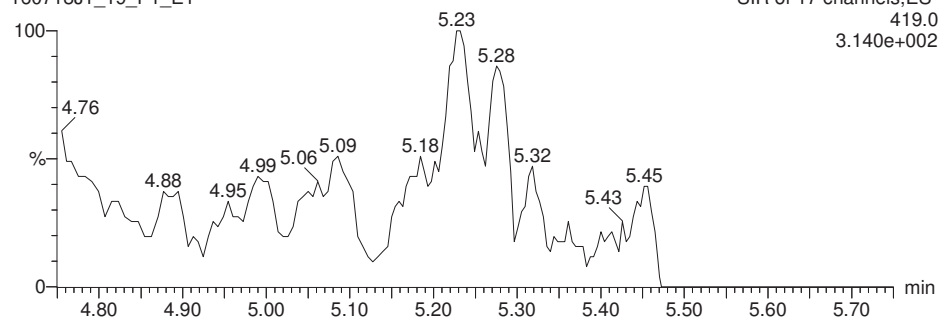
SIR of 17 channels,ES-  
79.92  
1.664e+002



## PFNA

160718J1\_19\_P1\_E1

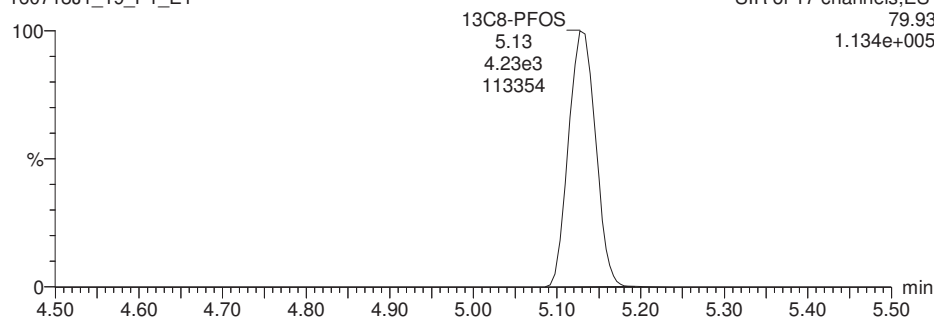
SIR of 17 channels,ES-  
419.0  
3.140e+002



## 13C8-PFOS

160718J1\_19\_P1\_E1

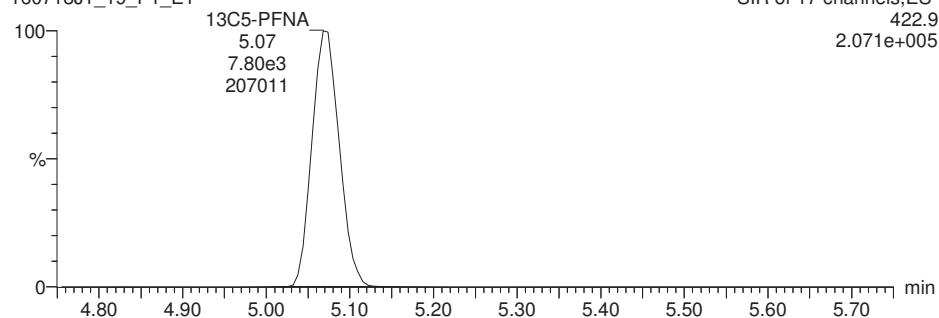
SIR of 17 channels,ES-  
79.93  
1.134e+005

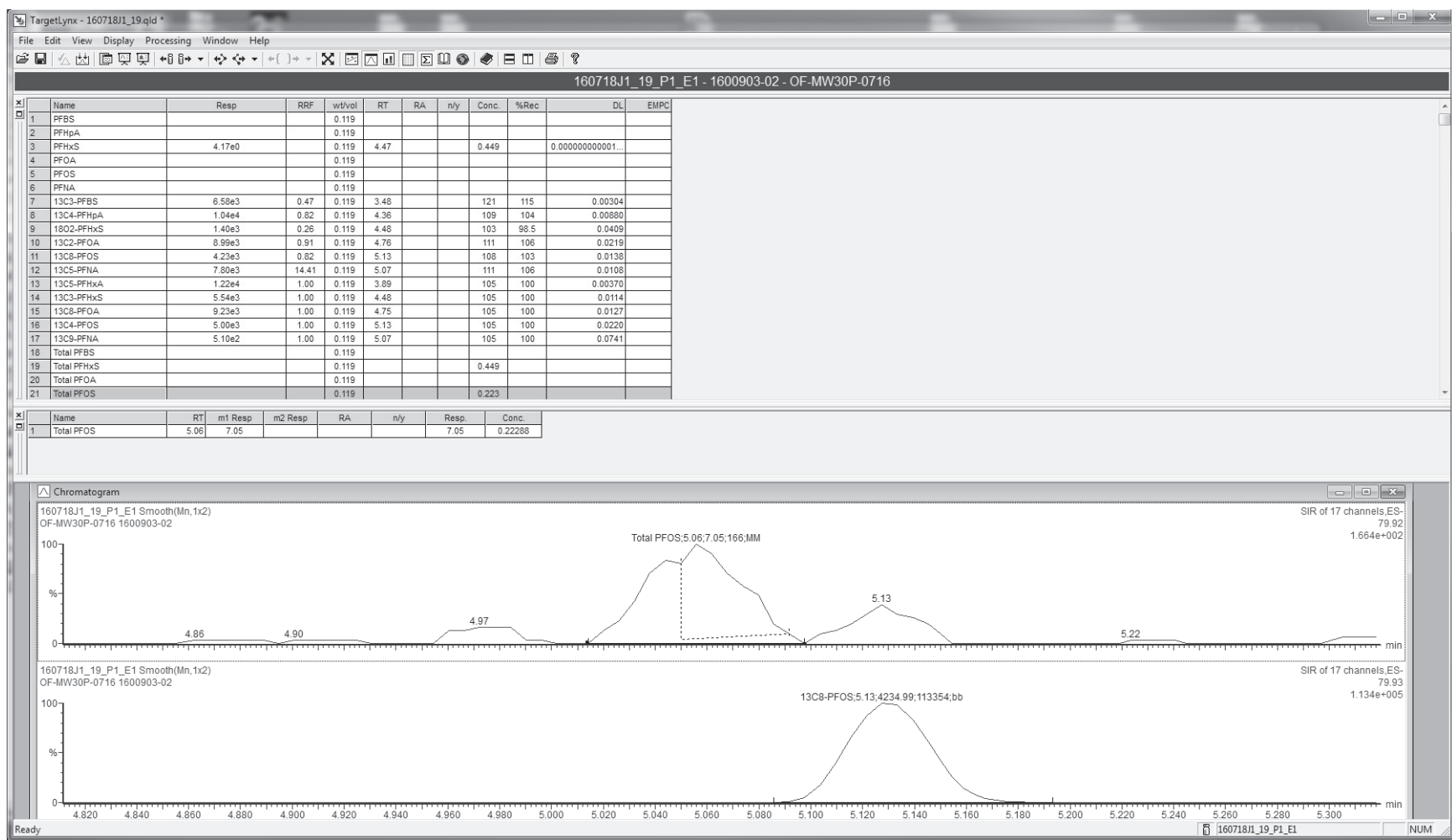


## 13C5-PFNA

160718J1\_19\_P1\_E1

SIR of 17 channels,ES-  
422.9  
2.071e+005





Vista Analytical Laboratory Q2

Dataset: U:\Q2.PRO\Results\160718J1\160718J1\_19.qld

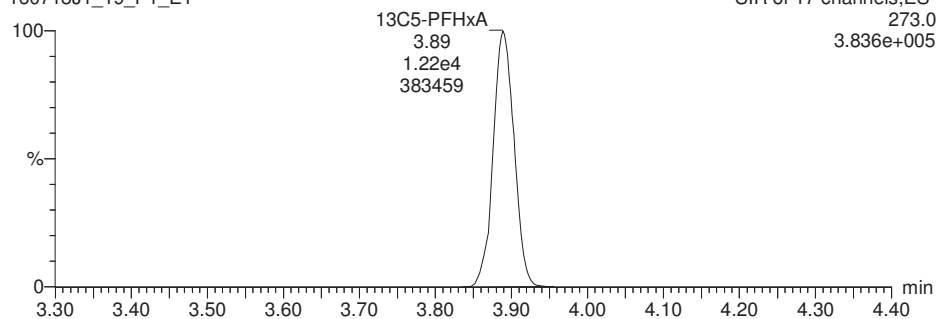
Last Altered: Tuesday, July 19, 2016 10:23:26 Pacific Daylight Time

Printed: Tuesday, July 19, 2016 10:24:02 Pacific Daylight Time

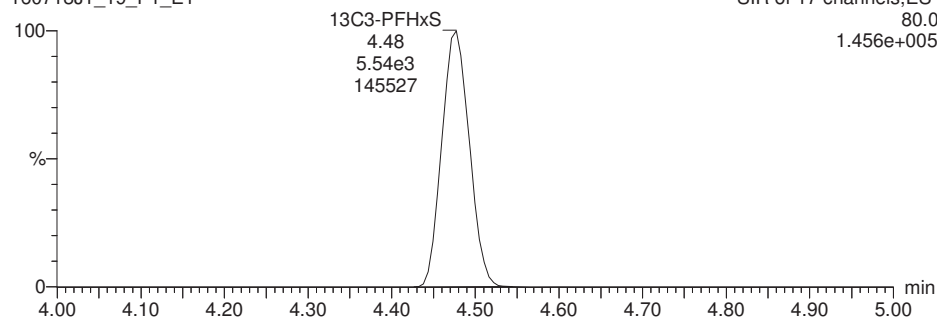
Name: 160718J1\_19.wiff, Date: 18-Jul-2016, Time: 18:32:23, ID: 1600903-02, Description: OF-MW30P-0716

**13C5-PFHxA**

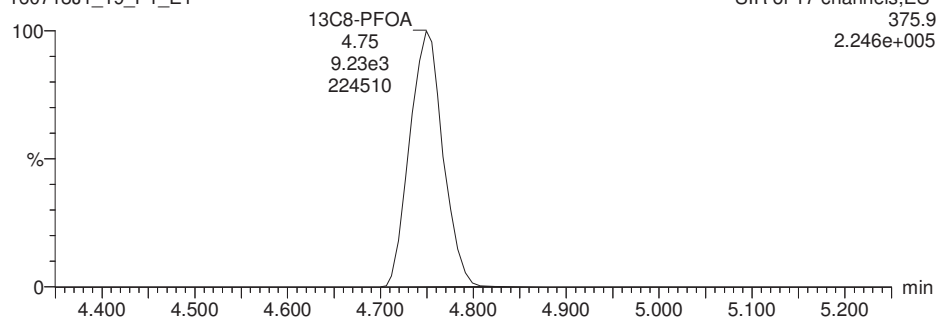
160718J1\_19\_P1\_E1

SIR of 17 channels,ES-  
273.0  
3.836e+005**13C3-PFHxS**

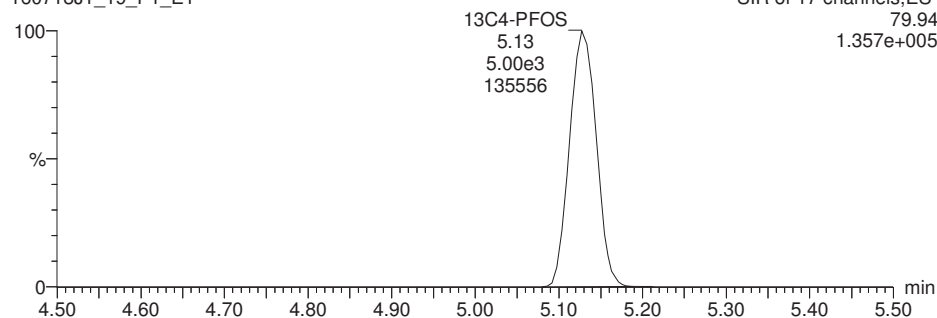
160718J1\_19\_P1\_E1

SIR of 17 channels,ES-  
80.0  
1.456e+005**13C8-PFOA**

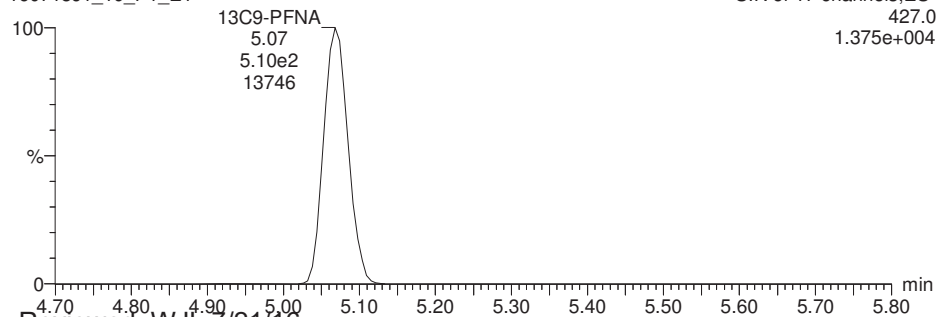
160718J1\_19\_P1\_E1

SIR of 17 channels,ES-  
375.9  
2.246e+005**13C4-PFOS**

160718J1\_19\_P1\_E1

SIR of 17 channels,ES-  
79.94  
1.357e+005**13C9-PFNA**

160718J1\_19\_P1\_E1

SIR of 17 channels,ES-  
427.0  
1.375e+004

Reviewed: WJL 7/21/16

pw 7/19/16

Dataset: U:\Q2.PRO\Results\160718J1\160718J1\_20.qld

Last Altered: Tuesday, July 19, 2016 10:35:01 Pacific Daylight Time

Printed: Tuesday, July 19, 2016 10:35:40 Pacific Daylight Time

Method: U:\Q2.PRO\MethDB\PFC List 6.mdb 08 Jul 2016 09:57:05

Calibration: U:\Q2.PRO\CurveDB\C18\_VAL-PFC\_Q2\_07-18-16\_L6.cdb 19 Jul 2016 08:45:41

Name: 160718J1\_20.wiff, Date: 18-Jul-2016, Time: 18:44:33, ID: 1600903-03, Description: OF-MW30D-0716

|    | # Name         | Trace | Response | IS Resp | RRF    | Wt/Vol | RT   | Conc. | %Rec  |
|----|----------------|-------|----------|---------|--------|--------|------|-------|-------|
| 1  | 1 PFBS         | 79.9  |          | 6.34e3  |        | 0.119  |      |       |       |
| 2  | 2 PFHpA        | 318.9 | 4.50e1   | 1.00e4  |        | 0.119  | 4.36 | 2.19  |       |
| 3  | 3 PFHxS        | 79.91 |          | 1.52e3  |        | 0.119  |      |       |       |
| 4  | 4 PFOA         | 368.9 | 1.03e2   | 8.92e3  |        | 0.119  | 4.75 | 2.65  |       |
| 5  | 5 PFOS         | 79.92 | 4.54e1   | 4.18e3  |        | 0.119  | 5.13 | 1.46  |       |
| 6  | 6 PFNA         | 419.0 | 5.92e1   | 8.56e3  |        | 0.119  | 5.07 | 1.08  |       |
| 7  | 7 13C3-PFBS    | 79.95 | 6.34e3   | 1.16e4  | 0.469  | 0.119  | 3.48 | 122   | 116.1 |
| 8  | 8 13C4-PFHpA   | 321.9 | 1.00e4   | 1.16e4  | 0.822  | 0.119  | 4.36 | 110   | 104.6 |
| 9  | 9 18O2-PFHxS   | 102.9 | 1.52e3   | 5.15e3  | 0.256  | 0.119  | 4.47 | 121   | 115.6 |
| 10 | 10 13C2-PFOA   | 369.9 | 8.92e3   | 9.40e3  | 0.915  | 0.119  | 4.75 | 109   | 103.7 |
| 11 | 11 13C8-PFOS   | 79.93 | 4.18e3   | 4.61e3  | 0.822  | 0.119  | 5.12 | 116   | 110.3 |
| 12 | 12 13C5-PFNA   | 422.9 | 8.56e3   | 5.63e2  | 14.407 | 0.119  | 5.07 | 111   | 105.6 |
| 13 | 13 13C5-PFHxA  | 273.0 | 1.16e4   | 1.16e4  | 1.000  | 0.119  | 3.89 | 105   | 100.0 |
| 14 | 14 13C3-PFHxS  | 80.0  | 5.15e3   | 5.15e3  | 1.000  | 0.119  | 4.47 | 105   | 100.0 |
| 15 | 15 13C8-PFOA   | 375.9 | 9.40e3   | 9.40e3  | 1.000  | 0.119  | 4.75 | 105   | 100.0 |
| 16 | 16 13C4-PFOS   | 79.94 | 4.61e3   | 4.61e3  | 1.000  | 0.119  | 5.12 | 105   | 100.0 |
| 17 | 17 13C9-PFNA   | 427.0 | 5.63e2   | 5.63e2  | 1.000  | 0.119  | 5.07 | 105   | 100.0 |
| 18 | 18 Total PFBS  | 79.9  |          | 6.34e3  |        | 0.119  |      |       |       |
| 19 | 19 Total PFHxS | 79.91 |          | 1.52e3  |        | 0.119  |      |       |       |
| 20 | 20 Total PFOA  | 368.9 |          | 8.92e3  |        | 0.119  |      | 2.65  |       |
| 21 | 21 Total PFOS  | 79.92 |          | 4.18e3  |        | 0.119  |      | 2.08  |       |

Vista Analytical Laboratory Q1

Dataset: U:\Q2.PRO\Results\160718J1\160718J1\_20.qld

Last Altered: Tuesday, July 19, 2016 10:35:01 Pacific Daylight Time

Printed: Tuesday, July 19, 2016 10:35:40 Pacific Daylight Time

Method: U:\Q2.PRO\MethDB\PFC List 6.mdb 08 Jul 2016 09:57:05

Calibration: U:\Q2.PRO\CurveDB\C18\_VAL-PFC\_Q2\_07-18-16\_L6.cdb 19 Jul 2016 08:45:41

Name: 160718J1\_20.wiff, Date: 18-Jul-2016, Time: 18:44:33, ID: 1600903-03, Description: OF-MW30D-0716

## Total PFBS

|   | # Name | Trace | RT | Area | IS Area | Conc. |
|---|--------|-------|----|------|---------|-------|
| 1 |        |       |    |      |         |       |

## Total PFHxS

|   | # Name | Trace | RT | Area | IS Area | Conc. |
|---|--------|-------|----|------|---------|-------|
| 1 |        |       |    |      |         |       |

## Total PFOA

|   | # Name | Trace | RT   | Area   | IS Area | Conc. |
|---|--------|-------|------|--------|---------|-------|
| 1 | 4 PFOA | 368.9 | 4.75 | 1.03e2 | 8.92e3  | 2.65  |

## Total PFOS

|   | # Name        | Trace | RT   | Area   | IS Area | Conc. |
|---|---------------|-------|------|--------|---------|-------|
| 1 | 5 PFOS        | 79.92 | 5.13 | 4.54e1 | 4.18e3  | 1.46  |
| 2 | 21 Total PFOS | 79.92 | 5.05 | 1.93e1 | 4.18e3  | 0.620 |

Vista Analytical Laboratory Q2

Dataset: U:\Q2.PRO\Results\160718J1\160718J1\_20.qld

Last Altered: Tuesday, July 19, 2016 10:35:01 Pacific Daylight Time

Printed: Tuesday, July 19, 2016 10:36:18 Pacific Daylight Time

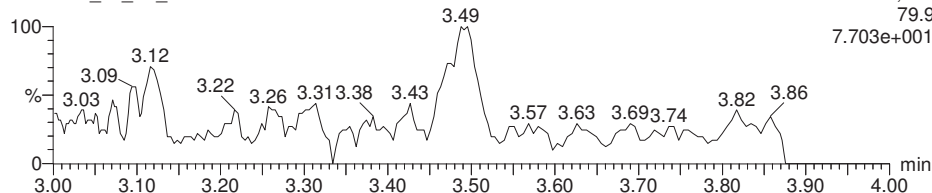
Method: U:\Q2.PRO\MethDB\PFC List 6.mdb 08 Jul 2016 09:57:05

Calibration: U:\Q2.PRO\CurveDB\C18\_VAL-PFC\_Q2\_07-18-16\_L6.cdb 19 Jul 2016 08:45:41

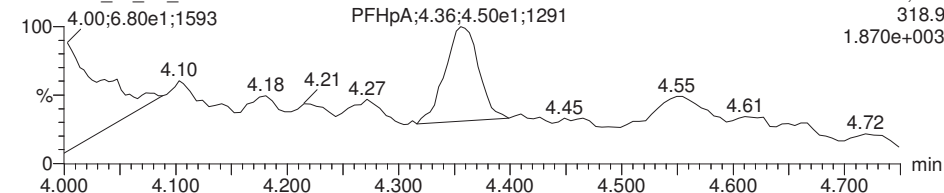
Name: 160718J1\_20.wiff, Date: 18-Jul-2016, Time: 18:44:33, ID: 1600903-03, Description: OF-MW30D-0716

**PFBS**

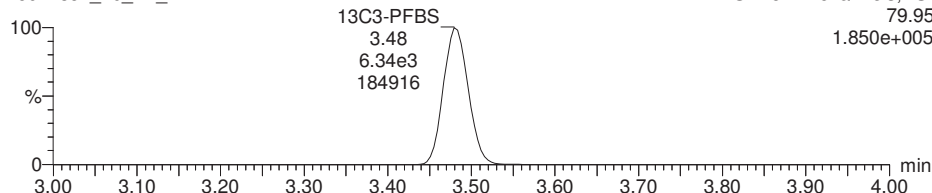
160718J1\_20\_P1\_E1

SIR of 17 channels, ES-  
79.9  
7.703e+001**PFHpA**

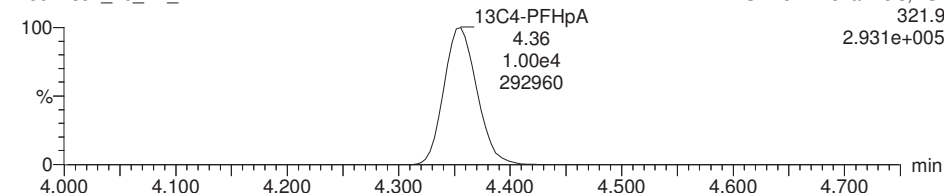
160718J1\_20\_P1\_E1

SIR of 17 channels, ES-  
318.9  
1.870e+003**13C3-PFBS**

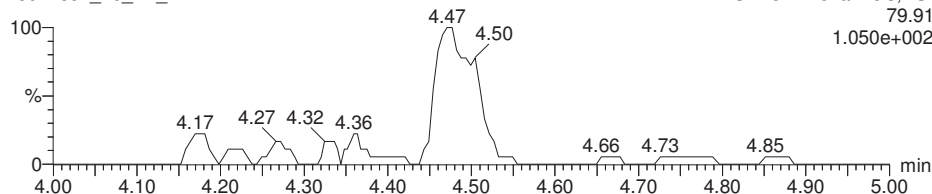
160718J1\_20\_P1\_E1

SIR of 17 channels, ES-  
79.95  
1.850e+005**13C4-PFHpA**

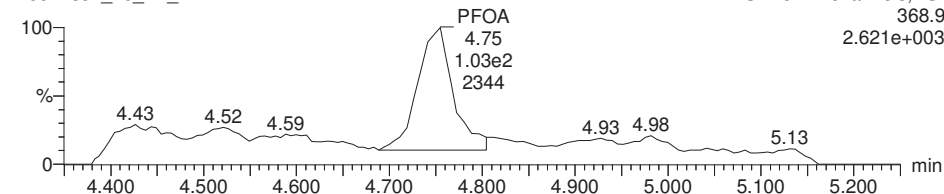
160718J1\_20\_P1\_E1

SIR of 17 channels, ES-  
321.9  
2.931e+005**PFHxS**

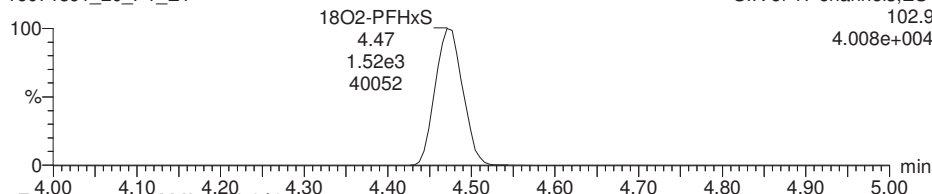
160718J1\_20\_P1\_E1

SIR of 17 channels, ES-  
79.91  
1.050e+002**PFOA**

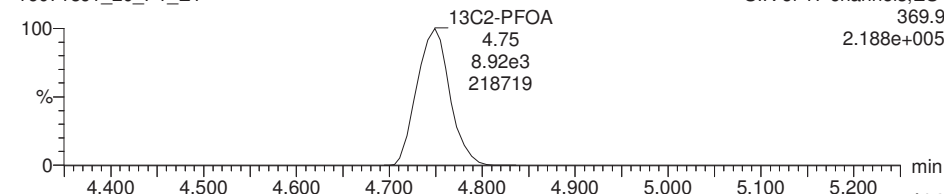
160718J1\_20\_P1\_E1

SIR of 17 channels, ES-  
368.9  
2.621e+003**18O2-PFHxS**

160718J1\_20\_P1\_E1

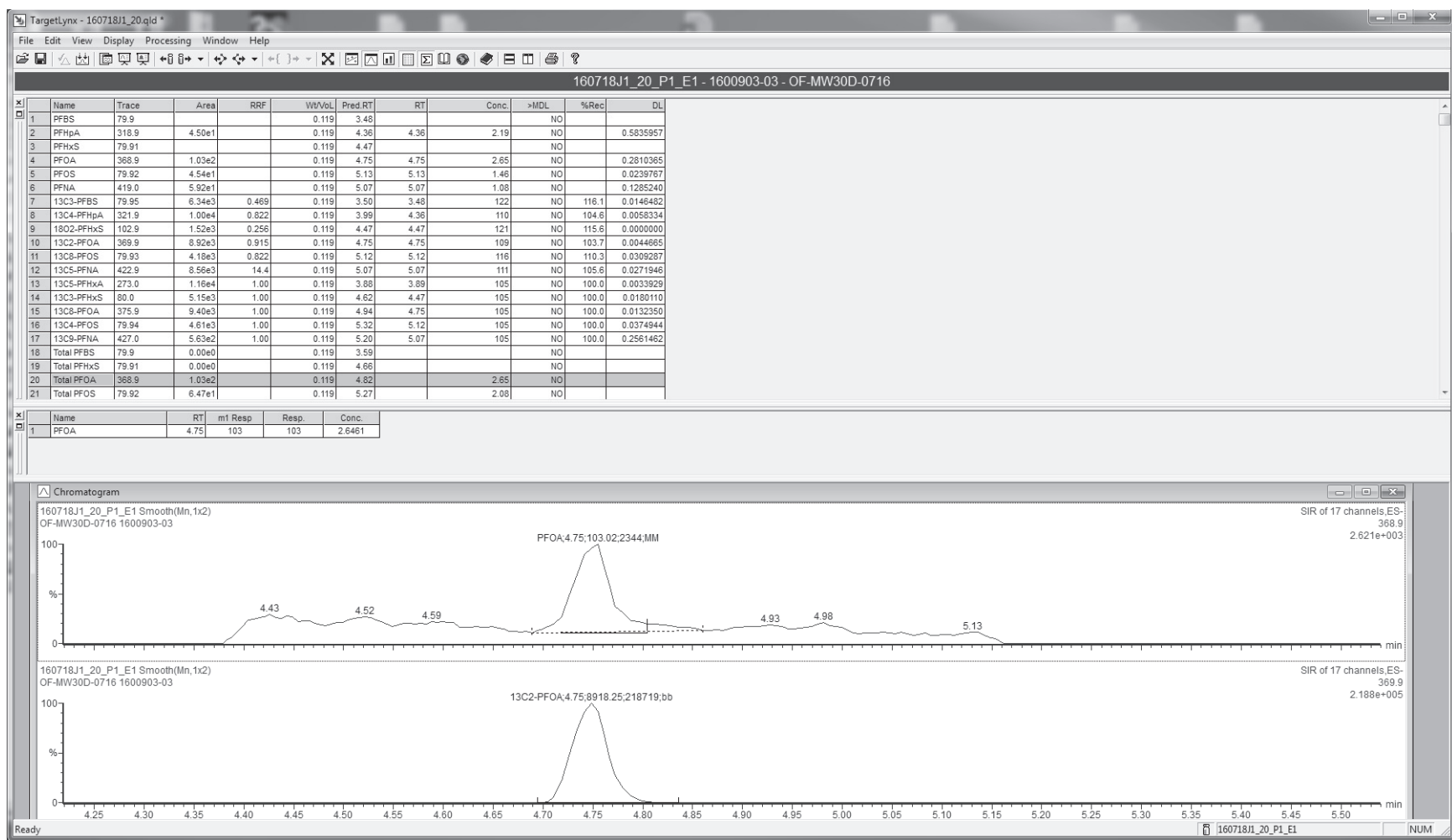
SIR of 17 channels, ES-  
102.9  
4.008e+004**13C2-PFOA**

160718J1\_20\_P1\_E1

SIR of 17 channels, ES-  
369.9  
2.188e+005

Reviewed: WJL 7/21/16

pw 7/19/16



Dataset:        U:\Q2.PRO\Results\160718J1\160718J1\_20.qld

Last Altered:   Tuesday, July 19, 2016 10:35:01 Pacific Daylight Time

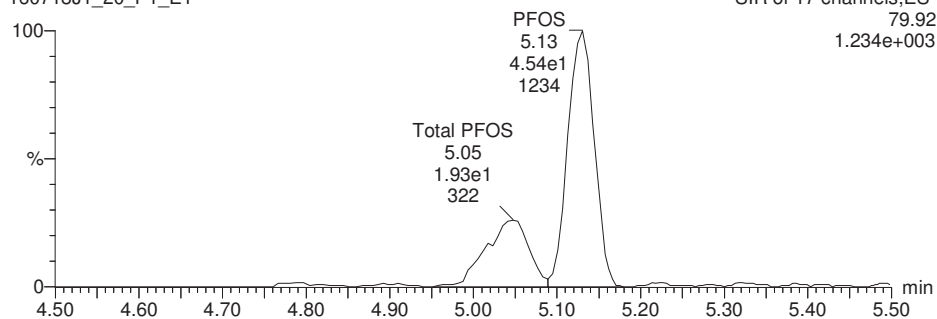
Printed:        Tuesday, July 19, 2016 10:36:18 Pacific Daylight Time

Name: 160718J1\_20.wiff, Date: 18-Jul-2016, Time: 18:44:33, ID: 1600903-03, Description: OF-MW30D-0716

### PFOS

160718J1\_20\_P1\_E1

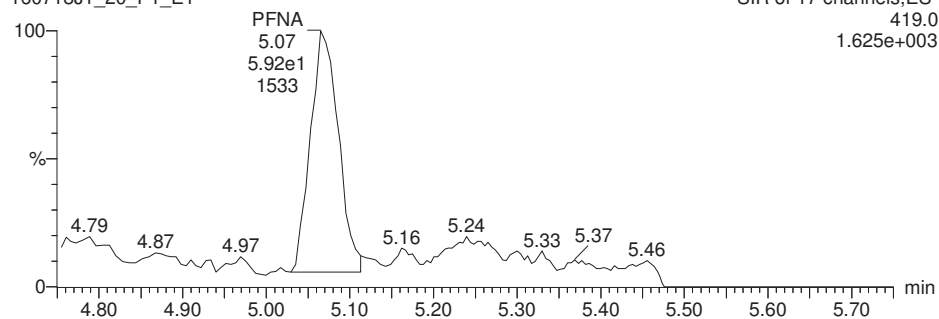
SIR of 17 channels,ES-  
79.92  
1.234e+003



### PFNA

160718J1\_20\_P1\_E1

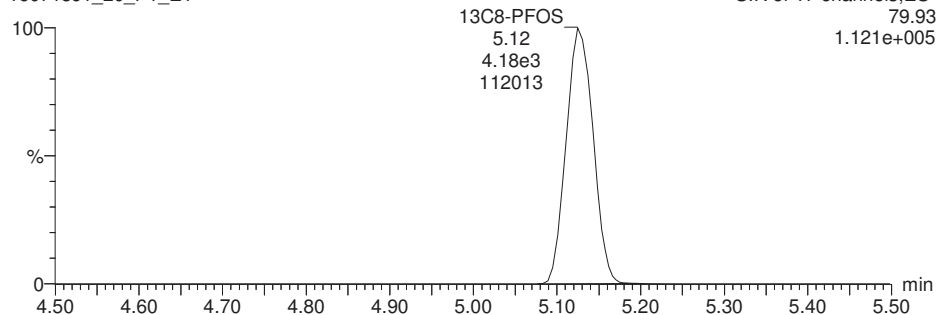
SIR of 17 channels,ES-  
419.0  
1.625e+003



### 13C8-PFOS

160718J1\_20\_P1\_E1

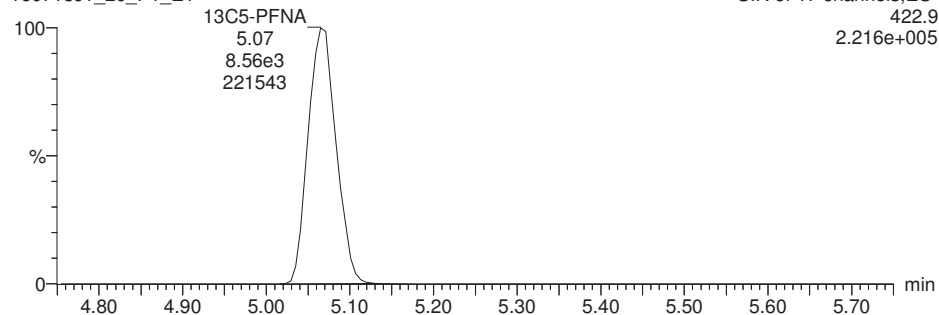
SIR of 17 channels,ES-  
79.93  
1.121e+005



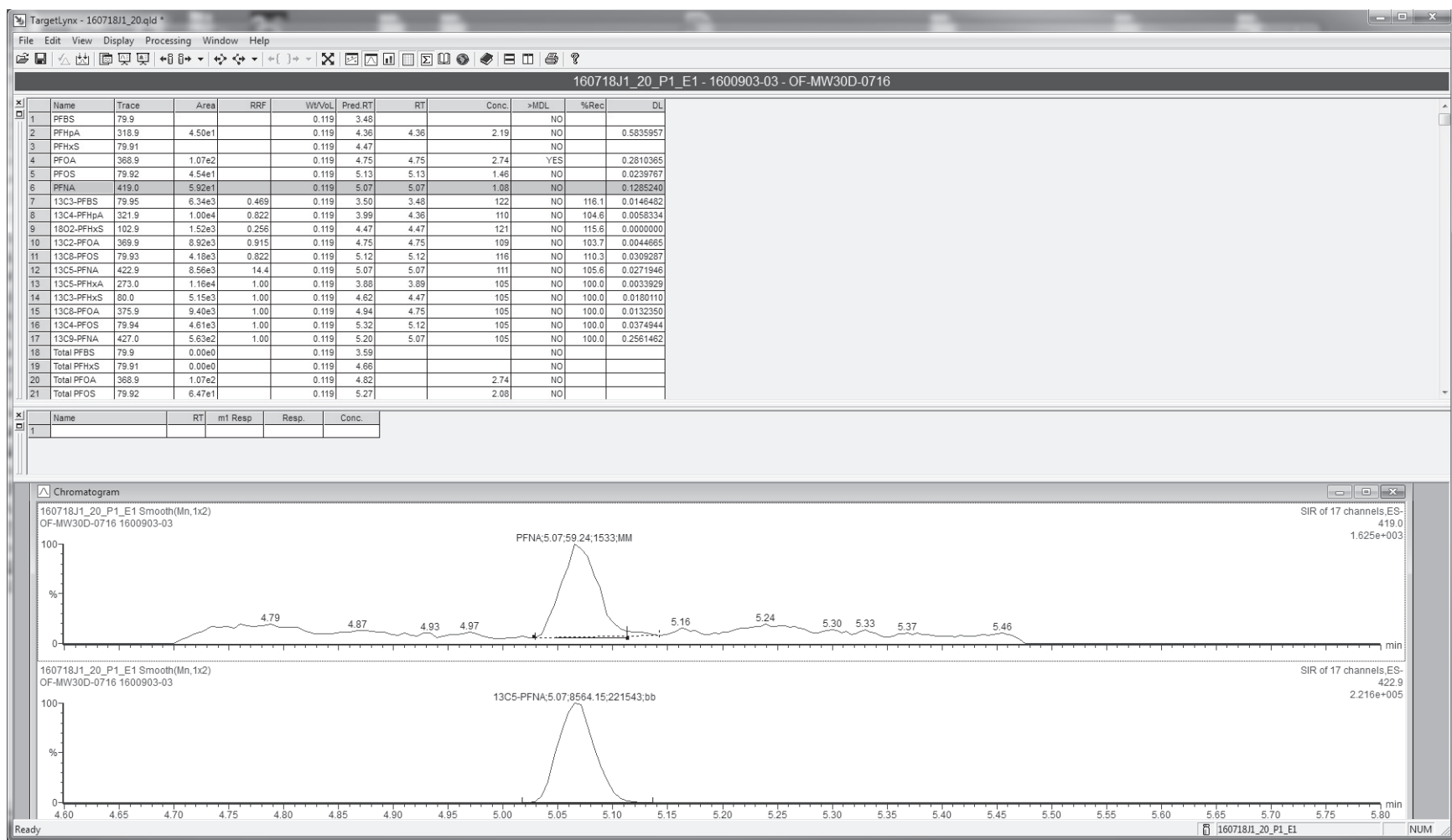
### 13C5-PFNA

160718J1\_20\_P1\_E1

SIR of 17 channels,ES-  
422.9  
2.216e+005







Vista Analytical Laboratory Q2

Dataset: U:\Q2.PRO\Results\160718J1\160718J1\_20.qld

Last Altered: Tuesday, July 19, 2016 10:35:01 Pacific Daylight Time

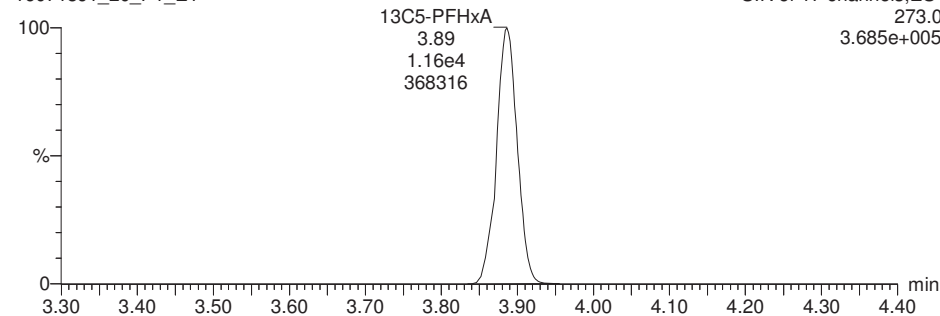
Printed: Tuesday, July 19, 2016 10:36:18 Pacific Daylight Time

Name: 160718J1\_20.wiff, Date: 18-Jul-2016, Time: 18:44:33, ID: 1600903-03, Description: OF-MW30D-0716

### 13C5-PFHxA

160718J1\_20\_P1\_E1

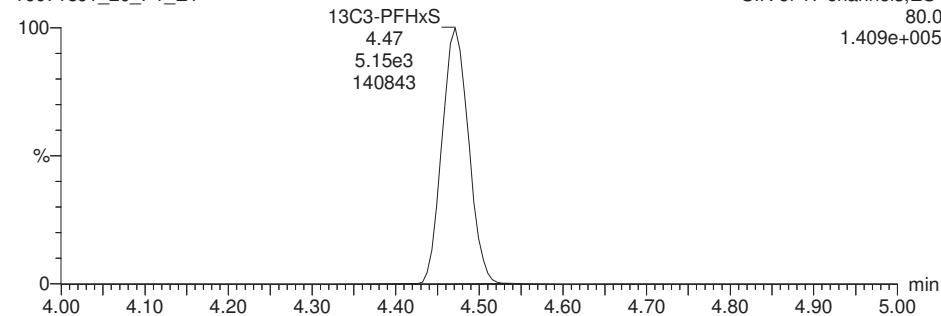
SIR of 17 channels,ES-  
273.0  
3.685e+005



### 13C3-PFHxS

160718J1\_20\_P1\_E1

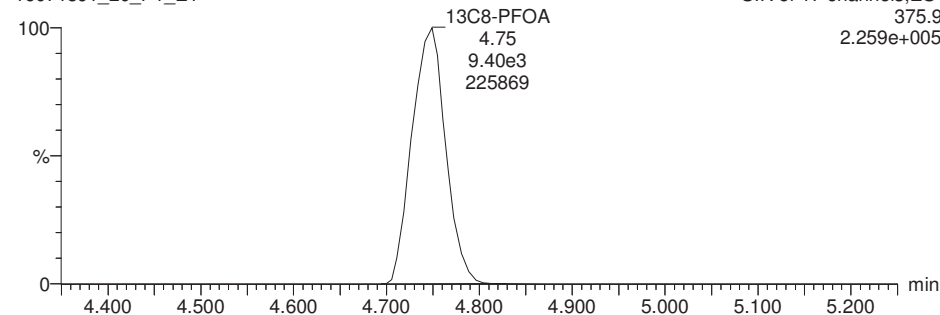
SIR of 17 channels,ES-  
80.0  
1.409e+005



### 13C8-PFOA

160718J1\_20\_P1\_E1

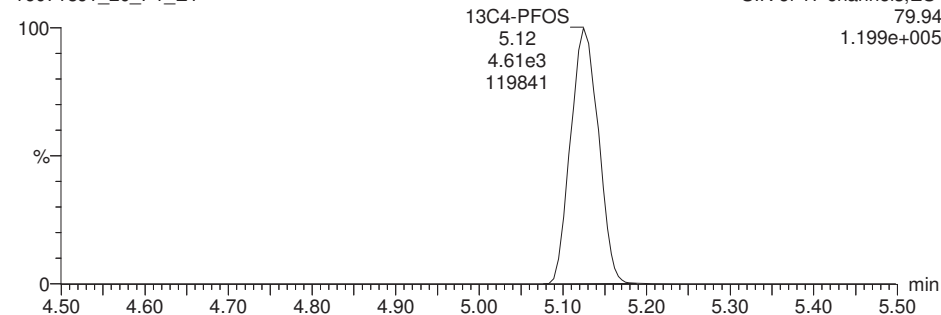
SIR of 17 channels,ES-  
375.9  
2.259e+005



### 13C4-PFOS

160718J1\_20\_P1\_E1

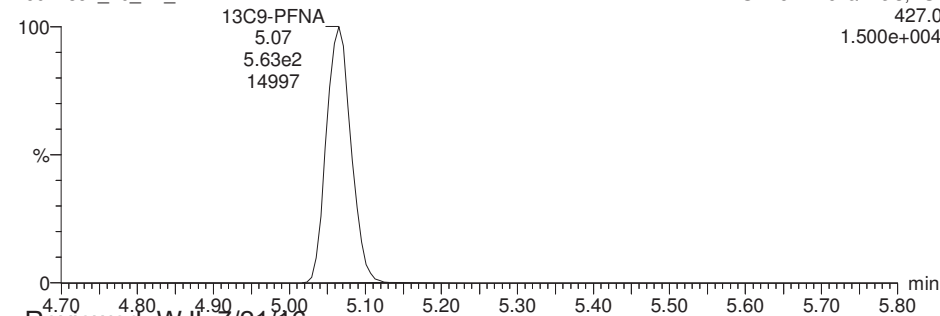
SIR of 17 channels,ES-  
79.94  
1.199e+005



### 13C9-PFNA

160718J1\_20\_P1\_E1

SIR of 17 channels,ES-  
427.0  
1.500e+004



Reviewed: WJL 7/21/16

pw 7/19/16

Dataset: U:\Q2.PRO\Results\160718J1\160718J1\_21.qld

Last Altered: Tuesday, July 19, 2016 10:38:28 Pacific Daylight Time

Printed: Tuesday, July 19, 2016 10:39:47 Pacific Daylight Time

Method: U:\Q2.PRO\MethDB\PFC List 6.mdb 08 Jul 2016 09:57:05

Calibration: U:\Q2.PRO\CurveDB\C18\_VAL-PFC\_Q2\_07-18-16\_L6.cdb 19 Jul 2016 08:45:41

Name: 160718J1\_21.wiff, Date: 18-Jul-2016, Time: 18:56:48, ID: 1600903-04, Description: OF-MW28D-0716

|    | # Name         | Trace | Response | IS Resp | RRF    | Wt/Vol | RT   | Conc. | %Rec  |
|----|----------------|-------|----------|---------|--------|--------|------|-------|-------|
| 1  | 1 PFBS         | 79.9  | 1.63e0   | 6.22e3  |        | 0.119  | 3.50 | 0.128 |       |
| 2  | 2 PFHpA        | 318.9 | 3.65e1   | 9.89e3  |        | 0.119  | 4.36 | 1.80  |       |
| 3  | 3 PFHxS        | 79.91 | 7.52e0   | 1.37e3  |        | 0.119  | 4.48 | 0.825 |       |
| 4  | 4 PFOA         | 368.9 | 7.94e1   | 8.54e3  |        | 0.119  | 4.75 | 2.13  |       |
| 5  | 5 PFOS         | 79.92 | 1.49e2   | 4.03e3  |        | 0.119  | 5.12 | 4.96  |       |
| 6  | 6 PFNA         | 419.0 | 4.85e1   | 7.43e3  |        | 0.119  | 5.07 | 1.02  |       |
| 7  | 7 13C3-PFBS    | 79.95 | 6.22e3   | 1.16e4  | 0.469  | 0.119  | 3.49 | 120   | 114.8 |
| 8  | 8 13C4-PFHpA   | 321.9 | 9.89e3   | 1.16e4  | 0.822  | 0.119  | 4.36 | 109   | 104.1 |
| 9  | 9 18O2-PFHxS   | 102.9 | 1.37e3   | 5.46e3  | 0.256  | 0.119  | 4.48 | 103   | 98.3  |
| 10 | 10 13C2-PFOA   | 369.9 | 8.54e3   | 9.08e3  | 0.915  | 0.119  | 4.75 | 108   | 102.9 |
| 11 | 11 13C8-PFOS   | 79.93 | 4.03e3   | 5.00e3  | 0.822  | 0.119  | 5.12 | 103   | 98.1  |
| 12 | 12 13C5-PFNA   | 422.9 | 7.43e3   | 5.64e2  | 14.407 | 0.119  | 5.07 | 95.8  | 91.5  |
| 13 | 13 13C5-PFHxA  | 273.0 | 1.16e4   | 1.16e4  | 1.000  | 0.119  | 3.89 | 105   | 100.0 |
| 14 | 14 13C3-PFHxS  | 80.0  | 5.46e3   | 5.46e3  | 1.000  | 0.119  | 4.48 | 105   | 100.0 |
| 15 | 15 13C8-PFOA   | 375.9 | 9.08e3   | 9.08e3  | 1.000  | 0.119  | 4.75 | 105   | 100.0 |
| 16 | 16 13C4-PFOS   | 79.94 | 5.00e3   | 5.00e3  | 1.000  | 0.119  | 5.12 | 105   | 100.0 |
| 17 | 17 13C9-PFNA   | 427.0 | 5.64e2   | 5.64e2  | 1.000  | 0.119  | 5.07 | 105   | 100.0 |
| 18 | 18 Total PFBS  | 79.9  |          | 6.22e3  |        | 0.119  |      | 0.128 |       |
| 19 | 19 Total PFHxS | 79.91 |          | 1.37e3  |        | 0.119  |      | 0.825 |       |
| 20 | 20 Total PFOA  | 368.9 |          | 8.54e3  |        | 0.119  |      | 2.13  |       |
| 21 | 21 Total PFOS  | 79.92 |          | 4.03e3  |        | 0.119  |      | 6.90  |       |

Vista Analytical Laboratory Q1

Dataset: U:\Q2.PRO\Results\160718J1\160718J1\_21.qld

Last Altered: Tuesday, July 19, 2016 10:38:28 Pacific Daylight Time

Printed: Tuesday, July 19, 2016 10:39:47 Pacific Daylight Time

Method: U:\Q2.PRO\MethDB\PFC List 6.mdb 08 Jul 2016 09:57:05

Calibration: U:\Q2.PRO\CurveDB\C18\_VAL-PFC\_Q2\_07-18-16\_L6.cdb 19 Jul 2016 08:45:41

Name: 160718J1\_21.wiff, Date: 18-Jul-2016, Time: 18:56:48, ID: 1600903-04, Description: OF-MW28D-0716

## Total PFBS

|   | # Name | Trace | RT   | Area   | IS Area | Conc. |
|---|--------|-------|------|--------|---------|-------|
| 1 | 1 PFBS | 79.9  | 3.50 | 1.63e0 | 6.22e3  | 0.128 |

## Total PFHxS

|   | # Name  | Trace | RT   | Area   | IS Area | Conc. |
|---|---------|-------|------|--------|---------|-------|
| 1 | 3 PFHxS | 79.91 | 4.48 | 7.52e0 | 1.37e3  | 0.825 |

## Total PFOA

|   | # Name | Trace | RT   | Area   | IS Area | Conc. |
|---|--------|-------|------|--------|---------|-------|
| 1 | 4 PFOA | 368.9 | 4.75 | 7.94e1 | 8.54e3  | 2.13  |

## Total PFOS

|   | # Name        | Trace | RT   | Area   | IS Area | Conc. |
|---|---------------|-------|------|--------|---------|-------|
| 1 | 5 PFOS        | 79.92 | 5.12 | 1.49e2 | 4.03e3  | 4.96  |
| 2 | 21 Total PFOS | 79.92 | 5.03 | 5.82e1 | 4.03e3  | 1.94  |

Vista Analytical Laboratory Q2

Dataset: U:\Q2.PRO\Results\160718J1\160718J1\_21.qld

Last Altered: Tuesday, July 19, 2016 10:38:28 Pacific Daylight Time

Printed: Tuesday, July 19, 2016 10:39:37 Pacific Daylight Time

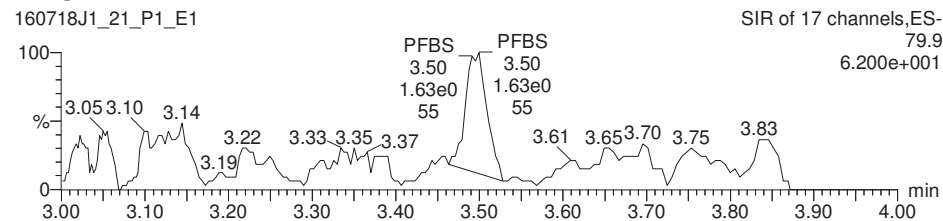
Method: U:\Q2.PRO\MethDB\PFC List 6.mdb 08 Jul 2016 09:57:05

Calibration: U:\Q2.PRO\CurveDB\C18\_VAL-PFC\_Q2\_07-18-16\_L6.cdb 19 Jul 2016 08:45:41

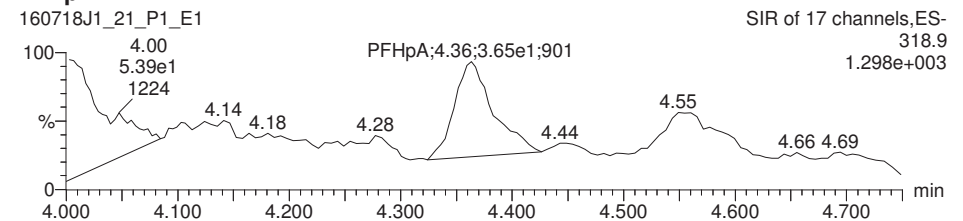
Name: 160718J1\_21.wiff, Date: 18-Jul-2016, Time: 18:56:48, ID: 1600903-04, Description: OF-MW28D-0716

**PFBS**

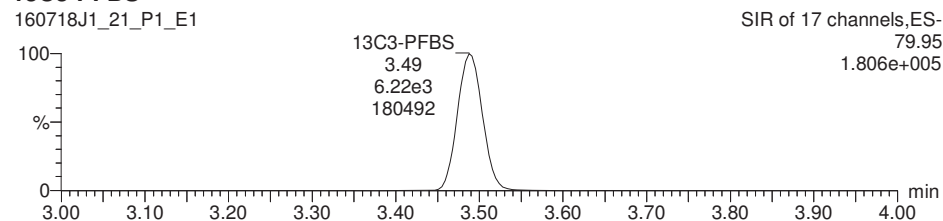
160718J1\_21\_P1\_E1

**PFHpA**

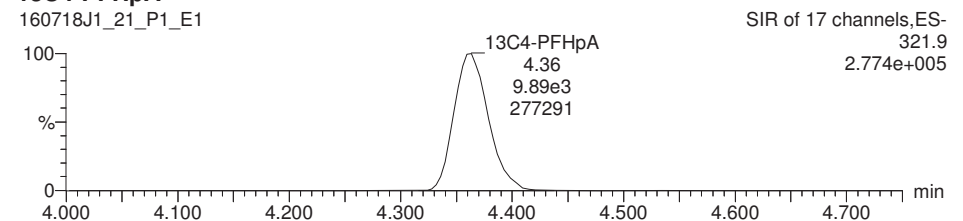
160718J1\_21\_P1\_E1

**13C3-PFBS**

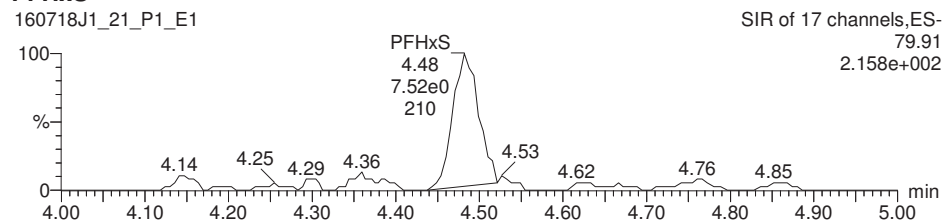
160718J1\_21\_P1\_E1

**13C4-PFHpA**

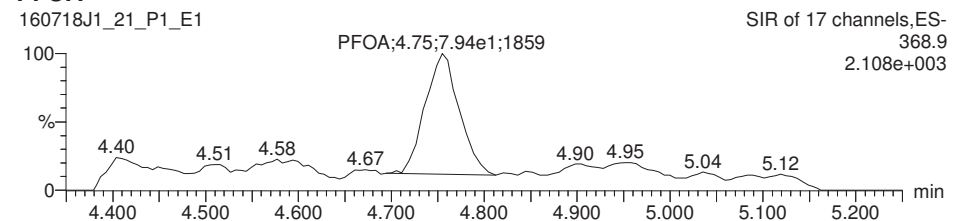
160718J1\_21\_P1\_E1

**PFHxS**

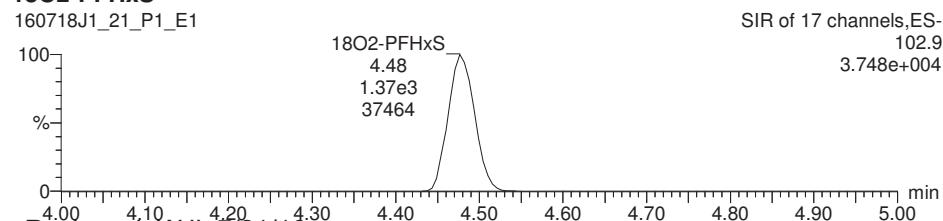
160718J1\_21\_P1\_E1

**PFOA**

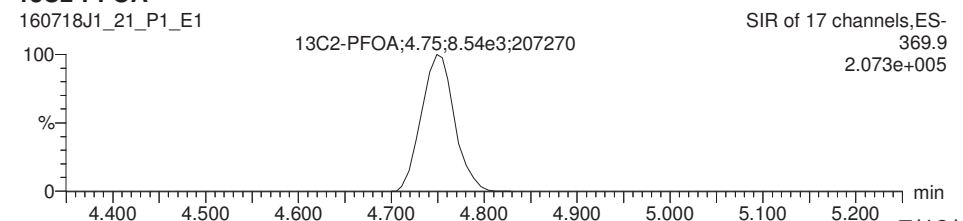
160718J1\_21\_P1\_E1

**18O2-PFHxS**

160718J1\_21\_P1\_E1

**13C2-PFOA**

160718J1\_21\_P1\_E1



Reviewed: WJL 7/21/16

pw 7/19/16

Dataset:        U:\Q2.PRO\Results\160718J1\160718J1\_21.qld

Last Altered:   Tuesday, July 19, 2016 10:38:28 Pacific Daylight Time

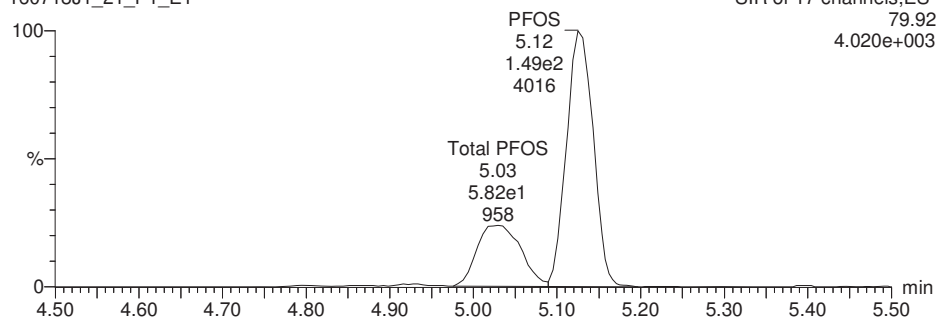
Printed:        Tuesday, July 19, 2016 10:39:37 Pacific Daylight Time

Name: 160718J1\_21.wiff, Date: 18-Jul-2016, Time: 18:56:48, ID: 1600903-04, Description: OF-MW28D-0716

### PFOS

160718J1\_21\_P1\_E1

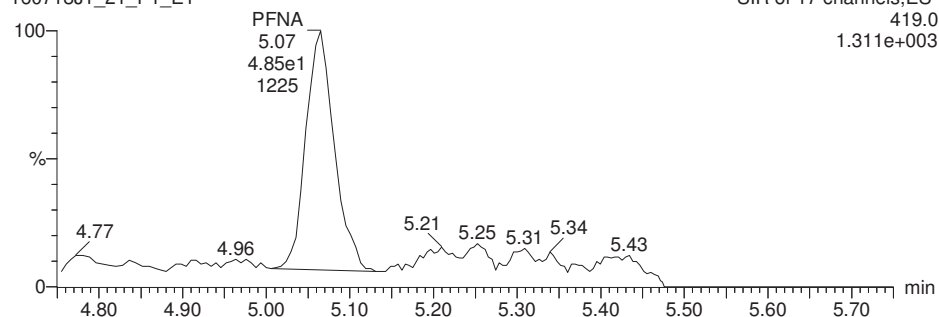
SIR of 17 channels,ES-  
79.92  
4.020e+003



### PFNA

160718J1\_21\_P1\_E1

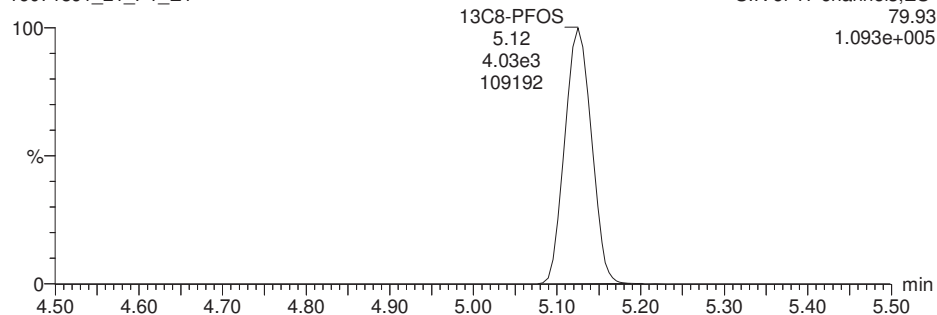
SIR of 17 channels,ES-  
419.0  
1.311e+003



### 13C8-PFOS

160718J1\_21\_P1\_E1

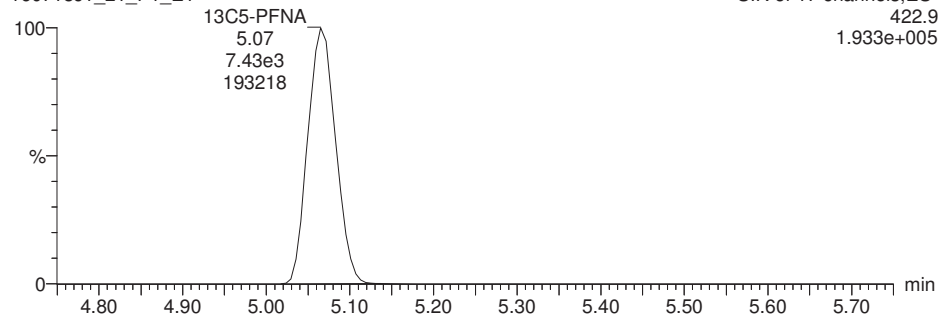
SIR of 17 channels,ES-  
79.93  
1.093e+005



### 13C5-PFNA

160718J1\_21\_P1\_E1

SIR of 17 channels,ES-  
422.9  
1.933e+005



Dataset:        U:\Q2.PRO\Results\160718J1\160718J1\_21.qld

Last Altered:   Tuesday, July 19, 2016 10:38:28 Pacific Daylight Time

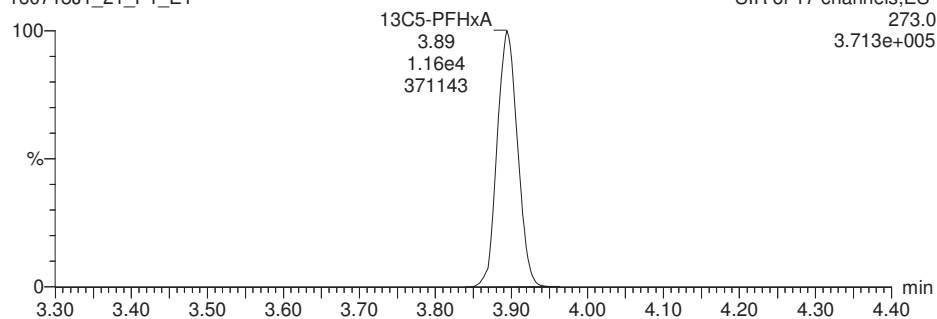
Printed:        Tuesday, July 19, 2016 10:39:37 Pacific Daylight Time

Name: 160718J1\_21.wiff, Date: 18-Jul-2016, Time: 18:56:48, ID: 1600903-04, Description: OF-MW28D-0716

**13C5-PFHxA**

160718J1\_21\_P1\_E1

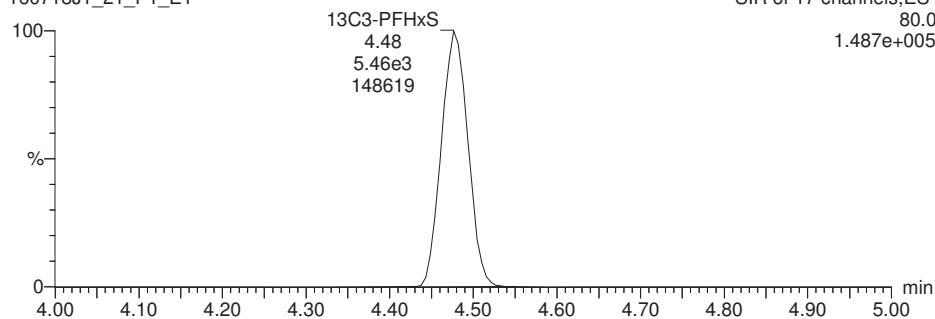
SIR of 17 channels,ES-  
273.0  
3.713e+005



**13C3-PFHxS**

160718J1\_21\_P1\_E1

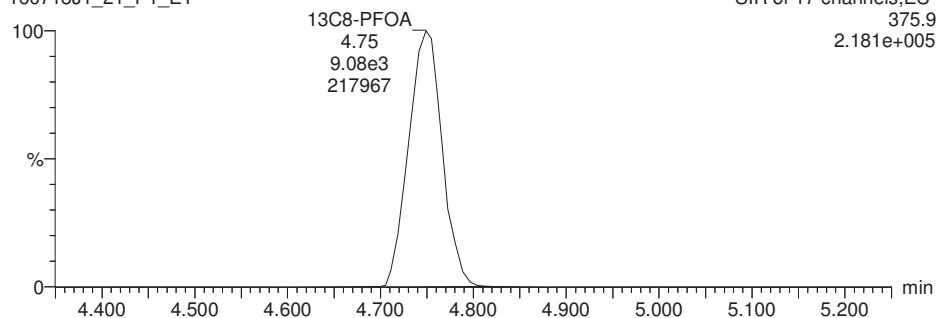
SIR of 17 channels,ES-  
80.0  
1.487e+005



**13C8-PFOA**

160718J1\_21\_P1\_E1

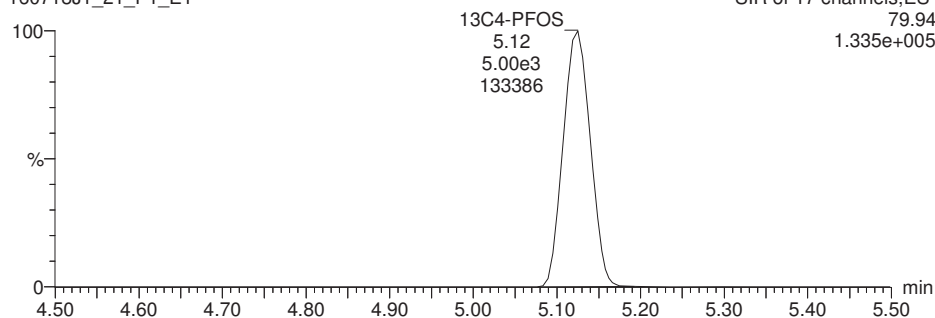
SIR of 17 channels,ES-  
375.9  
2.181e+005



**13C4-PFOS**

160718J1\_21\_P1\_E1

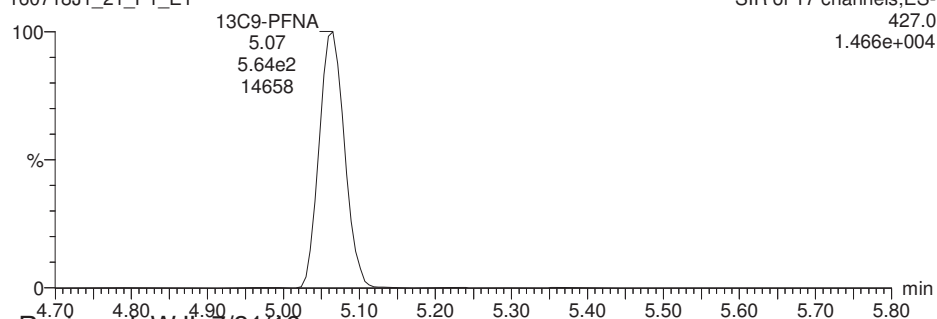
SIR of 17 channels,ES-  
79.94  
1.335e+005



**13C9-PFNA**

160718J1\_21\_P1\_E1

SIR of 17 channels,ES-  
427.0  
1.466e+004



Reviewed: WJL 7/21/16

pw 7/19/16

Dataset: U:\Q2.PRO\Results\160718J1\160718J1\_22.qld

Last Altered: Tuesday, July 19, 2016 10:42:41 Pacific Daylight Time

Printed: Tuesday, July 19, 2016 10:43:08 Pacific Daylight Time

Method: U:\Q2.PRO\MethDB\PFC List 6.mdb 08 Jul 2016 09:57:05

Calibration: U:\Q2.PRO\CurveDB\C18\_VAL-PFC\_Q2\_07-18-16\_L6.cdb 19 Jul 2016 08:45:41

Name: 160718J1\_22.wiff, Date: 18-Jul-2016, Time: 19:09:01, ID: 1600903-05, Description: OF-MW32-0716

|    | # Name         | Trace | Response | IS Resp | RRF    | Wt/Vol | RT   | Conc. | %Rec  |
|----|----------------|-------|----------|---------|--------|--------|------|-------|-------|
| 1  | 1 PFBS         | 79.9  | 1.42e1   | 5.78e3  |        | 0.127  | 3.48 | 1.13  |       |
| 2  | 2 PFHpA        | 318.9 |          | 8.70e3  |        | 0.127  |      |       |       |
| 3  | 3 PFHxS        | 79.91 | 1.17e1   | 1.42e3  |        | 0.127  | 4.47 | 1.16  |       |
| 4  | 4 PFOA         | 368.9 | 2.67e1   | 8.06e3  |        | 0.127  | 4.75 | 0.712 |       |
| 5  | 5 PFOS         | 79.92 | 1.12e1   | 4.10e3  |        | 0.127  | 5.12 | 0.343 |       |
| 6  | 6 PFNA         | 419.0 |          | 7.34e3  |        | 0.127  |      |       |       |
| 7  | 7 13C3-PFBS    | 79.95 | 5.78e3   | 1.05e4  | 0.469  | 0.127  | 3.48 | 115   | 117.0 |
| 8  | 8 13C4-PFHpA   | 321.9 | 8.70e3   | 1.05e4  | 0.822  | 0.127  | 4.35 | 98.9  | 100.5 |
| 9  | 9 18O2-PFHxS   | 102.9 | 1.42e3   | 4.84e3  | 0.256  | 0.127  | 4.47 | 113   | 114.8 |
| 10 | 10 13C2-PFOA   | 369.9 | 8.06e3   | 8.40e3  | 0.915  | 0.127  | 4.75 | 103   | 105.0 |
| 11 | 11 13C8-PFOS   | 79.93 | 4.10e3   | 4.46e3  | 0.822  | 0.127  | 5.13 | 110   | 111.9 |
| 12 | 12 13C5-PFNA   | 422.9 | 7.34e3   | 4.80e2  | 14.407 | 0.127  | 5.06 | 105   | 106.2 |
| 13 | 13 13C5-PFHxA  | 273.0 | 1.05e4   | 1.05e4  | 1.000  | 0.127  | 3.88 | 98.5  | 100.0 |
| 14 | 14 13C3-PFHxS  | 80.0  | 4.84e3   | 4.84e3  | 1.000  | 0.127  | 4.47 | 98.5  | 100.0 |
| 15 | 15 13C8-PFOA   | 375.9 | 8.40e3   | 8.40e3  | 1.000  | 0.127  | 4.74 | 98.5  | 100.0 |
| 16 | 16 13C4-PFOS   | 79.94 | 4.46e3   | 4.46e3  | 1.000  | 0.127  | 5.12 | 98.5  | 100.0 |
| 17 | 17 13C9-PFNA   | 427.0 | 4.80e2   | 4.80e2  | 1.000  | 0.127  | 5.06 | 98.5  | 100.0 |
| 18 | 18 Total PFBS  | 79.9  |          | 5.78e3  |        | 0.127  |      | 1.13  |       |
| 19 | 19 Total PFHxS | 79.91 |          | 1.42e3  |        | 0.127  |      | 1.16  |       |
| 20 | 20 Total PFOA  | 368.9 |          | 8.06e3  |        | 0.127  |      | 0.712 |       |
| 21 | 21 Total PFOS  | 79.92 |          | 4.10e3  |        | 0.127  |      | 0.753 |       |



Vista Analytical Laboratory Q1

Dataset: U:\Q2.PRO\Results\160718J1\160718J1\_22.qld

Last Altered: Tuesday, July 19, 2016 10:42:41 Pacific Daylight Time

Printed: Tuesday, July 19, 2016 10:43:08 Pacific Daylight Time

Method: U:\Q2.PRO\MethDB\PFC List 6.mdb 08 Jul 2016 09:57:05

Calibration: U:\Q2.PRO\CurveDB\C18\_VAL-PFC\_Q2\_07-18-16\_L6.cdb 19 Jul 2016 08:45:41

Name: 160718J1\_22.wiff, Date: 18-Jul-2016, Time: 19:09:01, ID: 1600903-05, Description: OF-MW32-0716

## Total PFBS

|   | # Name | Trace | RT   | Area   | IS Area | Conc. |
|---|--------|-------|------|--------|---------|-------|
| 1 | 1 PFBS | 79.9  | 3.48 | 1.42e1 | 5.78e3  | 1.13  |

## Total PFHxS

|   | # Name  | Trace | RT   | Area   | IS Area | Conc. |
|---|---------|-------|------|--------|---------|-------|
| 1 | 3 PFHxS | 79.91 | 4.47 | 1.17e1 | 1.42e3  | 1.16  |

## Total PFOA

|   | # Name | Trace | RT   | Area   | IS Area | Conc. |
|---|--------|-------|------|--------|---------|-------|
| 1 | 4 PFOA | 368.9 | 4.75 | 2.67e1 | 8.06e3  | 0.712 |

## Total PFOS

|   | # Name        | Trace | RT   | Area   | IS Area | Conc. |
|---|---------------|-------|------|--------|---------|-------|
| 1 | 5 PFOS        | 79.92 | 5.12 | 1.12e1 | 4.10e3  | 0.343 |
| 2 | 21 Total PFOS | 79.92 | 5.05 | 1.33e1 | 4.10e3  | 0.410 |

Vista Analytical Laboratory Q2

Dataset: U:\Q2.PRO\Results\160718J1\160718J1\_22.qld

Last Altered: Tuesday, July 19, 2016 10:42:41 Pacific Daylight Time

Printed: Tuesday, July 19, 2016 10:43:18 Pacific Daylight Time

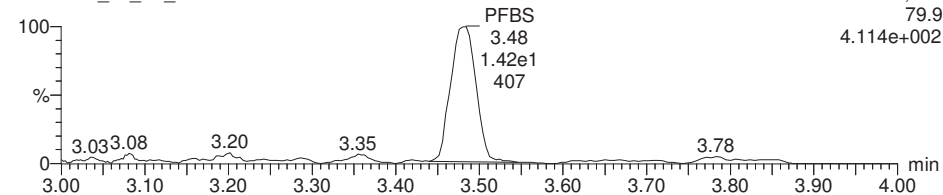
Method: U:\Q2.PRO\MethDB\PFC List 6.mdb 08 Jul 2016 09:57:05

Calibration: U:\Q2.PRO\CurveDB\C18\_VAL-PFC\_Q2\_07-18-16\_L6.cdb 19 Jul 2016 08:45:41

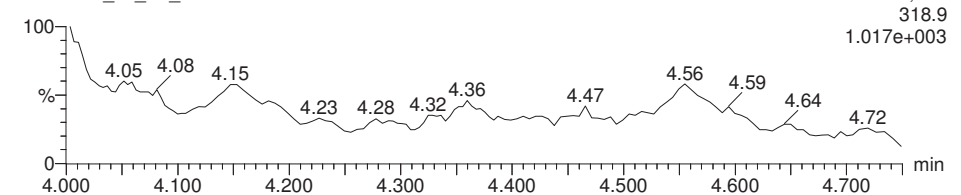
Name: 160718J1\_22.wiff, Date: 18-Jul-2016, Time: 19:09:01, ID: 1600903-05, Description: OF-MW32-0716

**PFBS**

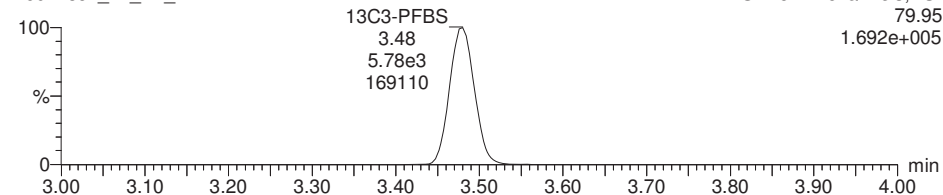
160718J1\_22\_P1\_E1

**PFHpA**

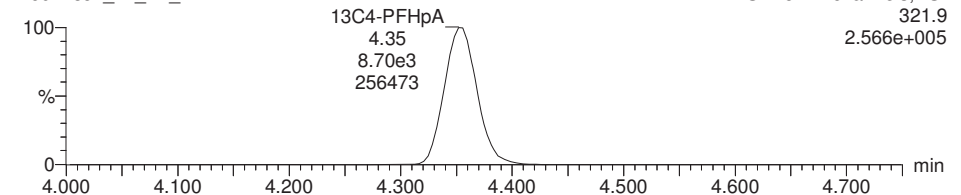
160718J1\_22\_P1\_E1

**13C3-PFBS**

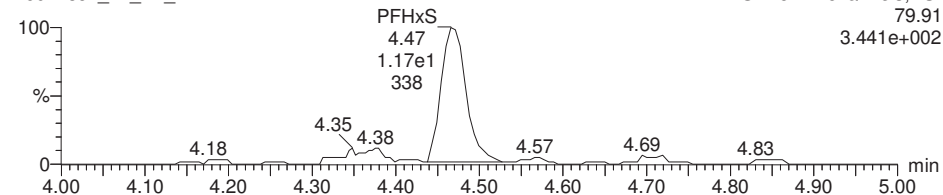
160718J1\_22\_P1\_E1

**13C4-PFHpA**

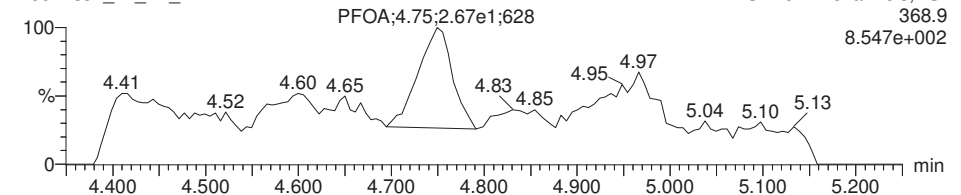
160718J1\_22\_P1\_E1

**PFHxS**

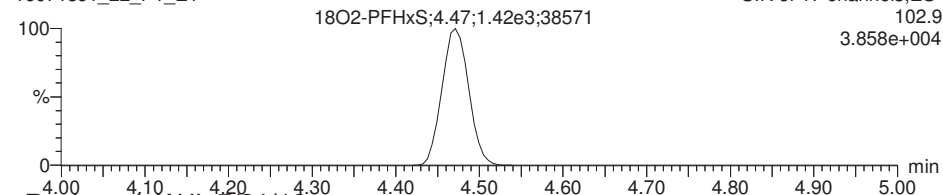
160718J1\_22\_P1\_E1

**PFOA**

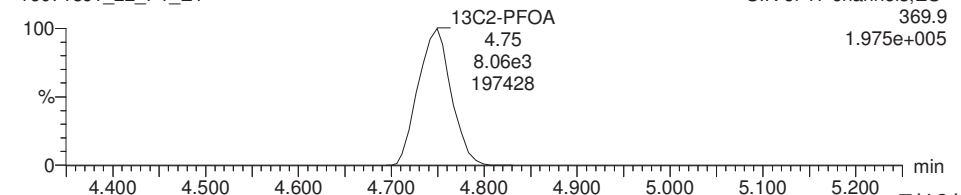
160718J1\_22\_P1\_E1

**18O2-PFHxS**

160718J1\_22\_P1\_E1

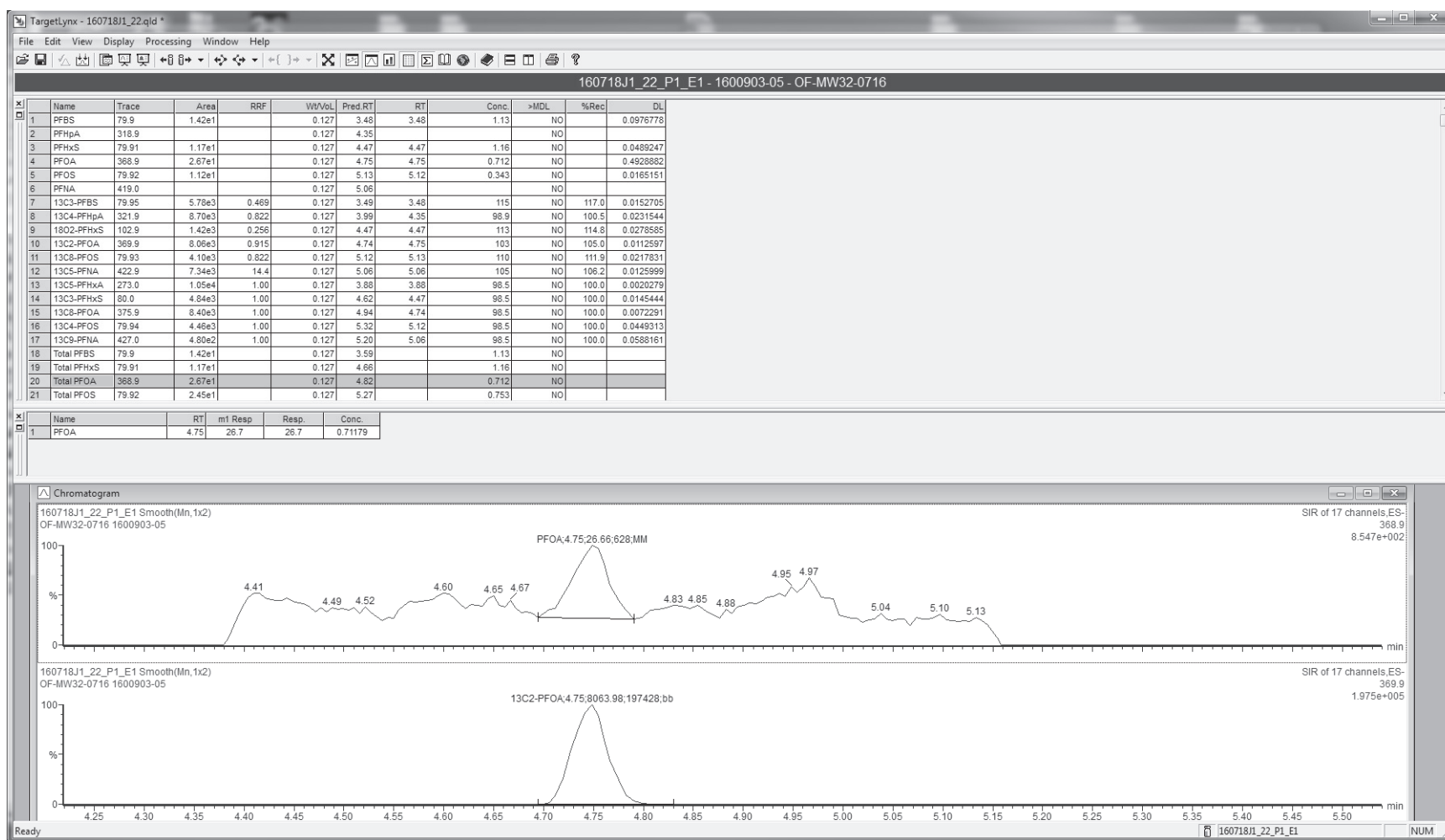
**13C2-PFOA**

160718J1\_22\_P1\_E1



Reviewed: WJL 7/21/16

pw 7/19/16



Dataset:        U:\Q2.PRO\Results\160718J1\160718J1\_22.qld

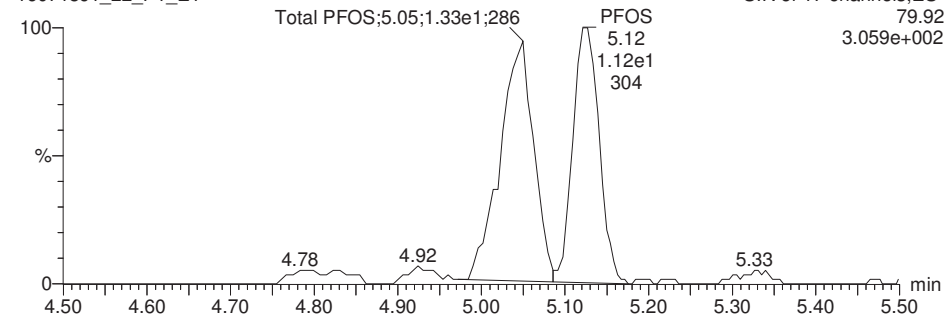
Last Altered:   Tuesday, July 19, 2016 10:42:41 Pacific Daylight Time

Printed:        Tuesday, July 19, 2016 10:43:18 Pacific Daylight Time

Name: 160718J1\_22.wiff, Date: 18-Jul-2016, Time: 19:09:01, ID: 1600903-05, Description: OF-MW32-0716

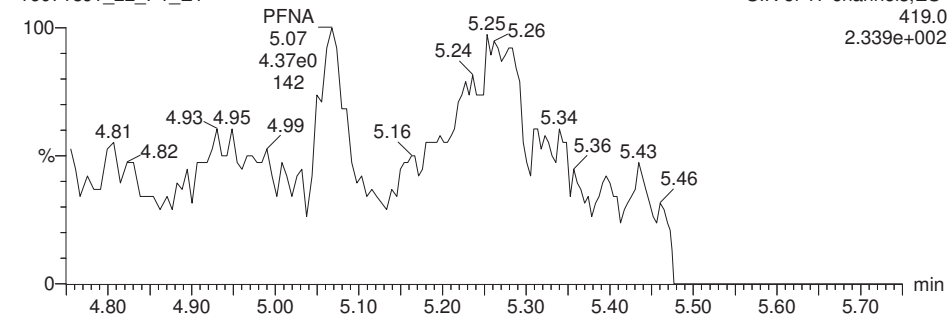
### PFOS

160718J1\_22\_P1\_E1



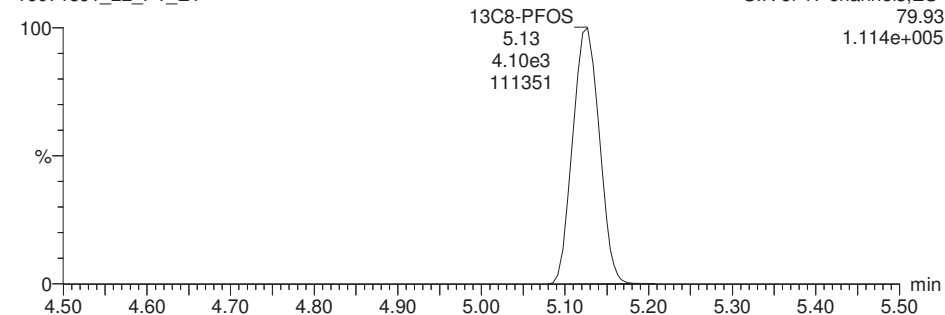
### PFNA

160718J1\_22\_P1\_E1



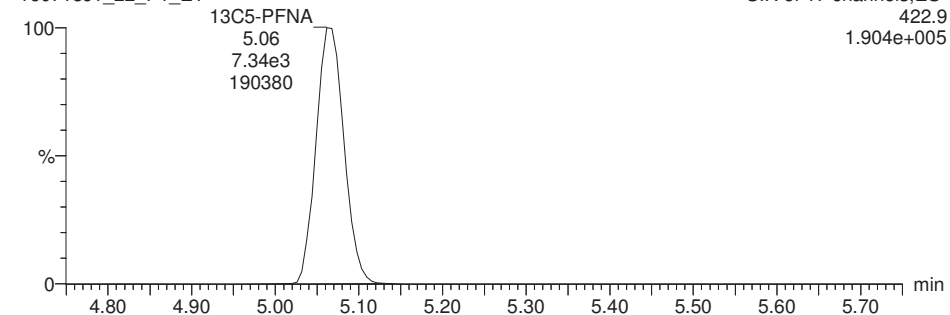
### 13C8-PFOS

160718J1\_22\_P1\_E1



### 13C5-PFNA

160718J1\_22\_P1\_E1



Dataset:        U:\Q2.PRO\Results\160718J1\160718J1\_22.qld

Last Altered:   Tuesday, July 19, 2016 10:42:41 Pacific Daylight Time

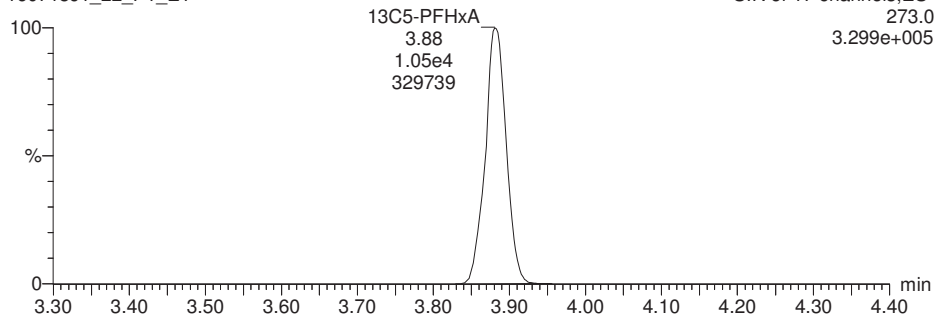
Printed:        Tuesday, July 19, 2016 10:43:18 Pacific Daylight Time

Name: 160718J1\_22.wiff, Date: 18-Jul-2016, Time: 19:09:01, ID: 1600903-05, Description: OF-MW32-0716

**13C5-PFHxA**

160718J1\_22\_P1\_E1

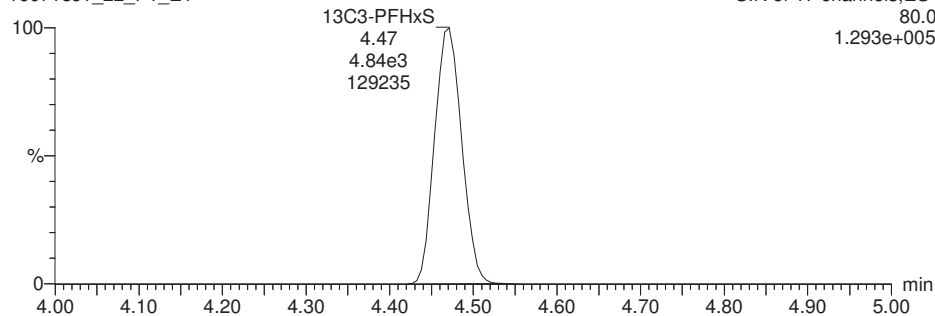
SIR of 17 channels,ES-  
273.0  
3.299e+005



**13C3-PFHxS**

160718J1\_22\_P1\_E1

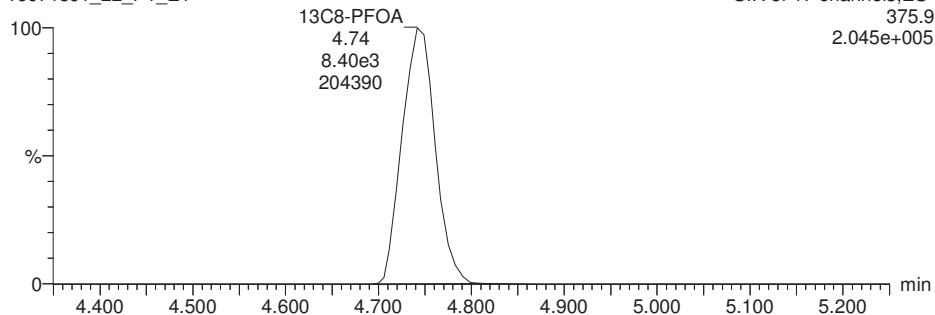
SIR of 17 channels,ES-  
80.0  
1.293e+005



**13C8-PFOA**

160718J1\_22\_P1\_E1

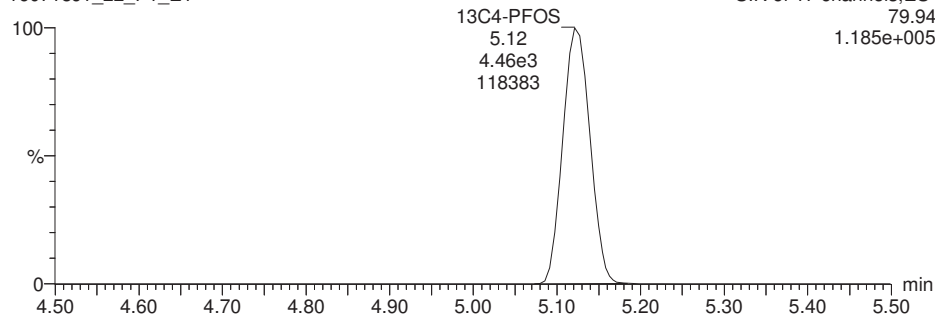
SIR of 17 channels,ES-  
375.9  
2.045e+005



**13C4-PFOS**

160718J1\_22\_P1\_E1

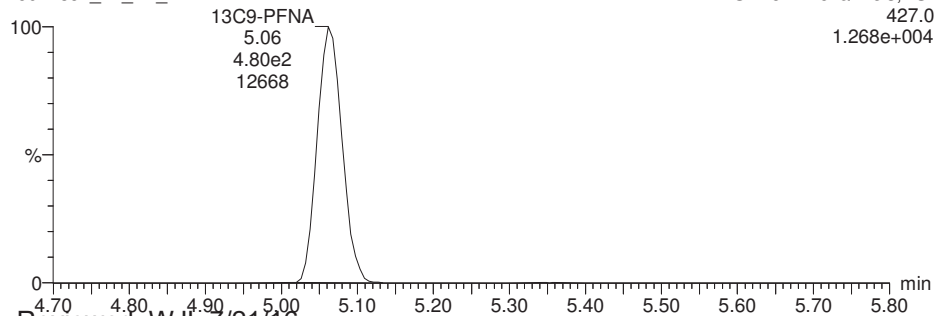
SIR of 17 channels,ES-  
79.94  
1.185e+005



**13C9-PFNA**

160718J1\_22\_P1\_E1

SIR of 17 channels,ES-  
427.0  
1.268e+004



Reviewed: WJL 7/21/16

pw 7/19/16

Dataset: U:\Q2.PRO\Results\160718J1\160718J1\_23.qld

Last Altered: Tuesday, July 19, 2016 10:48:17 Pacific Daylight Time

Printed: Tuesday, July 19, 2016 10:48:59 Pacific Daylight Time

Method: U:\Q2.PRO\MethDB\PFC List 6.mdb 08 Jul 2016 09:57:05

Calibration: U:\Q2.PRO\CurveDB\C18\_VAL-PFC\_Q2\_07-18-16\_L6.cdb 19 Jul 2016 08:45:41

Name: 160718J1\_23.wiff, Date: 18-Jul-2016, Time: 19:21:13, ID: 1600903-06, Description: OF-MW29-0716

|    | # Name         | Trace | Response | IS Resp | RRF    | Wt/Vol | RT   | Conc.  | %Rec  |
|----|----------------|-------|----------|---------|--------|--------|------|--------|-------|
| 1  | 1 PFBS         | 79.9  | 6.23e3   | 6.56e3  |        | 0.121  | 3.48 | 473    |       |
| 2  | 2 PFHpA        | 318.9 | 7.52e3   | 1.09e4  |        | 0.121  | 4.36 | 341    |       |
| 3  | 3 PFHxS        | 79.91 | 2.56e4   | 1.38e3  |        | 0.121  | 4.48 | 3690 E | *     |
| 4  | 4 PFOA         | 368.9 | 2.98e4   | 1.04e4  |        | 0.121  | 4.75 | 726    |       |
| 5  | 5 PFOS         | 79.92 | 3.66e4   | 4.61e3  |        | 0.121  | 5.13 | 1150   |       |
| 6  | 6 PFNA         | 419.0 | 1.21e3   | 8.46e3  |        | 0.121  | 5.07 | 22.0   |       |
| 7  | 7 13C3-PFBS    | 79.95 | 6.56e3   | 1.16e4  | 0.469  | 0.121  | 3.48 | 125    | 120.9 |
| 8  | 8 13C4-PFHpA   | 321.9 | 1.09e4   | 1.16e4  | 0.822  | 0.121  | 4.36 | 118    | 114.5 |
| 9  | 9 18O2-PFHxS   | 102.9 | 1.38e3   | 4.59e3  | 0.256  | 0.121  | 4.48 | 121    | 117.4 |
| 10 | 10 13C2-PFOA   | 369.9 | 1.04e4   | 1.05e4  | 0.915  | 0.121  | 4.75 | 111    | 108.0 |
| 11 | 11 13C8-PFOS   | 79.93 | 4.61e3   | 4.88e3  | 0.822  | 0.121  | 5.12 | 118    | 114.9 |
| 12 | 12 13C5-PFNA   | 422.9 | 8.46e3   | 5.37e2  | 14.407 | 0.121  | 5.06 | 113    | 109.3 |
| 13 | 13 13C5-PFHxA  | 273.0 | 1.16e4   | 1.16e4  | 1.000  | 0.121  | 3.89 | 103    | 100.0 |
| 14 | 14 13C3-PFHxS  | 80.0  | 4.59e3   | 4.59e3  | 1.000  | 0.121  | 4.48 | 103    | 100.0 |
| 15 | 15 13C8-PFOA   | 375.9 | 1.05e4   | 1.05e4  | 1.000  | 0.121  | 4.75 | 103    | 100.0 |
| 16 | 16 13C4-PFOS   | 79.94 | 4.88e3   | 4.88e3  | 1.000  | 0.121  | 5.12 | 103    | 100.0 |
| 17 | 17 13C9-PFNA   | 427.0 | 5.37e2   | 5.37e2  | 1.000  | 0.121  | 5.07 | 103    | 100.0 |
| 18 | 18 Total PFBS  | 79.9  |          | 6.56e3  |        | 0.121  |      | 483    |       |
| 19 | 19 Total PFHxS | 79.91 |          | 1.38e3  |        | 0.121  |      | 4360   |       |
| 20 | 20 Total PFOA  | 368.9 |          | 1.04e4  |        | 0.121  |      | 832    |       |
| 21 | 21 Total PFOS  | 79.92 |          | 4.61e3  |        | 0.121  |      | 2960   |       |

