Groundwater Sample Results,<br>Level 2 Laboratory Report, Level 4 Laboratory Report, Electronic Data Deliverable, Data Validation Report, Sample Location Report, SDG 1700803<br>NSWC<br>White Oak MD<br>December 2020

July 20, 2017

## Vista Work Order No. 1700803

Ms. Nia Nikmanesh
KMEA
2423 Hoover Avenue
National City, CA 91950
Dear Ms. Nikmanesh,
Enclosed are the results for the sample set received at Vista Analytical Laboratory on June 30, 2017. This sample set was analyzed on a rush turn-around time, under your Project Name 'NSWC White Oak'.

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.

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

Sincerely,

## Kanuy:Tovenemeta

for

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. 1700803

Case Narrative

## Sample Condition on Receipt:

Ten water 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

Samples "SB01", "IRPSite7-GW-FD01-20170628", "IRPSite7-GW-FRB01-20170628", "IRPSite5-GW-04GW81S-20170628and", and "IRPSite5-GW-04GW80-20170628" contained particulate and were centrifuged prior to extraction.

The samples were extracted and analyzed for a selected list of 14 PFAS using Modified EPA Method 537.

## Holding Times

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

## Quality Control

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

A Method Blank and Ongoing Precision and Recovery (OPR) sample were extracted and analyzed in two preparation batches (B7G0014 and B7G0054). No analytes were detected in the Method Blank above $1 / 2$ the LOQ. The OPR recoveries for PFTrDA and labeled standards 13C2-PFDoA and 13C2-PFteDA were outside of the method acceptance criteria in batch B7G0014. The OPR recoveries for PFDoA, PFTrDA, and labeled standards d5-EtFOSAA, 13C2-PFDoA, and 13C2-PFTeDA were outside of the method acceptance criteria in batch B7G0054. All other OPR recoveries were within the method acceptance criteria.

The labeled standard recoveries outside the acceptance criteria are listed in the table below.
As requested, an MS/MSD was performed on sample "IRPSite5-GW-04GW80-20170628".

## QC Anomalies

| LabNumber | SampleName | Analysis | Analyte | Flag | \%Rec |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 1700803-01 | SB01 | Modified EPA Method 537 | 13C2-PFDoA | H | 29.5 |
| 1700803-01 | SB01 | Modified EPA Method 537 | 13C2-PFTeDA | H | 20.9 |
| 1700803-02 | EB01 | Modified EPA Method 537 | 13C2-PFDoA | H | 27.5 |
| 1700803-02 | EB01 | Modified EPA Method 537 | 13C2-PFTeDA | H | 24.2 |
| 1700803-03 | IRPSite7-GW-46GW205-20170628 | Modified EPA Method 537 | 13C2-PFDoA | H | 4.20 |
| 1700803-03 | IRPSite7-GW-46GW205-20170628 | Modified EPA Method 537 | 13C2-PFTeDA | H | 4.90 |
| 1700803-04 | IRPSite7-GW-FD01-20170628 | Modified EPA Method 537 | 13C2-PFDoA | H | 19.4 |
| 1700803-04 | IRPSite7-GW-FD01-20170628 | Modified EPA Method 537 | 13C2-PFTeDA | H | 9.60 |
| 1700803-05 | IRPSite7-GW-07GW202-20170628 | Modified EPA Method 537 | 13C2-PFDoA | H | 31.2 |
| 1700803-05 | IRPSite7-GW-07GW202-20170628 | Modified EPA Method 537 | 13C2-PFTeDA | H | 20.1 |
| 1700803-06 | IRPSite7-GW-FRB01-20170628 | Modified EPA Method 537 | 13C2-PFDoA | H | 27.1 |
| $1700803-06$ | IRPSite7-GW-FRB01-20170628 | Modified EPA Method 537 | 13C2-PFTeDA | H | 7.10 |
| 1700803-07 | IRPSite5-GW-FRB01-20170628 | Modified EPA Method 537 | 13C2-PFDoA | H | 23.1 |
| 1700803-07 | IRPSite5-GW-FRB01-20170628 | Modified EPA Method 537 | 13C2-PFTeDA | H | 5.20 |
| 1700803-08 | IRPSite5-GW-04GW81S-20170628 | Modified EPA Method 537 | 13C2-PFDoA | H | 10.7 |
| 1700803-08 | IRPSite5-GW-04GW81S-20170628 | Modified EPA Method 537 | 13C2-PFTeDA | H | 25.6 |
| 1700803-09 | IRPSite5-GW-04GW80-20170628 | Modified EPA Method 537 | 13C2-PFDoA | H | 36.6 |
| 1700803-09 | IRPSite5-GW-04GW80-20170628 | Modified EPA Method 537 | 13C2-PFTeDA | H | 26.3 |
| 1700803-10 | EB02 | Modified EPA Method 537 | 13C2-PFDoA | H | 20.3 |
| 1700803-10 | EB02 | Modified EPA Method 537 | 13C2-PFTeDA | H | 10.9 |
| B7G0014-BLK1 | B7G0014-BLK1 | Modified EPA Method 537 | 13C2-PFDoA | H | 29.5 |
| B7G0014-BLK1 | B7G0014-BLK1 | Modified EPA Method 537 | 13C2-PFTeDA | H | 11.3 |
| B7G0014-BS1 | B7G0014-BS1 | Modified EPA Method 537 | 13C2-PFDoA | H | 15.3 |
| B7G0014-BS1 | B7G0014-BS1 | Modified EPA Method 537 | 13C2-PFTeDA | H | 4.40 |
| B7G0014-MS1 | B7G0014-MS1 | Modified EPA Method 537 | 13C2-PFDoA | H | 20.8 |
| B7G0014-MS1 | B7G0014-MS1 | Modified EPA Method 537 | 13C2-PFTeDA | H | 12.2 |
| B7G0014-MSD1 | B7G0014-MSD1 | Modified EPA Method 537 | 13C2-PFDoA | H | 13.7 |
| B7G0014-MSD1 | B7G0014-MSD1 | Modified EPA Method 537 | 13C2-PFTeDA | H | 19.2 |
| B7G0054-BLK1 | B7G0054-BLK1 | Modified EPA Method 537 | 13C2-PFDoA | H | 14.0 |
| B7G0054-BLK1 | B7G0054-BLK1 | Modified EPA Method 537 | 13C2-PFTeDA | H | 39.8 |
| B7G0054-BS1 | B7G0054-BS1 | Modified EPA Method 537 | d5-EtFOSAA | H | 43.6 |
| B7G0054-BS1 | B7G0054-BS1 | Modified EPA Method 537 | 13C2-PFDoA | H | 33.3 |
| B7G0054-BS1 | B7G0054-BS1 | Modified EPA Method 537 | 13C2-PFTeDA | H | 212 |

$H=$ Recovery was outside laboratory acceptance criteria.

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## Sample Inventory Report

| Vista <br> Sample ID | Client |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
|  | Sample ID | Sampled | Received | Components/Containers |
| 1700803-01 | SB01 | 28-Jun-17 09:44 | 30-Jun-17 09:54 | HDPE Bottle, 125 mL |
|  |  |  |  | HDPE Bottle, 125 mL |
| 1700803-02 | EB01 | 28-Jun-17 09:50 | 30-Jun-17 09:54 | HDPE Bottle, 125 mL |
|  |  |  |  | HDPE Bottle, 125 mL |
| 1700803-03 | IRPSite7-GW-46GW205-20170628 | 28-Jun-17 11:23 | 30-Jun-17 09:54 | HDPE Bottle, 125 mL |
|  |  |  |  | HDPE Bottle, 125 mL |
| 1700803-04 | IRPSite7-GW-FD01-20170628 | 28-Jun-17 11:25 | 30-Jun-17 09:54 | HDPE Bottle, 125 mL |
|  |  |  |  | HDPE Bottle, 125 mL |
| 1700803-05 | IRPSite7-GW-07GW202-20170628 | 28-Jun-17 12:40 | 30-Jun-17 09:54 | HDPE Bottle, 125 mL |
|  |  |  |  | HDPE Bottle, 125 mL |
| 1700803-06 | IRPSite7-GW-FRB01-20170628 | 28-Jun-17 14:20 | 30-Jun-17 09:54 | HDPE Bottle, 125 mL |
|  |  |  |  | HDPE Bottle, 125 mL |
| 1700803-07 | IRPSite5-GW-FRB01-20170628 | 28-Jun-17 15:00 | 30-Jun-17 09:54 | HDPE Bottle, 125 mL |
|  |  |  |  | HDPE Bottle, 125 mL |
| 1700803-08 | IRPSite5-GW-04GW81S-20170628 | 28-Jun-17 15:52 | 30-Jun-17 09:54 | HDPE Bottle, 125 mL |
|  |  |  |  | HDPE Bottle, 125 mL |
| 1700803-09 | IRPSite5-GW-04GW80-20170628/S/MSD | 28-Jun-17 17:05 | 30-Jun-17 09:54 | 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 |
| 1700803-10 | EB02 | 29-Jun-17 08:40 | 30-Jun-17 09:54 | HDPE Bottle, 125 mL |
|  |  |  |  | HDPE Bottle, 125 mL |

## ANALYTICAL RESULTS



## Sample ID: OPR

Modified EPA Method 537

| Matrix: <br> Sample Size: | $\begin{aligned} & \text { Aqueous } \\ & 0.125 \mathrm{~L} \end{aligned}$ | QC Batch: <br> Date Extracted: | $\begin{aligned} & \text { B7G0014 } \\ & \text { 05-Jul-201 } \end{aligned}$ | 13:36 |  | $\begin{array}{ll}\text { Lab Sample: } & \text { B7G0014-BS1 } \\ \text { Date Analyzed: } & \text { 11-Jul-17 18:04 Column: BEH C18 }\end{array}$ |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Analyte |  | Amt Found (ng/L) | Spike Amt | \%R | Limits |  | Labeled Standard | \%R | LCL-UCL |
| PFBS |  | 69.0 | 80.0 | 86.3 | 70-130 | IS | 13C3-PFBS | 83.0 | 50-150 |
| PFHxA |  | 66.1 | 80.0 | 82.6 | 70-130 | IS | 13C2-PFHxA | 110 | 50-150 |
| PFHpA |  | 63.4 | 80.0 | 79.3 | 70-130 | IS | 13C4-PFHpA | 93.5 | 50-150 |
| PFHxS |  | 77.7 | 80.0 | 97.2 | 70-130 | IS | 1802-PFHxS | 102 | 50-150 |
| PFOA |  | 63.6 | 80.0 | 79.5 | 70-130 | IS | 13C2-PFOA | 98.8 | 50-150 |
| PFOS |  | 70.5 | 80.0 | 88.1 | 70-130 | IS | 13C8-PFOS | 103 | 50-150 |
| PFNA |  | 70.7 | 80.0 | 88.4 | 70-130 | IS | 13C5-PFNA | 90.2 | 50-150 |
| PFDA |  | 60.3 | 80.0 | 75.4 | 70-130 | IS | 13C2-PFDA | 80.3 | 50-150 |
| MeFOSAA |  | 69.6 | 80.0 | 86.9 | 70-130 | IS | d3-MeFOSAA | 76.6 | 50-150 |
| PFUnA |  | 59.3 | 80.0 | 74.2 | 70-130 | IS | 13C2-PFUnA | 73.1 | 50-150 |
| EtFOSAA |  | 76.0 | 80.0 | 95.0 | 70-130 | IS | d5-EtFOSAA | 59.8 | 50-150 |
| PFDoA |  | 92.7 | 80.0 | 116 | 70-130 | IS | 13C2-PFDoA | 15.3 | 50-150 |
| PFTrDA |  | 26.2 | 80.0 | 32.8 | 60-130 | IS | 13C2-PFTeDA | 4.40 | 50-150 |
| PFTeDA |  | 69.4 | 80.0 | 86.8 | 70-130 |  |  |  |  |