\* See 1:10 Dilution

Vista Analytical Laboratory Q1

Dataset: U:\Q2.PRO\Results\160718J1\160718J1\_23.qld

Last Altered: Tuesday, July 19, 2016 10:48:17 Pacific Daylight Time

Printed: Tuesday, July 19, 2016 10:48:59 Pacific Daylight Time

Method: U:\Q2.PRO\MethDB\PFC List 6.mdb 08 Jul 2016 09:57:05

Calibration: U:\Q2.PRO\CurveDB\C18\_VAL-PFC\_Q2\_07-18-16\_L6.cdb 19 Jul 2016 08:45:41

Name: 160718J1\_23.wiff, Date: 18-Jul-2016, Time: 19:21:13, ID: 1600903-06, Description: OF-MW29-0716

## Total PFBS

|   | # Name        | Trace | RT   | Area   | IS Area | Conc. |
|---|---------------|-------|------|--------|---------|-------|
| 1 | 1 PFBS        | 79.9  | 3.48 | 6.23e3 | 6.56e3  | 473   |
| 2 | 18 Total PFBS | 79.9  | 3.36 | 1.39e2 | 6.56e3  | 10.2  |

## Total PFHxS

|   | # Name         | Trace | RT   | Area   | IS Area | Conc. |
|---|----------------|-------|------|--------|---------|-------|
| 1 | 3 PFHxS        | 79.91 | 4.48 | 2.56e4 | 1.38e3  | 3690  |
| 2 | 19 Total PFHxS | 79.91 | 4.38 | 5.77e3 | 1.38e3  | 649   |
| 3 | 19 Total PFHxS | 79.91 | 4.27 | 1.49e2 | 1.38e3  | 16.0  |

## Total PFOA

|   | # Name        | Trace | RT   | Area   | IS Area | Conc. |
|---|---------------|-------|------|--------|---------|-------|
| 1 | 4 PFOA        | 368.9 | 4.75 | 2.98e4 | 1.04e4  | 726   |
| 2 | 20 Total PFOA | 368.9 | 4.66 | 4.77e3 | 1.04e4  | 105   |
| 3 | 20 Total PFOA | 368.9 | 4.54 | 6.22e1 | 1.04e4  | 1.35  |

## Total PFOS

|   | # Name        | Trace | RT   | Area   | IS Area | Conc. |
|---|---------------|-------|------|--------|---------|-------|
| 1 | 5 PFOS        | 79.92 | 5.13 | 3.66e4 | 4.61e3  | 1150  |
| 2 | 21 Total PFOS | 79.92 | 5.02 | 4.97e4 | 4.61e3  | 1620  |
| 3 | 21 Total PFOS | 79.92 | 4.92 | 6.74e3 | 4.61e3  | 196   |
| 4 | 21 Total PFOS | 79.92 | 4.82 | 2.74e1 | 4.61e3  | 0.785 |

Dataset:        U:\Q2.PRO\Results\160718J1\160718J1\_23.qld

Last Altered:   Tuesday, July 19, 2016 10:48:17 Pacific Daylight Time

Printed:        Tuesday, July 19, 2016 10:48:45 Pacific Daylight Time

Method: U:\Q2.PRO\MethDB\PFC List 6.mdb 08 Jul 2016 09:57:05

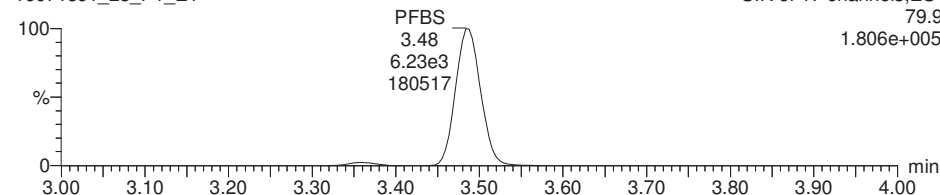
Calibration: U:\Q2.PRO\CurveDB\C18\_VAL-PFC\_Q2\_07-18-16\_L6.cdb 19 Jul 2016 08:45:41

Name: 160718J1\_23.wiff, Date: 18-Jul-2016, Time: 19:21:13, ID: 1600903-06, Description: OF-MW29-0716

#### PFBS

160718J1\_23\_P1\_E1

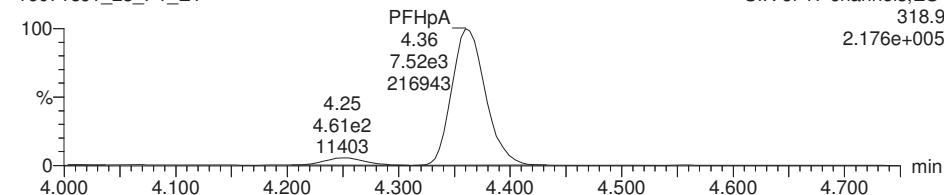
SIR of 17 channels,ES-  
79.9  
1.806e+005



#### PFHpA

160718J1\_23\_P1\_E1

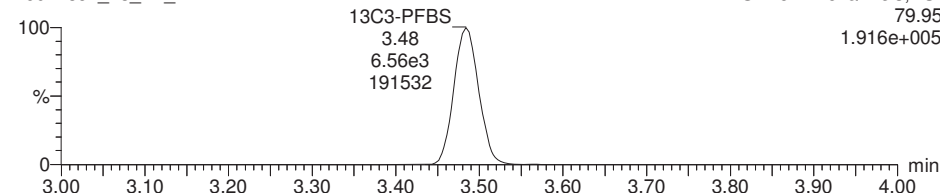
SIR of 17 channels,ES-  
318.9  
2.176e+005



#### 13C3-PFBS

160718J1\_23\_P1\_E1

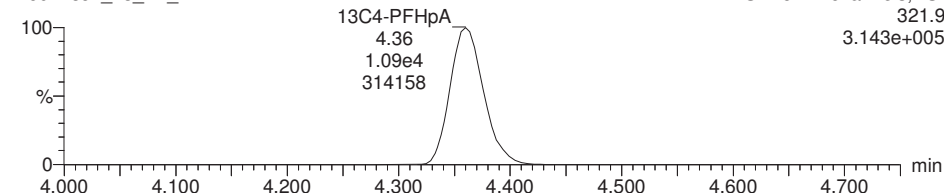
SIR of 17 channels,ES-  
79.95  
1.916e+005



#### 13C4-PFHpA

160718J1\_23\_P1\_E1

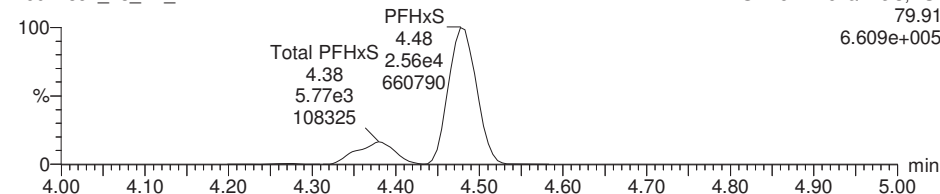
SIR of 17 channels,ES-  
321.9  
3.143e+005



#### PFHxS

160718J1\_23\_P1\_E1

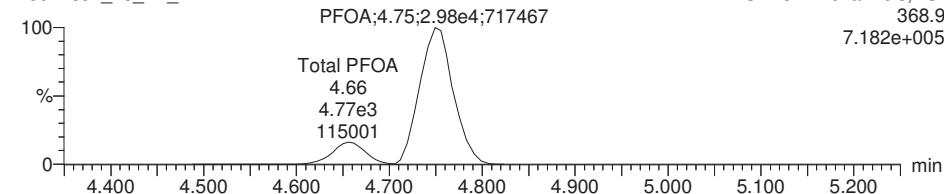
SIR of 17 channels,ES-  
79.91  
6.609e+005



#### PFOA

160718J1\_23\_P1\_E1

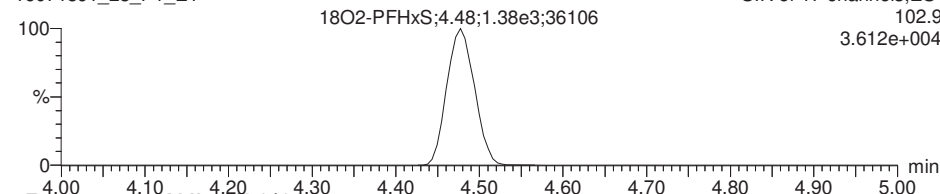
SIR of 17 channels,ES-  
368.9  
7.182e+005



#### 18O2-PFHxS

160718J1\_23\_P1\_E1

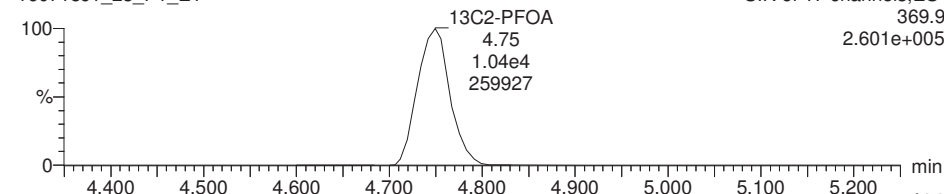
SIR of 17 channels,ES-  
102.9  
3.612e+004



#### 13C2-PFOA

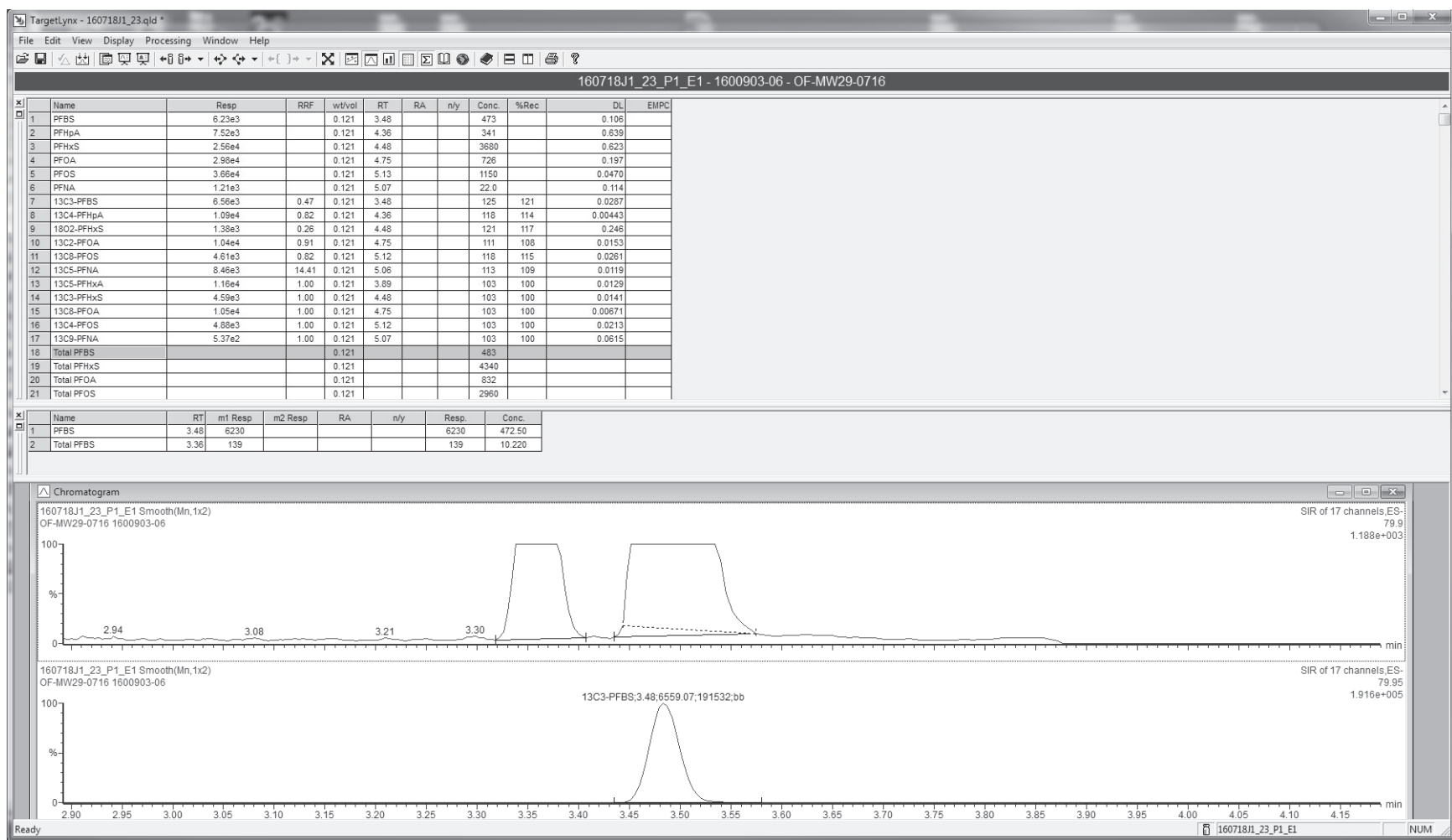
160718J1\_23\_P1\_E1

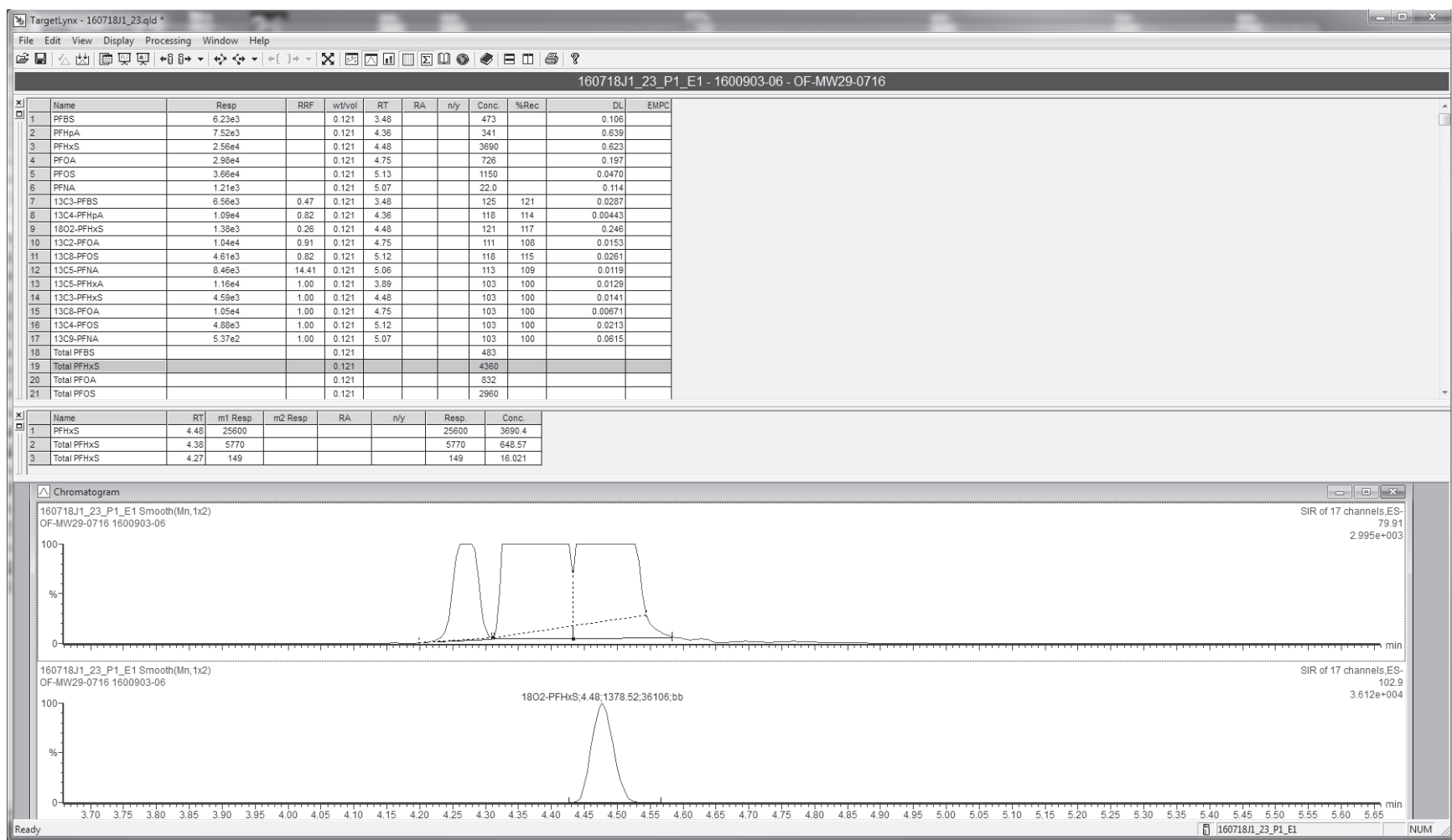
SIR of 17 channels,ES-  
369.9  
2.601e+005

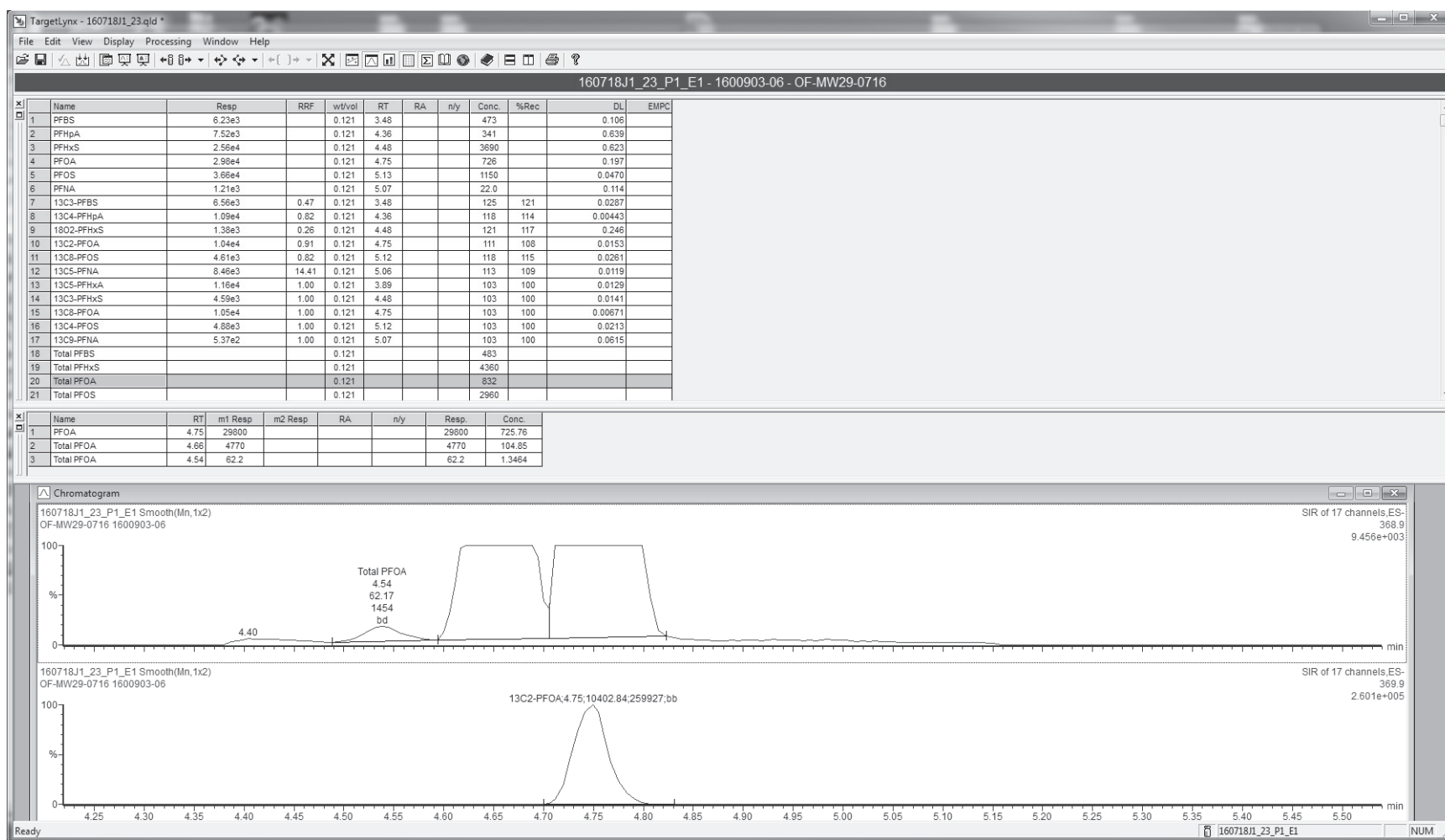


Reviewed: WJL 7/21/16









Dataset:        U:\Q2.PRO\Results\160718J1\160718J1\_23.qld

Last Altered:   Tuesday, July 19, 2016 10:48:17 Pacific Daylight Time

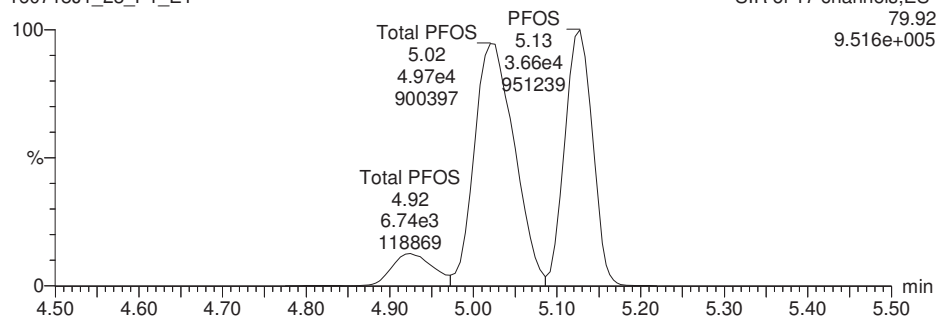
Printed:        Tuesday, July 19, 2016 10:48:45 Pacific Daylight Time

Name: 160718J1\_23.wiff, Date: 18-Jul-2016, Time: 19:21:13, ID: 1600903-06, Description: OF-MW29-0716

### PFOS

160718J1\_23\_P1\_E1

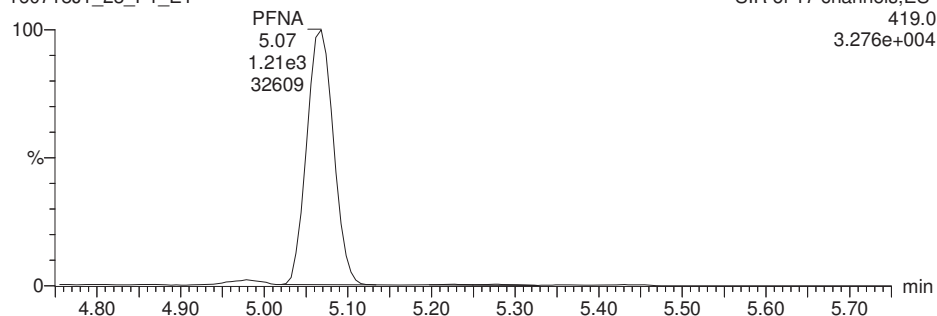
SIR of 17 channels,ES-  
79.92  
9.516e+005



### PFNA

160718J1\_23\_P1\_E1

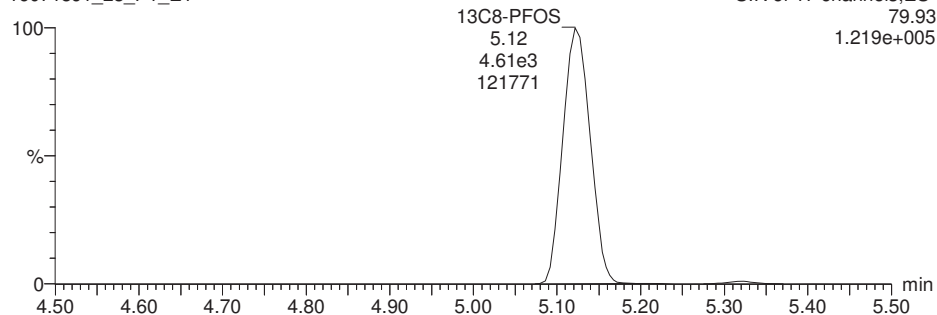
SIR of 17 channels,ES-  
419.0  
3.276e+004



### 13C8-PFOS

160718J1\_23\_P1\_E1

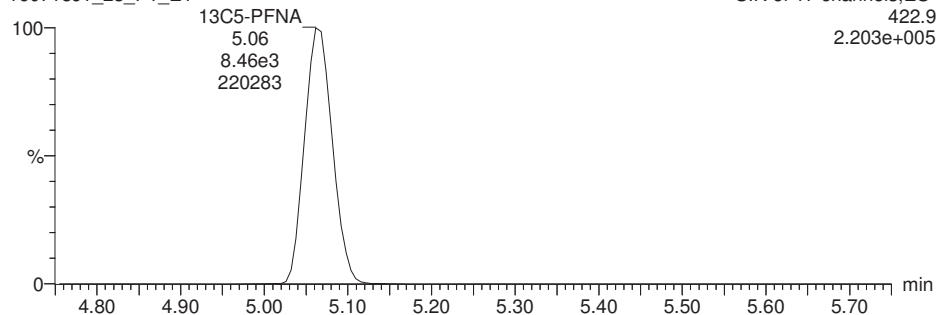
SIR of 17 channels,ES-  
79.93  
1.219e+005

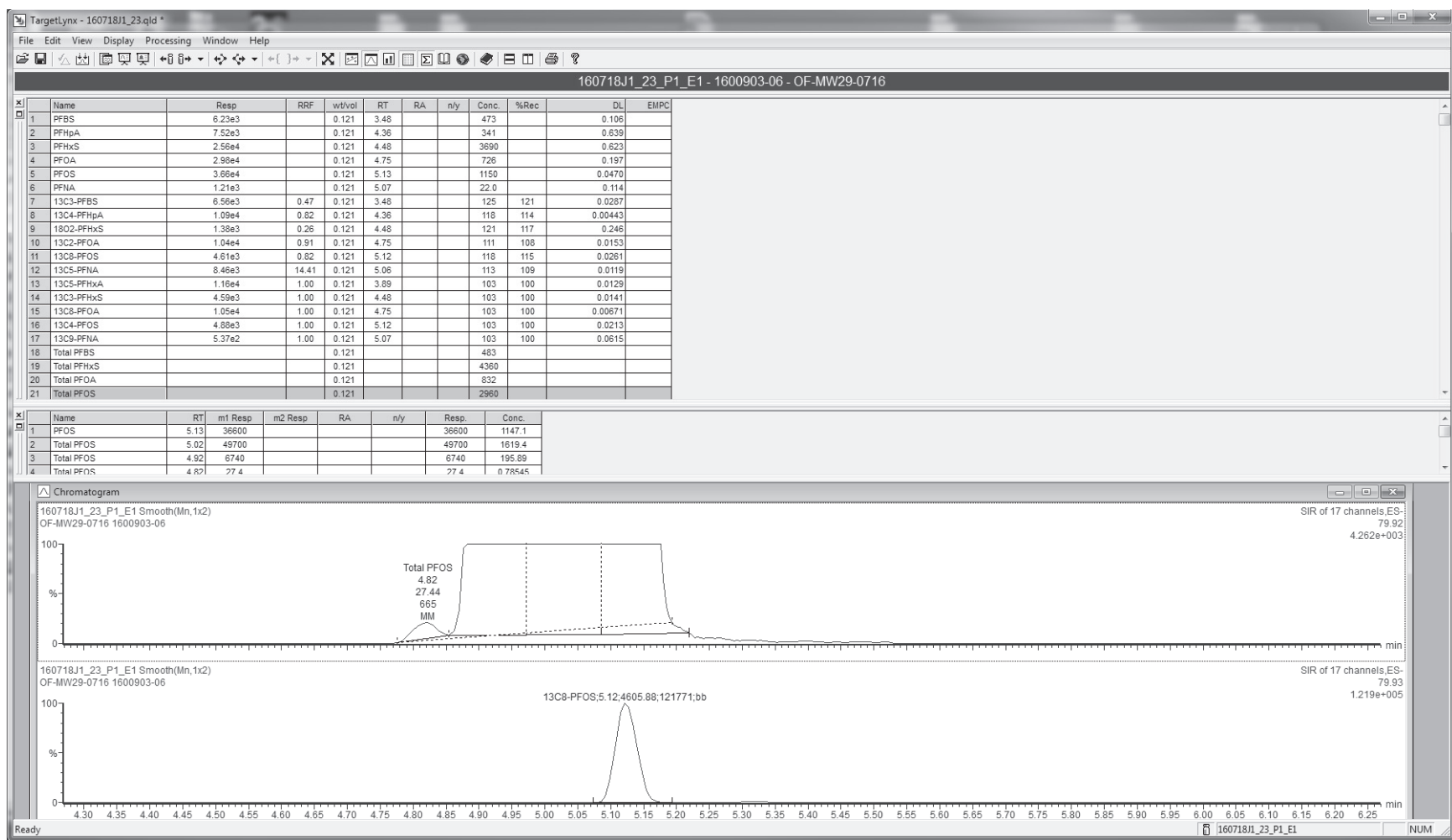


### 13C5-PFNA

160718J1\_23\_P1\_E1

SIR of 17 channels,ES-  
422.9  
2.203e+005





Vista Analytical Laboratory Q2

Dataset: U:\Q2.PRO\Results\160718J1\160718J1\_23.qld

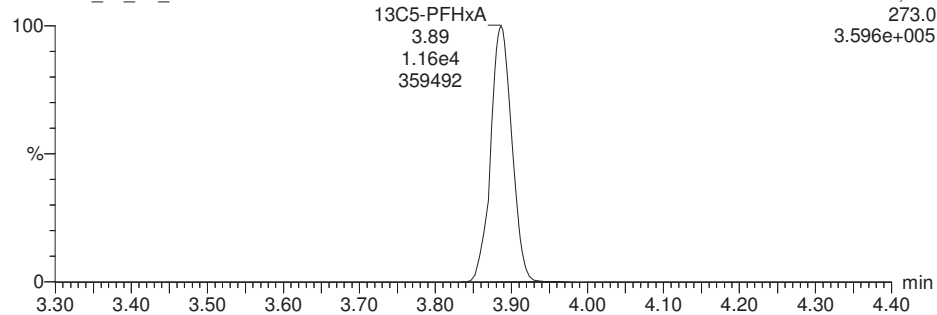
Last Altered: Tuesday, July 19, 2016 10:48:17 Pacific Daylight Time

Printed: Tuesday, July 19, 2016 10:48:45 Pacific Daylight Time

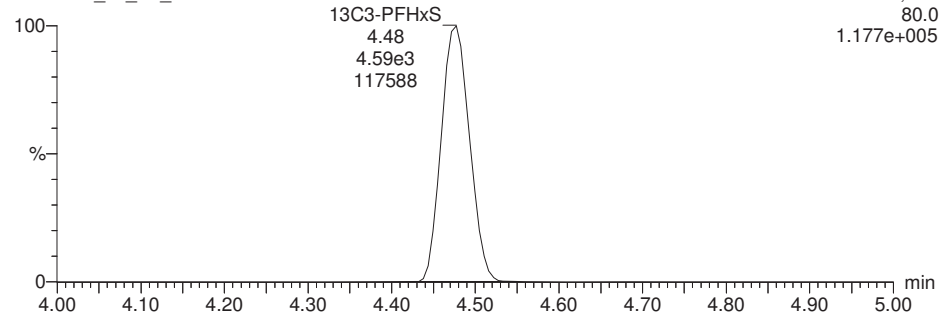
Name: 160718J1\_23.wiff, Date: 18-Jul-2016, Time: 19:21:13, ID: 1600903-06, Description: OF-MW29-0716

**13C5-PFHxA**

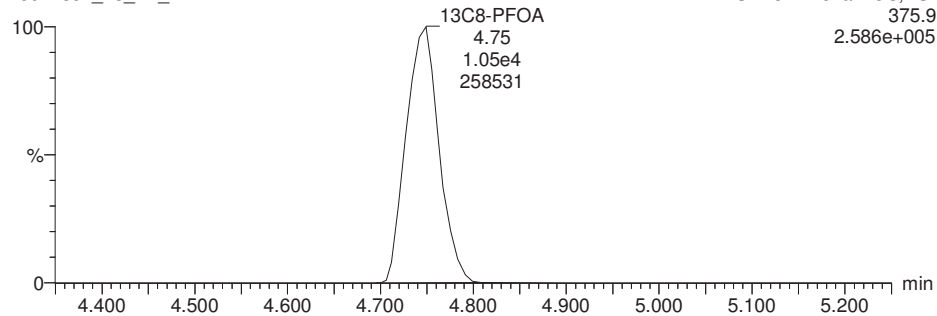
160718J1\_23\_P1\_E1

SIR of 17 channels,ES-  
273.0  
3.596e+005**13C3-PFHxS**

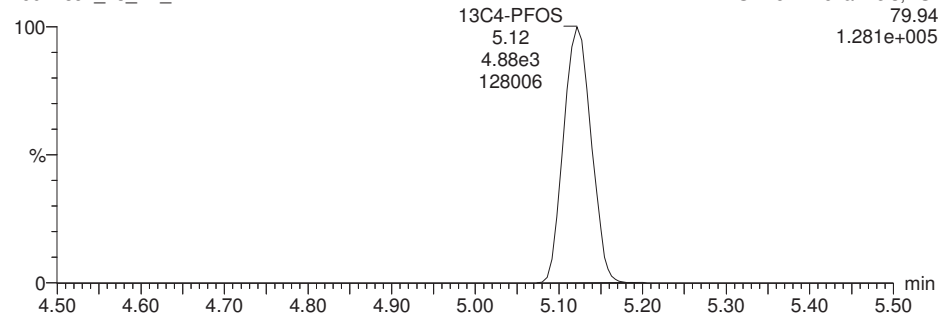
160718J1\_23\_P1\_E1

SIR of 17 channels,ES-  
80.0  
1.177e+005**13C8-PFOA**

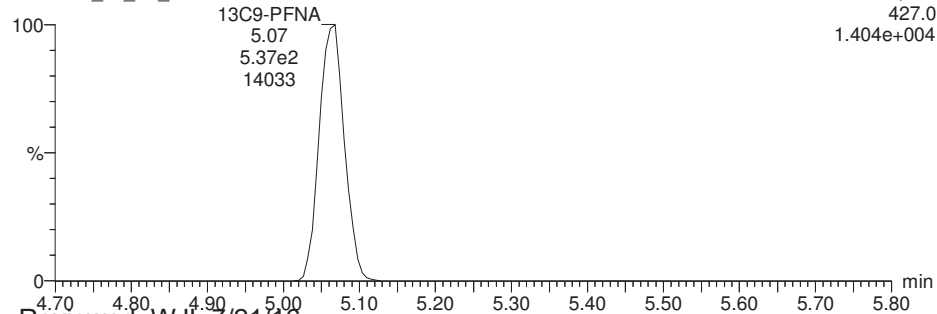
160718J1\_23\_P1\_E1

SIR of 17 channels,ES-  
375.9  
2.586e+005**13C4-PFOS**

160718J1\_23\_P1\_E1

SIR of 17 channels,ES-  
79.94  
1.281e+005**13C9-PFNA**

160718J1\_23\_P1\_E1

SIR of 17 channels,ES-  
427.0  
1.404e+004

Reviewed: WJL 7/21/16

pw 7/19/16

Dataset: U:\Q2.PRO\Results\160719J1\160719J1\_09.qld

Last Altered: Wednesday, July 20, 2016 10:34:20 Pacific Daylight Time

Printed: Wednesday, July 20, 2016 10:36:30 Pacific Daylight Time

Method: U:\Q2.PRO\MethDB\PFC List 6.mdb 08 Jul 2016 09:57:05

Calibration: U:\Q2.PRO\CurveDB\C18\_VAL-PFC\_Q2\_07-18-16\_L6.cdb 19 Jul 2016 08:45:41

Name: 160719J1\_09.wiff, Date: 19-Jul-2016, Time: 16:02:40, ID: 1600903-06@10x, Description: OF-MW29-0716

|   | # Name         | Trace | Response | IS Resp | RRF   | Wt/Vol | RT   | Conc. | %Rec  |
|---|----------------|-------|----------|---------|-------|--------|------|-------|-------|
| 1 | 3 PFHxS        | 79.91 | 3.57e3   | 1.77e2  |       | 0.121  | 4.48 | 4180  |       |
| 2 | 9 18O2-PFHxS   | 102.9 | 1.77e2   | 5.72e2  | 0.256 | 0.121  | 4.47 | 125   | 121.3 |
| 3 | 14 13C3-PFHxS  | 80.0  | 5.72e2   | 5.72e2  | 1.000 | 0.121  | 4.47 | 103   | 100.0 |
| 4 | 19 Total PFHxS | 79.91 |          | 1.77e2  |       | 0.121  |      | 4790  |       |

\*

\* 1:10 Dilution

Vista Analytical Laboratory Q1

Dataset: U:\Q2.PRO\Results\160719J1\160719J1\_09.qld

Last Altered: Wednesday, July 20, 2016 10:34:20 Pacific Daylight Time

Printed: Wednesday, July 20, 2016 10:36:30 Pacific Daylight Time

Method: U:\Q2.PRO\MethDB\PFC List 6.mdb 08 Jul 2016 09:57:05

Calibration: U:\Q2.PRO\CurveDB\C18\_VAL-PFC\_Q2\_07-18-16\_L6.cdb 19 Jul 2016 08:45:41

Name: 160719J1\_09.wiff, Date: 19-Jul-2016, Time: 16:02:40, ID: 1600903-06@10x, Description: OF-MW29-0716

## Total PFBS

|   | # Name        | Trace | RT   | Area   | IS Area | Conc. |
|---|---------------|-------|------|--------|---------|-------|
| 1 | 1 PFBS        | 79.9  | 3.49 | 9.49e2 | 1.01e3  | 469   |
| 2 | 18 Total PFBS | 79.9  | 3.36 | 2.13e1 | 1.01e3  | 10.2  |

## Total PFHxS

|   | # Name         | Trace | RT   | Area   | IS Area | Conc. |
|---|----------------|-------|------|--------|---------|-------|
| 1 | 19 Total PFHxS | 79.91 | 4.38 | 4.72e2 | 1.77e2  | 405   |
| 2 | 19 Total PFHxS | 79.91 | 4.36 | 2.24e2 | 1.77e2  | 189   |
| 3 | 19 Total PFHxS | 79.91 | 4.27 | 2.16e1 | 1.77e2  | 18.0  |
| 4 | 3 PFHxS        | 79.91 | 4.48 | 3.57e3 | 1.77e2  | 4180  |

## Total PFOA

|   | # Name        | Trace | RT   | Area   | IS Area | Conc. |
|---|---------------|-------|------|--------|---------|-------|
| 1 | 4 PFOA        | 368.9 | 4.76 | 3.12e3 | 1.00e3  | 798   |
| 2 | 20 Total PFOA | 368.9 | 4.66 | 4.83e2 | 1.00e3  | 110   |

## Total PFOS

|   | # Name        | Trace | RT   | Area   | IS Area | Conc. |
|---|---------------|-------|------|--------|---------|-------|
| 1 | 5 PFOS        | 79.92 | 5.13 | 2.96e3 | 3.73e2  | 1140  |
| 2 | 21 Total PFOS | 79.92 | 5.02 | 3.83e3 | 3.73e2  | 1530  |
| 3 | 21 Total PFOS | 79.92 | 4.93 | 5.33e2 | 3.73e2  | 191   |
| 4 | 21 Total PFOS | 79.92 | 4.82 | 2.23e0 | 3.73e2  | 0.787 |



Vista Analytical Laboratory Q2

Dataset: U:\Q2.PRO\Results\160719J1\160719J1\_09.qld

Last Altered: Wednesday, July 20, 2016 10:34:20 Pacific Daylight Time

Printed: Wednesday, July 20, 2016 10:36:46 Pacific Daylight Time

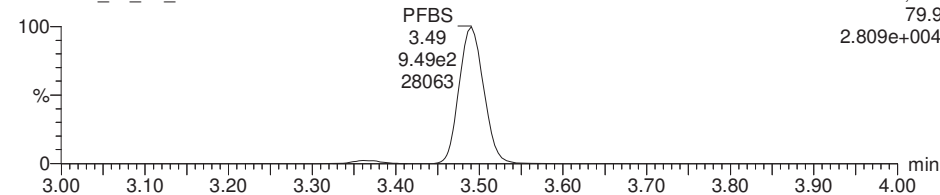
Method: U:\Q2.PRO\MethDB\PFC List 6.mdb 08 Jul 2016 09:57:05

Calibration: U:\Q2.PRO\CurveDB\C18\_VAL-PFC\_Q2\_07-18-16\_L6.cdb 19 Jul 2016 08:45:41

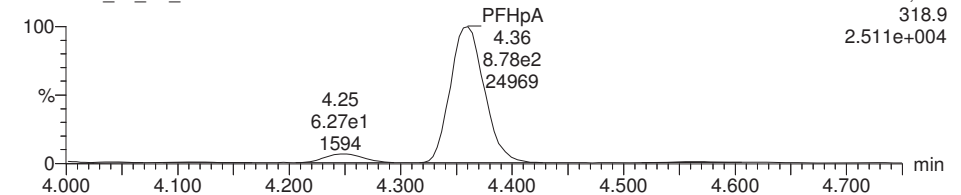
Name: 160719J1\_09.wiff, Date: 19-Jul-2016, Time: 16:02:40, ID: 1600903-06@10x, Description: OF-MW29-0716

**PFBS**

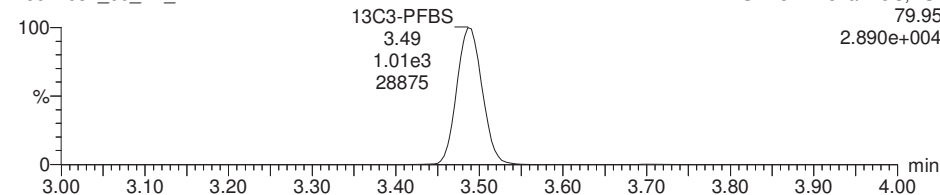
160719J1\_09\_P1\_E1

SIR of 17 channels, ES-  
79.9  
2.809e+004**PFHpA**

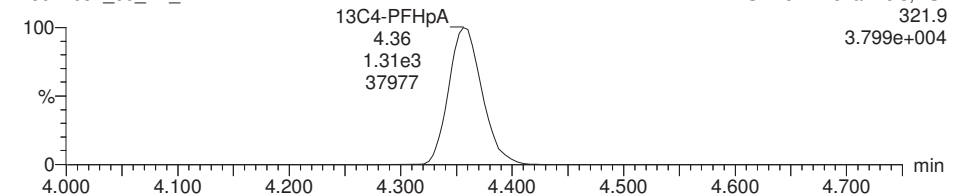
160719J1\_09\_P1\_E1

SIR of 17 channels, ES-  
318.9  
2.511e+004**13C3-PFBS**

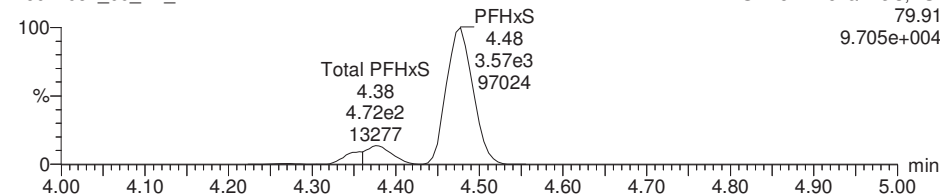
160719J1\_09\_P1\_E1

SIR of 17 channels, ES-  
79.95  
2.890e+004**13C4-PFHpA**

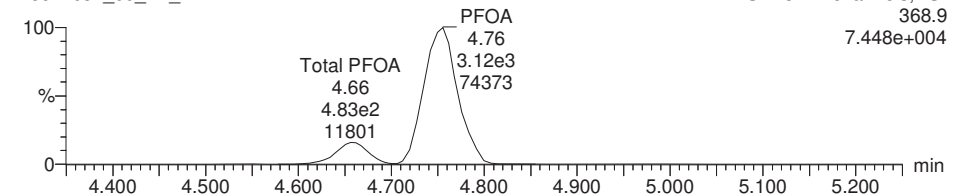
160719J1\_09\_P1\_E1

SIR of 17 channels, ES-  
321.9  
3.799e+004**PFHxS**

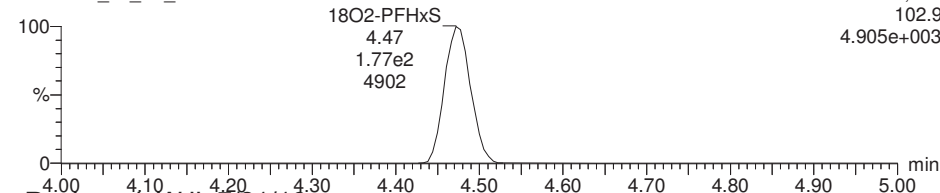
160719J1\_09\_P1\_E1

SIR of 17 channels, ES-  
79.91  
9.705e+004**PFOA**

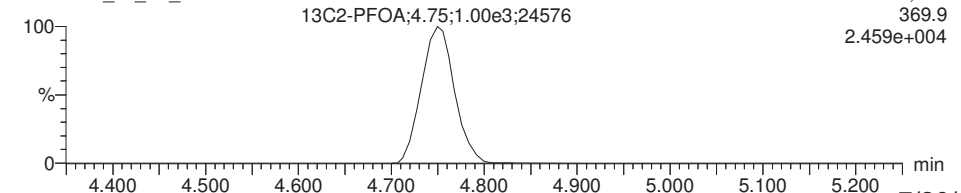
160719J1\_09\_P1\_E1

SIR of 17 channels, ES-  
368.9  
7.448e+004**18O2-PFHxS**

160719J1\_09\_P1\_E1

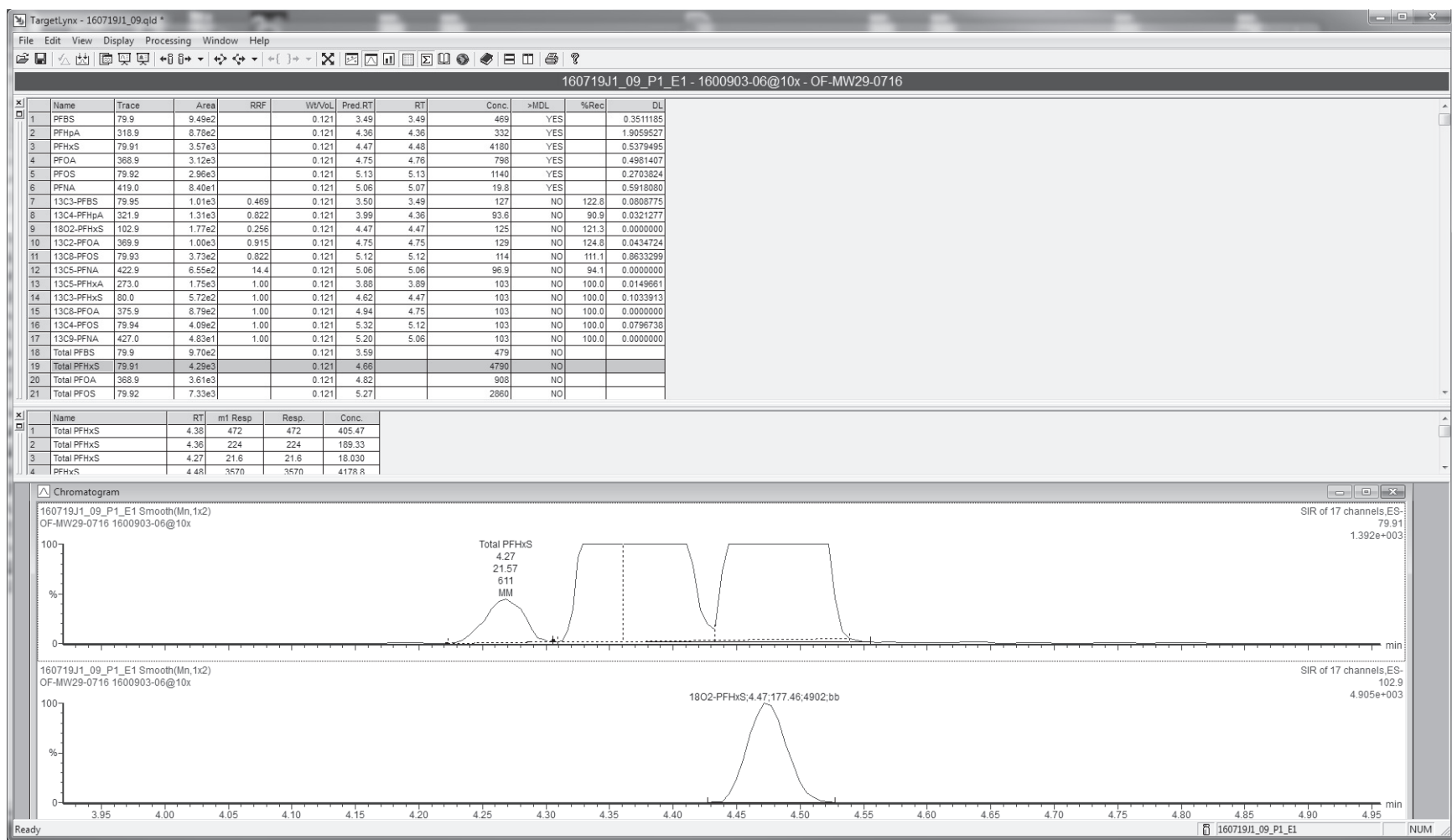
SIR of 17 channels, ES-  
102.9  
4.905e+003**13C2-PFOA**

160719J1\_09\_P1\_E1

SIR of 17 channels, ES-  
369.9  
2.459e+004

Reviewed: WJL 7/21/16

pw 7/20/16



Dataset:        U:\Q2.PRO\Results\160719J1\160719J1\_09.qld

Last Altered:   Wednesday, July 20, 2016 10:34:20 Pacific Daylight Time

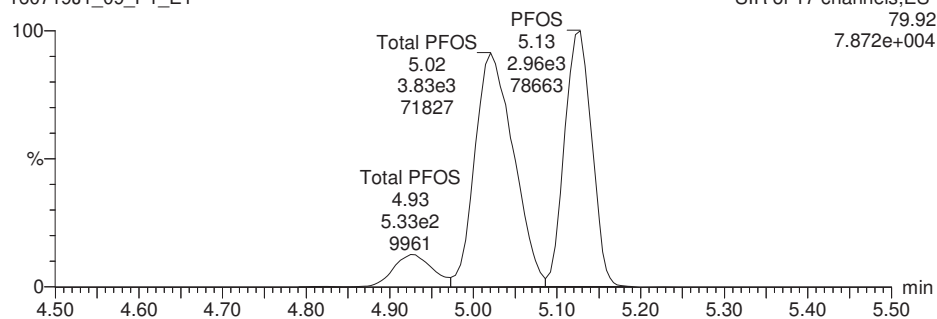
Printed:        Wednesday, July 20, 2016 10:36:46 Pacific Daylight Time

Name: 160719J1\_09.wiff, Date: 19-Jul-2016, Time: 16:02:40, ID: 1600903-06@10x, Description: OF-MW29-0716

### PFOS

160719J1\_09\_P1\_E1

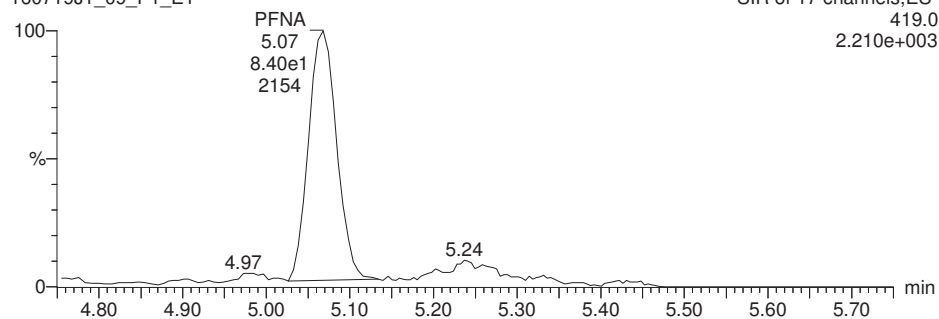
SIR of 17 channels,ES-  
79.92  
7.872e+004



### PFNA

160719J1\_09\_P1\_E1

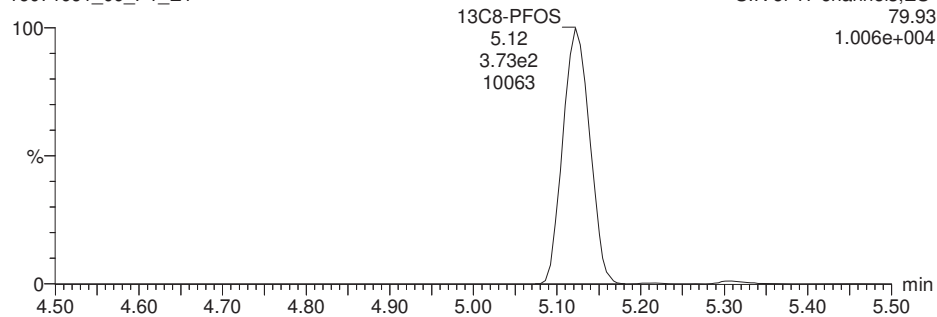
SIR of 17 channels,ES-  
419.0  
2.210e+003



### 13C8-PFOS

160719J1\_09\_P1\_E1

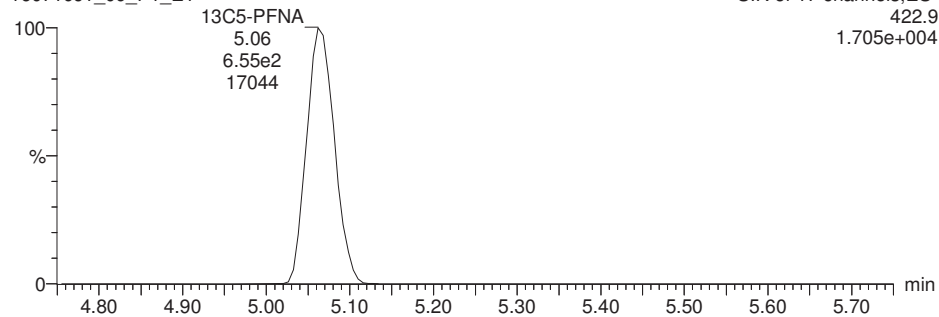
SIR of 17 channels,ES-  
79.93  
1.006e+004



### 13C5-PFNA

160719J1\_09\_P1\_E1

SIR of 17 channels,ES-  
422.9  
1.705e+004



Dataset:        U:\Q2.PRO\Results\160719J1\160719J1\_09.qld

Last Altered:   Wednesday, July 20, 2016 10:34:20 Pacific Daylight Time

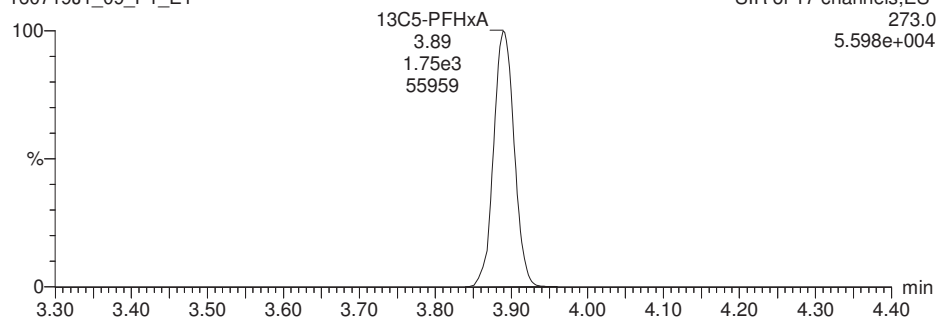
Printed:        Wednesday, July 20, 2016 10:36:46 Pacific Daylight Time

Name: 160719J1\_09.wiff, Date: 19-Jul-2016, Time: 16:02:40, ID: 1600903-06@10x, Description: OF-MW29-0716

**13C5-PFHxA**

160719J1\_09\_P1\_E1

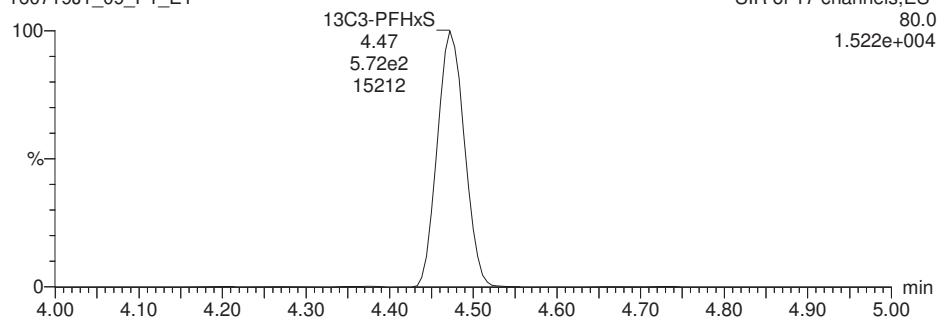
SIR of 17 channels,ES-  
273.0  
5.598e+004



**13C3-PFHxS**

160719J1\_09\_P1\_E1

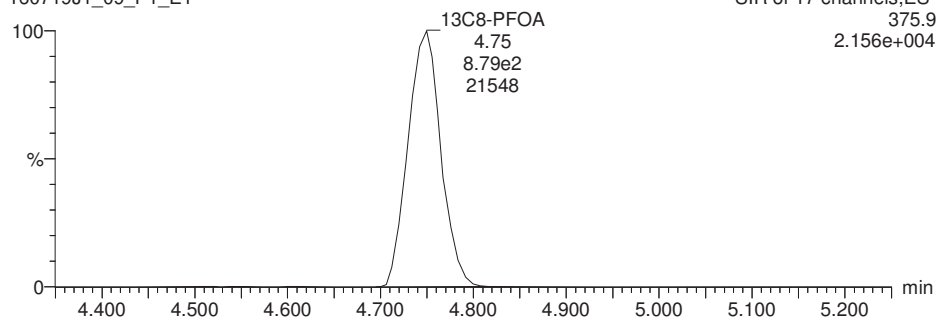
SIR of 17 channels,ES-  
80.0  
1.522e+004



**13C8-PFOA**

160719J1\_09\_P1\_E1

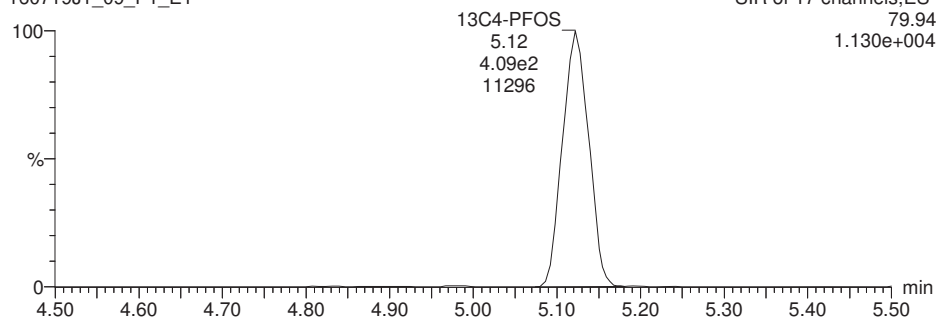
SIR of 17 channels,ES-  
375.9  
2.156e+004



**13C4-PFOS**

160719J1\_09\_P1\_E1

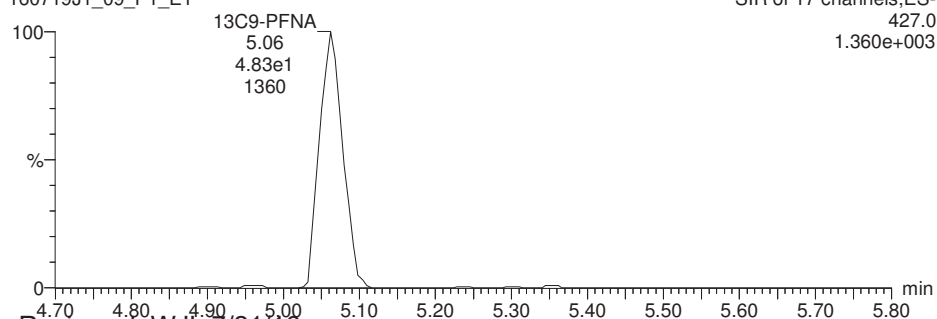
SIR of 17 channels,ES-  
79.94  
1.130e+004



**13C9-PFNA**

160719J1\_09\_P1\_E1

SIR of 17 channels,ES-  
427.0  
1.360e+003



Reviewed: WJL 7/21/16

pw 7/20/16

Dataset: U:\Q2.PRO\Results\160718J1\160718J1\_27.qld

Last Altered: Tuesday, July 19, 2016 11:15:44 Pacific Daylight Time

Printed: Tuesday, July 19, 2016 11:16:45 Pacific Daylight Time

Method: U:\Q2.PRO\MethDB\PFC List 6.mdb 08 Jul 2016 09:57:05

Calibration: U:\Q2.PRO\CurveDB\C18\_VAL-PFC\_Q2\_07-18-16\_L6.cdb 19 Jul 2016 08:45:41

Name: 160718J1\_27.wiff, Date: 18-Jul-2016, Time: 20:10:00, ID: B6G0068-MS1, Description: Matrix Spike

|    | # Name         | Trace | Response | IS Resp | RRF    | Wt/Vol | RT   | Conc. | %Rec    |
|----|----------------|-------|----------|---------|--------|--------|------|-------|---------|
| 1  | 1 PFBS         | 79.9  | 6.19e3   | 5.48e3  |        | 0.119  | 3.49 | 577   |         |
| 2  | 2 PFHpA        | 318.9 | 7.70e3   | 9.28e3  |        | 0.119  | 4.36 | 420   |         |
| 3  | 3 PFHxS        | 79.91 | 2.28e4   | 1.20e3  |        | 0.119  | 4.48 | 3890  | E *     |
| 4  | 4 PFOA         | 368.9 | 2.80e4   | 9.30e3  |        | 0.119  | 4.76 | 782   |         |
| 5  | 5 PFOS         | 79.92 | 3.26e4   | 3.79e3  |        | 0.119  | 5.14 | 1280  |         |
| 6  | 6 PFNA         | 419.0 | 4.67e3   | 7.13e3  |        | 0.119  | 5.07 | 104   |         |
| 7  | 7 13C3-PFBS    | 79.95 | 5.48e3   | 1.00e4  | 0.469  | 0.119  | 3.49 | 122   | 116.3   |
| 8  | 8 13C4-PFHpA   | 321.9 | 9.28e3   | 1.00e4  | 0.822  | 0.119  | 4.36 | 118   | 112.4   |
| 9  | 9 18O2-PFHxS   | 102.9 | 1.20e3   | 4.13e3  | 0.256  | 0.119  | 4.48 | 119   | 113.6   |
| 10 | 10 13C2-PFOA   | 369.9 | 9.30e3   | 8.94e3  | 0.915  | 0.119  | 4.75 | 119   | 113.6 * |
| 11 | 11 13C8-PFOS   | 79.93 | 3.79e3   | 4.31e3  | 0.822  | 0.119  | 5.13 | 112   | 106.9   |
| 12 | 12 13C5-PFNA   | 422.9 | 7.13e3   | 4.79e2  | 14.407 | 0.119  | 5.07 | 109   | 103.3   |
| 13 | 13 13C5-PFHxA  | 273.0 | 1.00e4   | 1.00e4  | 1.000  | 0.119  | 3.89 | 105   | 100.0   |
| 14 | 14 13C3-PFHxS  | 80.0  | 4.13e3   | 4.13e3  | 1.000  | 0.119  | 4.48 | 105   | 100.0   |
| 15 | 15 13C8-PFOA   | 375.9 | 8.94e3   | 8.94e3  | 1.000  | 0.119  | 4.75 | 105   | 100.0   |
| 16 | 16 13C4-PFOS   | 79.94 | 4.31e3   | 4.31e3  | 1.000  | 0.119  | 5.13 | 105   | 100.0   |
| 17 | 17 13C9-PFNA   | 427.0 | 4.79e2   | 4.79e2  | 1.000  | 0.119  | 5.07 | 105   | 100.0   |
| 18 | 18 Total PFBS  | 79.9  |          | 5.48e3  |        | 0.119  |      | 587   |         |
| 19 | 19 Total PFHxS | 79.91 |          | 1.20e3  |        | 0.119  |      | 4530  |         |
| 20 | 20 Total PFOA  | 368.9 |          | 9.30e3  |        | 0.119  |      | 881   |         |
| 21 | 21 Total PFOS  | 79.92 |          | 3.79e3  |        | 0.119  |      | 3080  |         |

\* See 1:10 Dilution

Vista Analytical Laboratory Q1

Dataset: U:\Q2.PRO\Results\160718J1\160718J1\_27.qld

Last Altered: Tuesday, July 19, 2016 11:15:44 Pacific Daylight Time

Printed: Tuesday, July 19, 2016 11:16:45 Pacific Daylight Time

Method: U:\Q2.PRO\MethDB\PFC List 6.mdb 08 Jul 2016 09:57:05

Calibration: U:\Q2.PRO\CurveDB\C18\_VAL-PFC\_Q2\_07-18-16\_L6.cdb 19 Jul 2016 08:45:41

Name: 160718J1\_27.wiff, Date: 18-Jul-2016, Time: 20:10:00, ID: B6G0068-MS1, Description: Matrix Spike

## Total PFBS

|   | # Name        | Trace | RT   | Area   | IS Area | Conc. |
|---|---------------|-------|------|--------|---------|-------|
| 1 | 1 PFBS        | 79.9  | 3.49 | 6.19e3 | 5.48e3  | 577   |
| 2 | 18 Total PFBS | 79.9  | 3.37 | 1.16e2 | 5.48e3  | 10.4  |

## Total PFHxS

|   | # Name         | Trace | RT   | Area   | IS Area | Conc. |
|---|----------------|-------|------|--------|---------|-------|
| 1 | 3 PFHxS        | 79.91 | 4.48 | 2.28e4 | 1.20e3  | 3890  |
| 2 | 19 Total PFHxS | 79.91 | 4.38 | 4.79e3 | 1.20e3  | 630   |
| 3 | 19 Total PFHxS | 79.91 | 4.27 | 1.11e2 | 1.20e3  | 14.0  |

## Total PFOA

|   | # Name        | Trace | RT   | Area   | IS Area | Conc. |
|---|---------------|-------|------|--------|---------|-------|
| 1 | 20 Total PFOA | 368.9 | 4.66 | 3.97e3 | 9.30e3  | 99.5  |
| 2 | 4 PFOA        | 368.9 | 4.76 | 2.80e4 | 9.30e3  | 782   |

## Total PFOS

|   | # Name        | Trace | RT   | Area   | IS Area | Conc. |
|---|---------------|-------|------|--------|---------|-------|
| 1 | 5 PFOS        | 79.92 | 5.14 | 3.26e4 | 3.79e3  | 1280  |
| 2 | 21 Total PFOS | 79.92 | 5.03 | 3.97e4 | 3.79e3  | 1600  |
| 3 | 21 Total PFOS | 79.92 | 4.92 | 5.63e3 | 3.79e3  | 203   |
| 4 | 21 Total PFOS | 79.92 | 4.82 | 3.08e1 | 3.79e3  | 1.09  |

Dataset:        U:\Q2.PRO\Results\160718J1\160718J1\_27.qld

Last Altered:   Tuesday, July 19, 2016 11:15:44 Pacific Daylight Time

Printed:        Tuesday, July 19, 2016 11:16:20 Pacific Daylight Time

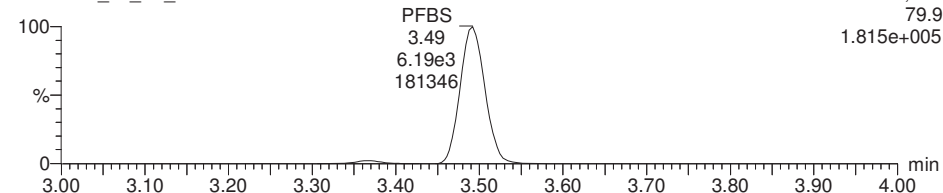
Method: U:\Q2.PRO\MethDB\PFC List 6.mdb 08 Jul 2016 09:57:05

Calibration: U:\Q2.PRO\CurveDB\C18\_VAL-PFC\_Q2\_07-18-16\_L6.cdb 19 Jul 2016 08:45:41

Name: 160718J1\_27.wiff, Date: 18-Jul-2016, Time: 20:10:00, ID: B6G0068-MS1, Description: Matrix Spike

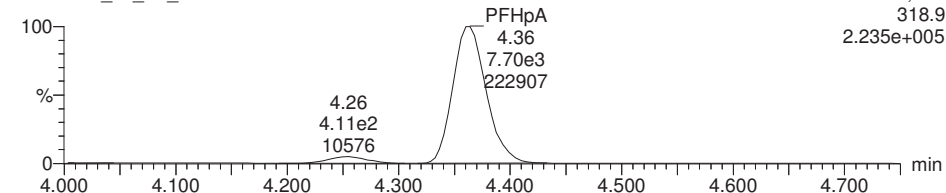
#### PFBS

160718J1\_27\_P1\_E1



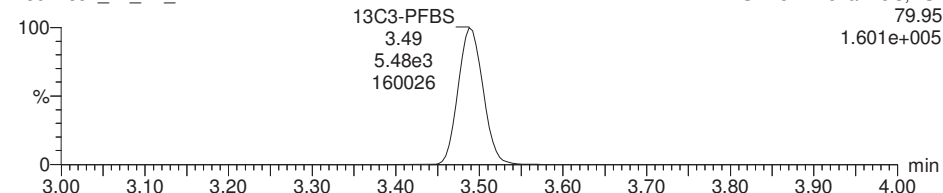
#### PFHpA

160718J1\_27\_P1\_E1



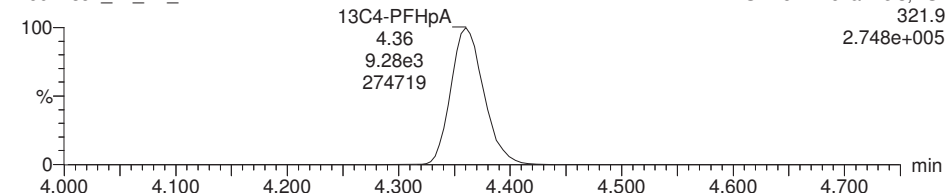
#### 13C3-PFBS

160718J1\_27\_P1\_E1



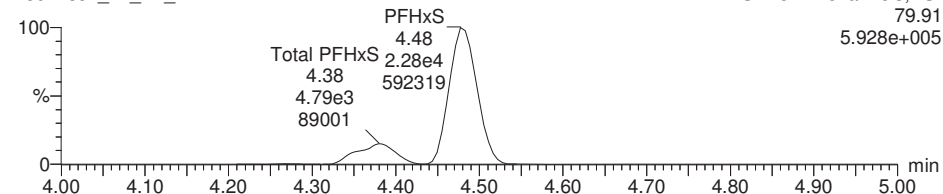
#### 13C4-PFHpA

160718J1\_27\_P1\_E1



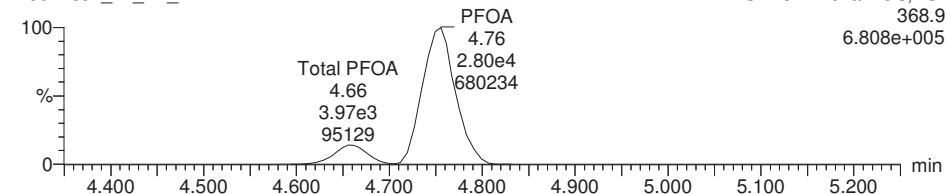
#### PFHxS

160718J1\_27\_P1\_E1



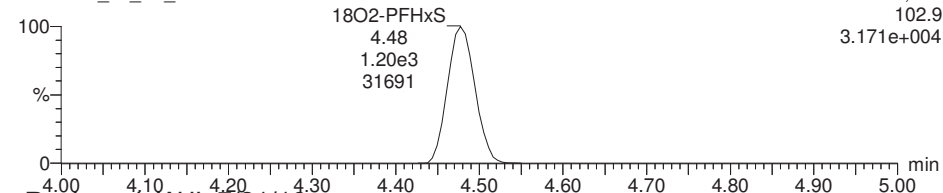
#### PFOA

160718J1\_27\_P1\_E1



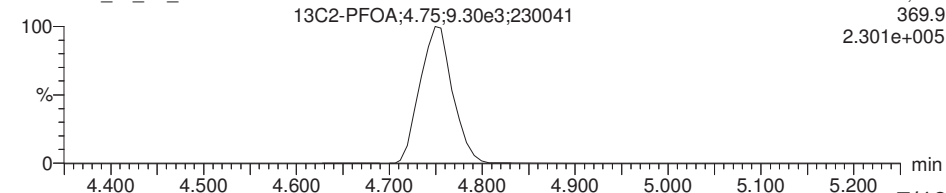
#### 18O2-PFHxS

160718J1\_27\_P1\_E1



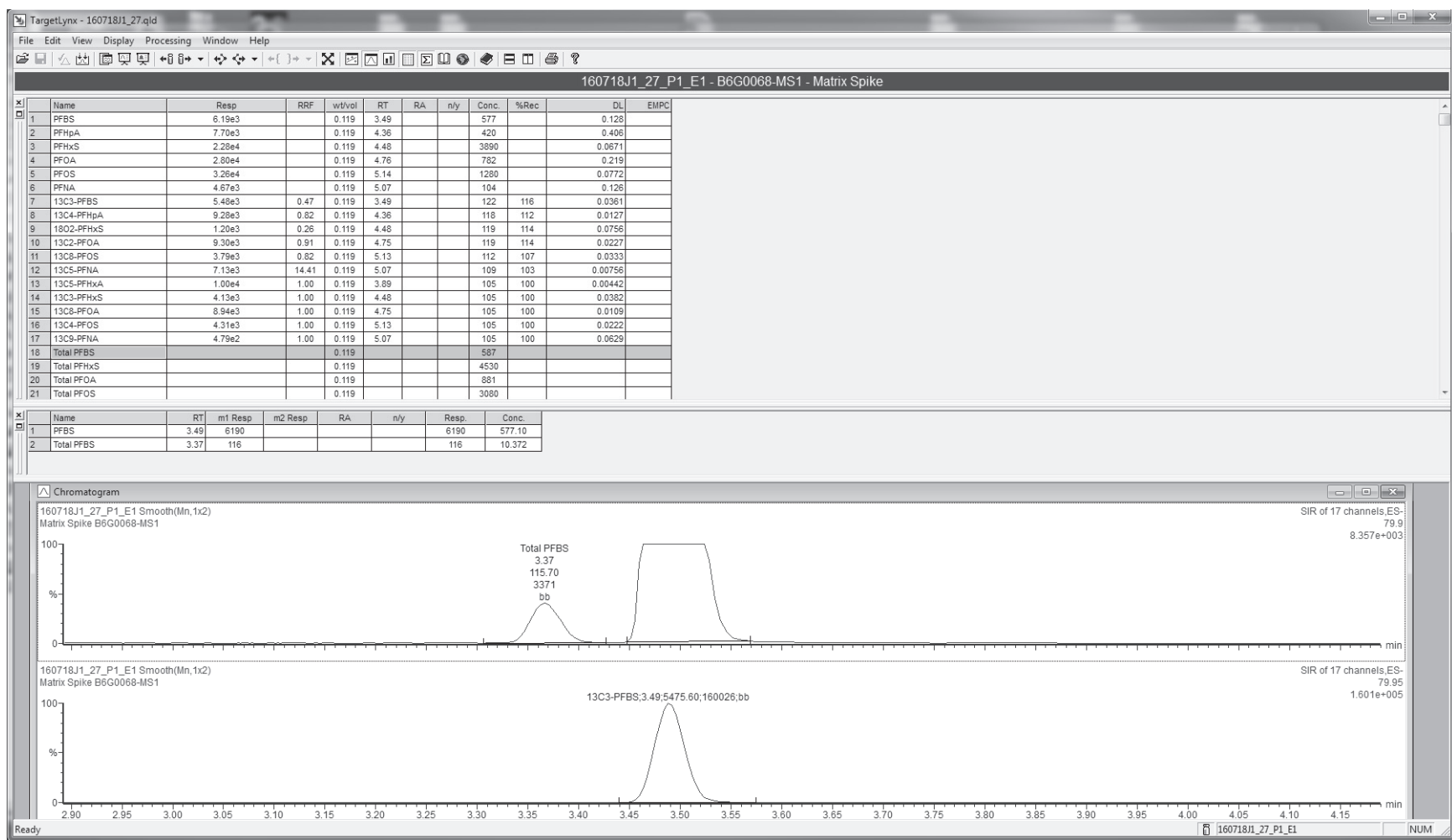
#### 13C2-PFOA

160718J1\_27\_P1\_E1

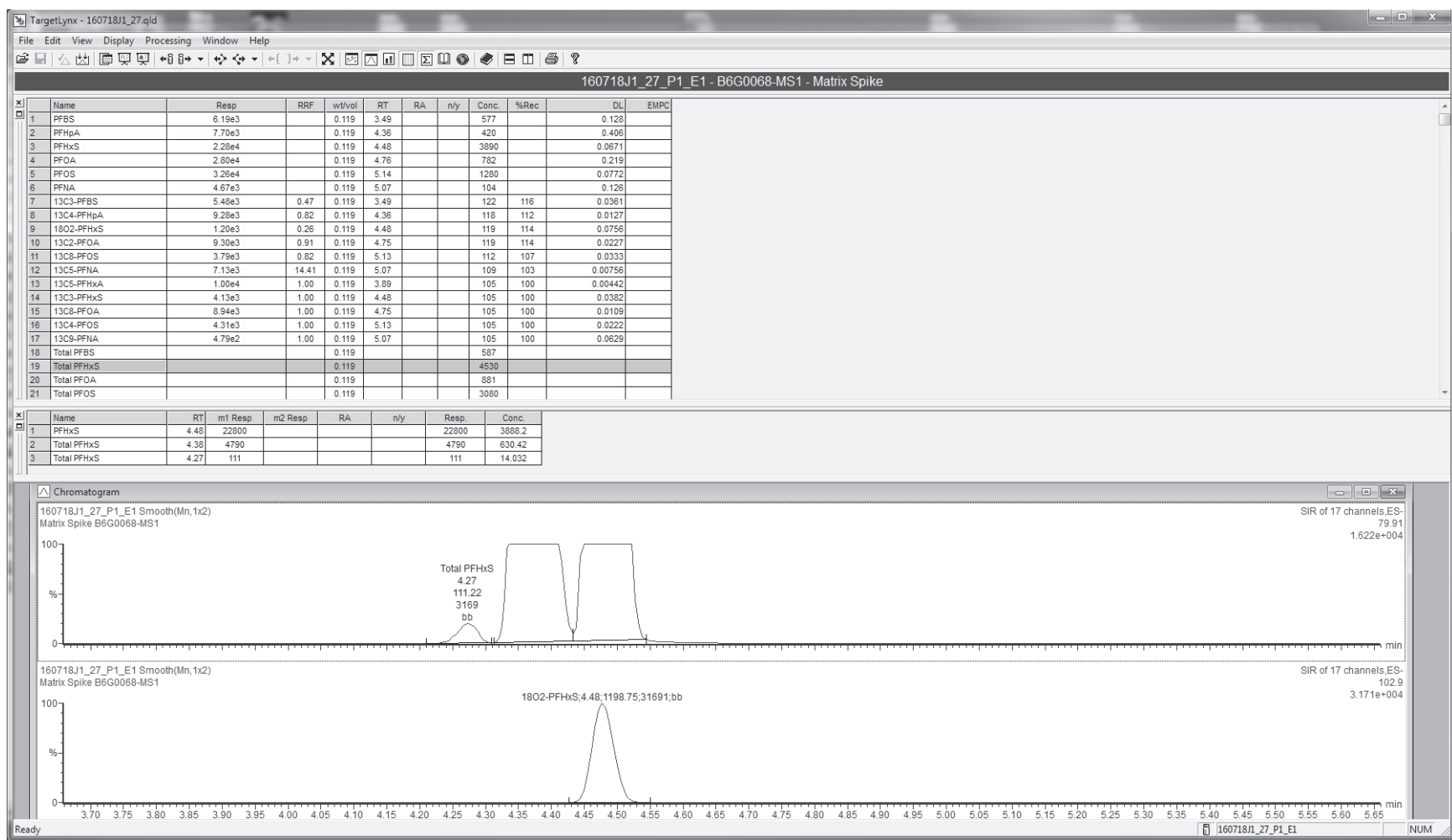


Reviewed: WJL 7/21/16

pw 7/19/16







Dataset:        U:\Q2.PRO\Results\160718J1\160718J1\_27.qld

Last Altered:   Tuesday, July 19, 2016 11:15:44 Pacific Daylight Time

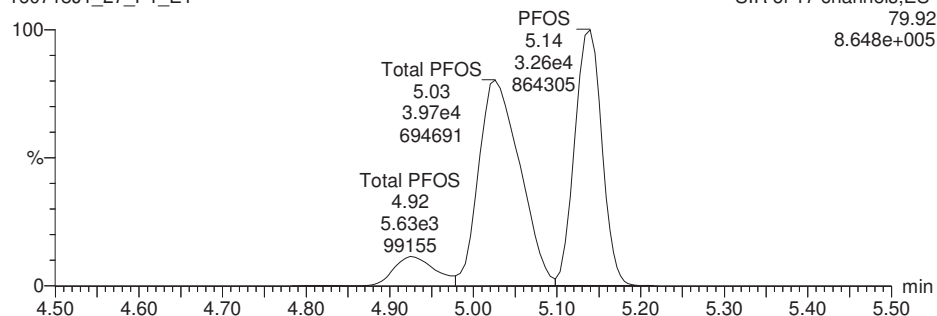
Printed:        Tuesday, July 19, 2016 11:16:20 Pacific Daylight Time

Name: 160718J1\_27.wiff, Date: 18-Jul-2016, Time: 20:10:00, ID: B6G0068-MS1, Description: Matrix Spike

### PFOS

160718J1\_27\_P1\_E1

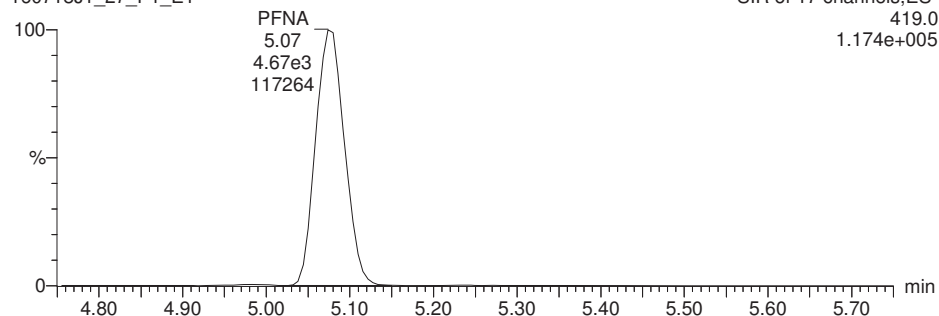
SIR of 17 channels,ES-  
79.92  
8.648e+005



### PFNA

160718J1\_27\_P1\_E1

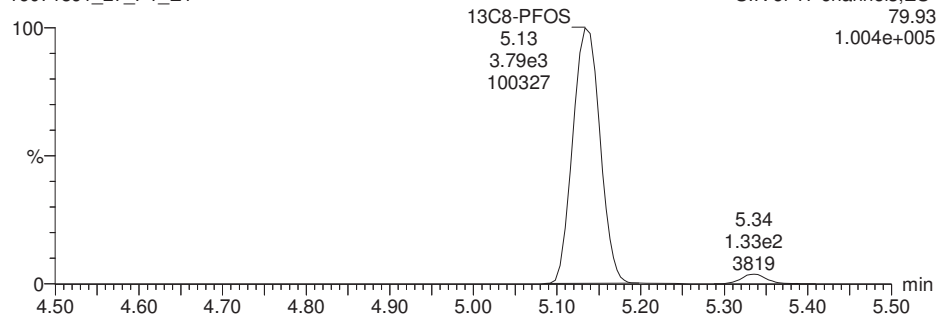
SIR of 17 channels,ES-  
419.0  
1.174e+005



### 13C8-PFOS

160718J1\_27\_P1\_E1

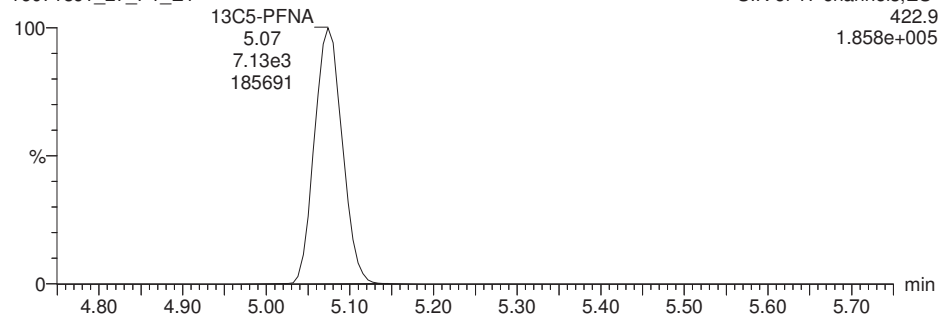
SIR of 17 channels,ES-  
79.93  
1.004e+005

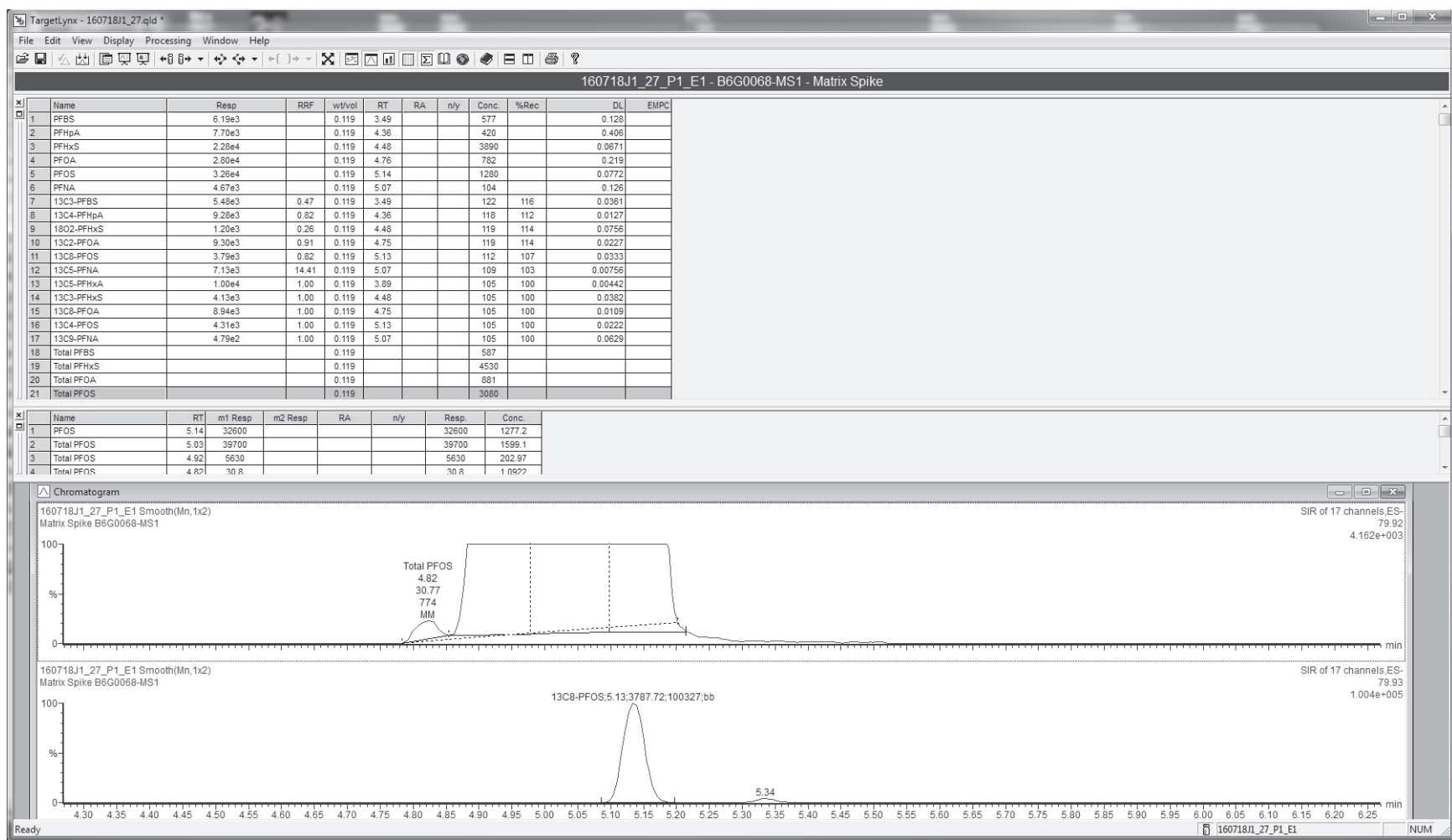


### 13C5-PFNA

160718J1\_27\_P1\_E1

SIR of 17 channels,ES-  
422.9  
1.858e+005





Vista Analytical Laboratory Q2

Dataset: U:\Q2.PRO\Results\160718J1\160718J1\_27.qld

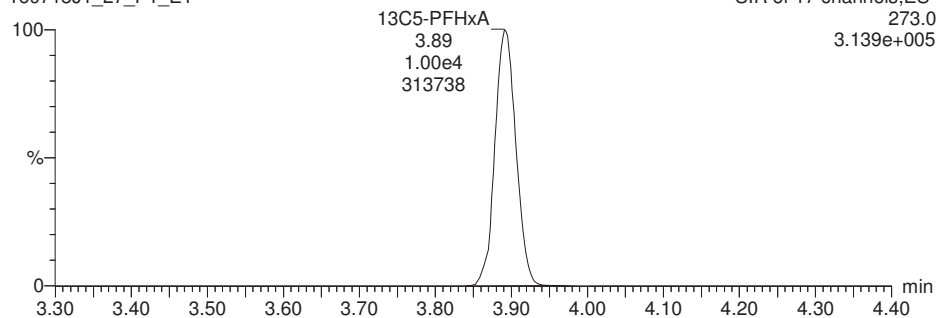
Last Altered: Tuesday, July 19, 2016 11:15:44 Pacific Daylight Time

Printed: Tuesday, July 19, 2016 11:16:20 Pacific Daylight Time

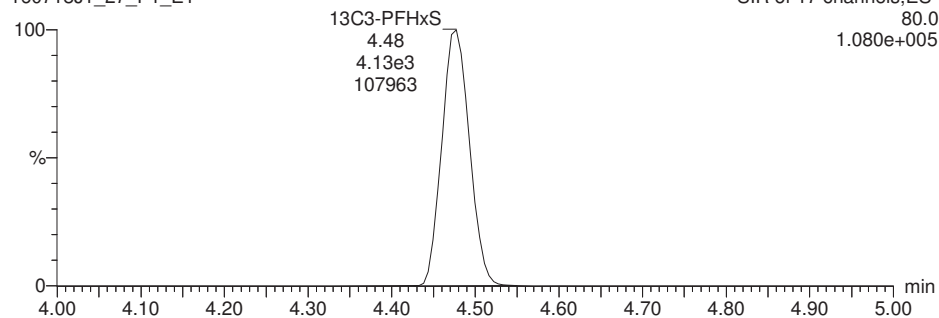
Name: 160718J1\_27.wiff, Date: 18-Jul-2016, Time: 20:10:00, ID: B6G0068-MS1, Description: Matrix Spike

**13C5-PFHxA**

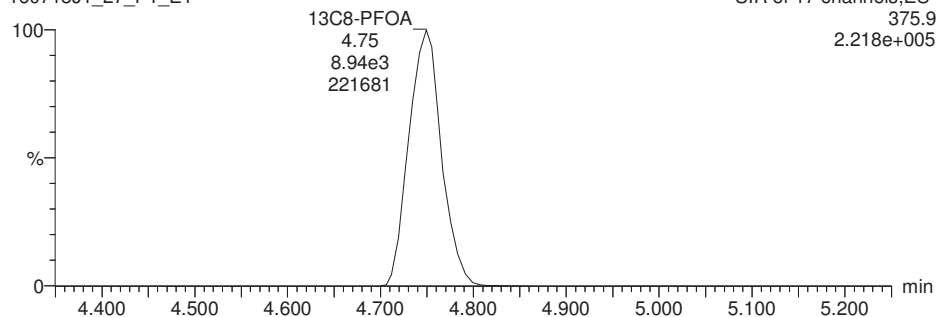
160718J1\_27\_P1\_E1

SIR of 17 channels,ES-  
273.0  
3.139e+005**13C3-PFHxS**

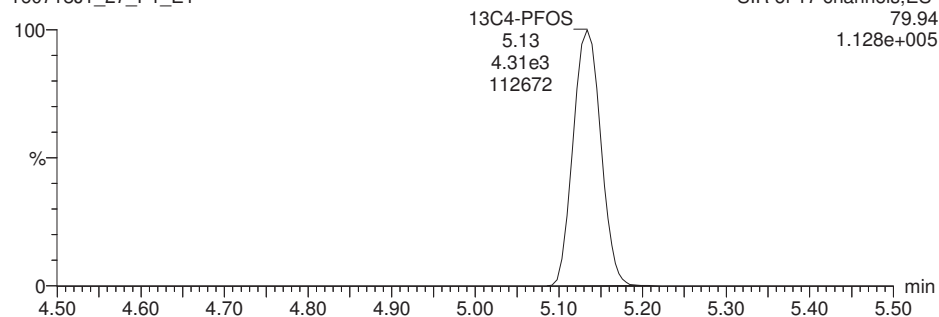
160718J1\_27\_P1\_E1

SIR of 17 channels,ES-  
80.0  
1.080e+005**13C8-PFOA**

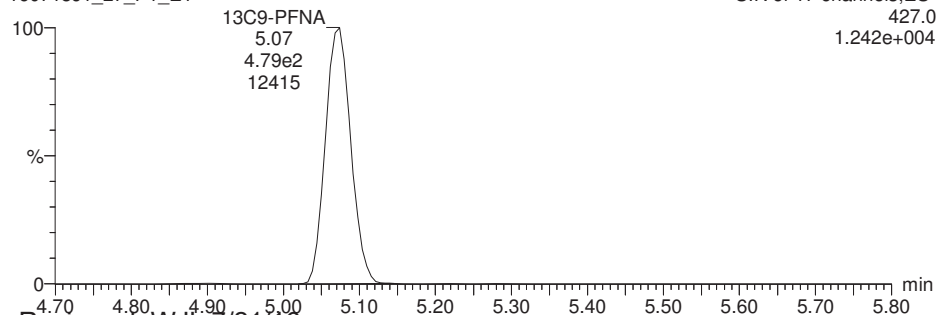
160718J1\_27\_P1\_E1

SIR of 17 channels,ES-  
375.9  
2.218e+005**13C4-PFOS**

160718J1\_27\_P1\_E1

SIR of 17 channels,ES-  
79.94  
1.128e+005**13C9-PFNA**

160718J1\_27\_P1\_E1

SIR of 17 channels,ES-  
427.0  
1.242e+004

Reviewed: WJL 7/21/16

pw 7/19/16

Dataset: U:\Q2.PRO\Results\160719J1\160719J1\_11.qld

Last Altered: Wednesday, July 20, 2016 10:56:24 Pacific Daylight Time

Printed: Wednesday, July 20, 2016 10:57:27 Pacific Daylight Time

Method: U:\Q2.PRO\MethDB\PFC List 6.mdb 08 Jul 2016 09:57:05

Calibration: U:\Q2.PRO\CurveDB\C18\_VAL-PFC\_Q2\_07-18-16\_L6.cdb 19 Jul 2016 08:45:41

Name: 160719J1\_11.wiff, Date: 19-Jul-2016, Time: 16:55:50, ID: B6G0068-MS1@10x, Description: Matrix Spike

|   | # Name         | Trace | Response | IS Resp | RRF   | Wt/Vol | RT   | Conc. | %Rec  |
|---|----------------|-------|----------|---------|-------|--------|------|-------|-------|
| 1 | 3 PFHxS        | 79.91 | 2.21e3   | 1.07e2  |       | 0.119  | 4.48 | 4440  |       |
| 2 | 9 18O2-PFHxS   | 102.9 | 1.07e2   | 3.68e2  | 0.256 | 0.119  | 4.48 | 119   | 113.8 |
| 3 | 14 13C3-PFHxS  | 80.0  | 3.68e2   | 3.68e2  | 1.000 | 0.119  | 4.48 | 105   | 100.0 |
| 4 | 19 Total PFHxS | 79.91 |          | 1.07e2  |       | 0.119  |      | 5110  |       |

\*

\* 1:10 Dilution

Vista Analytical Laboratory Q1

Dataset: U:\Q2.PRO\Results\160719J1\160719J1\_11.qld

Last Altered: Wednesday, July 20, 2016 10:56:24 Pacific Daylight Time

Printed: Wednesday, July 20, 2016 10:57:27 Pacific Daylight Time

Method: U:\Q2.PRO\MethDB\PFC List 6.mdb 08 Jul 2016 09:57:05

Calibration: U:\Q2.PRO\CurveDB\C18\_VAL-PFC\_Q2\_07-18-16\_L6.cdb 19 Jul 2016 08:45:41

Name: 160719J1\_11.wiff, Date: 19-Jul-2016, Time: 16:55:50, ID: B6G0068-MS1@10x, Description: Matrix Spike

## Total PFBS

|   | # Name        | Trace | RT   | Area   | IS Area | Conc. |
|---|---------------|-------|------|--------|---------|-------|
| 1 | 1 PFBS        | 79.9  | 3.50 | 7.77e2 | 6.85e2  | 577   |
| 2 | 18 Total PFBS | 79.9  | 3.37 | 1.30e1 | 6.85e2  | 9.31  |

## Total PFHxS

|   | # Name         | Trace | RT   | Area   | IS Area | Conc. |
|---|----------------|-------|------|--------|---------|-------|
| 1 | 3 PFHxS        | 79.91 | 4.48 | 2.21e3 | 1.07e2  | 4440  |
| 2 | 19 Total PFHxS | 79.91 | 4.38 | 3.18e2 | 1.07e2  | 462   |
| 3 | 19 Total PFHxS | 79.91 | 4.36 | 1.29e2 | 1.07e2  | 184   |
| 4 | 19 Total PFHxS | 79.91 | 4.27 | 1.50e1 | 1.07e2  | 21.1  |

## Total PFOA

|   | # Name        | Trace | RT   | Area   | IS Area | Conc. |
|---|---------------|-------|------|--------|---------|-------|
| 1 | 4 PFOA        | 368.9 | 4.76 | 2.28e3 | 6.32e2  | 963   |
| 2 | 20 Total PFOA | 368.9 | 4.66 | 3.50e2 | 6.32e2  | 129   |

## Total PFOS

|   | # Name        | Trace | RT   | Area   | IS Area | Conc. |
|---|---------------|-------|------|--------|---------|-------|
| 1 | 5 PFOS        | 79.92 | 5.15 | 2.06e3 | 2.51e2  | 1210  |
| 2 | 21 Total PFOS | 79.92 | 5.04 | 2.48e3 | 2.51e2  | 1490  |
| 3 | 21 Total PFOS | 79.92 | 4.94 | 3.42e2 | 2.51e2  | 185   |

Dataset: U:\Q2.PRO\Results\160719J1\160719J1\_11.qld

Last Altered: Wednesday, July 20, 2016 10:56:24 Pacific Daylight Time

Printed: Wednesday, July 20, 2016 10:56:53 Pacific Daylight Time

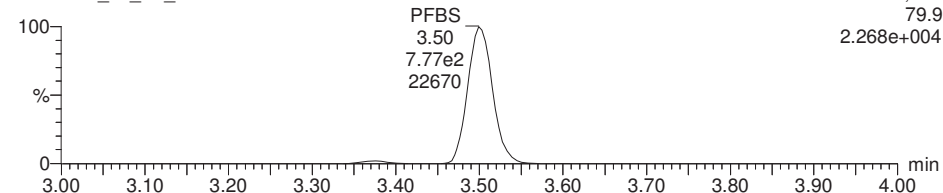
Method: U:\Q2.PRO\MethDB\PFC List 6.mdb 08 Jul 2016 09:57:05

Calibration: U:\Q2.PRO\CurveDB\C18\_VAL-PFC\_Q2\_07-18-16\_L6.cdb 19 Jul 2016 08:45:41

Name: 160719J1\_11.wiff, Date: 19-Jul-2016, Time: 16:55:50, ID: B6G0068-MS1@10x, Description: Matrix Spike

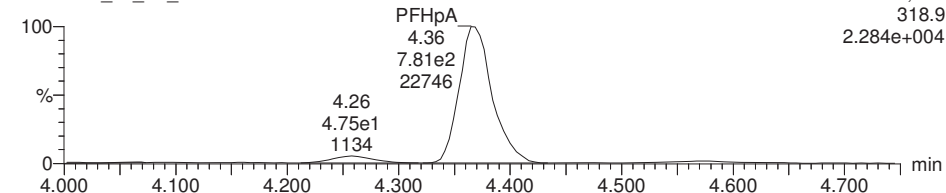
#### PFBS

160719J1\_11\_P1\_E1



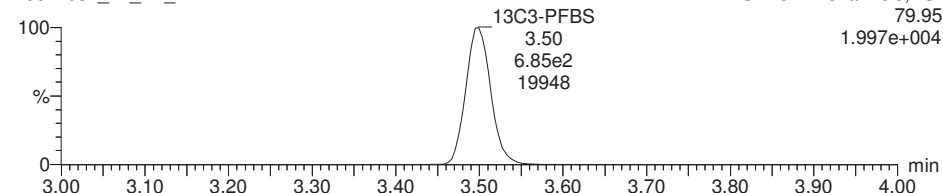
#### PFHpA

160719J1\_11\_P1\_E1



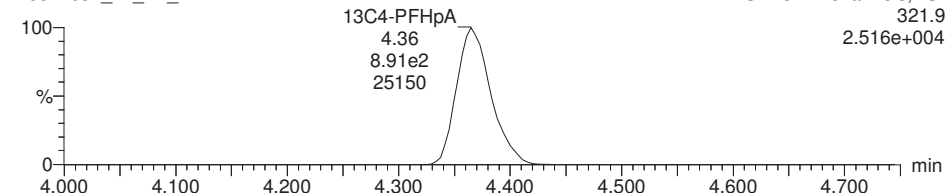
#### 13C3-PFBS

160719J1\_11\_P1\_E1



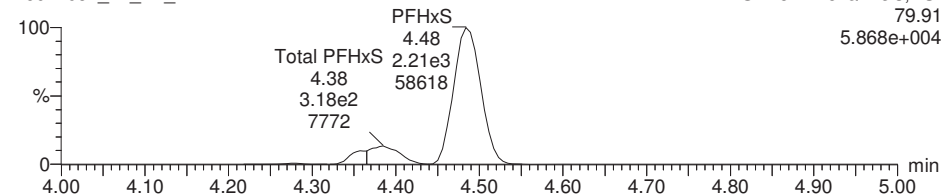
#### 13C4-PFHpA

160719J1\_11\_P1\_E1



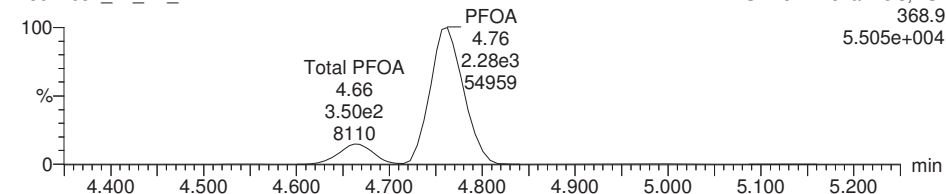
#### PFHxS

160719J1\_11\_P1\_E1



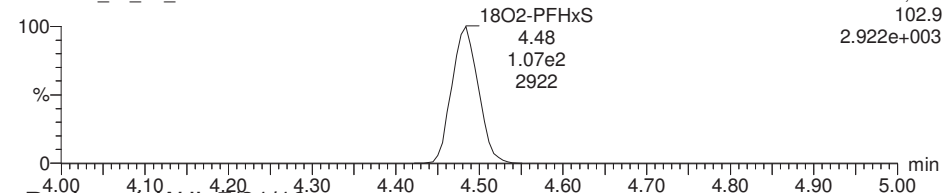
#### PFOA

160719J1\_11\_P1\_E1



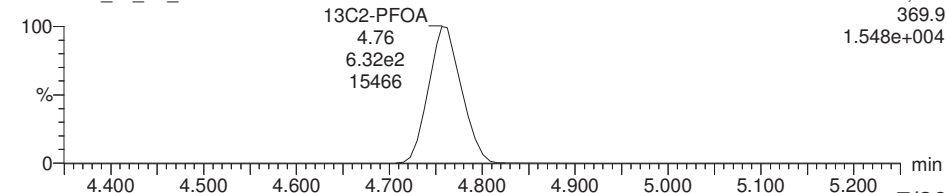
#### 18O2-PFHxS

160719J1\_11\_P1\_E1



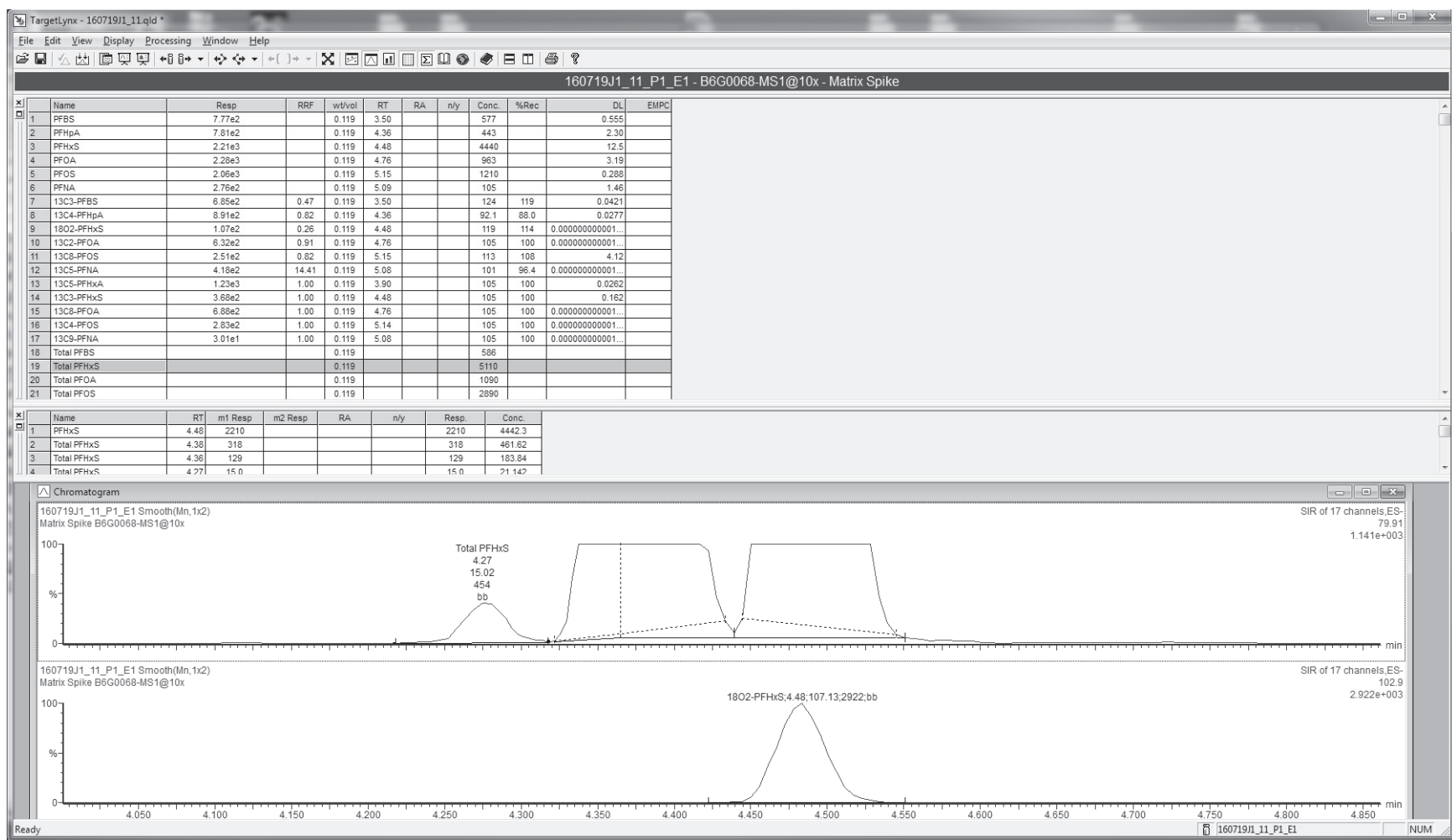
#### 13C2-PFOA

160719J1\_11\_P1\_E1



Reviewed: WJL 7/21/16

pw 7/20/16





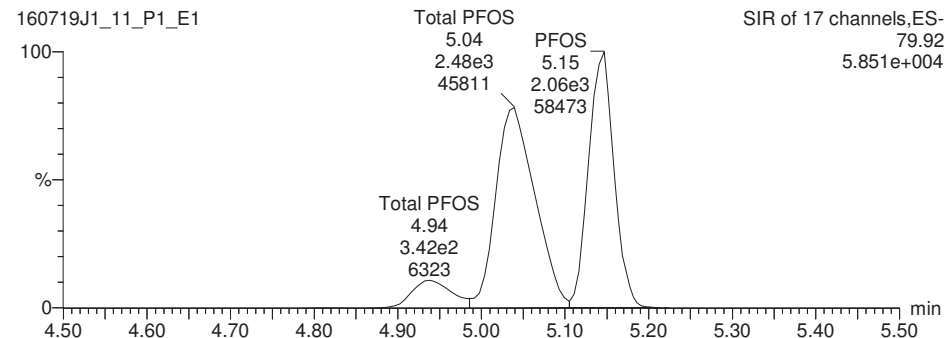
Dataset:        U:\Q2.PRO\Results\160719J1\160719J1\_11.qld

Last Altered:   Wednesday, July 20, 2016 10:56:24 Pacific Daylight Time

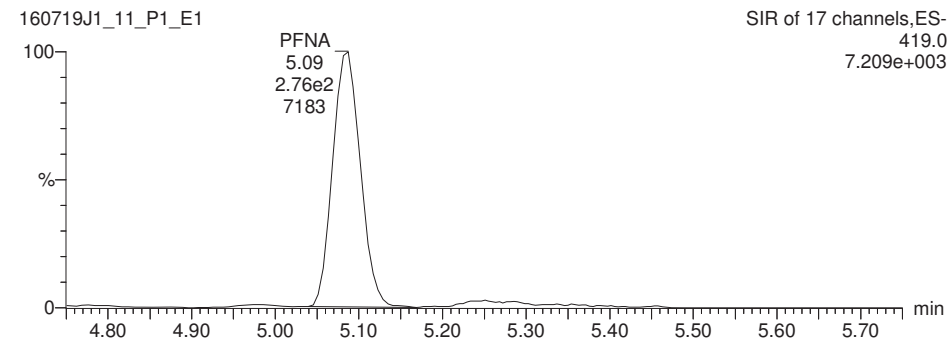
Printed:        Wednesday, July 20, 2016 10:56:53 Pacific Daylight Time

Name: 160719J1\_11.wiff, Date: 19-Jul-2016, Time: 16:55:50, ID: B6G0068-MS1@10x, Description: Matrix Spike

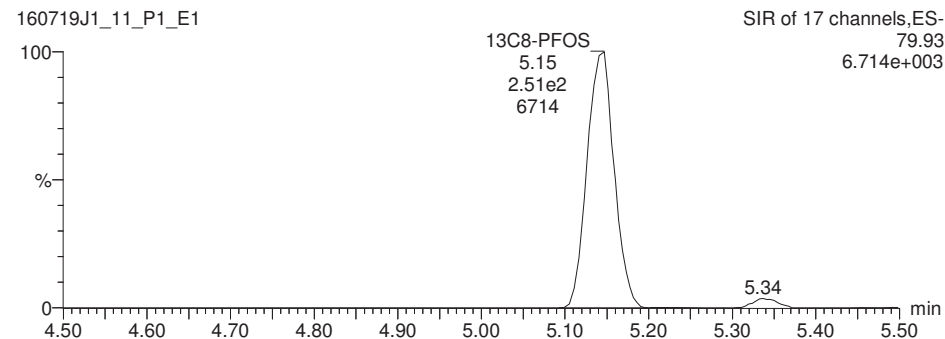
### PFOS



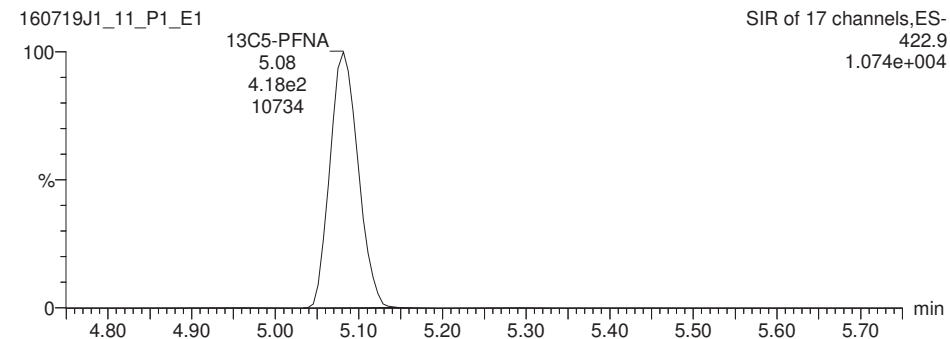
### PFNA



### 13C8-PFOS



### 13C5-PFNA



Vista Analytical Laboratory Q2

Dataset: U:\Q2.PRO\Results\160719J1\160719J1\_11.qld

Last Altered: Wednesday, July 20, 2016 10:56:24 Pacific Daylight Time

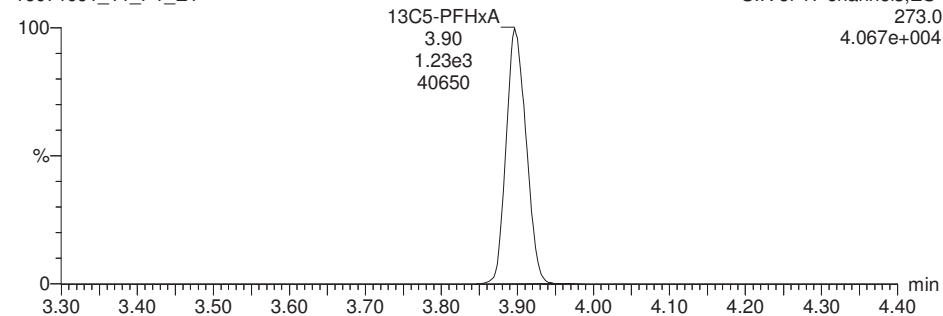
Printed: Wednesday, July 20, 2016 10:56:53 Pacific Daylight Time

Name: 160719J1\_11.wiff, Date: 19-Jul-2016, Time: 16:55:50, ID: B6G0068-MS1@10x, Description: Matrix Spike

### 13C5-PFHxA

160719J1\_11\_P1\_E1

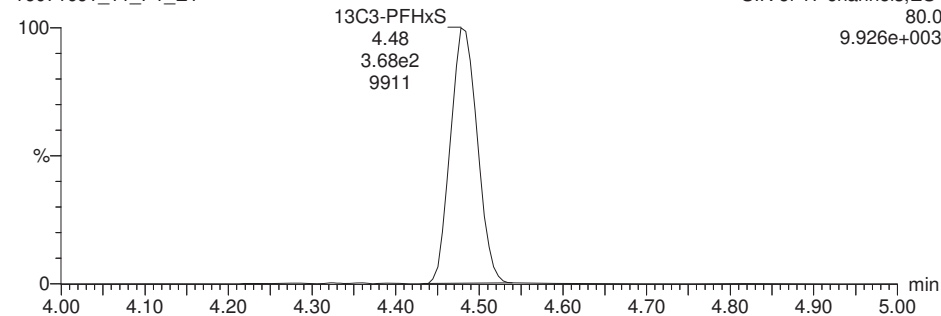
SIR of 17 channels,ES-  
273.0  
4.067e+004



### 13C3-PFHxS

160719J1\_11\_P1\_E1

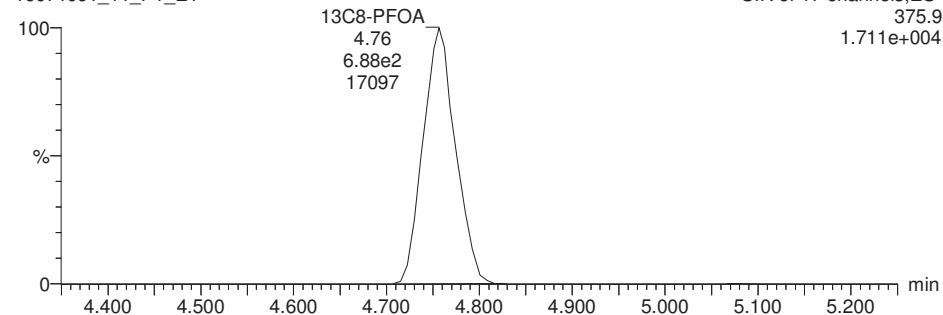
SIR of 17 channels,ES-  
80.0  
9.926e+003



### 13C8-PFOA

160719J1\_11\_P1\_E1

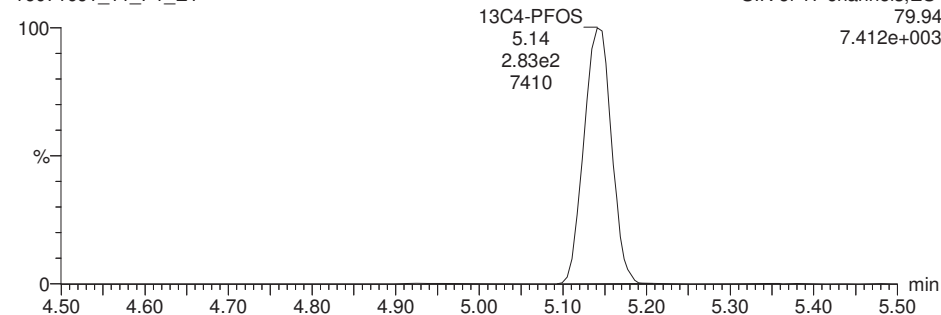
SIR of 17 channels,ES-  
375.9  
1.711e+004



### 13C4-PFOS

160719J1\_11\_P1\_E1

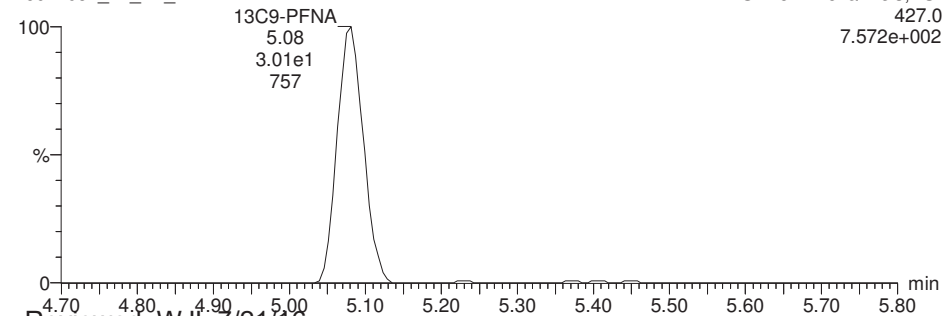
SIR of 17 channels,ES-  
79.94  
7.412e+003



### 13C9-PFNA

160719J1\_11\_P1\_E1

SIR of 17 channels,ES-  
427.0  
7.572e+002



Reviewed: WJL 7/21/16

pw 7/20/16

Dataset: U:\Q2.PRO\Results\160718J1\160718J1\_31.qld

Last Altered: Tuesday, July 19, 2016 11:22:56 Pacific Daylight Time

Printed: Tuesday, July 19, 2016 11:23:32 Pacific Daylight Time

Method: U:\Q2.PRO\MethDB\PFC List 6.mdb 08 Jul 2016 09:57:05

Calibration: U:\Q2.PRO\CurveDB\C18\_VAL-PFC\_Q2\_07-18-16\_L6.cdb 19 Jul 2016 08:45:41

Name: 160718J1\_31.wiff, Date: 18-Jul-2016, Time: 20:58:49, ID: B6G0068-MSD1, Description: Matrix Spike Dup

|    | # Name         | Trace | Response | IS Resp | RRF    | Wt/Vol | RT   | Conc. | %Rec    |
|----|----------------|-------|----------|---------|--------|--------|------|-------|---------|
| 1  | 1 PFBS         | 79.9  | 6.62e3   | 6.06e3  |        | 0.118  | 3.48 | 563   |         |
| 2  | 2 PFHpA        | 318.9 | 8.40e3   | 9.98e3  |        | 0.118  | 4.36 | 431   |         |
| 3  | 3 PFHxS        | 79.91 | 2.43e4   | 1.29e3  |        | 0.118  | 4.47 | 3860  | E *     |
| 4  | 4 PFOA         | 368.9 | 2.90e4   | 8.62e3  |        | 0.118  | 4.75 | 902   |         |
| 5  | 5 PFOS         | 79.92 | 3.40e4   | 4.20e3  |        | 0.118  | 5.12 | 1200  |         |
| 6  | 6 PFNA         | 419.0 | 5.36e3   | 8.16e3  |        | 0.118  | 5.06 | 106   |         |
| 7  | 7 13C3-PFBS    | 79.95 | 6.06e3   | 1.12e4  | 0.469  | 0.118  | 3.48 | 123   | 115.7   |
| 8  | 8 13C4-PFHpA   | 321.9 | 9.98e3   | 1.12e4  | 0.822  | 0.118  | 4.35 | 115   | 108.7   |
| 9  | 9 18O2-PFHxS   | 102.9 | 1.29e3   | 4.48e3  | 0.256  | 0.118  | 4.47 | 120   | 112.9   |
| 10 | 10 13C2-PFOA   | 369.9 | 8.62e3   | 9.21e3  | 0.915  | 0.118  | 4.75 | 109   | 102.3 * |
| 11 | 11 13C8-PFOS   | 79.93 | 4.20e3   | 4.44e3  | 0.822  | 0.118  | 5.12 | 122   | 114.9   |
| 12 | 12 13C5-PFNA   | 422.9 | 8.16e3   | 5.11e2  | 14.407 | 0.118  | 5.06 | 118   | 110.8   |
| 13 | 13 13C5-PFHxA  | 273.0 | 1.12e4   | 1.12e4  | 1.000  | 0.118  | 3.88 | 106   | 100.0   |
| 14 | 14 13C3-PFHxS  | 80.0  | 4.48e3   | 4.48e3  | 1.000  | 0.118  | 4.47 | 106   | 100.0   |
| 15 | 15 13C8-PFOA   | 375.9 | 9.21e3   | 9.21e3  | 1.000  | 0.118  | 4.74 | 106   | 100.0   |
| 16 | 16 13C4-PFOS   | 79.94 | 4.44e3   | 4.44e3  | 1.000  | 0.118  | 5.12 | 106   | 100.0   |
| 17 | 17 13C9-PFNA   | 427.0 | 5.11e2   | 5.11e2  | 1.000  | 0.118  | 5.06 | 106   | 100.0   |
| 18 | 18 Total PFBS  | 79.9  |          | 6.06e3  |        | 0.118  |      | 573   |         |
| 19 | 19 Total PFHxS | 79.91 |          | 1.29e3  |        | 0.118  |      | 4490  |         |
| 20 | 20 Total PFOA  | 368.9 |          | 8.62e3  |        | 0.118  |      | 1020  |         |
| 21 | 21 Total PFOS  | 79.92 |          | 4.20e3  |        | 0.118  |      | 2940  |         |

\* See 1:10 Dilution

Vista Analytical Laboratory Q1

Dataset: U:\Q2.PRO\Results\160718J1\160718J1\_31.qld

Last Altered: Tuesday, July 19, 2016 11:22:56 Pacific Daylight Time

Printed: Tuesday, July 19, 2016 11:23:32 Pacific Daylight Time

Method: U:\Q2.PRO\MethDB\PFC List 6.mdb 08 Jul 2016 09:57:05

Calibration: U:\Q2.PRO\CurveDB\C18\_VAL-PFC\_Q2\_07-18-16\_L6.cdb 19 Jul 2016 08:45:41

Name: 160718J1\_31.wiff, Date: 18-Jul-2016, Time: 20:58:49, ID: B6G0068-MSD1, Description: Matrix Spike Dup

## Total PFBS

|   | # Name        | Trace | RT   | Area   | IS Area | Conc. |
|---|---------------|-------|------|--------|---------|-------|
| 1 | 1 PFBS        | 79.9  | 3.48 | 6.62e3 | 6.06e3  | 563   |
| 2 | 18 Total PFBS | 79.9  | 3.36 | 1.21e2 | 6.06e3  | 9.89  |

## Total PFHxS

|   | # Name         | Trace | RT   | Area   | IS Area | Conc. |
|---|----------------|-------|------|--------|---------|-------|
| 1 | 3 PFHxS        | 79.91 | 4.47 | 2.43e4 | 1.29e3  | 3860  |
| 2 | 19 Total PFHxS | 79.91 | 4.37 | 5.03e3 | 1.29e3  | 620   |
| 3 | 19 Total PFHxS | 79.91 | 4.27 | 1.43e2 | 1.29e3  | 16.8  |

## Total PFOA

|   | # Name        | Trace | RT   | Area   | IS Area | Conc. |
|---|---------------|-------|------|--------|---------|-------|
| 1 | 4 PFOA        | 368.9 | 4.75 | 2.90e4 | 8.62e3  | 902   |
| 2 | 20 Total PFOA | 368.9 | 4.65 | 4.12e3 | 8.62e3  | 113   |
| 3 | 20 Total PFOA | 368.9 | 4.53 | 5.34e1 | 8.62e3  | 1.44  |

## Total PFOS

|   | # Name        | Trace | RT   | Area   | IS Area | Conc. |
|---|---------------|-------|------|--------|---------|-------|
| 1 | 5 PFOS        | 79.92 | 5.12 | 3.40e4 | 4.20e3  | 1200  |
| 2 | 21 Total PFOS | 79.92 | 5.02 | 4.25e4 | 4.20e3  | 1550  |
| 3 | 21 Total PFOS | 79.92 | 4.92 | 5.57e3 | 4.20e3  | 183   |
| 4 | 21 Total PFOS | 79.92 | 4.81 | 2.60e1 | 4.20e3  | 0.842 |

Vista Analytical Laboratory Q2

Dataset: U:\Q2.PRO\Results\160718J1\160718J1\_31.qld

Last Altered: Tuesday, July 19, 2016 11:22:56 Pacific Daylight Time

Printed: Tuesday, July 19, 2016 11:23:45 Pacific Daylight Time

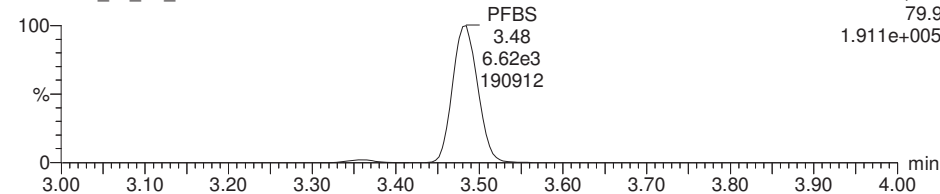
Method: U:\Q2.PRO\MethDB\PFC List 6.mdb 08 Jul 2016 09:57:05

Calibration: U:\Q2.PRO\CurveDB\C18\_VAL-PFC\_Q2\_07-18-16\_L6.cdb 19 Jul 2016 08:45:41

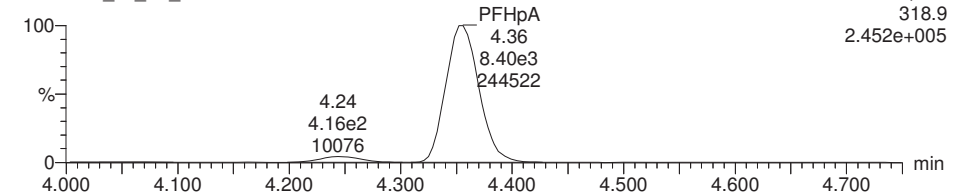
Name: 160718J1\_31.wiff, Date: 18-Jul-2016, Time: 20:58:49, ID: B6G0068-MSD1, Description: Matrix Spike Dup

**PFBS**

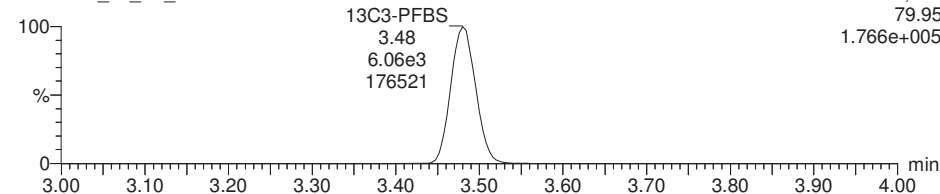
160718J1\_31\_P1\_E1

SIR of 17 channels, ES-  
79.9  
1.911e+005**PFHpA**

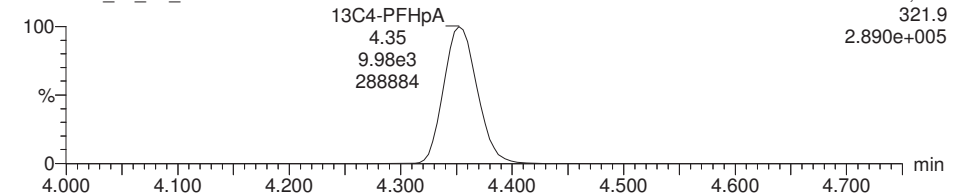
160718J1\_31\_P1\_E1

SIR of 17 channels, ES-  
318.9  
2.452e+005**13C3-PFBS**

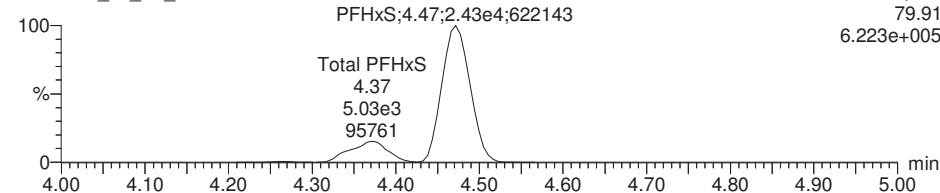
160718J1\_31\_P1\_E1

SIR of 17 channels, ES-  
79.95  
1.766e+005**13C4-PFHpA**

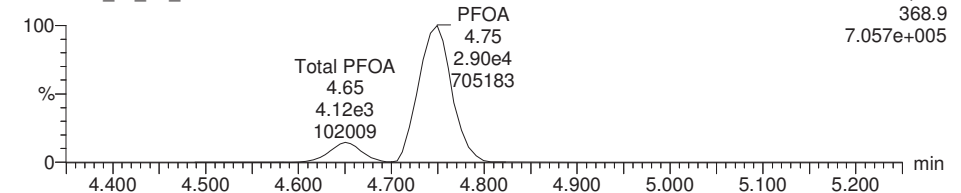
160718J1\_31\_P1\_E1

SIR of 17 channels, ES-  
321.9  
2.890e+005**PFHxS**

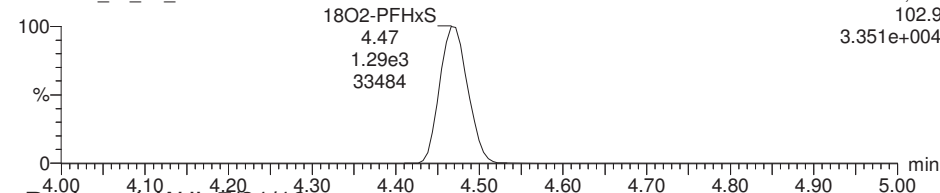
160718J1\_31\_P1\_E1

SIR of 17 channels, ES-  
79.91  
6.223e+005**PFOA**

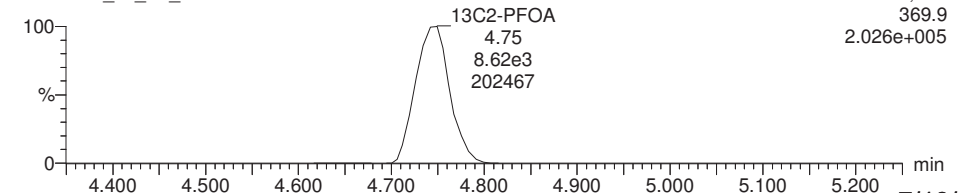
160718J1\_31\_P1\_E1

SIR of 17 channels, ES-  
368.9  
7.057e+005**18O2-PFHxS**

160718J1\_31\_P1\_E1

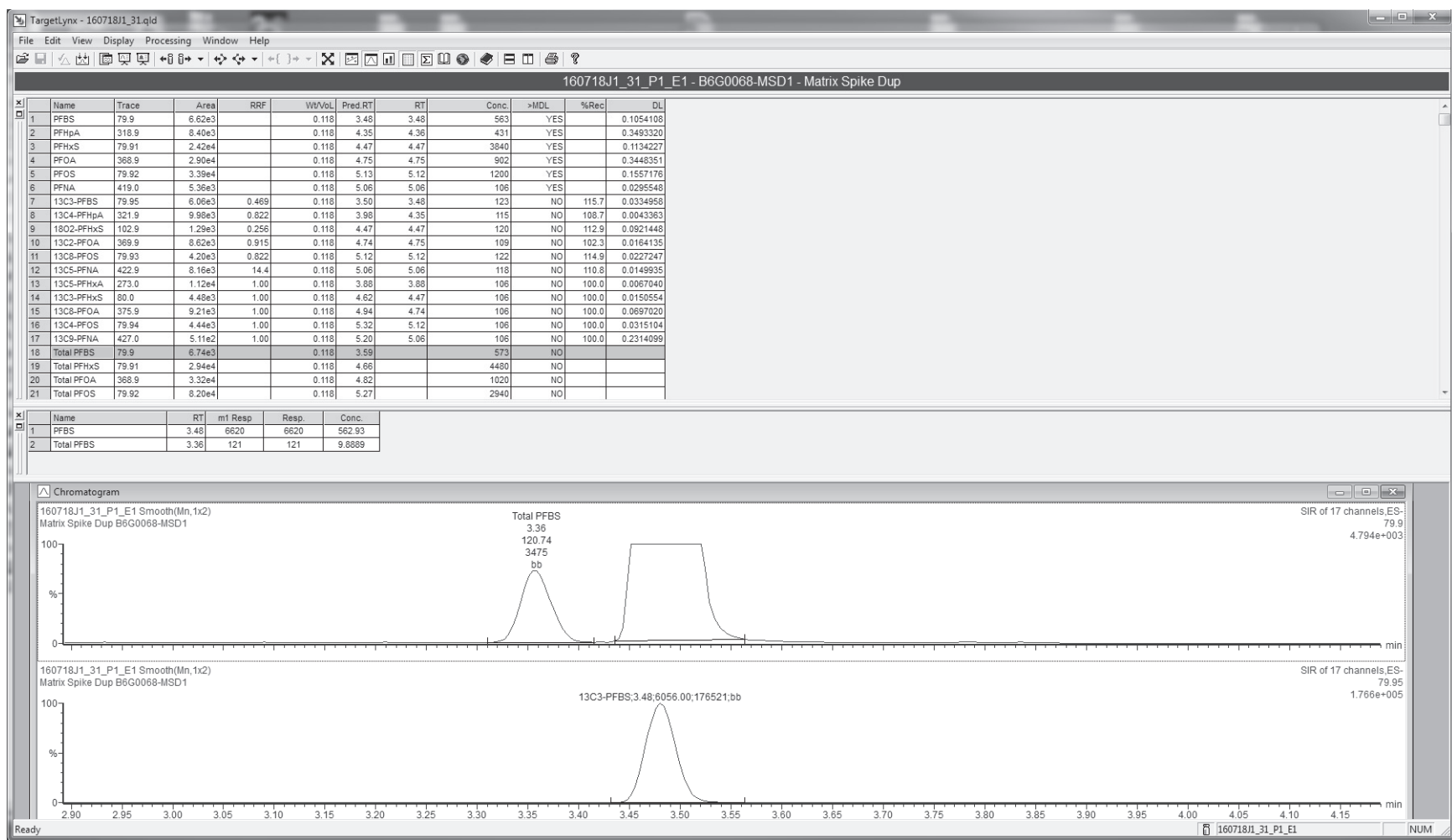
SIR of 17 channels, ES-  
102.9  
3.351e+004**13C2-PFOA**

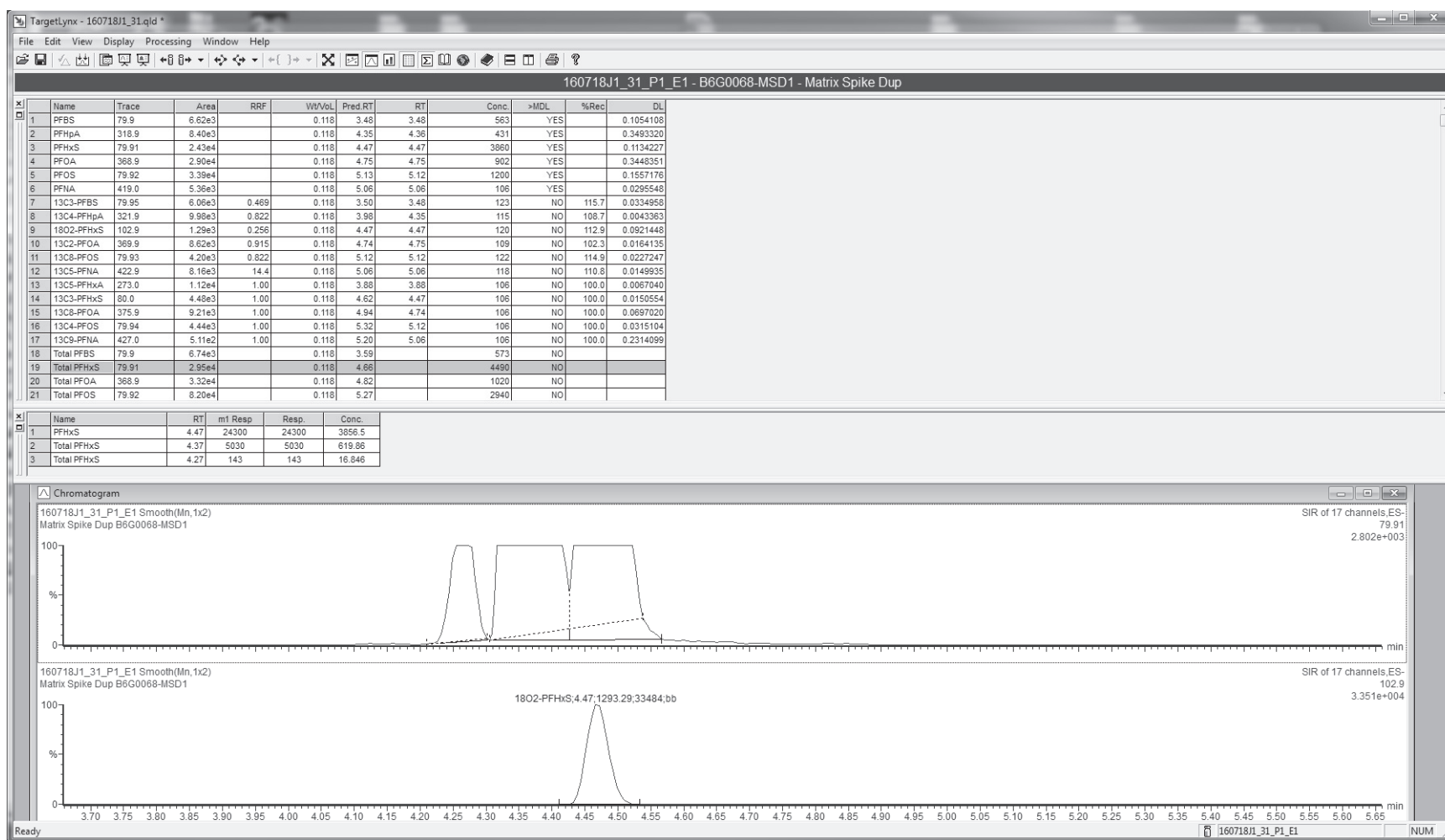
160718J1\_31\_P1\_E1

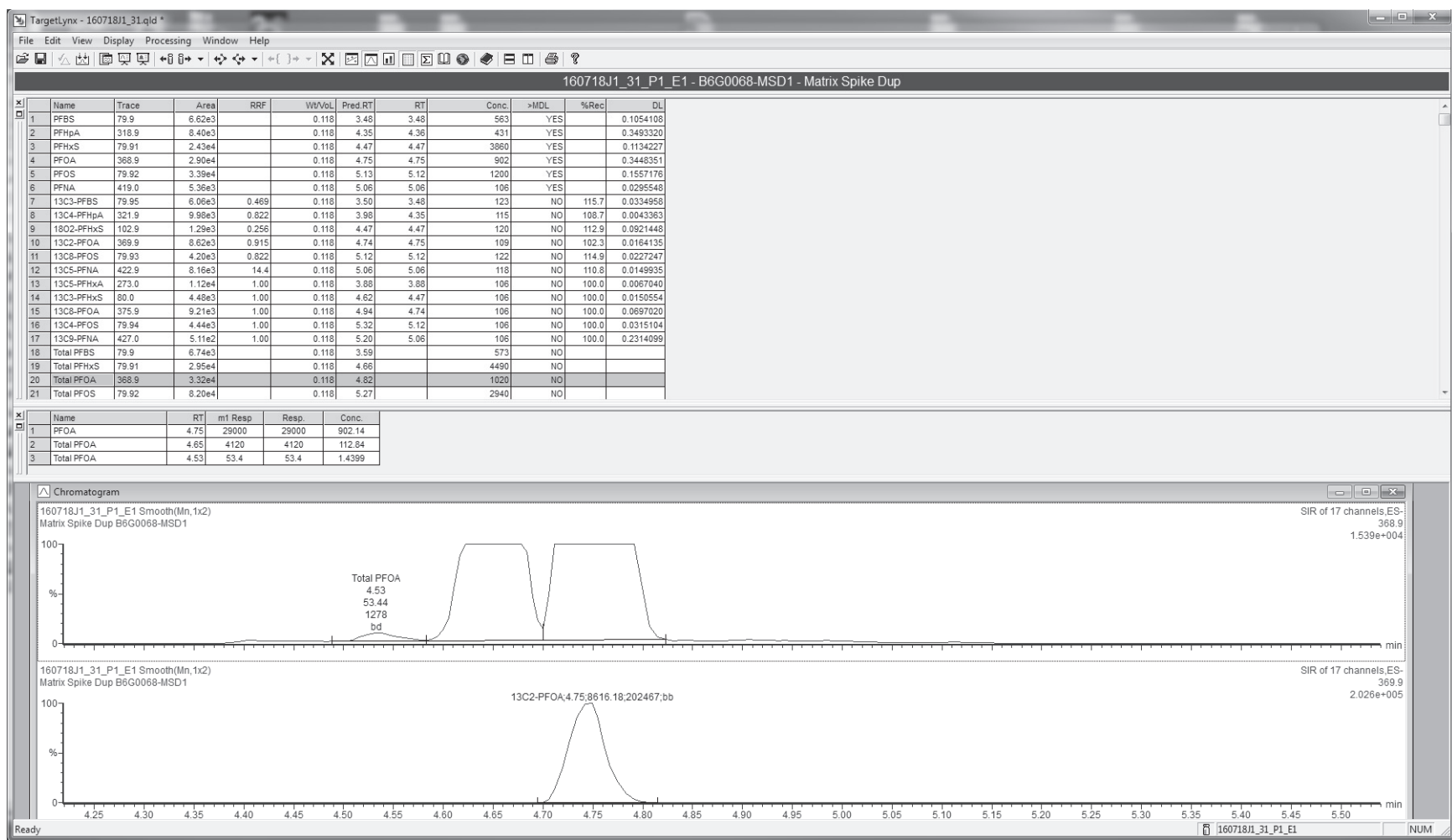
SIR of 17 channels, ES-  
369.9  
2.026e+005

Reviewed: WJL 7/21/16

pw 7/19/16









Dataset:        U:\Q2.PRO\Results\160718J1\160718J1\_31.qld

Last Altered:   Tuesday, July 19, 2016 11:22:56 Pacific Daylight Time

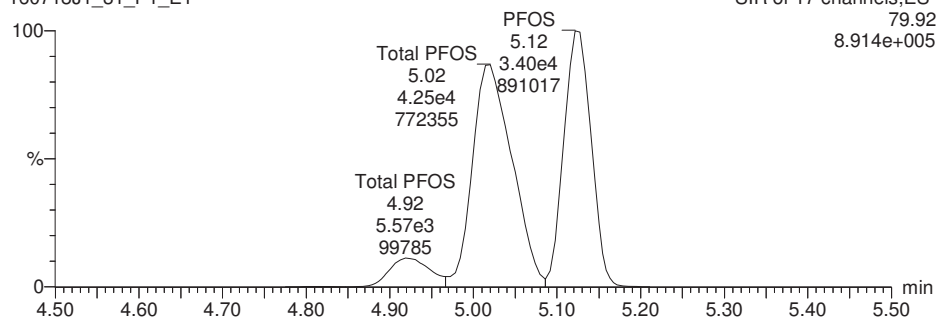
Printed:        Tuesday, July 19, 2016 11:23:45 Pacific Daylight Time

Name: 160718J1\_31.wiff, Date: 18-Jul-2016, Time: 20:58:49, ID: B6G0068-MSD1, Description: Matrix Spike Dup

### PFOS

160718J1\_31\_P1\_E1

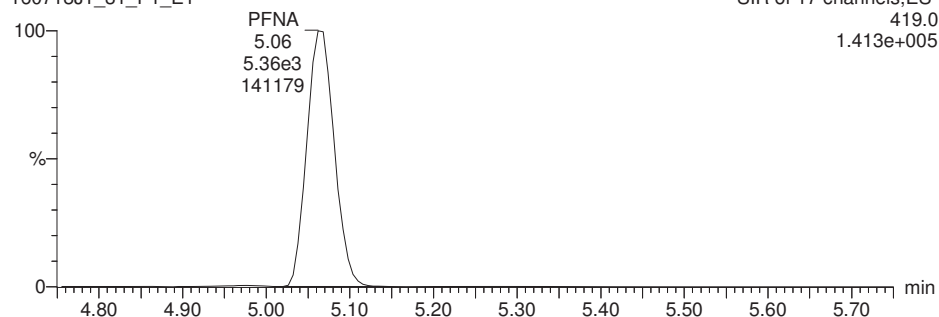
SIR of 17 channels,ES-  
79.92  
8.914e+005



### PFNA

160718J1\_31\_P1\_E1

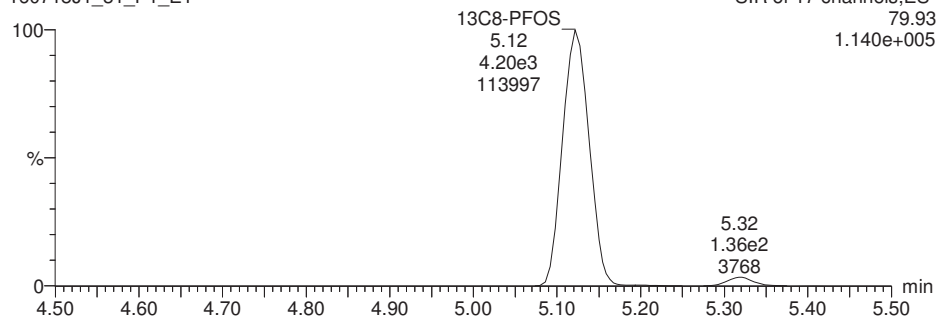
SIR of 17 channels,ES-  
419.0  
1.413e+005



### 13C8-PFOS

160718J1\_31\_P1\_E1

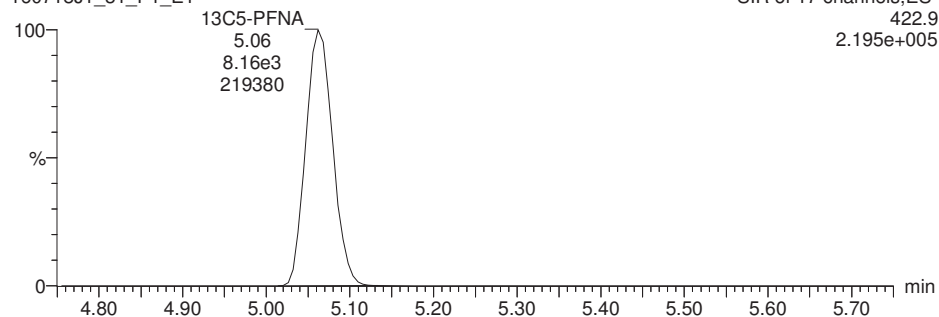
SIR of 17 channels,ES-  
79.93  
1.140e+005

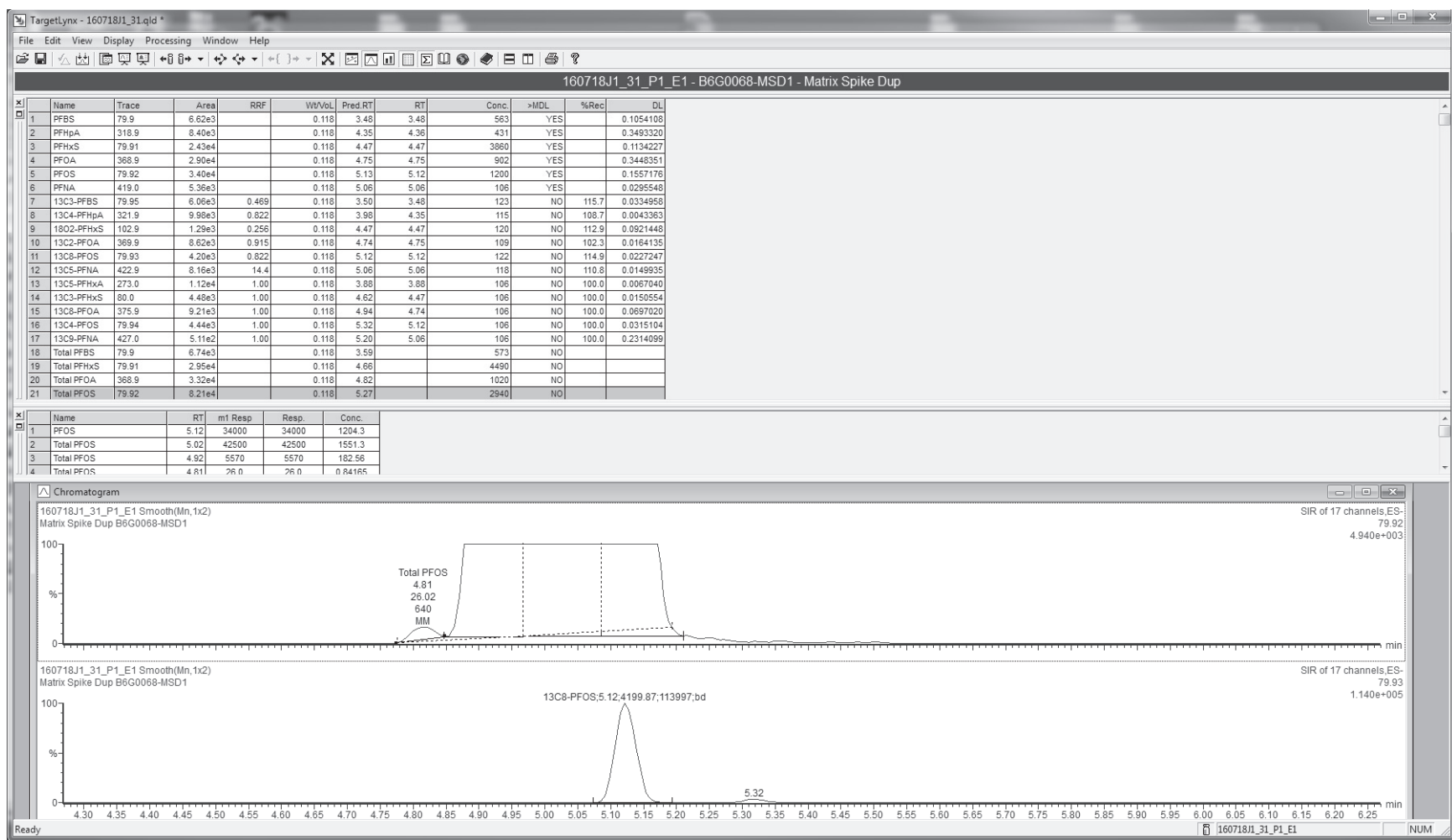


### 13C5-PFNA

160718J1\_31\_P1\_E1

SIR of 17 channels,ES-  
422.9  
2.195e+005





Dataset:        U:\Q2.PRO\Results\160718J1\160718J1\_31.qld

Last Altered:   Tuesday, July 19, 2016 11:22:56 Pacific Daylight Time

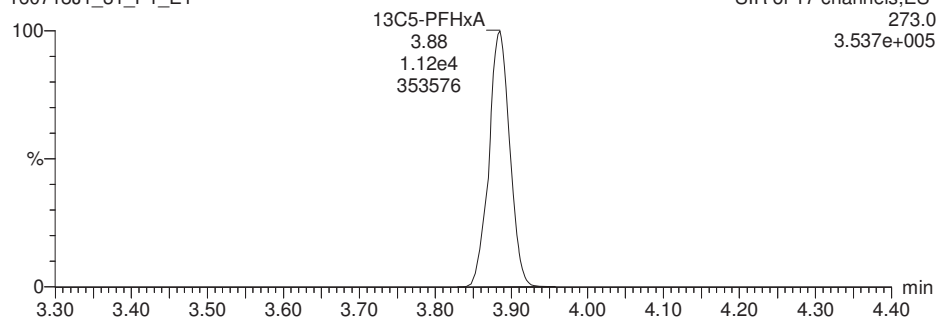
Printed:        Tuesday, July 19, 2016 11:23:45 Pacific Daylight Time

Name: 160718J1\_31.wiff, Date: 18-Jul-2016, Time: 20:58:49, ID: B6G0068-MSD1, Description: Matrix Spike Dup

**13C5-PFHxA**

160718J1\_31\_P1\_E1

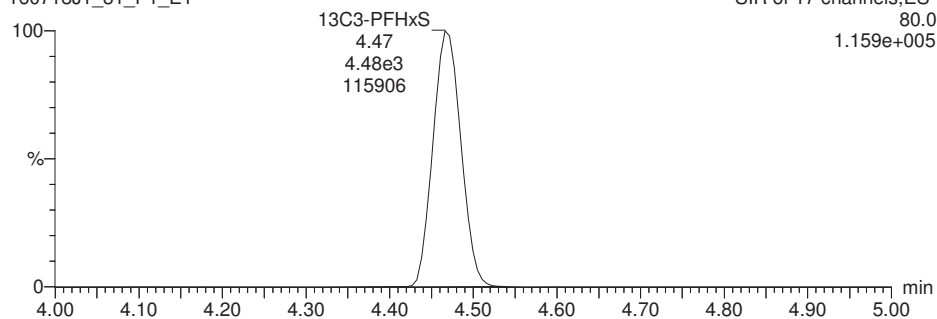
SIR of 17 channels,ES-  
273.0  
3.537e+005



**13C3-PFHxS**

160718J1\_31\_P1\_E1

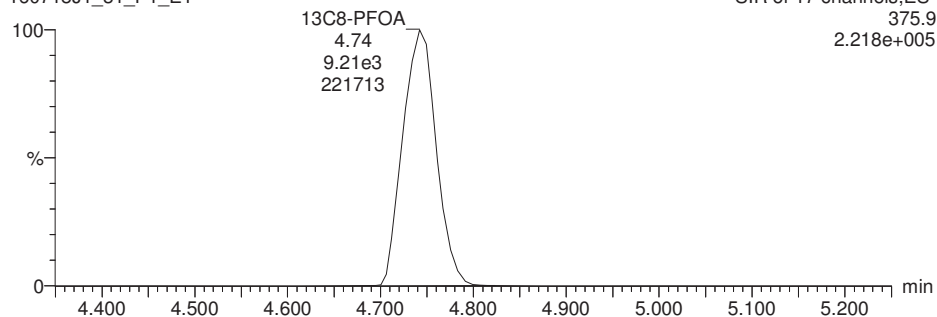
SIR of 17 channels,ES-  
80.0  
1.159e+005



**13C8-PFOA**

160718J1\_31\_P1\_E1

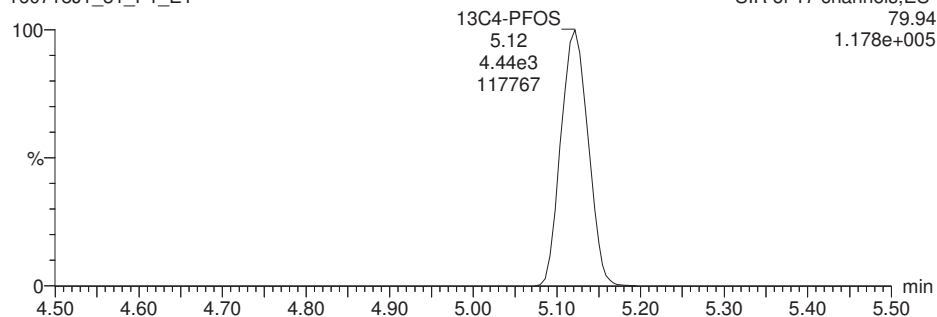
SIR of 17 channels,ES-  
375.9  
2.218e+005



**13C4-PFOS**

160718J1\_31\_P1\_E1

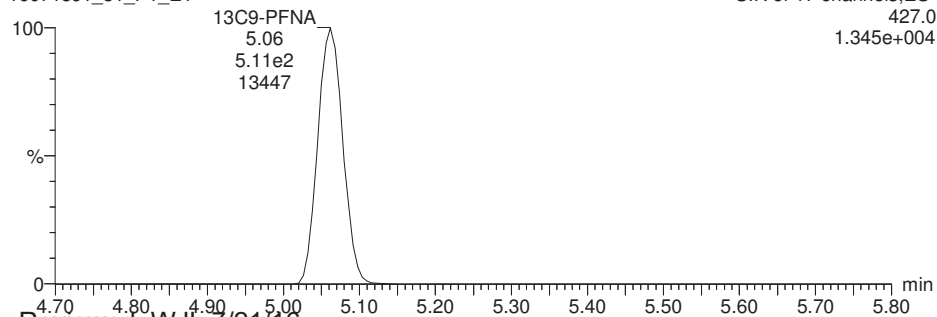
SIR of 17 channels,ES-  
79.94  
1.178e+005



**13C9-PFNA**

160718J1\_31\_P1\_E1

SIR of 17 channels,ES-  
427.0  
1.345e+004



Reviewed: WJL 7/21/16

pw 7/19/16

Dataset: U:\Q2.PRO\Results\160719J1\160719J1\_12.qld

Last Altered: Wednesday, July 20, 2016 11:02:24 Pacific Daylight Time

Printed: Wednesday, July 20, 2016 11:03:05 Pacific Daylight Time

Method: U:\Q2.PRO\MethDB\PFC List 6.mdb 08 Jul 2016 09:57:05

Calibration: U:\Q2.PRO\CurveDB\C18\_VAL-PFC\_Q2\_07-18-16\_L6.cdb 19 Jul 2016 08:45:41

Name: 160719J1\_12.wiff, Date: 19-Jul-2016, Time: 17:08:06, ID: B6G0068-MSD1@10x, Description: Matrix Spike Dup

|   | # Name         | Trace | Response | IS Resp | RRF   | Wt/Vol | RT   | Conc. | %Rec  |
|---|----------------|-------|----------|---------|-------|--------|------|-------|-------|
| 1 | 3 PFHxS        | 79.91 | 2.75e3   | 1.31e2  |       | 0.118  | 4.48 | 4630  |       |
| 2 | 9 18O2-PFHxS   | 102.9 | 1.31e2   | 4.96e2  | 0.256 | 0.118  | 4.48 | 110   | 103.3 |
| 3 | 14 13C3-PFHxS  | 80.0  | 4.96e2   | 4.96e2  | 1.000 | 0.118  | 4.48 | 106   | 100.0 |
| 4 | 19 Total PFHxS | 79.91 |          | 1.31e2  |       | 0.118  |      | 5270  |       |

\*

\* 1:10 Dilution

Vista Analytical Laboratory Q1

Dataset: U:\Q2.PRO\Results\160719J1\160719J1\_12.qld

Last Altered: Wednesday, July 20, 2016 11:02:24 Pacific Daylight Time

Printed: Wednesday, July 20, 2016 11:03:05 Pacific Daylight Time

Method: U:\Q2.PRO\MethDB\PFC List 6.mdb 08 Jul 2016 09:57:05

Calibration: U:\Q2.PRO\CurveDB\C18\_VAL-PFC\_Q2\_07-18-16\_L6.cdb 19 Jul 2016 08:45:41

Name: 160719J1\_12.wiff, Date: 19-Jul-2016, Time: 17:08:06, ID: B6G0068-MSD1@10x, Description: Matrix Spike Dup

## Total PFBS

|   | # Name        | Trace | RT   | Area   | IS Area | Conc. |
|---|---------------|-------|------|--------|---------|-------|
| 1 | 1 PFBS        | 79.9  | 3.49 | 7.34e2 | 6.83e2  | 554   |
| 2 | 18 Total PFBS | 79.9  | 3.37 | 1.35e1 | 6.83e2  | 9.81  |

## Total PFHxS

|   | # Name         | Trace | RT   | Area   | IS Area | Conc. |
|---|----------------|-------|------|--------|---------|-------|
| 1 | 3 PFHxS        | 79.91 | 4.48 | 2.75e3 | 1.31e2  | 4630  |
| 2 | 19 Total PFHxS | 79.91 | 4.38 | 5.12e2 | 1.31e2  | 622   |
| 3 | 19 Total PFHxS | 79.91 | 4.27 | 1.31e1 | 1.31e2  | 15.3  |

## Total PFOA

|   | # Name        | Trace | RT   | Area   | IS Area | Conc. |
|---|---------------|-------|------|--------|---------|-------|
| 1 | 20 Total PFOA | 368.9 | 4.66 | 4.30e2 | 8.43e2  | 121   |
| 2 | 4 PFOA        | 368.9 | 4.76 | 2.99e3 | 8.43e2  | 957   |

## Total PFOS

|   | # Name        | Trace | RT   | Area   | IS Area | Conc. |
|---|---------------|-------|------|--------|---------|-------|
| 1 | 5 PFOS        | 79.92 | 5.13 | 2.79e3 | 3.49e2  | 1190  |
| 2 | 21 Total PFOS | 79.92 | 5.02 | 3.44e3 | 3.49e2  | 1510  |
| 3 | 21 Total PFOS | 79.92 | 4.92 | 5.00e2 | 3.49e2  | 198   |

Dataset: U:\Q2.PRO\Results\160719J1\160719J1\_12.qld

Last Altered: Wednesday, July 20, 2016 11:02:24 Pacific Daylight Time

Printed: Wednesday, July 20, 2016 11:03:14 Pacific Daylight Time

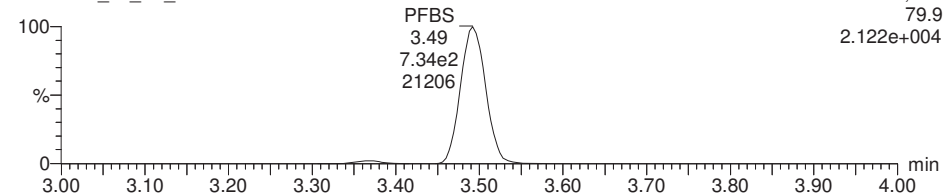
Method: U:\Q2.PRO\MethDB\PFC List 6.mdb 08 Jul 2016 09:57:05

Calibration: U:\Q2.PRO\CurveDB\C18\_VAL-PFC\_Q2\_07-18-16\_L6.cdb 19 Jul 2016 08:45:41

Name: 160719J1\_12.wiff, Date: 19-Jul-2016, Time: 17:08:06, ID: B6G0068-MSD1@10x, Description: Matrix Spike Dup

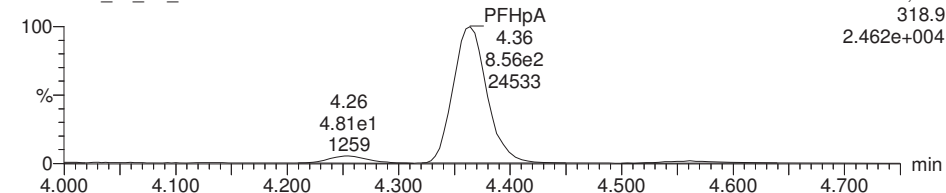
#### PFBS

160719J1\_12\_P1\_E1



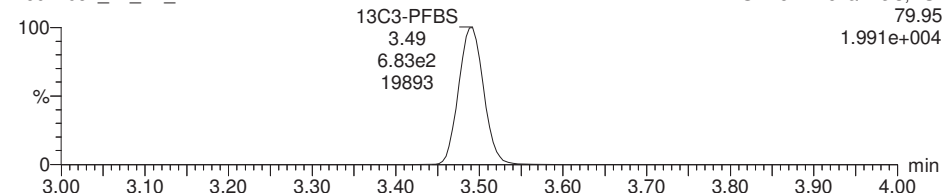
#### PFHpA

160719J1\_12\_P1\_E1



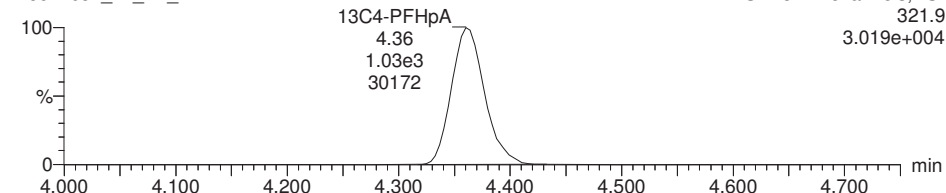
#### 13C3-PFBS

160719J1\_12\_P1\_E1



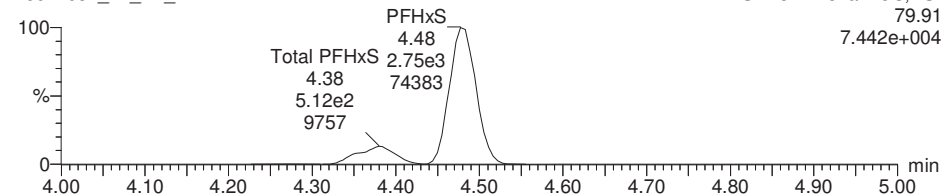
#### 13C4-PFHpA

160719J1\_12\_P1\_E1



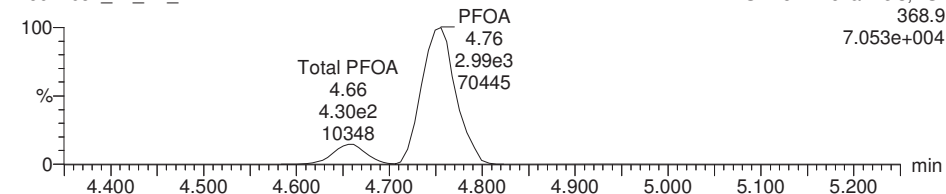
#### PFHxS

160719J1\_12\_P1\_E1



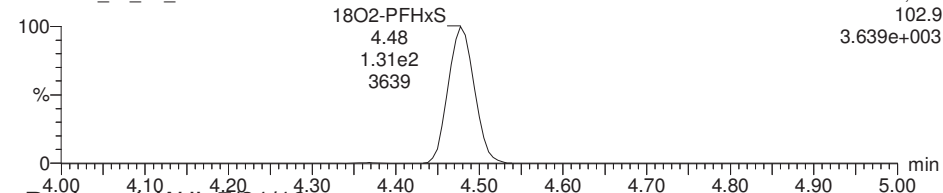
#### PFOA

160719J1\_12\_P1\_E1



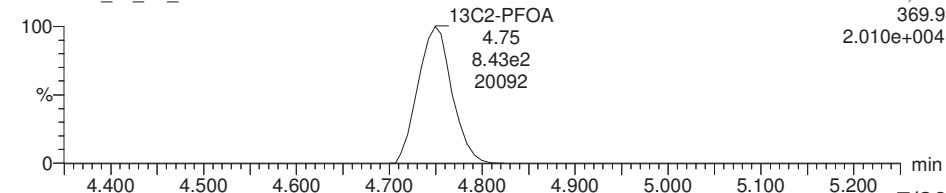
#### 18O2-PFHxS

160719J1\_12\_P1\_E1



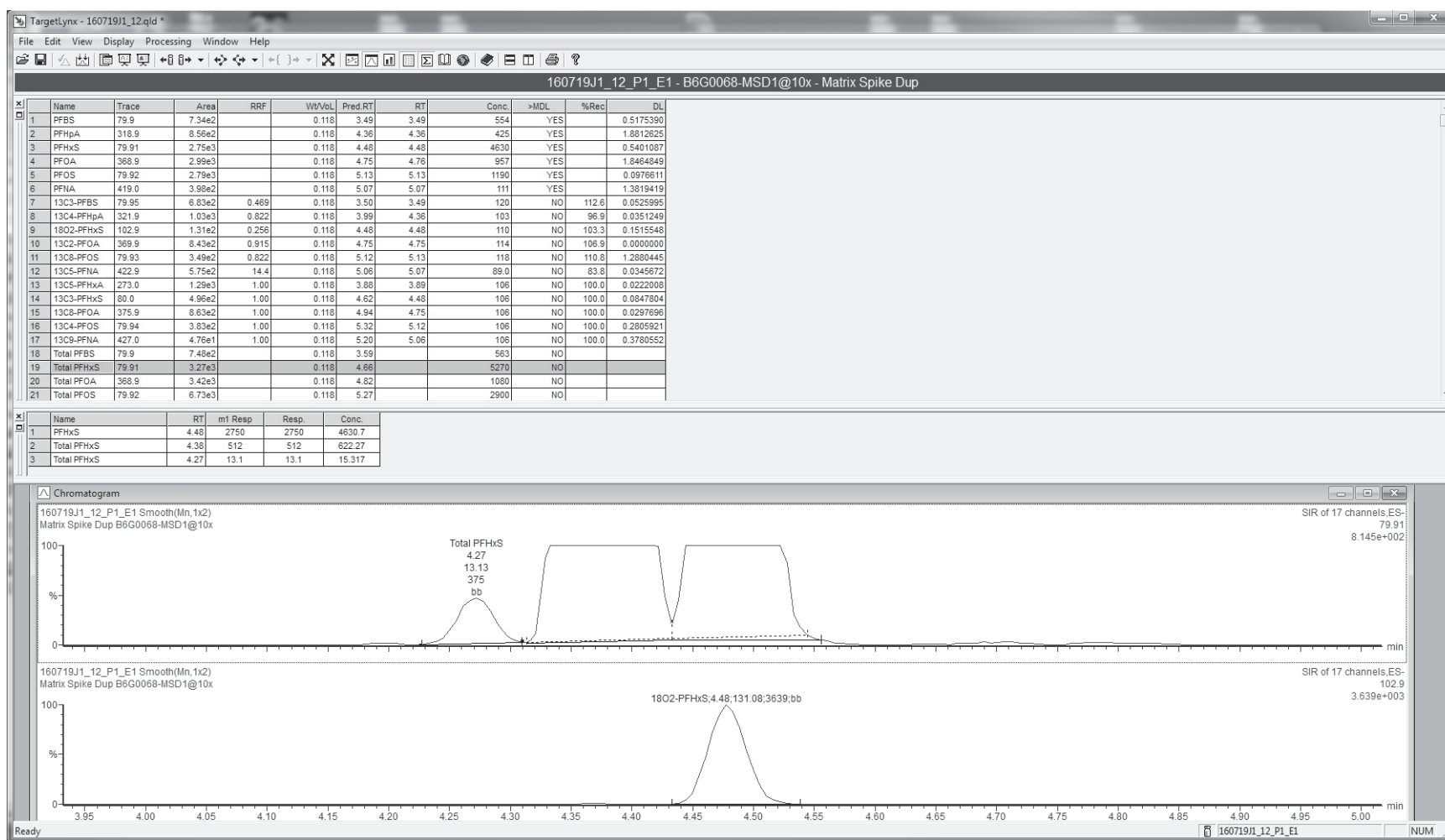
#### 13C2-PFOA

160719J1\_12\_P1\_E1



Reviewed: WJL 7/21/16

pw 7/20/16



Dataset:        U:\Q2.PRO\Results\160719J1\160719J1\_12.qld

Last Altered:   Wednesday, July 20, 2016 11:02:24 Pacific Daylight Time

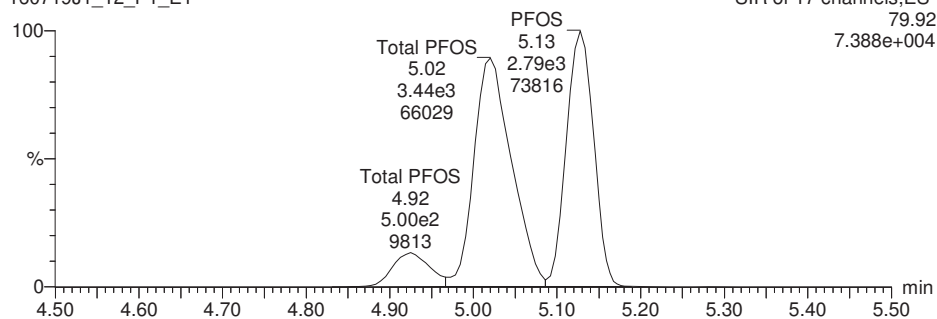
Printed:        Wednesday, July 20, 2016 11:03:14 Pacific Daylight Time

Name: 160719J1\_12.wiff, Date: 19-Jul-2016, Time: 17:08:06, ID: B6G0068-MSD1@10x, Description: Matrix Spike Dup

### PFOS

160719J1\_12\_P1\_E1

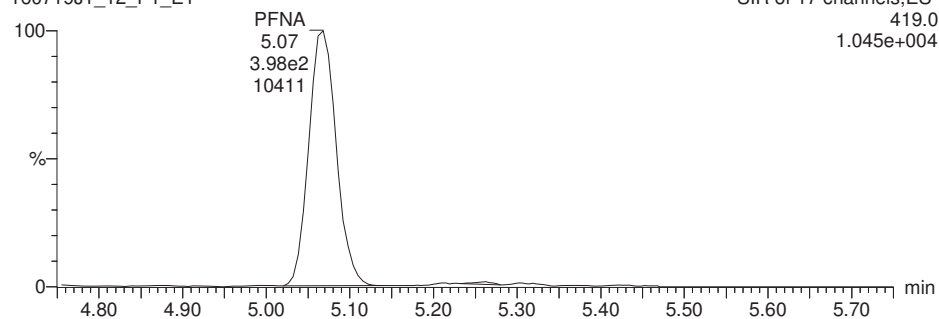
SIR of 17 channels,ES-  
79.92  
7.388e+004



### PFNA

160719J1\_12\_P1\_E1

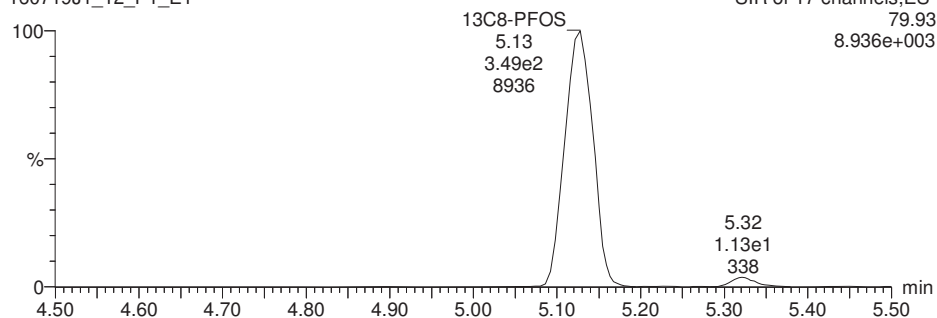
SIR of 17 channels,ES-  
419.0  
1.045e+004



### 13C8-PFOS

160719J1\_12\_P1\_E1

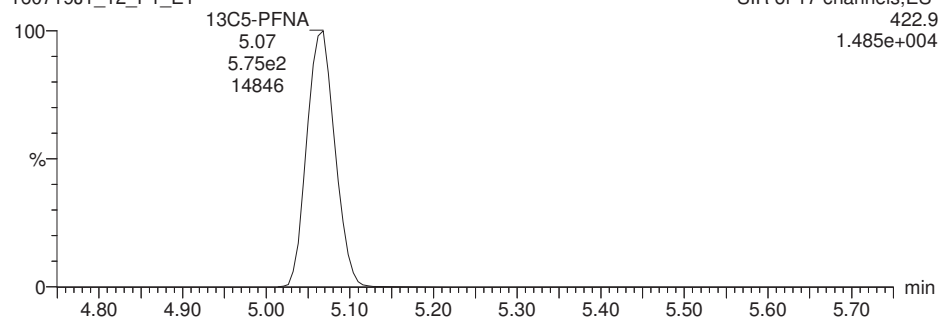
SIR of 17 channels,ES-  
79.93  
8.936e+003



### 13C5-PFNA

160719J1\_12\_P1\_E1

SIR of 17 channels,ES-  
422.9  
1.485e+004





Dataset:        U:\Q2.PRO\Results\160719J1\160719J1\_12.qld

Last Altered:   Wednesday, July 20, 2016 11:02:24 Pacific Daylight Time

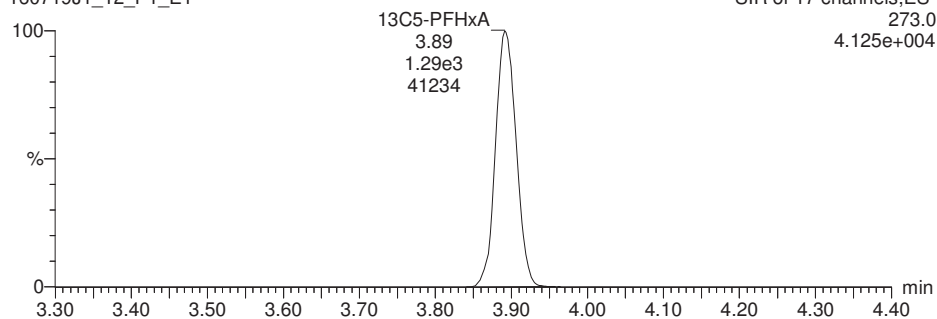
Printed:        Wednesday, July 20, 2016 11:03:14 Pacific Daylight Time

Name: 160719J1\_12.wiff, Date: 19-Jul-2016, Time: 17:08:06, ID: B6G0068-MSD1@10x, Description: Matrix Spike Dup

**13C5-PFHxA**

160719J1\_12\_P1\_E1

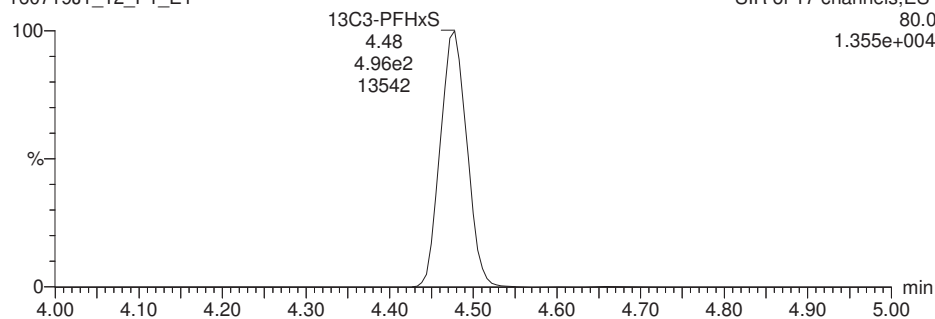
SIR of 17 channels,ES-  
273.0  
4.125e+004



**13C3-PFHxS**

160719J1\_12\_P1\_E1

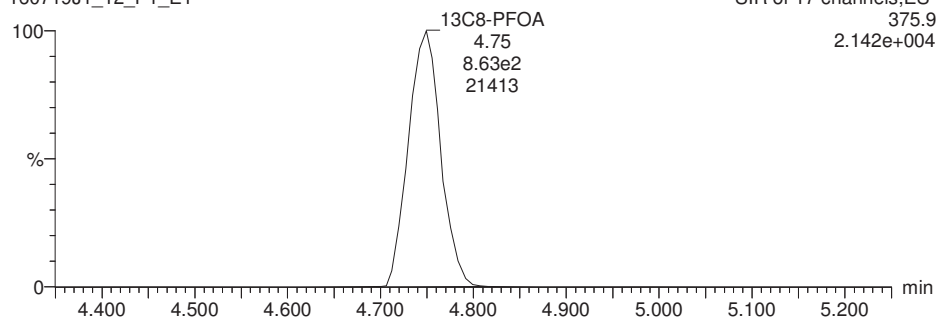
SIR of 17 channels,ES-  
80.0  
1.355e+004



**13C8-PFOA**

160719J1\_12\_P1\_E1

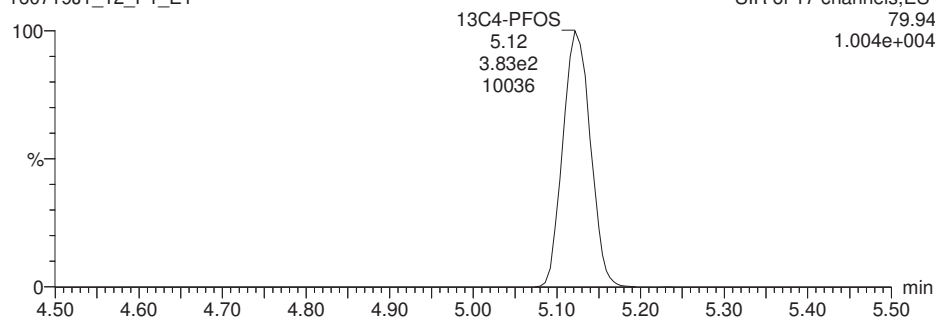
SIR of 17 channels,ES-  
375.9  
2.142e+004



**13C4-PFOS**

160719J1\_12\_P1\_E1

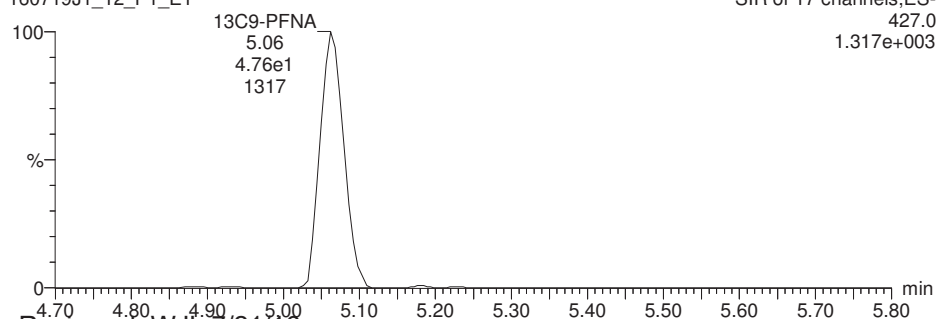
SIR of 17 channels,ES-  
79.94  
1.004e+004



**13C9-PFNA**

160719J1\_12\_P1\_E1

SIR of 17 channels,ES-  
427.0  
1.317e+003



Reviewed: WJL 7/21/16

pw 7/20/16

Dataset: U:\Q2.PRO\Results\160718J1\160718J1\_24.qld

Last Altered: Tuesday, July 19, 2016 10:55:47 Pacific Daylight Time

Printed: Tuesday, July 19, 2016 10:56:21 Pacific Daylight Time

Method: U:\Q2.PRO\MethDB\PFC List 6.mdb 08 Jul 2016 09:57:05

Calibration: U:\Q2.PRO\CurveDB\C18\_VAL-PFC\_Q2\_07-18-16\_L6.cdb 19 Jul 2016 08:45:41

Name: 160718J1\_24.wiff, Date: 18-Jul-2016, Time: 19:33:25, ID: 1600903-07, Description: OF-MW08D-0716

|    | # Name         | Trace | Response | IS Resp | RRF    | Wt/Vol | RT   | Conc. | %Rec  |
|----|----------------|-------|----------|---------|--------|--------|------|-------|-------|
| 1  | 1 PFBS         | 79.9  | 3.19e2   | 6.00e3  |        | 0.120  | 3.48 | 25.8  |       |
| 2  | 2 PFHpA        | 318.9 | 1.89e3   | 9.28e3  |        | 0.120  | 4.36 | 99.4  |       |
| 3  | 3 PFHxS        | 79.91 | 3.88e3   | 1.35e3  |        | 0.120  | 4.48 | 443   |       |
| 4  | 4 PFOA         | 368.9 | 2.19e3   | 8.88e3  |        | 0.120  | 4.75 | 56.4  |       |
| 5  | 5 PFOS         | 79.92 | 8.71e4   | 3.90e3  |        | 0.120  | 5.13 | 4420  | E     |
| 6  | 6 PFNA         | 419.0 | 1.13e3   | 8.08e3  |        | 0.120  | 5.07 | 21.7  |       |
| 7  | 7 13C3-PFBS    | 79.95 | 6.00e3   | 1.12e4  | 0.469  | 0.120  | 3.48 | 118   | 114.1 |
| 8  | 8 13C4-PFHpA   | 321.9 | 9.28e3   | 1.12e4  | 0.822  | 0.120  | 4.36 | 104   | 100.6 |
| 9  | 9 18O2-PFHxS   | 102.9 | 1.35e3   | 5.16e3  | 0.256  | 0.120  | 4.47 | 106   | 102.3 |
| 10 | 10 13C2-PFOA   | 369.9 | 8.88e3   | 8.93e3  | 0.915  | 0.120  | 4.75 | 113   | 108.7 |
| 11 | 11 13C8-PFOS   | 79.93 | 3.90e3   | 4.44e3  | 0.822  | 0.120  | 5.12 | 111   | 106.9 |
| 12 | 12 13C5-PFNA   | 422.9 | 8.08e3   | 5.26e2  | 14.407 | 0.120  | 5.07 | 111   | 106.6 |
| 13 | 13 13C5-PFHxA  | 273.0 | 1.12e4   | 1.12e4  | 1.000  | 0.120  | 3.89 | 104   | 100.0 |
| 14 | 14 13C3-PFHxS  | 80.0  | 5.16e3   | 5.16e3  | 1.000  | 0.120  | 4.47 | 104   | 100.0 |
| 15 | 15 13C8-PFOA   | 375.9 | 8.93e3   | 8.93e3  | 1.000  | 0.120  | 4.75 | 104   | 100.0 |
| 16 | 16 13C4-PFOS   | 79.94 | 4.44e3   | 4.44e3  | 1.000  | 0.120  | 5.12 | 104   | 100.0 |
| 17 | 17 13C9-PFNA   | 427.0 | 5.26e2   | 5.26e2  | 1.000  | 0.120  | 5.07 | 104   | 100.0 |
| 18 | 18 Total PFBS  | 79.9  |          | 6.00e3  |        | 0.120  |      | 26.5  |       |
| 19 | 19 Total PFHxS | 79.91 |          | 1.35e3  |        | 0.120  |      | 514   |       |
| 20 | 20 Total PFOA  | 368.9 |          | 8.88e3  |        | 0.120  |      | 61.6  |       |
| 21 | 21 Total PFOS  | 79.92 |          | 3.90e3  |        | 0.120  |      | 6310  |       |

\* See 1:10 Dilution

Vista Analytical Laboratory Q1

Dataset: U:\Q2.PRO\Results\160718J1\160718J1\_24.qld

Last Altered: Tuesday, July 19, 2016 10:55:47 Pacific Daylight Time

Printed: Tuesday, July 19, 2016 10:56:21 Pacific Daylight Time

Method: U:\Q2.PRO\MethDB\PFC List 6.mdb 08 Jul 2016 09:57:05

Calibration: U:\Q2.PRO\CurveDB\C18\_VAL-PFC\_Q2\_07-18-16\_L6.cdb 19 Jul 2016 08:45:41

Name: 160718J1\_24.wiff, Date: 18-Jul-2016, Time: 19:33:25, ID: 1600903-07, Description: OF-MW08D-0716

## Total PFBS

|   | # Name        | Trace | RT   | Area   | IS Area | Conc. |
|---|---------------|-------|------|--------|---------|-------|
| 1 | 1 PFBS        | 79.9  | 3.48 | 3.19e2 | 6.00e3  | 25.8  |
| 2 | 18 Total PFBS | 79.9  | 3.35 | 8.06e0 | 6.00e3  | 0.651 |

## Total PFHxS

|   | # Name         | Trace | RT   | Area   | IS Area | Conc. |
|---|----------------|-------|------|--------|---------|-------|
| 1 | 3 PFHxS        | 79.91 | 4.48 | 3.88e3 | 1.35e3  | 443   |
| 2 | 19 Total PFHxS | 79.91 | 4.38 | 6.28e2 | 1.35e3  | 69.7  |
| 3 | 19 Total PFHxS | 79.91 | 4.27 | 1.11e1 | 1.35e3  | 1.23  |

## Total PFOA

|   | # Name        | Trace | RT   | Area   | IS Area | Conc. |
|---|---------------|-------|------|--------|---------|-------|
| 1 | 4 PFOA        | 368.9 | 4.75 | 2.19e3 | 8.88e3  | 56.4  |
| 2 | 20 Total PFOA | 368.9 | 4.66 | 2.04e2 | 8.88e3  | 5.22  |

## Total PFOS

|   | # Name        | Trace | RT   | Area   | IS Area | Conc. |
|---|---------------|-------|------|--------|---------|-------|
| 1 | 5 PFOS        | 79.92 | 5.13 | 8.71e4 | 3.90e3  | 4420  |
| 2 | 21 Total PFOS | 79.92 | 5.03 | 4.56e4 | 3.90e3  | 1790  |
| 3 | 21 Total PFOS | 79.92 | 4.93 | 3.00e3 | 3.90e3  | 103   |

Vista Analytical Laboratory Q2

Dataset: U:\Q2.PRO\Results\160718J1\160718J1\_24.qld

Last Altered: Tuesday, July 19, 2016 10:55:47 Pacific Daylight Time

Printed: Tuesday, July 19, 2016 10:56:32 Pacific Daylight Time

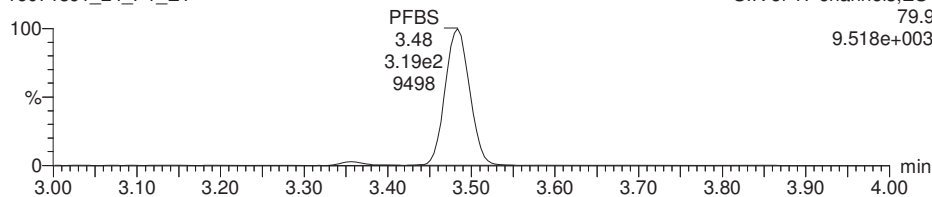
Method: U:\Q2.PRO\MethDB\PFC List 6.mdb 08 Jul 2016 09:57:05

Calibration: U:\Q2.PRO\CurveDB\C18\_VAL-PFC\_Q2\_07-18-16\_L6.cdb 19 Jul 2016 08:45:41

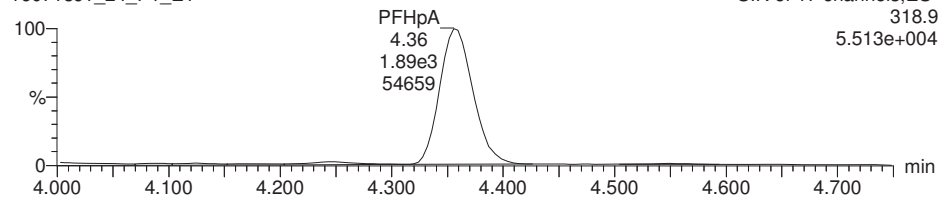
Name: 160718J1\_24.wiff, Date: 18-Jul-2016, Time: 19:33:25, ID: 1600903-07, Description: OF-MW08D-0716