[^0]

## Sample ID: OPR

Modified EPA Method 537

| Matrix: <br> Sample Size: | $\begin{aligned} & \text { Aqueous } \\ & 0.125 \mathrm{~L} \end{aligned}$ | QC Batch: <br> Date Extracted: | $\begin{aligned} & \text { B7G0054 } \\ & \text { 12-Jul-201 } \end{aligned}$ |  |  | Lab Sample: B7G0054-BS1 <br> Date Analyzed: 13-Jul-17 16:49 Column: BEH C18 |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Analyte |  | Amt Found (ng/L) | Spike Amt | \%R | Limits |  | Labeled Standard | \%R | LCL-UCL |
| PFBS |  | 70.7 | 80.0 | 88.4 | 70-130 | IS | 13C3-PFBS | 97.9 | 50-150 |
| PFHxA |  | 73.2 | 80.0 | 91.5 | 70-130 | IS | 13C2-PFHxA | 87.4 | 50-150 |
| PFHpA |  | 68.8 | 80.0 | 85.9 | 70-130 | IS | 13C4-PFHpA | 73.9 | 50-150 |
| PFHxS |  | 77.0 | 80.0 | 96.2 | 70-130 | IS | 18O2-PFHxS | 87.8 | 50-150 |
| PFOA |  | 72.0 | 80.0 | 90.0 | 70-130 | IS | 13C2-PFOA | 73.5 | 50-150 |
| PFOS |  | 75.8 | 80.0 | 94.7 | 70-130 | IS | 13C8-PFOS | 86.6 | 50-150 |
| PFNA |  | 61.7 | 80.0 | 77.2 | 70-130 | IS | 13C5-PFNA | 75.8 | 50-150 |
| PFDA |  | 74.4 | 80.0 | 93.0 | 70-130 | IS | 13C2-PFDA | 79.6 | 50-150 |
| MeFOSAA |  | 65.3 | 80.0 | 81.6 | 70-130 | IS | d3-MeFOSAA | 84.2 | 50-150 |
| PFUnA |  | 71.6 | 80.0 | 89.5 | 70-130 | IS | 13C2-PFUnA | 64.2 | 50-150 |
| EtFOSAA |  | 102 | 80.0 | 128 | 70-130 | IS | d5-EtFOSAA | 43.6 | 50-150 |
| PFDoA |  | 173 | 80.0 | 216 | 70-130 | IS | 13C2-PFDoA | 33.3 | 50-150 |
| PFTrDA |  | 178 | 80.0 | 222 | 60-130 | IS | 13C2-PFTeDA | 212 | 50-150 |
| PFTeDA |  | 71.4 | 80.0 | 89.2 | 70-130 |  |  |  |  |

[^1]

| Sample ID: | EB01 |  |  |  |  |  |  | Modifie | d EPA Met | thod 537 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Client Data <br> Name: <br> Project: <br> Date Collected: <br> Location: | KMEA <br> NSWC White Oak 28-Jun-2017 9:50 |  | Sample Data <br> Matrix: <br> Sample Size: | $\begin{aligned} & \text { Water } \\ & 0.121 \mathrm{~L} \end{aligned}$ | $\begin{array}{r} \hline \text { Labo } \\ \text { Lab } \\ \text { QC } \\ \text { Dat } \end{array}$ |  | Data  <br> e: $1700803-02$ <br>  B7G0054 <br> yzed: 13-Jul-17 20:13 | Date Received: <br> Date Extracted: <br> Column: BEH C18 | $\begin{aligned} & \text { 30-Jun-2017 } \\ & \text { 12-Jul-2017 } \end{aligned}$ | $\begin{array}{r} 9: 54 \\ 15: 51 \end{array}$ |
| Analyte | Conc. (ng/L) | DL | LOD | LOQ | Qualifiers |  | Labeled Standard | \%R | LCL-UCL | Qualifiers |
| PFBS | ND | 1.85 | 5.17 | 8.27 |  |  | 13C3-PFBS | 110 | 50-150 |  |
| PFHxA | ND | 2.25 | 5.17 | 8.27 |  | IS | 13C2-PFHxA | 89.7 | 50-150 |  |
| PFHpA | ND | 0.611 | 5.17 | 8.27 |  | IS | 13C4-PFHpA | 80.0 | 50-150 |  |
| PFHxS | ND | 0.979 | 5.17 | 8.27 |  | IS | 18O2-PFHxS | 98.9 | 50-150 |  |
| PFOA | ND | 0.673 | 5.17 | 8.27 |  | IS | 13C2-PFOA | 73.2 | 50-150 |  |
| PFOS | ND | 0.834 | 5.17 | 8.27 |  | IS | 13C8-PFOS | 92.7 | 50-150 |  |
| PFNA | ND | 0.837 | 5.17 | 8.27 |  | IS | 13C5-PFNA | 89.5 | 50-150 |  |
| PFDA | ND | 1.54 | 5.17 | 8.27 |  |  | 13C2-PFDA | 82.2 | 50-150 |  |
| MeFOSAA | ND | 1.71 | 5.17 | 8.27 |  |  | d3-MeFOSAA | 59.8 | 50-150 |  |
| PFUnA | ND | 1.09 | 5.17 | 8.27 |  | IS | 13C2-PFUnA | 66.6 | 50-150 |  |
| EtFOSAA | ND | 1.42 | 5.17 | 8.27 |  |  | d5-EtFOSAA | 73.4 | 50-150 |  |
| PFDoA | ND | 0.819 | 5.17 | 8.27 |  | IS | 13C2-PFDoA | 27.5 | 50-150 | H |
| PFTrDA | ND | 0.511 | 5.17 | 8.27 |  | IS | 13C2-PFTeDA | 24.2 | 50-150 | H |
| PFTeDA | ND | 0.780 | 5.17 | 8.27 |  |  |  |  |  |  |
|  |  | DL - Detection limit <br> RL - Reporting limit |  |  |  | LCL-U <br> Results <br> When r <br> Only th | L - Lower control limit - upper eported to DL. <br> orted, PFBS, PFHxS, PFOA a <br> linear isomer is reported for all | control limit <br> nd PFOS include both linear and 1 other analytes. | branched isomers. |  |






| Sample ID: | IRPSite5-GW-FRB01 | 0628 |  |  |  |  |  | Modifie | EPA Met | thod 537 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Client Data <br> Name: <br> Project: <br> Date Collected: <br> Location: | KMEA <br> NSWC White Oak 28-Jun-2017 15:00 |  | Sample Data <br> Matrix: <br> Sample Size: | Water 0.118 L | Lab <br> La <br> QC <br> D | ator <br> Sam <br> Batch <br> Ana | Data  <br> le: $1700803-07$ <br>  B7G0014 <br> yzed: 11-Jul-17 20:23 | Date Received: Date Extracted: <br> Column: BEH C18 | $\begin{aligned} & \text { 30-Jun-2017 } \\ & 05-J u l-2017 \end{aligned}$ | $\begin{array}{r} 9: 54 \\ 13: 36 \end{array}$ |
| Analyte | Conc. (ng/L) | DL | LOD | LOQ | Qualifiers |  | Labeled Standard | \%R | LCL-UCL | Qualifiers |
| PFBS | ND | 1.90 | 5.30 | 8.49 |  | IS | 13C3-PFBS | 91.8 | 50-150 |  |
| PFHxA | ND | 2.31 | 5.30 | 8.49 |  | IS | 13C2-PFHxA | 100 | 50-150 |  |
| PFHpA | ND | 0.627 | 5.30 | 8.49 |  | IS | 13C4-PFHpA | 90.3 | 50-150 |  |
| PFHxS | ND | 1.01 | 5.30 | 8.49 |  | IS | 1802-PFHxS | 99.3 | 50-150 |  |
| PFOA | ND | 0.691 | 5.30 | 8.49 |  | IS | 13C2-PFOA | 93.8 | 50-150 |  |
| PFOS | ND | 0.857 | 5.30 | 8.49 |  | IS | 13C8-PFOS | 101 | 50-150 |  |
| PFNA | ND | 0.860 | 5.30 | 8.49 |  | IS | 13C5-PFNA | 86.7 | 50-150 |  |
| PFDA | ND | 1.58 | 5.30 | 8.49 |  | IS | 13C2-PFDA | 83.9 | 50-150 |  |
| MeFOSAA | ND | 1.75 | 5.30 | 8.49 |  | IS | d3-MeFOSAA | 96.5 | 50-150 |  |
| PFUnA | ND | 1.11 | 5.30 | 8.49 |  | IS | 13C2-PFUnA | 90.5 | 50-150 |  |
| EtFOSAA | ND | 1.45 | 5.30 | 8.49 |  | IS | d5-EtFOSAA | 86.1 | 50-150 |  |
| PFDoA | ND | 0.841 | 5.30 | 8.49 |  | IS | 13C2-PFDoA | 23.1 | 50-150 | H |
| PFTrDA | ND | 0.525 | 5.30 | 8.49 |  | IS | 13C2-PFTeDA | 5.20 | 50-150 | H |
| PFTeDA | ND | 0.802 | 5.30 | 8.49 |  |  |  |  |  |  |
| DL - Detection limit <br> RL - Reporting limit |  |  |  |  |  | L-UC sults hen re aly the | - Lower control limit - upper cond ported to DL. <br> orted, PFBS, PFHxS, PFOA and inear isomer is reported for all | control limit <br> d PFOS include both linear and b other analytes. | anched isomers. |  |




Vista
Analytical Laboratory


When reported, PFBS, PFHxS, PFOA and PFOS include both linear and branched isomers.
Only the linear isomer is reported for all other analytes.