**PFBS**

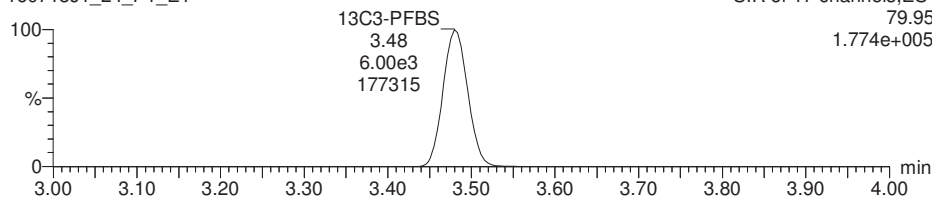
160718J1\_24\_P1\_E1

SIR of 17 channels, ES-  
79.9  
9.518e+003**PFHpA**

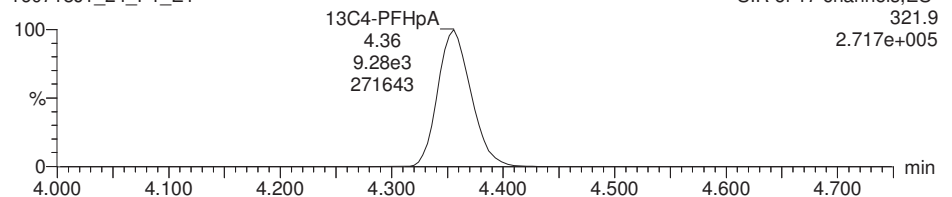
160718J1\_24\_P1\_E1

SIR of 17 channels, ES-  
318.9  
5.513e+004**13C3-PFBS**

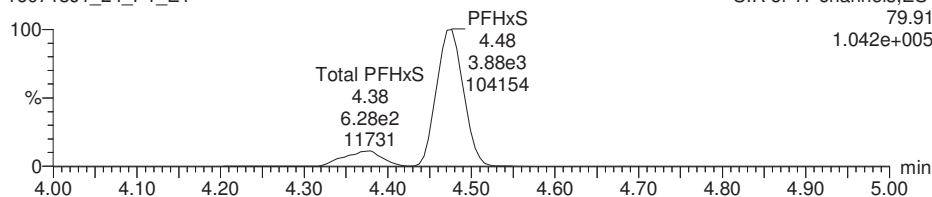
160718J1\_24\_P1\_E1

SIR of 17 channels, ES-  
79.95  
1.774e+005**13C4-PFHpA**

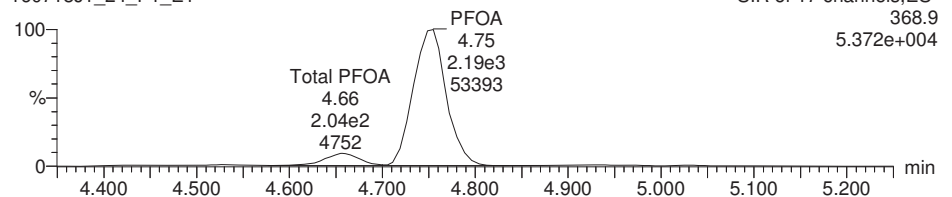
160718J1\_24\_P1\_E1

SIR of 17 channels, ES-  
321.9  
2.717e+005**PFHxS**

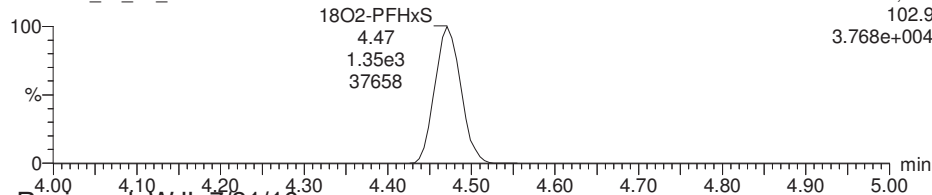
160718J1\_24\_P1\_E1

SIR of 17 channels, ES-  
79.91  
1.042e+005**PFOA**

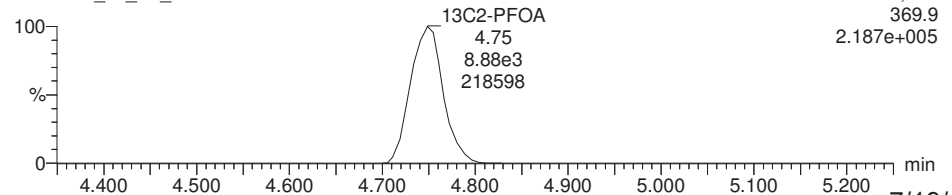
160718J1\_24\_P1\_E1

SIR of 17 channels, ES-  
368.9  
5.372e+004**18O2-PFHxS**

160718J1\_24\_P1\_E1

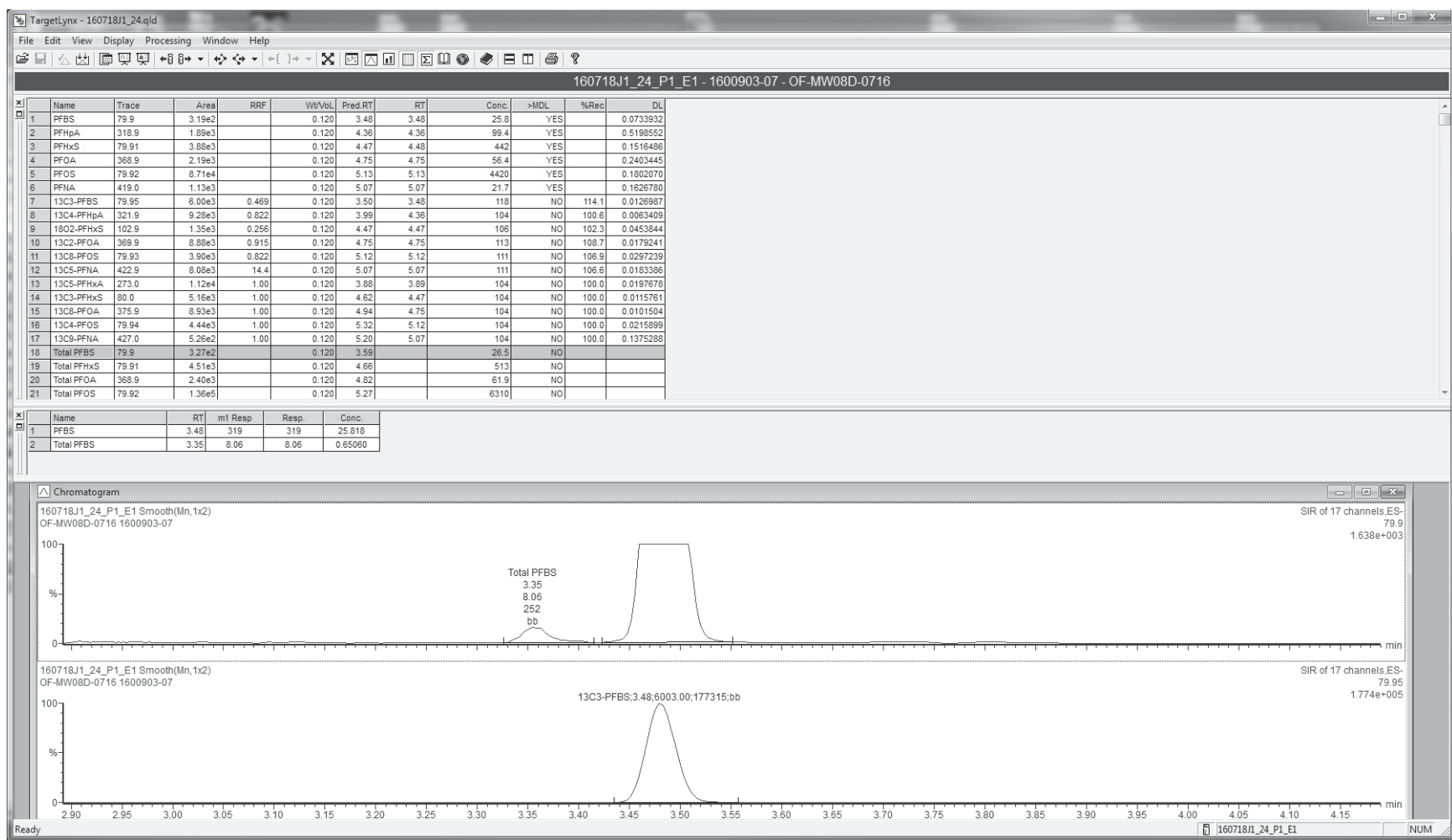
SIR of 17 channels, ES-  
102.9  
3.768e+004**13C2-PFOA**

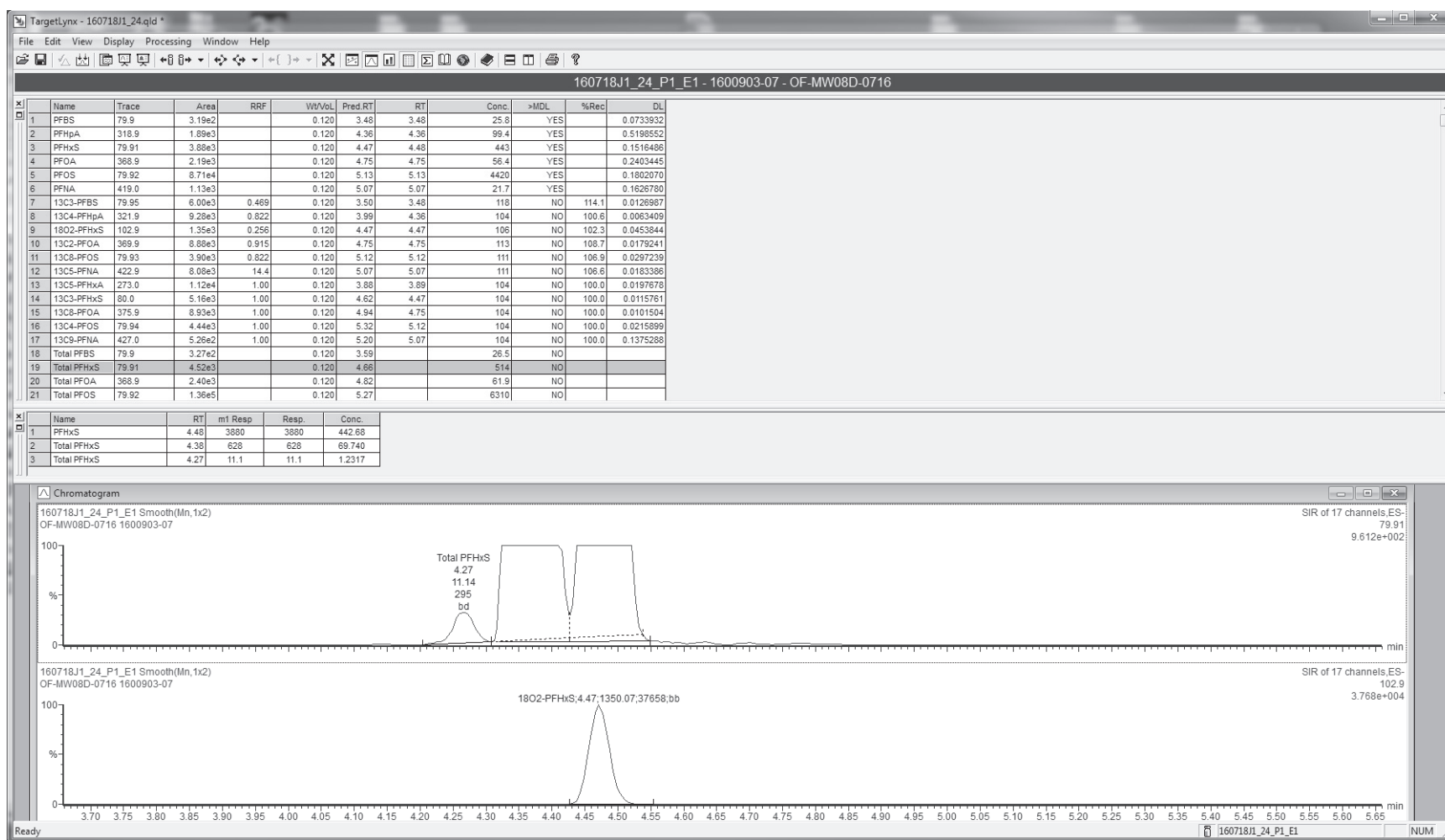
160718J1\_24\_P1\_E1

SIR of 17 channels, ES-  
369.9  
2.187e+005

Reviewed: WJL 7/21/16

pw 7/19/16





Dataset:        U:\Q2.PRO\Results\160718J1\160718J1\_24.qld

Last Altered:   Tuesday, July 19, 2016 10:55:47 Pacific Daylight Time

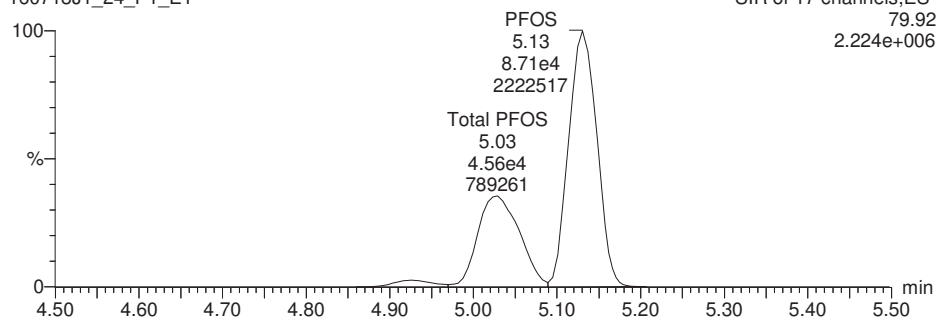
Printed:        Tuesday, July 19, 2016 10:56:32 Pacific Daylight Time

Name: 160718J1\_24.wiff, Date: 18-Jul-2016, Time: 19:33:25, ID: 1600903-07, Description: OF-MW08D-0716

### PFOS

160718J1\_24\_P1\_E1

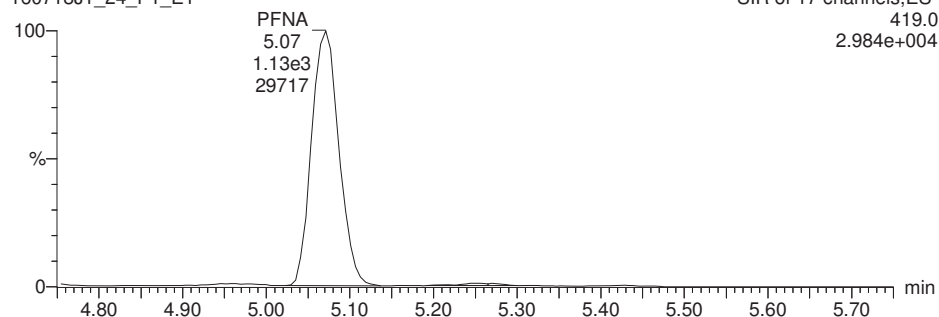
SIR of 17 channels,ES-  
79.92  
2.224e+006



### PFNA

160718J1\_24\_P1\_E1

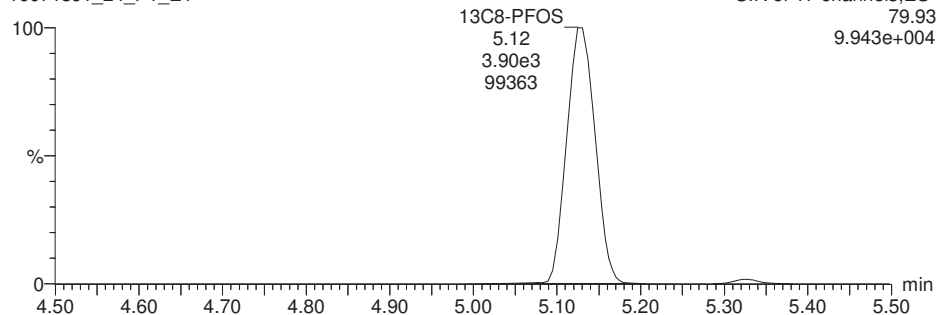
SIR of 17 channels,ES-  
419.0  
2.984e+004



### 13C8-PFOS

160718J1\_24\_P1\_E1

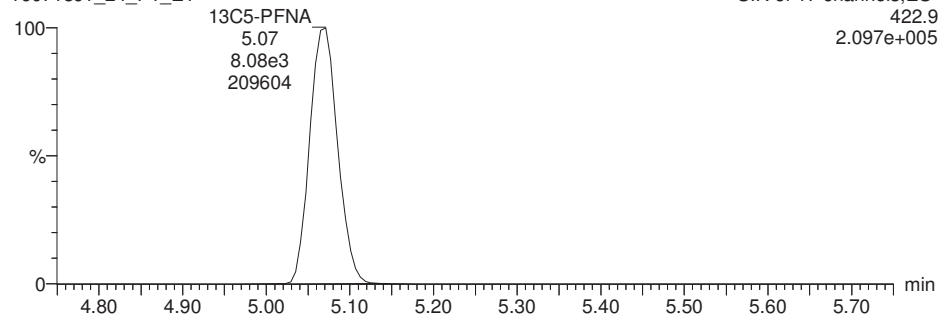
SIR of 17 channels,ES-  
79.93  
9.943e+004

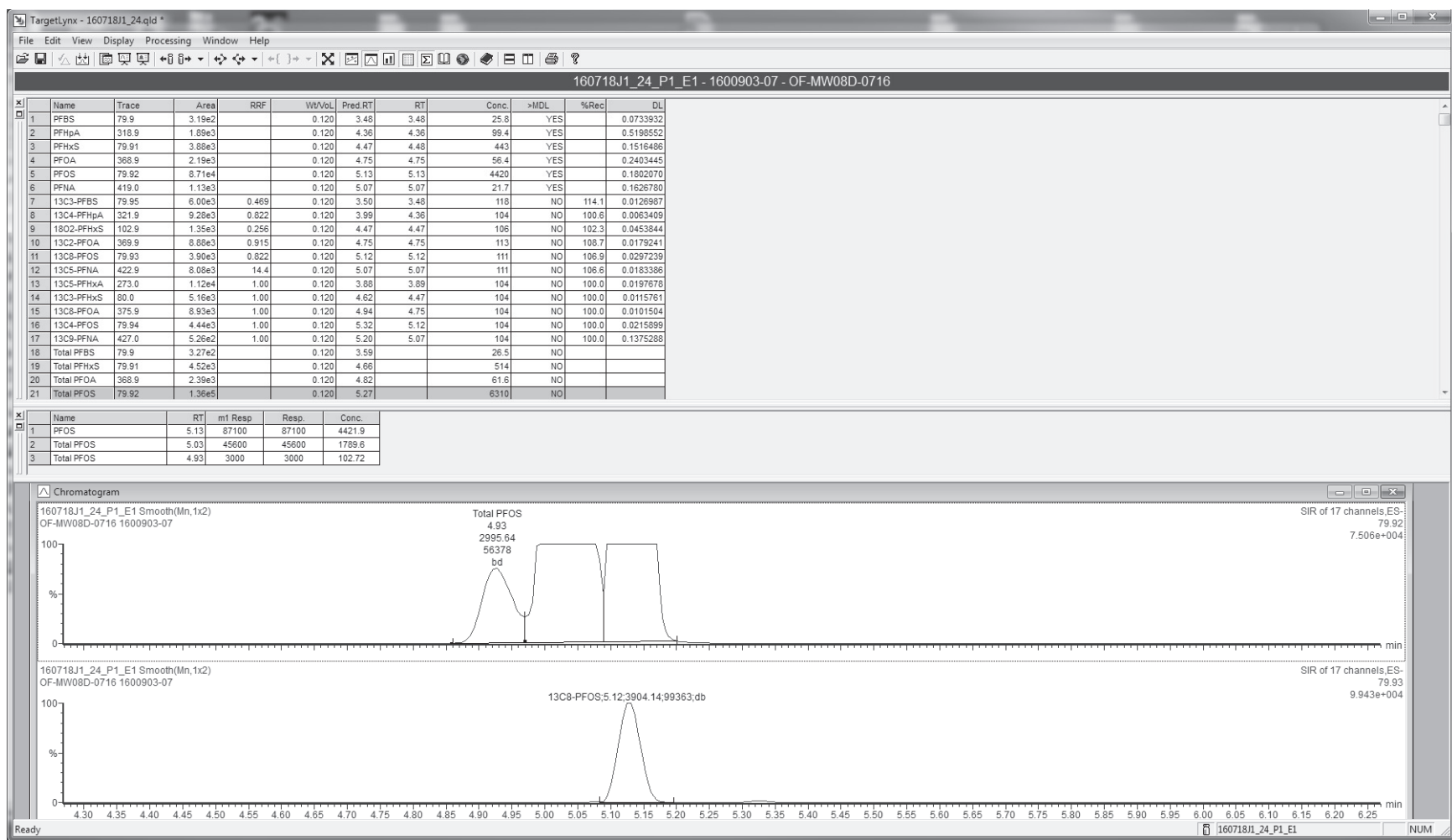


### 13C5-PFNA

160718J1\_24\_P1\_E1

SIR of 17 channels,ES-  
422.9  
2.097e+005







Dataset:        U:\Q2.PRO\Results\160718J1\160718J1\_24.qld

Last Altered:   Tuesday, July 19, 2016 10:55:47 Pacific Daylight Time

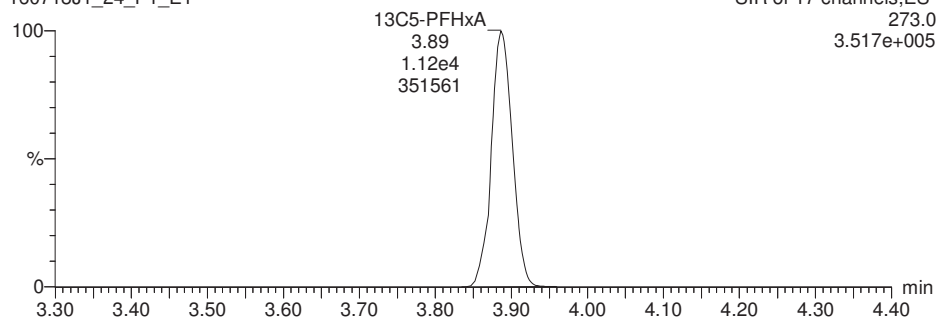
Printed:        Tuesday, July 19, 2016 10:56:32 Pacific Daylight Time

Name: 160718J1\_24.wiff, Date: 18-Jul-2016, Time: 19:33:25, ID: 1600903-07, Description: OF-MW08D-0716

**13C5-PFHxA**

160718J1\_24\_P1\_E1

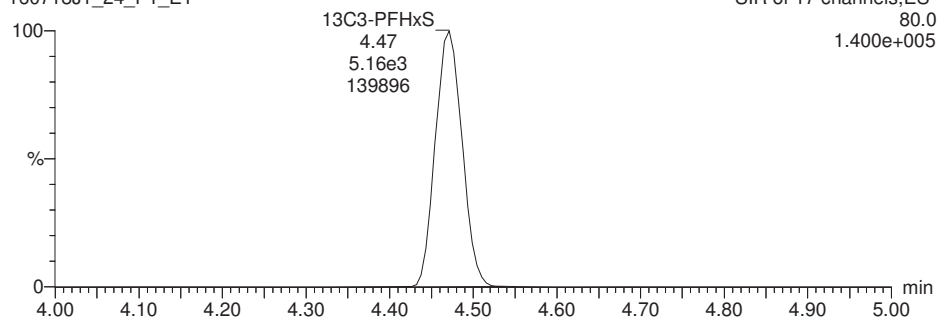
SIR of 17 channels,ES-  
273.0  
3.517e+005



**13C3-PFHxS**

160718J1\_24\_P1\_E1

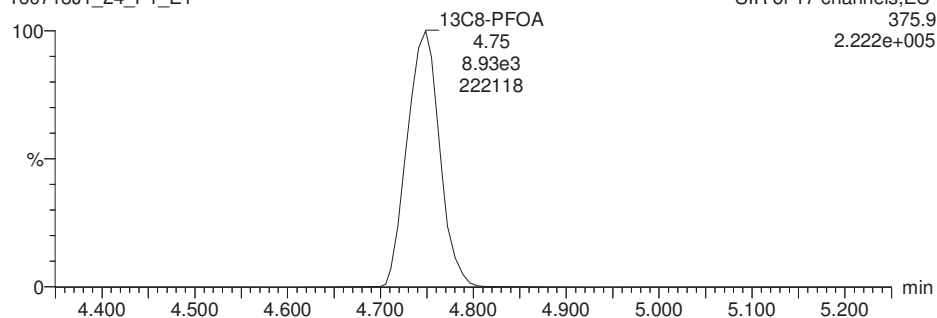
SIR of 17 channels,ES-  
80.0  
1.400e+005



**13C8-PFOA**

160718J1\_24\_P1\_E1

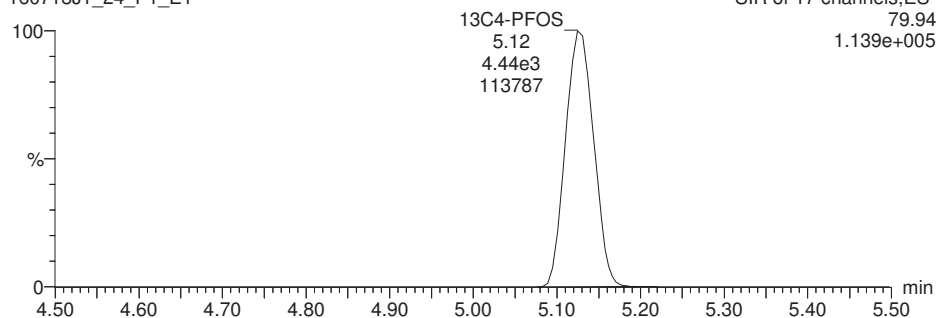
SIR of 17 channels,ES-  
375.9  
2.222e+005



**13C4-PFOS**

160718J1\_24\_P1\_E1

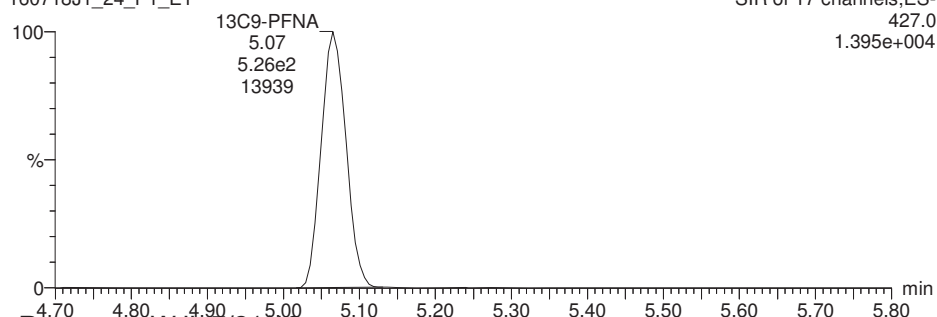
SIR of 17 channels,ES-  
79.94  
1.139e+005



**13C9-PFNA**

160718J1\_24\_P1\_E1

SIR of 17 channels,ES-  
427.0  
1.395e+004



Reviewed: WJL 7/21/16

pw 7/19/16

Dataset: U:\Q2.PRO\Results\160719J1\160719J1\_10.qld

Last Altered: Wednesday, July 20, 2016 10:41:06 Pacific Daylight Time

Printed: Wednesday, July 20, 2016 10:47:34 Pacific Daylight Time

Method: U:\Q2.PRO\MethDB\PFC List 6.mdb 08 Jul 2016 09:57:05

Calibration: U:\Q2.PRO\CurveDB\C18\_VAL-PFC\_Q2\_07-18-16\_L6.cdb 19 Jul 2016 08:45:41

Name: 160719J1\_10.wiff, Date: 19-Jul-2016, Time: 16:14:50, ID: 1600903-07@10x, Description: OF-MW08D-0716

|   | # Name        | Trace | Response | IS Resp | RRF   | Wt/Vol | RT   | Conc. | %Rec  |
|---|---------------|-------|----------|---------|-------|--------|------|-------|-------|
| 1 | 5 PFOS        | 79.92 | 6.39e3   | 2.68e2  |       | 0.120  | 5.14 | 5120  |       |
| 2 | 11 13C8-PFOS  | 79.93 | 2.68e2   | 3.00e2  | 0.822 | 0.120  | 5.13 | 113   | 108.7 |
| 3 | 16 13C4-PFOS  | 79.94 | 3.00e2   | 3.00e2  | 1.000 | 0.120  | 5.13 | 104   | 100.0 |
| 4 | 21 Total PFOS | 79.92 |          | 2.68e2  |       | 0.120  |      | 6880  |       |

\*

\*1:10 Dilution

Vista Analytical Laboratory Q1

Dataset: U:\Q2.PRO\Results\160719J1\160719J1\_10.qld

Last Altered: Wednesday, July 20, 2016 10:41:06 Pacific Daylight Time

Printed: Wednesday, July 20, 2016 10:47:34 Pacific Daylight Time

Method: U:\Q2.PRO\MethDB\PFC List 6.mdb 08 Jul 2016 09:57:05

Calibration: U:\Q2.PRO\CurveDB\C18\_VAL-PFC\_Q2\_07-18-16\_L6.cdb 19 Jul 2016 08:45:41

Name: 160719J1\_10.wiff, Date: 19-Jul-2016, Time: 16:14:50, ID: 1600903-07@10x, Description: OF-MW08D-0716

## Total PFBS

|   | # Name | Trace | RT   | Area   | IS Area | Conc. |
|---|--------|-------|------|--------|---------|-------|
| 1 | 1 PFBS | 79.9  | 3.49 | 3.38e1 | 7.09e2  | 23.1  |

## Total PFHxS

|   | # Name         | Trace | RT   | Area   | IS Area | Conc. |
|---|----------------|-------|------|--------|---------|-------|
| 1 | 3 PFHxS        | 79.91 | 4.48 | 3.41e2 | 1.26e2  | 416   |
| 2 | 19 Total PFHxS | 79.91 | 4.38 | 5.64e1 | 1.26e2  | 67.2  |
| 3 | 19 Total PFHxS | 79.91 | 4.28 | 1.48e0 | 1.26e2  | 1.76  |

## Total PFOA

|   | # Name        | Trace | RT   | Area   | IS Area | Conc. |
|---|---------------|-------|------|--------|---------|-------|
| 1 | 20 Total PFOA | 368.9 | 4.68 | 6.72e0 | 7.13e2  | 2.14  |
| 2 | 20 Total PFOA | 368.9 | 4.67 | 1.24e1 | 7.13e2  | 3.96  |
| 3 | 20 Total PFOA | 368.9 | 4.92 | 1.43e1 | 7.13e2  | 4.57  |
| 4 | 4 PFOA        | 368.9 | 4.75 | 1.89e2 | 7.13e2  | 60.7  |

## Total PFOS

|   | # Name        | Trace | RT   | Area   | IS Area | Conc. |
|---|---------------|-------|------|--------|---------|-------|
| 1 | 5 PFOS        | 79.92 | 5.14 | 6.39e3 | 2.68e2  | 5120  |
| 2 | 21 Total PFOS | 79.92 | 5.03 | 2.92e3 | 2.68e2  | 1650  |
| 3 | 21 Total PFOS | 79.92 | 4.93 | 2.26e2 | 2.68e2  | 113   |

Vista Analytical Laboratory Q2

Dataset: U:\Q2.PRO\Results\160719J1\160719J1\_10.qld

Last Altered: Wednesday, July 20, 2016 10:41:06 Pacific Daylight Time

Printed: Wednesday, July 20, 2016 10:47:47 Pacific Daylight Time

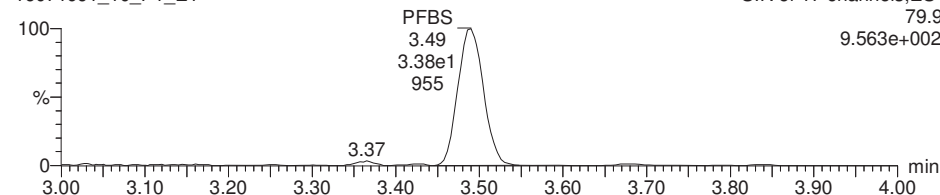
Method: U:\Q2.PRO\MethDB\PFC List 6.mdb 08 Jul 2016 09:57:05

Calibration: U:\Q2.PRO\CurveDB\C18\_VAL-PFC\_Q2\_07-18-16\_L6.cdb 19 Jul 2016 08:45:41

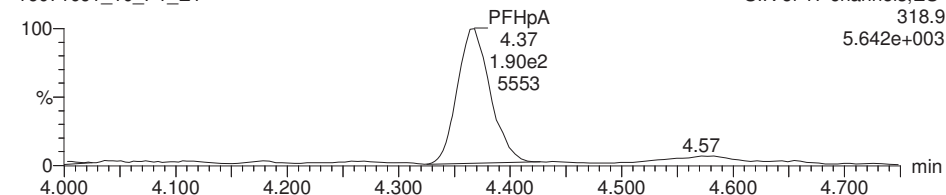
Name: 160719J1\_10.wiff, Date: 19-Jul-2016, Time: 16:14:50, ID: 1600903-07@10x, Description: OF-MW08D-0716

**PFBS**

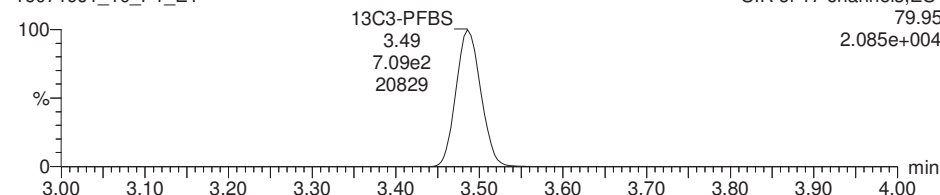
160719J1\_10\_P1\_E1

SIR of 17 channels, ES-  
79.9  
9.563e+002**PFHpA**

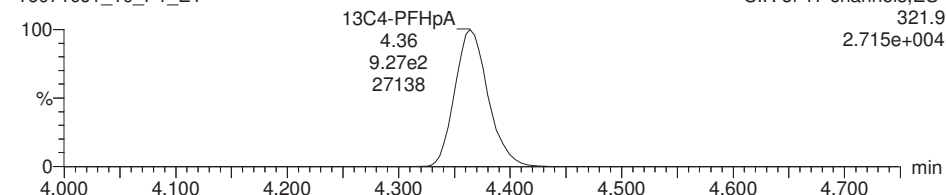
160719J1\_10\_P1\_E1

SIR of 17 channels, ES-  
318.9  
5.642e+003**13C3-PFBS**

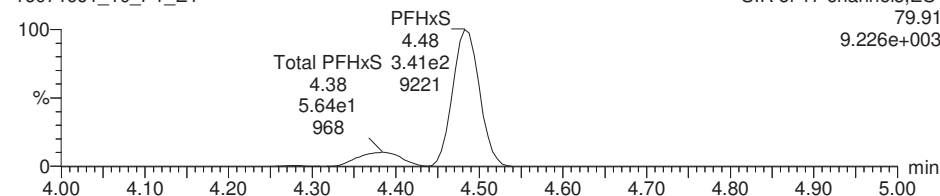
160719J1\_10\_P1\_E1

SIR of 17 channels, ES-  
79.95  
2.085e+004**13C4-PFHpA**

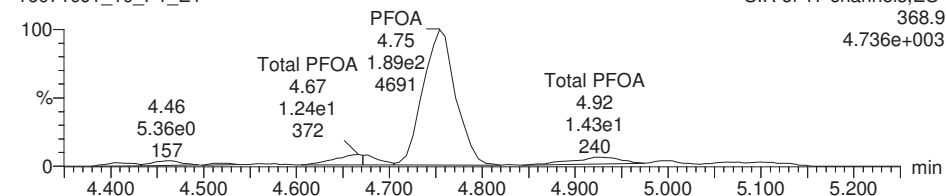
160719J1\_10\_P1\_E1

SIR of 17 channels, ES-  
321.9  
2.715e+004**PFHxS**

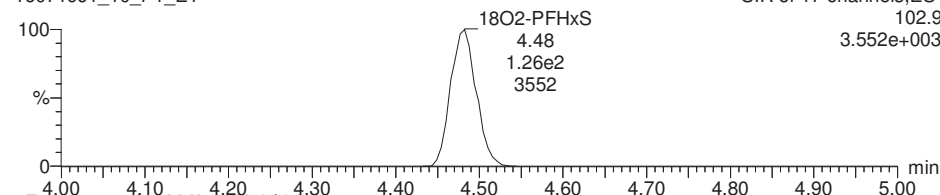
160719J1\_10\_P1\_E1

SIR of 17 channels, ES-  
79.91  
9.226e+003**PFOA**

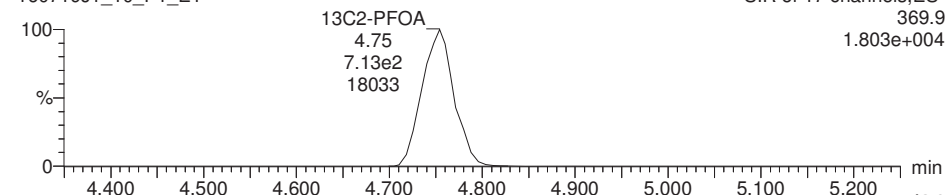
160719J1\_10\_P1\_E1

SIR of 17 channels, ES-  
368.9  
4.736e+003**18O2-PFHxS**

160719J1\_10\_P1\_E1

SIR of 17 channels, ES-  
102.9  
3.552e+003**13C2-PFOA**

160719J1\_10\_P1\_E1

SIR of 17 channels, ES-  
369.9  
1.803e+004

Reviewed: WJL 7/21/16

pw 7/20/16

Dataset:        U:\Q2.PRO\Results\160719J1\160719J1\_10.qld

Last Altered:   Wednesday, July 20, 2016 10:41:06 Pacific Daylight Time

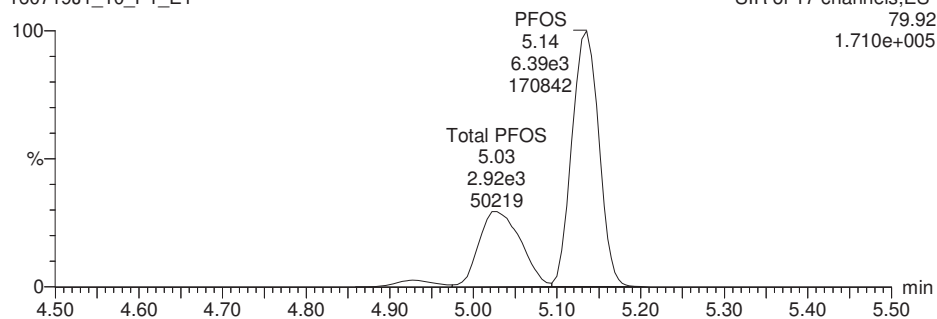
Printed:        Wednesday, July 20, 2016 10:47:47 Pacific Daylight Time

Name: 160719J1\_10.wiff, Date: 19-Jul-2016, Time: 16:14:50, ID: 1600903-07@10x, Description: OF-MW08D-0716

### PFOS

160719J1\_10\_P1\_E1

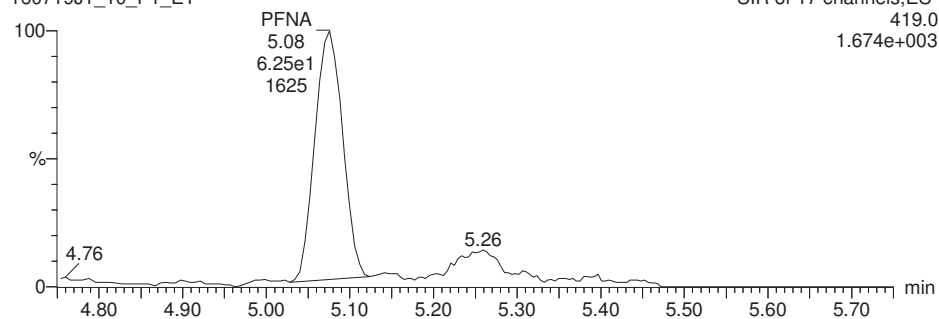
SIR of 17 channels,ES-  
79.92  
1.710e+005



### PFNA

160719J1\_10\_P1\_E1

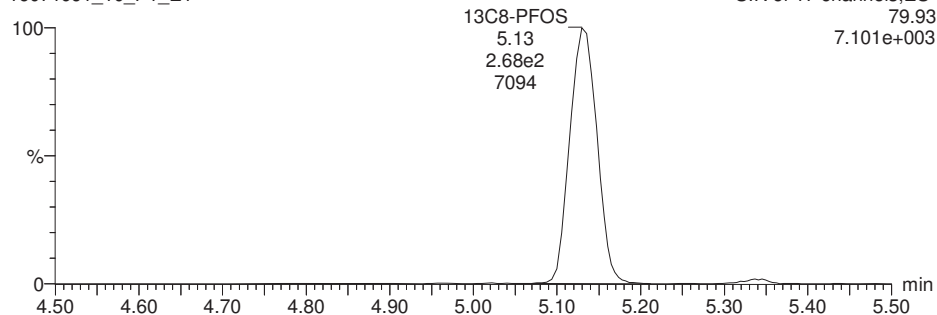
SIR of 17 channels,ES-  
419.0  
1.674e+003



### 13C8-PFOS

160719J1\_10\_P1\_E1

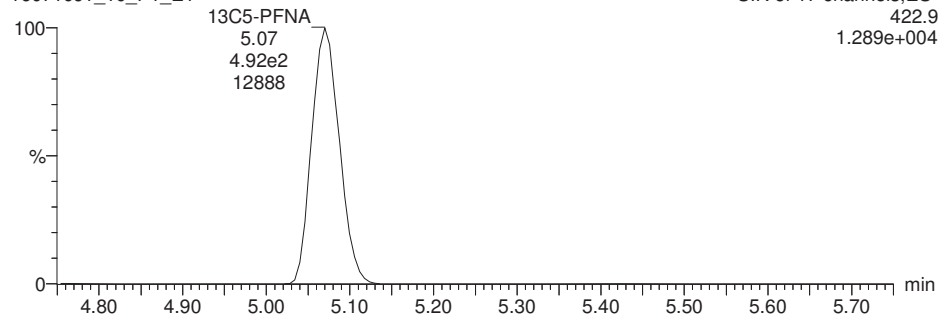
SIR of 17 channels,ES-  
79.93  
7.101e+003

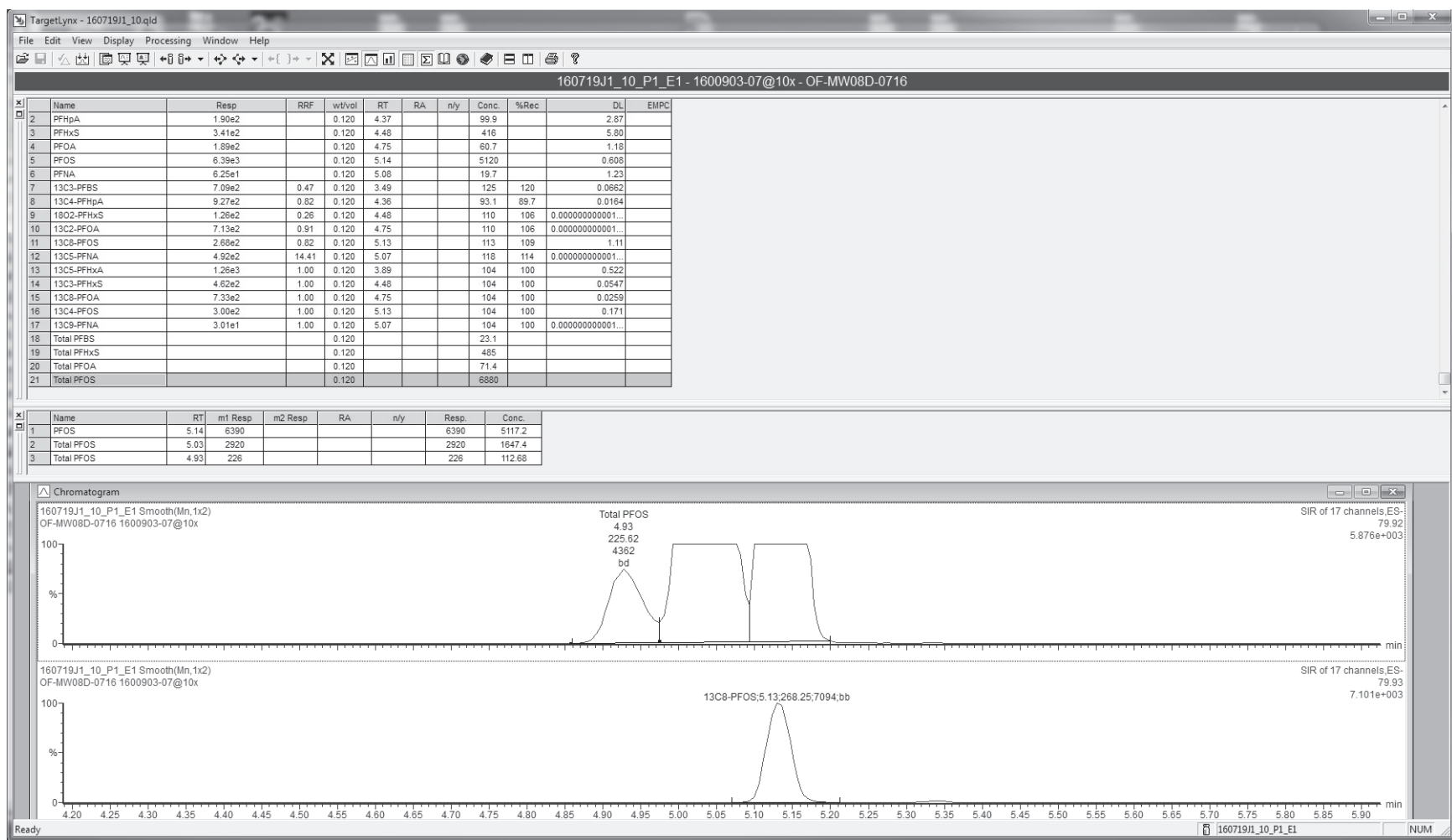


### 13C5-PFNA

160719J1\_10\_P1\_E1

SIR of 17 channels,ES-  
422.9  
1.289e+004





Vista Analytical Laboratory Q2

Dataset: U:\Q2.PRO\Results\160719J1\160719J1\_10.qld

Last Altered: Wednesday, July 20, 2016 10:41:06 Pacific Daylight Time

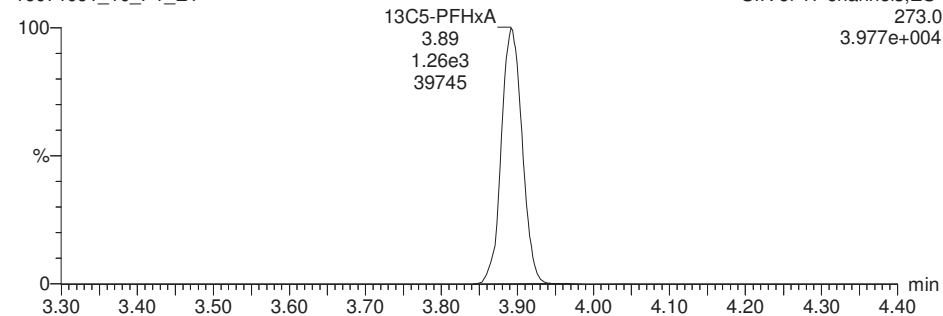
Printed: Wednesday, July 20, 2016 10:47:47 Pacific Daylight Time

Name: 160719J1\_10.wiff, Date: 19-Jul-2016, Time: 16:14:50, ID: 1600903-07@10x, Description: OF-MW08D-0716

### 13C5-PFHxA

160719J1\_10\_P1\_E1

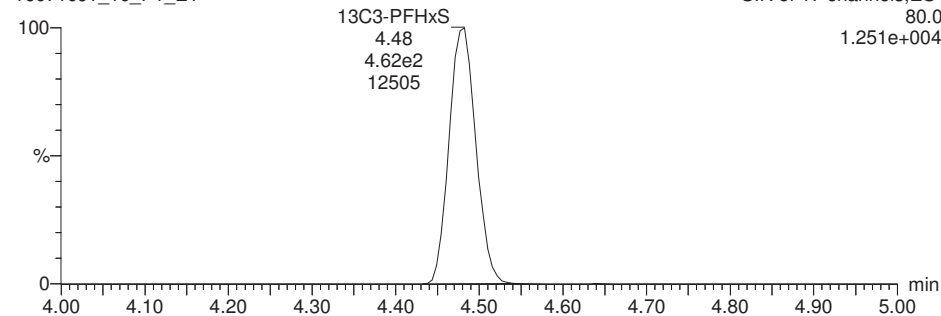
SIR of 17 channels,ES-  
273.0  
3.977e+004



### 13C3-PFHxS

160719J1\_10\_P1\_E1

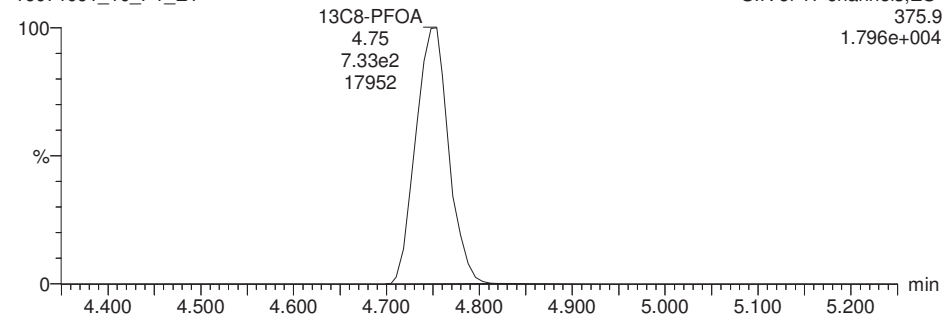
SIR of 17 channels,ES-  
80.0  
1.251e+004



### 13C8-PFOA

160719J1\_10\_P1\_E1

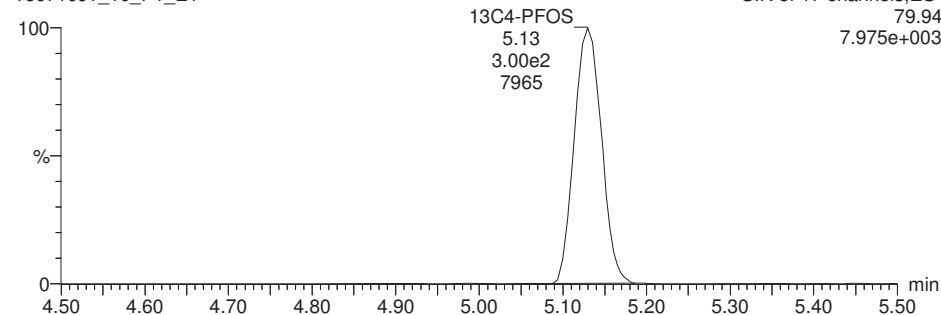
SIR of 17 channels,ES-  
375.9  
1.796e+004



### 13C4-PFOS

160719J1\_10\_P1\_E1

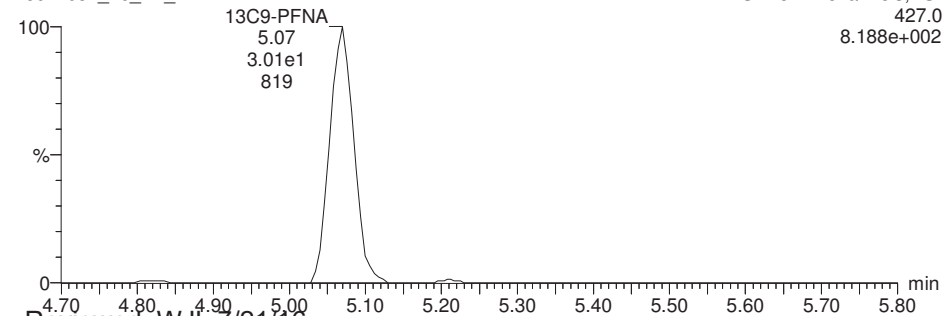
SIR of 17 channels,ES-  
79.94  
7.975e+003



### 13C9-PFNA

160719J1\_10\_P1\_E1

SIR of 17 channels,ES-  
427.0  
8.188e+002



Reviewed: WJL 7/21/16

pw 7/20/16

Dataset: U:\Q2.PRO\Results\160718J1\160718J1\_25.qld

Last Altered: Tuesday, July 19, 2016 11:04:42 Pacific Daylight Time

Printed: Tuesday, July 19, 2016 11:05:31 Pacific Daylight Time

Method: U:\Q2.PRO\MethDB\PFC List 6.mdb 08 Jul 2016 09:57:05

Calibration: U:\Q2.PRO\CurveDB\C18\_VAL-PFC\_Q2\_07-18-16\_L6.cdb 19 Jul 2016 08:45:41

Name: 160718J1\_25.wiff, Date: 18-Jul-2016, Time: 19:45:38, ID: 1600903-08, Description: OF-MW34-0716

|    | # Name         | Trace | Response | IS Resp | RRF    | Wt/Vol | RT   | Conc. | %Rec  |
|----|----------------|-------|----------|---------|--------|--------|------|-------|-------|
| 1  | 1 PFBS         | 79.9  | 8.54e0   | 6.21e3  |        | 0.123  | 3.49 | 0.651 |       |
| 2  | 2 PFHpA        | 318.9 |          | 9.89e3  |        | 0.123  |      |       |       |
| 3  | 3 PFHxS        | 79.91 | 3.21e1   | 1.46e3  |        | 0.123  | 4.48 | 3.22  |       |
| 4  | 4 PFOA         | 368.9 | 3.23e1   | 8.35e3  |        | 0.123  | 4.76 | 0.858 |       |
| 5  | 5 PFOS         | 79.92 | 1.35e2   | 4.40e3  |        | 0.123  | 5.13 | 3.99  |       |
| 6  | 6 PFNA         | 419.0 | 1.12e1   | 8.08e3  |        | 0.123  | 5.07 | 0.210 |       |
| 7  | 7 13C3-PFBS    | 79.95 | 6.21e3   | 1.17e4  | 0.469  | 0.123  | 3.49 | 115   | 113.5 |
| 8  | 8 13C4-PFHpA   | 321.9 | 9.89e3   | 1.17e4  | 0.822  | 0.123  | 4.36 | 104   | 102.9 |
| 9  | 9 18O2-PFHxS   | 102.9 | 1.46e3   | 5.17e3  | 0.256  | 0.123  | 4.48 | 112   | 110.2 |
| 10 | 10 13C2-PFOA   | 369.9 | 8.35e3   | 9.78e3  | 0.915  | 0.123  | 4.75 | 94.7  | 93.4  |
| 11 | 11 13C8-PFOS   | 79.93 | 4.40e3   | 4.77e3  | 0.822  | 0.123  | 5.13 | 114   | 112.0 |
| 12 | 12 13C5-PFNA   | 422.9 | 8.08e3   | 5.28e2  | 14.407 | 0.123  | 5.06 | 108   | 106.2 |
| 13 | 13 13C5-PFHxA  | 273.0 | 1.17e4   | 1.17e4  | 1.000  | 0.123  | 3.89 | 101   | 100.0 |
| 14 | 14 13C3-PFHxS  | 80.0  | 5.17e3   | 5.17e3  | 1.000  | 0.123  | 4.47 | 101   | 100.0 |
| 15 | 15 13C8-PFOA   | 375.9 | 9.78e3   | 9.78e3  | 1.000  | 0.123  | 4.75 | 101   | 100.0 |
| 16 | 16 13C4-PFOS   | 79.94 | 4.77e3   | 4.77e3  | 1.000  | 0.123  | 5.12 | 101   | 100.0 |
| 17 | 17 13C9-PFNA   | 427.0 | 5.28e2   | 5.28e2  | 1.000  | 0.123  | 5.06 | 101   | 100.0 |
| 18 | 18 Total PFBS  | 79.9  |          | 6.21e3  |        | 0.123  |      | 0.651 |       |
| 19 | 19 Total PFHxS | 79.91 |          | 1.46e3  |        | 0.123  |      | 3.65  |       |
| 20 | 20 Total PFOA  | 368.9 |          | 8.35e3  |        | 0.123  |      | 0.858 |       |
| 21 | 21 Total PFOS  | 79.92 |          | 4.40e3  |        | 0.123  |      | 6.15  |       |



Vista Analytical Laboratory Q1

Dataset: U:\Q2.PRO\Results\160718J1\160718J1\_25.qld

Last Altered: Tuesday, July 19, 2016 11:04:42 Pacific Daylight Time

Printed: Tuesday, July 19, 2016 11:05:31 Pacific Daylight Time

Method: U:\Q2.PRO\MethDB\PFC List 6.mdb 08 Jul 2016 09:57:05

Calibration: U:\Q2.PRO\CurveDB\C18\_VAL-PFC\_Q2\_07-18-16\_L6.cdb 19 Jul 2016 08:45:41

Name: 160718J1\_25.wiff, Date: 18-Jul-2016, Time: 19:45:38, ID: 1600903-08, Description: OF-MW34-0716

## Total PFBS

|   | # Name | Trace | RT   | Area   | IS Area | Conc. |
|---|--------|-------|------|--------|---------|-------|
| 1 | 1 PFBS | 79.9  | 3.49 | 8.54e0 | 6.21e3  | 0.651 |

## Total PFHxS

|   | # Name         | Trace | RT   | Area   | IS Area | Conc. |
|---|----------------|-------|------|--------|---------|-------|
| 1 | 3 PFHxS        | 79.91 | 4.48 | 3.21e1 | 1.46e3  | 3.22  |
| 2 | 19 Total PFHxS | 79.91 | 4.38 | 2.42e0 | 1.46e3  | 0.242 |
| 3 | 19 Total PFHxS | 79.91 | 4.34 | 1.89e0 | 1.46e3  | 0.189 |

## Total PFOA

|   | # Name | Trace | RT   | Area   | IS Area | Conc. |
|---|--------|-------|------|--------|---------|-------|
| 1 | 4 PFOA | 368.9 | 4.76 | 3.23e1 | 8.35e3  | 0.858 |

## Total PFOS

|   | # Name        | Trace | RT   | Area   | IS Area | Conc. |
|---|---------------|-------|------|--------|---------|-------|
| 1 | 5 PFOS        | 79.92 | 5.13 | 1.35e2 | 4.40e3  | 3.99  |
| 2 | 21 Total PFOS | 79.92 | 5.03 | 6.90e1 | 4.40e3  | 2.03  |
| 3 | 21 Total PFOS | 79.92 | 4.92 | 4.29e0 | 4.40e3  | 0.127 |

Dataset:        U:\Q2.PRO\Results\160718J1\160718J1\_25.qld

Last Altered:   Tuesday, July 19, 2016 11:04:42 Pacific Daylight Time

Printed:        Tuesday, July 19, 2016 11:05:23 Pacific Daylight Time

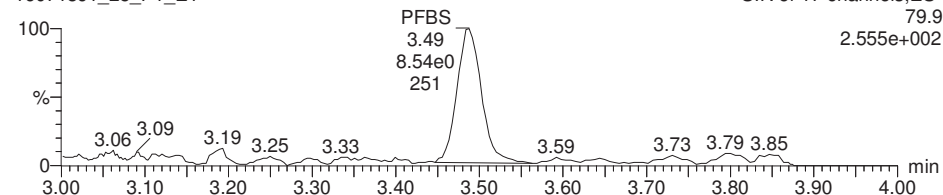
Method: U:\Q2.PRO\MethDB\PFC List 6.mdb 08 Jul 2016 09:57:05

Calibration: U:\Q2.PRO\CurveDB\C18\_VAL-PFC\_Q2\_07-18-16\_L6.cdb 19 Jul 2016 08:45:41

Name: 160718J1\_25.wiff, Date: 18-Jul-2016, Time: 19:45:38, ID: 1600903-08, Description: OF-MW34-0716

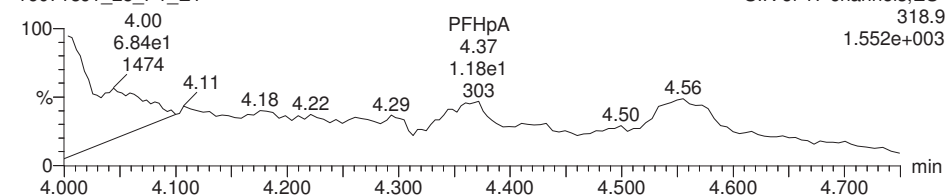
### PFBS

160718J1\_25\_P1\_E1



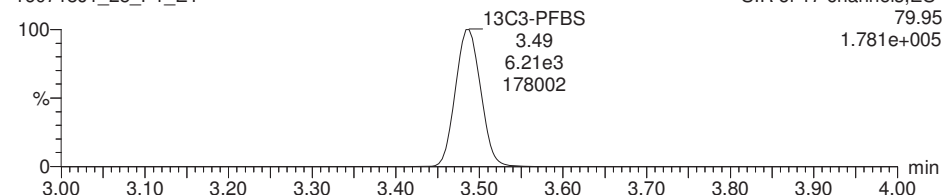
### PFHpA

160718J1\_25\_P1\_E1



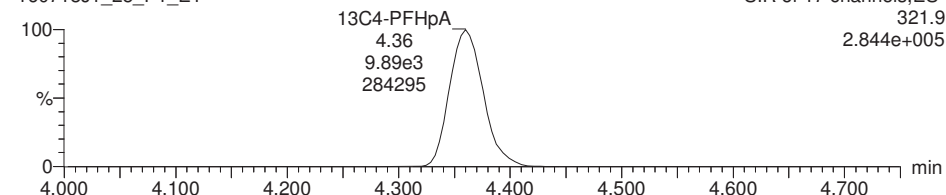
### 13C3-PFBS

160718J1\_25\_P1\_E1



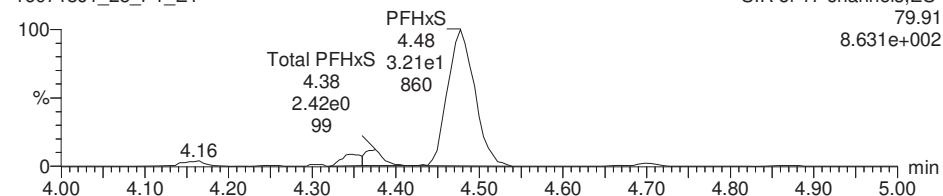
### 13C4-PFHpA

160718J1\_25\_P1\_E1



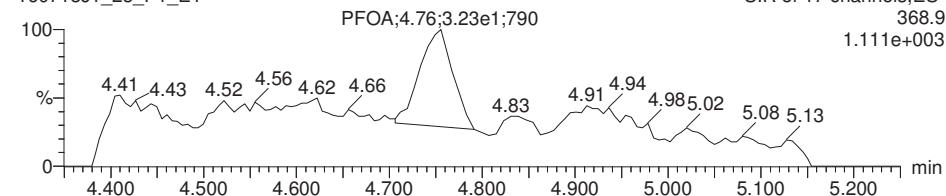
### PFHxS

160718J1\_25\_P1\_E1



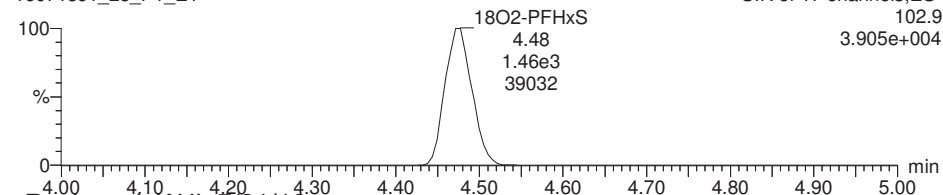
### PFOA

160718J1\_25\_P1\_E1



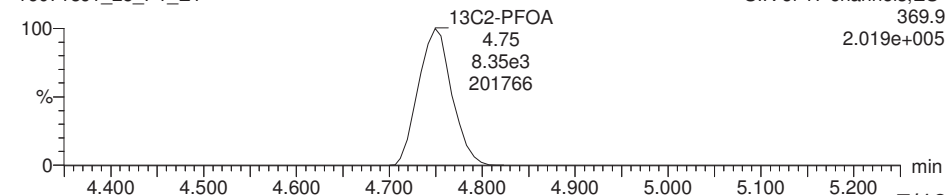
### 18O2-PFHxS

160718J1\_25\_P1\_E1



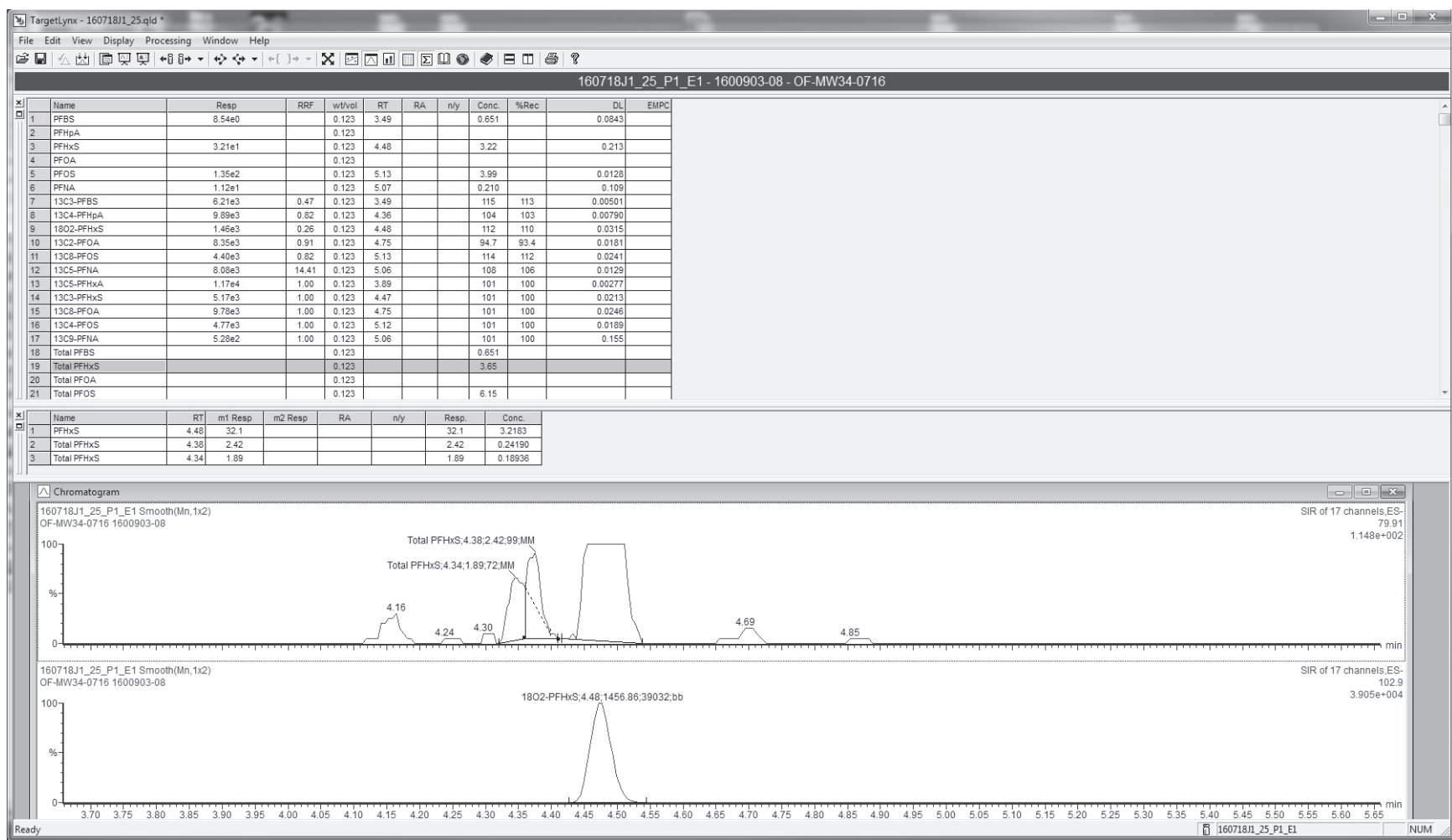
### 13C2-PFOA

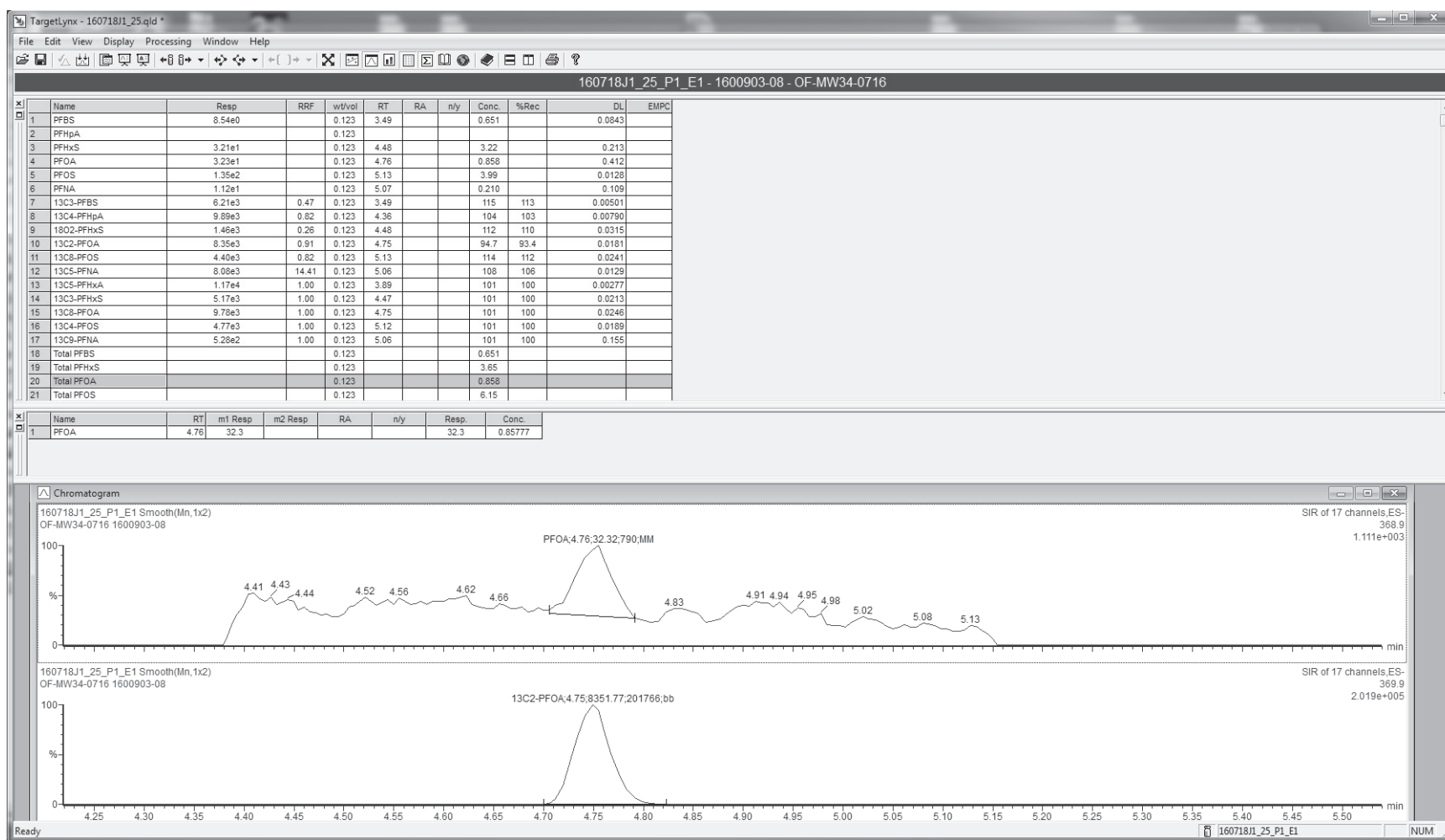
160718J1\_25\_P1\_E1



Reviewed: WJL 7/21/16

pw 7/19/16





Dataset:        U:\Q2.PRO\Results\160718J1\160718J1\_25.qld

Last Altered:   Tuesday, July 19, 2016 11:04:42 Pacific Daylight Time

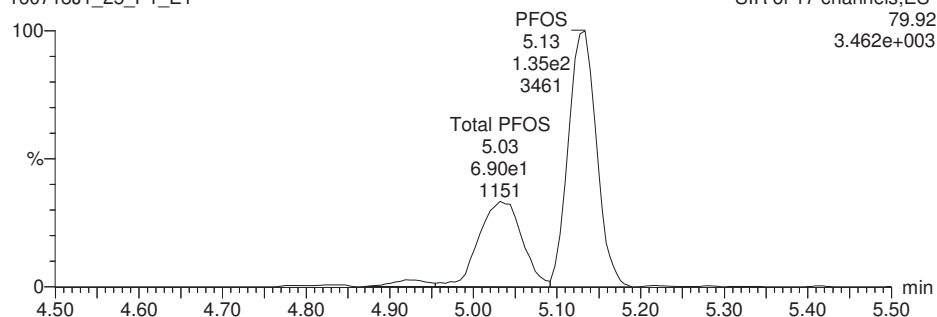
Printed:        Tuesday, July 19, 2016 11:05:23 Pacific Daylight Time

Name: 160718J1\_25.wiff, Date: 18-Jul-2016, Time: 19:45:38, ID: 1600903-08, Description: OF-MW34-0716

### PFOS

160718J1\_25\_P1\_E1

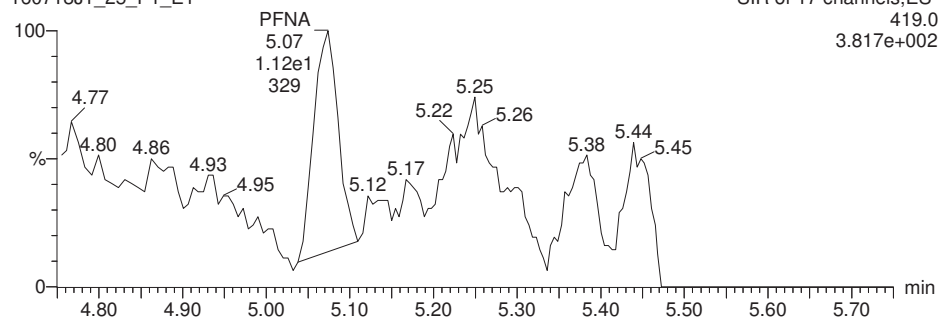
SIR of 17 channels,ES-  
79.92  
3.462e+003



### PFNA

160718J1\_25\_P1\_E1

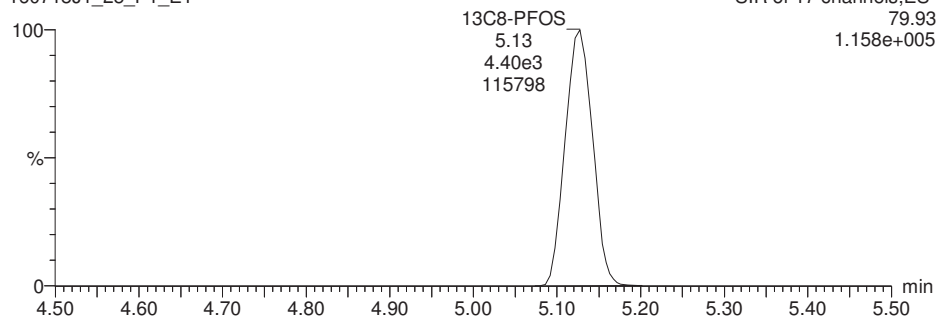
SIR of 17 channels,ES-  
419.0  
3.817e+002



### 13C8-PFOS

160718J1\_25\_P1\_E1

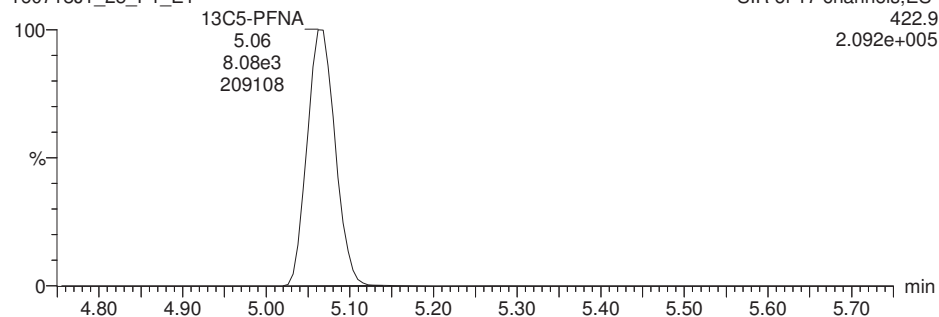
SIR of 17 channels,ES-  
79.93  
1.158e+005

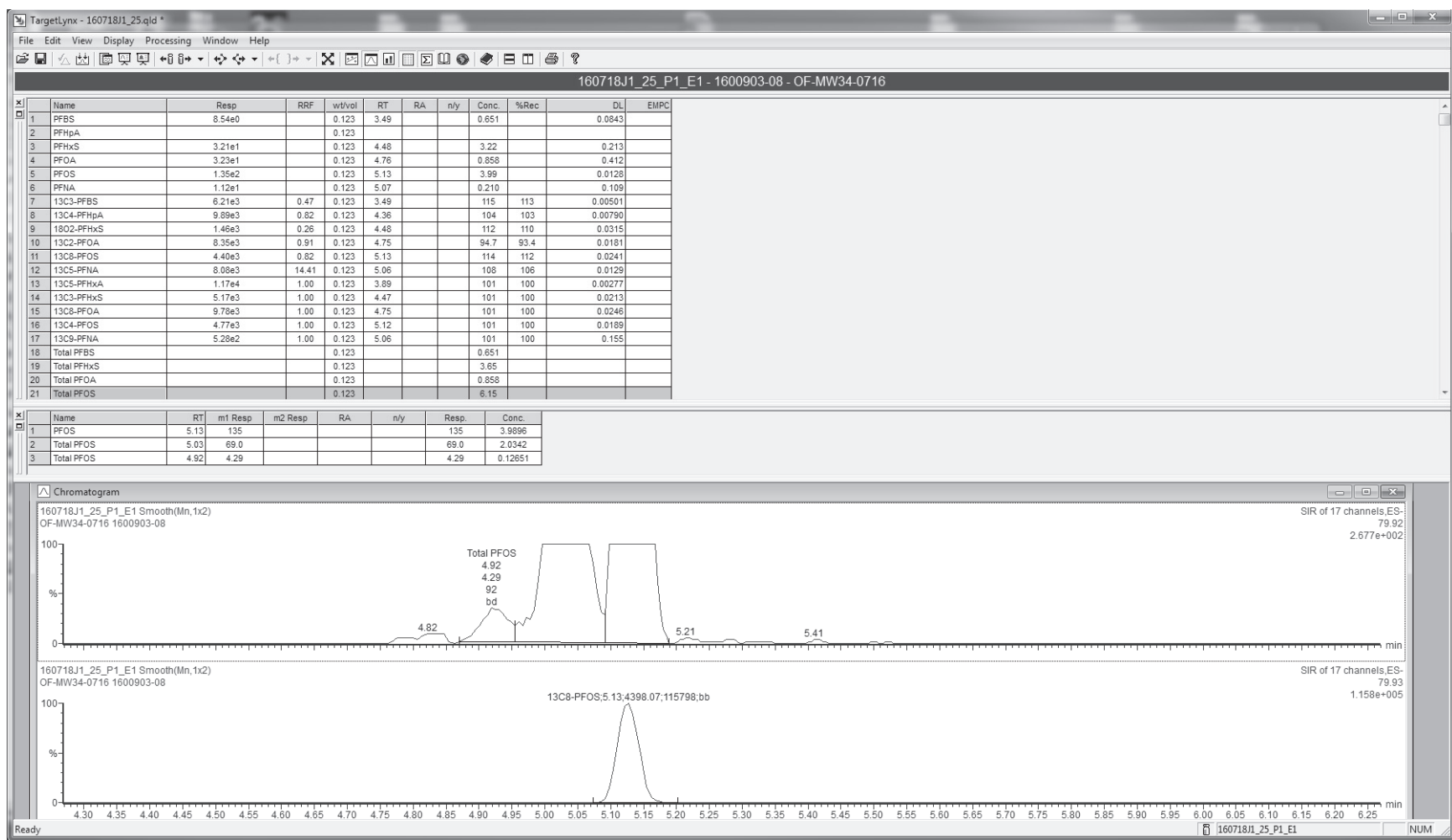


### 13C5-PFNA

160718J1\_25\_P1\_E1

SIR of 17 channels,ES-  
422.9  
2.092e+005





Vista Analytical Laboratory Q2

Dataset: U:\Q2.PRO\Results\160718J1\160718J1\_25.qld

Last Altered: Tuesday, July 19, 2016 11:04:42 Pacific Daylight Time

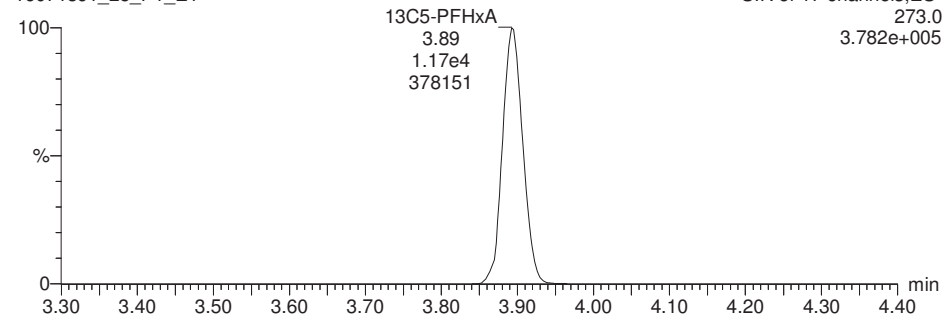
Printed: Tuesday, July 19, 2016 11:05:23 Pacific Daylight Time

Name: 160718J1\_25.wiff, Date: 18-Jul-2016, Time: 19:45:38, ID: 1600903-08, Description: OF-MW34-0716

### 13C5-PFHxA

160718J1\_25\_P1\_E1

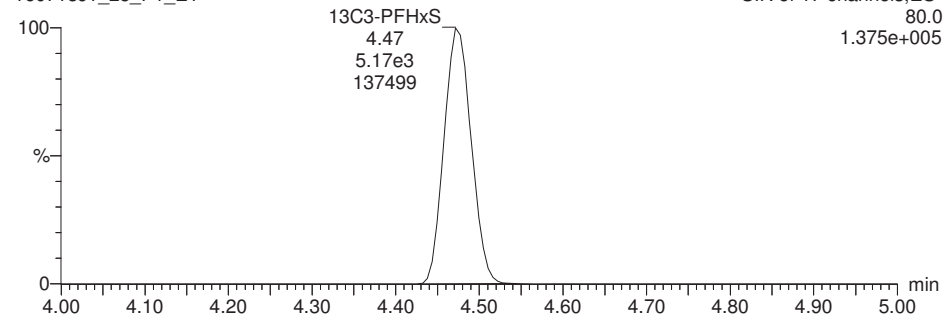
SIR of 17 channels,ES-  
273.0  
3.782e+005



### 13C3-PFHxS

160718J1\_25\_P1\_E1

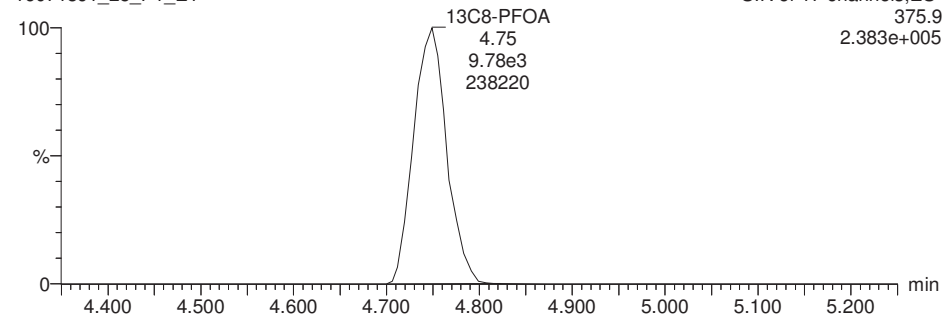
SIR of 17 channels,ES-  
80.0  
1.375e+005



### 13C8-PFOA

160718J1\_25\_P1\_E1

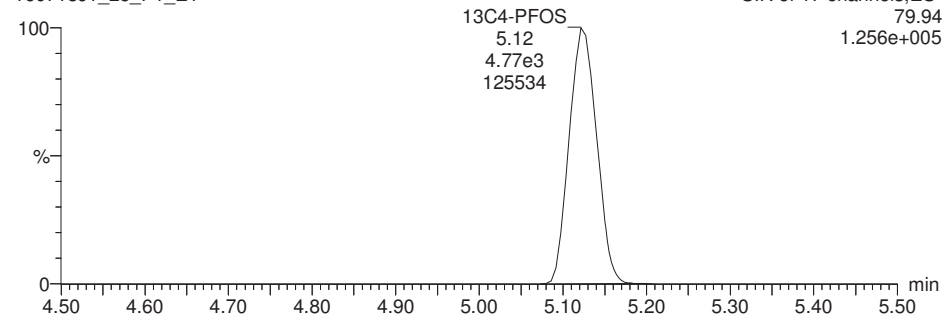
SIR of 17 channels,ES-  
375.9  
2.383e+005



### 13C4-PFOS

160718J1\_25\_P1\_E1

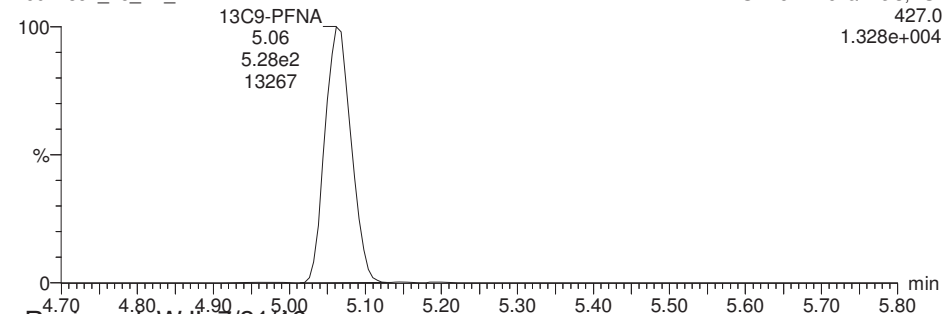
SIR of 17 channels,ES-  
79.94  
1.256e+005



### 13C9-PFNA

160718J1\_25\_P1\_E1

SIR of 17 channels,ES-  
427.0  
1.328e+004



Reviewed: WJL 7/21/16

pw 7/19/16

Dataset: U:\Q2.PRO\Results\160718J1\160718J1\_26.qld

Last Altered: Tuesday, July 19, 2016 11:07:26 Pacific Daylight Time

Printed: Tuesday, July 19, 2016 11:08:28 Pacific Daylight Time

Method: U:\Q2.PRO\MethDB\PFC List 6.mdb 08 Jul 2016 09:57:05

Calibration: U:\Q2.PRO\CurveDB\C18\_VAL-PFC\_Q2\_07-18-16\_L6.cdb 19 Jul 2016 08:45:41

Name: 160718J1\_26.wiff, Date: 18-Jul-2016, Time: 19:57:50, ID: 1600903-09, Description: OF-MW31D-0716

|    | # Name         | Trace | Response | IS Resp | RRF    | Wt/Vol | RT   | Conc. | %Rec  |
|----|----------------|-------|----------|---------|--------|--------|------|-------|-------|
| 1  | 1 PFBS         | 79.9  | 6.59e0   | 5.66e3  |        | 0.111  | 3.48 | 0.614 |       |
| 2  | 2 PFHpA        | 318.9 | 6.61e1   | 8.88e3  |        | 0.111  | 4.36 | 3.93  |       |
| 3  | 3 PFHxS        | 79.91 | 2.41e1   | 1.36e3  |        | 0.111  | 4.48 | 2.89  |       |
| 4  | 4 PFOA         | 368.9 | 1.41e2   | 7.65e3  |        | 0.111  | 4.75 | 4.54  |       |
| 5  | 5 PFOS         | 79.92 | 1.08e3   | 3.87e3  |        | 0.111  | 5.13 | 40.4  |       |
| 6  | 6 PFNA         | 419.0 | 1.10e2   | 7.66e3  |        | 0.111  | 5.07 | 2.42  |       |
| 7  | 7 13C3-PFBS    | 79.95 | 5.66e3   | 9.97e3  | 0.469  | 0.111  | 3.48 | 137   | 121.2 |
| 8  | 8 13C4-PFHpA   | 321.9 | 8.88e3   | 9.97e3  | 0.822  | 0.111  | 4.36 | 122   | 108.3 |
| 9  | 9 18O2-PFHxS   | 102.9 | 1.36e3   | 4.54e3  | 0.256  | 0.111  | 4.48 | 132   | 116.8 |
| 10 | 10 13C2-PFOA   | 369.9 | 7.65e3   | 9.01e3  | 0.915  | 0.111  | 4.75 | 105   | 92.8  |
| 11 | 11 13C8-PFOS   | 79.93 | 3.87e3   | 4.18e3  | 0.822  | 0.111  | 5.13 | 128   | 112.8 |
| 12 | 12 13C5-PFNA   | 422.9 | 7.66e3   | 4.85e2  | 14.407 | 0.111  | 5.07 | 124   | 109.5 |
| 13 | 13 13C5-PFHxA  | 273.0 | 9.97e3   | 9.97e3  | 1.000  | 0.111  | 3.89 | 113   | 100.0 |
| 14 | 14 13C3-PFHxS  | 80.0  | 4.54e3   | 4.54e3  | 1.000  | 0.111  | 4.48 | 113   | 100.0 |
| 15 | 15 13C8-PFOA   | 375.9 | 9.01e3   | 9.01e3  | 1.000  | 0.111  | 4.75 | 113   | 100.0 |
| 16 | 16 13C4-PFOS   | 79.94 | 4.18e3   | 4.18e3  | 1.000  | 0.111  | 5.13 | 113   | 100.0 |
| 17 | 17 13C9-PFNA   | 427.0 | 4.85e2   | 4.85e2  | 1.000  | 0.111  | 5.07 | 113   | 100.0 |
| 18 | 18 Total PFBS  | 79.9  |          | 5.66e3  |        | 0.111  |      | 0.614 |       |
| 19 | 19 Total PFHxS | 79.91 |          | 1.36e3  |        | 0.111  |      | 3.39  |       |
| 20 | 20 Total PFOA  | 368.9 |          | 7.65e3  |        | 0.111  |      | 4.54  |       |
| 21 | 21 Total PFOS  | 79.92 |          | 3.87e3  |        | 0.111  |      | 56.3  |       |



Vista Analytical Laboratory Q1

Dataset: U:\Q2.PRO\Results\160718J1\160718J1\_26.qld

Last Altered: Tuesday, July 19, 2016 11:07:26 Pacific Daylight Time

Printed: Tuesday, July 19, 2016 11:08:28 Pacific Daylight Time

Method: U:\Q2.PRO\MethDB\PFC List 6.mdb 08 Jul 2016 09:57:05

Calibration: U:\Q2.PRO\CurveDB\C18\_VAL-PFC\_Q2\_07-18-16\_L6.cdb 19 Jul 2016 08:45:41

Name: 160718J1\_26.wiff, Date: 18-Jul-2016, Time: 19:57:50, ID: 1600903-09, Description: OF-MW31D-0716

## Total PFBS

|   | # Name | Trace | RT   | Area   | IS Area | Conc. |
|---|--------|-------|------|--------|---------|-------|
| 1 | 1 PFBS | 79.9  | 3.48 | 6.59e0 | 5.66e3  | 0.614 |

## Total PFHxS

|   | # Name         | Trace | RT   | Area   | IS Area | Conc. |
|---|----------------|-------|------|--------|---------|-------|
| 1 | 19 Total PFHxS | 79.91 | 4.37 | 2.13e0 | 1.36e3  | 0.255 |
| 2 | 3 PFHxS        | 79.91 | 4.48 | 2.41e1 | 1.36e3  | 2.89  |
| 3 | 19 Total PFHxS | 79.91 | 4.39 | 2.06e0 | 1.36e3  | 0.246 |

## Total PFOA

|   | # Name | Trace | RT   | Area   | IS Area | Conc. |
|---|--------|-------|------|--------|---------|-------|
| 1 | 4 PFOA | 368.9 | 4.75 | 1.41e2 | 7.65e3  | 4.54  |

## Total PFOS

|   | # Name        | Trace | RT   | Area   | IS Area | Conc. |
|---|---------------|-------|------|--------|---------|-------|
| 1 | 5 PFOS        | 79.92 | 5.13 | 1.08e3 | 3.87e3  | 40.4  |
| 2 | 21 Total PFOS | 79.92 | 5.04 | 2.03e2 | 3.87e3  | 7.57  |
| 3 | 21 Total PFOS | 79.92 | 5.03 | 2.02e2 | 3.87e3  | 7.55  |
| 4 | 21 Total PFOS | 79.92 | 4.94 | 9.54e0 | 3.87e3  | 0.356 |
| 5 | 21 Total PFOS | 79.92 | 4.93 | 1.16e1 | 3.87e3  | 0.434 |

Vista Analytical Laboratory Q2

Dataset: U:\Q2.PRO\Results\160718J1\160718J1\_26.qld

Last Altered: Tuesday, July 19, 2016 11:07:26 Pacific Daylight Time

Printed: Tuesday, July 19, 2016 11:08:41 Pacific Daylight Time

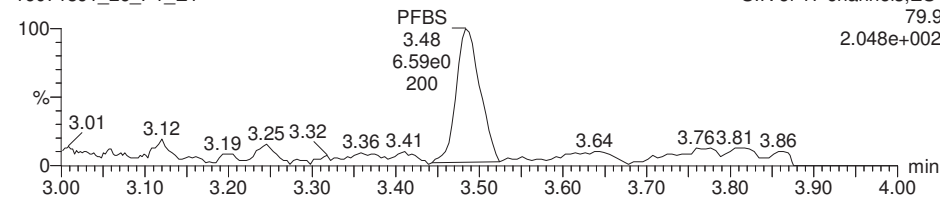
Method: U:\Q2.PRO\MethDB\PFC List 6.mdb 08 Jul 2016 09:57:05

Calibration: U:\Q2.PRO\CurveDB\C18\_VAL-PFC\_Q2\_07-18-16\_L6.cdb 19 Jul 2016 08:45:41

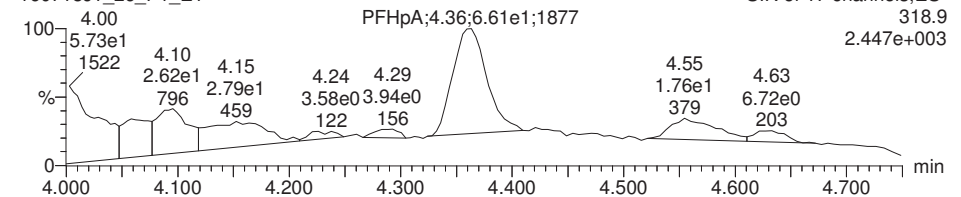
Name: 160718J1\_26.wiff, Date: 18-Jul-2016, Time: 19:57:50, ID: 1600903-09, Description: OF-MW31D-0716

**PFBS**

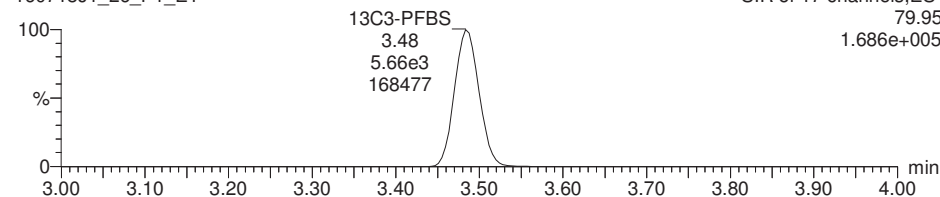
160718J1\_26\_P1\_E1

SIR of 17 channels, ES-  
79.9  
2.048e+002**PFHpA**

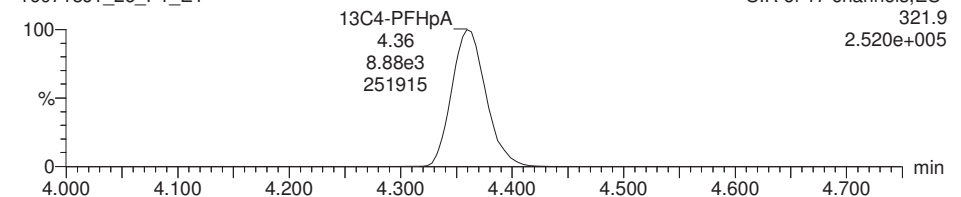
160718J1\_26\_P1\_E1

SIR of 17 channels, ES-  
318.9  
2.447e+003**13C3-PFBS**

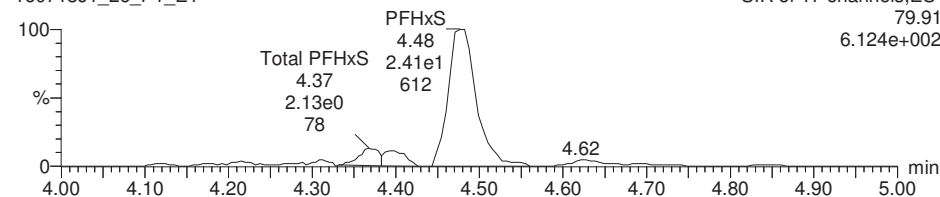
160718J1\_26\_P1\_E1

SIR of 17 channels, ES-  
79.95  
1.686e+005**13C4-PFHpA**

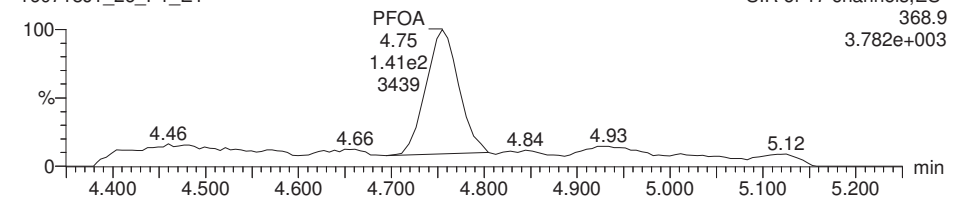
160718J1\_26\_P1\_E1

SIR of 17 channels, ES-  
321.9  
2.520e+005**PFHxS**

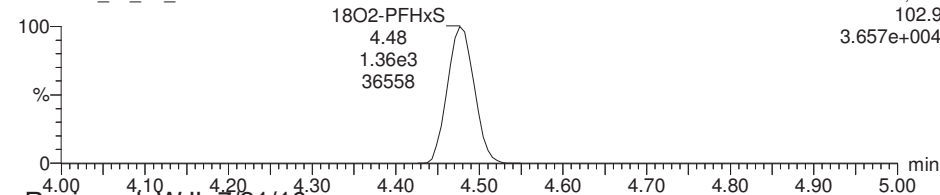
160718J1\_26\_P1\_E1

SIR of 17 channels, ES-  
79.91  
6.124e+002**PFOA**

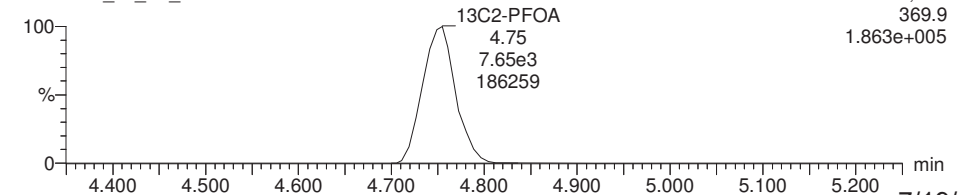
160718J1\_26\_P1\_E1

SIR of 17 channels, ES-  
368.9  
3.782e+003**18O2-PFHxS**

160718J1\_26\_P1\_E1

SIR of 17 channels, ES-  
102.9  
3.657e+004**13C2-PFOA**

160718J1\_26\_P1\_E1

SIR of 17 channels, ES-  
369.9  
1.863e+005

Reviewed: WJL 7/21/16

pw 7/19/16

Dataset:        U:\Q2.PRO\Results\160718J1\160718J1\_26.qld

Last Altered:   Tuesday, July 19, 2016 11:07:26 Pacific Daylight Time

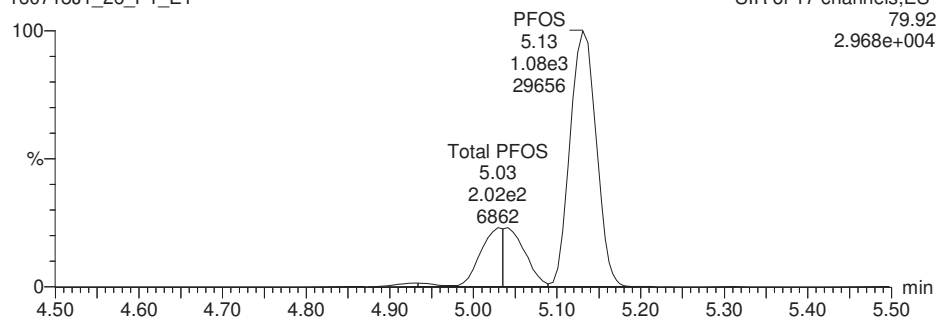
Printed:        Tuesday, July 19, 2016 11:08:41 Pacific Daylight Time

Name: 160718J1\_26.wiff, Date: 18-Jul-2016, Time: 19:57:50, ID: 1600903-09, Description: OF-MW31D-0716

### PFOS

160718J1\_26\_P1\_E1

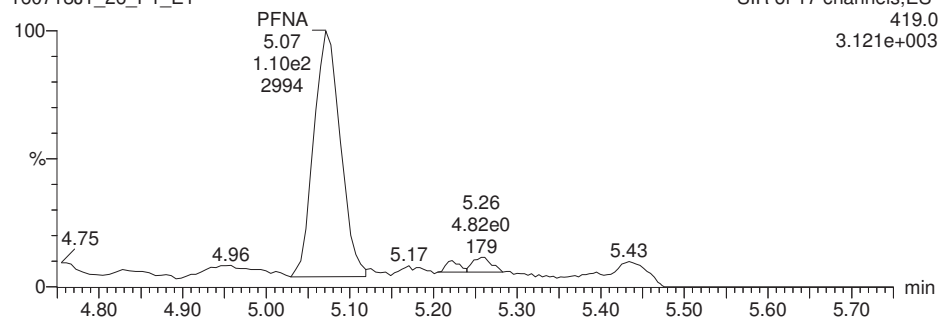
SIR of 17 channels,ES-  
79.92  
2.968e+004



### PFNA

160718J1\_26\_P1\_E1

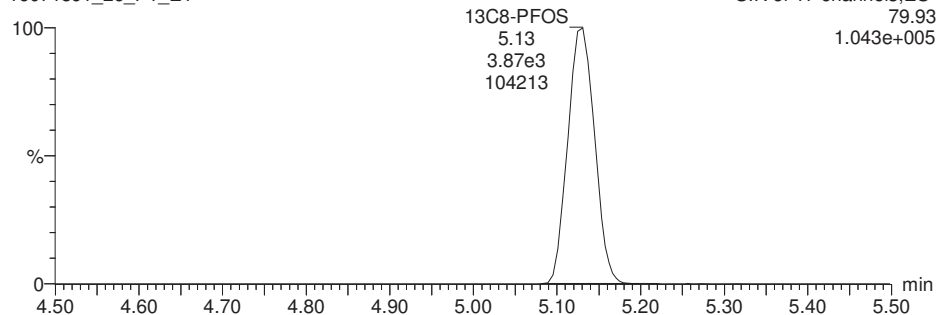
SIR of 17 channels,ES-  
419.0  
3.121e+003



### 13C8-PFOS

160718J1\_26\_P1\_E1

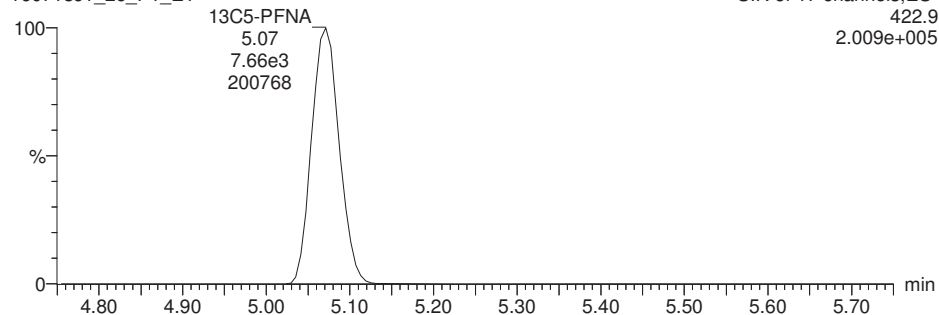
SIR of 17 channels,ES-  
79.93  
1.043e+005

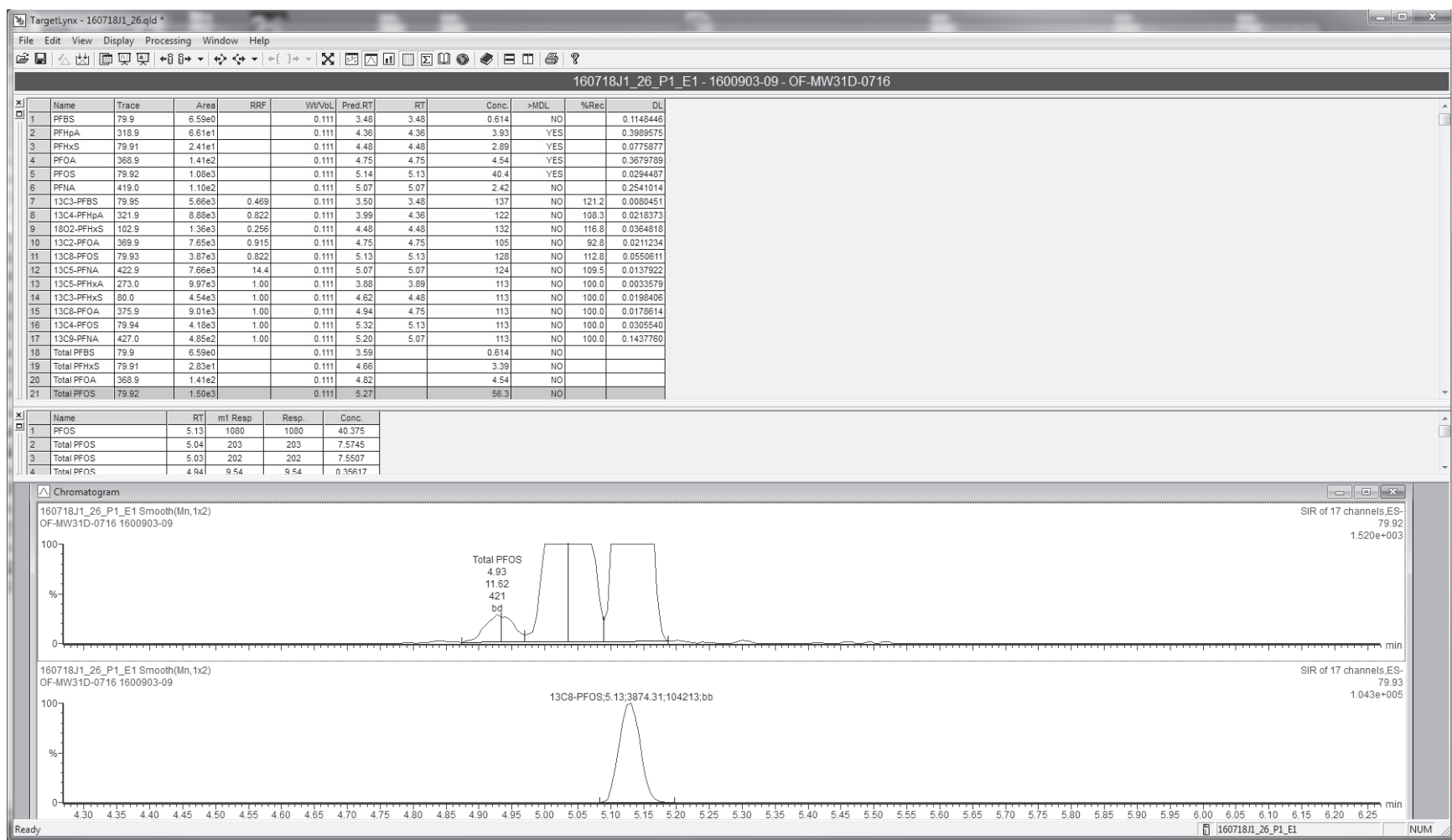


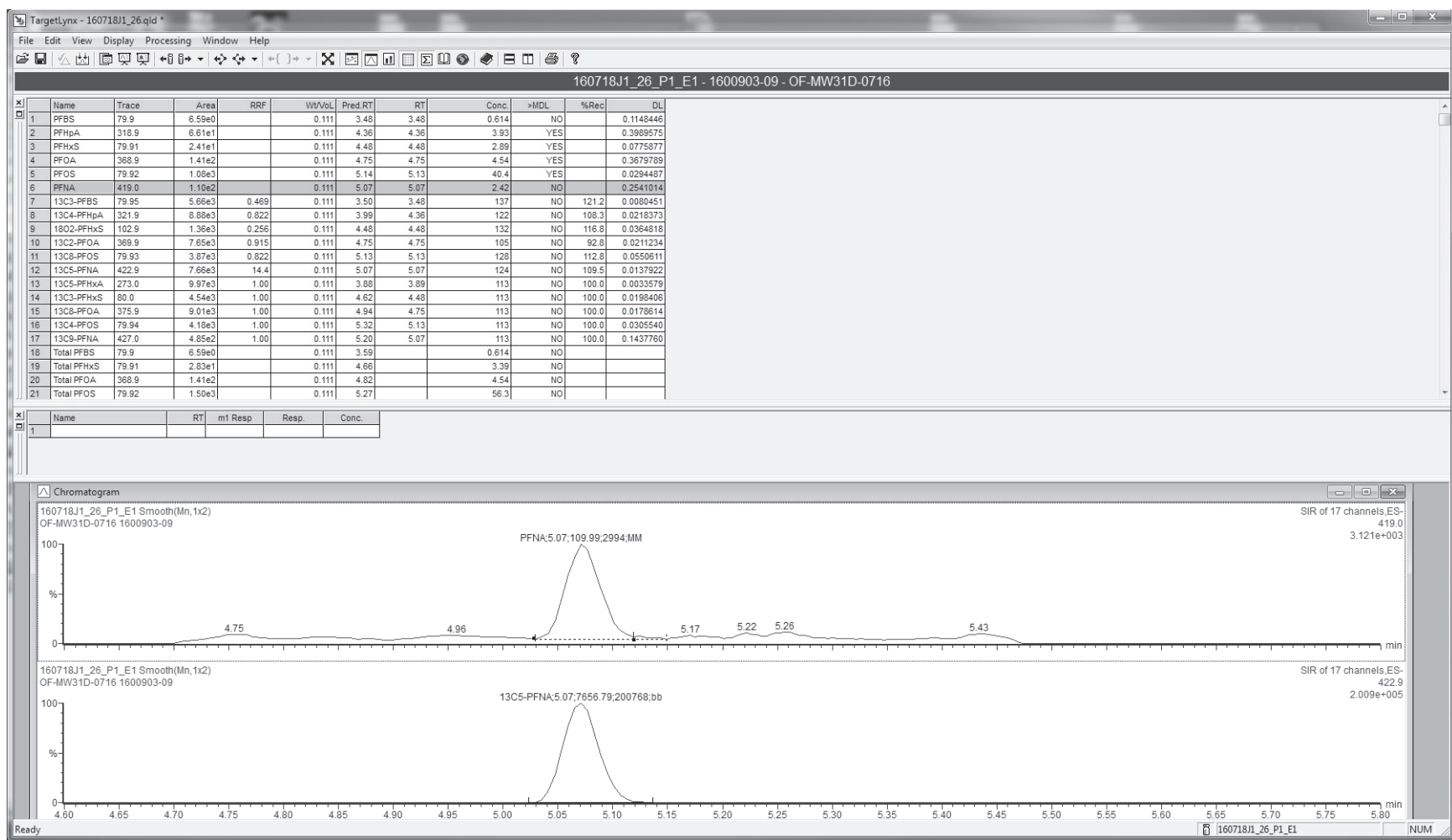
### 13C5-PFNA

160718J1\_26\_P1\_E1

SIR of 17 channels,ES-  
422.9  
2.009e+005







Vista Analytical Laboratory Q2

Dataset: U:\Q2.PRO\Results\160718J1\160718J1\_26.qld

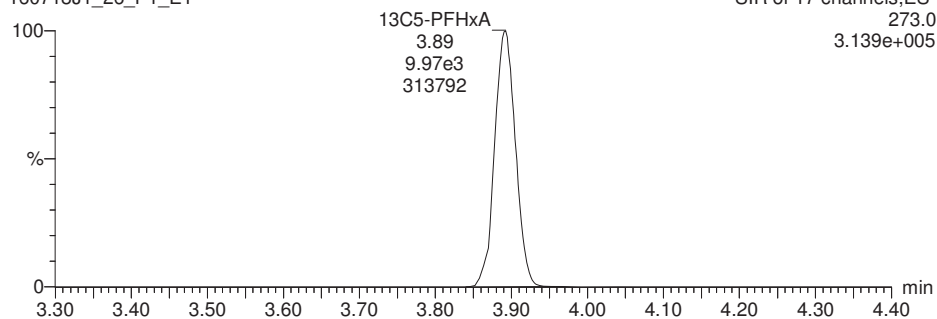
Last Altered: Tuesday, July 19, 2016 11:07:26 Pacific Daylight Time

Printed: Tuesday, July 19, 2016 11:08:41 Pacific Daylight Time

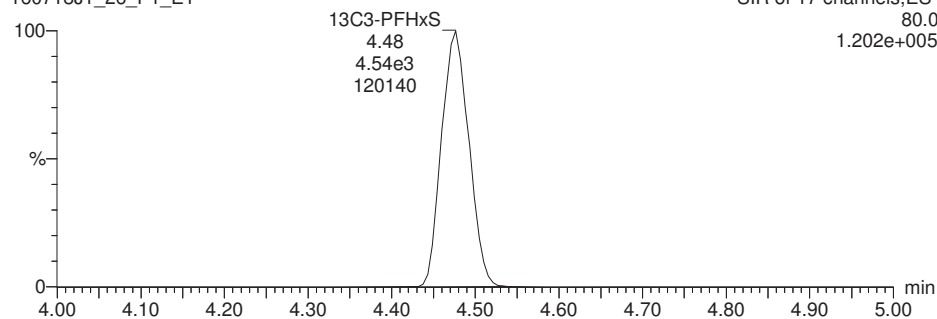
Name: 160718J1\_26.wiff, Date: 18-Jul-2016, Time: 19:57:50, ID: 1600903-09, Description: OF-MW31D-0716

**13C5-PFHxA**

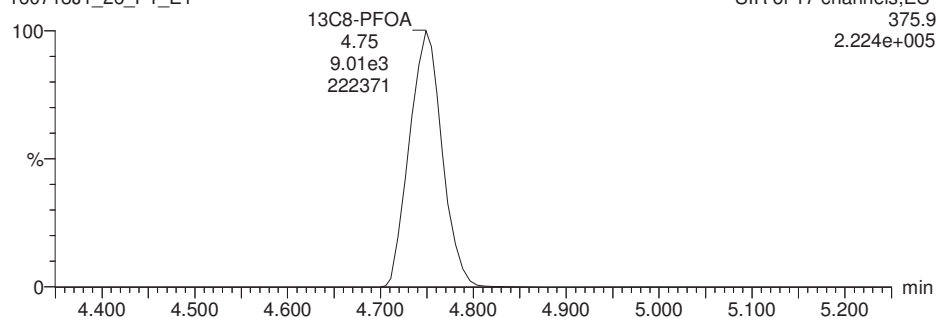
160718J1\_26\_P1\_E1

SIR of 17 channels,ES-  
273.0  
3.139e+005**13C3-PFHxS**

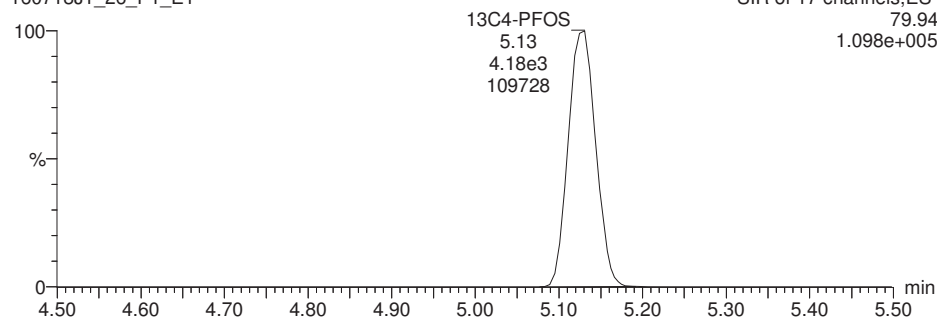
160718J1\_26\_P1\_E1

SIR of 17 channels,ES-  
80.0  
1.202e+005**13C8-PFOA**

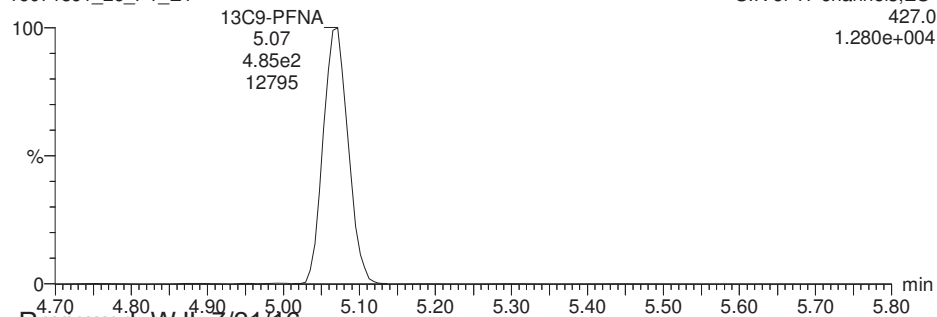
160718J1\_26\_P1\_E1

SIR of 17 channels,ES-  
375.9  
2.224e+005**13C4-PFOS**

160718J1\_26\_P1\_E1

SIR of 17 channels,ES-  
79.94  
1.098e+005**13C9-PFNA**

160718J1\_26\_P1\_E1

SIR of 17 channels,ES-  
427.0  
1.280e+004

Reviewed: WJL 7/21/16

pw 7/19/16

## **CONTINUING CALIBRATION**

Dataset: U:\Q2.PRO\Results\160718J1\160718J1\_29.qld

Last Altered: Tuesday, July 19, 2016 09:16:53 Pacific Daylight Time

Printed: Tuesday, July 19, 2016 09:17:45 Pacific Daylight Time

Method: U:\Q2.PRO\MethDB\PFC List 6.mdb 08 Jul 2016 09:57:05

Calibration: U:\Q2.PRO\CurveDB\C18\_VAL-PFC\_Q2\_07-18-16\_L6.cdb 19 Jul 2016 08:45:41

Name: 160718J1\_29.wiff, Date: 18-Jul-2016, Time: 20:34:27, ID: ST160718J1-10 PFC CS3.5 16G1210, Description: PFC CS3.5 16G1210

| #  | Name           | Trace | Response | IS Resp | RRF    | Wt/Vol | RT   | Conc. | %Rec  |
|----|----------------|-------|----------|---------|--------|--------|------|-------|-------|
| 1  | 1 PFBS         | 79.9  | 2.43e3   | 5.81e3  |        | 1.000  | 3.49 | 24.8  | 99.1  |
| 2  | 2 PFHpA        | 318.9 | 4.09e3   | 1.01e4  |        | 1.000  | 4.36 | 23.9  | 95.8  |
| 3  | 3 PFHxS        | 79.91 | 2.03e3   | 1.43e3  |        | 1.000  | 4.48 | 25.9  | 103.8 |
| 4  | 4 PFOA         | 368.9 | 7.96e3   | 8.63e3  |        | 1.000  | 4.75 | 26.1  | 104.3 |
| 5  | 5 PFOS         | 79.92 | 6.26e3   | 4.13e3  |        | 1.000  | 5.14 | 24.6  | 98.5  |
| 6  | 6 PFNA         | 419.0 | 1.05e4   | 8.39e3  |        | 1.000  | 5.08 | 23.9  | 95.7  |
| 7  | 7 13C3-PFBS    | 79.95 | 5.81e3   | 1.25e4  | 0.469  | 1.000  | 3.48 | 12.4  | 99.5  |
| 8  | 8 13C4-PFHpA   | 321.9 | 1.01e4   | 1.25e4  | 0.822  | 1.000  | 4.36 | 12.4  | 98.9  |
| 9  | 9 18O2-PFHxS   | 102.9 | 1.43e3   | 5.53e3  | 0.256  | 1.000  | 4.48 | 12.6  | 100.9 |
| 10 | 10 13C2-PFOA   | 369.9 | 8.63e3   | 1.06e4  | 0.915  | 1.000  | 4.75 | 11.1  | 89.1  |
| 11 | 11 13C8-PFOS   | 79.93 | 4.13e3   | 4.71e3  | 0.822  | 1.000  | 5.13 | 13.3  | 106.8 |
| 12 | 12 13C5-PFNA   | 422.9 | 8.39e3   | 5.27e2  | 14.407 | 1.000  | 5.07 | 13.8  | 110.6 |
| 13 | 13 13C5-PFHxA  | 273.0 | 1.25e4   | 1.25e4  | 1.000  | 1.000  | 3.89 | 12.5  | 100.0 |
| 14 | 14 13C3-PFHxS  | 80.0  | 5.53e3   | 5.53e3  | 1.000  | 1.000  | 4.48 | 12.5  | 100.0 |
| 15 | 15 13C8-PFOA   | 375.9 | 1.06e4   | 1.06e4  | 1.000  | 1.000  | 4.75 | 12.5  | 100.0 |
| 16 | 16 13C4-PFOS   | 79.94 | 4.71e3   | 4.71e3  | 1.000  | 1.000  | 5.13 | 12.5  | 100.0 |
| 17 | 17 13C9-PFNA   | 427.0 | 5.27e2   | 5.27e2  | 1.000  | 1.000  | 5.07 | 12.5  | 100.0 |
| 18 | 18 Total PFBS  | 79.9  |          | 5.81e3  |        | 1.000  |      | 24.8  |       |
| 19 | 19 Total PFHxS | 79.91 |          | 1.43e3  |        | 1.000  |      | 25.9  |       |
| 20 | 20 Total PFOA  | 368.9 |          | 8.63e3  |        | 1.000  |      | 26.1  |       |
| 21 | 21 Total PFOS  | 79.92 |          | 4.13e3  |        | 1.000  |      | 24.7  |       |

75-125



NA

60-150



50-150

PL  
7/19/16

BR 7/19/16



|    | Sample Name | Acquisition Date   | Sample ID                       | Sample Comment    |
|----|-------------|--------------------|---------------------------------|-------------------|
| 1  | 160718J1_01 | 7/18/2016 14:52:40 | IPA                             | IPA               |
| 2  | 160718J1_02 | 7/18/2016 15:04:53 | ST160718J1-1 PFC CS0 16G1205    | CS0 16G1205       |
| 3  | 160718J1_03 | 7/18/2016 15:17:04 | ST160718J1-2 PFC CS1 16G1206    | CS1 16G1206       |
| 4  | 160718J1_04 | 7/18/2016 15:29:17 | ST160718J1-3 PFC CS2 16G1208    | CS2 16G1208       |
| 5  | 160718J1_05 | 7/18/2016 15:41:29 | ST160718J1-4 PFC CS3 16G1209    | CS3 16G1209       |
| 6  | 160718J1_06 | 7/18/2016 15:53:41 | ST160718J1-5 PFC CS3.5 16G1210  | CS3.5 16G1210     |
| 7  | 160718J1_07 | 7/18/2016 16:05:54 | ST160718J1-6 PFC CS4 16G1211    | CS4 16G1211       |
| 8  | 160718J1_08 | 7/18/2016 16:18:06 | ST160718J1-7 PFC CS4.5 16G1212  | CS4.5 16G1212     |
| 9  | 160718J1_09 | 7/18/2016 16:30:18 | ST160718J1-8 PFC CS5 16G1213    | CS5 16G1213       |
| 10 | 160718J1_10 | 7/18/2016 16:42:28 | ST160718J1-9 PFC CS6 16G1214    | CS6 16G1214       |
| 11 | 160718J1_11 | 7/18/2016 16:54:42 | IPA                             | IPA               |
| 12 | 160718J1_12 | 7/18/2016 17:06:54 | IPA                             | IPA               |
| 13 | 160718J1_13 | 7/18/2016 17:19:06 | SS160718J1-1 PFC SSS 16G1301    | PFC SSS 16G1301   |
| 14 | 160718J1_14 | 7/18/2016 17:31:18 | IPA                             | IPA               |
| 15 | 160718J1_15 | 7/18/2016 17:43:31 | B6G0068-BS1                     | OPR               |
| 16 | 160718J1_16 | 7/18/2016 17:55:41 | IPA                             | IPA               |
| 17 | 160718J1_17 | 7/18/2016 18:07:55 | B6G0068-BLK1                    | Method Blank      |
| 18 | 160718J1_18 | 7/18/2016 18:20:09 | 1600903-01                      | OF-MW30-0716      |
| 19 | 160718J1_19 | 7/18/2016 18:32:23 | 1600903-02                      | OF-MW30P-0716     |
| 20 | 160718J1_20 | 7/18/2016 18:44:33 | 1600903-03                      | OF-MW30D-0716     |
| 21 | 160718J1_21 | 7/18/2016 18:56:48 | 1600903-04                      | OF-MW28D-0716     |
| 22 | 160718J1_22 | 7/18/2016 19:09:01 | 1600903-05                      | OF-MW32-0716      |
| 23 | 160718J1_23 | 7/18/2016 19:21:13 | 1600903-06                      | OF-MW29-0716      |
| 24 | 160718J1_24 | 7/18/2016 19:33:25 | 1600903-07                      | OF-MW08D-0716     |
| 25 | 160718J1_25 | 7/18/2016 19:45:38 | 1600903-08                      | OF-MW34-0716      |
| 26 | 160718J1_26 | 7/18/2016 19:57:50 | 1600903-09                      | OF-MW31D-0716     |
| 27 | 160718J1_27 | 7/18/2016 20:10:00 | B6G0068-MS1                     | Matrix Spike      |
| 28 | 160718J1_28 | 7/18/2016 20:22:14 | IPA                             | IPA               |
| 29 | 160718J1_29 | 7/18/2016 20:34:27 | ST160718J1-10 PFC CS3.5 16G1210 | PFC CS3.5 16G1210 |
| 30 | 160718J1_30 | 7/18/2016 20:46:36 | IPA                             | IPA               |
| 31 | 160718J1_31 | 7/18/2016 20:58:49 | B6G0068-MSD1                    | Matrix Spike Dup  |
| 32 | 160718J1_32 | 7/18/2016 21:11:01 | IPA                             | IPA               |
| 33 | 160718J1_33 | 7/18/2016 21:23:13 | ST160718J1-11 PFC CS3.5 16G1210 | PFC CS3.5 16G1210 |
| 34 | 160718J1_34 | 7/18/2016 21:35:26 | IPA                             | IPA               |

# LC Calibration Standards Review Checklist Q2

| Calibration ID: |       | ION Ratio                           | Concentration                       | C-Cals Name                         | Sign Date                           | Correct I-Cal                       | Manual Integrations                 |                                     |
|-----------------|-------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|
| ST160718J1-10   | L M H | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| ↓ -11           | L M H | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
|                 | L M H | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            |
|                 | L M H | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            |
|                 | L M H | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            |
|                 | L M H | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            |
|                 | L M H | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            |
|                 | L M H | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            |
|                 | L M H | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            |
|                 | L M H | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            |

Full Mass Cal. Date: 7/7/16

Reviewed By: DR 7/19/16  
Initials/Date

Comments:

Dataset:        U:\Q2.PRO\Results\160718J1\160718J1\_29.qld

Last Altered:   Tuesday, July 19, 2016 09:16:53 Pacific Daylight Time

Printed:        Tuesday, July 19, 2016 09:17:31 Pacific Daylight Time

Method: U:\Q2.PRO\MethDB\PFC List 6.mdb 08 Jul 2016 09:57:05

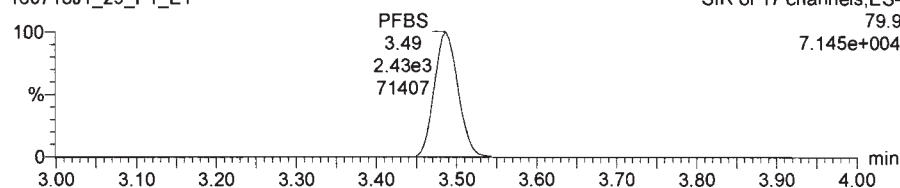
Calibration: U:\Q2.PRO\CurveDB\C18\_VAL-PFC\_Q2\_07-18-16\_L6.cdb 19 Jul 2016 08:45:41

Name: 160718J1\_29.wiff, Date: 18-Jul-2016, Time: 20:34:27, ID: ST160718J1-10 PFC CS3.5 16G1210, Description: PFC CS3.5 16G1210

**PFBS**

160718J1\_29\_P1\_E1

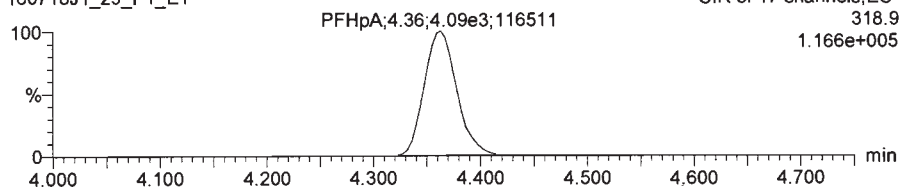
SIR of 17 channels, ES-  
79.9  
7.145e+004



**PFHpA**

160718J1\_29\_P1\_E1

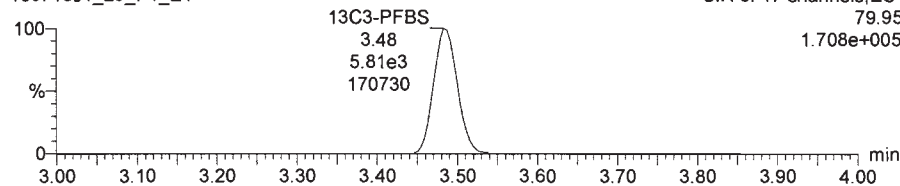
SIR of 17 channels, ES-  
318.9  
1.166e+005



**13C3-PFBS**

160718J1\_29\_P1\_E1

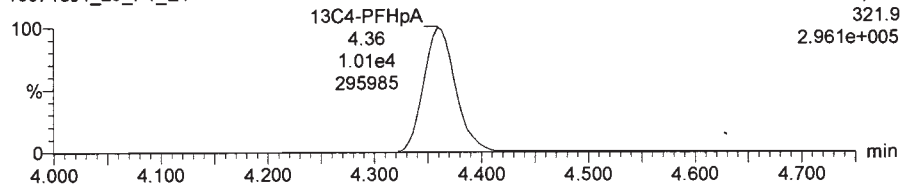
SIR of 17 channels, ES-  
79.95  
1.708e+005



**13C4-PFHpA**

160718J1\_29\_P1\_E1

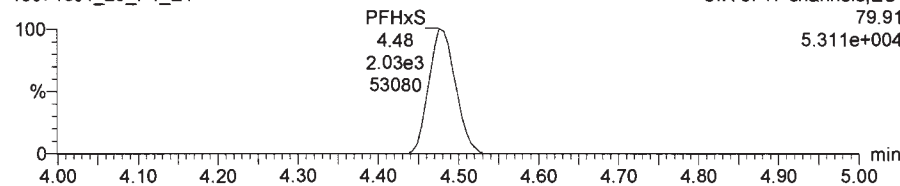
SIR of 17 channels, ES-  
321.9  
2.961e+005



**PFHxS**

160718J1\_29\_P1\_E1

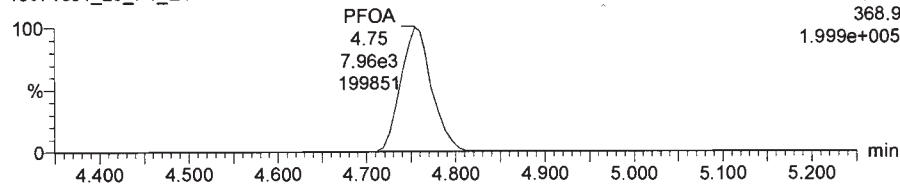
SIR of 17 channels, ES-  
79.91  
5.311e+004



**PFOA**

160718J1\_29\_P1\_E1

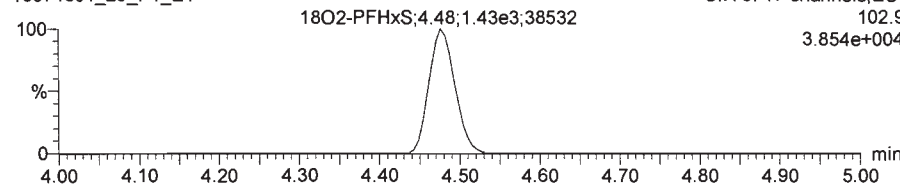
SIR of 17 channels, ES-  
368.9  
1.999e+005



**18O2-PFHxS**

160718J1\_29\_P1\_E1

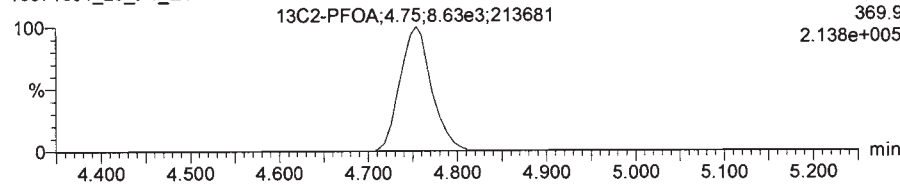
SIR of 17 channels, ES-  
102.9  
3.854e+004



**13C2-PFOA**

160718J1\_29\_P1\_E1

SIR of 17 channels, ES-  
369.9  
2.138e+005



Dataset:        U:\Q2.PRO\Results\160718J1\160718J1\_29.qld

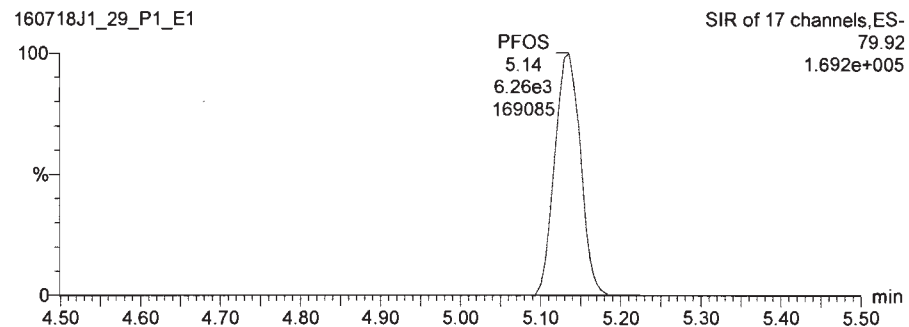
Last Altered:    Tuesday, July 19, 2016 09:16:53 Pacific Daylight Time

Printed:        Tuesday, July 19, 2016 09:17:31 Pacific Daylight Time

Name: 160718J1\_29.wiff, Date: 18-Jul-2016, Time: 20:34:27, ID: ST160718J1-10 PFC CS3.5 16G1210, Description: PFC CS3.5 16G1210

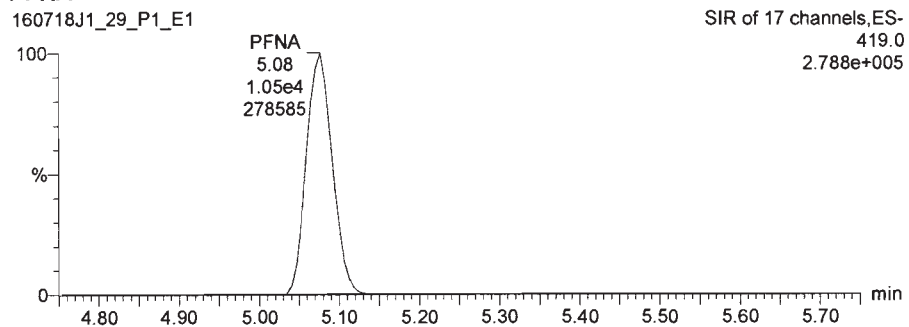
**PFOS**

160718J1\_29\_P1\_E1



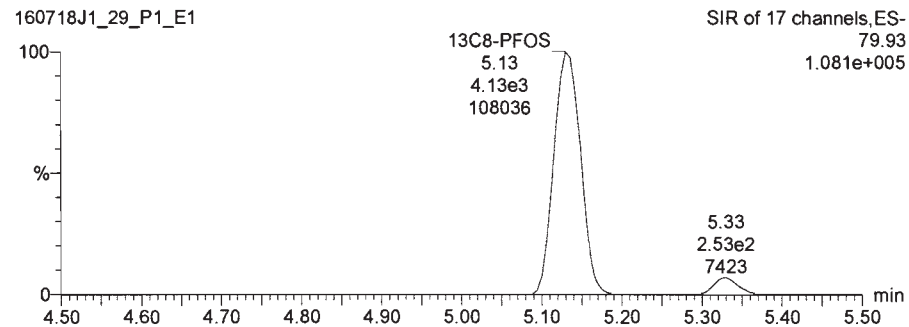
**PFNA**

160718J1\_29\_P1\_E1



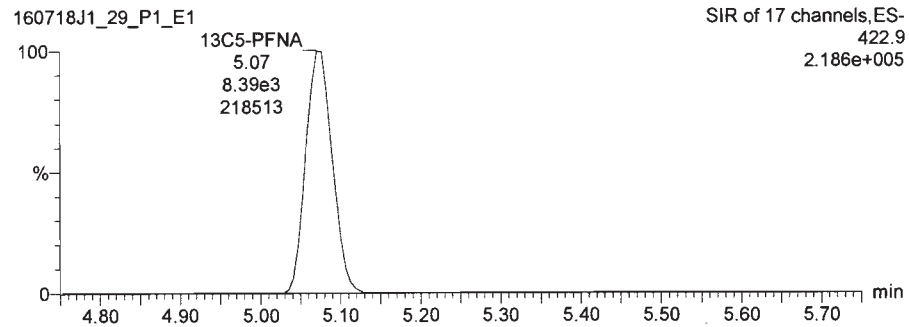
**13C8-PFOS**

160718J1\_29\_P1\_E1



**13C5-PFNA**

160718J1\_29\_P1\_E1



Dataset:        U:\Q2.PRO\Results\160718J1\160718J1\_29.qld

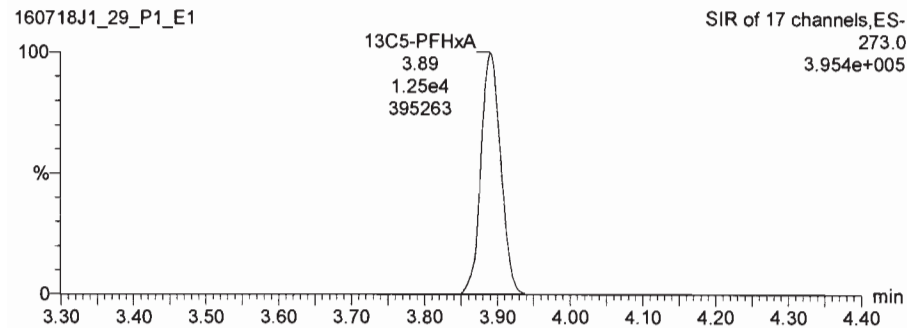
Last Altered:    Tuesday, July 19, 2016 09:16:53 Pacific Daylight Time

Printed:        Tuesday, July 19, 2016 09:17:31 Pacific Daylight Time

Name: 160718J1\_29.wiff, Date: 18-Jul-2016, Time: 20:34:27, ID: ST160718J1-10 PFC CS3.5 16G1210, Description: PFC CS3.5 16G1210

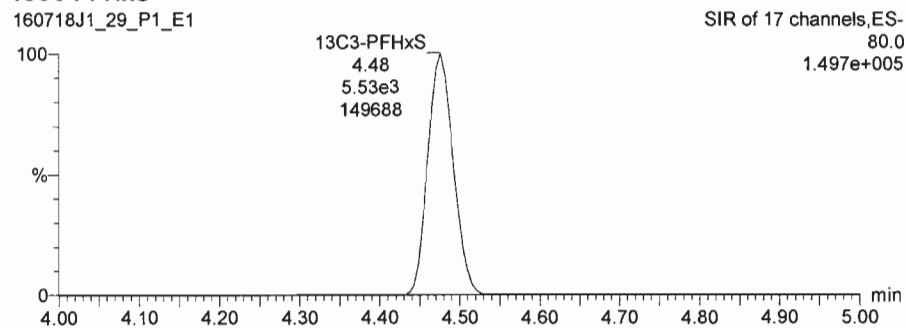
**13C5-PFHxA**

160718J1\_29\_P1\_E1



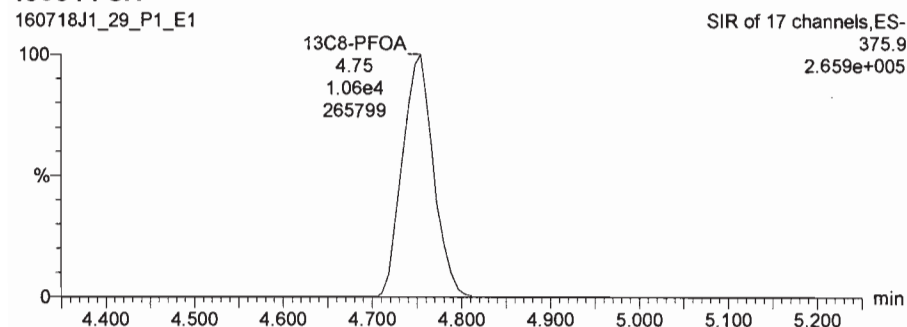
**13C3-PFHxS**

160718J1\_29\_P1\_E1



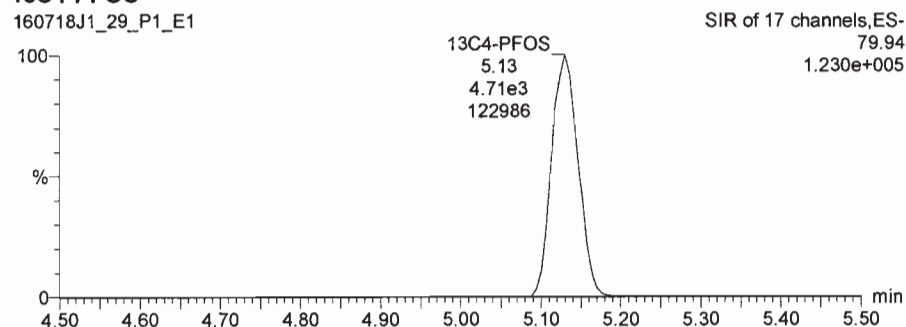
**13C8-PFOA**

160718J1\_29\_P1\_E1



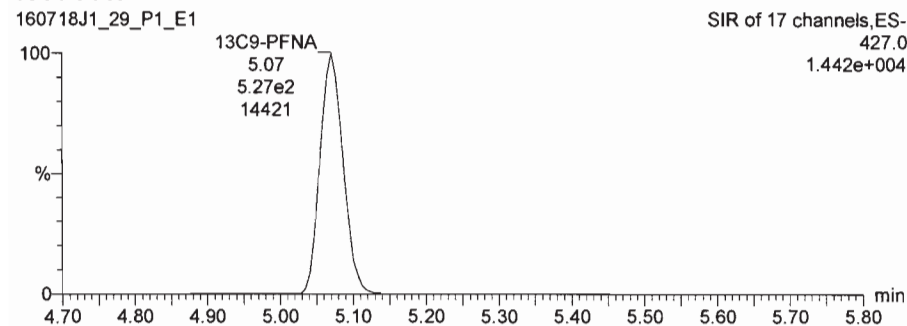
**13C4-PFOS**

160718J1\_29\_P1\_E1



**13C9-PFNA**

160718J1\_29\_P1\_E1



Dataset: U:\Q2.PRO\Results\160718J1\160718J1\_33.qld

Last Altered: Tuesday, July 19, 2016 09:18:44 Pacific Daylight Time

Printed: Tuesday, July 19, 2016 09:19:16 Pacific Daylight Time

Method: U:\Q2.PRO\MethDB\PFC List 6.mdb 08 Jul 2016 09:57:05

Calibration: U:\Q2.PRO\CurveDB\C18\_VAL-PFC\_Q2\_07-18-16\_L6.cdb 19 Jul 2016 08:45:41

Name: 160718J1\_33.wiff, Date: 18-Jul-2016, Time: 21:23:13, ID: ST160718J1-11 PFC CS3.5 16G1210, Description: PFC CS3.5 16G1210

| #  | Name           | Trace | Response | IS Resp | RRF    | Wt/Vol | RT   | Conc | %Rec  |
|----|----------------|-------|----------|---------|--------|--------|------|------|-------|
| 1  | 1 PFBS         | 79.9  | 2.46e3   | 6.02e3  |        | 1.000  | 3.49 | 24.2 | 96.9  |
| 2  | 2 PFHpA        | 318.9 | 3.96e3   | 9.87e3  |        | 1.000  | 4.36 | 23.8 | 95.1  |
| 3  | 3 PFHxS        | 79.91 | 1.93e3   | 1.43e3  |        | 1.000  | 4.48 | 24.6 | 98.5  |
| 4  | 4 PFOA         | 368.9 | 7.47e3   | 9.69e3  |        | 1.000  | 4.75 | 21.7 | 86.6  |
| 5  | 5 PFOS         | 79.92 | 6.51e3   | 4.24e3  |        | 1.000  | 5.13 | 25.0 | 99.8  |
| 6  | 6 PFNA         | 419.0 | 1.11e4   | 8.26e3  |        | 1.000  | 5.07 | 25.9 | 103.7 |
| 7  | 7 13C3-PFBS    | 79.95 | 6.02e3   | 1.23e4  | 0.469  | 1.000  | 3.49 | 13.0 | 104.2 |
| 8  | 8 13C4-PFHpA   | 321.9 | 9.87e3   | 1.23e4  | 0.822  | 1.000  | 4.36 | 12.2 | 97.3  |
| 9  | 9 18O2-PFHxS   | 102.9 | 1.43e3   | 5.35e3  | 0.256  | 1.000  | 4.47 | 13.1 | 104.4 |
| 10 | 10 13C2-PFOA   | 369.9 | 9.69e3   | 1.01e4  | 0.915  | 1.000  | 4.75 | 13.1 | 104.9 |
| 11 | 11 13C8-PFOS   | 79.93 | 4.24e3   | 5.00e3  | 0.822  | 1.000  | 5.13 | 12.9 | 103.1 |
| 12 | 12 13C5-PFNA   | 422.9 | 8.26e3   | 5.48e2  | 14.407 | 1.000  | 5.07 | 13.1 | 104.6 |
| 13 | 13 13C5-PFHxA  | 273.0 | 1.23e4   | 1.23e4  | 1.000  | 1.000  | 3.89 | 12.5 | 100.0 |
| 14 | 14 13C3-PFHxS  | 80.0  | 5.35e3   | 5.35e3  | 1.000  | 1.000  | 4.48 | 12.5 | 100.0 |
| 15 | 15 13C8-PFOA   | 375.9 | 1.01e4   | 1.01e4  | 1.000  | 1.000  | 4.75 | 12.5 | 100.0 |
| 16 | 16 13C4-PFOS   | 79.94 | 5.00e3   | 5.00e3  | 1.000  | 1.000  | 5.13 | 12.5 | 100.0 |
| 17 | 17 13C9-PFNA   | 427.0 | 5.48e2   | 5.48e2  | 1.000  | 1.000  | 5.07 | 12.5 | 100.0 |
| 18 | 18 Total PFBS  | 79.9  |          | 6.02e3  |        | 1.000  |      | 24.2 |       |
| 19 | 19 Total PFHxS | 79.91 |          | 1.43e3  |        | 1.000  |      | 24.6 |       |
| 20 | 20 Total PFOA  | 368.9 |          | 9.69e3  |        | 1.000  |      | 21.7 |       |
| 21 | 21 Total PFOS  | 79.92 |          | 4.24e3  |        | 1.000  |      | 25.0 |       |

75-125



NA

60-150



50-150

PW  
7/19/16

Bms ✓  
7/19/16

BE 7/19/16 ✓



|    | Sample Name | Acquisition Date   | Sample ID                       | Sample Comment    |
|----|-------------|--------------------|---------------------------------|-------------------|
| 1  | 160718J1_01 | 7/18/2016 14:52:40 | IPA                             | IPA               |
| 2  | 160718J1_02 | 7/18/2016 15:04:53 | ST160718J1-1 PFC CS0 16G1205    | CS0 16G1205       |
| 3  | 160718J1_03 | 7/18/2016 15:17:04 | ST160718J1-2 PFC CS1 16G1206    | CS1 16G1206       |
| 4  | 160718J1_04 | 7/18/2016 15:29:17 | ST160718J1-3 PFC CS2 16G1208    | CS2 16G1208       |
| 5  | 160718J1_05 | 7/18/2016 15:41:29 | ST160718J1-4 PFC CS3 16G1209    | CS3 16G1209       |
| 6  | 160718J1_06 | 7/18/2016 15:53:41 | ST160718J1-5 PFC CS3.5 16G1210  | CS3.5 16G1210     |
| 7  | 160718J1_07 | 7/18/2016 16:05:54 | ST160718J1-6 PFC CS4 16G1211    | CS4 16G1211       |
| 8  | 160718J1_08 | 7/18/2016 16:18:06 | ST160718J1-7 PFC CS4.5 16G1212  | CS4.5 16G1212     |
| 9  | 160718J1_09 | 7/18/2016 16:30:18 | ST160718J1-8 PFC CS5 16G1213    | CS5 16G1213       |
| 10 | 160718J1_10 | 7/18/2016 16:42:28 | ST160718J1-9 PFC CS6 16G1214    | CS6 16G1214       |
| 11 | 160718J1_11 | 7/18/2016 16:54:42 | IPA                             | IPA               |
| 12 | 160718J1_12 | 7/18/2016 17:06:54 | IPA                             | IPA               |
| 13 | 160718J1_13 | 7/18/2016 17:19:06 | SS160718J1-1 PFC SSS 16G1301    | PFC SSS 16G1301   |
| 14 | 160718J1_14 | 7/18/2016 17:31:18 | IPA                             | IPA               |
| 15 | 160718J1_15 | 7/18/2016 17:43:31 | B6G0068-BS1                     | OPR               |
| 16 | 160718J1_16 | 7/18/2016 17:55:41 | IPA                             | IPA               |
| 17 | 160718J1_17 | 7/18/2016 18:07:55 | B6G0068-BLK1                    | Method Blank      |
| 18 | 160718J1_18 | 7/18/2016 18:20:09 | 1600903-01                      | OF-MW30-0716      |
| 19 | 160718J1_19 | 7/18/2016 18:32:23 | 1600903-02                      | OF-MW30P-0716     |
| 20 | 160718J1_20 | 7/18/2016 18:44:33 | 1600903-03                      | OF-MW30D-0716     |
| 21 | 160718J1_21 | 7/18/2016 18:56:48 | 1600903-04                      | OF-MW28D-0716     |
| 22 | 160718J1_22 | 7/18/2016 19:09:01 | 1600903-05                      | OF-MW32-0716      |
| 23 | 160718J1_23 | 7/18/2016 19:21:13 | 1600903-06                      | OF-MW29-0716      |
| 24 | 160718J1_24 | 7/18/2016 19:33:25 | 1600903-07                      | OF-MW08D-0716     |
| 25 | 160718J1_25 | 7/18/2016 19:45:38 | 1600903-08                      | OF-MW34-0716      |
| 26 | 160718J1_26 | 7/18/2016 19:57:50 | 1600903-09                      | OF-MW31D-0716     |
| 27 | 160718J1_27 | 7/18/2016 20:10:00 | B6G0068-MS1                     | Matrix Spike      |
| 28 | 160718J1_28 | 7/18/2016 20:22:14 | IPA                             | IPA               |
| 29 | 160718J1_29 | 7/18/2016 20:34:27 | ST160718J1-10 PFC CS3.5 16G1210 | PFC CS3.5 16G1210 |
| 30 | 160718J1_30 | 7/18/2016 20:46:36 | IPA                             | IPA               |
| 31 | 160718J1_31 | 7/18/2016 20:58:49 | B6G0068-MSD1                    | Matrix Spike Dup  |
| 32 | 160718J1_32 | 7/18/2016 21:11:01 | IPA                             | IPA               |
| 33 | 160718J1_33 | 7/18/2016 21:23:13 | ST160718J1-11 PFC CS3.5 16G1210 | PFC CS3.5 16G1210 |
| 34 | 160718J1_34 | 7/18/2016 21:35:26 | IPA                             | IPA               |

Dataset:        U:\Q2.PRO\Results\160718J1\160718J1\_33.qld

Last Altered:   Tuesday, July 19, 2016 09:18:44 Pacific Daylight Time

Printed:        Tuesday, July 19, 2016 09:19:39 Pacific Daylight Time

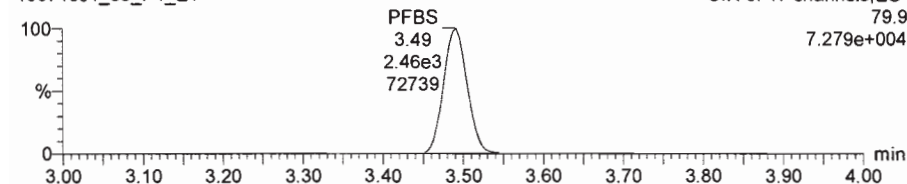
Method: U:\Q2.PRO\MethDB\PFC List 6.mdb 08 Jul 2016 09:57:05

Calibration: U:\Q2.PRO\CurveDB\IC18\_VAL-PFC\_Q2\_07-18-16\_L6.cdb 19 Jul 2016 08:45:41

Name: 160718J1\_33.wiff, Date: 18-Jul-2016, Time: 21:23:13, ID: ST160718J1-11 PFC CS3.5 16G1210, Description: PFC CS3.5 16G1210

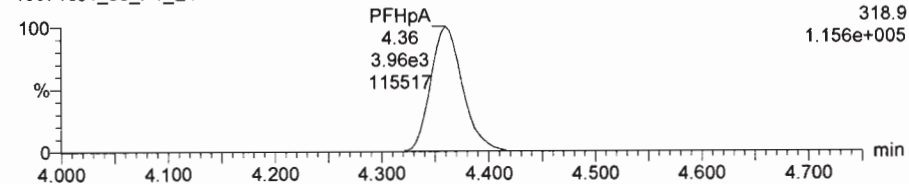
**PFBS**

160718J1\_33\_P1\_E1



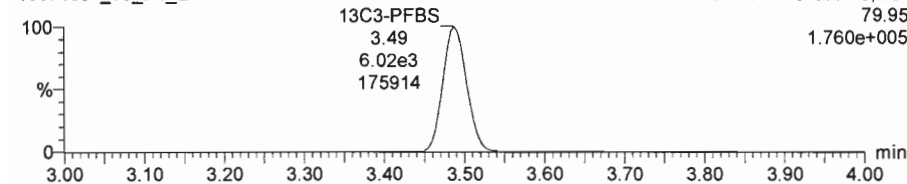
**PFHpA**

160718J1\_33\_P1\_E1



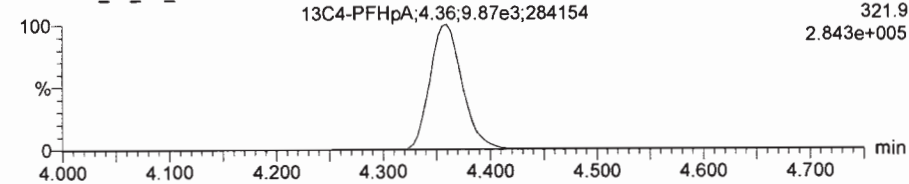
**13C3-PFBS**

160718J1\_33\_P1\_E1



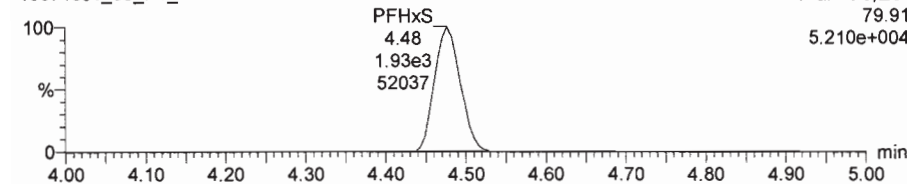
**13C4-PFHpA**

160718J1\_33\_P1\_E1



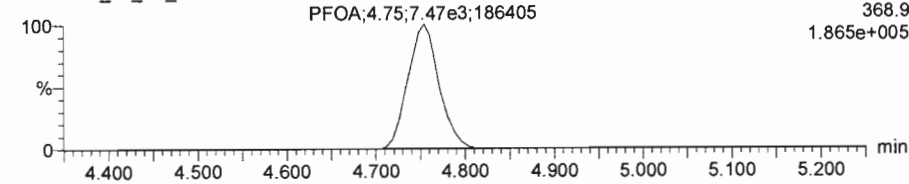
**PFHxS**

160718J1\_33\_P1\_E1



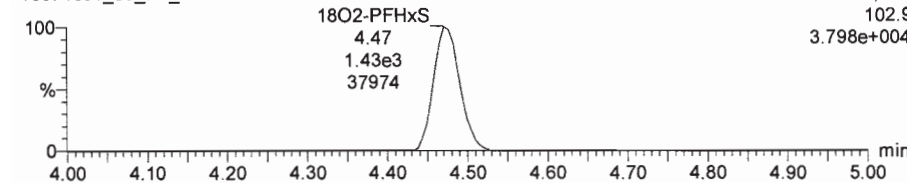
**PFOA**

160718J1\_33\_P1\_E1



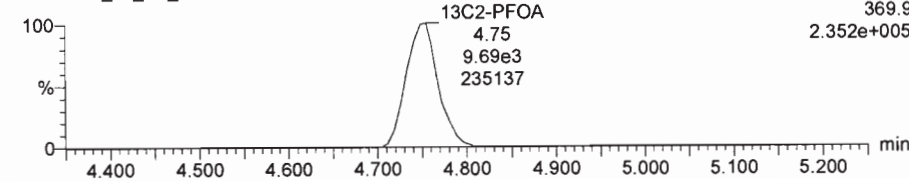
**18O2-PFHxS**

160718J1\_33\_P1\_E1



**13C2-PFOA**

160718J1\_33\_P1\_E1





Dataset:        U:\Q2.PRO\Results\160718J1\160718J1\_33.qld

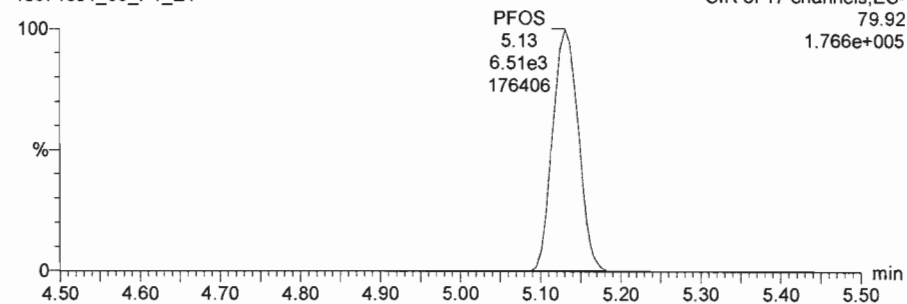
Last Altered:    Tuesday, July 19, 2016 09:18:44 Pacific Daylight Time

Printed:        Tuesday, July 19, 2016 09:19:39 Pacific Daylight Time

Name: 160718J1\_33.wiff, Date: 18-Jul-2016, Time: 21:23:13, ID: ST160718J1-11 PFC CS3.5 16G1210, Description: PFC CS3.5 16G1210

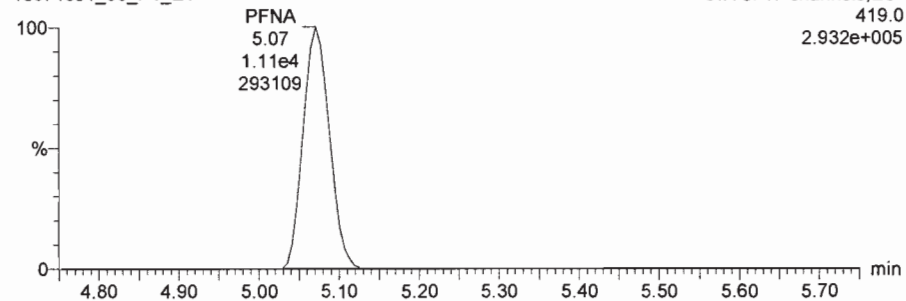
**PFOS**

160718J1\_33\_P1\_E1



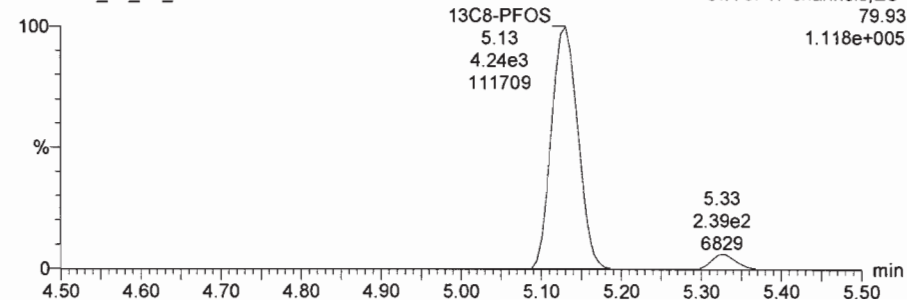
**PFNA**

160718J1\_33\_P1\_E1



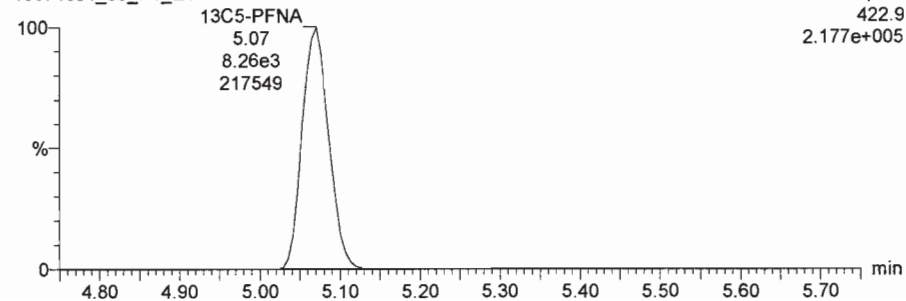
**13C8-PFOS**

160718J1\_33\_P1\_E1



**13C5-PFNA**

160718J1\_33\_P1\_E1



Dataset:        U:\Q2.PRO\Results\160718J1\160718J1\_33.qld

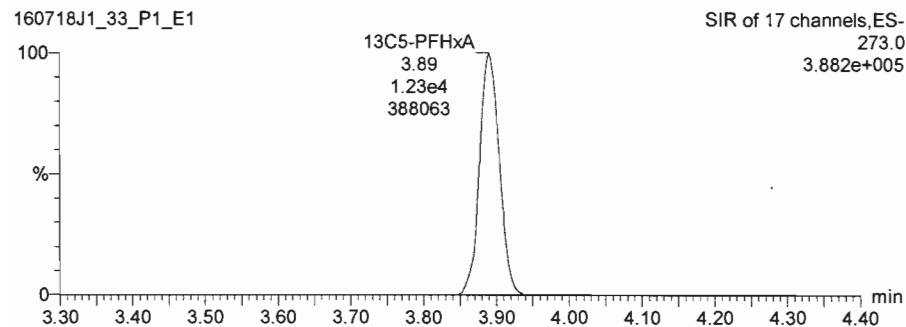
Last Altered:   Tuesday, July 19, 2016 09:18:44 Pacific Daylight Time

Printed:        Tuesday, July 19, 2016 09:19:39 Pacific Daylight Time

Name: 160718J1\_33.wiff, Date: 18-Jul-2016, Time: 21:23:13, ID: ST160718J1-11 PFC CS3.5 16G1210, Description: PFC CS3.5 16G1210

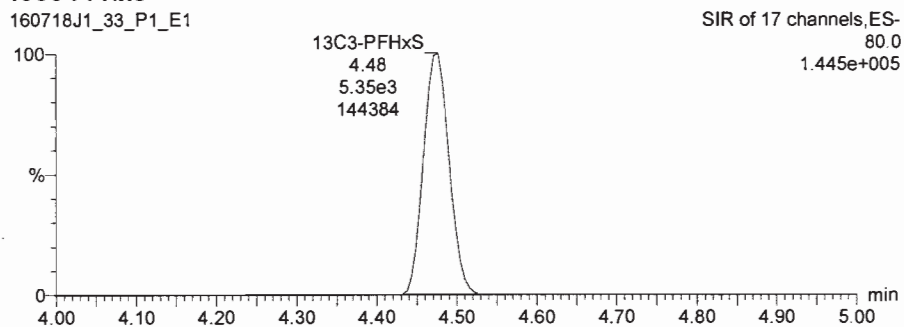
**13C5-PFHxA**

160718J1\_33\_P1\_E1



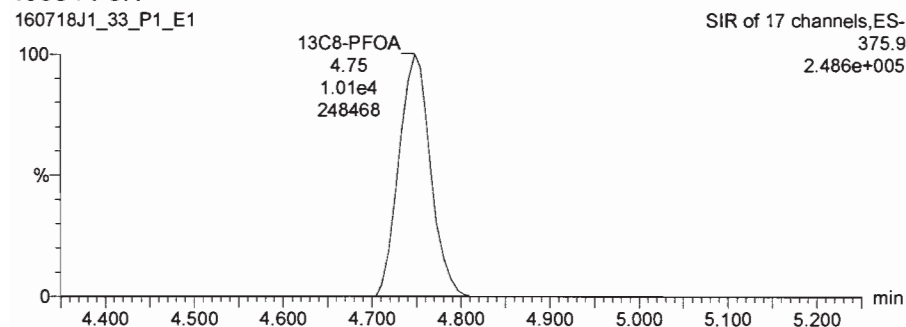
**13C3-PFHxS**

160718J1\_33\_P1\_E1



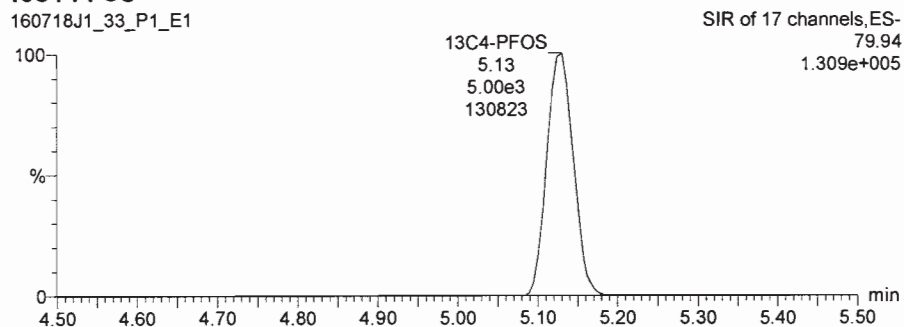
**13C8-PFOA**

160718J1\_33\_P1\_E1



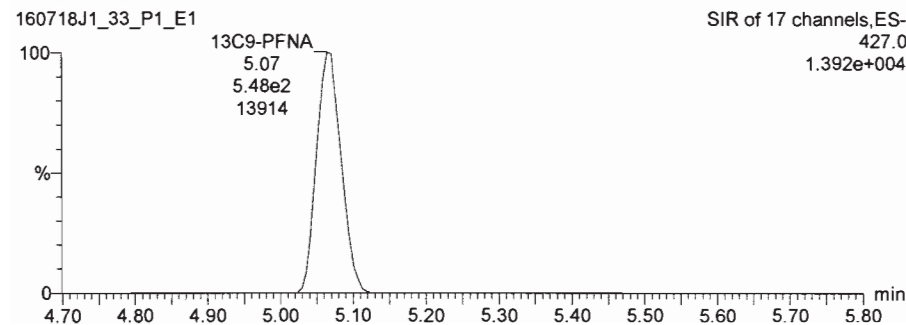
**13C4-PFOS**

160718J1\_33\_P1\_E1



**13C9-PFNA**

160718J1\_33\_P1\_E1



Dataset: U:\Q2.PRO\Results\160719J1\160719J1\_02.qld

Last Altered: Wednesday, July 20, 2016 09:53:34 Pacific Daylight Time

Printed: Wednesday, July 20, 2016 09:56:48 Pacific Daylight Time

Method: U:\Q2.PRO\MethDB\PFC List 6.mdb 08 Jul 2016 09:57:05

Calibration: U:\Q2.PRO\CurveDB\C18\_VAL-PFC\_Q2\_07-18-16\_L6.cdb 19 Jul 2016 08:45:41

Name: 160719J1\_02.wiff, Date: 19-Jul-2016, Time: 14:37:16, ID: ST160719J1-1 PFC CS3.5 16G1210, Description: PFC CS3.5 16G1210

|    | # Name         | Trace | Response | IS Resp | RRF    | Wt/Vol | RT   | Conc | %Rec  |
|----|----------------|-------|----------|---------|--------|--------|------|------|-------|
| 1  | 1 PFBS         | 79.9  | 2.78e3   | 6.61e3  |        | 1.000  | 3.49 | 25.0 | 99.8  |
| 2  | 2 PFHpA        | 318.9 | 4.68e3   | 1.14e4  |        | 1.000  | 4.37 | 24.2 | 97.0  |
| 3  | 3 PFHxS        | 79.91 | 2.28e3   | 1.65e3  |        | 1.000  | 4.49 | 25.2 | 100.7 |
| 4  | 4 PFOA         | 368.9 | 9.00e3   | 1.00e4  |        | 1.000  | 4.76 | 25.4 | 101.6 |
| 5  | 5 PFOS         | 79.92 | 6.92e3   | 4.40e3  |        | 1.000  | 5.14 | 25.5 | 102.2 |
| 6  | 6 PFNA         | 419.0 | 1.20e4   | 8.83e3  |        | 1.000  | 5.08 | 26.1 | 104.3 |
| 7  | 7 13C3-PFBS    | 79.95 | 6.61e3   | 1.36e4  | 0.469  | 1.000  | 3.49 | 12.9 | 103.5 |
| 8  | 8 13C4-PFHpA   | 321.9 | 1.14e4   | 1.36e4  | 0.822  | 1.000  | 4.37 | 12.8 | 102.1 |
| 9  | 9 18O2-PFHxS   | 102.9 | 1.65e3   | 6.14e3  | 0.256  | 1.000  | 4.48 | 13.1 | 105.1 |
| 10 | 10 13C2-PFOA   | 369.9 | 1.00e4   | 1.11e4  | 0.915  | 1.000  | 4.76 | 12.3 | 98.2  |
| 11 | 11 13C8-PFOS   | 79.93 | 4.40e3   | 5.32e3  | 0.822  | 1.000  | 5.13 | 12.6 | 100.7 |
| 12 | 12 13C5-PFNA   | 422.9 | 8.83e3   | 6.05e2  | 14.407 | 1.000  | 5.07 | 12.7 | 101.3 |
| 13 | 13 13C5-PFHxA  | 273.0 | 1.36e4   | 1.36e4  | 1.000  | 1.000  | 3.90 | 12.5 | 100.0 |
| 14 | 14 13C3-PFHxS  | 80.0  | 6.14e3   | 6.14e3  | 1.000  | 1.000  | 4.48 | 12.5 | 100.0 |
| 15 | 15 13C8-PFOA   | 375.9 | 1.11e4   | 1.11e4  | 1.000  | 1.000  | 4.76 | 12.5 | 100.0 |
| 16 | 16 13C4-PFOS   | 79.94 | 5.32e3   | 5.32e3  | 1.000  | 1.000  | 5.13 | 12.5 | 100.0 |
| 17 | 17 13C9-PFNA   | 427.0 | 6.05e2   | 6.05e2  | 1.000  | 1.000  | 5.07 | 12.5 | 100.0 |
| 18 | 18 Total PFBS  | 79.9  |          | 6.61e3  |        | 1.000  |      | 25.0 |       |
| 19 | 19 Total PFHxS | 79.91 |          | 1.65e3  |        | 1.000  |      | 25.2 |       |
| 20 | 20 Total PFOA  | 368.9 |          | 1.00e4  |        | 1.000  |      | 25.4 |       |
| 21 | 21 Total PFOS  | 79.92 |          | 4.40e3  |        | 1.000  |      | 25.6 |       |

75-125



NA

60-150



50-150

PW  
7/20/16

ES 4/20/16

|    | Sample Name | Acquisition Date   | Sample ID                      | Sample Comment    |
|----|-------------|--------------------|--------------------------------|-------------------|
| 1  | 160719J1_01 | 7/19/2016 14:25:02 | IPA                            | IPA               |
| 2  | 160719J1_02 | 7/19/2016 14:37:16 | ST160719J1-1 PFC CS3.5 16G1210 | PFC CS3.5 16G1210 |
| 3  | 160719J1_03 | 7/19/2016 14:49:28 | IPA                            | IPA               |
| 4  | 160719J1_04 | 7/19/2016 15:01:37 | B6G0075-BS1                    | OPR               |
| 5  | 160719J1_05 | 7/19/2016 15:13:49 | B6G0076-BS1                    | OPR               |
| 6  | 160719J1_06 | 7/19/2016 15:26:03 | IPA                            | IPA               |
| 7  | 160719J1_07 | 7/19/2016 15:38:15 | B6G0075-BLK1                   | Method Blank      |
| 8  | 160719J1_08 | 7/19/2016 15:50:27 | B6G0076-BLK1                   | Method Blank      |
| 9  | 160719J1_09 | 7/19/2016 16:02:40 | 1600903-06@10x                 | OF-MW29-0716      |
| 10 | 160719J1_10 | 7/19/2016 16:14:50 | 1600903-07@10x                 | OF-MW08D-0716     |
| 11 | 160719J1_11 | 7/19/2016 16:55:50 | B6G0068-MS1@10x                | Matrix Spike      |
| 12 | 160719J1_12 | 7/19/2016 17:08:06 | B6G0068-MSD1@10x               | Matrix Spike Dup  |
| 13 | 160719J1_13 | 7/19/2016 17:20:18 | 1600910-01                     | GW-GZ-105         |
| 14 | 160719J1_14 | 7/19/2016 17:32:29 | 1600910-02                     | GW-GZ-105-DUP     |
| 15 | 160719J1_15 | 7/19/2016 17:44:43 | 1600910-03                     | GW-FPC-8B         |
| 16 | 160719J1_16 | 7/19/2016 17:56:55 | 1600910-04                     | GW-FPC-8A         |
| 17 | 160719J1_17 | 7/19/2016 18:09:05 | 1600910-05                     | GW-FPC-4B         |
| 18 | 160719J1_18 | 7/19/2016 18:21:21 | 1600910-06                     | GW-AE-4A          |
| 19 | 160719J1_19 | 7/19/2016 18:33:34 | IPA                            | IPA               |
| 20 | 160719J1_20 | 7/19/2016 18:45:47 | ST160719J1-2 PFC CS3.5 16G1210 | PFC CS3.5 16G1210 |
| 21 | 160719J1_21 | 7/19/2016 18:58:00 | IPA                            | IPA               |
| 22 | 160719J1_22 | 7/19/2016 19:10:11 | 1600910-07                     | GW-AE-4B          |
| 23 | 160719J1_23 | 7/19/2016 19:22:24 | 1600910-08                     | GW-FPC-6B         |
| 24 | 160719J1_24 | 7/19/2016 19:34:37 | 1600910-09                     | GW-FPC-6A         |
| 25 | 160719J1_25 | 7/19/2016 19:46:47 | 1600910-10                     | GW-FPC-7A         |
| 26 | 160719J1_26 | 7/19/2016 19:59:02 | 1600910-11                     | GW-FPC-7B         |
| 27 | 160719J1_27 | 7/19/2016 20:11:12 | 1600910-12                     | GW-AE-2A          |
| 28 | 160719J1_28 | 7/19/2016 20:23:24 | 1600910-13                     | GW-AE-2B          |
| 29 | 160719J1_29 | 7/19/2016 20:35:37 | 1600910-14                     | GW-AE-3A          |
| 30 | 160719J1_30 | 7/19/2016 20:47:49 | 1600910-15                     | GW-AE-3A DUP      |
| 31 | 160719J1_31 | 7/19/2016 21:00:01 | 1600910-16                     | GW-AE-3B          |
| 32 | 160719J1_32 | 7/19/2016 21:12:15 | IPA                            | IPA               |
| 33 | 160719J1_33 | 7/19/2016 21:24:27 | ST160719J1-3 PFC CS3.5 16G1210 | PFC CS3.5 16G1210 |
| 34 | 160719J1_34 | 7/19/2016 21:36:40 | IPA                            | IPA               |
| 35 | 160719J1_35 | 7/19/2016 21:48:52 | 1600910-17                     | GW-FPC-9A         |
| 36 | 160719J1_36 | 7/19/2016 22:01:03 | 1600910-18                     | GW-AE-1B          |
| 37 | 160719J1_37 | 7/19/2016 22:13:15 | 1600910-19                     | GW-EB-WATERLEVEL  |
| 38 | 160719J1_38 | 7/19/2016 22:25:27 | 1600910-20                     | FB-DI WATER       |
| 39 | 160719J1_39 | 7/19/2016 22:37:42 | 1600910-21                     | GW-AE-1A          |
| 40 | 160719J1_40 | 7/19/2016 22:49:56 | 1600910-22                     | GW-FPC-11B        |
| 41 | 160719J1_41 | 7/19/2016 23:02:06 | 1600910-23                     | GW-FPC-11A        |
| 42 | 160719J1_42 | 7/19/2016 23:14:18 | 1600910-24                     | GW-FPC-5B         |
| 43 | 160719J1_43 | 7/19/2016 23:26:30 | B6G0076-MS1                    | Matrix Spike      |
| 44 | 160719J1_44 | 7/19/2016 23:38:42 | B6G0076-MSD1                   | Matrix Spike Dup  |
| 45 | 160719J1_45 | 7/19/2016 23:50:54 | IPA                            | IPA               |
| 46 | 160719J1_46 | 7/20/2016 00:03:08 | ST160719J1-4 PFC CS3.5 16G1210 | PFC CS3.5 16G1210 |
| 47 | 160719J1_47 | 7/20/2016 00:15:20 | IPA                            | IPA               |

# LC Calibration Standards Review Checklist Q2

| Calibration ID: |    | L M H                                                                                                       | ION Ratio                           | Concentration                       | C-Cals Name                         | Sign Date                           | Correct I-Cal                       | Manual Integrations                 |                                     |
|-----------------|----|-------------------------------------------------------------------------------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|
| ST160719J1-1    |    | <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
|                 | -2 | <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
|                 | -3 | <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
|                 | -4 | <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
|                 |    | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>                                  | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            |
|                 |    | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>                                  | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            |
|                 |    | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>                                  | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            |
|                 |    | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>                                  | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            |
|                 |    | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>                                  | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            |
|                 |    | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>                                  | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>            |

Full Mass Cal. Date: 7/7/16

Reviewed By: ES 7/20/16  
Initials/Date

Comments:

PFC List 6



Dataset:        U:\Q2.PRO\Results\160719J1\160719J1\_02.qld

Last Altered:   Wednesday, July 20, 2016 09:53:34 Pacific Daylight Time

Printed:        Wednesday, July 20, 2016 09:59:07 Pacific Daylight Time

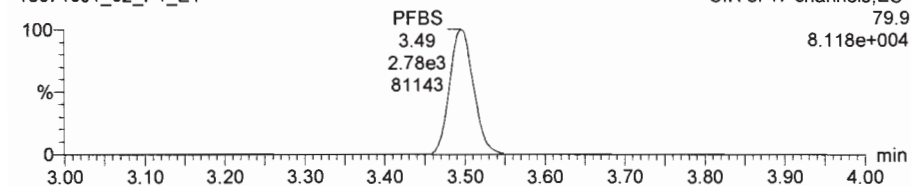
Method: U:\Q2.PRO\MethDB\PFC List 6.mdb 08 Jul 2016 09:57:05

Calibration: U:\Q2.PRO\CurveDB\C18\_VAL-PFC\_Q2\_07-18-16\_L6.cdb 19 Jul 2016 08:45:41

Name: 160719J1\_02.wiff, Date: 19-Jul-2016, Time: 14:37:16, ID: ST160719J1-1 PFC CS3.5 16G1210, Description: PFC CS3.5 16G1210

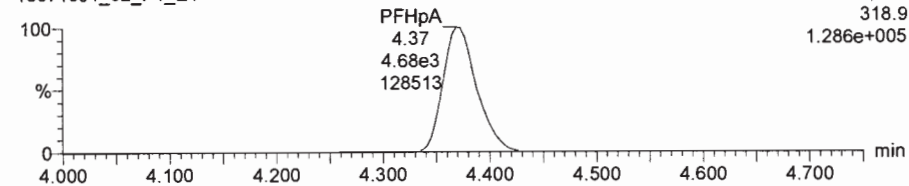
### PFBS

160719J1\_02\_P1\_E1



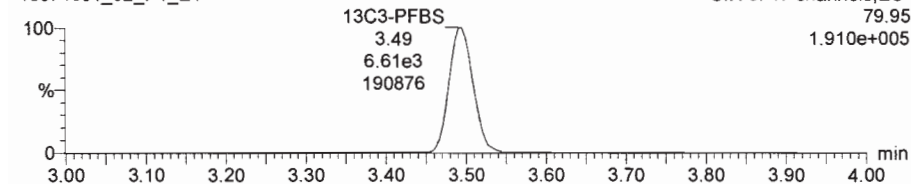
### PFHpA

160719J1\_02\_P1\_E1



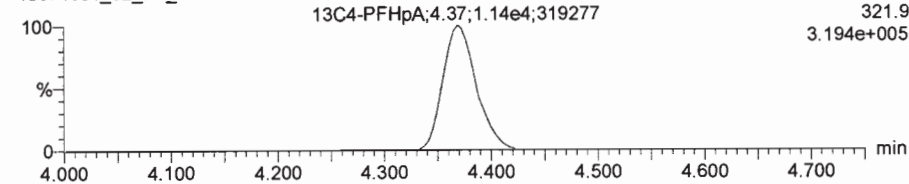
### 13C3-PFBS

160719J1\_02\_P1\_E1



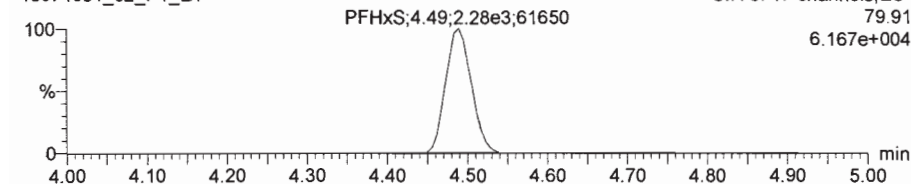
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160719J1\_02\_P1\_E1



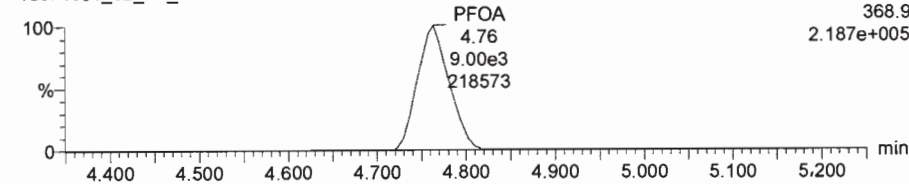
### PFHxS

160719J1\_02\_P1\_E1



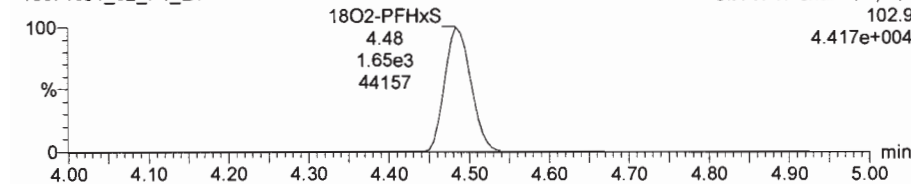
### PFOA

160719J1\_02\_P1\_E1



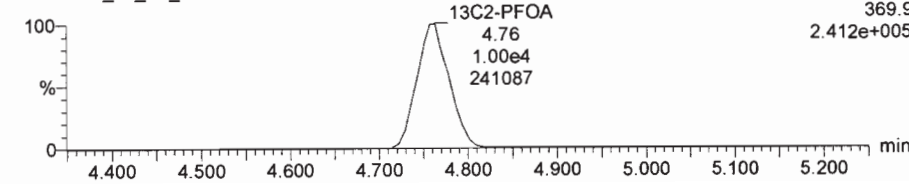
### 18O2-PFHxS

160719J1\_02\_P1\_E1



### 13C2-PFOA

160719J1\_02\_P1\_E1



Dataset:        U:\Q2.PRO\Results\160719J1\160719J1\_02.qld

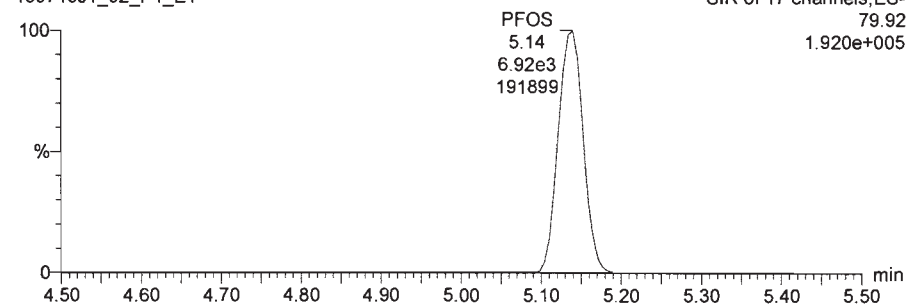
Last Altered:   Wednesday, July 20, 2016 09:53:34 Pacific Daylight Time

Printed:        Wednesday, July 20, 2016 09:59:07 Pacific Daylight Time

Name: 160719J1\_02.wiff, Date: 19-Jul-2016, Time: 14:37:16, ID: ST160719J1-1 PFC CS3.5 16G1210, Description: PFC CS3.5 16G1210

**PFOS**

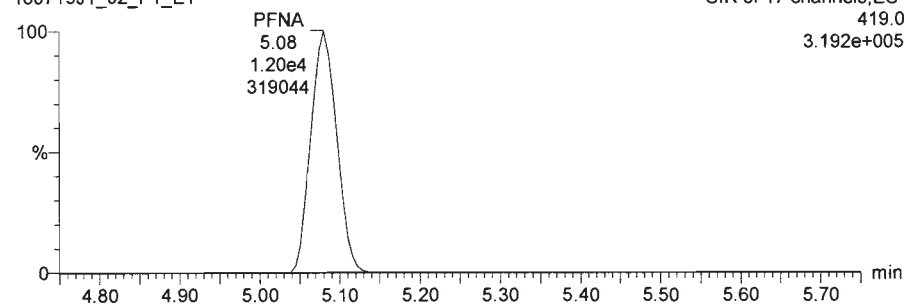
160719J1\_02\_P1\_E1



SIR of 17 channels, ES-  
79.92  
1.920e+005

**PFNA**

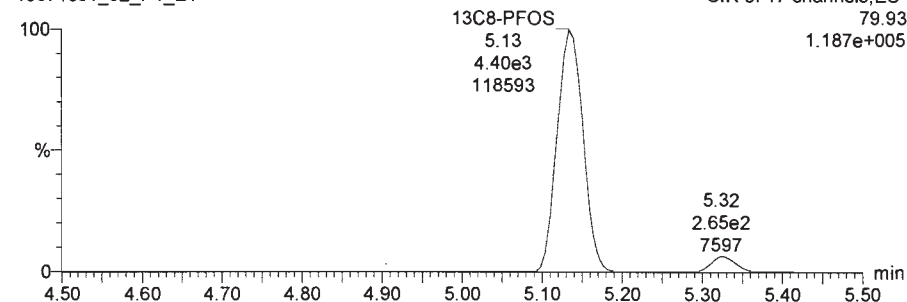
160719J1\_02\_P1\_E1



SIR of 17 channels, ES-  
419.0  
3.192e+005

**13C8-PFOS**

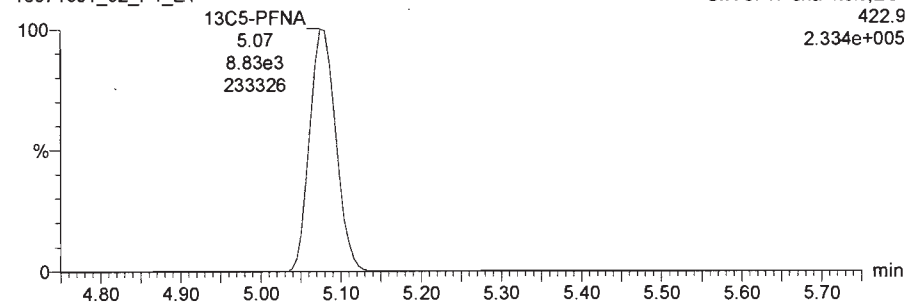
160719J1\_02\_P1\_E1



SIR of 17 channels, ES-  
79.93  
1.187e+005

**13C5-PFNA**

160719J1\_02\_P1\_E1



SIR of 17 channels, ES-  
422.9  
2.334e+005

Dataset:        U:\Q2.PRO\Results\160719J1\160719J1\_02.qld

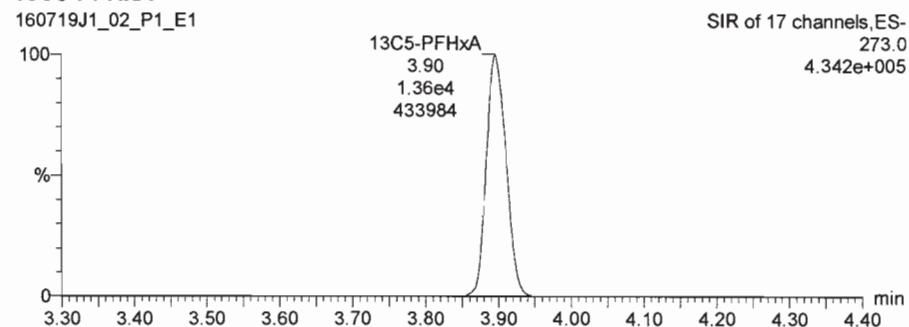
Last Altered:   Wednesday, July 20, 2016 09:53:34 Pacific Daylight Time

Printed:        Wednesday, July 20, 2016 09:59:07 Pacific Daylight Time

Name: 160719J1\_02.wiff, Date: 19-Jul-2016, Time: 14:37:16, ID: ST160719J1-1 PFC CS3.5 16G1210, Description: PFC CS3.5 16G1210

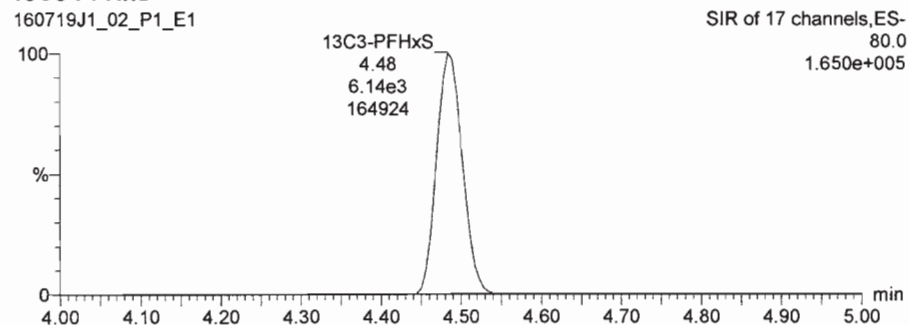
**13C5-PFHxA**

160719J1\_02\_P1\_E1



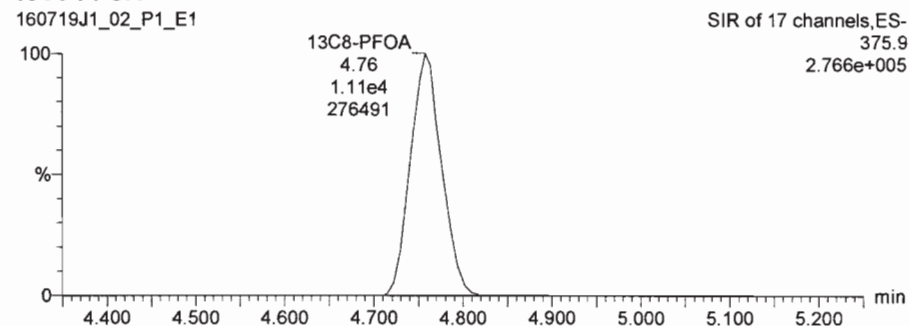
**13C3-PFHxS**

160719J1\_02\_P1\_E1



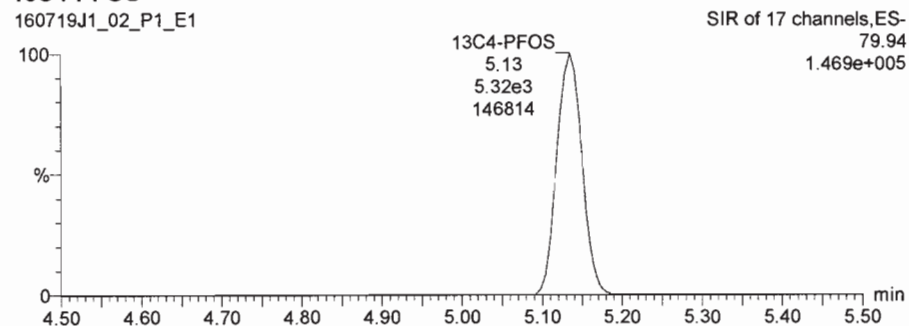
**13C8-PFOA**

160719J1\_02\_P1\_E1



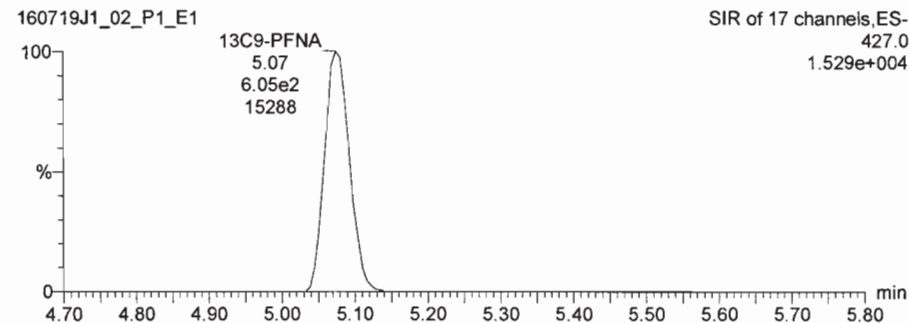
**13C4-PFOS**

160719J1\_02\_P1\_E1



**13C9-PFNA**

160719J1\_02\_P1\_E1





Dataset: U:\Q2.PRO\Results\160719J1\160719J1\_20.qld

Last Altered: Wednesday, July 20, 2016 10:29:48 Pacific Daylight Time

Printed: Wednesday, July 20, 2016 10:30:09 Pacific Daylight Time

Method: U:\Q2.PRO\MethDB\PFC List 6.mdb 08 Jul 2016 09:57:05

Calibration: U:\Q2.PRO\CurveDB\C18\_VAL-PFC\_Q2\_07-18-16\_L6.cdb 19 Jul 2016 08:45:41