| Sample ID: | EB02 |  |  |  |  |  |  | Modified | EPA Me | thod 537 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Client Data <br> Name: <br> Project: <br> Date Collected: Location: | KMEA <br> NSWC White Oak 29-Jun-2017 8:40 |  | Sample Data <br> Matrix: <br> Sample Size: | Water 0.110 L | $\begin{gathered} \hline \text { Labo } \\ \text { Lab } \\ \text { QC } \\ \text { Dat } \end{gathered}$ | atory <br> Samp <br> Batch <br> Anal | Data  <br> e: $1700803-10$ <br>  B7G0014 <br> yzed: 11-Jul-17 21:17 | Date Received: <br> Date Extracted: <br> Column: BEH C18 | $\begin{aligned} & 30-J u n-2017 \\ & 05-J u l-2017 \end{aligned}$ | $\begin{array}{r} 9: 54 \\ 13: 36 \end{array}$ |
| Analyte | Conc. (ng/L) | DL | LOD | LOQ | Qualifiers |  | Labeled Standard | \%R | LCL-UCL | Qualifiers |
| PFBS | ND | 2.04 | 5.68 | 9.13 |  |  | 13C3-PFBS | 87.7 | 50-150 |  |
| PFHxA | ND | 2.49 | 5.68 | 9.13 |  | IS | 13C2-PFHxA | 96.9 | 50-150 |  |
| PFHpA | ND | 0.674 | 5.68 | 9.13 |  | IS | 13C4-PFHpA | 89.1 | 50-150 |  |
| PFHxS | ND | 1.08 | 5.68 | 9.13 |  | IS | 1802-PFHxS | 107 | 50-150 |  |
| PFOA | ND | 0.743 | 5.68 | 9.13 |  | IS | 13C2-PFOA | 97.8 | 50-150 |  |
| PFOS | ND | 0.921 | 5.68 | 9.13 |  | IS | 13C8-PFOS | 90.6 | 50-150 |  |
| PFNA | ND | 0.924 | 5.68 | 9.13 |  | IS | 13C5-PFNA | 88.3 | 50-150 |  |
| PFDA | ND | 1.70 | 5.68 | 9.13 |  | IS | 13C2-PFDA | 93.3 | 50-150 |  |
| MeFOSAA | ND | 1.88 | 5.68 | 9.13 |  | IS | d3-MeFOSAA | 115 | 50-150 |  |
| PFUnA | ND | 1.20 | 5.68 | 9.13 |  | IS | 13C2-PFUnA | 75.0 | 50-150 |  |
| EtFOSAA | ND | 1.56 | 5.68 | 9.13 |  |  | d5-EtFOSAA | 88.7 | 50-150 |  |
| PFDoA | ND | 0.904 | 5.68 | 9.13 |  | IS | 13C2-PFDoA | 20.3 | 50-150 | H |
| PFTrDA | ND | 0.564 | 5.68 | 9.13 |  | IS | 13C2-PFTeDA | 10.9 | 50-150 | H |
| PFTeDA | ND | 0.861 | 5.68 | 9.13 |  |  |  |  |  |  |
|  |  | DL - Detection limit RL - Reporting limit |  |  | LCL-UCL - Lower control limit - upper control limit |  |  |  |  |  |
|  |  | When reported, PFBS, PFHxS, PFOA and PFOS include both linear and branched isomers. Only the linear isomer is reported for all other analytes. |

## DATA QUALIFIERS \& ABBREVIATIONS

B This compound was also detected in the method blank.
D Dilution

E The associated compound concentration exceeded the calibration range of the instrument.

H Recovery and/or RPD was outside laboratory acceptance limits.
I Chemical Interference
J The amount detected is below the Reporting Limit/LOQ.
M Estimated Maximum Possible Concentration. (CA Region 2 projects only)

* See Cover Letter

Conc. Concentration
NA Not applicable
ND Not Detected

TEQ Toxic Equivalency

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

## CERTIFICATIONS

| Accrediting Authority | Certificate Number |
| :--- | :---: |
| Arkansas Department of Environmental Quality | $17-015-0$ |
| California Department of Health - ELAP | 2892 |
| DoD ELAP - A2LA Accredited - ISO/IEC 17025:2005 | 3091.01 |
| Florida Department of Health | E87777-18 |
| Hawaii Department of Health | N/A |
| Louisiana Department of Environmental Quality | 01977 |
| Maine Department of Health | 2016026 |
| Minnesota Department of Health | 1175673 |
| Nevada Division of Environmental Protection | CA004132017-1 |
| New Hampshire Environmental Accreditation Program | 207716 |
| New Jersey Department of Environmental Protection | CA003 |
| New York Department of Health | 11411 |
| Oregon Laboratory Accreditation Program | $4042-008$ |
| Pennsylvania Department of Environmental Protection | 013 |
| Texas Commission on Environmental Quality | T104704189-17-8 |
| Virginia Department of General Services | 8621 |
| 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 <br> Dibenzofurans | EPA 23 |


| MATRIX: Biological Tissue |  |
| :--- | :--- |
| Description of Test | Method |
| Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope <br> Dilution GC/HRMS | EPA 1613B |
| Brominated Diphenyl Ethers by HRGC/HRMS | EPA 1614A |
| Chlorinated Biphenyl Congeners in Water, Soil, Sediment, and Tissue <br> by GC/HRMS | EPA 1668A/C |
| Pesticides in Water, Soil, Sediment, Biosolids, and Tissue by <br> 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 <br> GC/HRMS | EPA 8280A/B |
| Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated <br> Dibenzofurans (PCDFs) by GC/HRMS | EPA <br> $8290 / 8290 A$ |


| 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 <br> Dilution GC/HRMS | EPA 1613B |
| Brominated Diphenyl Ethers by HRGC/HRMS | EPA 1614A |
| Chlorinated Biphenyl Congeners in Water, Soil, Sediment, and Tissue <br> 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 <br> Dibenzofurans by GC/HRMS | EPA 8280A/B |
| Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated <br> Dibenzofurans (PCDFs) by GC/HRMS | EPA |


| 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 <br> 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 <br> Dibenzofurans by GC/HRMS | EPA 8280A/B |
| Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated <br> Dibenzofurans (PCDFs) by GC/HRMS | EPA |

$\qquad$ OF $\qquad$


## Sample Log-in Checklist

Vista Work Order \#:


TAT 14



| If Chlorinated or Drinking Water Samples, Acceptable Preservation? |  |  | $\checkmark$ |  |  |  |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: |
| Preservation Documented: | $\mathrm{Na}_{2} \mathrm{~S}_{2} \mathrm{O}_{3}$ | Trizma |  | None | Yes | No |
| NA | NA |  |  |  |  |  |
| Shipping Container | Vista | Client | Retain | Return | Dispose |  |

July 20, 2017

## Vista Work Order No. 1700803

Ms. Nia Nikmanesh
KMEA
2423 Hoover Avenue
National City, CA 91950
Dear Ms. Nikmanesh,
Enclosed are the results for the sample set received at Vista Analytical Laboratory on June 30, 2017. This sample set was analyzed on a rush turn-around time, under your Project Name 'NSWC White Oak'.

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.

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

Sincerely,

## Kaneng:Lopgenesta for

Martha Maier<br>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. 1700803

Case Narrative

## Sample Condition on Receipt:

Ten water 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

Samples "SB01", "IRPSite7-GW-FD01-20170628", "IRPSite7-GW-FRB01-20170628", "IRPSite5-GW-04GW81S-20170628and", and "IRPSite5-GW-04GW80-20170628" contained particulate and were centrifuged prior to extraction.

The samples were extracted and analyzed for a selected list of 14 PFAS using Modified EPA Method 537.

## Holding Times

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

## Quality Control

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

A Method Blank and Ongoing Precision and Recovery (OPR) sample were extracted and analyzed in two preparation batches (B7G0014 and B7G0054). No analytes were detected in the Method Blank above $1 / 2$ the LOQ. The OPR recoveries for PFTrDA and labeled standards 13C2-PFDoA and 13C2-PFteDA were outside of the method acceptance criteria in batch B7G0014. The OPR recoveries for PFDoA, PFTrDA, and labeled standards d5-EtFOSAA, 13C2-PFDoA, and 13C2-PFTeDA were outside of the method acceptance criteria in batch B7G0054. All other OPR recoveries were within the method acceptance criteria.

The labeled standard recoveries outside the acceptance criteria are listed in the table below.
As requested, an MS/MSD was performed on sample "IRPSite5-GW-04GW80-20170628".

## QC Anomalies

| LabNumber | SampleName | Analysis | Analyte | Flag | \%Rec |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 1700803-01 | SB01 | Modified EPA Method 537 | 13C2-PFDoA | H | 29.5 |
| 1700803-01 | SB01 | Modified EPA Method 537 | 13C2-PFTeDA | H | 20.9 |
| 1700803-02 | EB01 | Modified EPA Method 537 | 13C2-PFDoA | H | 27.5 |
| 1700803-02 | EB01 | Modified EPA Method 537 | 13C2-PFTeDA | H | 24.2 |
| 1700803-03 | IRPSite7-GW-46GW205-20170628 | Modified EPA Method 537 | 13C2-PFDoA | H | 4.20 |
| 1700803-03 | IRPSite7-GW-46GW205-20170628 | Modified EPA Method 537 | 13C2-PFTeDA | H | 4.90 |
| 1700803-04 | IRPSite7-GW-FD01-20170628 | Modified EPA Method 537 | 13C2-PFDoA | H | 19.4 |
| 1700803-04 | IRPSite7-GW-FD01-20170628 | Modified EPA Method 537 | 13C2-PFTeDA | H | 9.60 |
| 1700803-05 | IRPSite7-GW-07GW202-20170628 | Modified EPA Method 537 | 13C2-PFDoA | H | 31.2 |
| 1700803-05 | IRPSite7-GW-07GW202-20170628 | Modified EPA Method 537 | 13C2-PFTeDA | H | 20.1 |
| 1700803-06 | IRPSite7-GW-FRB01-20170628 | Modified EPA Method 537 | 13C2-PFDoA | H | 27.1 |
| $1700803-06$ | IRPSite7-GW-FRB01-20170628 | Modified EPA Method 537 | 13C2-PFTeDA | H | 7.10 |
| 1700803-07 | IRPSite5-GW-FRB01-20170628 | Modified EPA Method 537 | 13C2-PFDoA | H | 23.1 |
| 1700803-07 | IRPSite5-GW-FRB01-20170628 | Modified EPA Method 537 | 13C2-PFTeDA | H | 5.20 |
| 1700803-08 | IRPSite5-GW-04GW81S-20170628 | Modified EPA Method 537 | 13C2-PFDoA | H | 10.7 |
| 1700803-08 | IRPSite5-GW-04GW81S-20170628 | Modified EPA Method 537 | 13C2-PFTeDA | H | 25.6 |
| 1700803-09 | IRPSite5-GW-04GW80-20170628 | Modified EPA Method 537 | 13C2-PFDoA | H | 36.6 |
| 1700803-09 | IRPSite5-GW-04GW80-20170628 | Modified EPA Method 537 | 13C2-PFTeDA | H | 26.3 |
| 1700803-10 | EB02 | Modified EPA Method 537 | 13C2-PFDoA | H | 20.3 |
| 1700803-10 | EB02 | Modified EPA Method 537 | 13C2-PFTeDA | H | 10.9 |
| B7G0014-BLK1 | B7G0014-BLK1 | Modified EPA Method 537 | 13C2-PFDoA | H | 29.5 |
| B7G0014-BLK1 | B7G0014-BLK1 | Modified EPA Method 537 | 13C2-PFTeDA | H | 11.3 |
| B7G0014-BS1 | B7G0014-BS1 | Modified EPA Method 537 | 13C2-PFDoA | H | 15.3 |
| B7G0014-BS1 | B7G0014-BS1 | Modified EPA Method 537 | 13C2-PFTeDA | H | 4.40 |
| B7G0014-MS1 | B7G0014-MS1 | Modified EPA Method 537 | 13C2-PFDoA | H | 20.8 |
| B7G0014-MS1 | B7G0014-MS1 | Modified EPA Method 537 | 13C2-PFTeDA | H | 12.2 |
| B7G0014-MSD1 | B7G0014-MSD1 | Modified EPA Method 537 | 13C2-PFDoA | H | 13.7 |
| B7G0014-MSD1 | B7G0014-MSD1 | Modified EPA Method 537 | 13C2-PFTeDA | H | 19.2 |
| B7G0054-BLK1 | B7G0054-BLK1 | Modified EPA Method 537 | 13C2-PFDoA | H | 14.0 |
| B7G0054-BLK1 | B7G0054-BLK1 | Modified EPA Method 537 | 13C2-PFTeDA | H | 39.8 |
| B7G0054-BS1 | B7G0054-BS1 | Modified EPA Method 537 | d5-EtFOSAA | H | 43.6 |
| B7G0054-BS1 | B7G0054-BS1 | Modified EPA Method 537 | 13C2-PFDoA | H | 33.3 |
| B7G0054-BS1 | B7G0054-BS1 | Modified EPA Method 537 | 13C2-PFTeDA | H | 212 |