Name: 160719J1\_20.wiff, Date: 19-Jul-2016, Time: 18:45:47, ID: ST160719J1-2 PFC CS3.5 16G1210, Description: PFC CS3.5 16G1210

| #  | Name           | Trace | Response | IS Resp | RRF    | Wt/Vol | RT   | Conc. | %Rec  |
|----|----------------|-------|----------|---------|--------|--------|------|-------|-------|
| 1  | 1 PFBS         | 79.9  | 2.43e3   | 5.85e3  |        | 1.000  | 3.49 | 24.6  | 98.4  |
| 2  | 2 PFHpA        | 318.9 | 4.24e3   | 1.01e4  |        | 1.000  | 4.37 | 25.0  | 99.9  |
| 3  | 3 PFHxS        | 79.91 | 2.12e3   | 1.42e3  |        | 1.000  | 4.49 | 27.4  | 109.6 |
| 4  | 4 PFOA         | 368.9 | 7.92e3   | 9.03e3  |        | 1.000  | 4.76 | 24.7  | 98.9  |
| 5  | 5 PFOS         | 79.92 | 6.22e3   | 4.26e3  |        | 1.000  | 5.13 | 23.7  | 94.8  |
| 6  | 6 PFNA         | 419.0 | 1.13e4   | 8.29e3  |        | 1.000  | 5.07 | 26.1  | 104.2 |
| 7  | 7 13C3-PFBS    | 79.95 | 5.85e3   | 1.22e4  | 0.469  | 1.000  | 3.49 | 12.7  | 101.8 |
| 8  | 8 13C4-PFHpA   | 321.9 | 1.01e4   | 1.22e4  | 0.822  | 1.000  | 4.37 | 12.5  | 100.0 |
| 9  | 9 18O2-PFHxS   | 102.9 | 1.42e3   | 5.75e3  | 0.256  | 1.000  | 4.48 | 12.0  | 96.2  |
| 10 | 10 13C2-PFOA   | 369.9 | 9.03e3   | 1.01e4  | 0.915  | 1.000  | 4.76 | 12.2  | 97.9  |
| 11 | 11 13C8-PFOS   | 79.93 | 4.26e3   | 5.03e3  | 0.822  | 1.000  | 5.13 | 12.9  | 103.0 |
| 12 | 12 13C5-PFNA   | 422.9 | 8.29e3   | 5.48e2  | 14.407 | 1.000  | 5.07 | 13.1  | 105.0 |
| 13 | 13 13C5-PFHxA  | 273.0 | 1.22e4   | 1.22e4  | 1.000  | 1.000  | 3.89 | 12.5  | 100.0 |
| 14 | 14 13C3-PFHxS  | 80.0  | 5.75e3   | 5.75e3  | 1.000  | 1.000  | 4.48 | 12.5  | 100.0 |
| 15 | 15 13C8-PFOA   | 375.9 | 1.01e4   | 1.01e4  | 1.000  | 1.000  | 4.76 | 12.5  | 100.0 |
| 16 | 16 13C4-PFOS   | 79.94 | 5.03e3   | 5.03e3  | 1.000  | 1.000  | 5.13 | 12.5  | 100.0 |
| 17 | 17 13C9-PFNA   | 427.0 | 5.48e2   | 5.48e2  | 1.000  | 1.000  | 5.07 | 12.5  | 100.0 |
| 18 | 18 Total PFBS  | 79.9  |          | 5.85e3  |        | 1.000  |      | 24.6  |       |
| 19 | 19 Total PFHxS | 79.91 |          | 1.42e3  |        | 1.000  |      | 27.4  |       |
| 20 | 20 Total PFOA  | 368.9 |          | 9.03e3  |        | 1.000  |      | 24.7  |       |
| 21 | 21 Total PFOS  | 79.92 |          | 4.26e3  |        | 1.000  |      | 23.8  |       |

75-125



NA  
60-150



50-150

PV  
7/20/16

Eg 7/20/16

|    | Sample Name | Acquisition Date   | Sample ID                      | Sample Comment    |
|----|-------------|--------------------|--------------------------------|-------------------|
| 1  | 160719J1_01 | 7/19/2016 14:25:02 | IPA                            | IPA               |
| 2  | 160719J1_02 | 7/19/2016 14:37:16 | ST160719J1-1 PFC CS3.5 16G1210 | PFC CS3.5 16G1210 |
| 3  | 160719J1_03 | 7/19/2016 14:49:28 | IPA                            | IPA               |
| 4  | 160719J1_04 | 7/19/2016 15:01:37 | B6G0075-BS1                    | OPR               |
| 5  | 160719J1_05 | 7/19/2016 15:13:49 | B6G0076-BS1                    | OPR               |
| 6  | 160719J1_06 | 7/19/2016 15:26:03 | IPA                            | IPA               |
| 7  | 160719J1_07 | 7/19/2016 15:38:15 | B6G0075-BLK1                   | Method Blank      |
| 8  | 160719J1_08 | 7/19/2016 15:50:27 | B6G0076-BLK1                   | Method Blank      |
| 9  | 160719J1_09 | 7/19/2016 16:02:40 | 1600903-06@10x                 | OF-MW29-0716      |
| 10 | 160719J1_10 | 7/19/2016 16:14:50 | 1600903-07@10x                 | OF-MW08D-0716     |
| 11 | 160719J1_11 | 7/19/2016 16:55:50 | B6G0068-MS1@10x                | Matrix Spike      |
| 12 | 160719J1_12 | 7/19/2016 17:08:06 | B6G0068-MSD1@10x               | Matrix Spike Dup  |
| 13 | 160719J1_13 | 7/19/2016 17:20:18 | 1600910-01                     | GW-GZ-105         |
| 14 | 160719J1_14 | 7/19/2016 17:32:29 | 1600910-02                     | GW-GZ-105-DUP     |
| 15 | 160719J1_15 | 7/19/2016 17:44:43 | 1600910-03                     | GW-FPC-8B         |
| 16 | 160719J1_16 | 7/19/2016 17:56:55 | 1600910-04                     | GW-FPC-8A         |
| 17 | 160719J1_17 | 7/19/2016 18:09:05 | 1600910-05                     | GW-FPC-4B         |
| 18 | 160719J1_18 | 7/19/2016 18:21:21 | 1600910-06                     | GW-AE-4A          |
| 19 | 160719J1_19 | 7/19/2016 18:33:34 | IPA                            | IPA               |
| 20 | 160719J1_20 | 7/19/2016 18:45:47 | ST160719J1-2 PFC CS3.5 16G1210 | PFC CS3.5 16G1210 |
| 21 | 160719J1_21 | 7/19/2016 18:58:00 | IPA                            | IPA               |
| 22 | 160719J1_22 | 7/19/2016 19:10:11 | 1600910-07                     | GW-AE-4B          |
| 23 | 160719J1_23 | 7/19/2016 19:22:24 | 1600910-08                     | GW-FPC-6B         |
| 24 | 160719J1_24 | 7/19/2016 19:34:37 | 1600910-09                     | GW-FPC-6A         |
| 25 | 160719J1_25 | 7/19/2016 19:46:47 | 1600910-10                     | GW-FPC-7A         |
| 26 | 160719J1_26 | 7/19/2016 19:59:02 | 1600910-11                     | GW-FPC-7B         |
| 27 | 160719J1_27 | 7/19/2016 20:11:12 | 1600910-12                     | GW-AE-2A          |
| 28 | 160719J1_28 | 7/19/2016 20:23:24 | 1600910-13                     | GW-AE-2B          |
| 29 | 160719J1_29 | 7/19/2016 20:35:37 | 1600910-14                     | GW-AE-3A          |
| 30 | 160719J1_30 | 7/19/2016 20:47:49 | 1600910-15                     | GW-AE-3A DUP      |
| 31 | 160719J1_31 | 7/19/2016 21:00:01 | 1600910-16                     | GW-AE-3B          |
| 32 | 160719J1_32 | 7/19/2016 21:12:15 | IPA                            | IPA               |
| 33 | 160719J1_33 | 7/19/2016 21:24:27 | ST160719J1-3 PFC CS3.5 16G1210 | PFC CS3.5 16G1210 |
| 34 | 160719J1_34 | 7/19/2016 21:36:40 | IPA                            | IPA               |
| 35 | 160719J1_35 | 7/19/2016 21:48:52 | 1600910-17                     | GW-FPC-9A         |
| 36 | 160719J1_36 | 7/19/2016 22:01:03 | 1600910-18                     | GW-AE-1B          |
| 37 | 160719J1_37 | 7/19/2016 22:13:15 | 1600910-19                     | GW-EB-WATERLEVEL  |
| 38 | 160719J1_38 | 7/19/2016 22:25:27 | 1600910-20                     | FB-DI WATER       |
| 39 | 160719J1_39 | 7/19/2016 22:37:42 | 1600910-21                     | GW-AE-1A          |
| 40 | 160719J1_40 | 7/19/2016 22:49:56 | 1600910-22                     | GW-FPC-11B        |
| 41 | 160719J1_41 | 7/19/2016 23:02:06 | 1600910-23                     | GW-FPC-11A        |
| 42 | 160719J1_42 | 7/19/2016 23:14:18 | 1600910-24                     | GW-FPC-5B         |
| 43 | 160719J1_43 | 7/19/2016 23:26:30 | B6G0076-MS1                    | Matrix Spike      |
| 44 | 160719J1_44 | 7/19/2016 23:38:42 | B6G0076-MSD1                   | Matrix Spike Dup  |
| 45 | 160719J1_45 | 7/19/2016 23:50:54 | IPA                            | IPA               |
| 46 | 160719J1_46 | 7/20/2016 00:03:08 | ST160719J1-4 PFC CS3.5 16G1210 | PFC CS3.5 16G1210 |
| 47 | 160719J1_47 | 7/20/2016 00:15:20 | IPA                            | IPA               |

Dataset: U:\Q2.PRO\Results\160719J1\160719J1\_20.qld

Last Altered: Wednesday, July 20, 2016 10:03:12 Pacific Daylight Time

Printed: Wednesday, July 20, 2016 10:03:51 Pacific Daylight Time

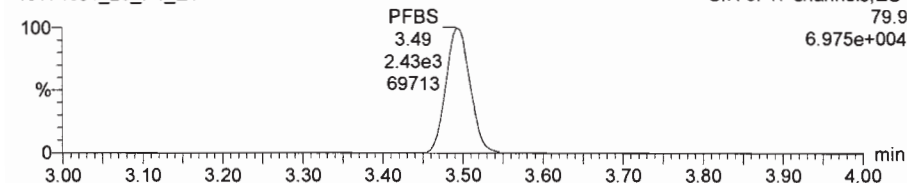
Method: U:\Q2.PRO\MethDB\PFC List 6.mdb 08 Jul 2016 09:57:05

Calibration: U:\Q2.PRO\CurveDB\C18\_VAL-PFC\_Q2\_07-18-16\_L6.cdb 19 Jul 2016 08:45:41

Name: 160719J1\_20.wiff, Date: 19-Jul-2016, Time: 18:45:47, ID: ST160719J1-2 PFC CS3.5 16G1210, Description: PFC CS3.5 16G1210

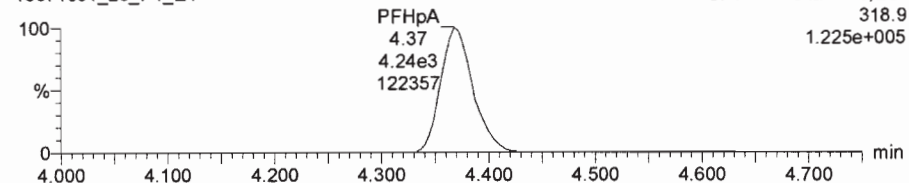
#### PFBS

160719J1\_20\_P1\_E1



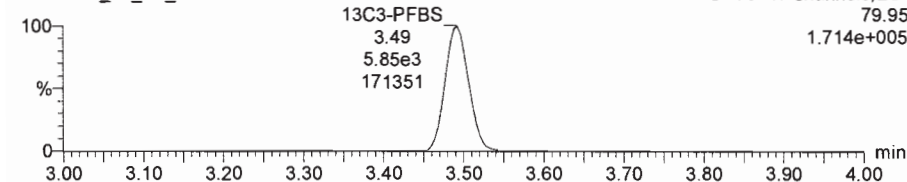
#### PFHpA

160719J1\_20\_P1\_E1



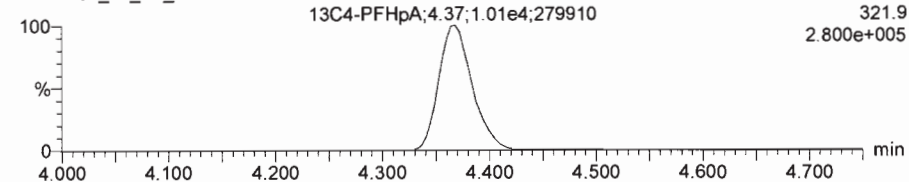
#### 13C3-PFBS

160719J1\_20\_P1\_E1



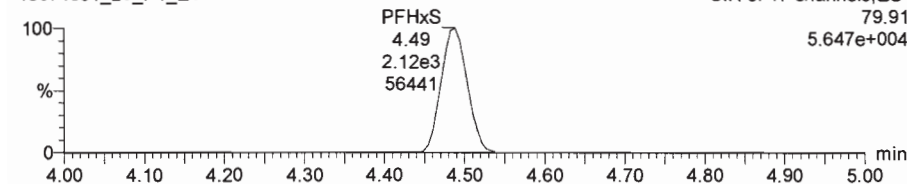
#### 13C4-PFHpA

160719J1\_20\_P1\_E1



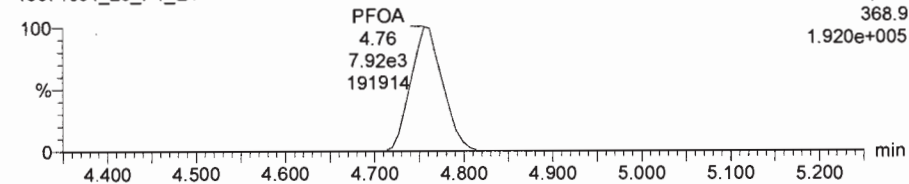
#### PFHxS

160719J1\_20\_P1\_E1



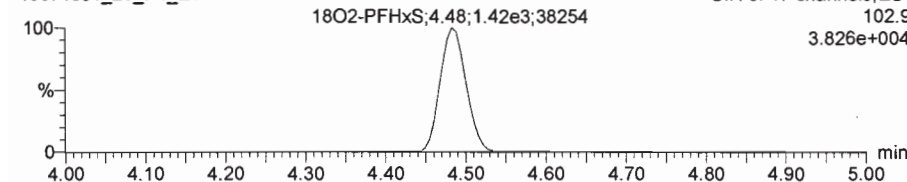
#### PFOA

160719J1\_20\_P1\_E1



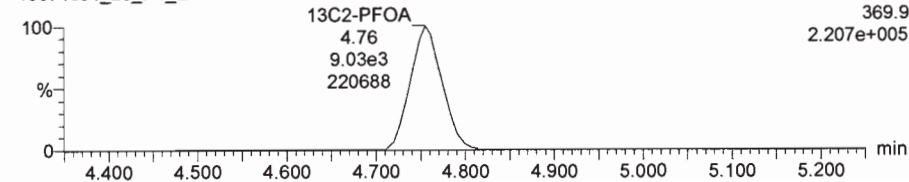
#### 18O2-PFHxS

160719J1\_20\_P1\_E1



#### 13C2-PFOA

160719J1\_20\_P1\_E1



Dataset:        U:\Q2.PRO\Results\160719J1\160719J1\_20.qld

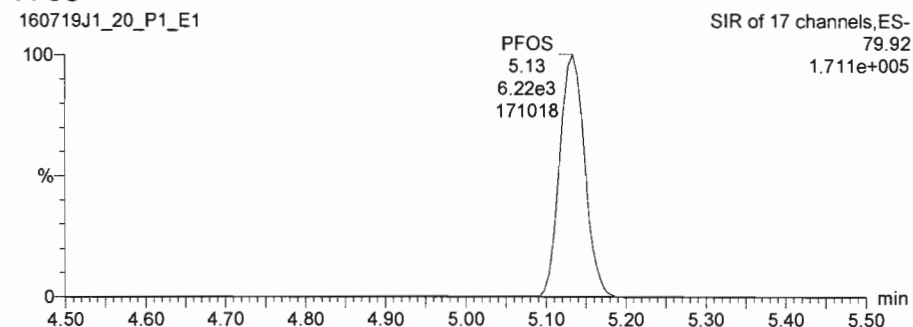
Last Altered:   Wednesday, July 20, 2016 10:03:12 Pacific Daylight Time

Printed:        Wednesday, July 20, 2016 10:03:51 Pacific Daylight Time

Name: 160719J1\_20.wiff, Date: 19-Jul-2016, Time: 18:45:47, ID: ST160719J1-2 PFC CS3.5 16G1210, Description: PFC CS3.5 16G1210

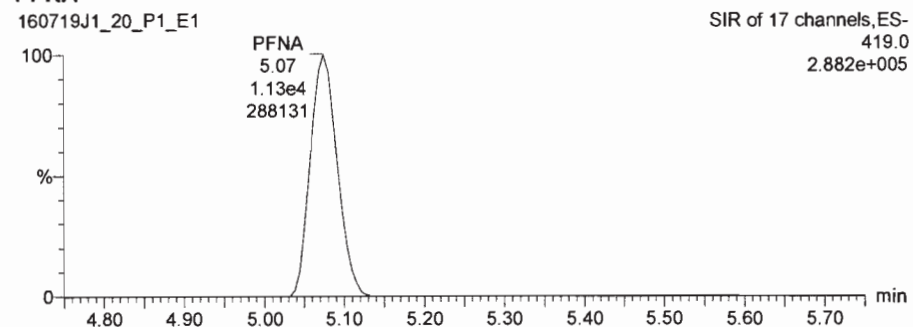
**PFOS**

160719J1\_20\_P1\_E1



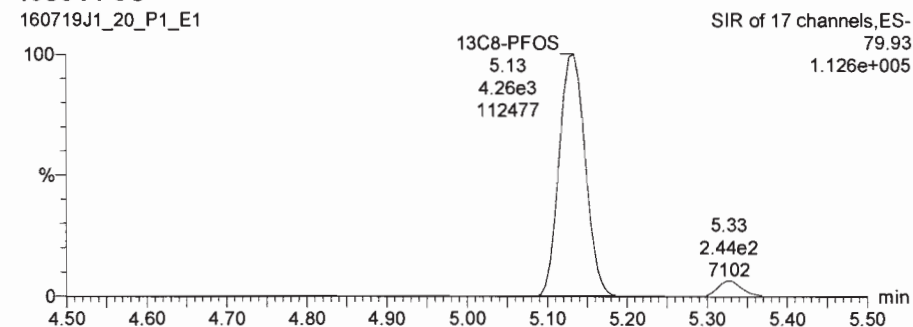
**PFNA**

160719J1\_20\_P1\_E1



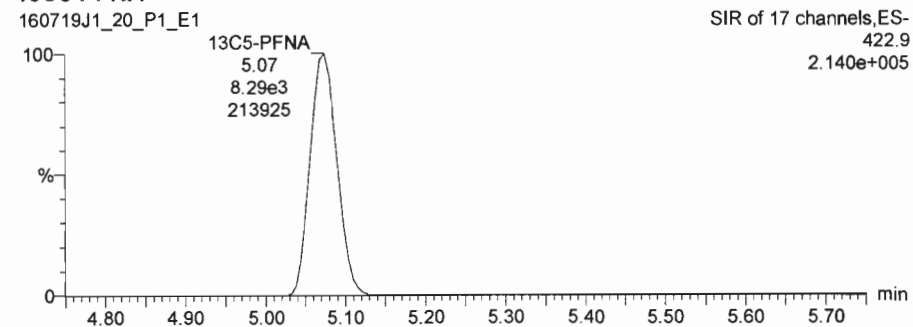
**13C8-PFOS**

160719J1\_20\_P1\_E1



**13C5-PFNA**

160719J1\_20\_P1\_E1



Dataset:        U:\Q2.PRO\Results\160719J1\160719J1\_20.qld

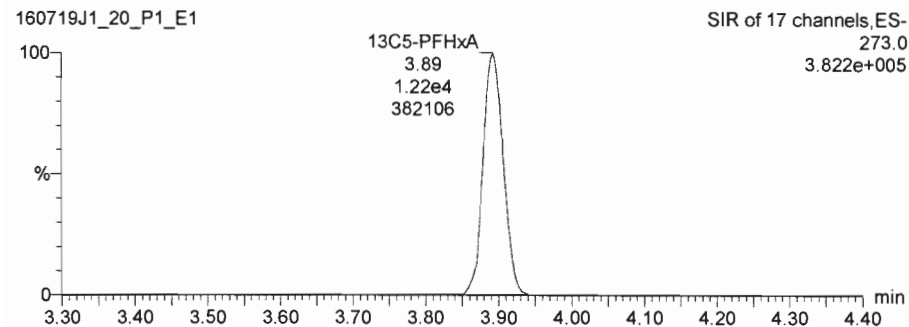
Last Altered:   Wednesday, July 20, 2016 10:03:12 Pacific Daylight Time

Printed:        Wednesday, July 20, 2016 10:03:51 Pacific Daylight Time

Name: 160719J1\_20.wiff, Date: 19-Jul-2016, Time: 18:45:47, ID: ST160719J1-2 PFC CS3.5 16G1210, Description: PFC CS3.5 16G1210

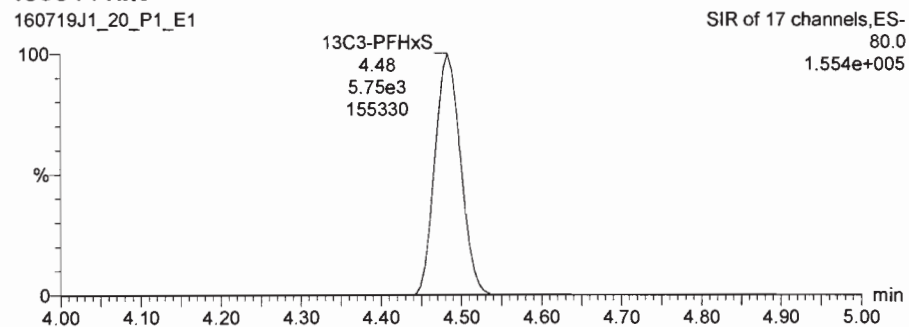
**13C5-PFHxA**

160719J1\_20\_P1\_E1



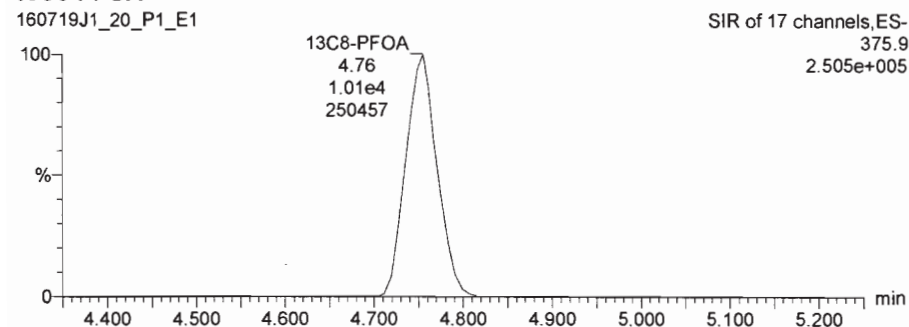
**13C3-PFHxS**

160719J1\_20\_P1\_E1



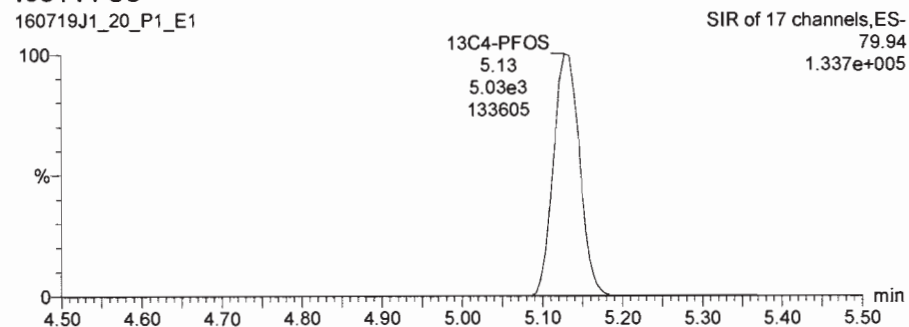
**13C8-PFOA**

160719J1\_20\_P1\_E1



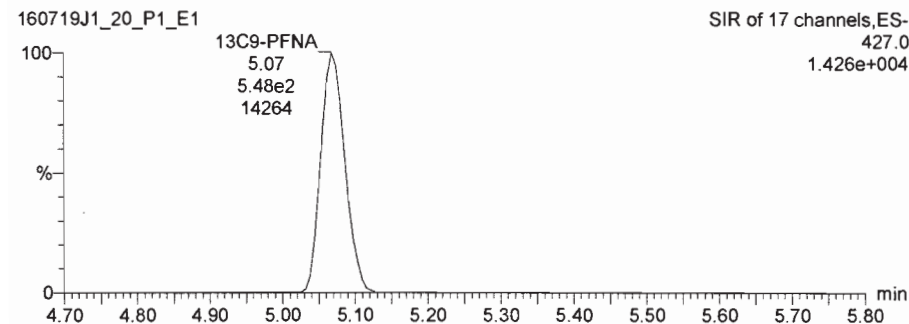
**13C4-PFOS**

160719J1\_20\_P1\_E1



**13C9-PFNA**

160719J1\_20\_P1\_E1



## **INITIAL CALIBRATION**



Dataset: U:\Q2.PRO\Results\160718J1\160718J1crv.qld

Last Altered: Tuesday, July 19, 2016 08:45:41 Pacific Daylight Time

Printed: Tuesday, July 19, 2016 08:53:33 Pacific Daylight Time

Method: U:\Q2.PRO\MethDB\PFC List 6.mdb 08 Jul 2016 09:57:05

Calibration: U:\Q2.PRO\CurveDB\C18\_VAL-PFC\_Q2\_07-18-16\_L6.cdb 19 Jul 2016 08:45:41

**Compound name: PFBS**

Coefficient of Determination:  $R^2 = 0.998945$

Calibration curve:  $-0.000122621 * x^2 + 0.214151 * x$

Response type: Internal Std ( Ref 7 ), Area \* ( IS Conc. / IS Area )

Curve type: 2nd Order, Origin: Force, Weighting: 1/x, Axis trans: None

|   | # Name               | Std. Conc | RT   | Resp   | IS Resp | Conc. | %Dev | RRF   |
|---|----------------------|-----------|------|--------|---------|-------|------|-------|
| 1 | 1 160718J1_02_P1_... | 1.00      | 3.48 | 1.23e2 | 6.49e3  | 1.10  | 10.2 | 0.236 |
| 2 | 2 160718J1_03_P1_... | 2.00      | 3.49 | 2.45e2 | 6.55e3  | 2.18  | 9.1  | 0.233 |
| 3 | 3 160718J1_04_P1_... | 5.00      | 3.48 | 5.89e2 | 6.13e3  | 5.63  | 12.5 | 0.240 |
| 4 | 4 160718J1_05_P1_... | 10.0      | 3.48 | 1.21e3 | 6.55e3  | 10.9  | 8.9  | 0.232 |
| 5 | 5 160718J1_06_P1_... | 25.0      | 3.49 | 2.67e3 | 6.28e3  | 25.2  | 0.6  | 0.212 |
| 6 | 6 160718J1_07_P1_... | 50.0      | 3.48 | 5.25e3 | 6.36e3  | 49.6  | -0.8 | 0.206 |
| 7 | 7 160718J1_08_P1_... | 75.0      | 3.48 | 7.55e3 | 6.07e3  | 75.9  | 1.2  | 0.207 |
| 8 | 8 160718J1_09_P1_... | 100       | 3.49 | 9.54e3 | 6.18e3  | 95.4  | -4.6 | 0.193 |
| 9 | 9 160718J1_10_P1_... | 200       | 3.49 | 1.86e4 | 6.06e3  | 202   | 1.2  | 0.192 |

PW  
7/19/16

BP 7/19/16 ✓

**Compound name: PFHpA**

Coefficient of Determination:  $R^2 = 0.999501$

Calibration curve:  $-0.000131734 * x^2 + 0.214148 * x$

Response type: Internal Std ( Ref 8 ), Area \* ( IS Conc. / IS Area )

Curve type: 2nd Order, Origin: Force, Weighting: 1/x, Axis trans: None

|   | # Name               | Std. Conc | RT   | Resp   | IS Resp | Conc. | %Dev | RRF   |
|---|----------------------|-----------|------|--------|---------|-------|------|-------|
| 1 | 1 160718J1_02_P1_... | 1.00      | 4.36 | 2.06e2 | 1.04e4  | 1.16  | 15.7 | 0.248 |
| 2 | 2 160718J1_03_P1_... | 2.00      | 4.36 | 4.13e2 | 1.10e4  | 2.19  | 9.7  | 0.235 |
| 3 | 3 160718J1_04_P1_... | 5.00      | 4.36 | 9.63e2 | 1.04e4  | 5.41  | 8.3  | 0.231 |
| 4 | 4 160718J1_05_P1_... | 10.0      | 4.36 | 1.97e3 | 1.10e4  | 10.5  | 5.1  | 0.224 |
| 5 | 5 160718J1_06_P1_... | 25.0      | 4.36 | 4.70e3 | 1.11e4  | 25.0  | -0.1 | 0.211 |
| 6 | 6 160718J1_07_P1_... | 50.0      | 4.36 | 9.50e3 | 1.16e4  | 49.3  | -1.4 | 0.205 |
| 7 | 7 160718J1_08_P1_... | 75.0      | 4.36 | 1.33e4 | 1.07e4  | 75.8  | 1.1  | 0.206 |
| 8 | 8 160718J1_09_P1_... | 100       | 4.36 | 1.80e4 | 1.15e4  | 97.4  | -2.6 | 0.196 |
| 9 | 9 160718J1_10_P1_... | 200       | 4.36 | 3.49e4 | 1.15e4  | 201   | 0.7  | 0.189 |

Dataset: U:\Q2.PRO\Results\160718J1\160718J1crv.qld

Last Altered: Tuesday, July 19, 2016 08:45:41 Pacific Daylight Time

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**Compound name: PFHxS**

Coefficient of Determination:  $R^2 = 0.998461$

Calibration curve:  $-0.0003928 * x^2 + 0.695199 * x$

Response type: Internal Std ( Ref 9 ), Area \* ( IS Conc. / IS Area )

Curve type: 2nd Order, Origin: Force, Weighting: 1/x, Axis trans: None

|   | # Name               | Std. Conc | RT   | Resp   | IS Resp | Conc. | %Dev | RRF   |
|---|----------------------|-----------|------|--------|---------|-------|------|-------|
| 1 | 1 160718J1_02_P1_... | 1.00      | 4.48 | 9.61e1 | 1.48e3  | 1.17  | 16.7 | 0.811 |
| 2 | 2 160718J1_03_P1_... | 2.00      | 4.48 | 2.06e2 | 1.57e3  | 2.37  | 18.4 | 0.822 |
| 3 | 3 160718J1_04_P1_... | 5.00      | 4.48 | 4.49e2 | 1.48e3  | 5.46  | 9.2  | 0.757 |
| 4 | 4 160718J1_05_P1_... | 10.0      | 4.47 | 9.81e2 | 1.61e3  | 11.0  | 10.1 | 0.761 |
| 5 | 5 160718J1_06_P1_... | 25.0      | 4.48 | 2.14e3 | 1.53e3  | 25.5  | 1.9  | 0.698 |
| 6 | 6 160718J1_07_P1_... | 50.0      | 4.48 | 4.37e3 | 1.59e3  | 50.8  | 1.5  | 0.686 |
| 7 | 7 160718J1_08_P1_... | 75.0      | 4.47 | 6.23e3 | 1.57e3  | 74.5  | -0.7 | 0.661 |
| 8 | 8 160718J1_09_P1_... | 100       | 4.48 | 7.91e3 | 1.59e3  | 94.2  | -5.8 | 0.620 |
| 9 | 9 160718J1_10_P1_... | 200       | 4.48 | 1.55e4 | 1.55e3  | 203   | 1.6  | 0.625 |

**Compound name: PFOA**

Coefficient of Determination:  $R^2 = 0.998397$

Calibration curve:  $-0.000571641 * x^2 + 0.4573 * x$

Response type: Internal Std ( Ref 10 ), Area \* ( IS Conc. / IS Area )

Curve type: 2nd Order, Origin: Force, Weighting: 1/x, Axis trans: None

|   | # Name               | Std. Conc | RT   | Resp   | IS Resp | Conc. | %Dev | RRF   |
|---|----------------------|-----------|------|--------|---------|-------|------|-------|
| 1 | 1 160718J1_02_P1_... | 1.00      | 4.75 | 3.85e2 | 9.21e3  | 1.14  | 14.4 | 0.522 |
| 2 | 2 160718J1_03_P1_... | 2.00      | 4.76 | 8.25e2 | 9.73e3  | 2.32  | 16.1 | 0.530 |
| 3 | 3 160718J1_04_P1_... | 5.00      | 4.75 | 1.82e3 | 8.54e3  | 5.87  | 17.4 | 0.533 |
| 4 | 4 160718J1_05_P1_... | 10.0      | 4.75 | 3.95e3 | 9.84e3  | 11.1  | 11.3 | 0.502 |
| 5 | 5 160718J1_06_P1_... | 25.0      | 4.76 | 8.75e3 | 9.73e3  | 25.4  | 1.6  | 0.450 |
| 6 | 6 160718J1_07_P1_... | 50.0      | 4.75 | 1.80e4 | 1.06e4  | 49.5  | -1.0 | 0.425 |
| 7 | 7 160718J1_08_P1_... | 75.0      | 4.74 | 2.44e4 | 1.01e4  | 72.8  | -2.9 | 0.403 |
| 8 | 8 160718J1_09_P1_... | 100       | 4.76 | 3.30e4 | 1.06e4  | 96.8  | -3.2 | 0.389 |
| 9 | 9 160718J1_10_P1_... | 200       | 4.75 | 6.08e4 | 1.09e4  | 204   | 1.9  | 0.347 |



Dataset: U:\Q2.PRO\Results\160718J1\160718J1crv.qld

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**Compound name: PFOS**

Coefficient of Determination:  $R^2 = 0.997956$

Calibration curve:  $-0.000484398 * x^2 + 0.781377 * x$

Response type: Internal Std ( Ref 11 ), Area \* ( IS Conc. / IS Area )

Curve type: 2nd Order, Origin: Force, Weighting: 1/x, Axis trans: None

|   | # Name               | Std. Conc | RT   | Resp   | IS Resp | Conc. | %Dev | RRF   |
|---|----------------------|-----------|------|--------|---------|-------|------|-------|
| 1 | 1 160718J1_02_P1_... | 1.00      | 5.12 | 3.08e2 | 4.28e3  | 1.15  | 15.3 | 0.900 |
| 2 | 2 160718J1_03_P1_... | 2.00      | 5.14 | 5.75e2 | 4.40e3  | 2.09  | 4.6  | 0.816 |
| 3 | 3 160718J1_04_P1_... | 5.00      | 5.12 | 1.52e3 | 3.86e3  | 6.34  | 26.8 | 0.987 |
| 4 | 4 160718J1_05_P1_... | 10.0      | 5.13 | 3.13e3 | 4.51e3  | 11.2  | 11.8 | 0.868 |
| 5 | 5 160718J1_06_P1_... | 25.0      | 5.13 | 6.76e3 | 4.51e3  | 24.4  | -2.5 | 0.750 |
| 6 | 6 160718J1_07_P1_... | 50.0      | 5.14 | 1.34e4 | 4.68e3  | 47.2  | -5.6 | 0.716 |
| 7 | 7 160718J1_08_P1_... | 75.0      | 5.12 | 2.03e4 | 4.47e3  | 76.3  | 1.7  | 0.757 |
| 8 | 8 160718J1_09_P1_... | 100       | 5.13 | 2.68e4 | 4.66e3  | 98.0  | -2.0 | 0.719 |
| 9 | 9 160718J1_10_P1_... | 200       | 5.13 | 4.94e4 | 4.48e3  | 201   | 0.7  | 0.689 |

**Compound name: PFNA**

Coefficient of Determination:  $R^2 = 0.998509$

Calibration curve:  $-0.000731552 * x^2 + 0.66992 * x$

Response type: Internal Std ( Ref 12 ), Area \* ( IS Conc. / IS Area )

Curve type: 2nd Order, Origin: Force, Weighting: 1/x, Axis trans: None

|   | # Name               | Std. Conc | RT   | Resp   | IS Resp | Conc. | %Dev | RRF   |
|---|----------------------|-----------|------|--------|---------|-------|------|-------|
| 1 | 1 160718J1_02_P1_... | 1.00      | 5.07 | 5.31e2 | 7.96e3  | 1.25  | 24.6 | 0.834 |
| 2 | 2 160718J1_03_P1_... | 2.00      | 5.08 | 1.05e3 | 8.46e3  | 2.31  | 15.5 | 0.772 |
| 3 | 3 160718J1_04_P1_... | 5.00      | 5.06 | 2.29e3 | 7.98e3  | 5.38  | 7.6  | 0.717 |
| 4 | 4 160718J1_05_P1_... | 10.0      | 5.07 | 5.28e3 | 8.72e3  | 11.4  | 14.4 | 0.757 |
| 5 | 5 160718J1_06_P1_... | 25.0      | 5.07 | 1.15e4 | 9.07e3  | 24.3  | -3.0 | 0.633 |
| 6 | 6 160718J1_07_P1_... | 50.0      | 5.08 | 2.27e4 | 9.41e3  | 47.5  | -5.0 | 0.604 |
| 7 | 7 160718J1_08_P1_... | 75.0      | 5.06 | 3.32e4 | 8.95e3  | 75.4  | 0.6  | 0.618 |
| 8 | 8 160718J1_09_P1_... | 100       | 5.07 | 4.61e4 | 9.69e3  | 99.5  | -0.5 | 0.594 |
| 9 | 9 160718J1_10_P1_... | 200       | 5.07 | 8.38e4 | 9.96e3  | 201   | 0.6  | 0.526 |

Dataset: U:\Q2.PRO\Results\160718J1\160718J1crv.qld

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**Compound name: 13C3-PFBS**

Response Factor: 0.468713

RRF SD: 0.0116569, Relative SD: 2.487

Response type: Internal Std ( Ref 13 ), Area \* ( IS Conc. / IS Area )

Curve type: RF

|   | # Name               | Std. Conc | RT   | Resp   | IS Resp | Conc. | %Dev | RRF   |
|---|----------------------|-----------|------|--------|---------|-------|------|-------|
| 1 | 1 160718J1_02_P1_... | 12.5      | 3.48 | 6.49e3 | 1.32e4  | 13.1  | 5.1  | 0.493 |
| 2 | 2 160718J1_03_P1_... | 12.5      | 3.48 | 6.55e3 | 1.39e4  | 12.6  | 0.6  | 0.471 |
| 3 | 3 160718J1_04_P1_... | 12.5      | 3.48 | 6.13e3 | 1.32e4  | 12.4  | -0.6 | 0.466 |
| 4 | 4 160718J1_05_P1_... | 12.5      | 3.48 | 6.55e3 | 1.43e4  | 12.2  | -2.5 | 0.457 |
| 5 | 5 160718J1_06_P1_... | 12.5      | 3.49 | 6.28e3 | 1.32e4  | 12.7  | 1.9  | 0.478 |
| 6 | 6 160718J1_07_P1_... | 12.5      | 3.48 | 6.36e3 | 1.37e4  | 12.4  | -0.6 | 0.466 |
| 7 | 7 160718J1_08_P1_... | 12.5      | 3.48 | 6.07e3 | 1.33e4  | 12.1  | -2.8 | 0.455 |
| 8 | 8 160718J1_09_P1_... | 12.5      | 3.49 | 6.18e3 | 1.34e4  | 12.3  | -2.0 | 0.459 |
| 9 | 9 160718J1_10_P1_... | 12.5      | 3.48 | 6.06e3 | 1.28e4  | 12.6  | 0.9  | 0.473 |

**Compound name: 13C4-PFHpA**

Response Factor: 0.822337

RRF SD: 0.0422548, Relative SD: 5.13837

Response type: Internal Std ( Ref 13 ), Area \* ( IS Conc. / IS Area )

Curve type: RF

|   | # Name               | Std. Conc | RT   | Resp   | IS Resp | Conc. | %Dev | RRF   |
|---|----------------------|-----------|------|--------|---------|-------|------|-------|
| 1 | 1 160718J1_02_P1_... | 12.5      | 4.36 | 1.04e4 | 1.32e4  | 12.0  | -3.8 | 0.791 |
| 2 | 2 160718J1_03_P1_... | 12.5      | 4.36 | 1.10e4 | 1.39e4  | 12.0  | -3.7 | 0.792 |
| 3 | 3 160718J1_04_P1_... | 12.5      | 4.35 | 1.04e4 | 1.32e4  | 12.0  | -3.7 | 0.792 |
| 4 | 4 160718J1_05_P1_... | 12.5      | 4.35 | 1.10e4 | 1.43e4  | 11.7  | -6.3 | 0.770 |
| 5 | 5 160718J1_06_P1_... | 12.5      | 4.36 | 1.11e4 | 1.32e4  | 12.9  | 3.0  | 0.847 |
| 6 | 6 160718J1_07_P1_... | 12.5      | 4.36 | 1.16e4 | 1.37e4  | 12.9  | 3.4  | 0.850 |
| 7 | 7 160718J1_08_P1_... | 12.5      | 4.35 | 1.07e4 | 1.33e4  | 12.2  | -2.1 | 0.805 |
| 8 | 8 160718J1_09_P1_... | 12.5      | 4.36 | 1.15e4 | 1.34e4  | 13.0  | 3.8  | 0.853 |
| 9 | 9 160718J1_10_P1_... | 12.5      | 4.36 | 1.15e4 | 1.28e4  | 13.7  | 9.5  | 0.900 |

Dataset: U:\Q2.PRO\Results\160718J1\160718J1crv.qld

Last Altered: Tuesday, July 19, 2016 08:45:41 Pacific Daylight Time  
Printed: Tuesday, July 19, 2016 08:53:33 Pacific Daylight Time

**Compound name: 18O2-PFHxS**

Response Factor: 0.255816

RRF SD: 0.00773253, Relative SD: 3.02269

Response type: Internal Std ( Ref 14 ), Area \* ( IS Conc. / IS Area )

Curve type: RF

|   | # Name               | Std. Conc | RT   | Resp   | IS Resp | Conc. | %Dev | RRF   |
|---|----------------------|-----------|------|--------|---------|-------|------|-------|
| 1 | 1 160718J1_02_P1_... | 12.5      | 4.47 | 1.48e3 | 5.81e3  | 12.5  | -0.3 | 0.255 |
| 2 | 2 160718J1_03_P1_... | 12.5      | 4.48 | 1.57e3 | 5.95e3  | 12.9  | 3.0  | 0.263 |
| 3 | 3 160718J1_04_P1_... | 12.5      | 4.47 | 1.48e3 | 6.02e3  | 12.0  | -3.8 | 0.246 |
| 4 | 4 160718J1_05_P1_... | 12.5      | 4.47 | 1.61e3 | 6.68e3  | 11.8  | -5.6 | 0.242 |
| 5 | 5 160718J1_06_P1_... | 12.5      | 4.48 | 1.53e3 | 6.03e3  | 12.4  | -0.5 | 0.254 |
| 6 | 6 160718J1_07_P1_... | 12.5      | 4.48 | 1.59e3 | 6.25e3  | 12.5  | -0.2 | 0.255 |
| 7 | 7 160718J1_08_P1_... | 12.5      | 4.47 | 1.57e3 | 5.97e3  | 12.8  | 2.7  | 0.263 |
| 8 | 8 160718J1_09_P1_... | 12.5      | 4.48 | 1.59e3 | 6.09e3  | 12.8  | 2.3  | 0.262 |
| 9 | 9 160718J1_10_P1_... | 12.5      | 4.47 | 1.55e3 | 5.93e3  | 12.8  | 2.4  | 0.262 |

**Compound name: 13C2-PFOA**

Response Factor: 0.914668

RRF SD: 0.0407954, Relative SD: 4.46013

Response type: Internal Std ( Ref 15 ), Area \* ( IS Conc. / IS Area )

Curve type: RF

|   | # Name               | Std. Conc | RT   | Resp   | IS Resp | Conc. | %Dev | RRF   |
|---|----------------------|-----------|------|--------|---------|-------|------|-------|
| 1 | 1 160718J1_02_P1_... | 12.5      | 4.75 | 9.21e3 | 9.48e3  | 13.3  | 6.2  | 0.972 |
| 2 | 2 160718J1_03_P1_... | 12.5      | 4.76 | 9.73e3 | 1.10e4  | 12.1  | -3.1 | 0.887 |
| 3 | 3 160718J1_04_P1_... | 12.5      | 4.75 | 8.54e3 | 1.03e4  | 11.4  | -8.9 | 0.833 |
| 4 | 4 160718J1_05_P1_... | 12.5      | 4.75 | 9.84e3 | 1.11e4  | 12.2  | -2.8 | 0.889 |
| 5 | 5 160718J1_06_P1_... | 12.5      | 4.75 | 9.73e3 | 1.06e4  | 12.5  | -0.1 | 0.914 |
| 6 | 6 160718J1_07_P1_... | 12.5      | 4.75 | 1.06e4 | 1.13e4  | 12.9  | 3.2  | 0.944 |
| 7 | 7 160718J1_08_P1_... | 12.5      | 4.74 | 1.01e4 | 1.08e4  | 12.7  | 1.7  | 0.930 |
| 8 | 8 160718J1_09_P1_... | 12.5      | 4.75 | 1.06e4 | 1.16e4  | 12.5  | 0.2  | 0.917 |
| 9 | 9 160718J1_10_P1_... | 12.5      | 4.75 | 1.09e4 | 1.16e4  | 12.9  | 3.4  | 0.946 |

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**Compound name: 13C8-PFOS**

Response Factor: 0.82208

RRF SD: 0.027096, Relative SD: 3.29602

Response type: Internal Std ( Ref 16 ), Area \* ( IS Conc. / IS Area )

Curve type: RF

|   | # Name               | Std. Conc | RT   | Resp   | IS Resp | Conc. | %Dev | RRF   |
|---|----------------------|-----------|------|--------|---------|-------|------|-------|
| 1 | 1 160718J1_02_P1_... | 12.5      | 5.12 | 4.28e3 | 4.98e3  | 13.0  | 4.4  | 0.858 |
| 2 | 2 160718J1_03_P1_... | 12.5      | 5.13 | 4.40e3 | 5.42e3  | 12.3  | -1.2 | 0.812 |
| 3 | 3 160718J1_04_P1_... | 12.5      | 5.12 | 3.86e3 | 5.01e3  | 11.7  | -6.1 | 0.772 |
| 4 | 4 160718J1_05_P1_... | 12.5      | 5.13 | 4.51e3 | 5.66e3  | 12.1  | -3.2 | 0.796 |
| 5 | 5 160718J1_06_P1_... | 12.5      | 5.13 | 4.51e3 | 5.46e3  | 12.5  | 0.3  | 0.825 |
| 6 | 6 160718J1_07_P1_... | 12.5      | 5.14 | 4.68e3 | 5.53e3  | 12.8  | 2.7  | 0.845 |
| 7 | 7 160718J1_08_P1_... | 12.5      | 5.12 | 4.47e3 | 5.46e3  | 12.5  | -0.4 | 0.819 |
| 8 | 8 160718J1_09_P1_... | 12.5      | 5.13 | 4.66e3 | 5.66e3  | 12.5  | 0.2  | 0.824 |
| 9 | 9 160718J1_10_P1_... | 12.5      | 5.12 | 4.48e3 | 5.28e3  | 12.9  | 3.3  | 0.849 |

**Compound name: 13C5-PFNA**

Response Factor: 14.4066

RRF SD: 1.03038, Relative SD: 7.15218

Response type: Internal Std ( Ref 17 ), Area \* ( IS Conc. / IS Area )

Curve type: RF

|   | # Name               | Std. Conc | RT   | Resp   | IS Resp | Conc. | %Dev  | RRF  |
|---|----------------------|-----------|------|--------|---------|-------|-------|------|
| 1 | 1 160718J1_02_P1_... | 12.5      | 5.07 | 7.96e3 | 6.04e2  | 11.4  | -8.6  | 13.2 |
| 2 | 2 160718J1_03_P1_... | 12.5      | 5.07 | 8.46e3 | 6.33e2  | 11.6  | -7.2  | 13.4 |
| 3 | 3 160718J1_04_P1_... | 12.5      | 5.06 | 7.98e3 | 5.51e2  | 12.6  | 0.6   | 14.5 |
| 4 | 4 160718J1_05_P1_... | 12.5      | 5.07 | 8.72e3 | 6.75e2  | 11.2  | -10.4 | 12.9 |
| 5 | 5 160718J1_06_P1_... | 12.5      | 5.07 | 9.07e3 | 6.26e2  | 12.6  | 0.5   | 14.5 |
| 6 | 6 160718J1_07_P1_... | 12.5      | 5.08 | 9.41e3 | 6.16e2  | 13.2  | 5.9   | 15.3 |
| 7 | 7 160718J1_08_P1_... | 12.5      | 5.06 | 8.95e3 | 6.01e2  | 12.9  | 3.3   | 14.9 |
| 8 | 8 160718J1_09_P1_... | 12.5      | 5.07 | 9.69e3 | 6.32e2  | 13.3  | 6.5   | 15.3 |
| 9 | 9 160718J1_10_P1_... | 12.5      | 5.06 | 9.96e3 | 6.33e2  | 13.7  | 9.3   | 15.8 |



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**Compound name: 13C5-PFHxA**

Response Factor: 1

RRF SD: 1.61841e-016, Relative SD: 1.61841e-014

Response type: Internal Std ( Ref 13 ), Area \* ( IS Conc. / IS Area )

Curve type: RF

|   | # Name               | Std. Conc | RT   | Resp   | IS Resp | Conc. | %Dev | RRF  |
|---|----------------------|-----------|------|--------|---------|-------|------|------|
| 1 | 1 160718J1_02_P1_... | 12.5      | 3.88 | 1.32e4 | 1.32e4  | 12.5  | 0.0  | 1.00 |
| 2 | 2 160718J1_03_P1_... | 12.5      | 3.89 | 1.39e4 | 1.39e4  | 12.5  | 0.0  | 1.00 |
| 3 | 3 160718J1_04_P1_... | 12.5      | 3.88 | 1.32e4 | 1.32e4  | 12.5  | 0.0  | 1.00 |
| 4 | 4 160718J1_05_P1_... | 12.5      | 3.88 | 1.43e4 | 1.43e4  | 12.5  | 0.0  | 1.00 |
| 5 | 5 160718J1_06_P1_... | 12.5      | 3.89 | 1.32e4 | 1.32e4  | 12.5  | 0.0  | 1.00 |
| 6 | 6 160718J1_07_P1_... | 12.5      | 3.89 | 1.37e4 | 1.37e4  | 12.5  | -0.0 | 1.00 |
| 7 | 7 160718J1_08_P1_... | 12.5      | 3.88 | 1.33e4 | 1.33e4  | 12.5  | 0.0  | 1.00 |
| 8 | 8 160718J1_09_P1_... | 12.5      | 3.89 | 1.34e4 | 1.34e4  | 12.5  | 0.0  | 1.00 |
| 9 | 9 160718J1_10_P1_... | 12.5      | 3.89 | 1.28e4 | 1.28e4  | 12.5  | 0.0  | 1.00 |

**Compound name: 13C3-PFHxS**

Response Factor: 1

RRF SD: 0, Relative SD: 0

Response type: Internal Std ( Ref 14 ), Area \* ( IS Conc. / IS Area )

Curve type: RF

|   | # Name               | Std. Conc | RT   | Resp   | IS Resp | Conc. | %Dev | RRF  |
|---|----------------------|-----------|------|--------|---------|-------|------|------|
| 1 | 1 160718J1_02_P1_... | 12.5      | 4.47 | 5.81e3 | 5.81e3  | 12.5  | 0.0  | 1.00 |
| 2 | 2 160718J1_03_P1_... | 12.5      | 4.48 | 5.95e3 | 5.95e3  | 12.5  | 0.0  | 1.00 |
| 3 | 3 160718J1_04_P1_... | 12.5      | 4.47 | 6.02e3 | 6.02e3  | 12.5  | 0.0  | 1.00 |
| 4 | 4 160718J1_05_P1_... | 12.5      | 4.47 | 6.68e3 | 6.68e3  | 12.5  | 0.0  | 1.00 |
| 5 | 5 160718J1_06_P1_... | 12.5      | 4.48 | 6.03e3 | 6.03e3  | 12.5  | 0.0  | 1.00 |
| 6 | 6 160718J1_07_P1_... | 12.5      | 4.47 | 6.25e3 | 6.25e3  | 12.5  | 0.0  | 1.00 |
| 7 | 7 160718J1_08_P1_... | 12.5      | 4.47 | 5.97e3 | 5.97e3  | 12.5  | 0.0  | 1.00 |
| 8 | 8 160718J1_09_P1_... | 12.5      | 4.48 | 6.09e3 | 6.09e3  | 12.5  | 0.0  | 1.00 |
| 9 | 9 160718J1_10_P1_... | 12.5      | 4.47 | 5.93e3 | 5.93e3  | 12.5  | 0.0  | 1.00 |

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**Compound name: 13C8-PFOA**

Response Factor: 1

RRF SD: 0, Relative SD: 0

Response type: Internal Std ( Ref 15 ), Area \* ( IS Conc. / IS Area )

Curve type: RF

|   | # Name               | Std. Conc | RT   | Resp   | IS Resp | Conc. | %Dev | RRF  |
|---|----------------------|-----------|------|--------|---------|-------|------|------|
| 1 | 1 160718J1_02_P1_... | 12.5      | 4.75 | 9.48e3 | 9.48e3  | 12.5  | 0.0  | 1.00 |
| 2 | 2 160718J1_03_P1_... | 12.5      | 4.76 | 1.10e4 | 1.10e4  | 12.5  | 0.0  | 1.00 |
| 3 | 3 160718J1_04_P1_... | 12.5      | 4.74 | 1.03e4 | 1.03e4  | 12.5  | 0.0  | 1.00 |
| 4 | 4 160718J1_05_P1_... | 12.5      | 4.75 | 1.11e4 | 1.11e4  | 12.5  | 0.0  | 1.00 |
| 5 | 5 160718J1_06_P1_... | 12.5      | 4.75 | 1.06e4 | 1.06e4  | 12.5  | 0.0  | 1.00 |
| 6 | 6 160718J1_07_P1_... | 12.5      | 4.75 | 1.13e4 | 1.13e4  | 12.5  | 0.0  | 1.00 |
| 7 | 7 160718J1_08_P1_... | 12.5      | 4.74 | 1.08e4 | 1.08e4  | 12.5  | 0.0  | 1.00 |
| 8 | 8 160718J1_09_P1_... | 12.5      | 4.75 | 1.16e4 | 1.16e4  | 12.5  | 0.0  | 1.00 |
| 9 | 9 160718J1_10_P1_... | 12.5      | 4.74 | 1.16e4 | 1.16e4  | 12.5  | 0.0  | 1.00 |

**Compound name: 13C4-PFOS**

Response Factor: 1

RRF SD: 0, Relative SD: 0

Response type: Internal Std ( Ref 16 ), Area \* ( IS Conc. / IS Area )

Curve type: RF

|   | # Name               | Std. Conc | RT   | Resp   | IS Resp | Conc. | %Dev | RRF  |
|---|----------------------|-----------|------|--------|---------|-------|------|------|
| 1 | 1 160718J1_02_P1_... | 12.5      | 5.12 | 4.98e3 | 4.98e3  | 12.5  | 0.0  | 1.00 |
| 2 | 2 160718J1_03_P1_... | 12.5      | 5.13 | 5.42e3 | 5.42e3  | 12.5  | 0.0  | 1.00 |
| 3 | 3 160718J1_04_P1_... | 12.5      | 5.12 | 5.01e3 | 5.01e3  | 12.5  | 0.0  | 1.00 |
| 4 | 4 160718J1_05_P1_... | 12.5      | 5.12 | 5.66e3 | 5.66e3  | 12.5  | 0.0  | 1.00 |
| 5 | 5 160718J1_06_P1_... | 12.5      | 5.13 | 5.46e3 | 5.46e3  | 12.5  | 0.0  | 1.00 |
| 6 | 6 160718J1_07_P1_... | 12.5      | 5.13 | 5.53e3 | 5.53e3  | 12.5  | 0.0  | 1.00 |
| 7 | 7 160718J1_08_P1_... | 12.5      | 5.12 | 5.46e3 | 5.46e3  | 12.5  | 0.0  | 1.00 |
| 8 | 8 160718J1_09_P1_... | 12.5      | 5.12 | 5.66e3 | 5.66e3  | 12.5  | 0.0  | 1.00 |
| 9 | 9 160718J1_10_P1_... | 12.5      | 5.12 | 5.28e3 | 5.28e3  | 12.5  | 0.0  | 1.00 |

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**Compound name: 13C9-PFNA**

Response Factor: 1

RRF SD: 0, Relative SD: 0

Response type: Internal Std ( Ref 17 ), Area \* ( IS Conc. / IS Area )

Curve type: RF

|   | # Name               | Std. Conc | RT   | Resp   | IS Resp | Conc. | %Dev | RRF  |
|---|----------------------|-----------|------|--------|---------|-------|------|------|
| 1 | 1 160718J1_02_P1_... | 12.5      | 5.07 | 6.04e2 | 6.04e2  | 12.5  | 0.0  | 1.00 |
| 2 | 2 160718J1_03_P1_... | 12.5      | 5.07 | 6.33e2 | 6.33e2  | 12.5  | 0.0  | 1.00 |
| 3 | 3 160718J1_04_P1_... | 12.5      | 5.06 | 5.51e2 | 5.51e2  | 12.5  | 0.0  | 1.00 |
| 4 | 4 160718J1_05_P1_... | 12.5      | 5.06 | 6.75e2 | 6.75e2  | 12.5  | 0.0  | 1.00 |
| 5 | 5 160718J1_06_P1_... | 12.5      | 5.07 | 6.26e2 | 6.26e2  | 12.5  | 0.0  | 1.00 |
| 6 | 6 160718J1_07_P1_... | 12.5      | 5.08 | 6.16e2 | 6.16e2  | 12.5  | 0.0  | 1.00 |
| 7 | 7 160718J1_08_P1_... | 12.5      | 5.06 | 6.01e2 | 6.01e2  | 12.5  | 0.0  | 1.00 |
| 8 | 8 160718J1_09_P1_... | 12.5      | 5.06 | 6.32e2 | 6.32e2  | 12.5  | 0.0  | 1.00 |
| 9 | 9 160718J1_10_P1_... | 12.5      | 5.06 | 6.33e2 | 6.33e2  | 12.5  | 0.0  | 1.00 |

**Compound name: Total PFBS**

Coefficient of Determination:  $R^2 = 0.998945$

Calibration curve:  $-0.000122621 * x^2 + 0.214151 * x$

Response type: Internal Std ( Ref 7 ), Area \* ( IS Conc. / IS Area )

Curve type: 2nd Order, Origin: Force, Weighting: 1/x, Axis trans: None

|   | # Name               | Std. Conc | RT | Resp | IS Resp | Conc. | %Dev | RRF |
|---|----------------------|-----------|----|------|---------|-------|------|-----|
| 1 | 1 160718J1_02_P1_... | 1.00      |    |      | 6.49e3  | 1.10  |      |     |
| 2 | 2 160718J1_03_P1_... | 2.00      |    |      | 6.55e3  | 2.18  |      |     |
| 3 | 3 160718J1_04_P1_... | 5.00      |    |      | 6.13e3  | 5.63  |      |     |
| 4 | 4 160718J1_05_P1_... | 10.0      |    |      | 6.55e3  | 10.9  |      |     |
| 5 | 5 160718J1_06_P1_... | 25.0      |    |      | 6.28e3  | 25.2  |      |     |
| 6 | 6 160718J1_07_P1_... | 50.0      |    |      | 6.36e3  | 49.6  |      |     |
| 7 | 7 160718J1_08_P1_... | 75.0      |    |      | 6.07e3  | 75.9  |      |     |
| 8 | 8 160718J1_09_P1_... | 100       |    |      | 6.18e3  | 95.4  |      |     |
| 9 | 9 160718J1_10_P1_... | 200       |    |      | 6.06e3  | 202   |      |     |

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**Compound name: Total PFHxS**

Coefficient of Determination:  $R^2 = 0.998461$

Calibration curve:  $-0.0003928 * x^2 + 0.695199 * x$

Response type: Internal Std ( Ref 9 ), Area \* ( IS Conc. / IS Area )

Curve type: 2nd Order, Origin: Force, Weighting: 1/x, Axis trans: None

|   | # Name               | Std. Conc | RT | Resp | IS Resp | Conc. | %Dev | RRF |
|---|----------------------|-----------|----|------|---------|-------|------|-----|
| 1 | 1 160718J1_02_P1_... | 1.00      |    |      | 1.48e3  | 1.17  |      |     |
| 2 | 2 160718J1_03_P1_... | 2.00      |    |      | 1.57e3  | 2.37  |      |     |
| 3 | 3 160718J1_04_P1_... | 5.00      |    |      | 1.48e3  | 5.46  |      |     |
| 4 | 4 160718J1_05_P1_... | 10.0      |    |      | 1.61e3  | 11.0  |      |     |
| 5 | 5 160718J1_06_P1_... | 25.0      |    |      | 1.53e3  | 25.5  |      |     |
| 6 | 6 160718J1_07_P1_... | 50.0      |    |      | 1.59e3  | 50.8  |      |     |
| 7 | 7 160718J1_08_P1_... | 75.0      |    |      | 1.57e3  | 74.5  |      |     |
| 8 | 8 160718J1_09_P1_... | 100       |    |      | 1.59e3  | 94.2  |      |     |
| 9 | 9 160718J1_10_P1_... | 200       |    |      | 1.55e3  | 203   |      |     |

**Compound name: Total PFOA**

Coefficient of Determination:  $R^2 = 0.998397$

Calibration curve:  $-0.000571641 * x^2 + 0.4573 * x$

Response type: Internal Std ( Ref 10 ), Area \* ( IS Conc. / IS Area )

Curve type: 2nd Order, Origin: Force, Weighting: 1/x, Axis trans: None

|   | # Name               | Std. Conc | RT | Resp | IS Resp | Conc. | %Dev | RRF |
|---|----------------------|-----------|----|------|---------|-------|------|-----|
| 1 | 1 160718J1_02_P1_... | 12.5      |    |      | 9.21e3  | 1.22  |      |     |
| 2 | 2 160718J1_03_P1_... | 12.5      |    |      | 9.73e3  | 2.32  |      |     |
| 3 | 3 160718J1_04_P1_... | 12.5      |    |      | 8.54e3  | 5.87  |      |     |
| 4 | 4 160718J1_05_P1_... | 12.5      |    |      | 9.84e3  | 11.1  |      |     |
| 5 | 5 160718J1_06_P1_... | 12.5      |    |      | 9.73e3  | 25.4  |      |     |
| 6 | 6 160718J1_07_P1_... | 12.5      |    |      | 1.06e4  | 49.6  |      |     |
| 7 | 7 160718J1_08_P1_... | 12.5      |    |      | 1.01e4  | 72.8  |      |     |
| 8 | 8 160718J1_09_P1_... | 12.5      |    |      | 1.06e4  | 96.8  |      |     |
| 9 | 9 160718J1_10_P1_... | 12.5      |    |      | 1.09e4  | 204   |      |     |



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**Compound name: Total PFOS**

Coefficient of Determination:  $R^2 = 0.997956$

Calibration curve:  $-0.000484398 * x^2 + 0.781377 * x$

Response type: Internal Std ( Ref 11 ), Area \* ( IS Conc. / IS Area )

Curve type: 2nd Order, Origin: Force, Weighting: 1/x, Axis trans: None

|   | # Name               | Std. Conc | RT | Resp | IS Resp | Conc. | %Dev | RRF |
|---|----------------------|-----------|----|------|---------|-------|------|-----|
| 1 | 1 160718J1_02_P1_... | 1.00      |    |      | 4.28e3  | 1.18  |      |     |
| 2 | 2 160718J1_03_P1_... | 2.00      |    |      | 4.40e3  | 2.13  |      |     |
| 3 | 3 160718J1_04_P1_... | 5.00      |    |      | 3.86e3  | 6.37  |      |     |
| 4 | 4 160718J1_05_P1_... | 10.0      |    |      | 4.51e3  | 11.2  |      |     |
| 5 | 5 160718J1_06_P1_... | 25.0      |    |      | 4.51e3  | 24.4  |      |     |
| 6 | 6 160718J1_07_P1_... | 50.0      |    |      | 4.68e3  | 47.3  |      |     |
| 7 | 7 160718J1_08_P1_... | 75.0      |    |      | 4.47e3  | 76.4  |      |     |
| 8 | 8 160718J1_09_P1_... | 100       |    |      | 4.66e3  | 98.2  |      |     |
| 9 | 9 160718J1_10_P1_... | 200       |    |      | 4.48e3  | 202   |      |     |

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Printed: Tuesday, July 19, 2016 08:55:18 Pacific Daylight Time

Method: U:\Q2.PRO\MethDB\PFC List 6.mdb 08 Jul 2016 09:57:05

Calibration: U:\Q2.PRO\CurveDB\C18\_VAL-PFC\_Q2\_07-18-16\_L6.cdb 19 Jul 2016 08:45:41

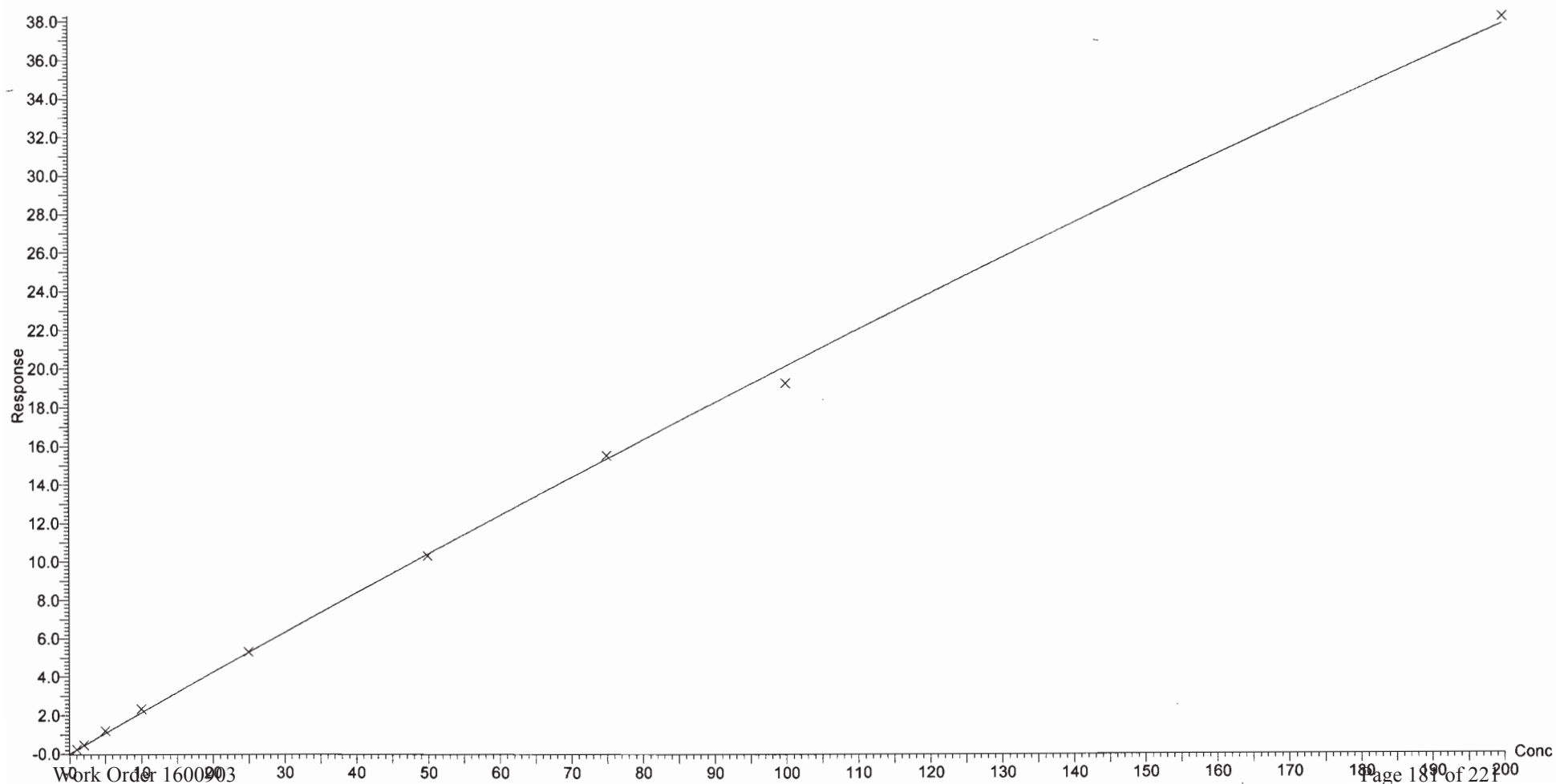
Compound name: PFBS

Coefficient of Determination:  $R^2 = 0.998945$

Calibration curve:  $-0.000122621 * x^2 + 0.214151 * x$

Response type: Internal Std ( Ref 7 ), Area \* ( IS Conc. / IS Area )

Curve type: 2nd Order, Origin: Force, Weighting: 1/x, Axis trans: None



Dataset:        U:\Q2.PRO\Results\160718J1\160718J1crv.qld

Last Altered:   Tuesday, July 19, 2016 08:45:41 Pacific Daylight Time

Printed:        Tuesday, July 19, 2016 08:55:18 Pacific Daylight Time

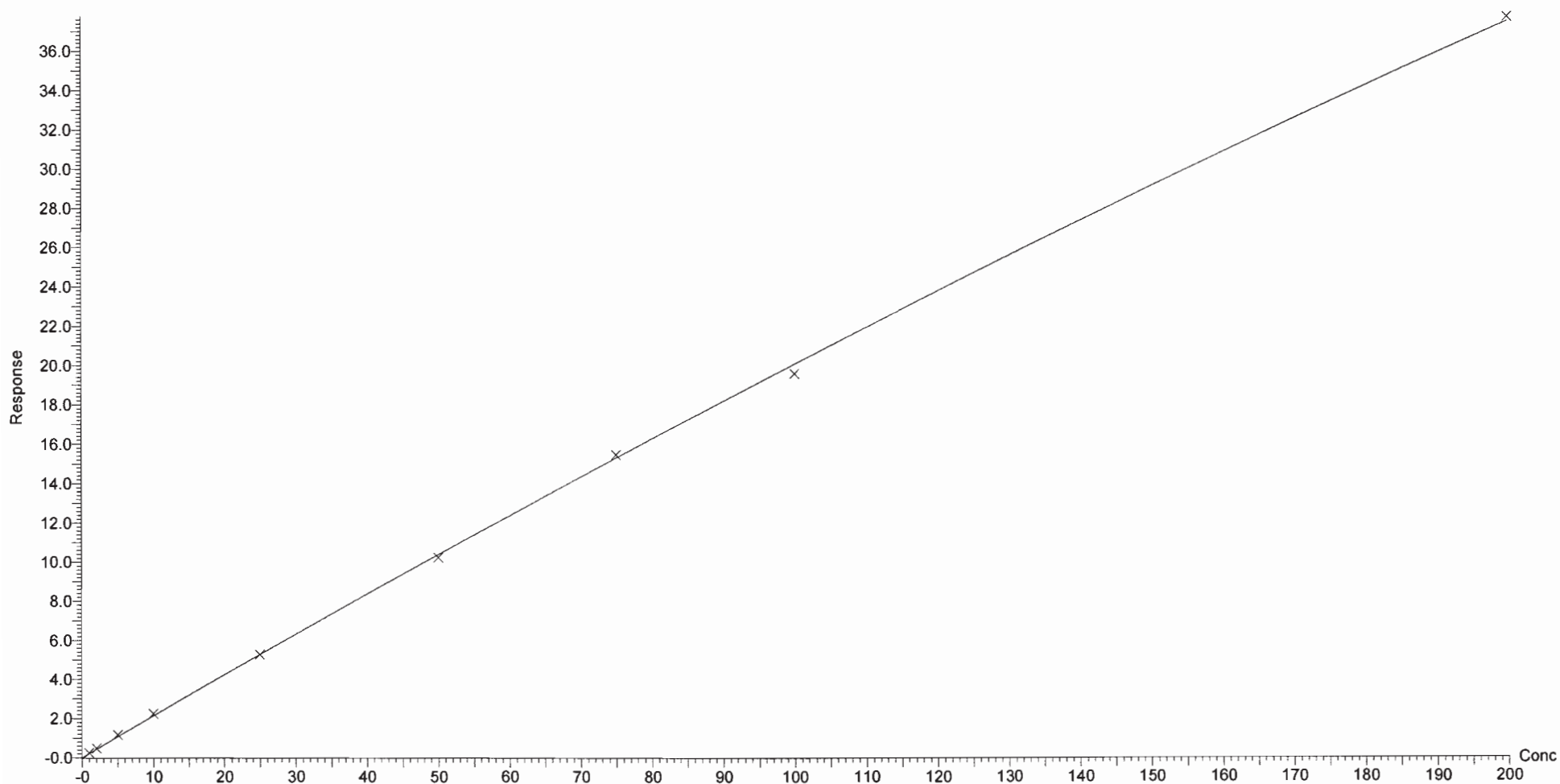
Compound name: PFHpA

Coefficient of Determination:  $R^2 = 0.999501$

Calibration curve:  $-0.000131734 * x^2 + 0.214148 * x$

Response type: Internal Std ( Ref 8 ), Area \* ( IS Conc. / IS Area )

Curve type: 2nd Order, Origin: Force, Weighting: 1/x, Axis trans: None



Dataset:        U:\Q2.PRO\Results\160718J1\160718J1crv.qld

Last Altered:    Tuesday, July 19, 2016 08:45:41 Pacific Daylight Time

Printed:        Tuesday, July 19, 2016 08:55:18 Pacific Daylight Time

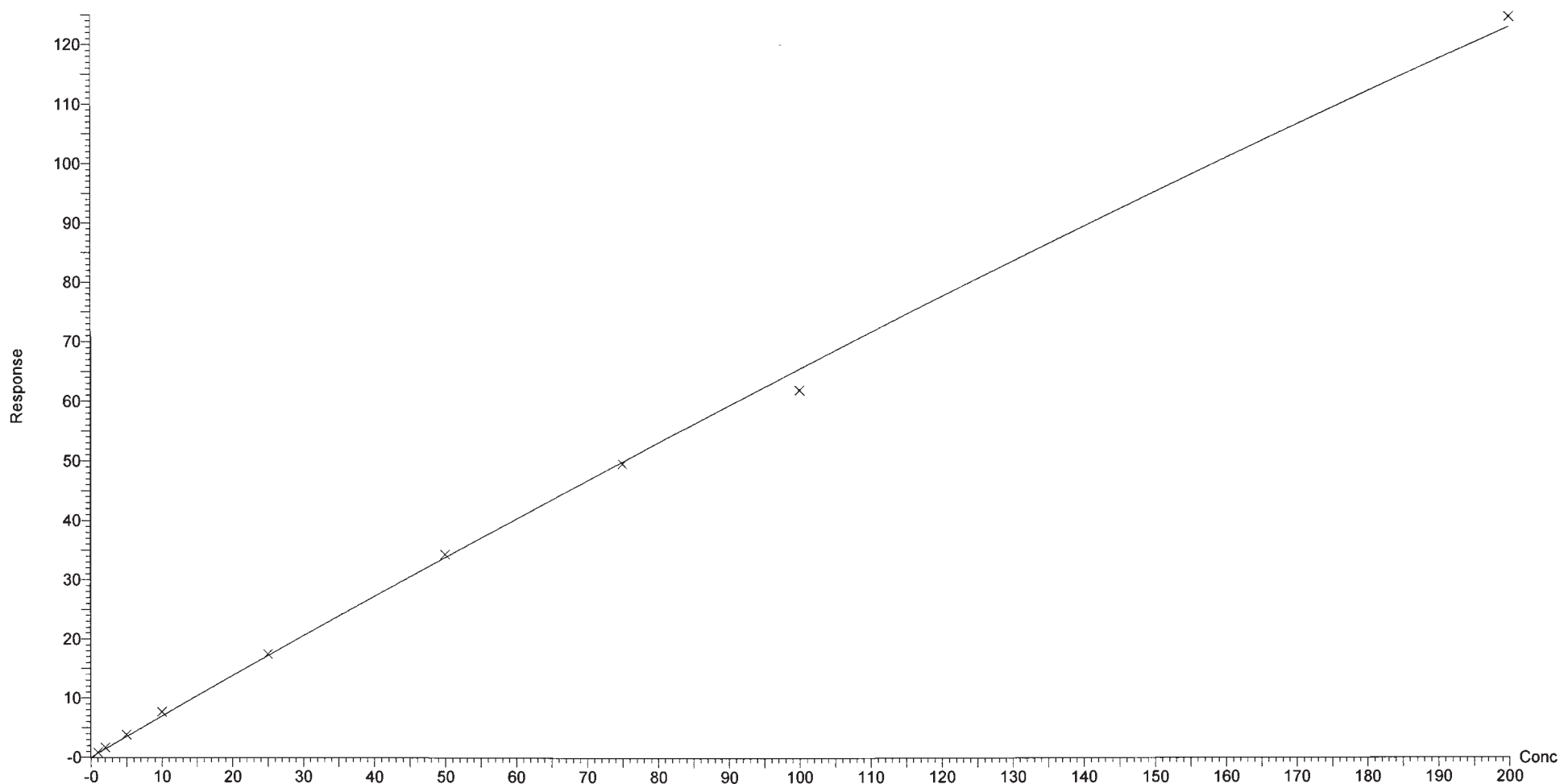
Compound name: PFHxS

Coefficient of Determination:  $R^2 = 0.998461$

Calibration curve:  $-0.0003928 * x^2 + 0.695199 * x$

Response type: Internal Std ( Ref 9 ), Area \* ( IS Conc. / IS Area )

Curve type: 2nd Order, Origin: Force, Weighting: 1/x, Axis trans: None



Dataset:        U:\Q2.PRO\Results\160718J1\160718J1crv.qld

Last Altered:   Tuesday, July 19, 2016 08:45:41 Pacific Daylight Time

Printed:        Tuesday, July 19, 2016 08:55:18 Pacific Daylight Time

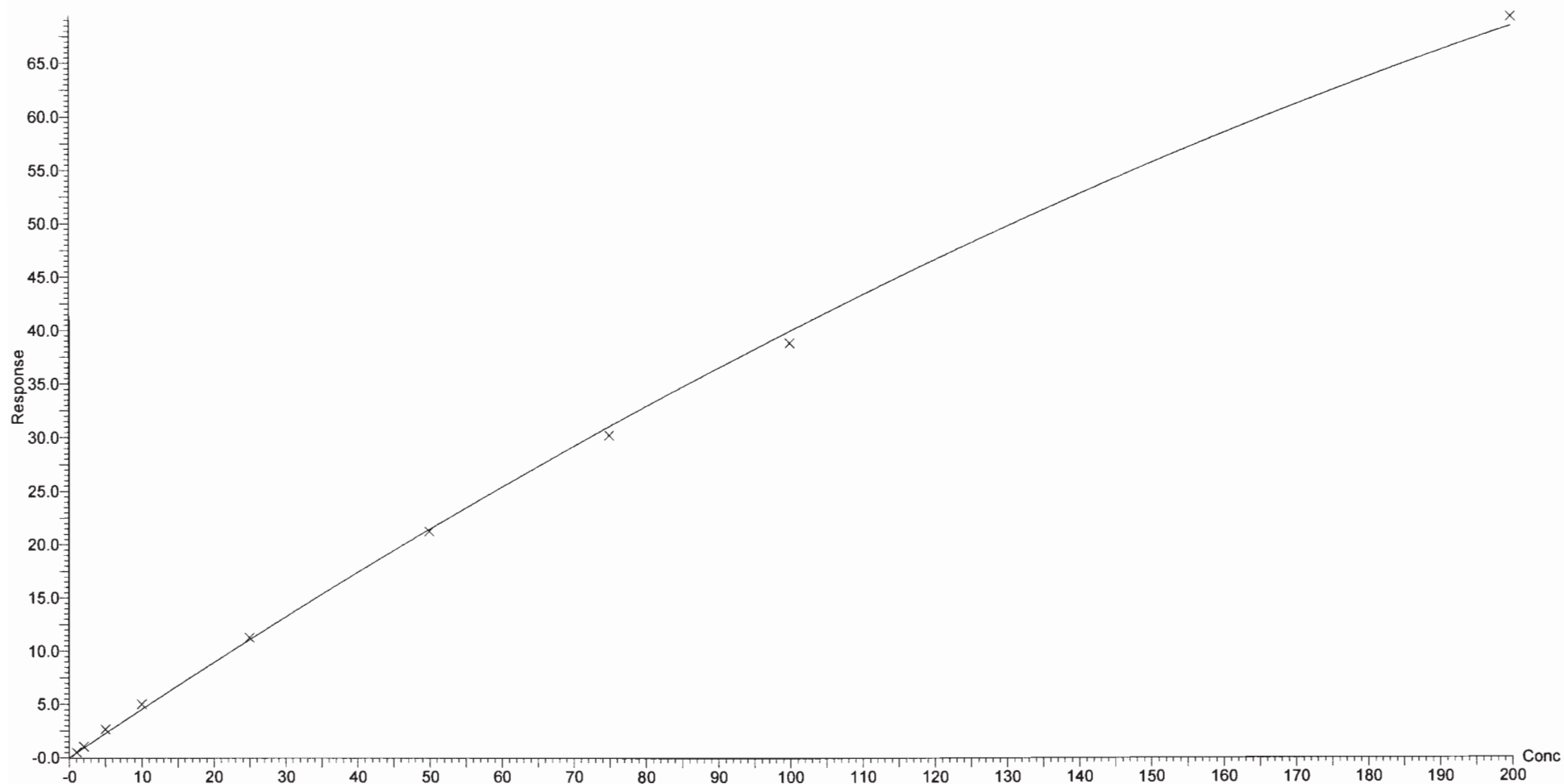
Compound name: PFOA

Coefficient of Determination:  $R^2 = 0.998397$

Calibration curve:  $-0.000571641 * x^2 + 0.4573 * x$

Response type: Internal Std ( Ref 10 ), Area \* ( IS Conc. / IS Area )

Curve type: 2nd Order, Origin: Force, Weighting: 1/x, Axis trans: None



Dataset:        U:\Q2.PRO\Results\160718J1\160718J1crv.qld

Last Altered:   Tuesday, July 19, 2016 08:45:41 Pacific Daylight Time

Printed:        Tuesday, July 19, 2016 08:55:18 Pacific Daylight Time

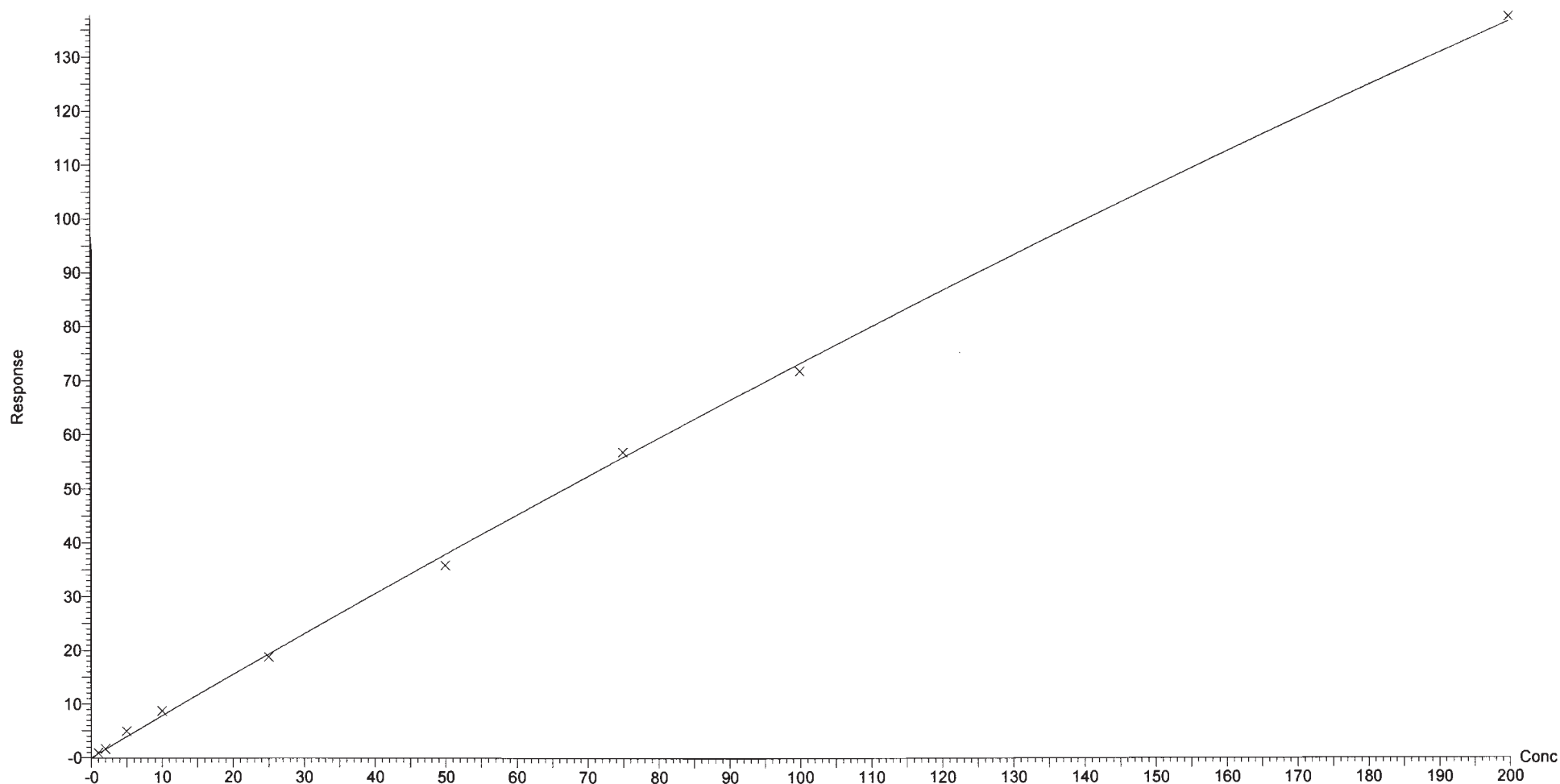
Compound name: PFOS

Coefficient of Determination:  $R^2 = 0.997956$

Calibration curve:  $-0.000484398 * x^2 + 0.781377 * x$

Response type: Internal Std ( Ref 11 ), Area \* ( IS Conc. / IS Area )

Curve type: 2nd Order, Origin: Force, Weighting: 1/x, Axis trans: None



Dataset:        U:\Q2.PRO\Results\160718J1\160718J1crv.qld

Last Altered:   Tuesday, July 19, 2016 08:45:41 Pacific Daylight Time

Printed:        Tuesday, July 19, 2016 08:55:18 Pacific Daylight Time

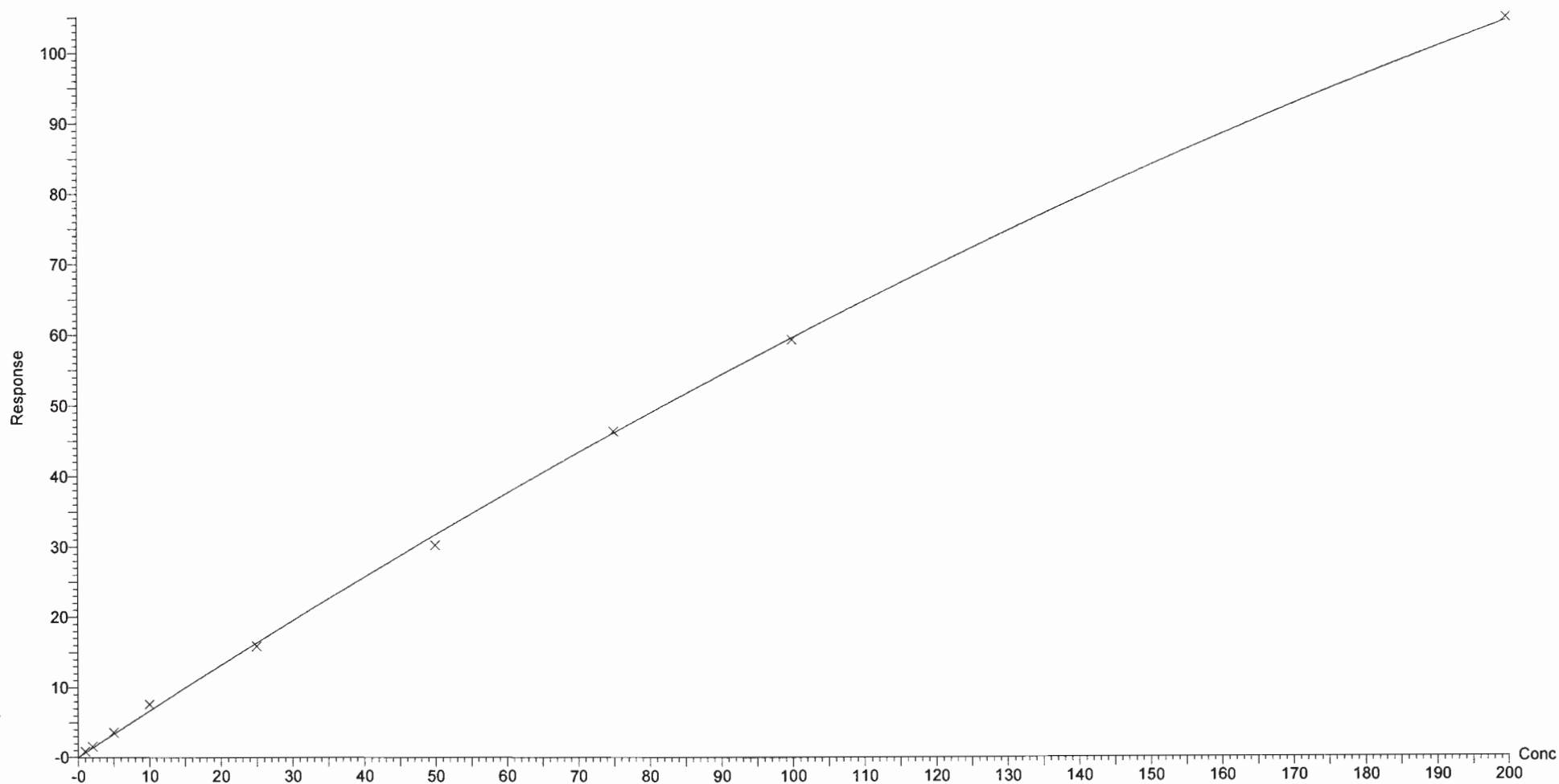
Compound name: PFNA

Coefficient of Determination:  $R^2 = 0.998509$

Calibration curve:  $-0.000731552 * x^2 + 0.66992 * x$

Response type: Internal Std ( Ref 12 ), Area \* ( IS Conc. / IS Area )

Curve type: 2nd Order, Origin: Force, Weighting: 1/x, Axis trans: None



|    | Sample Name | Acquisition Date   | Sample ID                       | Sample Comment    |
|----|-------------|--------------------|---------------------------------|-------------------|
| 1  | 160718J1_01 | 7/18/2016 14:52:40 | IPA                             | IPA               |
| 2  | 160718J1_02 | 7/18/2016 15:04:53 | ST160718J1-1 PFC CS0 16G1205    | CS0 16G1205       |
| 3  | 160718J1_03 | 7/18/2016 15:17:04 | ST160718J1-2 PFC CS1 16G1206    | CS1 16G1206       |
| 4  | 160718J1_04 | 7/18/2016 15:29:17 | ST160718J1-3 PFC CS2 16G1208    | CS2 16G1208       |
| 5  | 160718J1_05 | 7/18/2016 15:41:29 | ST160718J1-4 PFC CS3 16G1209    | CS3 16G1209       |
| 6  | 160718J1_06 | 7/18/2016 15:53:41 | ST160718J1-5 PFC CS3.5 16G1210  | CS3.5 16G1210     |
| 7  | 160718J1_07 | 7/18/2016 16:05:54 | ST160718J1-6 PFC CS4 16G1211    | CS4 16G1211       |
| 8  | 160718J1_08 | 7/18/2016 16:18:06 | ST160718J1-7 PFC CS4.5 16G1212  | CS4.5 16G1212     |
| 9  | 160718J1_09 | 7/18/2016 16:30:18 | ST160718J1-8 PFC CS5 16G1213    | CS5 16G1213       |
| 10 | 160718J1_10 | 7/18/2016 16:42:28 | ST160718J1-9 PFC CS6 16G1214    | CS6 16G1214       |
| 11 | 160718J1_11 | 7/18/2016 16:54:42 | IPA                             | IPA               |
| 12 | 160718J1_12 | 7/18/2016 17:06:54 | IPA                             | IPA               |
| 13 | 160718J1_13 | 7/18/2016 17:19:06 | SS160718J1-1 PFC SSS 16G1301    | PFC SSS 16G1301   |
| 14 | 160718J1_14 | 7/18/2016 17:31:18 | IPA                             | IPA               |
| 15 | 160718J1_15 | 7/18/2016 17:43:31 | B6G0068-BS1                     | OPR               |
| 16 | 160718J1_16 | 7/18/2016 17:55:41 | IPA                             | IPA               |
| 17 | 160718J1_17 | 7/18/2016 18:07:55 | B6G0068-BLK1                    | Method Blank      |
| 18 | 160718J1_18 | 7/18/2016 18:20:09 | 1600903-01                      | OF-MW30-0716      |
| 19 | 160718J1_19 | 7/18/2016 18:32:23 | 1600903-02                      | OF-MW30P-0716     |
| 20 | 160718J1_20 | 7/18/2016 18:44:33 | 1600903-03                      | OF-MW30D-0716     |
| 21 | 160718J1_21 | 7/18/2016 18:56:48 | 1600903-04                      | OF-MW28D-0716     |
| 22 | 160718J1_22 | 7/18/2016 19:09:01 | 1600903-05                      | OF-MW32-0716      |
| 23 | 160718J1_23 | 7/18/2016 19:21:13 | 1600903-06                      | OF-MW29-0716      |
| 24 | 160718J1_24 | 7/18/2016 19:33:25 | 1600903-07                      | OF-MW08D-0716     |
| 25 | 160718J1_25 | 7/18/2016 19:45:38 | 1600903-08                      | OF-MW34-0716      |
| 26 | 160718J1_26 | 7/18/2016 19:57:50 | 1600903-09                      | OF-MW31D-0716     |
| 27 | 160718J1_27 | 7/18/2016 20:10:00 | B6G0068-MS1                     | Matrix Spike      |
| 28 | 160718J1_28 | 7/18/2016 20:22:14 | IPA                             | IPA               |
| 29 | 160718J1_29 | 7/18/2016 20:34:27 | ST160718J1-10 PFC CS3.5 16G1210 | PFC CS3.5 16G1210 |
| 30 | 160718J1_30 | 7/18/2016 20:46:36 | IPA                             | IPA               |
| 31 | 160718J1_31 | 7/18/2016 20:58:49 | B6G0068-MSD1                    | Matrix Spike Dup  |
| 32 | 160718J1_32 | 7/18/2016 21:11:01 | IPA                             | IPA               |
| 33 | 160718J1_33 | 7/18/2016 21:23:13 | ST160718J1-11 PFC CS3.5 16G1210 | PFC CS3.5 16G1210 |
| 34 | 160718J1_34 | 7/18/2016 21:35:26 | IPA                             | IPA               |



Dataset:        U:\Q2.PRO\Results\160718J1\160718J1.crv.qld

Last Altered:   Tuesday, July 19, 2016 08:45:41 Pacific Daylight Time

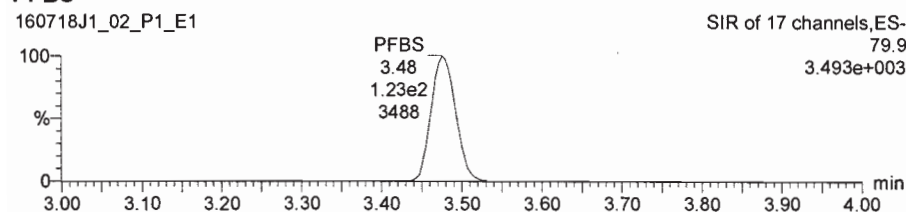
Printed:        Tuesday, July 19, 2016 08:56:07 Pacific Daylight Time

Method: U:\Q2.PRO\MethDB\PFC List 6.mdb 08 Jul 2016 09:57:05

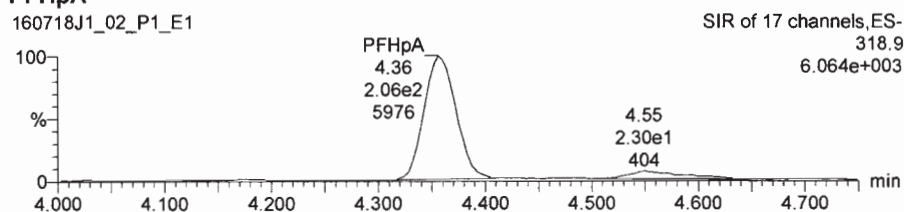
Calibration: U:\Q2.PRO\CurveDB\C18\_VAL-PFC\_Q2\_07-18-16\_L6.cdb 19 Jul 2016 08:45:41

Name: 160718J1\_02.wiff, Date: 18-Jul-2016, Time: 15:04:53, ID: ST160718J1-1 PFC CS0 16G1205, Description: CS0 16G1205

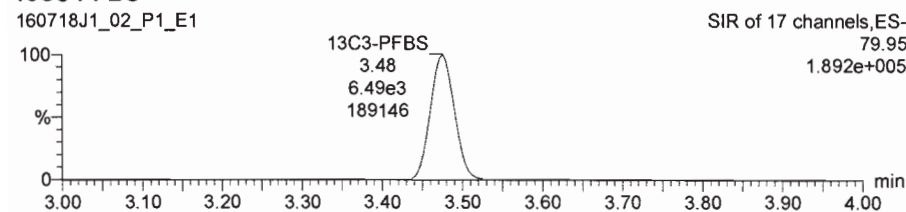
**PFBS**



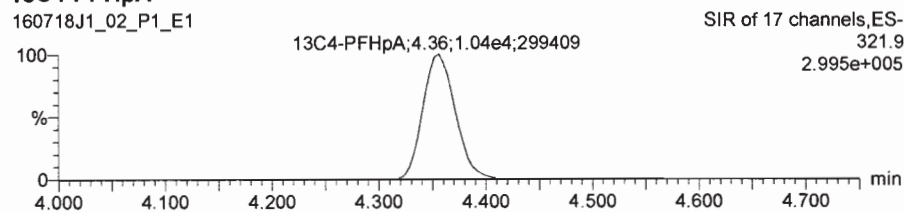
**PFHpA**



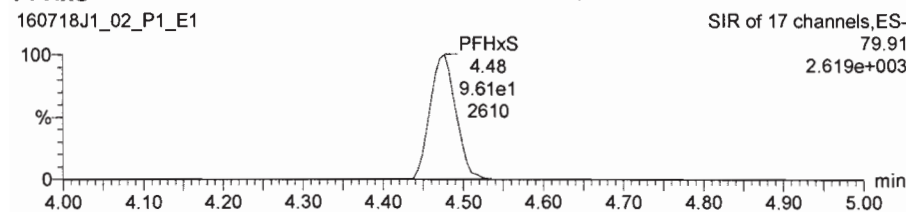
**13C3-PFBS**



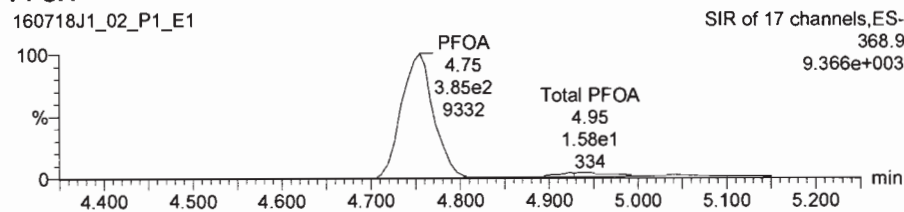
**13C4-PFHpA**



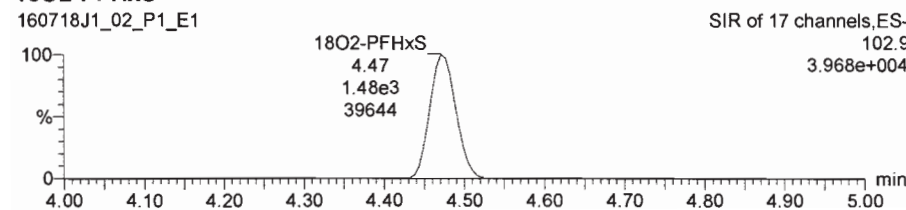
**PFHxS**



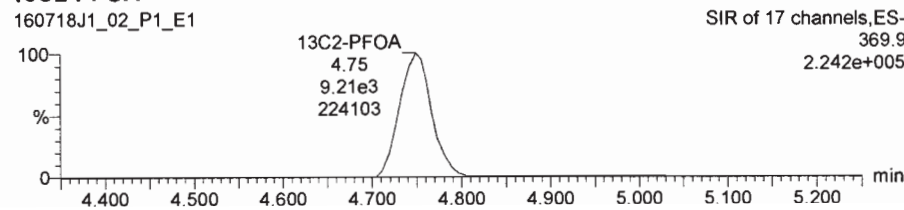
**PFOA**



**18O2-PFHxS**



**13C2-PFOA**



Dataset:        U:\Q2.PRO\Results\160718J1\160718J1crv.qld

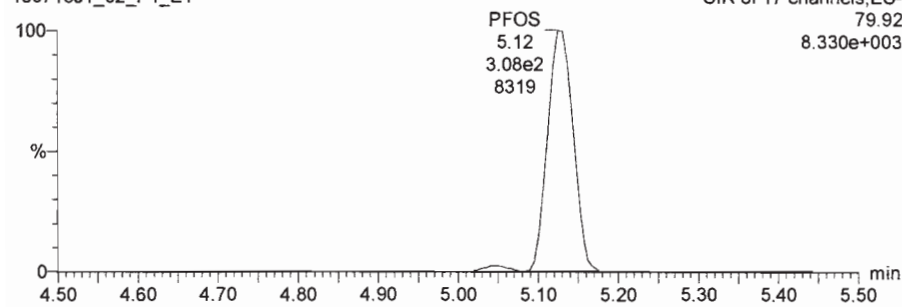
Last Altered:   Tuesday, July 19, 2016 08:45:41 Pacific Daylight Time

Printed:        Tuesday, July 19, 2016 08:56:07 Pacific Daylight Time

Name: 160718J1\_02.wiff, Date: 18-Jul-2016, Time: 15:04:53, ID: ST160718J1-1 PFC CS0 16G1205, Description: CS0 16G1205

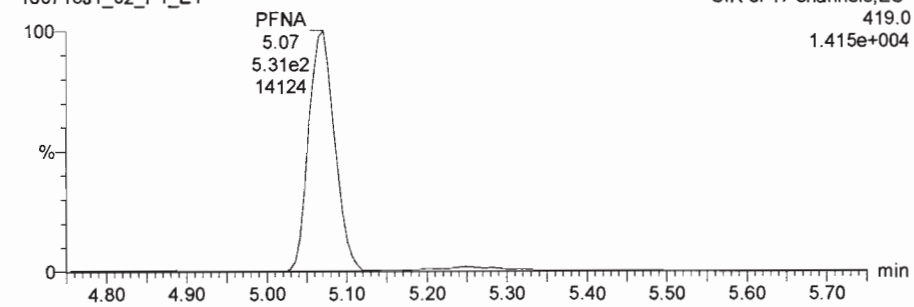
**PFOS**

160718J1\_02\_P1\_E1



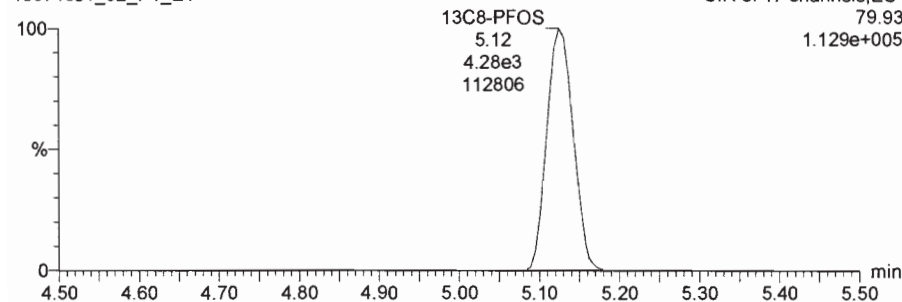
**PFNA**

160718J1\_02\_P1\_E1



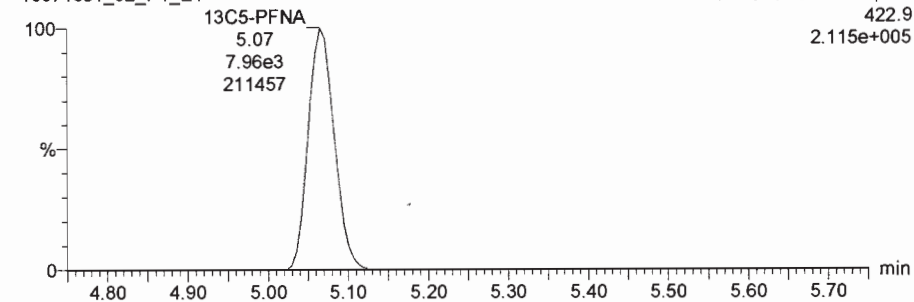
**13C8-PFOS**

160718J1\_02\_P1\_E1



**13C5-PFNA**

160718J1\_02\_P1\_E1



Dataset:        U:\Q2.PRO\Results\160718J1\160718J1crv.qld

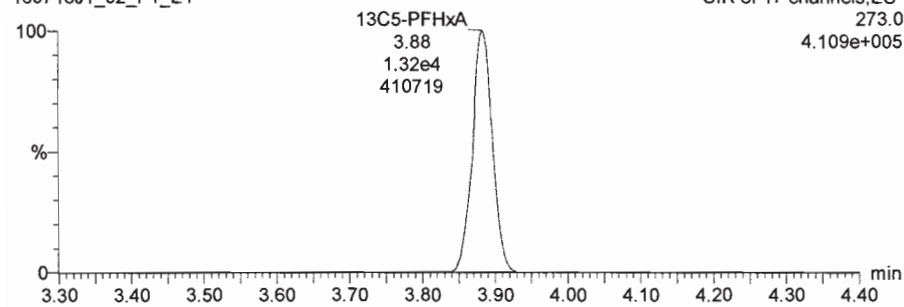
Last Altered:   Tuesday, July 19, 2016 08:45:41 Pacific Daylight Time

Printed:        Tuesday, July 19, 2016 08:56:07 Pacific Daylight Time

Name: 160718J1\_02.wiff, Date: 18-Jul-2016, Time: 15:04:53, ID: ST160718J1-1 PFC CS0 16G1205, Description: CS0 16G1205

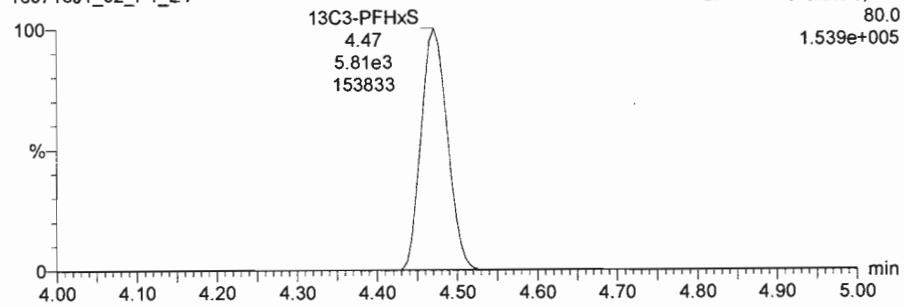
**13C5-PFHxA**

160718J1\_02\_P1\_E1



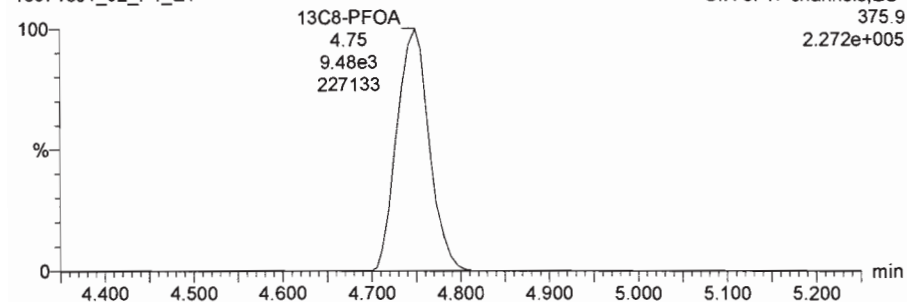
**13C3-PFHxS**

160718J1\_02\_P1\_E1



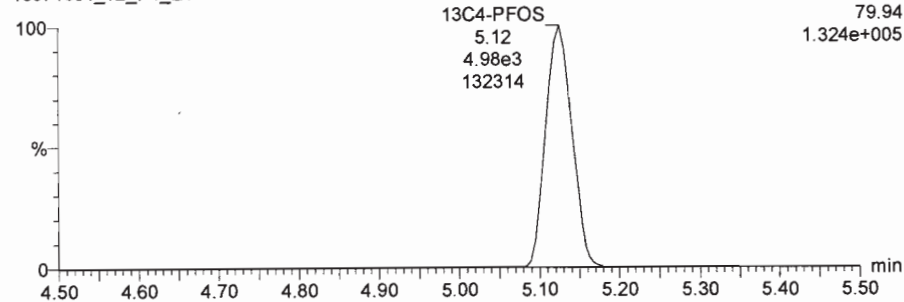
**13C8-PFOA**

160718J1\_02\_P1\_E1



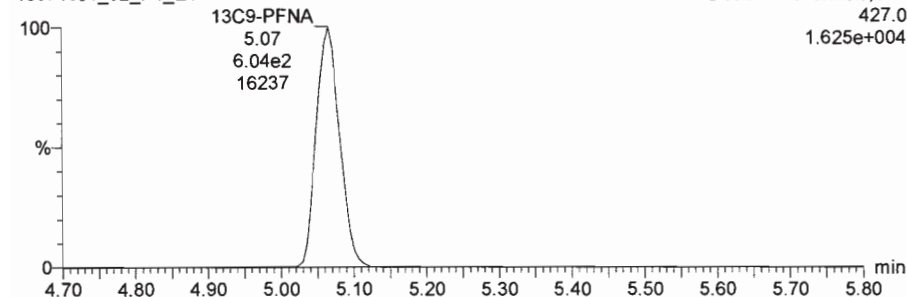
**13C4-PFOS**

160718J1\_02\_P1\_E1



**13C9-PFNA**

160718J1\_02\_P1\_E1



Dataset:        U:\Q2.PRO\Results\160718J1\160718J1crv.qld

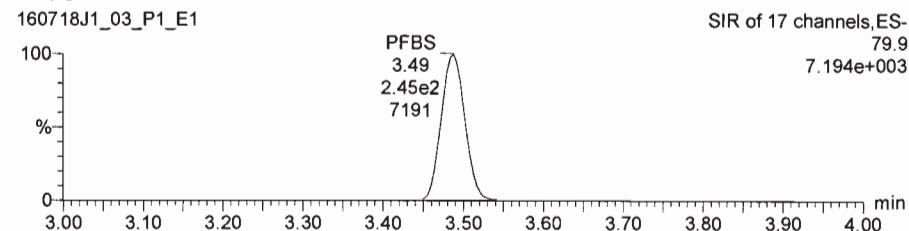
Last Altered:   Tuesday, July 19, 2016 08:45:41 Pacific Daylight Time

Printed:        Tuesday, July 19, 2016 08:56:07 Pacific Daylight Time

Name: 160718J1\_03.wiff, Date: 18-Jul-2016, Time: 15:17:04, ID: ST160718J1-2 PFC CS1 16G1206, Description: CS1 16G1206

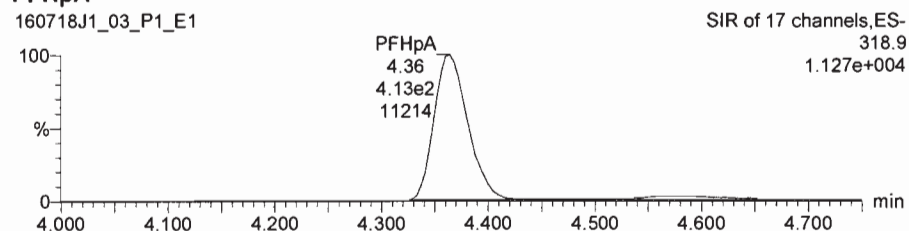
#### PFBS

160718J1\_03\_P1\_E1



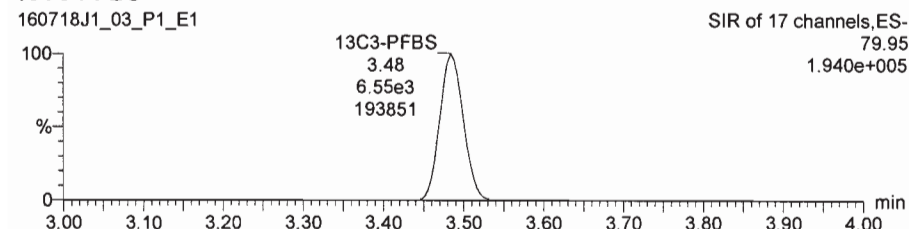
#### PFHpA

160718J1\_03\_P1\_E1



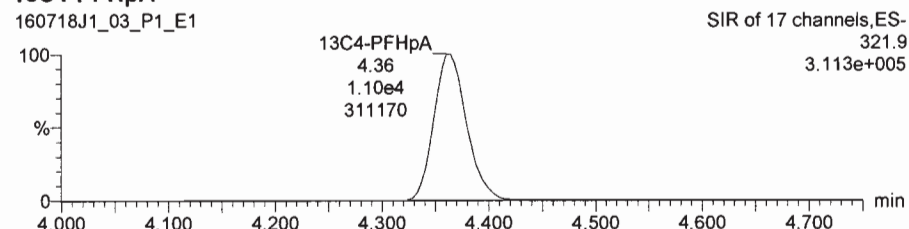
#### 13C3-PFBS

160718J1\_03\_P1\_E1



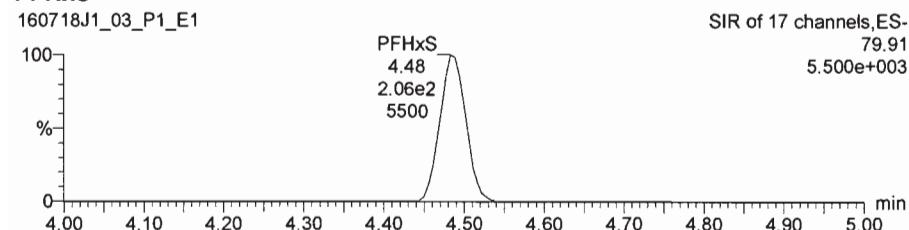
#### 13C4-PFHpA

160718J1\_03\_P1\_E1



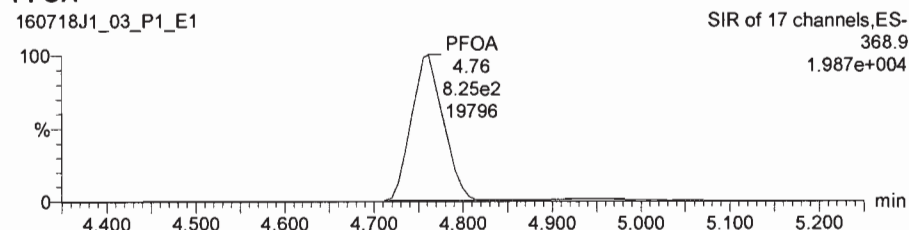
#### PFHxS

160718J1\_03\_P1\_E1



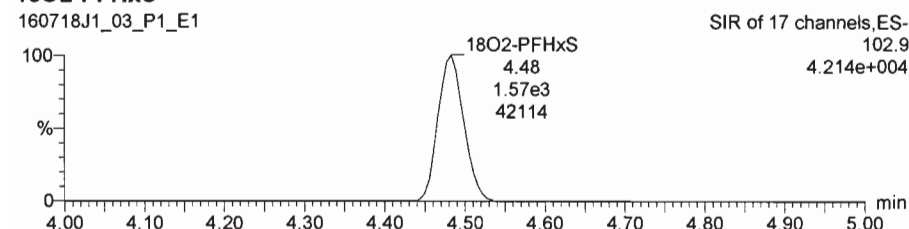
#### PFOA

160718J1\_03\_P1\_E1



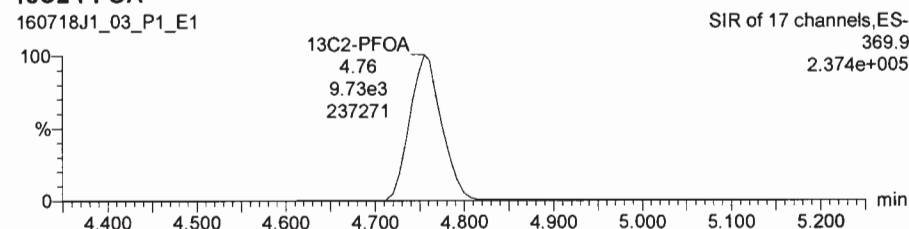
#### 18O2-PFHxS

160718J1\_03\_P1\_E1



#### 13C2-PFOA

160718J1\_03\_P1\_E1



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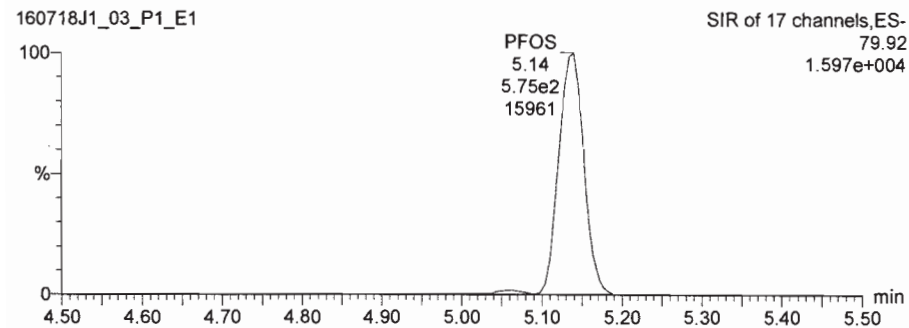
Last Altered:   Tuesday, July 19, 2016 08:45:41 Pacific Daylight Time

Printed:        Tuesday, July 19, 2016 08:56:07 Pacific Daylight Time

Name: 160718J1\_03.wiff, Date: 18-Jul-2016, Time: 15:17:04, ID: ST160718J1-2 PFC CS1 16G1206, Description: CS1 16G1206

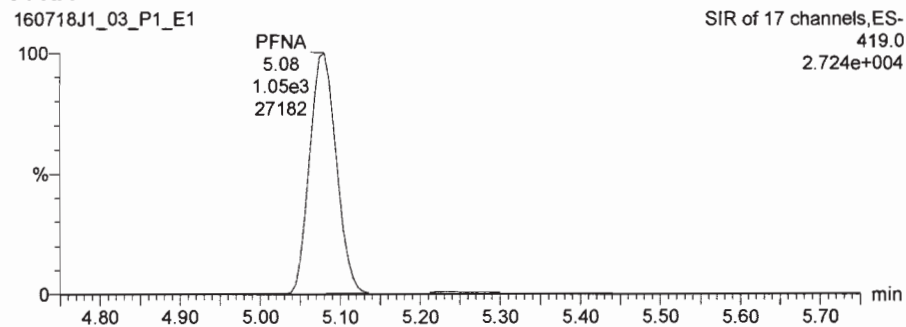
#### PFOS

160718J1\_03\_P1\_E1



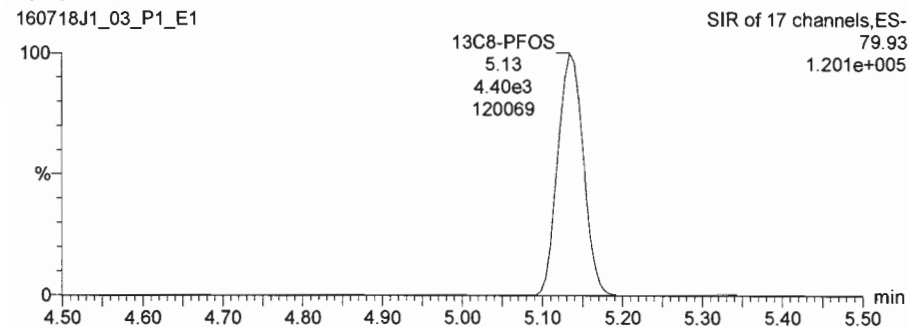
#### PFNA

160718J1\_03\_P1\_E1



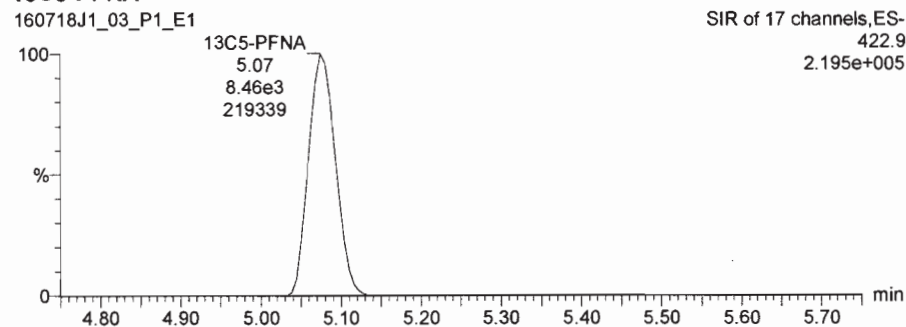
#### 13C8-PFOS

160718J1\_03\_P1\_E1



#### 13C5-PFNA

160718J1\_03\_P1\_E1



Dataset:        U:\Q2.PRO\Results\160718J1\160718J1crv.qld

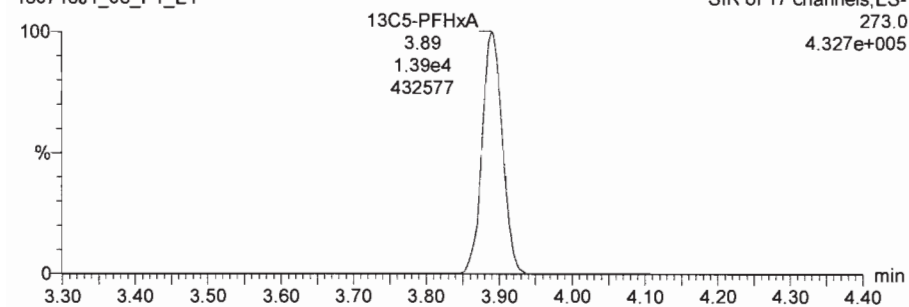
Last Altered:    Tuesday, July 19, 2016 08:45:41 Pacific Daylight Time

Printed:        Tuesday, July 19, 2016 08:56:07 Pacific Daylight Time

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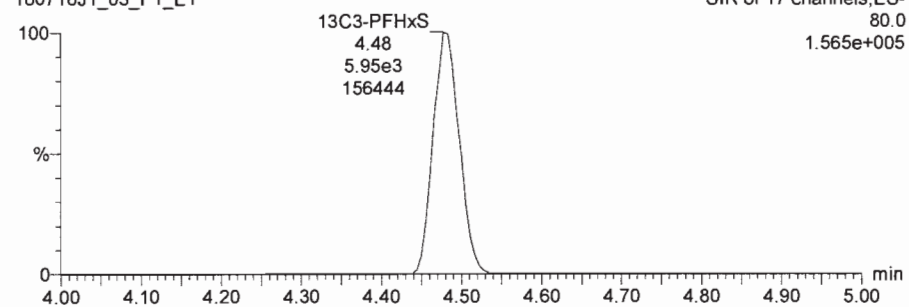
**13C5-PFHxA**

160718J1\_03\_P1\_E1



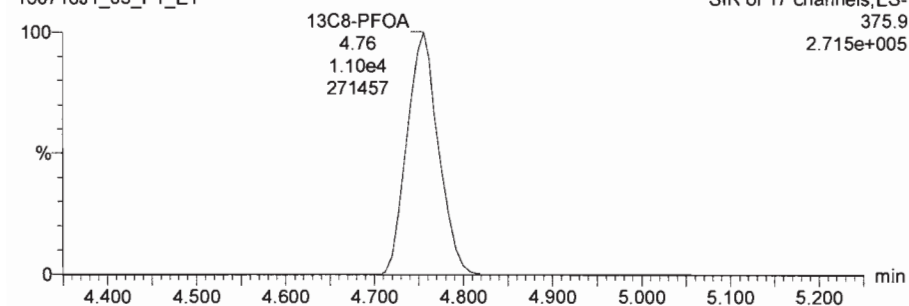
**13C3-PFHxS**

160718J1\_03\_P1\_E1



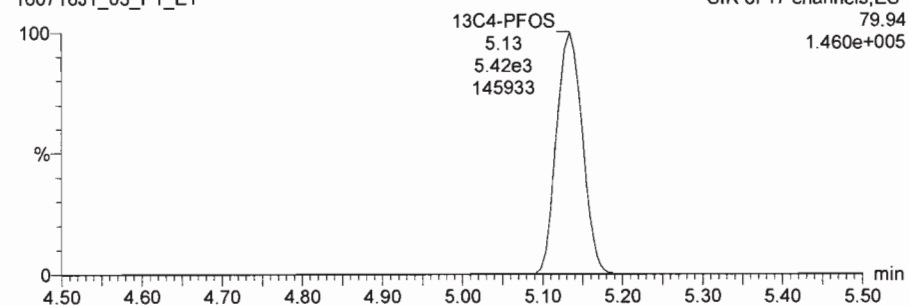
**13C8-PFOA**

160718J1\_03\_P1\_E1



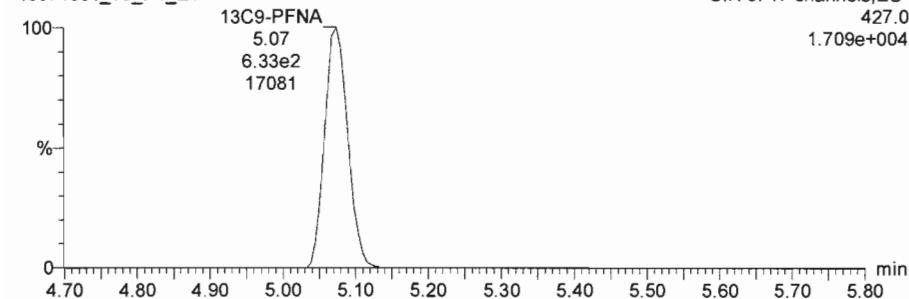
**13C4-PFOS**

160718J1\_03\_P1\_E1



**13C9-PFNA**

160718J1\_03\_P1\_E1



Dataset:        U:\Q2.PRO\Results\160718J1\160718J1crv.qld

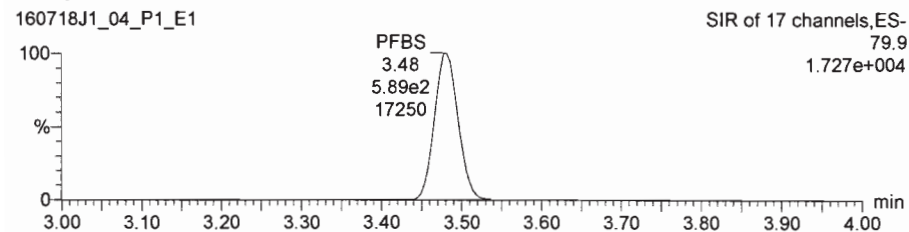
Last Altered:    Tuesday, July 19, 2016 08:45:41 Pacific Daylight Time

Printed:        Tuesday, July 19, 2016 08:56:07 Pacific Daylight Time

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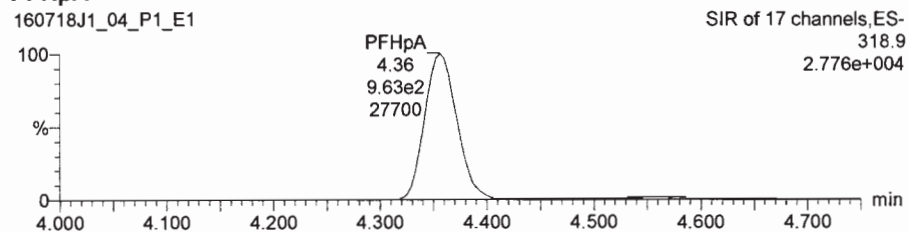
**PFBS**

160718J1\_04\_P1\_E1



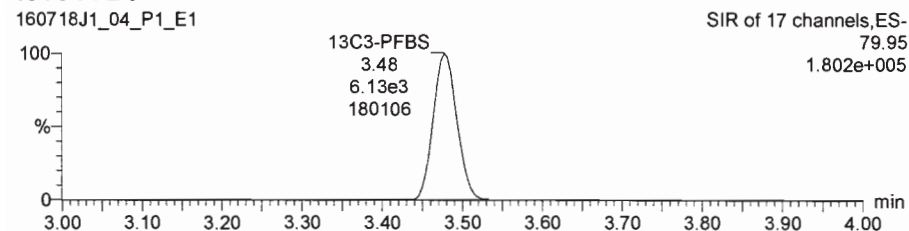
**PFHpA**

160718J1\_04\_P1\_E1



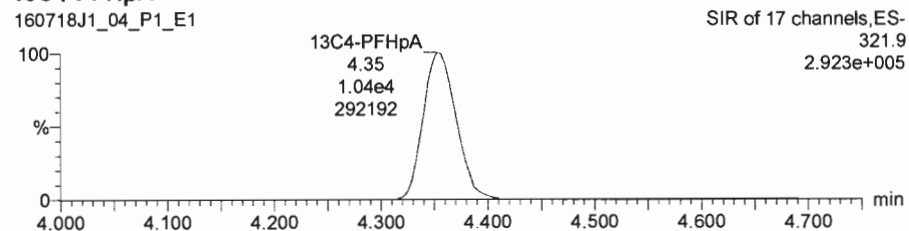
**13C3-PFBS**

160718J1\_04\_P1\_E1



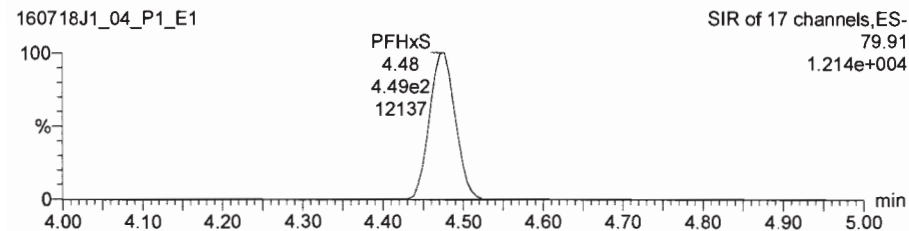
**13C4-PFHpA**

160718J1\_04\_P1\_E1



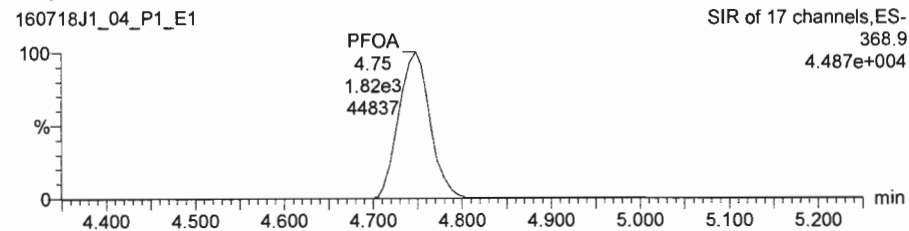
**PFHxS**

160718J1\_04\_P1\_E1



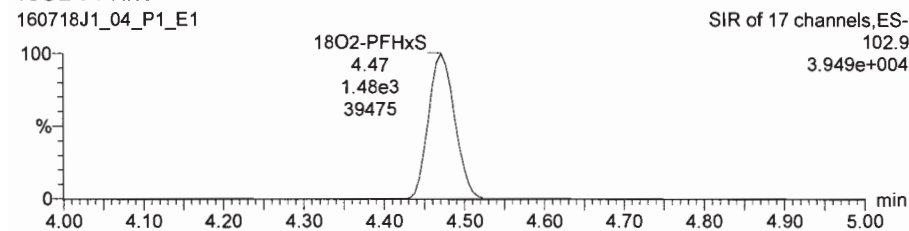
**PFOA**

160718J1\_04\_P1\_E1



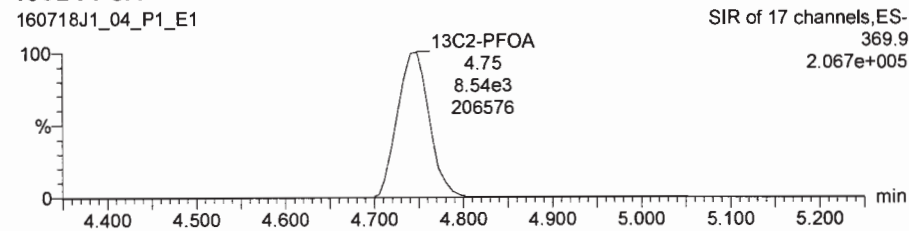
**18O2-PFHxS**

160718J1\_04\_P1\_E1



**13C2-PFOA**

160718J1\_04\_P1\_E1



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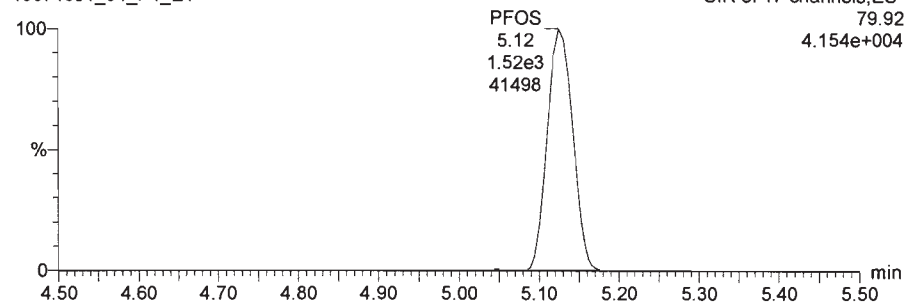
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Printed:        Tuesday, July 19, 2016 08:56:07 Pacific Daylight Time

Name: 160718J1\_04.wiff, Date: 18-Jul-2016, Time: 15:29:17, ID: ST160718J1-3 PFC CS2 16G1208, Description: CS2 16G1208

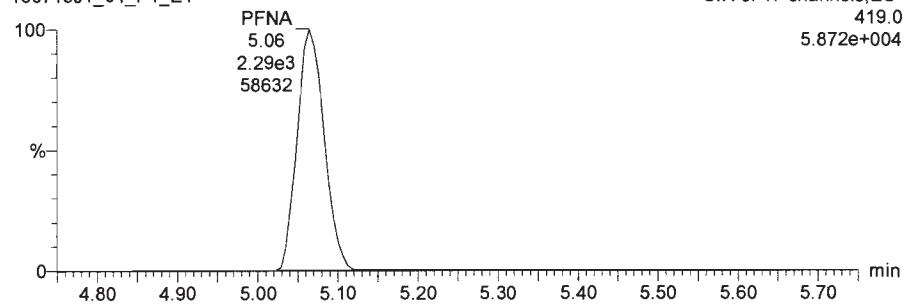
**PFOS**

160718J1\_04\_P1\_E1



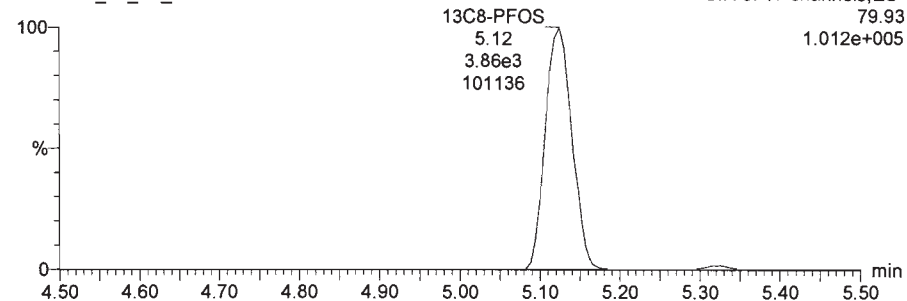
**PFNA**

160718J1\_04\_P1\_E1



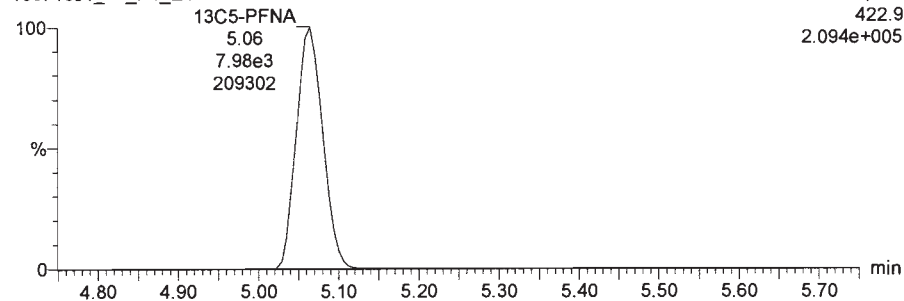
**13C8-PFOS**

160718J1\_04\_P1\_E1



**13C5-PFNA**

160718J1\_04\_P1\_E1





Dataset:        U:\Q2.PRO\Results\160718J1\160718J1crv.qld

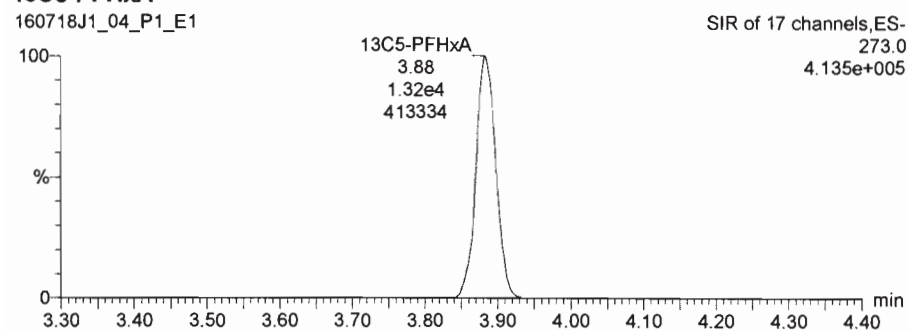
Last Altered:   Tuesday, July 19, 2016 08:45:41 Pacific Daylight Time

Printed:        Tuesday, July 19, 2016 08:56:07 Pacific Daylight Time

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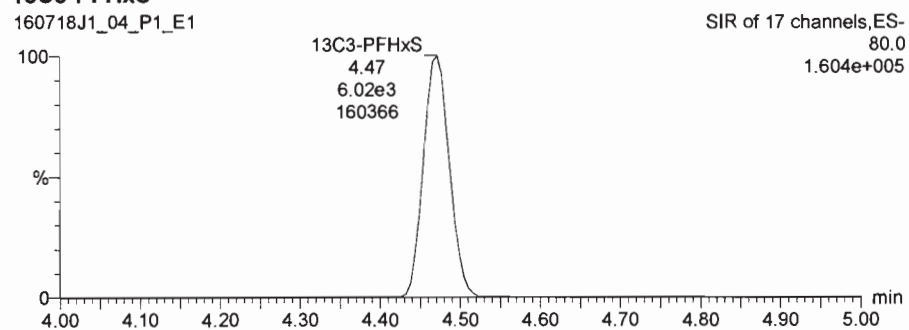
**13C5-PFHxA**

160718J1\_04\_P1\_E1



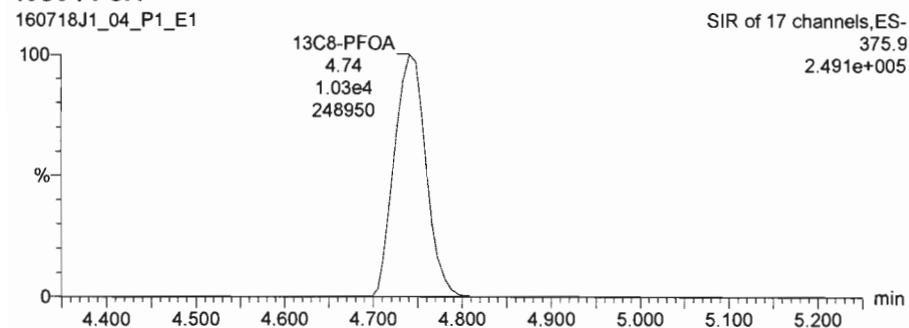
**13C3-PFHxS**

160718J1\_04\_P1\_E1



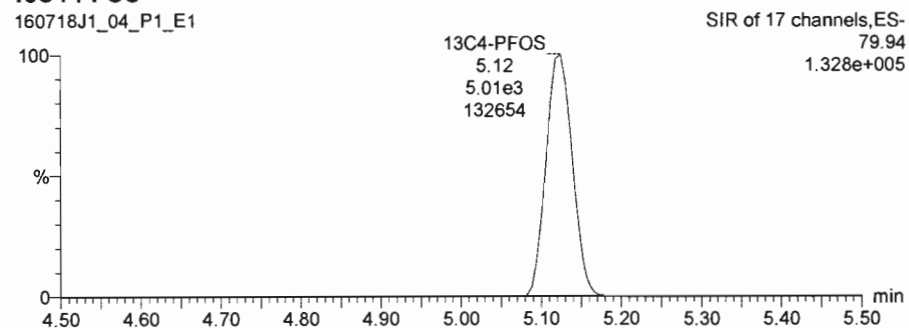
**13C8-PFOA**

160718J1\_04\_P1\_E1



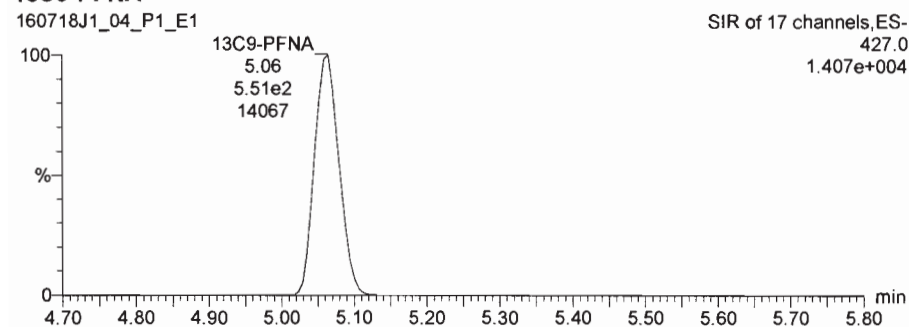
**13C4-PFOS**

160718J1\_04\_P1\_E1



**13C9-PFNA**

160718J1\_04\_P1\_E1



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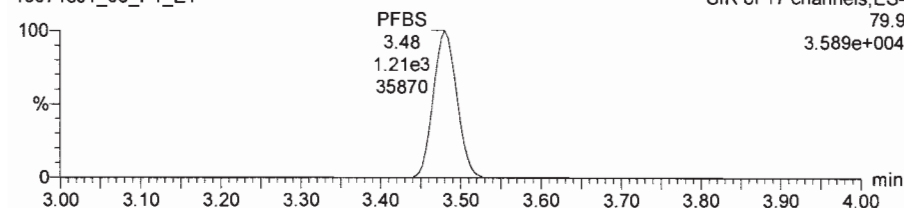
Last Altered:    Tuesday, July 19, 2016 08:45:41 Pacific Daylight Time

Printed:        Tuesday, July 19, 2016 08:56:07 Pacific Daylight Time

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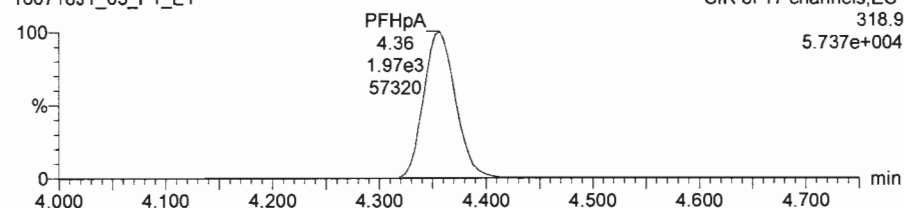
**PFBS**

160718J1\_05\_P1\_E1



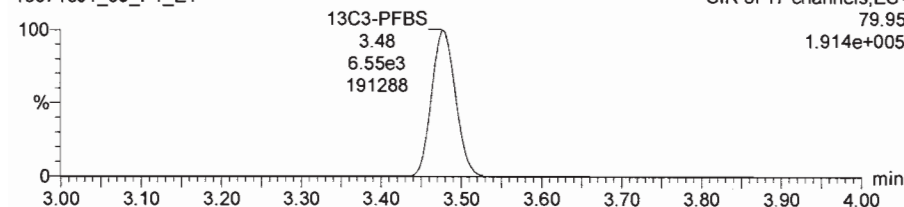
**PFHpA**

160718J1\_05\_P1\_E1



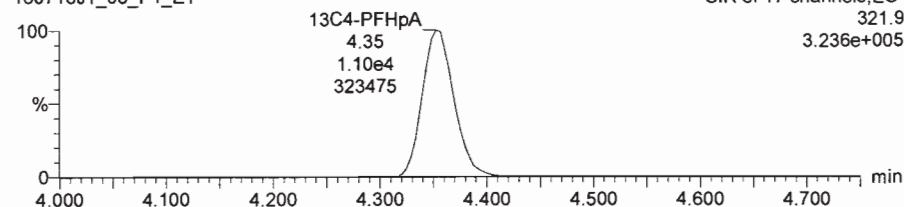
**13C3-PFBS**

160718J1\_05\_P1\_E1



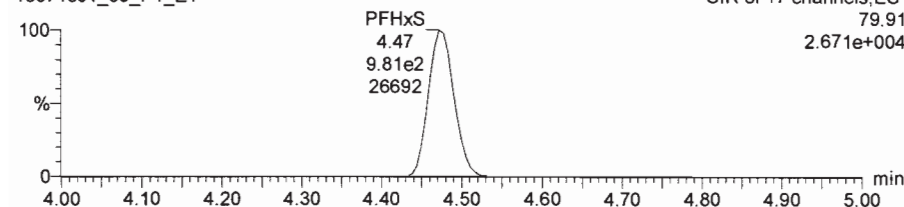
**13C4-PFHpA**

160718J1\_05\_P1\_E1



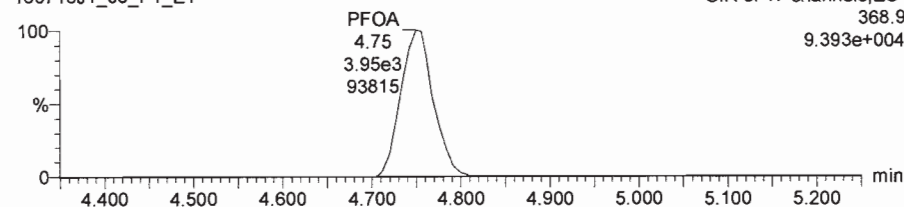
**PFHxS**

160718J1\_05\_P1\_E1



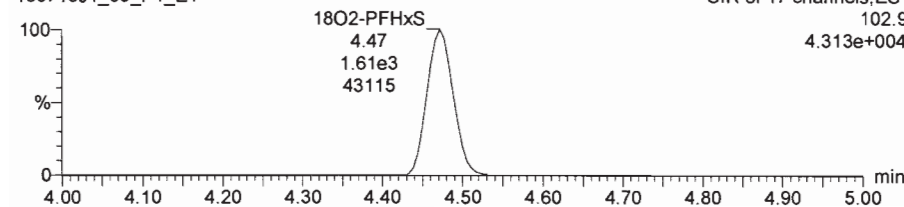
**PFOA**

160718J1\_05\_P1\_E1



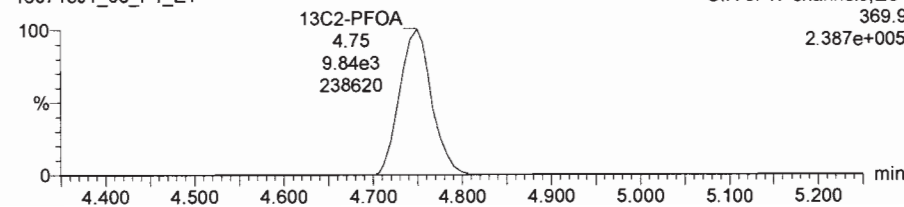
**18O2-PFHxS**

160718J1\_05\_P1\_E1



**13C2-PFOA**

160718J1\_05\_P1\_E1



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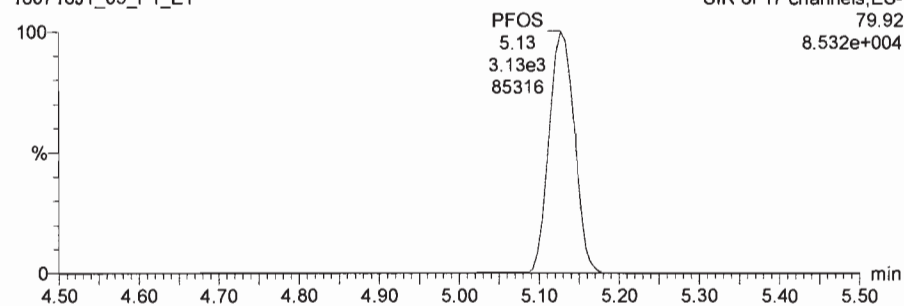
Last Altered:   Tuesday, July 19, 2016 08:45:41 Pacific Daylight Time

Printed:        Tuesday, July 19, 2016 08:56:07 Pacific Daylight Time

Name: 160718J1\_05.wiff, Date: 18-Jul-2016, Time: 15:41:29, ID: ST160718J1-4 PFC CS3 16G1209, Description: CS3 16G1209

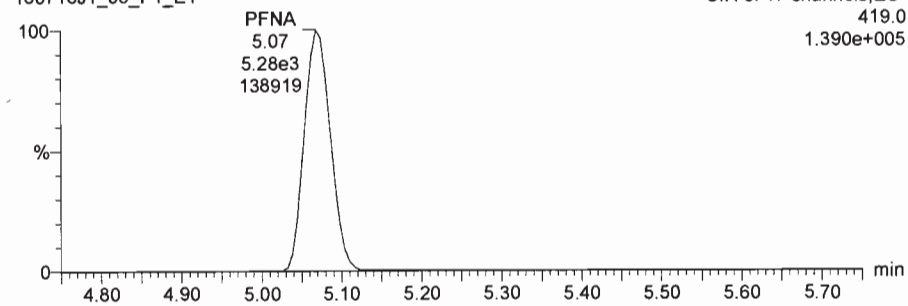
**PFOS**

160718J1\_05\_P1\_E1



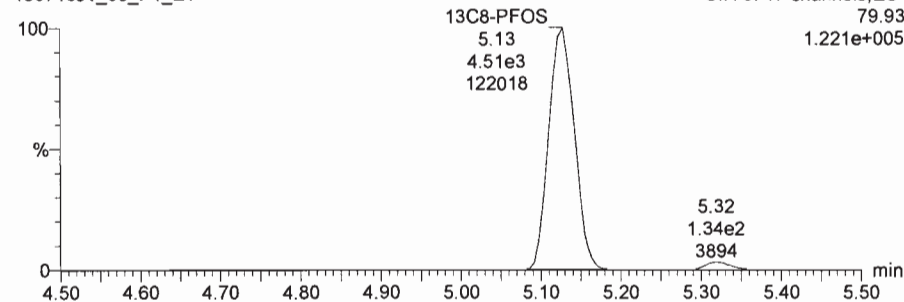
**PFNA**

160718J1\_05\_P1\_E1



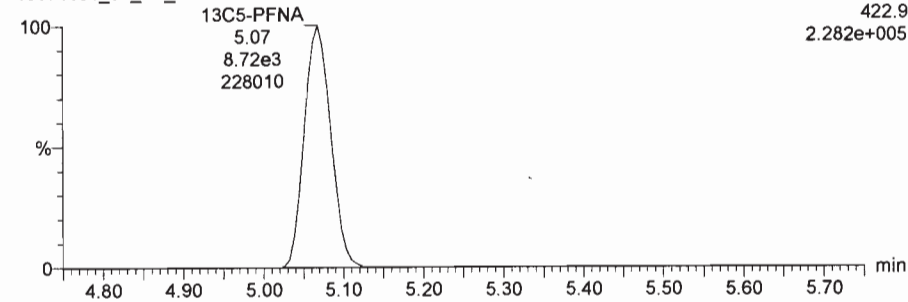
**13C8-PFOS**

160718J1\_05\_P1\_E1



**13C5-PFNA**

160718J1\_05\_P1\_E1



Dataset:        U:\Q2.PRO\Results\160718J1\160718J1crv.qld

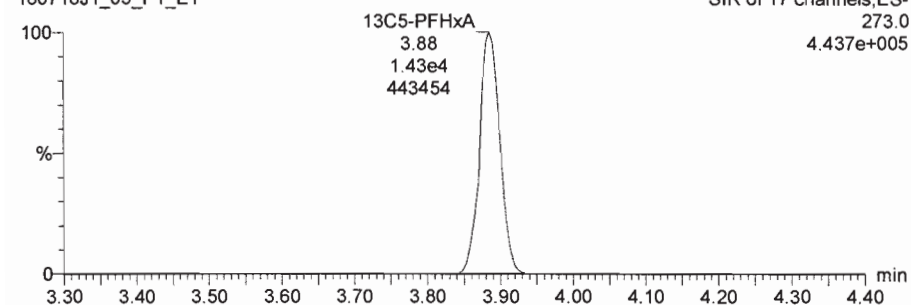
Last Altered:    Tuesday, July 19, 2016 08:45:41 Pacific Daylight Time

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Name: 160718J1\_05.wiff, Date: 18-Jul-2016, Time: 15:41:29, ID: ST160718J1-4 PFC CS3 16G1209, Description: CS3 16G1209

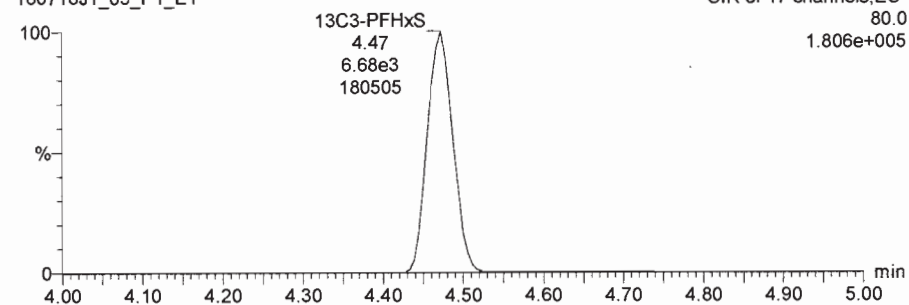
**13C5-PFHxA**

160718J1\_05\_P1\_E1



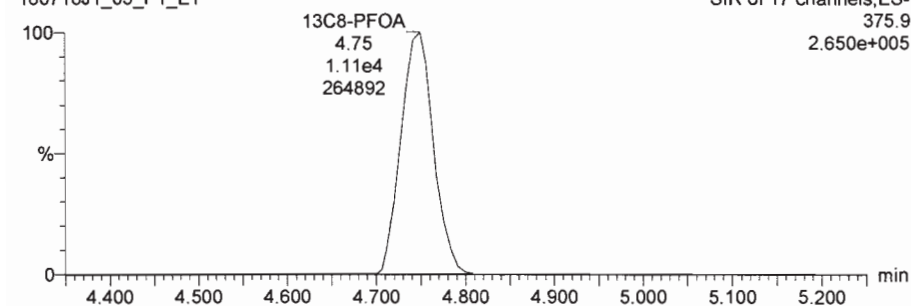
**13C3-PFHxS**

160718J1\_05\_P1\_E1



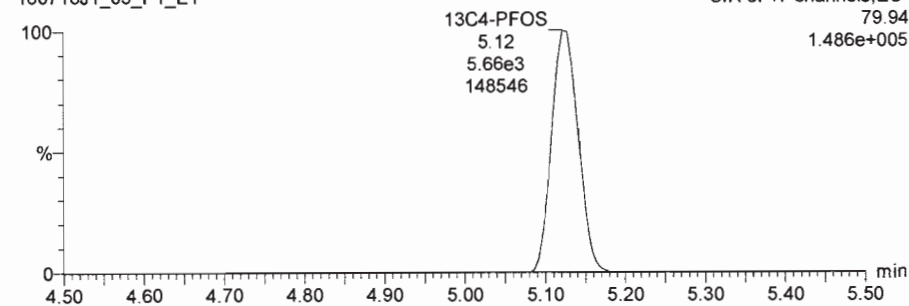
**13C8-PFOA**

160718J1\_05\_P1\_E1



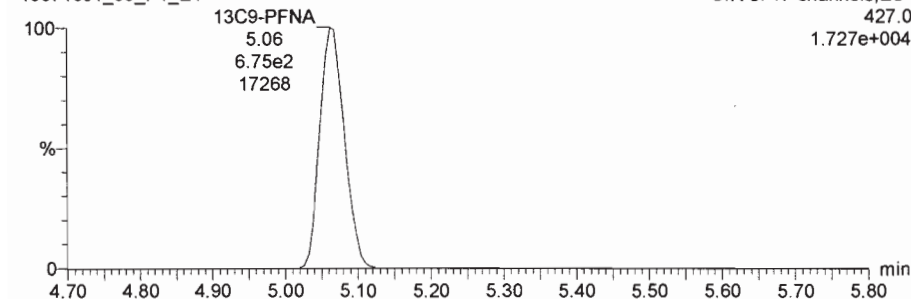
**13C4-PFOS**

160718J1\_05\_P1\_E1



**13C9-PFNA**

160718J1\_05\_P1\_E1



Dataset:        U:\Q2.PRO\Results\160718J1\160718J1crv.qld

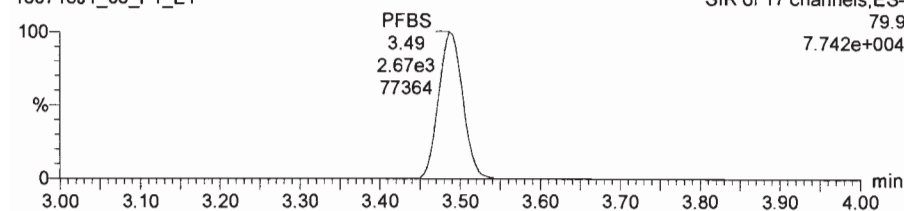
Last Altered:    Tuesday, July 19, 2016 08:45:41 Pacific Daylight Time

Printed:        Tuesday, July 19, 2016 08:56:07 Pacific Daylight Time

Name: 160718J1\_06.wiff, Date: 18-Jul-2016, Time: 15:53:41, ID: ST160718J1-5 PFC CS3.5 16G1210, Description: CS3.5 16G1210

**PFBS**

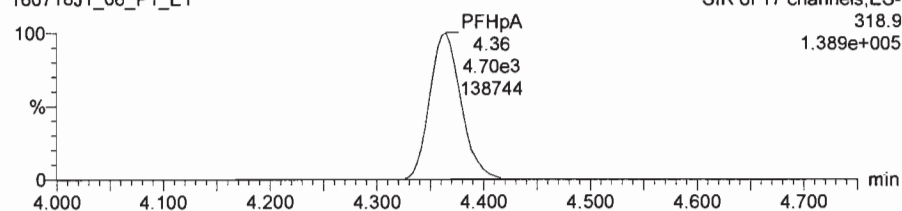
160718J1\_06\_P1\_E1



SIR of 17 channels, ES-  
79.9  
7.742e+004

**PFHpA**

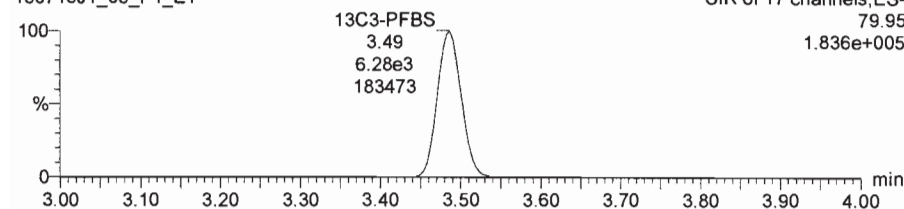
160718J1\_06\_P1\_E1



SIR of 17 channels, ES-  
318.9  
1.389e+005

**13C3-PFBS**

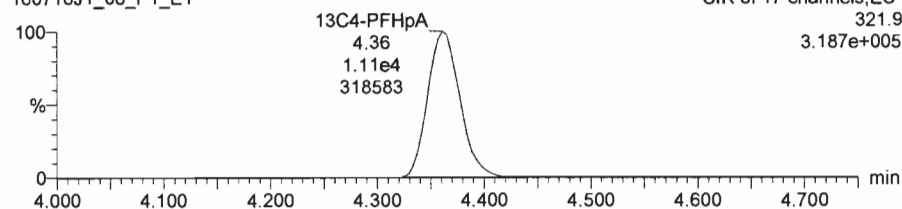
160718J1\_06\_P1\_E1



SIR of 17 channels, ES-  
79.95  
1.836e+005

**13C4-PFHpA**

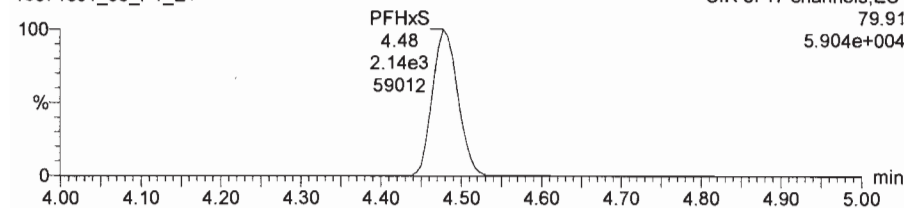
160718J1\_06\_P1\_E1



SIR of 17 channels, ES-  
321.9  
3.187e+005

**PFHxS**

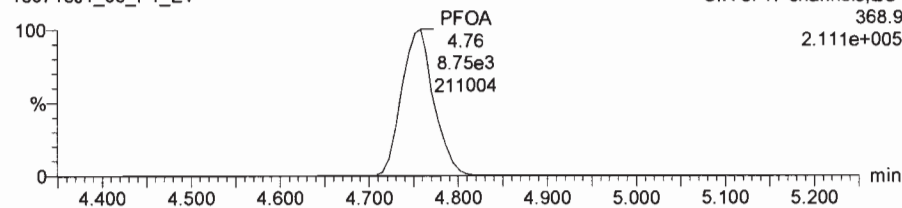
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SIR of 17 channels, ES-  
79.91  
5.904e+004

**PFOA**

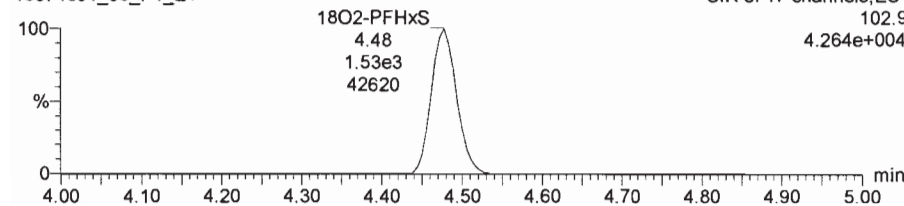
160718J1\_06\_P1\_E1



SIR of 17 channels, ES-  
368.9  
2.111e+005

**18O2-PFHxS**

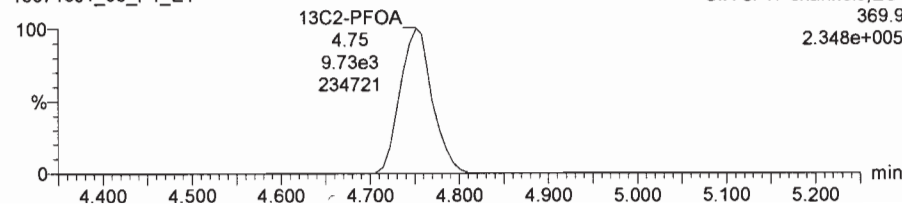
160718J1\_06\_P1\_E1



SIR of 17 channels, ES-  
102.9  
4.264e+004

**13C2-PFOA**

160718J1\_06\_P1\_E1



SIR of 17 channels, ES-  
369.9  
2.348e+005

Dataset:        U:\Q2.PRO\Results\160718J1\160718J1crv.qld

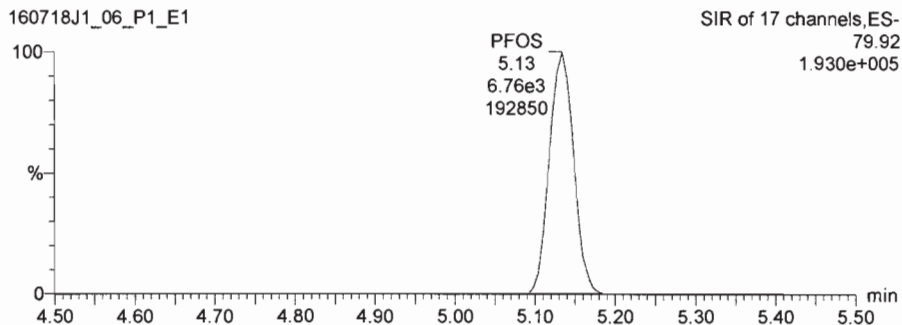
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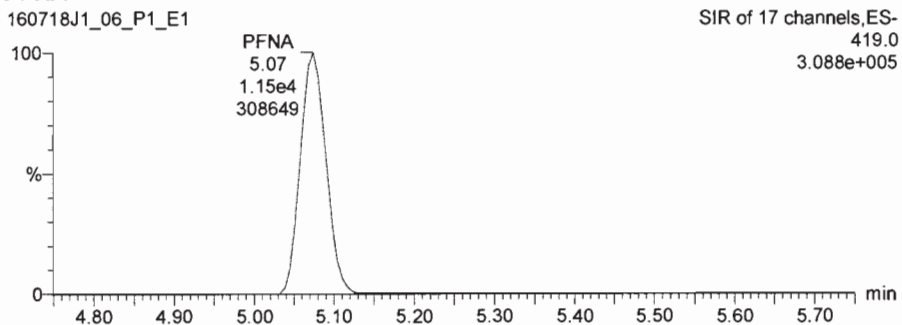
**PFOS**

160718J1\_06\_P1\_E1



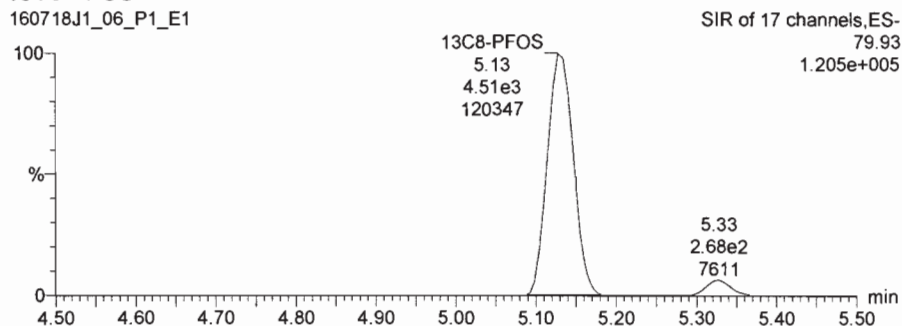
**PFNA**

160718J1\_06\_P1\_E1



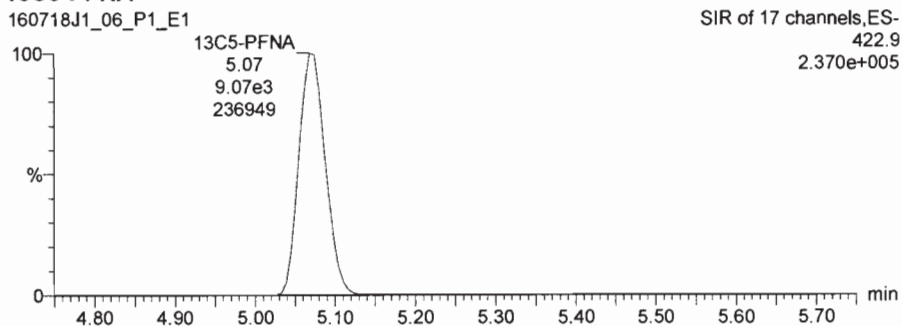
**13C8-PFOS**

160718J1\_06\_P1\_E1



**13C5-PFNA**

160718J1\_06\_P1\_E1



Dataset:        U:\Q2.PRO\Results\160718J1\160718J1crv.qld

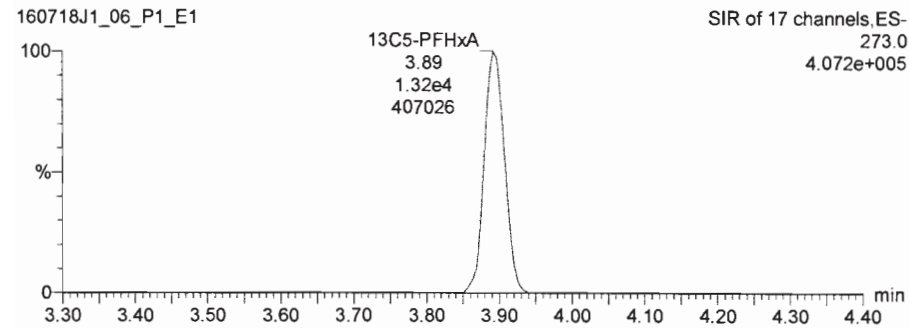
Last Altered:   Tuesday, July 19, 2016 08:45:41 Pacific Daylight Time

Printed:        Tuesday, July 19, 2016 08:56:07 Pacific Daylight Time

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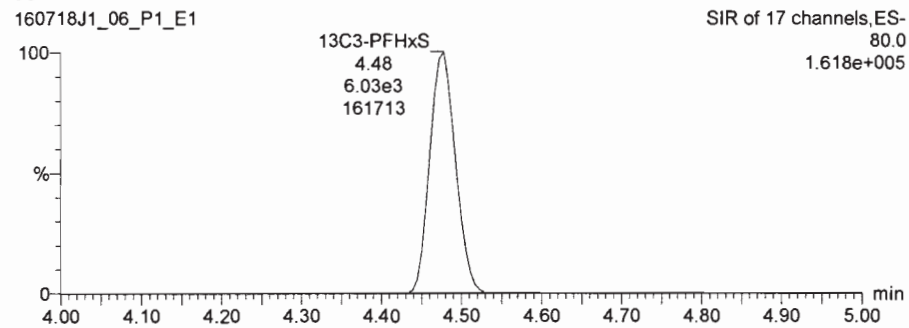
**13C5-PFHxA**

160718J1\_06\_P1\_E1



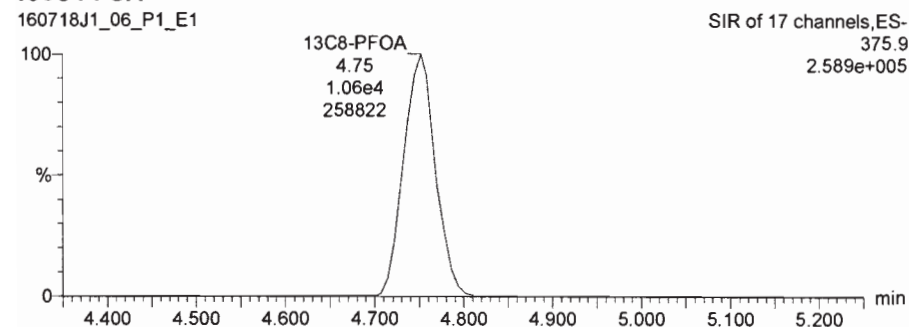
**13C3-PFHxS**

160718J1\_06\_P1\_E1



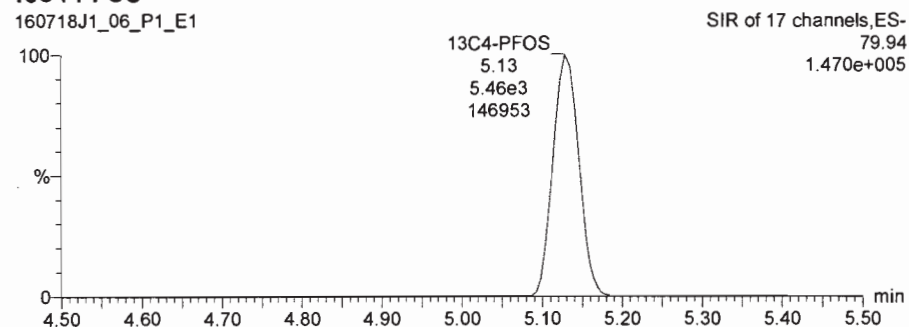
**13C8-PFOA**

160718J1\_06\_P1\_E1



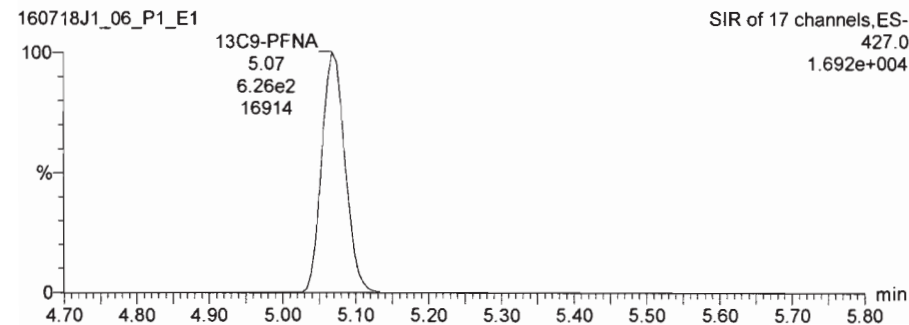
**13C4-PFOS**

160718J1\_06\_P1\_E1



**13C9-PFNA**

160718J1\_06\_P1\_E1



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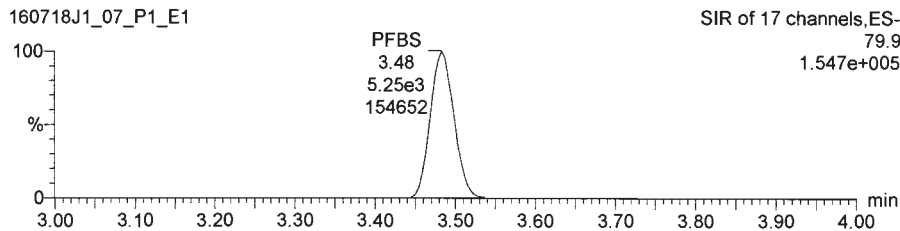
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Name: 160718J1\_07.wiff, Date: 18-Jul-2016, Time: 16:05:54, ID: ST160718J1-6 PFC CS4 16G1211, Description: CS4 16G1211

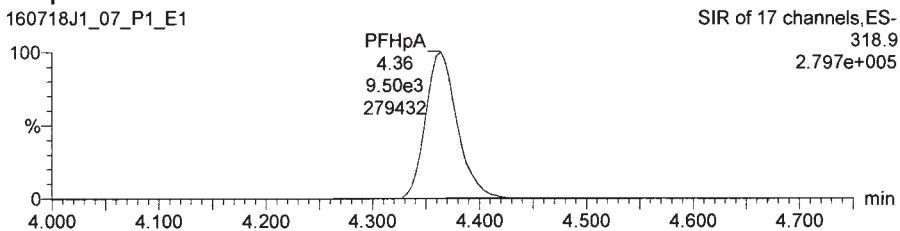
**PFBS**

160718J1\_07\_P1\_E1



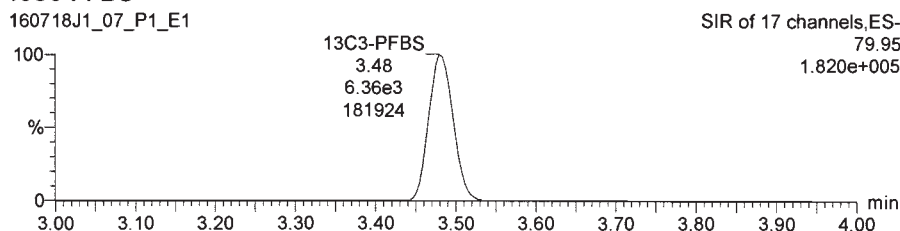
**PFHpA**

160718J1\_07\_P1\_E1



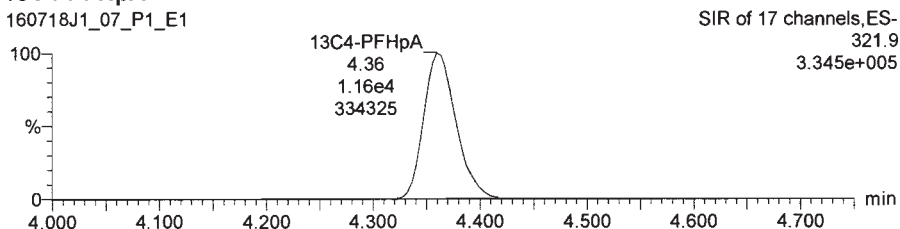
**13C3-PFBS**

160718J1\_07\_P1\_E1



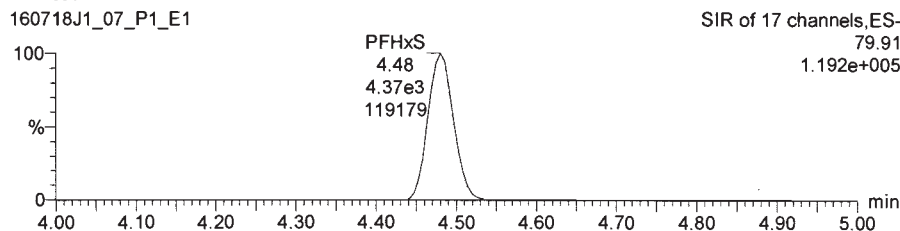
**13C4-PFHpA**

160718J1\_07\_P1\_E1



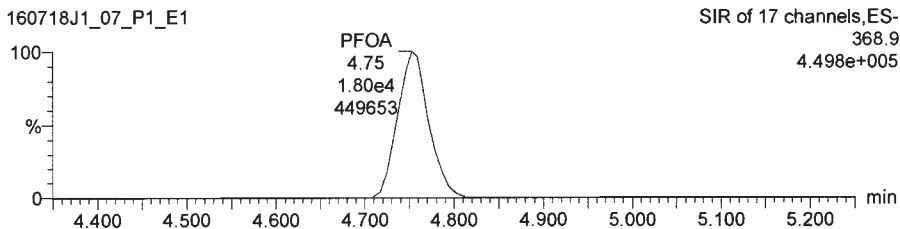
**PFHxS**

160718J1\_07\_P1\_E1



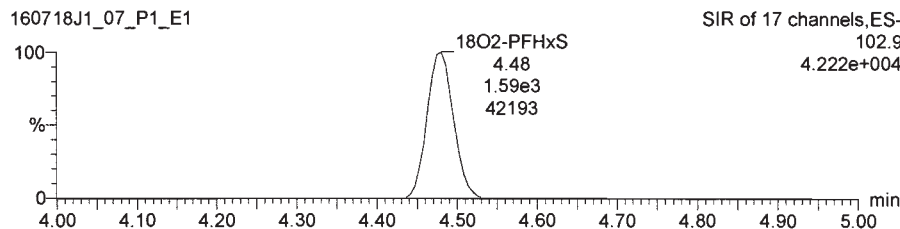
**PFOA**

160718J1\_07\_P1\_E1



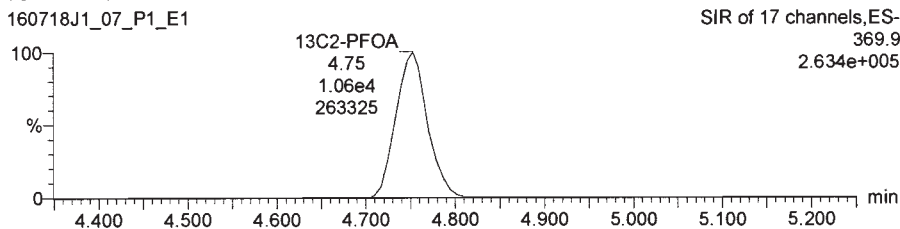
**18O2-PFHxS**

160718J1\_07\_P1\_E1



**13C2-PFOA**

160718J1\_07\_P1\_E1





Dataset: U:\Q2.PRO\Results\160718J1\160718J1crv.qld

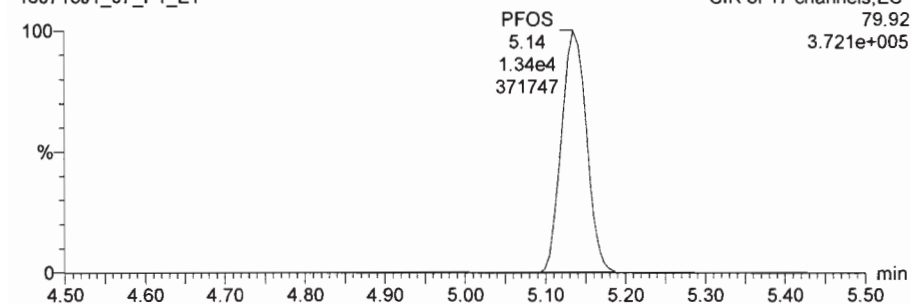
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Printed: Tuesday, July 19, 2016 08:56:07 Pacific Daylight Time

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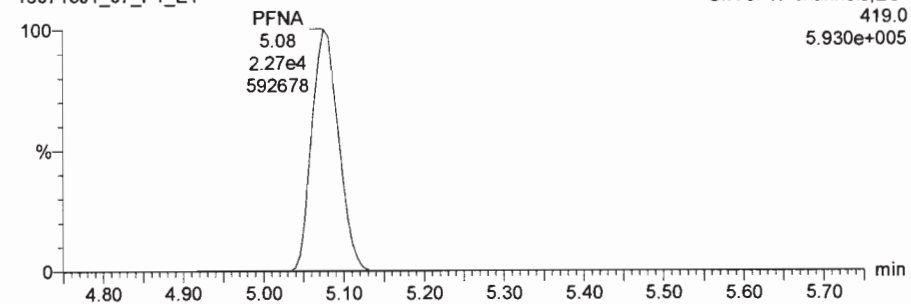
### PFOS

160718J1\_07\_P1\_E1



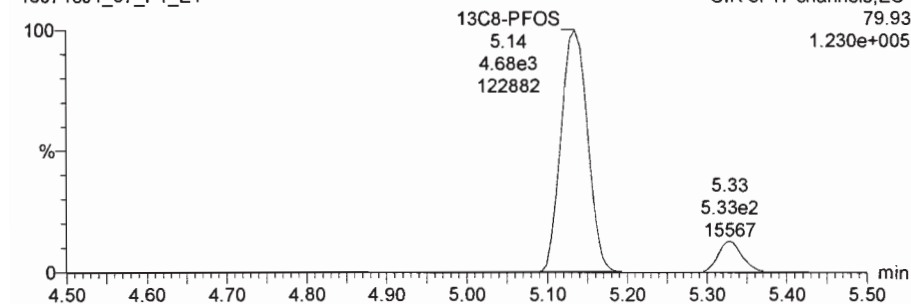
### PFNA

160718J1\_07\_P1\_E1



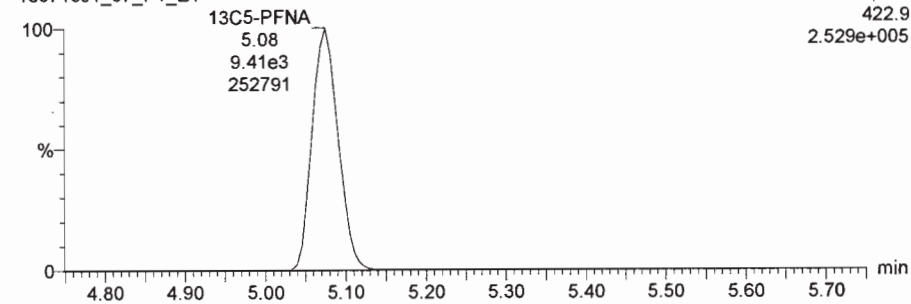
### 13C8-PFOS

160718J1\_07\_P1\_E1



### 13C5-PFNA

160718J1\_07\_P1\_E1



Dataset: U:\Q2.PRO\Results\160718J1\160718J1crv.qld

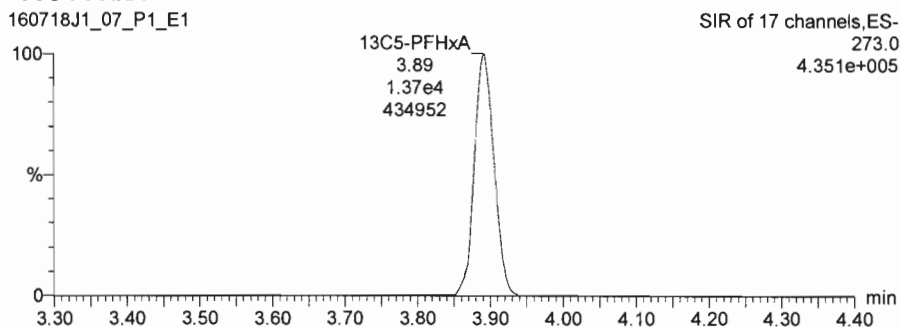
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Printed: Tuesday, July 19, 2016 08:56:07 Pacific Daylight Time

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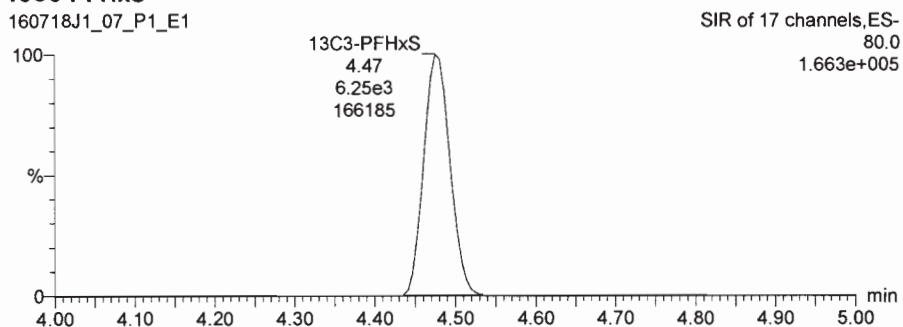
**13C5-PFHxA**

160718J1\_07\_P1\_E1



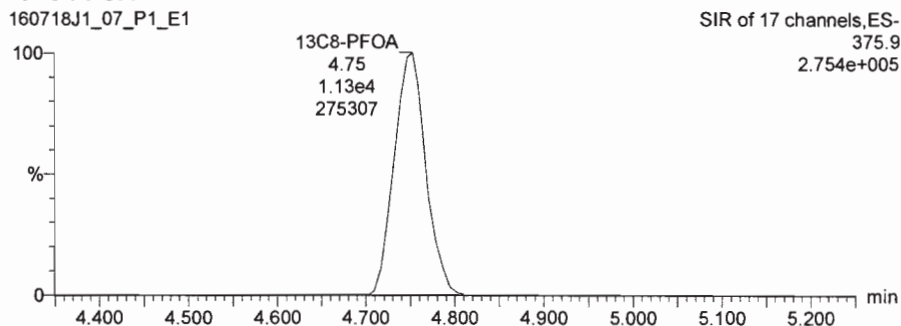
**13C3-PFHxS**

160718J1\_07\_P1\_E1



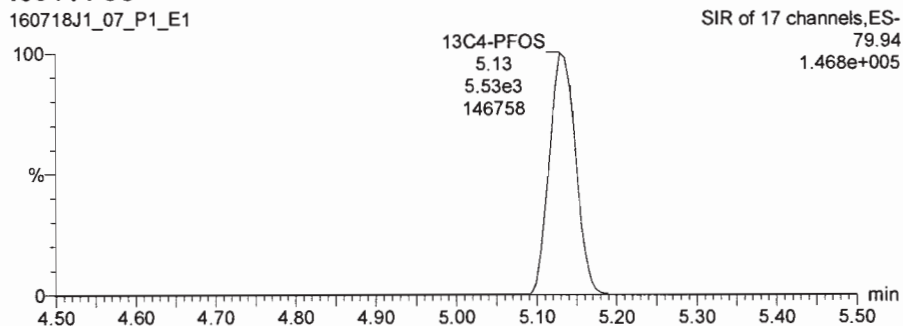
**13C8-PFOA**

160718J1\_07\_P1\_E1



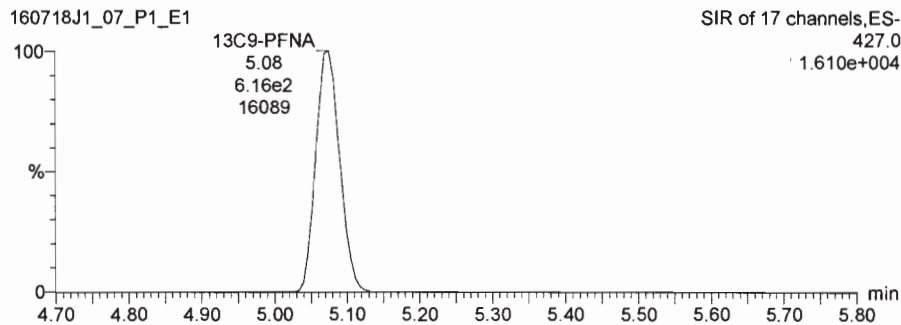
**13C4-PFOS**

160718J1\_07\_P1\_E1



**13C9-PFNA**

160718J1\_07\_P1\_E1



Dataset:        U:\Q2.PRO\Results\160718J1\160718J1crv.qld

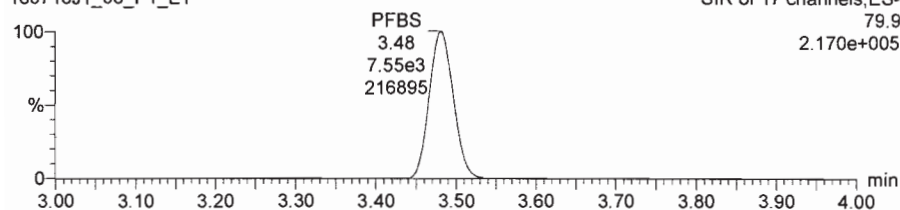
Last Altered:   Tuesday, July 19, 2016 08:45:41 Pacific Daylight Time

Printed:        Tuesday, July 19, 2016 08:56:07 Pacific Daylight Time

Name: 160718J1\_08.wiff, Date: 18-Jul-2016, Time: 16:18:06, ID: ST160718J1-7 PFC CS4.5 16G1212, Description: CS4.5 16G1212

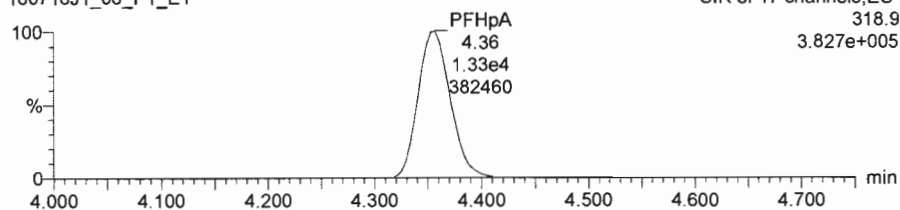
**PFBS**

160718J1\_08\_P1\_E1



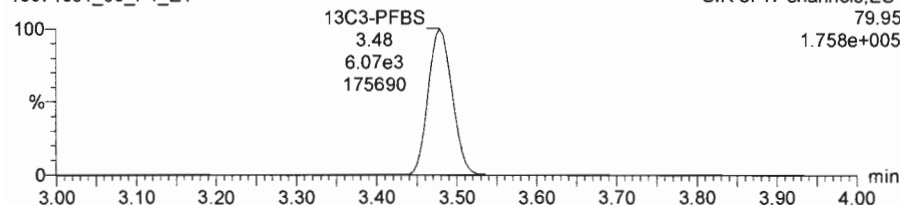
**PFHpA**

160718J1\_08\_P1\_E1



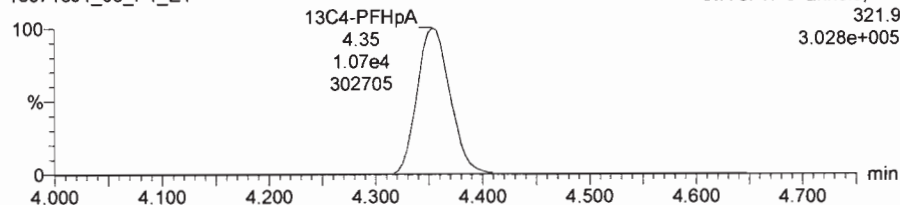
**13C3-PFBS**

160718J1\_08\_P1\_E1



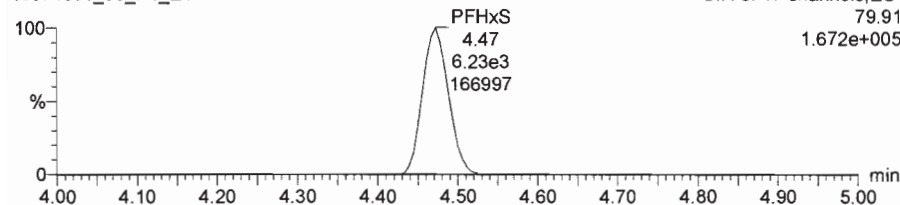
**13C4-PFHpA**

160718J1\_08\_P1\_E1



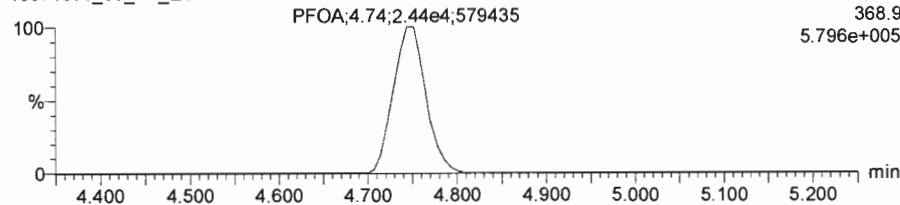
**PFHxS**

160718J1\_08\_P1\_E1



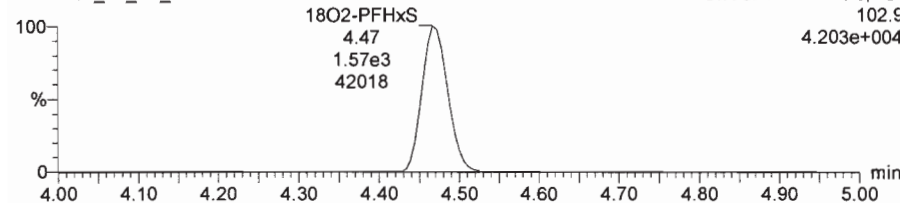
**PFOA**

160718J1\_08\_P1\_E1



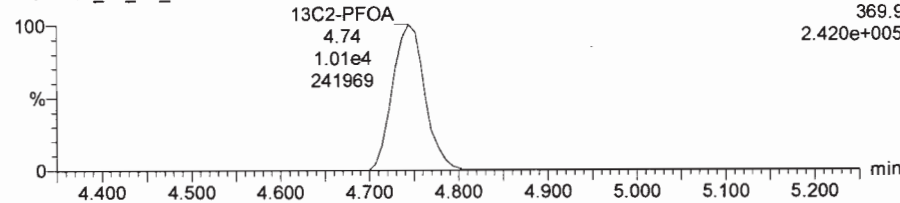
**18O2-PFHxS**

160718J1\_08\_P1\_E1



**13C2-PFOA**

160718J1\_08\_P1\_E1



Dataset:        U:\Q2.PRO\Results\160718J1\160718J1crv.qld

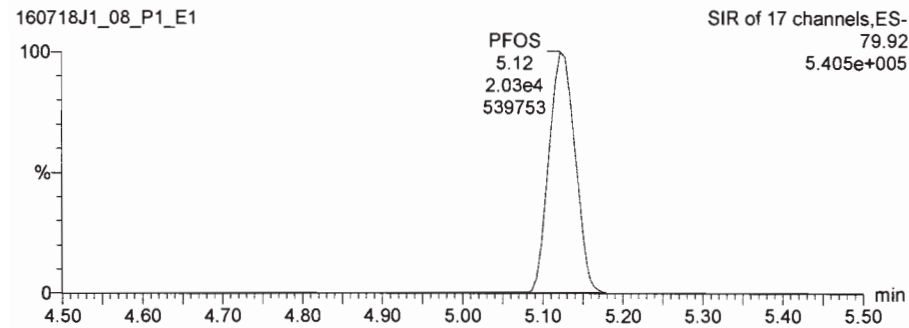
Last Altered:   Tuesday, July 19, 2016 08:45:41 Pacific Daylight Time