$H=$ Recovery was outside laboratory acceptance criteria.

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## Sample Inventory Report

| Vista Sample ID | Client |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
|  | Sample ID | Sampled | Received | Components/Containers |
| 1700803-01 | SB01 | 28-Jun-17 09:44 | 30-Jun-17 09:54 | HDPE Bottle, 125 mL |
|  |  |  |  | HDPE Bottle, 125 mL |
| 1700803-02 | EB01 | 28-Jun-17 09:50 | 30-Jun-17 09:54 | HDPE Bottle, 125 mL |
|  |  |  |  | HDPE Bottle, 125 mL |
| 1700803-03 | IRPSite7-GW-46GW205-20170628 | 28-Jun-17 11:23 | 30-Jun-17 09:54 | HDPE Bottle, 125 mL |
|  |  |  |  | HDPE Bottle, 125 mL |
| 1700803-04 | IRPSite7-GW-FD01-20170628 | 28-Jun-17 11:25 | 30-Jun-17 09:54 | HDPE Bottle, 125 mL |
|  |  |  |  | HDPE Bottle, 125 mL |
| 1700803-05 | IRPSite7-GW-07GW202-20170628 | 28-Jun-17 12:40 | 30-Jun-17 09:54 | HDPE Bottle, 125 mL |
|  |  |  |  | HDPE Bottle, 125 mL |
| 1700803-06 | IRPSite7-GW-FRB01-20170628 | 28-Jun-17 14:20 | 30-Jun-17 09:54 | HDPE Bottle, 125 mL |
|  |  |  |  | HDPE Bottle, 125 mL |
| 1700803-07 | IRPSite5-GW-FRB01-20170628 | 28-Jun-17 15:00 | 30-Jun-17 09:54 | HDPE Bottle, 125 mL |
|  |  |  |  | HDPE Bottle, 125 mL |
| 1700803-08 | IRPSite5-GW-04GW81S-20170628 | 28-Jun-17 15:52 | 30-Jun-17 09:54 | HDPE Bottle, 125 mL |
|  |  |  |  | HDPE Bottle, 125 mL |
| 1700803-09 | IRPSite5-GW-04GW80-20170628/S/MSD | 28-Jun-17 17:05 | 30-Jun-17 09:54 | 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 |
| 1700803-10 | EB02 | 29-Jun-17 08:40 | 30-Jun-17 09:54 | HDPE Bottle, 125 mL |
|  |  |  |  | HDPE Bottle, 125 mL |

## ANALYTICAL RESULTS



## Sample ID: OPR

Modified EPA Method 537

| Matrix: <br> Sample Size: | $\begin{aligned} & \text { Aqueous } \\ & 0.125 \mathrm{~L} \end{aligned}$ | QC Batch: <br> Date Extracted: | $\begin{aligned} & \text { B7G0014 } \\ & \text { 05-Jul-201 } \end{aligned}$ | 13:36 |  | $\begin{array}{ll}\text { Lab Sample: } & \text { B7G0014-BS1 } \\ \text { Date Analyzed: } & \text { 11-Jul-17 18:04 Column: BEH C18 }\end{array}$ |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Analyte |  | Amt Found (ng/L) | Spike Amt | \%R | Limits |  | Labeled Standard | \%R | LCL-UCL |
| PFBS |  | 69.0 | 80.0 | 86.3 | 70-130 | IS | 13C3-PFBS | 83.0 | 50-150 |
| PFHxA |  | 66.1 | 80.0 | 82.6 | 70-130 | IS | 13C2-PFHxA | 110 | 50-150 |
| PFHpA |  | 63.4 | 80.0 | 79.3 | 70-130 | IS | 13C4-PFHpA | 93.5 | 50-150 |
| PFHxS |  | 77.7 | 80.0 | 97.2 | 70-130 | IS | 1802-PFHxS | 102 | 50-150 |
| PFOA |  | 63.6 | 80.0 | 79.5 | 70-130 | IS | 13C2-PFOA | 98.8 | 50-150 |
| PFOS |  | 70.5 | 80.0 | 88.1 | 70-130 | IS | 13C8-PFOS | 103 | 50-150 |
| PFNA |  | 70.7 | 80.0 | 88.4 | 70-130 | IS | 13C5-PFNA | 90.2 | 50-150 |
| PFDA |  | 60.3 | 80.0 | 75.4 | 70-130 | IS | 13C2-PFDA | 80.3 | 50-150 |
| MeFOSAA |  | 69.6 | 80.0 | 86.9 | 70-130 | IS | d3-MeFOSAA | 76.6 | 50-150 |
| PFUnA |  | 59.3 | 80.0 | 74.2 | 70-130 | IS | 13C2-PFUnA | 73.1 | 50-150 |
| EtFOSAA |  | 76.0 | 80.0 | 95.0 | 70-130 | IS | d5-EtFOSAA | 59.8 | 50-150 |
| PFDoA |  | 92.7 | 80.0 | 116 | 70-130 | IS | 13C2-PFDoA | 15.3 | 50-150 |
| PFTrDA |  | 26.2 | 80.0 | 32.8 | 60-130 | IS | 13C2-PFTeDA | 4.40 | 50-150 |
| PFTeDA |  | 69.4 | 80.0 | 86.8 | 70-130 |  |  |  |  |

[^2]

## Sample ID: OPR

Modified EPA Method 537

| Matrix: <br> Sample Size: | Aqueous 0.125 L | QC Batch: <br> Date Extracted: | $\begin{aligned} & \text { B7G0054 } \\ & \text { 12-Jul-2017 } \end{aligned}$ | $15: 51$ |  | Lab Sample: Date Analyzed: | B7G0054-BS1 <br> 13-Jul-17 16:49 Column: BEH C18 |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Analyte |  | Amt Found (ng/L) | Spike Amt | \%R | Limits |  | Labeled Standard | \%R | LCL-UCL |
| PFBS |  | 70.7 | 80.0 | 88.4 | 70-130 | IS | 13C3-PFBS | 97.9 | 50-150 |
| PFHxA |  | 73.2 | 80.0 | 91.5 | 70-130 | IS | 13C2-PFHxA | 87.4 | 50-150 |
| PFHpA |  | 68.8 | 80.0 | 85.9 | 70-130 | IS | 13C4-PFHpA | 73.9 | 50-150 |
| PFHxS |  | 77.0 | 80.0 | 96.2 | 70-130 | IS | 1802-PFHxS | 87.8 | 50-150 |
| PFOA |  | 72.0 | 80.0 | 90.0 | 70-130 | IS | 13C2-PFOA | 73.5 | 50-150 |
| PFOS |  | 75.8 | 80.0 | 94.7 | 70-130 | IS | 13C8-PFOS | 86.6 | 50-150 |
| PFNA |  | 61.7 | 80.0 | 77.2 | 70-130 | IS | 13C5-PFNA | 75.8 | 50-150 |
| PFDA |  | 74.4 | 80.0 | 93.0 | 70-130 | IS | 13C2-PFDA | 79.6 | 50-150 |
| MeFOSAA |  | 65.3 | 80.0 | 81.6 | 70-130 | IS | d3-MeFOSAA | 84.2 | 50-150 |
| PFUnA |  | 71.6 | 80.0 | 89.5 | 70-130 | IS | 13C2-PFUnA | 64.2 | 50-150 |
| EtFOSAA |  | 102 | 80.0 | 128 | 70-130 | IS | d5-EtFOSAA | 43.6 | 50-150 |
| PFDoA |  | 173 | 80.0 | 216 | 70-130 | IS | 13C2-PFDoA | 33.3 | 50-150 |
| PFTrDA |  | 178 | 80.0 | 222 | 60-130 | IS | 13C2-PFTeDA | 212 | 50-150 |
| PFTeDA |  | 71.4 | 80.0 | 89.2 | 70-130 |  |  |  |  |

[^3]

| Sample ID: | EB01 |  |  |  |  |  |  | Modifie | d EPA Met | thod 537 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Client Data <br> Name: <br> Project: <br> Date Collected: <br> Location: | KMEA <br> NSWC White Oak 28-Jun-2017 9:50 |  | Sample Data <br> Matrix: <br> Sample Size: | $\begin{aligned} & \text { Water } \\ & 0.121 \mathrm{~L} \end{aligned}$ | $\begin{array}{r} \hline \text { Labo } \\ \text { Lab } \\ \text { QC } \\ \text { Dat } \end{array}$ |  | Data  <br> e: $1700803-02$ <br>  B7G0054 <br> yzed: 13-Jul-17 20:13 | Date Received: <br> Date Extracted: <br> Column: BEH C18 | $\begin{aligned} & \text { 30-Jun-2017 } \\ & \text { 12-Jul-2017 } \end{aligned}$ | $\begin{array}{r} 9: 54 \\ 15: 51 \end{array}$ |
| Analyte | Conc. (ng/L) | DL | LOD | LOQ | Qualifiers |  | Labeled Standard | \%R | LCL-UCL | Qualifiers |
| PFBS | ND | 1.85 | 5.17 | 8.27 |  |  | 13C3-PFBS | 110 | 50-150 |  |
| PFHxA | ND | 2.25 | 5.17 | 8.27 |  | IS | 13C2-PFHxA | 89.7 | 50-150 |  |
| PFHpA | ND | 0.611 | 5.17 | 8.27 |  | IS | 13C4-PFHpA | 80.0 | 50-150 |  |
| PFHxS | ND | 0.979 | 5.17 | 8.27 |  | IS | 18O2-PFHxS | 98.9 | 50-150 |  |
| PFOA | ND | 0.673 | 5.17 | 8.27 |  | IS | 13C2-PFOA | 73.2 | 50-150 |  |
| PFOS | ND | 0.834 | 5.17 | 8.27 |  | IS | 13C8-PFOS | 92.7 | 50-150 |  |
| PFNA | ND | 0.837 | 5.17 | 8.27 |  | IS | 13C5-PFNA | 89.5 | 50-150 |  |
| PFDA | ND | 1.54 | 5.17 | 8.27 |  |  | 13C2-PFDA | 82.2 | 50-150 |  |
| MeFOSAA | ND | 1.71 | 5.17 | 8.27 |  |  | d3-MeFOSAA | 59.8 | 50-150 |  |
| PFUnA | ND | 1.09 | 5.17 | 8.27 |  | IS | 13C2-PFUnA | 66.6 | 50-150 |  |
| EtFOSAA | ND | 1.42 | 5.17 | 8.27 |  |  | d5-EtFOSAA | 73.4 | 50-150 |  |
| PFDoA | ND | 0.819 | 5.17 | 8.27 |  | IS | 13C2-PFDoA | 27.5 | 50-150 | H |
| PFTrDA | ND | 0.511 | 5.17 | 8.27 |  | IS | 13C2-PFTeDA | 24.2 | 50-150 | H |
| PFTeDA | ND | 0.780 | 5.17 | 8.27 |  |  |  |  |  |  |
|  |  | DL - Detection limit <br> RL - Reporting limit |  |  |  | LCL-U <br> Results <br> When r <br> Only th | L - Lower control limit - upper eported to DL. <br> orted, PFBS, PFHxS, PFOA a <br> linear isomer is reported for all | control limit <br> nd PFOS include both linear and 1 other analytes. | branched isomers. |  |






| Sample ID: | IRPSite5-GW-FRB01 | 0628 |  |  |  |  |  | Modifie | EPA Met | thod 537 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Client Data <br> Name: <br> Project: <br> Date Collected: <br> Location: | KMEA <br> NSWC White Oak 28-Jun-2017 15:00 |  | Sample Data <br> Matrix: <br> Sample Size: | Water 0.118 L | Lab <br> La <br> QC <br> D | ator <br> Sam <br> Batch <br> Ana | Data  <br> le: $1700803-07$ <br>  B7G0014 <br> yzed: 11-Jul-17 20:23 | Date Received: Date Extracted: <br> Column: BEH C18 | $\begin{aligned} & \text { 30-Jun-2017 } \\ & 05-J u l-2017 \end{aligned}$ | $\begin{array}{r} 9: 54 \\ 13: 36 \end{array}$ |
| Analyte | Conc. (ng/L) | DL | LOD | LOQ | Qualifiers |  | Labeled Standard | \%R | LCL-UCL | Qualifiers |
| PFBS | ND | 1.90 | 5.30 | 8.49 |  | IS | 13C3-PFBS | 91.8 | 50-150 |  |
| PFHxA | ND | 2.31 | 5.30 | 8.49 |  | IS | 13C2-PFHxA | 100 | 50-150 |  |
| PFHpA | ND | 0.627 | 5.30 | 8.49 |  | IS | 13C4-PFHpA | 90.3 | 50-150 |  |
| PFHxS | ND | 1.01 | 5.30 | 8.49 |  | IS | 1802-PFHxS | 99.3 | 50-150 |  |
| PFOA | ND | 0.691 | 5.30 | 8.49 |  | IS | 13C2-PFOA | 93.8 | 50-150 |  |
| PFOS | ND | 0.857 | 5.30 | 8.49 |  | IS | 13C8-PFOS | 101 | 50-150 |  |
| PFNA | ND | 0.860 | 5.30 | 8.49 |  | IS | 13C5-PFNA | 86.7 | 50-150 |  |
| PFDA | ND | 1.58 | 5.30 | 8.49 |  | IS | 13C2-PFDA | 83.9 | 50-150 |  |
| MeFOSAA | ND | 1.75 | 5.30 | 8.49 |  | IS | d3-MeFOSAA | 96.5 | 50-150 |  |
| PFUnA | ND | 1.11 | 5.30 | 8.49 |  | IS | 13C2-PFUnA | 90.5 | 50-150 |  |
| EtFOSAA | ND | 1.45 | 5.30 | 8.49 |  | IS | d5-EtFOSAA | 86.1 | 50-150 |  |
| PFDoA | ND | 0.841 | 5.30 | 8.49 |  | IS | 13C2-PFDoA | 23.1 | 50-150 | H |
| PFTrDA | ND | 0.525 | 5.30 | 8.49 |  | IS | 13C2-PFTeDA | 5.20 | 50-150 | H |
| PFTeDA | ND | 0.802 | 5.30 | 8.49 |  |  |  |  |  |  |
| DL - Detection limit <br> RL - Reporting limit |  |  |  |  |  | L-UC sults hen re aly the | - Lower control limit - upper cond ported to DL. <br> orted, PFBS, PFHxS, PFOA and inear isomer is reported for all | control limit <br> d PFOS include both linear and b other analytes. | anched isomers. |  |




Vista
Analytical Laboratory


When reported, PFBS, PFHxS, PFOA and PFOS include both linear and branched isomers.
Only the linear isomer is reported for all other analytes.

| Sample ID: | EB02 |  |  |  |  |  |  | Modified | EPA Me | thod 537 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Client Data <br> Name: <br> Project: <br> Date Collected: Location: | KMEA <br> NSWC White Oak 29-Jun-2017 8:40 |  | Sample Data <br> Matrix: <br> Sample Size: | Water 0.110 L | $\begin{gathered} \hline \text { Labo } \\ \text { Lab } \\ \text { QC } \\ \text { Dat } \end{gathered}$ | atory <br> Samp <br> Batch <br> Anal | Data  <br> e: $1700803-10$ <br>  B7G0014 <br> yzed: 11-Jul-17 21:17 | Date Received: <br> Date Extracted: <br> Column: BEH C18 | $\begin{aligned} & 30-J u n-2017 \\ & 05-J u l-2017 \end{aligned}$ | $\begin{array}{r} 9: 54 \\ 13: 36 \end{array}$ |
| Analyte | Conc. (ng/L) | DL | LOD | LOQ | Qualifiers |  | Labeled Standard | \%R | LCL-UCL | Qualifiers |
| PFBS | ND | 2.04 | 5.68 | 9.13 |  |  | 13C3-PFBS | 87.7 | 50-150 |  |
| PFHxA | ND | 2.49 | 5.68 | 9.13 |  | IS | 13C2-PFHxA | 96.9 | 50-150 |  |
| PFHpA | ND | 0.674 | 5.68 | 9.13 |  | IS | 13C4-PFHpA | 89.1 | 50-150 |  |
| PFHxS | ND | 1.08 | 5.68 | 9.13 |  | IS | 1802-PFHxS | 107 | 50-150 |  |
| PFOA | ND | 0.743 | 5.68 | 9.13 |  | IS | 13C2-PFOA | 97.8 | 50-150 |  |
| PFOS | ND | 0.921 | 5.68 | 9.13 |  | IS | 13C8-PFOS | 90.6 | 50-150 |  |
| PFNA | ND | 0.924 | 5.68 | 9.13 |  | IS | 13C5-PFNA | 88.3 | 50-150 |  |
| PFDA | ND | 1.70 | 5.68 | 9.13 |  | IS | 13C2-PFDA | 93.3 | 50-150 |  |
| MeFOSAA | ND | 1.88 | 5.68 | 9.13 |  | IS | d3-MeFOSAA | 115 | 50-150 |  |
| PFUnA | ND | 1.20 | 5.68 | 9.13 |  | IS | 13C2-PFUnA | 75.0 | 50-150 |  |
| EtFOSAA | ND | 1.56 | 5.68 | 9.13 |  |  | d5-EtFOSAA | 88.7 | 50-150 |  |
| PFDoA | ND | 0.904 | 5.68 | 9.13 |  | IS | 13C2-PFDoA | 20.3 | 50-150 | H |
| PFTrDA | ND | 0.564 | 5.68 | 9.13 |  | IS | 13C2-PFTeDA | 10.9 | 50-150 | H |
| PFTeDA | ND | 0.861 | 5.68 | 9.13 |  |  |  |  |  |  |
|  |  | DL - Detection limit RL - Reporting limit |  |  | LCL-UCL - Lower control limit - upper control limit |  |  |  |  |  |
|  |  | When reported, PFBS, PFHxS, PFOA and PFOS include both linear and branched isomers. Only the linear isomer is reported for all other analytes. |

## DATA QUALIFIERS \& ABBREVIATIONS

B This compound was also detected in the method blank.
D Dilution

E The associated compound concentration exceeded the calibration range of the instrument.

H Recovery and/or RPD was outside laboratory acceptance limits.
I Chemical Interference
J The amount detected is below the Reporting Limit/LOQ.
M Estimated Maximum Possible Concentration. (CA Region 2 projects only)

* See Cover Letter

Conc. Concentration
NA Not applicable
ND Not Detected

TEQ Toxic Equivalency

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

## CERTIFICATIONS

| Accrediting Authority | Certificate Number |
| :--- | :---: |
| Arkansas Department of Environmental Quality | $17-015-0$ |
| California Department of Health - ELAP | 2892 |
| DoD ELAP - A2LA Accredited - ISO/IEC 17025:2005 | 3091.01 |
| Florida Department of Health | E87777-18 |
| Hawaii Department of Health | N/A |
| Louisiana Department of Environmental Quality | 01977 |
| Maine Department of Health | 2016026 |
| Minnesota Department of Health | 1175673 |
| Nevada Division of Environmental Protection | CA004132017-1 |
| New Hampshire Environmental Accreditation Program | 207716 |
| New Jersey Department of Environmental Protection | CA003 |
| New York Department of Health | 11411 |
| Oregon Laboratory Accreditation Program | $4042-008$ |
| Pennsylvania Department of Environmental Protection | 013 |
| Texas Commission on Environmental Quality | T104704189-17-8 |
| Virginia Department of General Services | 8621 |
| 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 <br> Dibenzofurans | EPA 23 |


| MATRIX: Biological Tissue |  |
| :--- | :--- |
| Description of Test | Method |
| Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope <br> Dilution GC/HRMS | EPA 1613B |
| Brominated Diphenyl Ethers by HRGC/HRMS | EPA 1614A |
| Chlorinated Biphenyl Congeners in Water, Soil, Sediment, and Tissue <br> by GC/HRMS | EPA 1668A/C |
| Pesticides in Water, Soil, Sediment, Biosolids, and Tissue by <br> 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 <br> GC/HRMS | EPA 8280A/B |
| Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated <br> Dibenzofurans (PCDFs) by GC/HRMS | EPA <br> $8290 / 8290 A$ |


| 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 <br> Dilution GC/HRMS | EPA 1613B |
| Brominated Diphenyl Ethers by HRGC/HRMS | EPA 1614A |
| Chlorinated Biphenyl Congeners in Water, Soil, Sediment, and Tissue <br> 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 <br> Dibenzofurans by GC/HRMS | EPA 8280A/B |
| Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated <br> Dibenzofurans (PCDFs) by GC/HRMS | EPA |


| 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 <br> 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 <br> Dibenzofurans by GC/HRMS | EPA 8280A/B |
| Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated <br> Dibenzofurans (PCDFs) by GC/HRMS | EPA |