Printed:        Tuesday, July 19, 2016 08:56:07 Pacific Daylight Time

Name: 160718J1\_08.wiff, Date: 18-Jul-2016, Time: 16:18:06, ID: ST160718J1-7 PFC CS4.5 16G1212, Description: CS4.5 16G1212

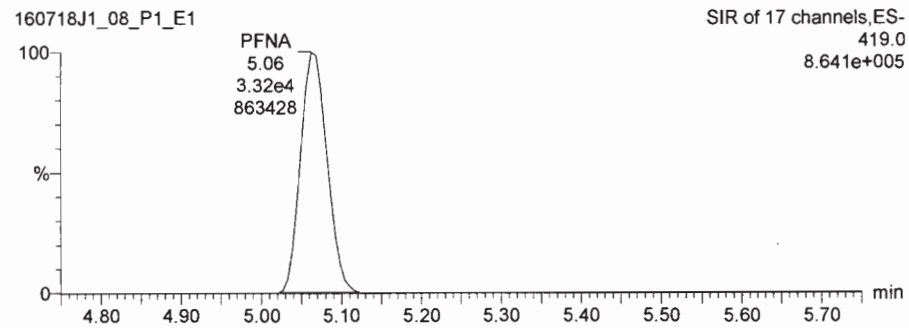
### PFOS

160718J1\_08\_P1\_E1



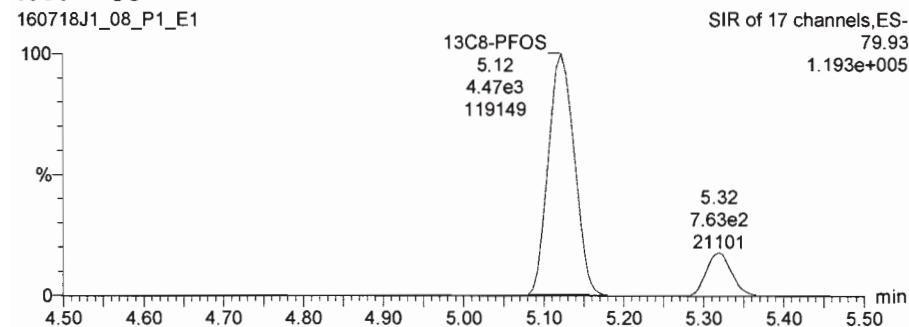
### PFNA

160718J1\_08\_P1\_E1



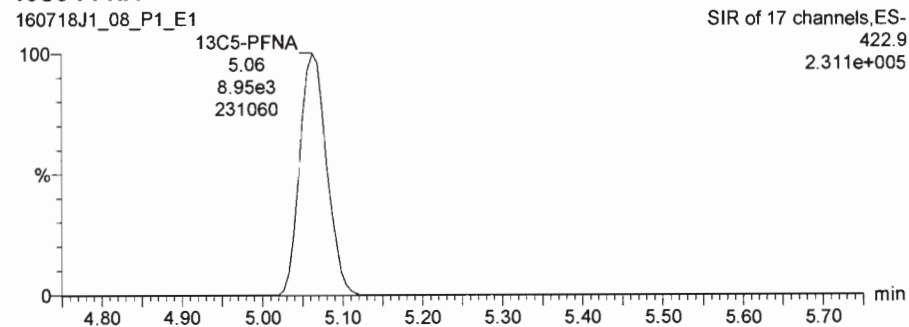
### 13C8-PFOS

160718J1\_08\_P1\_E1



### 13C5-PFNA

160718J1\_08\_P1\_E1



Dataset:        U:\Q2.PRO\Results\160718J1\160718J1crv.qld

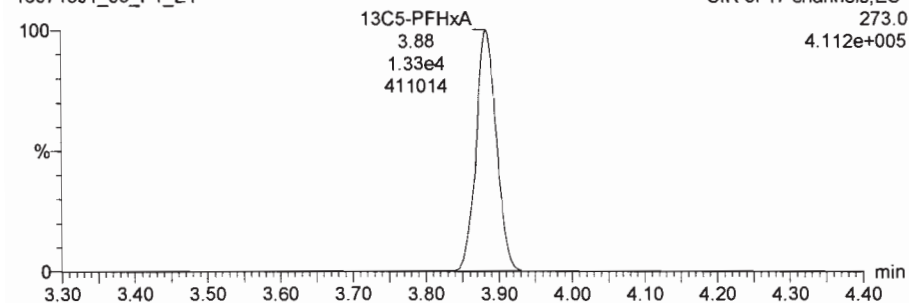
Last Altered:   Tuesday, July 19, 2016 08:45:41 Pacific Daylight Time

Printed:        Tuesday, July 19, 2016 08:56:07 Pacific Daylight Time

Name: 160718J1\_08.wiff, Date: 18-Jul-2016, Time: 16:18:06, ID: ST160718J1-7 PFC CS4.5 16G1212, Description: CS4.5 16G1212

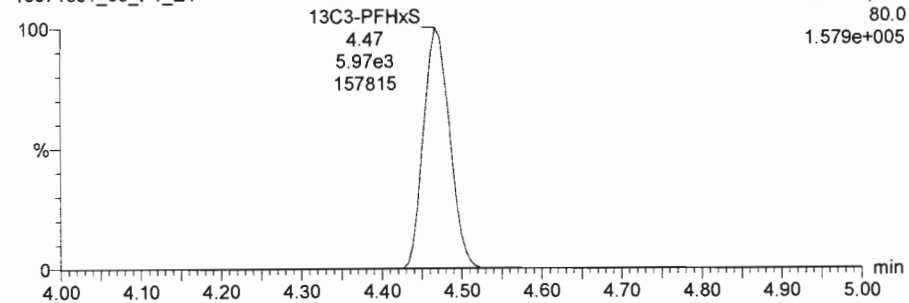
**13C5-PFHxA**

160718J1\_08\_P1\_E1



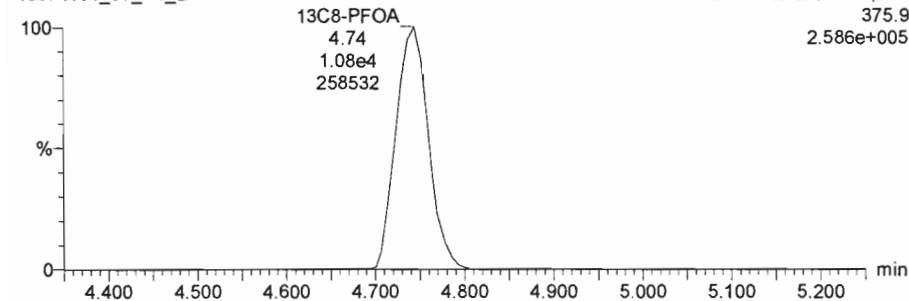
**13C3-PFHxS**

160718J1\_08\_P1\_E1



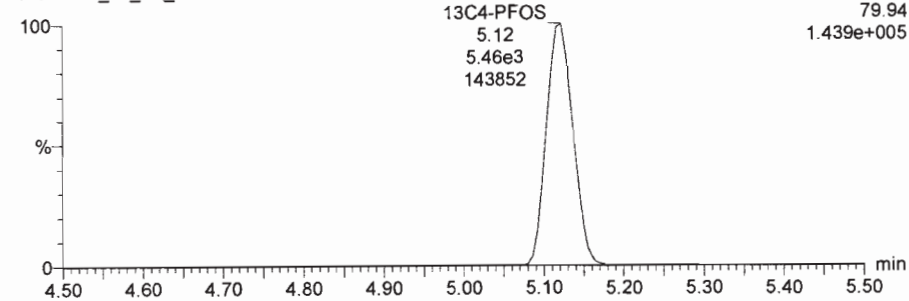
**13C8-PFOA**

160718J1\_08\_P1\_E1



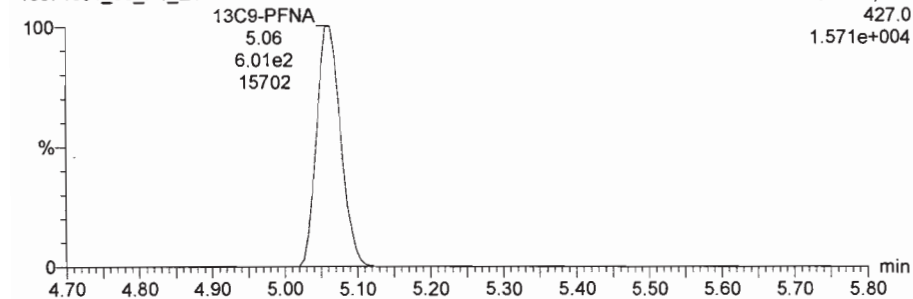
**13C4-PFOS**

160718J1\_08\_P1\_E1



**13C9-PFNA**

160718J1\_08\_P1\_E1



Dataset:        U:\Q2.PRO\Results\160718J1\160718J1crv.qld

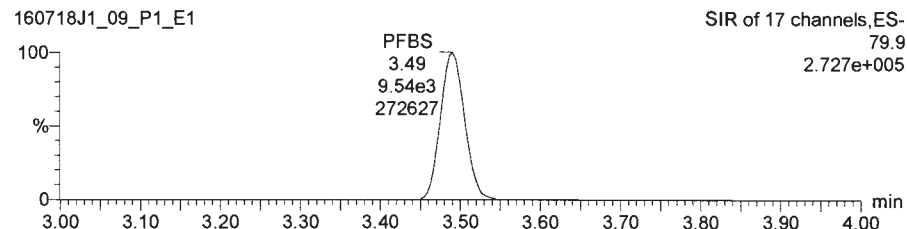
Last Altered:    Tuesday, July 19, 2016 08:45:41 Pacific Daylight Time

Printed:        Tuesday, July 19, 2016 08:56:07 Pacific Daylight Time

Name: 160718J1\_09.wiff, Date: 18-Jul-2016, Time: 16:30:18, ID: ST160718J1-8 PFC CS5 16G1213, Description: CS5 16G1213

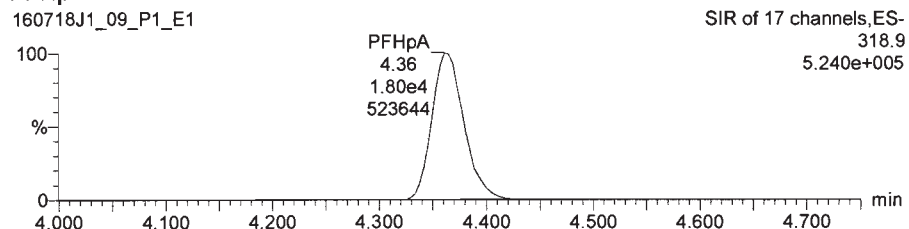
#### PFBS

160718J1\_09\_P1\_E1



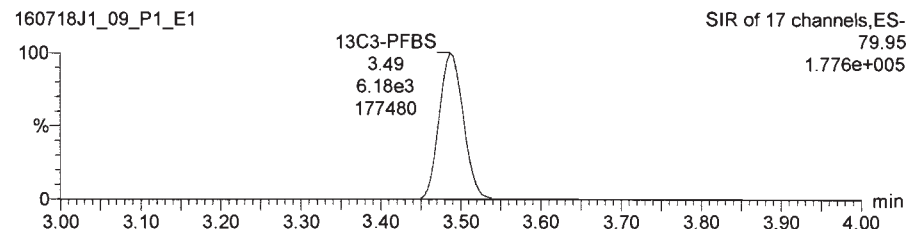
#### PFHpA

160718J1\_09\_P1\_E1



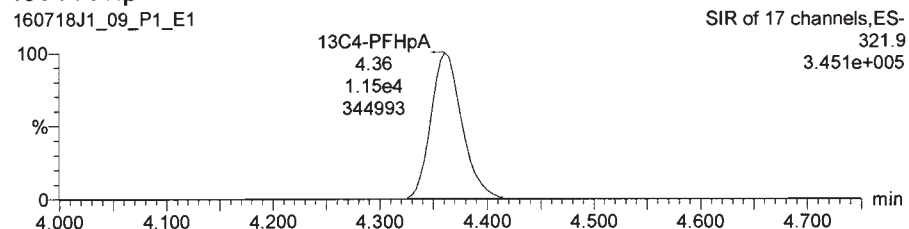
#### 13C3-PFBS

160718J1\_09\_P1\_E1



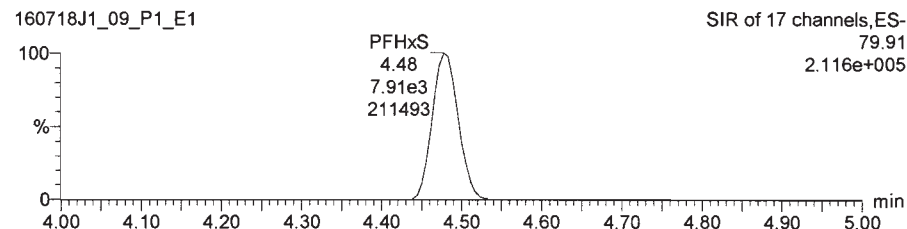
#### 13C4-PFHpA

160718J1\_09\_P1\_E1



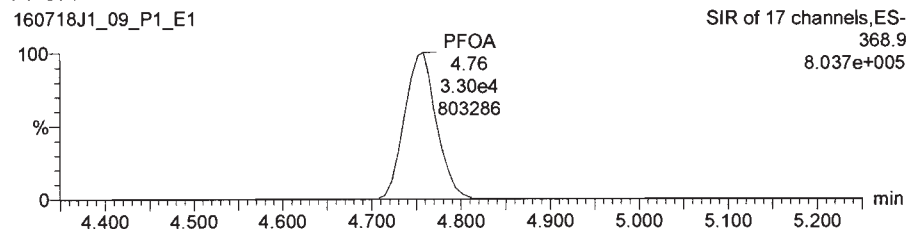
#### PFHxS

160718J1\_09\_P1\_E1



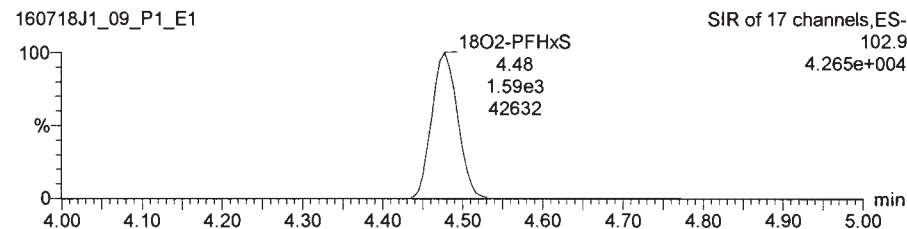
#### PFOA

160718J1\_09\_P1\_E1



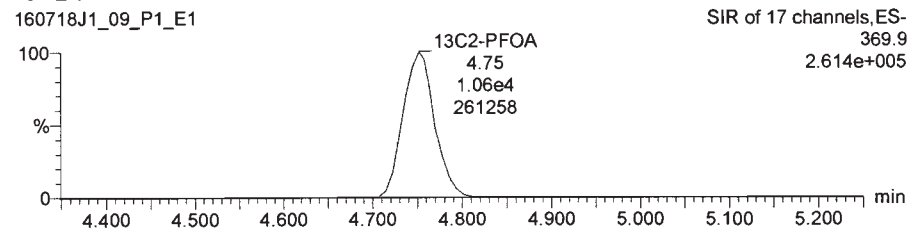
#### 18O2-PFHxS

160718J1\_09\_P1\_E1



#### 13C2-PFOA

160718J1\_09\_P1\_E1



Dataset: U:\Q2.PRO\Results\160718J1\160718J1crv.qld

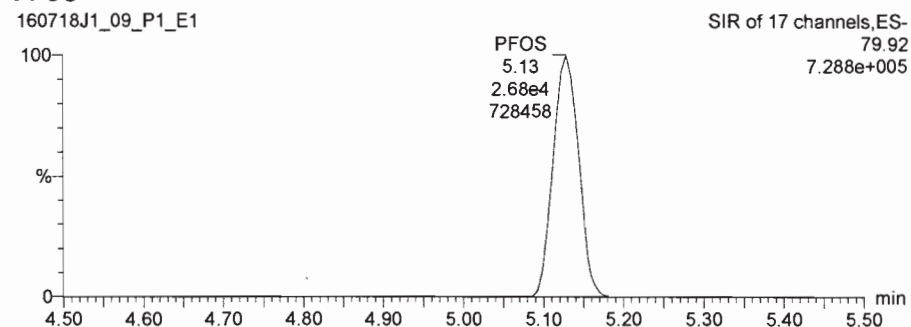
Last Altered: Tuesday, July 19, 2016 08:45:41 Pacific Daylight Time

Printed: Tuesday, July 19, 2016 08:56:07 Pacific Daylight Time

Name: 160718J1\_09.wiff, Date: 18-Jul-2016, Time: 16:30:18, ID: ST160718J1-8 PFC CS5 16G1213, Description: CS5 16G1213

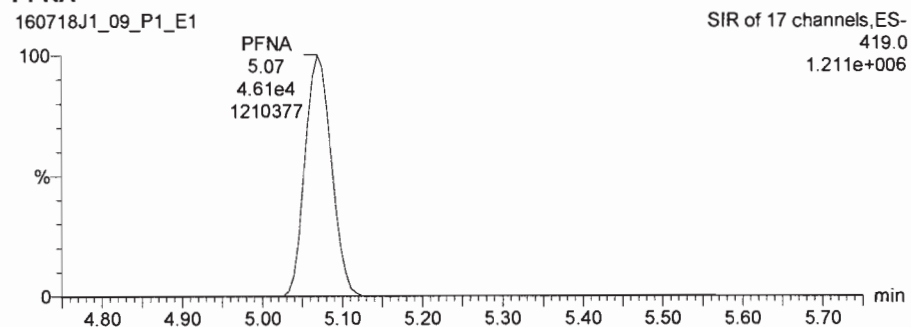
### PFOS

160718J1\_09\_P1\_E1



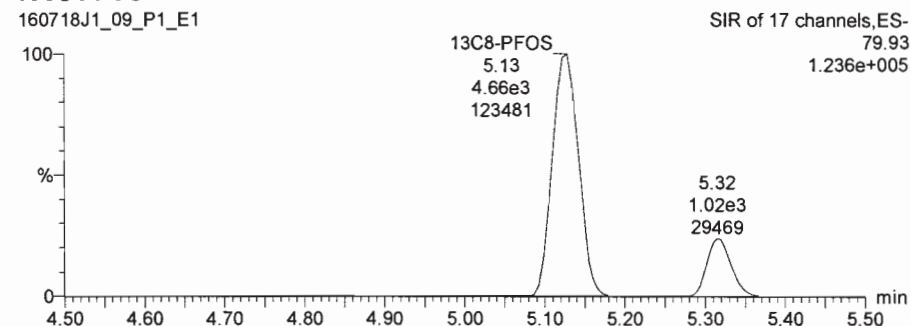
### PFNA

160718J1\_09\_P1\_E1



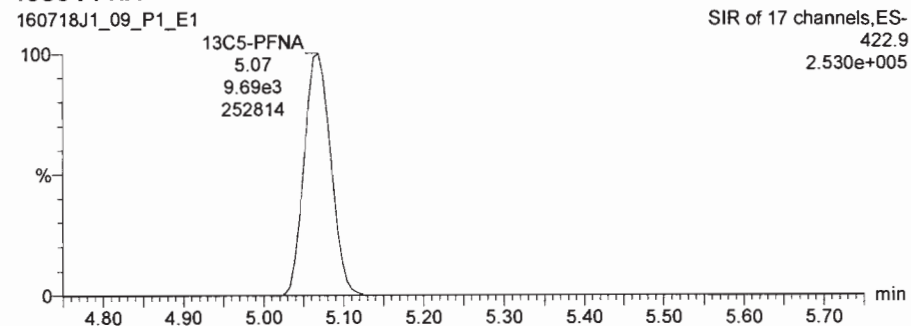
### 13C8-PFOS

160718J1\_09\_P1\_E1



### 13C5-PFNA

160718J1\_09\_P1\_E1



Dataset:        U:\Q2.PRO\Results\160718J1\160718J1crv.qld

Last Altered:   Tuesday, July 19, 2016 08:45:41 Pacific Daylight Time

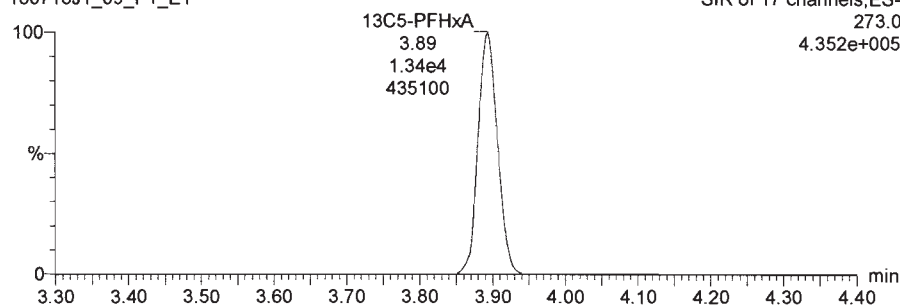
Printed:        Tuesday, July 19, 2016 08:56:07 Pacific Daylight Time

Name: 160718J1\_09.wiff, Date: 18-Jul-2016, Time: 16:30:18, ID: ST160718J1-8 PFC CS5 16G1213, Description: CS5 16G1213

**13C5-PFHxA**

160718J1\_09\_P1\_E1

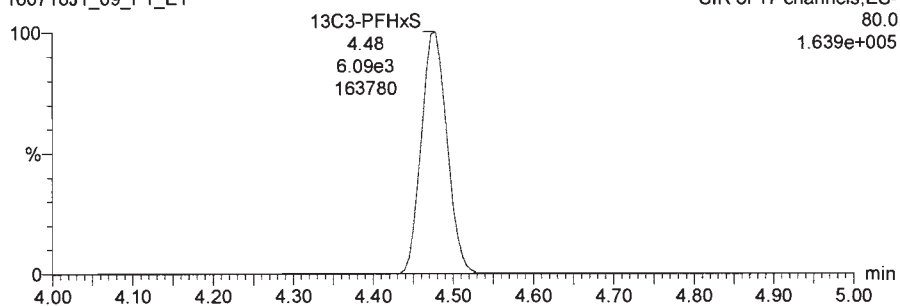
SIR of 17 channels, ES-  
273.0  
4.352e+005



**13C3-PFHxS**

160718J1\_09\_P1\_E1

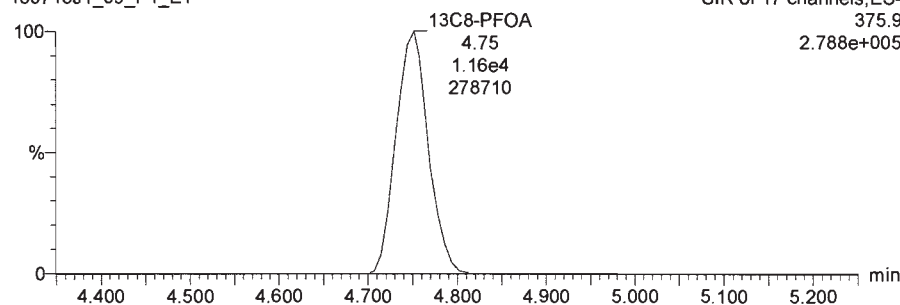
SIR of 17 channels, ES-  
80.0  
1.639e+005



**13C8-PFOA**

160718J1\_09\_P1\_E1

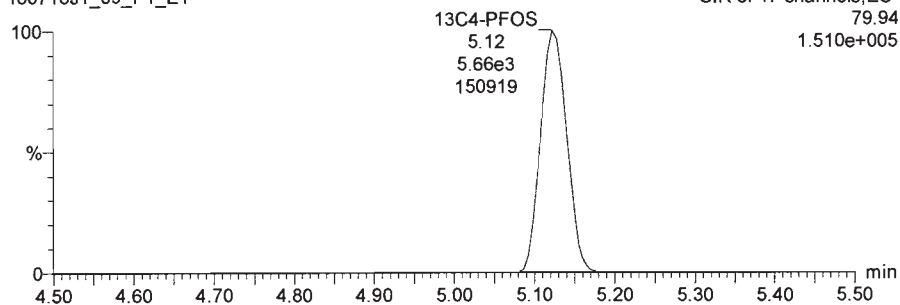
SIR of 17 channels, ES-  
375.9  
2.788e+005



**13C4-PFOS**

160718J1\_09\_P1\_E1

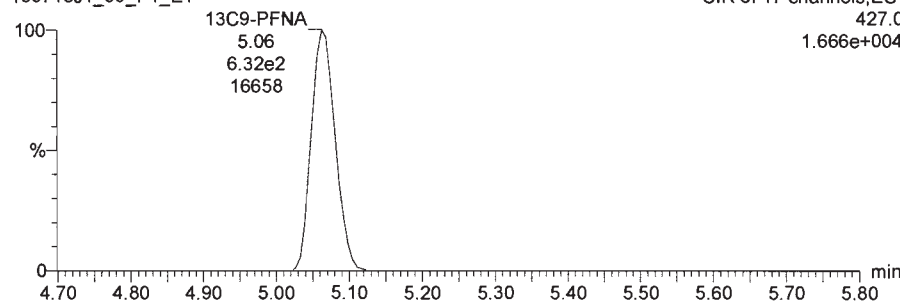
SIR of 17 channels, ES-  
79.94  
1.510e+005



**13C9-PFNA**

160718J1\_09\_P1\_E1

SIR of 17 channels, ES-  
427.0  
1.666e+004





Dataset:        U:\Q2.PRO\Results\160718J1\160718J1crv.qld

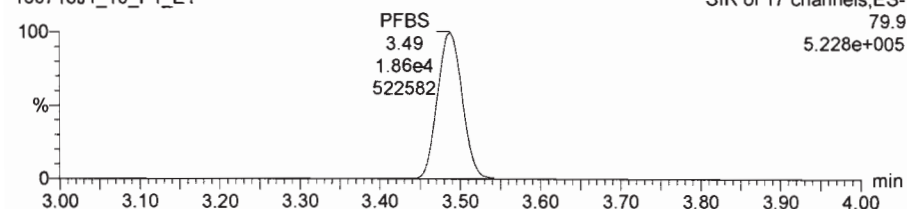
Last Altered:   Tuesday, July 19, 2016 08:45:41 Pacific Daylight Time

Printed:        Tuesday, July 19, 2016 08:56:07 Pacific Daylight Time

Name: 160718J1\_10.wiff, Date: 18-Jul-2016, Time: 16:42:28, ID: ST160718J1-9 PFC CS6 16G1214, Description: CS6 16G1214

**PFBS**

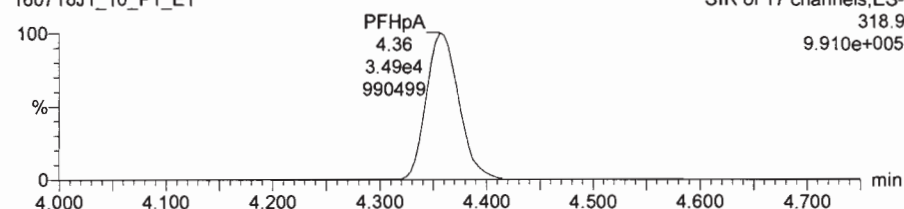
160718J1\_10\_P1\_E1



SIR of 17 channels, ES-  
79.9  
5.228e+005

**PFHpA**

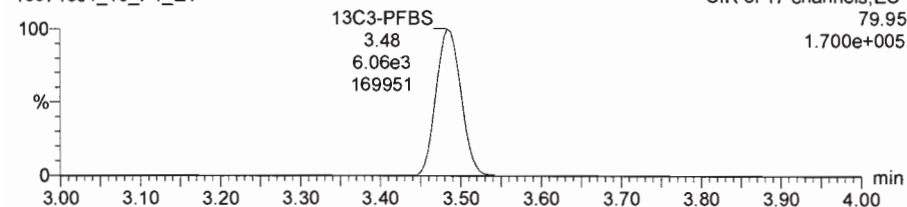
160718J1\_10\_P1\_E1



SIR of 17 channels, ES-  
318.9  
9.910e+005

**13C3-PFBS**

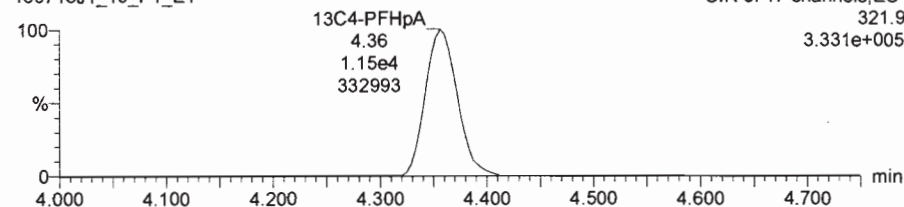
160718J1\_10\_P1\_E1



SIR of 17 channels, ES-  
79.95  
1.700e+005

**13C4-PFHpA**

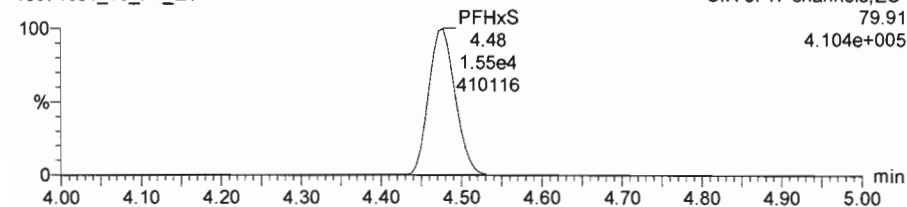
160718J1\_10\_P1\_E1



SIR of 17 channels, ES-  
321.9  
3.331e+005

**PFHxS**

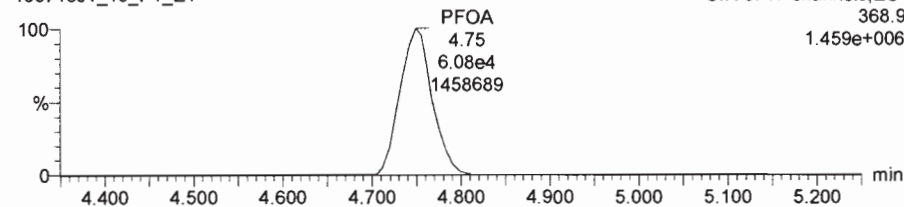
160718J1\_10\_P1\_E1



SIR of 17 channels, ES-  
79.91  
4.104e+005

**PFOA**

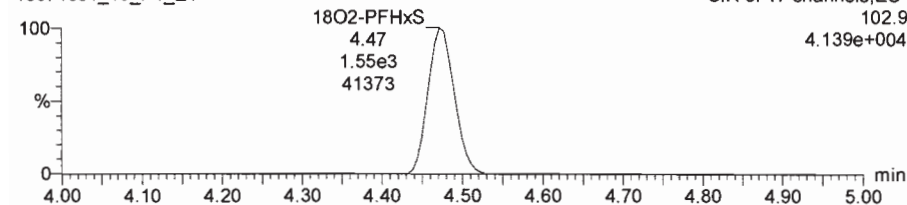
160718J1\_10\_P1\_E1



SIR of 17 channels, ES-  
368.9  
1.459e+006

**18O2-PFHxS**

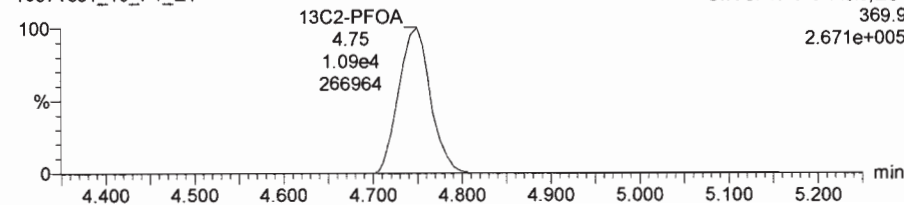
160718J1\_10\_P1\_E1



SIR of 17 channels, ES-  
102.9  
4.139e+004

**13C2-PFOA**

160718J1\_10\_P1\_E1



SIR of 17 channels, ES-  
369.9  
2.671e+005

Dataset:        U:\Q2.PRO\Results\160718J1\160718J1crv.qld

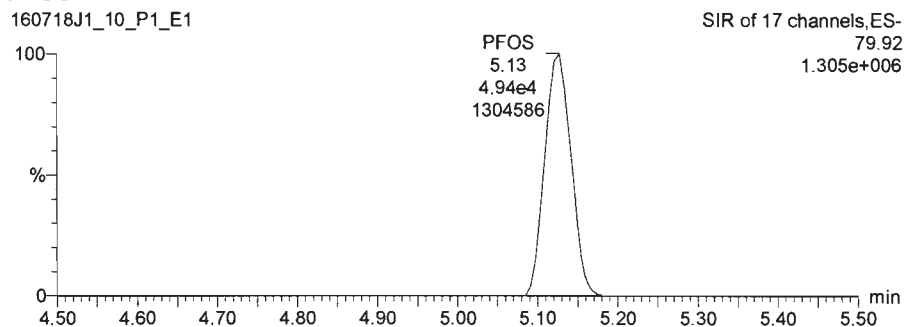
Last Altered:   Tuesday, July 19, 2016 08:45:41 Pacific Daylight Time

Printed:        Tuesday, July 19, 2016 08:56:07 Pacific Daylight Time

Name: 160718J1\_10.wiff, Date: 18-Jul-2016, Time: 16:42:28, ID: ST160718J1-9 PFC CS6 16G1214, Description: CS6 16G1214

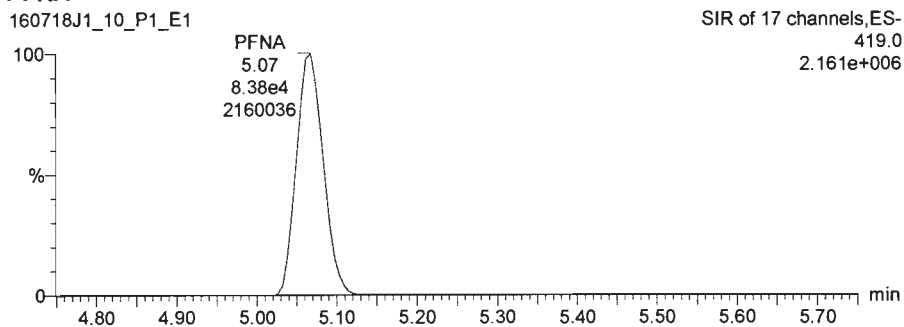
### PFOS

160718J1\_10\_P1\_E1



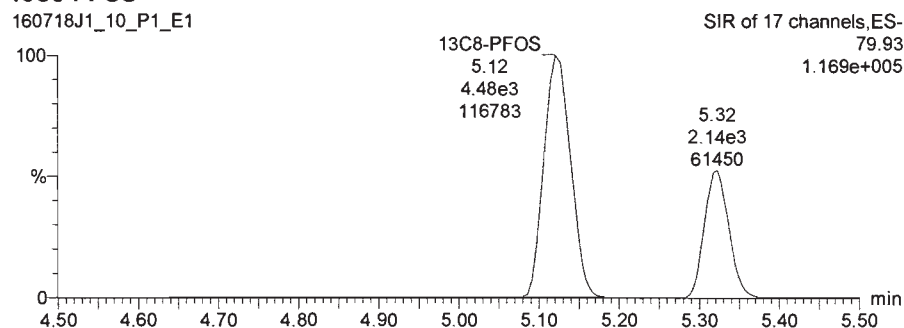
### PFNA

160718J1\_10\_P1\_E1



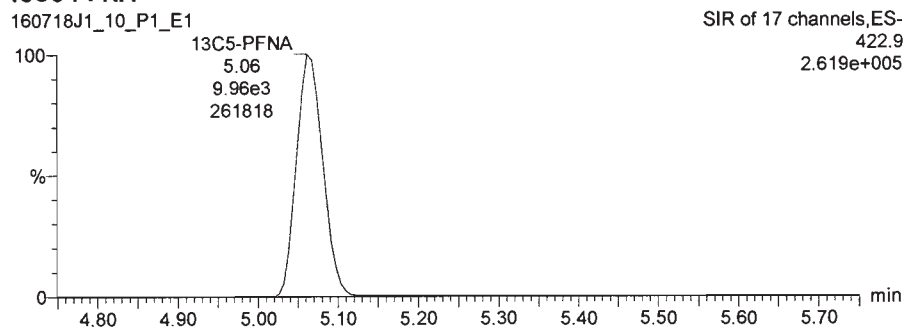
### 13C8-PFOS

160718J1\_10\_P1\_E1



### 13C5-PFNA

160718J1\_10\_P1\_E1



Dataset:        U:\Q2.PRO\Results\160718J1\160718J1crv.qld

Last Altered:   Tuesday, July 19, 2016 08:45:41 Pacific Daylight Time

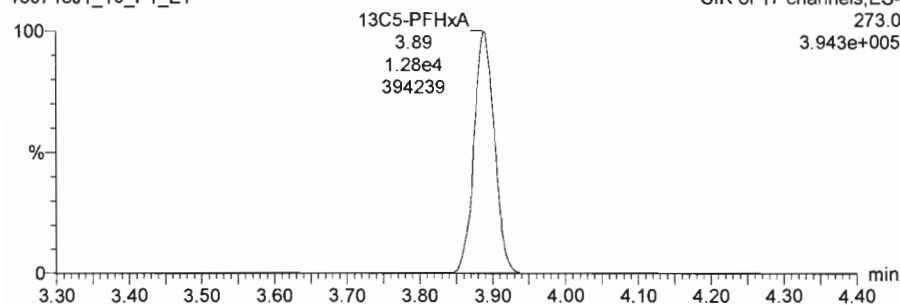
Printed:        Tuesday, July 19, 2016 08:56:07 Pacific Daylight Time

Name: 160718J1\_10.wiff, Date: 18-Jul-2016, Time: 16:42:28, ID: ST160718J1-9 PFC CS6 16G1214, Description: CS6 16G1214

**13C5-PFHxA**

160718J1\_10\_P1\_E1

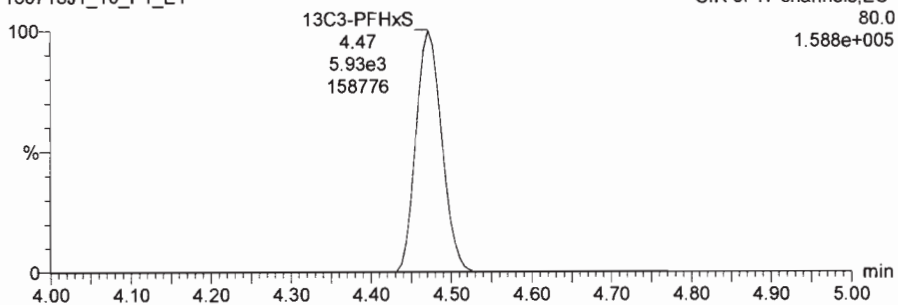
SIR of 17 channels, ES-  
273.0  
3.943e+005



**13C3-PFHxS**

160718J1\_10\_P1\_E1

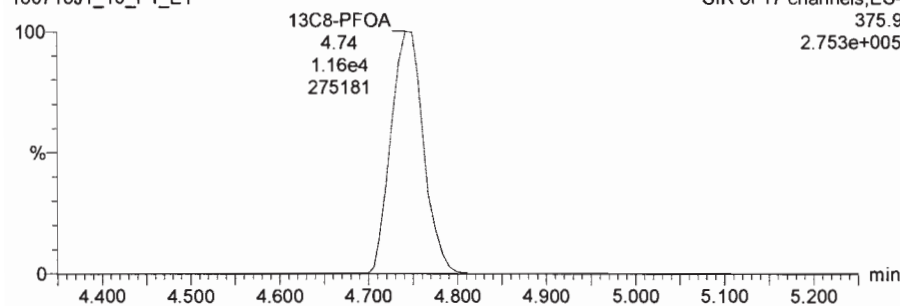
SIR of 17 channels, ES-  
80.0  
1.588e+005



**13C8-PFOA**

160718J1\_10\_P1\_E1

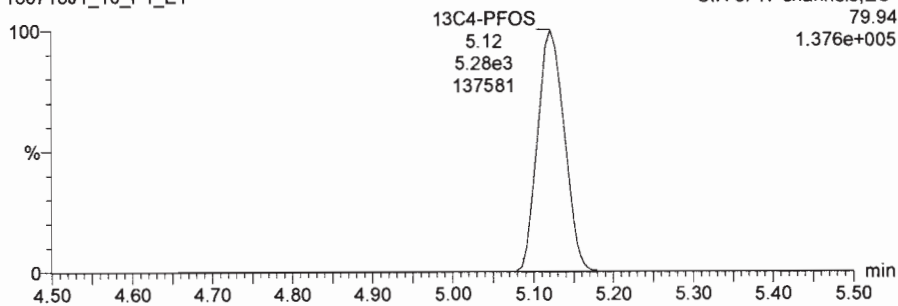
SIR of 17 channels, ES-  
375.9  
2.753e+005



**13C4-PFOS**

160718J1\_10\_P1\_E1

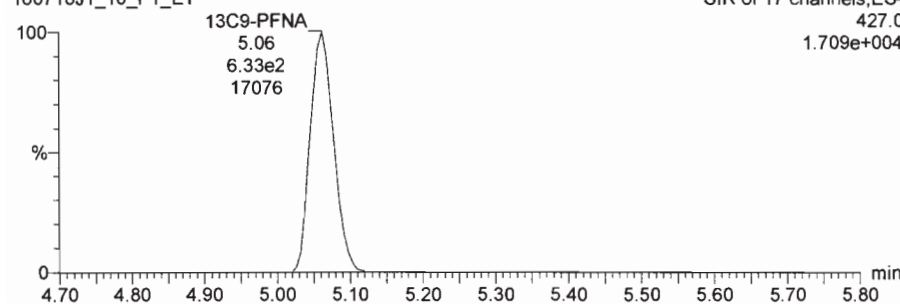
SIR of 17 channels, ES-  
79.94  
1.376e+005



**13C9-PFNA**

160718J1\_10\_P1\_E1

SIR of 17 channels, ES-  
427.0  
1.709e+004



Dataset: U:\Q2.PRO\Results\160718J1\160718J1\_13.qld

Last Altered: Tuesday, July 19, 2016 09:09:16 Pacific Daylight Time  
Printed: Tuesday, July 19, 2016 09:10:49 Pacific Daylight Time

Method: U:\Q2.PRO\MethDB\PFC List 6.mdb 08 Jul 2016 09:57:05

Calibration: U:\Q2.PRO\CurveDB\C18\_VAL-PFC\_Q2\_07-18-16\_L6.cdb 19 Jul 2016 08:45:41

Name: 160718J1\_13.wiff, Date: 18-Jul-2016, Time: 17:19:06, ID: SS160718J1-1 PFC SSS 16G1301, Description: PFC SSS 16G1301

|    | # Name         | Trace | Response | IS Resp | RRF    | Wt/Vol | RT   | Conc. | %Rec  |
|----|----------------|-------|----------|---------|--------|--------|------|-------|-------|
| 1  | 1 PFBS         | 79.9  | 2.46e3   | 6.17e3  |        | 1.000  | 3.49 | 23.6  | 94.2  |
| 2  | 2 PFHpA        | 318.9 | 5.19e3   | 1.07e4  |        | 1.000  | 4.36 | 28.8  | 115.2 |
| 3  | 3 PFHxS        | 79.91 | 1.73e3   | 1.51e3  |        | 1.000  | 4.48 | 20.8  | 83.3  |
| 4  | 4 PFOA         | 368.9 | 7.13e3   | 9.84e3  |        | 1.000  | 4.76 | 20.3  | 81.2  |
| 5  | 5 PFOS         | 79.92 | 4.88e3   | 4.45e3  |        | 1.000  | 5.14 | 17.7  | 71.0  |
| 6  | 6 PFNA         | 419.0 | 1.33e4   | 9.12e3  |        | 1.000  | 5.08 | 28.2  | 112.7 |
| 7  | 7 13C3-PFBS    | 79.95 | 6.17e3   | 1.35e4  | 0.469  | 1.000  | 3.48 | 12.2  | 97.8  |
| 8  | 8 13C4-PFHpA   | 321.9 | 1.07e4   | 1.35e4  | 0.822  | 1.000  | 4.36 | 12.1  | 96.7  |
| 9  | 9 18O2-PFHxS   | 102.9 | 1.51e3   | 6.11e3  | 0.256  | 1.000  | 4.48 | 12.1  | 96.8  |
| 10 | 10 13C2-PFOA   | 369.9 | 9.84e3   | 1.11e4  | 0.915  | 1.000  | 4.75 | 12.1  | 96.8  |
| 11 | 11 13C8-PFOS   | 79.93 | 4.45e3   | 5.49e3  | 0.822  | 1.000  | 5.14 | 12.3  | 98.5  |
| 12 | 12 13C5-PFNA   | 422.9 | 9.12e3   | 6.31e2  | 14.407 | 1.000  | 5.08 | 12.6  | 100.4 |
| 13 | 13 13C5-PFHxA  | 273.0 | 1.35e4   | 1.35e4  | 1.000  | 1.000  | 3.89 | 12.5  | 100.0 |
| 14 | 14 13C3-PFHxS  | 80.0  | 6.11e3   | 6.11e3  | 1.000  | 1.000  | 4.48 | 12.5  | 100.0 |
| 15 | 15 13C8-PFOA   | 375.9 | 1.11e4   | 1.11e4  | 1.000  | 1.000  | 4.75 | 12.5  | 100.0 |
| 16 | 16 13C4-PFOS   | 79.94 | 5.49e3   | 5.49e3  | 1.000  | 1.000  | 5.14 | 12.5  | 100.0 |
| 17 | 17 13C9-PFNA   | 427.0 | 6.31e2   | 6.31e2  | 1.000  | 1.000  | 5.08 | 12.5  | 100.0 |
| 18 | 18 Total PFBS  | 79.9  |          | 6.17e3  |        | 1.000  |      | 23.6  |       |
| 19 | 19 Total PFHxS | 79.91 |          | 1.51e3  |        | 1.000  |      | 25.0  |       |
| 20 | 20 Total PFOA  | 368.9 |          | 9.84e3  |        | 1.000  |      | 23.8  |       |
| 21 | 21 Total PFOS  | 79.92 |          | 4.45e3  |        | 1.000  |      | 29.4  |       |

Limit  
75-125

102.7 (A)  
102.8 (A)  
104.0 (A)

PW  
7/19/16

BR 7/19/16 ✓

(A) Branched/Technical Mix, % Rec.  
calculated as % of linear  
isomer.  
PW 7/19/16

Vista Analytical Laboratory Q1

Dataset: U:\Q2.PRO\Results\160718J1\160718J1\_13.qld

Last Altered: Tuesday, July 19, 2016 09:09:16 Pacific Daylight Time

Printed: Tuesday, July 19, 2016 09:10:49 Pacific Daylight Time

Method: U:\Q2.PRO\MethDB\PFC List 6.mdb 08 Jul 2016 09:57:05

Calibration: U:\Q2.PRO\CurveDB\C18\_VAL-PFC\_Q2\_07-18-16\_L6.cdb 19 Jul 2016 08:45:41

Name: 160718J1\_13.wiff, Date: 18-Jul-2016, Time: 17:19:06, ID: SS160718J1-1 PFC SSS 16G1301, Description: PFC SSS 16G1301

## Total PFBS

|   | # Name | Trace | RT   | Area   | IS Area | Conc. |
|---|--------|-------|------|--------|---------|-------|
| 1 | 1 PFBS | 79.9  | 3.49 | 2.46e3 | 6.17e3  | 23.6  |

## Total PFHxS

|   | # Name         | Trace | RT   | Area   | IS Area | Conc.  |
|---|----------------|-------|------|--------|---------|--------|
| 1 | 3 PFHxS        | 79.91 | 4.48 | 1.73e3 | 1.51e3  | 20.8   |
| 2 | 19 Total PFHxS | 79.91 | 4.38 | 3.48e2 | 1.51e3  | 4.14   |
| 3 | 19 Total PFHxS | 79.91 | 4.28 | 7.00e0 | 1.51e3  | 0.0832 |

## Total PFOA

|   | # Name        | Trace | RT   | Area   | IS Area | Conc. |
|---|---------------|-------|------|--------|---------|-------|
| 1 | 4 PFOA        | 368.9 | 4.76 | 7.13e3 | 9.84e3  | 20.3  |
| 2 | 20 Total PFOA | 368.9 | 4.66 | 1.25e3 | 9.84e3  | 3.48  |

## Total PFOS

|   | # Name        | Trace | RT   | Area   | IS Area | Conc. |
|---|---------------|-------|------|--------|---------|-------|
| 1 | 21 Total PFOS | 79.92 | 4.93 | 2.06e2 | 4.45e3  | 0.741 |
| 2 | 5 PFOS        | 79.92 | 5.14 | 4.88e3 | 4.45e3  | 17.7  |
| 3 | 21 Total PFOS | 79.92 | 5.04 | 3.02e3 | 4.45e3  | 10.9  |

Dataset:        U:\Q2.PRO\Results\160718J1\160718J1\_13.qld

Last Altered:   Tuesday, July 19, 2016 09:09:16 Pacific Daylight Time

Printed:        Tuesday, July 19, 2016 09:11:15 Pacific Daylight Time

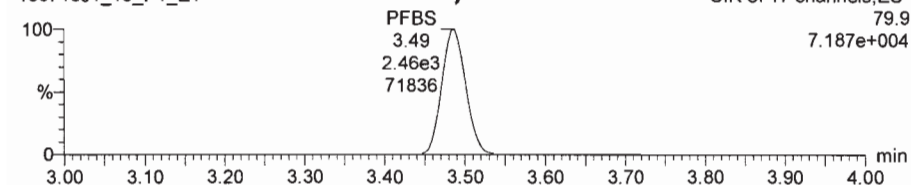
Method: U:\Q2.PRO\MethDB\PFC List 6.mdb 08 Jul 2016 09:57:05

Calibration: U:\Q2.PRO\CurveDB\C18\_VAL-PFC\_Q2\_07-18-16\_L6.cdb 19 Jul 2016 08:45:41

Name: 160718J1\_13.wiff, Date: 18-Jul-2016, Time: 17:19:06, ID: SS160718J1-1 PFC SSS 16G1301, Description: PFC SSS 16G1301

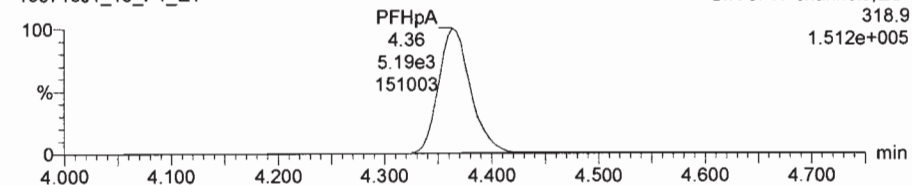
### PFBS

160718J1\_13\_P1\_E1



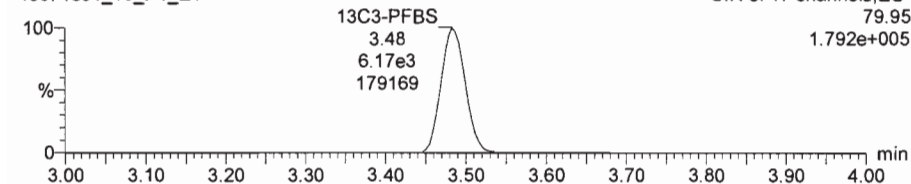
### PFHpA

160718J1\_13\_P1\_E1



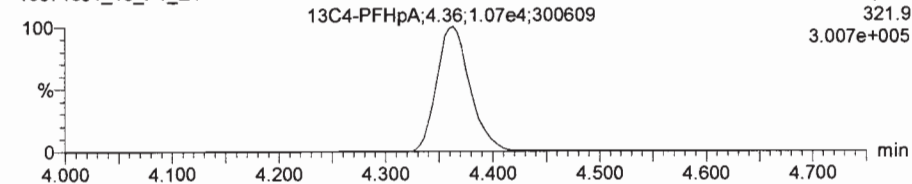
### 13C3-PFBS

160718J1\_13\_P1\_E1



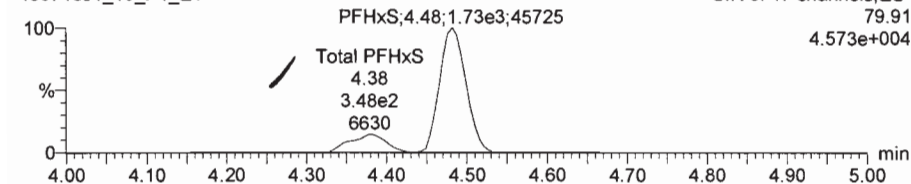
### 13C4-PFHpA

160718J1\_13\_P1\_E1



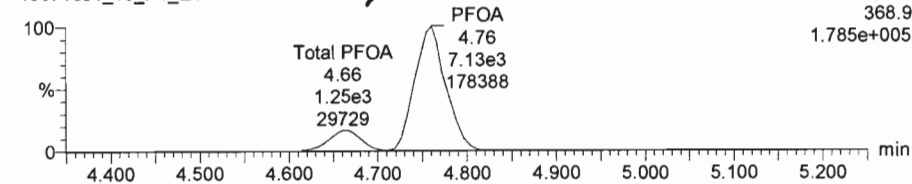
### PFHxS

160718J1\_13\_P1\_E1



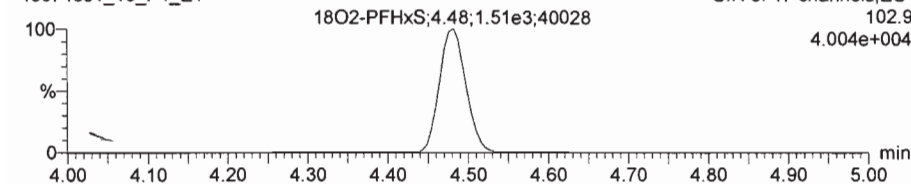
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160718J1\_13\_P1\_E1



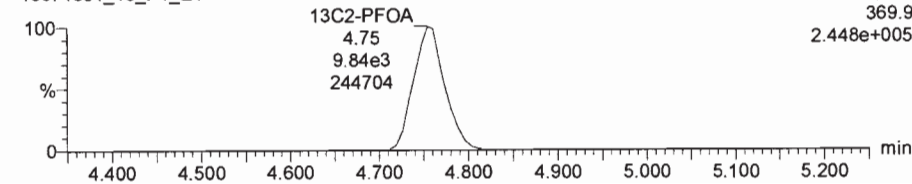
### 18O2-PFHxS

160718J1\_13\_P1\_E1

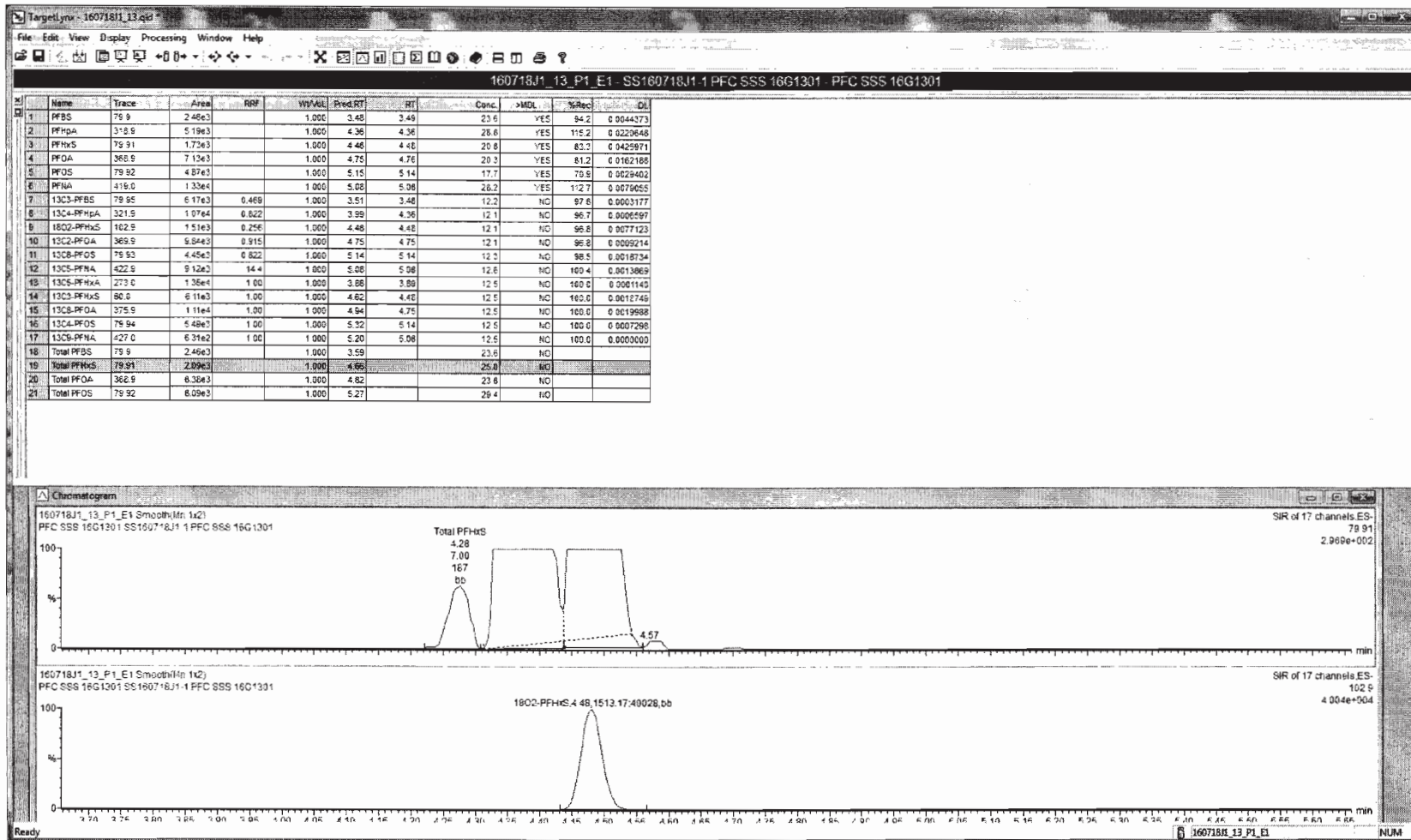


### 13C2-PFOA

160718J1\_13\_P1\_E1







Dataset:        U:\Q2.PRO\Results\160718J1\160718J1\_13.qld

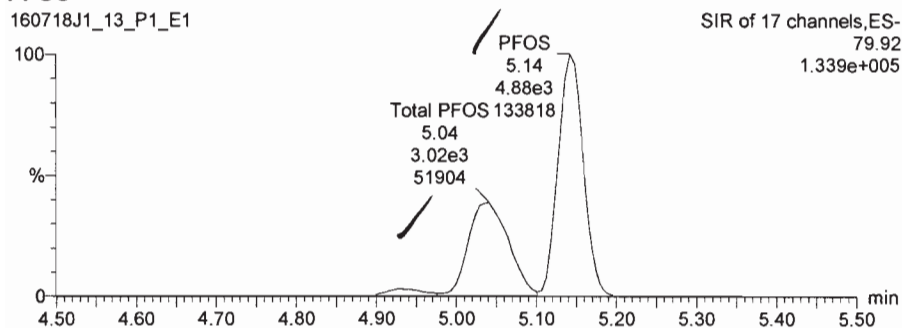
Last Altered:    Tuesday, July 19, 2016 09:09:16 Pacific Daylight Time

Printed:        Tuesday, July 19, 2016 09:11:15 Pacific Daylight Time

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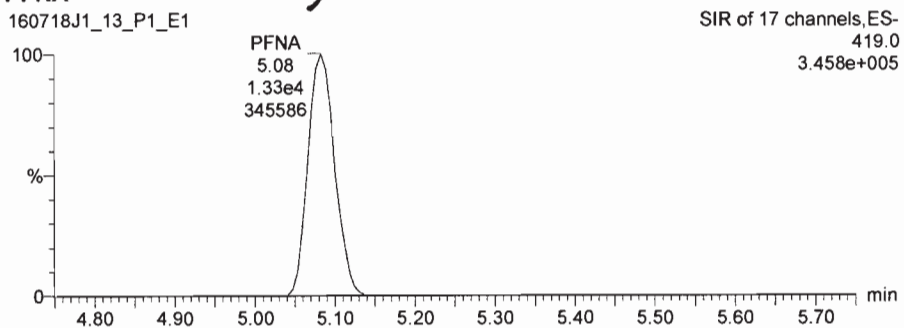
**PFOS**

160718J1\_13\_P1\_E1



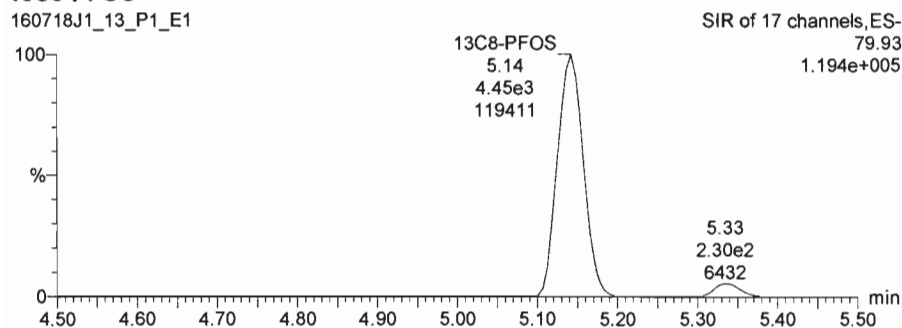
**PFNA**

160718J1\_13\_P1\_E1



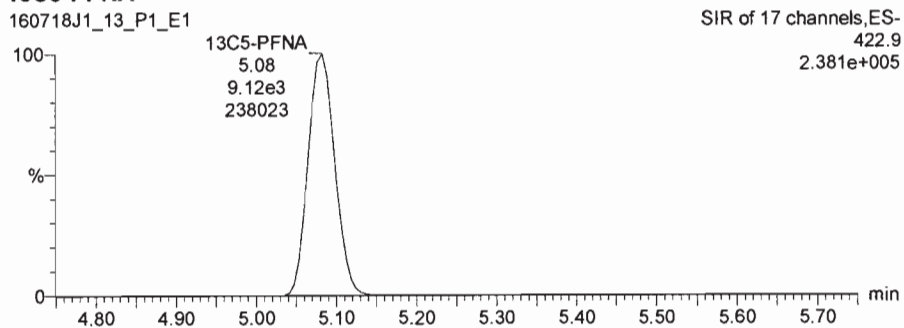
**13C8-PFOS**

160718J1\_13\_P1\_E1

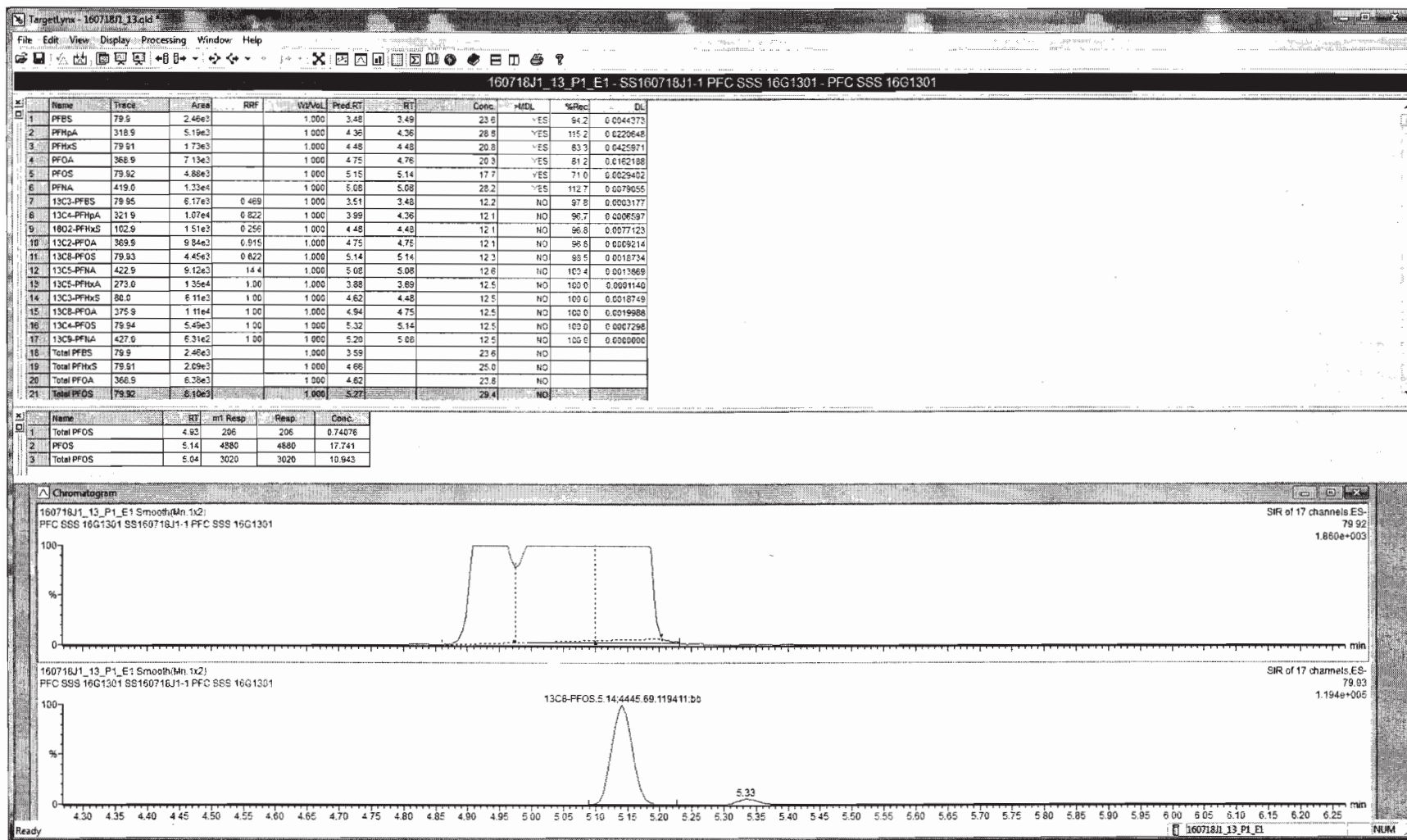


**13C5-PFNA**

160718J1\_13\_P1\_E1







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Last Altered:   Tuesday, July 19, 2016 09:09:16 Pacific Daylight Time

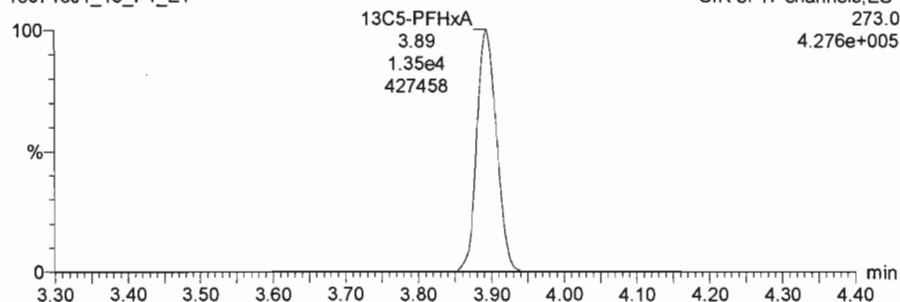
Printed:        Tuesday, July 19, 2016 09:11:15 Pacific Daylight Time

Name: 160718J1\_13.wiff, Date: 18-Jul-2016, Time: 17:19:06, ID: SS160718J1-1 PFC SSS 16G1301, Description: PFC SSS 16G1301

**13C5-PFHxA**

160718J1\_13\_P1\_E1

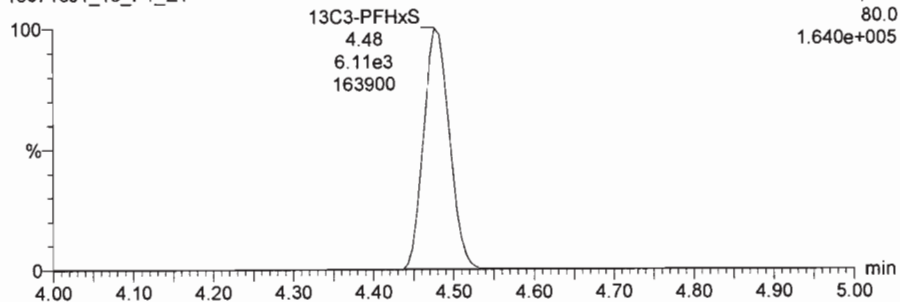
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4.276e+005



**13C3-PFHxS**

160718J1\_13\_P1\_E1

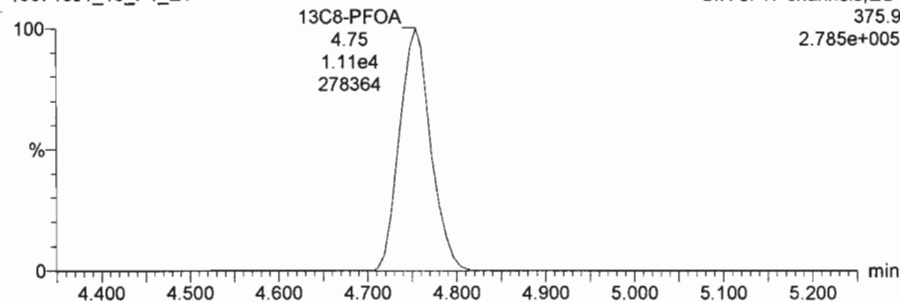
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80.0  
1.640e+005



**13C8-PFOA**

160718J1\_13\_P1\_E1

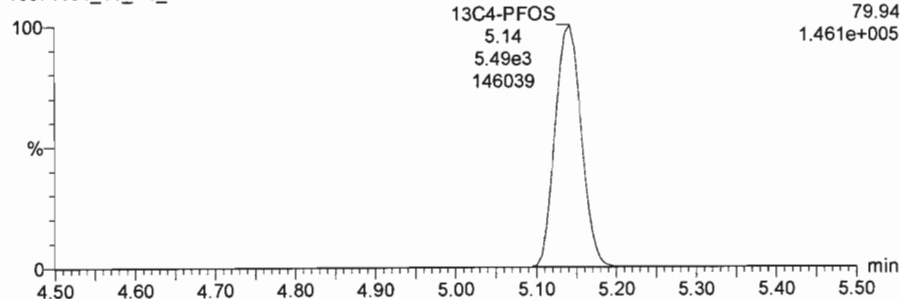
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2.785e+005



**13C4-PFOS**

160718J1\_13\_P1\_E1

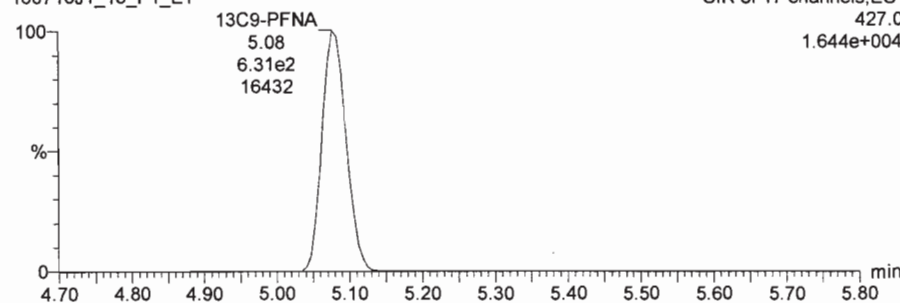
SIR of 17 channels, ES-  
79.94  
1.461e+005



**13C9-PFNA**

160718J1\_13\_P1\_E1

SIR of 17 channels, ES-  
427.0  
1.644e+004



[illegible]





## Data Validation Summary

### Oceana CTO-WE44, NALF Fentress

TO: Tiffany Hill/CVO  
Anita Dodson/VBO

FROM: Tiffany McGlynn/GNV

CC: Herb Kelly/GNV

DATE: September 9, 2016

#### Introduction

The following data validation report discusses the data validation process and findings for Vista Analytical in the Sample Delivery Groups (SDGs) listed in the table below.

Samples were analyzed using the following analytical methods:

- 537 MOD Perfluorinated Hydrocarbons

The samples included in these SDGs are listed in the table below.

| SDG     | Sample_Name      | Matrix |
|---------|------------------|--------|
| 1600783 | OFPOL-MW-7-0616  | Water  |
| 1600783 | OFPOL-MW-4-0616  | Water  |
| 1600783 | OFPOL-MW-8-0616  | Water  |
| 1600783 | OFPOL-MW-6-0616  | Water  |
| 1600783 | OFPOL-MW-3-0616  | Water  |
| 1600783 | OFPOL-MW-3P-0616 | Water  |
| 1600783 | OFPOL-MW-2-0616  | Water  |
| 1600783 | OF-MW13-0616     | Water  |
| 1600783 | OF-MW11-0616     | Water  |
| 1600818 | OF14-MW07S-0616  | Water  |
| 1600818 | OF14-MW07D-0616  | Water  |
| 1600818 | OF-MW14-0616     | Water  |

| <b>SDG</b> | <b>Sample_Name</b> | <b>Matrix</b> |
|------------|--------------------|---------------|
| 1600818    | OF-MW16-0616       | Water         |
| 1600818    | OF-FB062016        | Water         |
| 1600818    | OF-EB062016        | Water         |
| 1600818    | OF-MW15-0616       | Water         |
| 1600818    | OF-MW15D-0616      | Water         |
| 1600818    | OF14-MW06-0616     | Water         |
| 1600818    | OF14-MW06D-0616    | Water         |
| 1600818    | OF-MW17-0616       | Water         |
| 1600818    | OF-MW12D-0616      | Water         |
| 1600818    | OF-MW12-0616       | Water         |
| 1600818    | OF-MW13D-0616      | Water         |
| 1600818    | OF-MW13DP-0616     | Water         |
| 1600818    | OF-MW11D-0616      | Water         |
| 1600820    | OF-MW10-0616       | Water         |
| 1600820    | OF-MW08-0616       | Water         |
| 1600820    | OF-MW08P-0616      | Water         |
| 1600820    | OF-MW10D-0616      | Water         |
| 1600820    | OF-MW09-0616       | Water         |
| 1600820    | OF-MW09D-0616      | Water         |
| 1600872    | OF-MW28-0716       | Water         |
| 1600872    | OF-MW25-0716       | Water         |
| 1600872    | OF-MW31-0716       | Water         |
| 1600872    | OF-FB070616        | Water         |
| 1600896    | OF-MW24-0716       | Water         |
| 1600896    | OF-FB071116        | Water         |
| 1600896    | OF-MW27-0716       | Water         |
| 1600903    | OF-MW30-0716       | Water         |
| 1600903    | OF-MW30P-0716      | Water         |
| 1600903    | OF-MW30D-0716      | Water         |
| 1600903    | OF-MW28D-0716      | Water         |
| 1600903    | OF-MW32-0716       | Water         |
| 1600903    | OF-MW29-0716       | Water         |
| 1600903    | OF-MW08D-0716      | Water         |
| 1600903    | OF-MW34-0716       | Water         |
| 1600903    | OF-MW31D-0716      | Water         |

## Data Evaluation

Data was evaluated in accordance with the analytical methods and with the criteria found in the following guidance documents: Sampling and Analysis Plan Basewide Perfluorinated Compound Site Investigation, Naval Auxiliary Landing Field Fentress, Chesapeake, Virginia

Contract Task Order WE44 (August 2016) and National Functional Guidelines for Organic Data Review (August 2014) with Region 3 Modification (Use of 'B' qualifier) as applicable. The samples were evaluated based on the following criteria:

- Data Completeness
- Technical Holding Times
- Tuning Instrument
- Initial/Continuing Calibrations
- Blanks
- Internal Standards
- Laboratory Control Samples
- Isotope Dilution Analyte
- Field Duplicates
- Identification/Quantitation
- Reporting Limits

### **Overall Evaluation of Data/Potential Usability Issues**

Specific details regarding qualification of the data are addressed in the sections below. If an issue is not addressed there were no actions required based on unmet quality criteria. When more than one qualifier is associated with a compound/analyte, the validator has chosen the qualifier that best indicates possible bias in the results and qualified these data accordingly.

#### **Data Completeness**

The SDG was received complete and intact.

#### **Technical Holding Times**

According to the chain of custody records, sampling was performed on 6/17/16 through 7/14/16. Samples were received at the laboratory 6/18/16 through 7/15/16. All sample preparation and analyses were performed within holding time requirements.

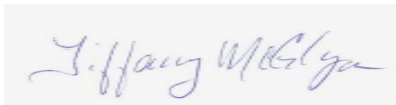


## **Conclusion**

These data can be used in the project decision-making process as qualified by the data quality evaluation process.

Please do not hesitate to contact us about this validation report.

Sincerely,

A handwritten signature in blue ink, reading "Tiffany McGlynn", is displayed within a light gray rectangular box.

Tiffany McGlynn

## Qualification Flags

|         |                                                                                                                                                    |
|---------|----------------------------------------------------------------------------------------------------------------------------------------------------|
| Exclude | More appropriate data exist for this analyte.                                                                                                      |
| R       | Data were rejected for use.                                                                                                                        |
| UL      | Analyte not detected, quantitation limit is potentially biased low.                                                                                |
| UJ      | Analyte not detected, estimated quantitation limit.                                                                                                |
| U       | Analyte not detected.                                                                                                                              |
| B       | Not detected substantially above the level reported in laboratory or field blanks.                                                                 |
| L       | Analyte present, estimated value potentially biased low.                                                                                           |
| K       | Analyte present, estimated value potentially biased high.                                                                                          |
| N       | Analyte identification presumptive; no second column analysis performed or GC/MS tentative identification.                                         |
| J       | Analyte present, estimated value.                                                                                                                  |
| NJ      | Analysis indicates the presence of an analyte that was "tentatively identified" and the associated value represents its approximate concentration. |
| None    | Placeholder for calculating quality control issues that do not require flagging.                                                                   |
| =       | Analyte was detected at a concentration greater than the quantitation limit.                                                                       |

### Qualifier Code Reference

| Value | Description                                                  |
|-------|--------------------------------------------------------------|
| %SOL  | High Moisture content                                        |
| 2C    | Second Column – Poor Dual Column Reproducibility             |
| 2S    | Second Source – Bad reproducibility between tandem detectors |
| BD    | Blank Spike/Blank Spike Duplicate(LCS/LCSD) Precision        |
| BRL   | Below Reporting Limit                                        |
| BSH   | Blank Spike/LCS – High Recovery                              |
| BSL   | Blank Spike/LCS – Low Recovery                               |
| CC    | Continuing Calibration                                       |
| CCBL  | Continuing Calibration Blank Contamination                   |
| CCH   | Continuing Calibration Verification – High Recovery          |
| CCL   | Continuing Calibration Verification – Low Recovery           |
| DL    | Redundant Result – due to Dilution                           |
| EBL   | Equipment Blank Contamination                                |
| EMPC  | Estimated Possible Maximum Concentration                     |
| ESH   | Extraction Standard - High Recovery                          |
| ESL   | Extraction Standard - Low Recovery                           |
| FBL   | Field Blank Contamination                                    |
| FD    | Field Duplicate                                              |
| HT    | Holding Time                                                 |
| ICB   | Initial Calibration – Bad Linearity or Curve Function        |
| ICH   | Initial Calibration – High Relative Response Factors         |
| ICL   | Initial Calibration – Low Relative Response Factors          |
| IR15  | Ion ratio exceeds +/- 15% difference                         |
| ISH   | Internal Standard – High Recovery                            |
| ISL   | Internal Standard – Low Recovery                             |
| LD    | Lab Duplicate Reproducibility                                |
| LR    | Concentration Exceeds Linear Range                           |
| MBL   | Method Blank Contamination                                   |
| MDP   | Matrix Spike/Matrix Spike Duplicate Precision                |
| MI    | Matrix interference obscuring the raw data                   |

| Value | Description                                                |
|-------|------------------------------------------------------------|
| MSH   | Matrix Spike and/or Matrix Spike Duplicate – High Recovery |
| MSL   | Matrix Spike and/or Matrix Spike Duplicate – Low Recovery  |
| OT    | Other                                                      |
| PD    | Pesticide Degradation                                      |
| RE    | Redundant Result - due to Reanalysis or Re-extraction      |
| SD    | Serial Dilution Reproducibility                            |
| SSH   | Spiked Surrogate – High Recovery                           |
| SSL   | Spiked Surrogate – Low Recovery                            |
| TBL   | Trip Blank Contamination                                   |
| TN    | Tune                                                       |

| LOCATION_NAME | SITE_NAME  | INSTALLATION_ID | LOCATION_TYPE | LOCATION_TYPE_DESC | SDG     | COORD_X     | COORD_Y   | ANALYTICAL_METHOD_GRP_DESC | SAMPLE_NAME   | SAMPLE_MATRIX | SAMPLE_MATRIX_DESC | COLLECT_DATE |
|---------------|------------|-----------------|---------------|--------------------|---------|-------------|-----------|----------------------------|---------------|---------------|--------------------|--------------|
| OF-MW30       | SITE 00017 | OCEANA_NAS      | WLM           | Monitoring well    | 1600903 | 12175170.28 | 3420101.2 | Perfluoroalkyl Compounds   | OF-MW30-0716  | WG            | Ground water       | 13-Jul-16    |
| OF-MW08D      | SITE 00017 | OCEANA_NAS      | WLM           | Monitoring well    | 1600903 | 12176529.66 | 3423327.1 | Perfluoroalkyl Compounds   | OF-MW08D-0716 | WG            | Ground water       | 14-Jul-16    |
| OF-MW30D      | SITE 00017 | OCEANA_NAS      | WLM           | Monitoring well    | 1600903 | 12175178.33 | 3420099.8 | Perfluoroalkyl Compounds   | OF-MW30D-0716 | WG            | Ground water       | 13-Jul-16    |
| OF-MW28D      | SITE 00017 | OCEANA_NAS      | WLM           | Monitoring well    | 1600903 | 12184238.17 | 3425007.5 | Perfluoroalkyl Compounds   | OF-MW28D-0716 | WG            | Ground water       | 13-Jul-16    |
| OF-MW34       | SITE 00017 | OCEANA_NAS      | WLM           | Monitoring well    | 1600903 | 12173260.52 | 3414822   | Perfluoroalkyl Compounds   | OF-MW34-0716  | WG            | Ground water       | 14-Jul-16    |
| OF-MW31D      | SITE 00017 | OCEANA_NAS      | WLM           | Monitoring well    | 1600903 | 12177514.29 | 3420313.7 | Perfluoroalkyl Compounds   | OF-MW31D-0716 | WG            | Ground water       | 14-Jul-16    |
| OF-MW30       | SITE 00017 | OCEANA_NAS      | WLM           | Monitoring well    | 1600903 | 12175170.28 | 3420101.2 | Perfluoroalkyl Compounds   | OF-MW30-0716  | WG            | Ground water       | 13-Jul-16    |
| OF-MW28D      | SITE 00017 | OCEANA_NAS      | WLM           | Monitoring well    | 1600903 | 12184238.17 | 3425007.5 | Perfluoroalkyl Compounds   | OF-MW28D-0716 | WG            | Ground water       | 13-Jul-16    |
| OF-MW08D      | SITE 00017 | OCEANA_NAS      | WLM           | Monitoring well    | 1600903 | 12176529.66 | 3423327.1 | Perfluoroalkyl Compounds   | OF-MW08D-0716 | WG            | Ground water       | 14-Jul-16    |
| OF-MW30       | SITE 00017 | OCEANA_NAS      | WLM           | Monitoring well    | 1600903 | 12175170.28 | 3420101.2 | Perfluoroalkyl Compounds   | OF-MW30P-0716 | WG            | Ground water       | 13-Jul-16    |
| OF-MW30       | SITE 00017 | OCEANA_NAS      | WLM           | Monitoring well    | 1600903 | 12175170.28 | 3420101.2 | Perfluoroalkyl Compounds   | OF-MW30-0716  | WG            | Ground water       | 13-Jul-16    |
| OF-MW29       | SITE 00017 | OCEANA_NAS      | WLM           | Monitoring well    | 1600903 | 12177738.21 | 3422900.8 | Perfluoroalkyl Compounds   | OF-MW29-0716  | WG            | Ground water       | 14-Jul-16    |
| OF-MW32       | SITE 00017 | OCEANA_NAS      | WLM           | Monitoring well    | 1600903 | 12175381.42 | 3417313.8 | Perfluoroalkyl Compounds   | OF-MW32-0716  | WG            | Ground water       | 13-Jul-16    |
| OF-MW30       | SITE 00017 | OCEANA_NAS      | WLM           | Monitoring well    | 1600903 | 12175170.28 | 3420101.2 | Perfluoroalkyl Compounds   | OF-MW30P-0716 | WG            | Ground water       | 13-Jul-16    |
| OF-MW31D      | SITE 00017 | OCEANA_NAS      | WLM           | Monitoring well    | 1600903 | 12177514.29 | 3420313.7 | Perfluoroalkyl Compounds   | OF-MW31D-0716 | WG            | Ground water       | 14-Jul-16    |
| OF-MW30D      | SITE 00017 | OCEANA_NAS      | WLM           | Monitoring well    | 1600903 | 12175178.33 | 3420099.8 | Perfluoroalkyl Compounds   | OF-MW30D-0716 | WG            | Ground water       | 13-Jul-16    |
| OF-MW08D      | SITE 00017 | OCEANA_NAS      | WLM           | Monitoring well    | 1600903 | 12176529.66 | 3423327.1 | Perfluoroalkyl Compounds   | OF-MW08D-0716 | WG            | Ground water       | 14-Jul-16    |
| OF-MW29       | SITE 00017 | OCEANA_NAS      | WLM           | Monitoring well    | 1600903 | 12177738.21 | 3422900.8 | Perfluoroalkyl Compounds   | OF-MW29-0716  | WG            | Ground water       | 14-Jul-16    |
| OF-MW32       | SITE 00017 | OCEANA_NAS      | WLM           | Monitoring well    | 1600903 | 12175381.42 | 3417313.8 | Perfluoroalkyl Compounds   | OF-MW32-0716  | WG            | Ground water       | 13-Jul-16    |
| OF-MW31D      | SITE 00017 | OCEANA_NAS      | WLM           | Monitoring well    | 1600903 | 12177514.29 | 3420313.7 | Perfluoroalkyl Compounds   | OF-MW31D-0716 | WG            | Ground water       | 14-Jul-16    |
| OF-MW30D      | SITE 00017 | OCEANA_NAS      | WLM           | Monitoring well    | 1600903 | 12175178.33 | 3420099.8 | Perfluoroalkyl Compounds   | OF-MW30D-0716 | WG            | Ground water       | 13-Jul-16    |
| OF-MW31D      | SITE 00017 | OCEANA_NAS      | WLM           | Monitoring well    | 1600903 | 12177514.29 | 3420313.7 | Perfluoroalkyl Compounds   | OF-MW31D-0716 | WG            | Ground water       | 14-Jul-16    |
| OF-MW34       | SITE 00017 | OCEANA_NAS      | WLM           | Monitoring well    | 1600903 | 12173260.52 | 3414822   | Perfluoroalkyl Compounds   | OF-MW34-0716  | WG            | Ground water       | 14-Jul-16    |
| OF-MW32       | SITE 00017 | OCEANA_NAS      | WLM           | Monitoring well    | 1600903 | 12175381.42 | 3417313.8 | Perfluoroalkyl Compounds   | OF-MW32-0716  | WG            | Ground water       | 13-Jul-16    |
| OF-MW31D      | SITE 00017 | OCEANA_NAS      | WLM           | Monitoring well    | 1600903 | 12177514.29 | 3420313.7 | Perfluoroalkyl Compounds   | OF-MW31D-0716 | WG            | Ground water       | 14-Jul-16    |
| OF-MW30       | SITE 00017 | OCEANA_NAS      | WLM           | Monitoring well    | 1600903 | 12175170.28 | 3420101.2 | Perfluoroalkyl Compounds   | OF-MW30P-0716 | WG            | Ground water       | 13-Jul-16    |
| OF-MW31D      | SITE 00017 | OCEANA_NAS      | WLM           | Monitoring well    | 1600903 | 12177514.29 | 3420313.7 | Perfluoroalkyl Compounds   | OF-MW31D-0716 | WG            | Ground water       | 14-Jul-16    |
| OF-MW29       | SITE 00017 | OCEANA_NAS      | WLM           | Monitoring well    | 1600903 | 12177738.21 | 3422900.8 | Perfluoroalkyl Compounds   | OF-MW29-0716  | WG            | Ground water       | 14-Jul-16    |
| OF-MW29       | SITE 00017 | OCEANA_NAS      | WLM           | Monitoring well    | 1600903 | 12177738.21 | 3422900.8 | Perfluoroalkyl Compounds   | OF-MW29-0716  | WG            | Ground water       | 14-Jul-16    |
| OF-MW34       | SITE 00017 | OCEANA_NAS      | WLM           | Monitoring well    | 1600903 | 12173260.52 | 3414822   | Perfluoroalkyl Compounds   | OF-MW34-0716  | WG            | Ground water       | 14-Jul-16    |
| OF-MW29       | SITE 00017 | OCEANA_NAS      | WLM           | Monitoring well    | 1600903 | 12177738.21 | 3422900.8 | Perfluoroalkyl Compounds   | OF-MW29-0716  | WG            | Ground water       | 14-Jul-16    |
| OF-MW34       | SITE 00017 | OCEANA_NAS      | WLM           | Monitoring well    | 1600903 | 12173260.52 | 3414822   | Perfluoroalkyl Compounds   | OF-MW34-0716  | WG            | Ground water       | 14-Jul-16    |
| OF-MW32       | SITE 00017 | OCEANA_NAS      | WLM           | Monitoring well    | 1600903 | 12175381.42 | 3417313.8 | Perfluoroalkyl Compounds   | OF-MW32-0716  | WG            | Ground water       | 13-Jul-16    |
| OF-MW28D      | SITE 00017 | OCEANA_NAS      | WLM           | Monitoring well    | 1600903 | 12184238.17 | 3425007.5 | Perfluoroalkyl Compounds   | OF-MW28D-0716 | WG            | Ground water       | 13-Jul-16    |
| OF-MW30       | SITE 00017 | OCEANA_NAS      | WLM           | Monitoring well    | 1600903 | 12175170.28 | 3420101.2 | Perfluoroalkyl Compounds   | OF-MW30P-0716 | WG            | Ground water       | 13-Jul-16    |
| OF-MW08D      | SITE 00017 | OCEANA_NAS      | WLM           | Monitoring well    | 1600903 | 12176529.66 | 3423327.1 | Perfluoroalkyl Compounds   | OF-MW08D-0716 | WG            | Ground water       | 14-Jul-16    |
| OF-MW30       | SITE 00017 | OCEANA_NAS      | WLM           | Monitoring well    | 1600903 | 12175170.28 | 3420101.2 | Perfluoroalkyl Compounds   | OF-MW30-0716  | WG            | Ground water       | 13-Jul-16    |
| OF-MW30       | SITE 00017 | OCEANA_NAS      | WLM           | Monitoring well    | 1600903 | 12175170.28 | 3420101.2 | Perfluoroalkyl Compounds   | OF-MW30-0716  | WG            | Ground water       | 13-Jul-16    |
| OF-MW28D      | SITE 00017 | OCEANA_NAS      | WLM           | Monitoring well    | 1600903 | 12184238.17 | 3425007.5 | Perfluoroalkyl Compounds   | OF-MW28D-0716 | WG            | Ground water       | 13-Jul-16    |
| OF-MW30       | SITE 00017 | OCEANA_NAS      | WLM           | Monitoring well    | 1600903 | 12175170.28 | 3420101.2 | Perfluoroalkyl Compounds   | OF-MW30P-0716 | WG            | Ground water       | 13-Jul-16    |
| OF-MW30       | SITE 00017 | OCEANA_NAS      | WLM           | Monitoring well    | 1600903 | 12175170.28 | 3420101.2 | Perfluoroalkyl Compounds   | OF-MW30-0716  | WG            | Ground water       | 13-Jul-16    |
| OF-MW30D      | SITE 00017 | OCEANA_NAS      | WLM           | Monitoring well    | 1600903 | 12175178.33 | 3420099.8 | Perfluoroalkyl Compounds   | OF-MW30D-0716 | WG            | Ground water       | 13-Jul-16    |
| OF-MW32       | SITE 00017 | OCEANA_NAS      | WLM           | Monitoring well    | 1600903 | 12175381.42 | 3417313.8 | Perfluoroalkyl Compounds   | OF-MW32-0716  | WG            | Ground water       | 13-Jul-16    |
| OF-MW08D      | SITE 00017 | OCEANA_NAS      | WLM           | Monitoring well    | 1600903 | 12176529.66 | 3423327.1 | Perfluoroalkyl Compounds   | OF-MW08D-0716 | WG            | Ground water       | 14-Jul-16    |
| OF-MW28D      | SITE 00017 | OCEANA_NAS      | WLM           | Monitoring well    | 1600903 | 12184238.17 | 3425007.5 | Perfluoroalkyl Compounds   | OF-MW28D-0716 | WG            | Ground water       | 13-Jul-16    |
| OF-MW30       | SITE 00017 | OCEANA_NAS      | WLM           | Monitoring well    | 1600903 | 12175170.28 | 3420101.2 | Perfluoroalkyl Compounds   | OF-MW30P-0716 | WG            | Ground water       | 13-Jul-16    |
| OF-MW34       | SITE 00017 | OCEANA_NAS      | WLM           | Monitoring well    | 1600903 | 12173260.52 | 3414822   | Perfluoroalkyl Compounds   | OF-MW34-0716  | WG            | Ground water       | 14-Jul-16    |
| OF-MW28D      | SITE 00017 | OCEANA_NAS      | WLM           | Monitoring well    | 1600903 | 12184238.17 | 3425007.5 | Perfluoroalkyl Compounds   | OF-MW28D-0716 | WG            | Ground water       | 13-Jul-16    |
| OF-MW30D      | SITE 00017 | OCEANA_NAS      | WLM           | Monitoring well    | 1600903 | 12175178.33 | 3420099.8 | Perfluoroalkyl Compounds   | OF-MW30D-0716 | WG            | Ground water       | 13-Jul-16    |

| LOCATION_NAME | SITE_NAME  | INSTALLATION_ID | LOCATION_TYPE | LOCATION_TYPE_DESC | SDG     | COORD_X     | COORD_Y   | ANALYTICAL_METHOD_GRP_DESC | SAMPLE_NAME   | SAMPLE_MATRIX | SAMPLE_MATRIX_DESC | COLLECT_DATE |
|---------------|------------|-----------------|---------------|--------------------|---------|-------------|-----------|----------------------------|---------------|---------------|--------------------|--------------|
| OF-MW30D      | SITE 00017 | OCEANA_NAS      | WLM           | Monitoring well    | 1600903 | 12175178.33 | 3420099.8 | Perfluoroalkyl Compounds   | OF-MW30D-0716 | WG            | Ground water       | 13-Jul-16    |
| OF-MW29       | SITE 00017 | OCEANA_NAS      | WLM           | Monitoring well    | 1600903 | 12177738.21 | 3422900.8 | Perfluoroalkyl Compounds   | OF-MW29-0716  | WG            | Ground water       | 14-Jul-16    |
| OF-MW34       | SITE 00017 | OCEANA_NAS      | WLM           | Monitoring well    | 1600903 | 12173260.52 | 3414822   | Perfluoroalkyl Compounds   | OF-MW34-0716  | WG            | Ground water       | 14-Jul-16    |
| OF-MW32       | SITE 00017 | OCEANA_NAS      | WLM           | Monitoring well    | 1600903 | 12175381.42 | 3417313.8 | Perfluoroalkyl Compounds   | OF-MW32-0716  | WG            | Ground water       | 13-Jul-16    |
| OF-MW08D      | SITE 00017 | OCEANA_NAS      | WLM           | Monitoring well    | 1600903 | 12176529.66 | 3423327.1 | Perfluoroalkyl Compounds   | OF-MW08D-0716 | WG            | Ground water       | 14-Jul-16    |