$\qquad$ OF $\qquad$


## Sample Log-in Checklist

Vista Work Order \#:


TAT 14



| If Chlorinated or Drinking Water Samples, Acceptable Preservation? |  |  | $\checkmark$ |  |  |  |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: |
| Preservation Documented: | $\mathrm{Na}_{2} \mathrm{~S}_{2} \mathrm{O}_{3}$ | Trizma |  | None | Yes | No |
| NA | NA |  |  |  |  |  |
| Shipping Container | Vista | Client | Retain | Return | Dispose |  |

## EXTRACTION INFORMATION

# Process Sheet <br> Workorder: 1700803 

Prep Expiration: 2017-Jul-12
Client: KMEA

## Method: 537M PFAS DOD (LOQ as mR) Matrix: Aqueous

Version: 537 (14 Analyte)

Workorder Due:17-Jul-17 00:00
TAT: 17


Initial Sequence: $\qquad$

(4) Client ID: IRPSite7-GW-07GW202-20170628 i Mas 7/7h7
(B) Client ID: IRPSite7-GW-FDOL-20170628 U3F 7/177

Vista PM:Martha Maier
$\qquad$

## Batch: B7G0014

## Matrix: Aqueous

| LabNumber | WetWeight (Initial) | \% Solids (Extraction Solids) | DryWeight | Final | Extracted | Ext By | Spike | SpikeAmount | ClientMatrix | Analysis |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1700803-01 | 0.12033 J | NA | NA | 1000 | 05-Jul-17 13:36 | BAP |  |  | Water | 537M PFAS DOD (LOQ as |
| 1700803-03 | $0.11772 \sqrt{ }$ | I |  | 1000 | 05-Jul-17 13:36 | BAP |  |  | Water | 537M PFAS DOD (LOQ as |
| 1700803-04 | $0.12078 \sqrt{ }$ |  |  | 1000 | 05-Jul-17 13:36 | BAP |  |  | Water | 537M PFAS DOD (LOQ as |
| 1700803-05 | $0.12196 \sim$ |  |  | 1000 | 05-Jul-17 13:36 | BAP |  |  | Water | 537M PFAS DOD (LOQ as |
| 1700803-06 | $0.12281 \checkmark$ |  |  | 1000 | 05-Jul-17 13:36 | BAP |  |  | Water | 537M PFAS DOD (LOQ as |
| 1700803-07 | 0.11773 |  |  | 1000 | 05-Jul-17 13:36 | BAP |  |  | Water | 537M PFAS DOD (LOQ as |
| 1700803-08 | 0.12065 |  |  | 1000 | 05-Jul-17 13:36 | BAP |  |  | Water | 537M PFAS DOD (LOQ as |
| 1700803-09 | 0.11892 J |  |  | 1000 | 05-Jul-17 13:36 | BAP |  |  | Water | 537M PFAS DOD (LOQ as |
| 1700803-09 | 0.11892 |  | 1 | 1000 | 05-Jul-17 13:36 | BAP |  |  | Water | 537M PFAS |
| 1700803-10 | 0.10956 |  |  | 1000 | 05-Jul-17 13:36 | BAP |  |  | Water | 537M PFAS DOD (LOQ as |
| B7G0014-BLK1 | 0.125 |  |  | 1000 | 05-Jul-17 13:36 | BAP |  | , |  | QC |
| B7G0014-BS1 | 0.125 |  |  | 1000 | 05-Jul-17 13:36 | BAP | 17D2 | $105$ |  | QC |
| B7G0014-MS1 | $0.12163 \sqrt{ }$ |  |  | 1000 | 05-Jul-17 13:36 | BAP | 17D2 | 10 |  | QC |
| B7G0014-MSD1 | 0.1181 J | $\because$ |  | 1000 | 05-Jul-17 13:36 | BAP | 17D27 | / 10 ) |  | QC |

PREPARATION BENCH SHEET

Prepared using: LCMS - SPE Extraction-LCMS

| C | VISTA <br> Sample ID | $\underset{\text { Before }}{\mathrm{pH}}$ | $\underset{\text { After }}{\mathrm{pH}^{2}}$ | $\begin{gathered} \text { Chlorine } \\ \text { (Cl) } \end{gathered}$ | Drops HCl Added | Bottle + Sample (g) | Bottle <br> Only <br> (g) | Sample Amt. (L) | IS/NS CHEM/WIT DATE | SPE | $\begin{gathered} \text { RS } \\ \text { CHEM/WIT } \\ \text { DATE } \end{gathered}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $\square$ | B7G0014-BLK1 | 5 | 2 | 0 | 2 | $N A$ | NA | 1.17) | BP ICAF Ahogr | luthe 7/10/17 | BP 133F $710 / 17$ |
| $\square$ | B7G0014-BSI | 5 | 2 | 0 | 2 | I | I | $\checkmark$ |  |  | - |
| $\square$ | $\begin{array}{ll} \hline \text { B7G0014-MS1 } \\ \text { 1700803-09 } \end{array}$ | 5 | 2 | 0 | 2 | 149.04 | 27.41 | 0.12 .1 | $0^{3}$ |  |  |
| $\square$ | $\begin{aligned} & \text { B7G0014-MSD1 } \\ & \text { B700803-09 } \end{aligned}$ | 5 | 2 | 0 | 2 | 145.56 | 27.46 |  | O, 1 |  |  |
| $\square$ | 1700803-01 © | 5 | 2 | 0 | 2 | 147.70 | 23.37 | 0.1033 | $\Psi$ | $\checkmark$ | $\downarrow$ |
| $\square$ | 1700803-02 (3) | 4 | 2 | 0 | 2 | 147.35 |  |  |  |  |  |
| $\square$ | 1700803-03 | 4 | 2 | 0 | 2 | 145-20 | 27.48 | 6.1177 | BP 1CAF F(10)12 | K3SF $7 / 10117$ | $B P \quad$ KAF $7 / 10 / 17$ |
| $\square$ | ${ }^{1700803-04}$ ( ${ }^{170003}$ | 5 | 2 | 0 | 2 | 148.30 | 21.52 | 0.1378 |  |  | I |
| $\square$ | 1700803-05 | 5 | 2 | 0 | 2 | 149.34 | 27.37 | 0.1210 |  |  |  |
| $\square$ | 1700803-06 (1) | 5 | 2 | 0 | 2 | 150.6 | 27.45 | 0.1227 |  |  |  |
| $\square$ | 1700803-07 | 4 | 2 | 0 | 2 | 145.10 | 27.37 | 3.1 .73 |  |  |  |
| $\square$ | ${ }^{1700803-08}$ (A) | 5 | 2 | 0 | 2 | 148.17 | 27.52 | 1.20.69 |  |  |  |
| $\square$ | ${ }^{1700803-09}$ (k) | 5 | 2 | 0 | 2 | 146.76 | 27.44 | 0.1891 |  |  |  |
| $\square$ | 1700803-10 | 4 | 2 | 0 | 2 | 137.09 | 27.53 | 0.119 | $\downarrow$ | $v$ | $V$ |
| $\square$ | 1700820-01 |  |  |  |  |  | KBF 7k |  |  |  |  |


| IS Name <br> 17E26 R100 (2) | NS Name $\frac{1102705}{(22)}$ | RS Name <br> (v4) $17 F 3038,10 \mathrm{~m}$ | SPE Chem: Strata-X-AW $33 \mathrm{~mm} 200 \mathrm{my} /$ $\qquad$ Ele SOLV: $\mathrm{MeOH} / 0.5 \%$ NH2OIt in MeOH $\qquad$ Final Volume(s) $\qquad$ 1 nL | Check Out: Chemist/Date: $\qquad$ 7t $7 / 5 / 12$ Check In: Chemist/Dat Th $7 / 5 / 17$ <br> Balance ID HCMS-8 <br> pH Adjusted: Chemist/Date: $\qquad$ It $7 / 5 /(2$ |
| :---: | :---: | :---: | :---: | :---: |

Comments: Assume $1 \mathrm{~g}=1 \mathrm{~mL}$
(1) Samples ceere centrifuged to remove particulate matier MBF $7 / 5 / 17$
(8) Samde mas acsecd to batch B760015 BP 2.7 .17

# Process Sheet <br> Workorder: 1700803 

Prep Expiration: 2017-Jul-12
Client: KMEA

## Method: 537M PFAS DOD (LOQ as mRS) Matrix: Aqueous

Version: 537 (14 Analyte)

## Workorder Due:17-Jul-17 00:00

TAT: 17
Prep Batch: $\beta \neq 90054$
Prep Data Entered: BP 7.13•17 Date and Initials

Initial Sequence: $\qquad$
Date Received Location Comments


Vista PM: Martha Meier
Vial Box ID: Egg-static Sample Reconciled By:
 Page 1 of 1

## Batch: B7G0054

## Matrix: Aqueous

| LabNumber | WetWeight (Initial) | \% Solids (Extraction Solids) | DryWeight | Final | Extracted | Ext By | Spike | SpikeAmount | ClientMatrix | Analysis |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1700803-01RE1 | $0.11986 /$ | NA | J | 1000 | 05-Jul-17 13:36 | BAP |  |  | Water | 537M PFAS DOD (LOQ as |
| 1700803-02RE1 | 0.120937 | $T$ | $T$ | 1000 | 07-Jul-17 13:34 | BAP |  |  | Water | 537M PFAS DOD (LOQ as |
| 1700803-03RE1 | 0.1208 / |  |  | 1000 | 05-Jul-17 13:36 | BAP |  |  | Water | 537M PFAS DOD (LOQ as |
| 1700803-04RE1 | $0.11455 /$ |  |  | 1000 | 05-Jul-17 13:36 | BAP |  |  | Water | 537M PFAS DOD (LOQ as |
| 1700803-05RE1 | $0.12144 /$ |  |  | 1000 | 05-Jul-17 13:36 | BAP |  |  | Water | 537M PFAS DOD (LOQ as |
| 1700803-06RE1 | $0.1197 /$ |  |  | 1000 | 05-Jul-17 13:36 | BAP |  |  | Water | 537M PFAS DOD (LOQ as |
| 1700803-07RE1 | $0.11981 /$ |  |  | 1000 | 05-Jul-17 13:36 | BAP |  |  | Water | 537M PFAS DOD (LOQ as |
| 1700803-08RE1 | 0.12044 / |  |  | 1000 | 05-Jul-17 13:36 | BAP |  |  | Water | 537M PFAS DOD (LOQ as |
| 1700803-09RE1 | 0.11975 / |  |  | 1000 | 05-Jul-17 13:36 | BAP |  |  | Water | 537M PFAS DOD (LOQ as |
| 1700803-09RE1 | 0.11975 / |  |  | 1000 | 12-Jul-17 15:51 | BAP |  |  | Water | 537M PFAS Static RL |
| 1700803-10RE1 | 0.12181 r |  |  | 1000 | 05-Jul-17 13:36 | BAP |  |  | Water | 537M PFAS DOD (LOQ as |
| 1700836-01RE1 | 0.11781 r |  |  | 1000 | 12-Jul-17 15:51 | BAP |  |  | Aqueous | 537M PFAS Static RL |
| 1700836-02RE1 | $0.12115 \checkmark$ |  |  | 1000 | 12-Jul-17 15:51 | BAP |  |  | Aqueous | 537M PFAS Static RL |
| 1700836-03RE1 | 0.11871 |  |  | 1000 | 12-Jul-17 15:51 | BAP |  |  | Aqueous | 537M PFAS Static RL |
| 1700836-04RE1 | $0.11551 /$ |  | 1 | 1000 | 12-Jul-17 15:51 | BAP |  |  | Aqueous | 537M PFAS Static RL |
| 1700836-05RE1 | $0.11801 /$ |  |  | 1000 | 12-Jul-17 15:51 | BAP |  |  | Aqueous | 537M PFAS Static RL |
| B7G0054-BLK1 | 0.125 |  |  | 1000 | 12-Jul-17 15:51 | BAP |  |  |  | QC |
| B7G0054-BS1 | 0.125 |  |  | 1000 | 12-Jul-17 15:51 | BAP | 17 D 2705 | $710{ }^{r}$ |  | QC |
| B7G0054-MS1 | $0.12064 \checkmark$ |  |  | 1000 | 12-Jul-17 15:51 | BAP | 17D2705 | 10 「 |  | QC |
| B7G0054-MSD1 | 0.11356 | $\checkmark$ | 1 | 1000 | 12-Jul-17 15:51 | BAP | 17D2705 | / 10 V |  | QC |

$7 \cdot 13 \cdot 17$

# PREPARATION BENCH SHEET 

## Matrix：Aqueous

Method：537M PFAS DOD（LOO as mRL） Method：537M PFAS Static RL

Prepared using：LCMS－SPE Extraction－LCMS

| c | VISTA Sample ID | $\begin{gathered} \text { pH } \\ \text { Before } \end{gathered}$ | $\underset{\text { After }}{\substack{\mathrm{pH} \\ \hline}}$ | $\underset{\text { Chlorine }}{\text { (Cl) }}$ | $\begin{gathered} \text { Drops } \\ \text { HCl } \\ \text { Added } \end{gathered}$ | Bottle <br> Sample <br> （g） | $\begin{gathered} \text { Bottle } \\ \text { Only } \\ \text { (g) } \end{gathered}$ | Sample <br> Amt． <br> （L） | $\begin{gathered} \text { IS/NS } \\ \text { CHEM/WIT } \\ \text { DATE } \end{gathered}$ | SPE | $\begin{gathered} \text { RS } \\ \text { CHEM/WIT } \\ \text { DATE } \end{gathered}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $\square$ | B7G0054－BLK1 | 5 | 2 | 0 | 2 | NA | $\mathrm{N}^{+}$ | （0．125） | BP It 7／n／12 | 1／2 $7 / 12 / 12$ | BP TKC 7．12．17 |
| D | B7G0054－BSI | 5 | 2 | 0 | 2 | V | F | I |  |  |  |
| $\square$ | $\begin{aligned} & \begin{array}{l} \text { B7G0054-MS1 } \\ \text { 1700803-09RE1 } \end{array}(\#) \end{aligned}$ | 5 | 2 | 0 | 2 | 148.28 | 27.64 | 0.12064 | I |  |  |
| 7 |  | 5 | 2 | 0 | 2 | 141.05 | 27.49 | 0.11356 |  |  |  |
| T | 1700803－01RE1 | 5 | 2 | $\bigcirc$ | 2 | 147.29 | 27.43 | 0.11986 |  |  |  |
| 可 | 1700803－02RE1 | 5 | 2 | 0 | 2 | 148.39 | 27.46 | 0.12093 |  |  |  |
| － | 1700803－03RE1 | 5 | 2 | $\bigcirc$ | 2 | 148.27 | 27.47 | 0.12080 |  |  |  |
| 5 | ${ }^{1700803-04 \mathrm{REI}}$（A） | 5 | 2 | 0 | 2 | 142.01 | 27.46 | 0.11455 |  |  |  |
| Q | 1700803－05RE1 | 5 | 2 | 0 | 2 | 148.89 | 27.45 | 0.12144 |  |  |  |
| $\square$ | 1700803－06RE1 | 5 | 2 | 0 | 2 | 147.10 | 27.40 | 0.11970 |  |  |  |
| $\square$ | 1700803－07RE1 | 5 | 2 | $\bigcirc$ | 2 | 147.16 | 27.35 | 0.11981 |  |  |  |
| $\square$ | ${ }^{1700803-08 R E 1}$（A） | 5 | 2 | 0 | 2 | 147.90 | 27.46 | 0.12044 |  |  |  |
| 4 | ${ }^{1700803-09 R E 1}$（A） | 5 | 2 | 0 | 2 | 147.13 | 27.38 |  | 3.17 | $\downarrow$ | $\downarrow$ |
| $\square$ | 1700803－09RE1 |  |  |  |  |  |  |  |  | 还 | 2／17 |
| 5 | 1700803－10RE1 | 5 | 2 | 0 | 2 | 149.30 | 27.49 | 0.12181 | BD 札 $7 / 12 / \mathrm{lo}$ | $\# 7 / 412$ | BP \＃C 7．12．17 |
| 0 | 1700836－01RE1 | 6 | 2 | 0 | 2 | 144.63 | 26.92 | 0.11781 | I | $\pm$ | I |
|  | TE 2617， 10 N （v） |  |  | or |  | $\frac{7 F 3038,}{(4)^{\prime}}$ |  |  | Siruta $X$－ 10 33， $0.5 \%$ NHyOH in $M$ <br> e（s） $\qquad$ InL | $200 y$ yenc COH／MeOH | meck Out： ck In： eck in ：$N A \in \mathrm{ErP} y$ Iance iD：$H$ CMS－8 Adjusted： 7 H／i2／is |

Comments：Assume $1 \mathrm{~g}=1 \mathrm{~mL}$（4）Samples centrituged to renove particulate matter ite t／i2／i7

Matrix: Aqueous
Method: 537M PFAS DOD (LOO as mRL)
Method: 537M PFAS Static RL
$\square$ B7G0054

B7G0054
Chemist: BP

Prep Date/Time: 12-Jul-17 15:51
Prepared using: LCMS - SPE Extraction-LCMS

(\#) Samples contrituged fo remove perticulate watter ote $\mathcal{H} / 2 / 17$


Comments: Assume $1 \mathrm{~g}=1 \mathrm{~mL}$
Work Order 1700803
Page 35 of 382

$$
\text { SAMPLE DATA - MODIFIED EPA METHOD } 537
$$

## Quantify Sample Summary Report

 Vista Analytical Laboratory
## Dataset: <br> U:IQ4.PRO|results|170711M11170711M1-46.qld

## Last Altered: Wednesday, July 12, 2017 15:59:00 Pacific Daylight Time

 Printed:Wednesday, July 12, 2017 15:59:26 Pacific Daylight Time

## Method: U:|Q4.PRO\MethDB\PFAS L14-7-5-17.mdb 10 Jul 2017 08:06:14

 Calibration: U:|Q4.PRO\CurveDBIC18_VAL-PFAS_Q4_7-10-17-L14.cdb 11 Jul 2017 08:36:22Name: 170711M1_46, Date: 11-Jul-2017, Time: 18:37:02, ID: B7G0014-BLK1 Method Blank 0.125, Description: Method Blank

|  | \# Name | Trace | Area | IS Area | Wt./Vol. | RRF | Pred.RT | RT | y Axis Resp. | Conc. | \%Rec |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | 1 PFBS | $299>79.7$ |  | 2.28 e 3 | 0.125 |  | 2.92 |  |  |  |  |
| 2 | 2 PFHxA | $313.2>268.9$ |  | 6.76 e 3 | 0.125 |  | 3.16 |  |  |  |  |
| 3 | 3 PFHpA | $363>318.9$ |  | 1.68 e 4 | 0.125 |  | 3.43 |  |  |  |  |
| 4 | 4 PFHxS | $398.9>79.6$ |  | 1.68 e 3 | 0.125 |  | 3.55 |  |  |  |  |
| 5 | 5 PFOA | $413>368.7$ |  | 2.27 e 4 | 0.125 |  | 3.63 |  |  |  |  |
| 6 | 6 PFNA | $462.9>418.8$ |  | 1.70 e 4 | 0.125 |  | 3.82 |  |  |  |  |
| 7 | 7 PFOS | $499>79.9$ |  | 2.76 e 3 | 0.125 |  | 3.86 |  |  |  |  |
| 8 | 8 PFDA | $513>468.8$ |  | 1.09 e 4 | 0.125 |  | 4.00 |  |  |  |  |
| 9 | 9 PFUnA | $562.9>518.9$ |  | 3.31 e 3 | 0.125 |  | 4.16 |  |  |  |  |
| 10 | 10 N-MeFOSAA | $570.1>419$ |  | 9.21 e 2 | 0.125 |  | 4.00 |  |  |  |  |
| 11 | $11 \mathrm{~N}-\mathrm{EtFOSAA}$ | $584.2>419$ |  | 6.25 e 2 | 0.125 |  | 4.08 |  |  |  |  |
| 12 | 12 PFDoA | $612.9>318.8$ |  | 1.24 e 2 | 0.125 |  | 4.32 |  |  |  |  |
| 13 | 13 PFTrDA | $662.9>618.9$ |  | 1.24 e 2 | 0.125 |  | 4.50 |  |  |  |  |
| 14 | 14 PFTeDA | $712.9>668.8$ |  | 3.73 e 2 | 0.125 |  | 4.66 |  |  |  |  |
| 15 | 15 13C3-PFBA | $216.1>171.8$ | 1.17 e 4 | 1.25 e 4 | 0.125 | 0.918 | 1.43 | 1.33 | 11.7 | 102 | 102.0 |
| 16 | 16 13C3-PFPeA | $266>221.8$ | 1.80 e 4 | 1.25 e 4 | 0.125 | 1.784 | 2.72 | 2.63 | 18.0 | 80.5 | 80.5 |
| 17 | 17 13C3-PFBS | $302>98.8$ | 2.28 e 3 | 1.25 e 4 | 0.125 | 0.215 | 2.92 | 2.86 | 2.28 | 84.6 | 84.6 |
| 18 | 18 13C2-PFHxA | $315>269.8$ | 6.76 e 3 | 2.24 e 4 | 0.125 | 0.304 | 3.16 | 3.11 | 1.51 | 39.6 | 99.1 |
| 19 | 19 13C4-PFHpA | $367.2>321.8$ | 1.68 e 4 | 2.24 e 4 | 0.125 | 0.306 | 3.43 | 3.37 | 3.75 | 97.9 | 97.9 |
| 20 | 20 18O2-PFHxS | $403>102.6$ | 1.68 e 3 | 4.15 e 3 | 0.125 | 0.437 | 3.55 | 3.44 | 5.05 | 92.4 | 92.4 |
| 21 | 21 13C2-PFOA | $414.9>369.7$ | 2.27 e 4 | 1.91 e 4 | 0.125 | 1.292 | 3.63 | 3.57 | 14.9 | 92.0 | 92.0 |
| 22 | 22 13C5-PFNA | $468.2>422.9$ | 1.70 e 4 | 1.89 e 4 | 0.125 | 0.980 | 3.82 | 3.75 | 11.2 | 91.6 | 91.6 |
| 23 | 23 13C8-PFOS | $507>79.9$ | 2.76 e 3 | 2.61 e 3 | 0.125 | 1.098 | 3.86 | 3.80 | 13.2 | 96.1 | 96.1 |
| 24 | 24 13C2-PFDA | $515.1>469.9$ | 1.09 e 4 | 1.27 e 4 | 0.125 | 0.928 | 4.00 | 3.91 | 10.7 | 91.9 | 91.9 |
| 25 | 25 13C2-PFUnA | $565>519.8$ | 3.31 e 3 | 3.25 e 3 | 0.125 | 1.083 | 4.16 | 4.08 | 12.7 | 94.1 | 94.1 |
| 26 | 26 d3-N-MeFOSAA | $573.3>419$ | 9.21 e 2 | 3.25 e 3 | 0.125 | 0.224 | 4.00 | 3.94 | 3.55 | 126 | 126.4 |
| 27 | 27 d5-N-EtFOSAA | $589.3>419$ | 6.25 e 2 | 3.25 e 3 | 0.125 | 0.230 | 4.08 | 4.01 | 2.41 | 83.7 | 83.7 |
| 28 | 28 13C2-PFDoA | $615>569.7$ | 1.24 e 2 | 3.25 e 3 | 0.125 | 0.130 | 4.32 | 4.23 | 0.479 | 29.5 | 29.5 |
| 29 | 29 13C2-PFTeDA | $714.8>669.6$ | 3.73 e 2 | 3.25 e 3 | 0.125 | 1.018 | 4.66 | 4.57 | 1.44 | 11.3 | 11.3 |
| 30 | 30 13C4-PFBA | $217>171.8$ | 1.25 e 4 | 1.25 e 4 | 0.125 | 1.000 | 1.43 | 1.33 | 12.5 | 100 | 100.0 |
| 31 | 31 13C5-PFHxA | $318>272.9$ | 2.24 e 4 | 2.24 e 4 | 0.125 | 1.000 | 3.18 | 3.11 | 5.00 | 40.0 | 100.0 |
| 32 | $32.13 \mathrm{C} 3-\mathrm{PFHxS}$ | $401.9>79.9$ | 4.15 e 3 | 4.15 e 3 | 0.125 | 1.000 | 3.55 | 3.44 | 12.5 | 100 | 100.0 |

## Quantify Sample Summary Report

 Vista Analytical Laboratory
## Dataset: <br> U:IQ4.PRO|results|170711M11170711M1-46.qld

Last Altered: Wednesday, July 12, 2017 15:59:00 Pacific Daylight Time Printed: Wednesday, July 12, 2017 15:59:26 Pacific Daylight Time

## Name: 170711M1_46, Date: 11-Jul-2017, Time: 18:37:02, ID: B7G0014-BLK1 Method Blank 0.125, Description: Method Blank

|  | \# Name | Trace | Area | IS Area | Wt./Vol. | RRF | Pred.RT | RT | y Axis Resp. | Conc. | \%Rec |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 33 | 33 13C8-PFOA | $421.3>376$ | 1.91e4 | 1.91e4 | 0.125 | 1.000 | 3.63 | 3.57 | 12.5 | 100 | 100.0 |
| 34 | 34 13C9-PFNA | $472.2>426.9$ | 1.89 e 4 | 1.89 e 4 | 0.125 | 1.000 | 3.82 | 3.74 | 12.5 | 100 | 100.0 |
| 35 | 35 13C4-PFOS | $503>79.9$ | 2.61e3 | 2.61 e 3 | 0.125 | 1.000 | 3.86 | 3.80 | 12.5 | 100 | 100.0 |
| 36 | 36 13C6-PFDA | $519.1>473.7$ | 1.27 e 4 | 1.27 e 4 | 0.125 | 1.000 | 4.00 | 3.91 | 12.5 | 100 | 100.0 |
| 37 | 37 13C7-PFUnA | $570.1>524.8$ | 3.25 e 3 | 3.25 e 3 | 0.125 | 1.000 | 4.16 | 4.08 | 12.5 | 100 | 100.0 |
| 38 | 38 Total PFBS | $299>79.7$ | 0.00 e 0 | 2.28 e 3 | 0.125 |  | 2.92 |  | 0.000 |  |  |
| 39 | 39 Total PFHxS | $398.9>79.6$ | 0.00 e 0 | 1.68 e 3 | 0.125 |  | 3.55 |  | 0.000 |  |  |
| 40 | 40 Total PFOA | $413>368.7$ | 0.00e0 | 2.27 e 4 | 0.125 |  | 3.63 |  | 0.000 |  |  |
| 41 | 41 Total PFOS | $499>79.9$ | 0.00e0 | 2.76 e 3 | 0.125 |  | 3.86 |  | 0.000 |  |  |
| 42 | 42 Total N-Me-FOSAA | $570.1>419$ | 0.00e0 | 9.21 e 2 | 0.125 |  | 4.20 |  | 0.000 |  |  |
| 43 | 43 Total N -EtFOSAA | $584.2>419$ | 0.00 e 0 | 6.25 e 2 | 0.125 |  | 4.30 |  | 0.000 |  |  |


| Dataset: | U:\Q4.PRO\results\170711M1\170711M1-46.qld |
| :--- | :--- |
| Last Altered: | Wednesday, July 12, 2017 15:59:00 Pacific Daylight Time |
| Printed: | Wednesday, July 12, 2017 15:59:26 Pacific Daylight Time |

Method: U:\Q4.PRO\MethDB\PFAS_L14-7-5-17.mdb 10 Jul 2017 08:06:14 Calibration: U:\Q4.PRO\CurveDB\C18_VAL-PFAS_Q4_7-10-17-L14.cdb 11 Jul 2017 08:36:22
Name: 170711M1_46, Date: 11-Jul-2017, Time: 18:37:02, ID: B7G0014-BLK1 Method Blank 0.125, Description: Method Blank Total PFBS

| \# Name | Trace | RT | Area | IS Area |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 1 |  |  | Response Primary Flags |  |  |

Total PFHxS

|  | \# Name | Trace | RT | Area | IS Area | Response | Primary Flags | Conc. |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| 1 |  |  |  |  |  |  |  |  |  |
| Total PFOA |  |  |  |  |  |  |  |  |  |
|  | \# Name | Trace |  | RT | Area | IS Area | Response | Primary Flags | Conc. |
|  |  |  |  |  |  |  |  |  |  |

Total PFOS

|  | \# Name | Trace | RT | Area | IS Area |
| :---: | :---: | :---: | :---: | :---: | :---: |

## Total N-Me-FOSAA

|  | \# Name | Trace | RT | Area | IS Area | Response | Primary Flags | Conc. |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| 1 |  |  |  |  |  |  |  |  |

## Total N-EtFOSAA

| \# Name | Trace | RT | Area | IS Area | Response | Primary Flags | Conc. |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
|  |  |  |  |  |  |  |  |

## Dataset:

U:IQ4.PRO|results|170711M11170711M1-46.qld
Last Altered: Wednesday, July 12, 2017 15:59:00 Pacific Daylight Time Printed: Wednesday, July 12, 2017 15:59:26 Pacific Daylight Time

## Method: U:|Q4.PRO\MethDB\PFAS_L14-7-5-17.mdb 10 Jul 2017 08:06:14

## Calibration: U:IQ4.PRO|CurveDBIC18_VAL-PFAS_Q4_7-10-17-L14.cdb 11 Jul 2017 08:36:22

## Name: 170711M1_46, Date: 11-Jul-2017, Time: 18:37:02, ID: B7G0014-BLK1 Method Blank 0.125, Description: Method Blank

## Total PFBS

F6:MRM of 2 channels,ES-
$299>79.7$
$4.206 e+001$


13C3-PFBS



PFHpA



13C4-PFHpA



1802-PFHxS


U:IQ4.PRO|results1170711M11170711M1-46.qld

| Last Altered: | Wednesday, July 12, 2017 15:59:00 Pacific Daylight Time |
| :--- | :--- |
| Printed: | Wednesday, July 12, 2017 15:59:26 Pacific Daylight Time |

## Name: 170711M1_46, Date: 11-Jul-2017, Time: 18:37:02, ID: B7G0014-BLK1 Method Blank 0.125, Description: Method Blank

## Total PFOA




13C2-PFOA


13C5-PFNA


## Total PFOS



13C8-PFOS


## PFDA



13C2-PFUnA


## Name: 170711M1_46, Date: 11-Jul-2017, Time: 18:37:02, ID: B7G0014-BLK1 Method Blank 0.125, Description: Method Blank

## PFUnA




13C2-PFUnA

d3-N-MeFOSAA
F49:MRM of 1 channel,ES-


d5-N-EtFOSAA



13C2-PFDoA


## Dataset:

U:IQ4.PRO|results|170711M11170711M1-46.qld
Last Altered: Wednesday, July 12, 2017 15:59:00 Pacific Daylight Time Printed: Wednesday, July 12, 2017 15:59:26 Pacific Daylight Time

## Name: 170711M1_46, Date: 11-Jul-2017, Time: 18:37:02, ID: B7G0014-BLK1 Method Blank 0.125, Description: Method Blank

## PFTeDA



13C2-PFTeDA



13C2-PFTeDA
F59:MRM of 2 channels,ES-



13C8-PFOA


13C3-PFHxS


13C9-PFNA


## Quantify Sample Report

## Dataset: <br> U:IQ4.PRO|results|170711M11170711M1-46.qld

## Last Altered: Wednesday, July 12, 2017 15:59:00 Pacific Daylight Time

 Printed: Wednesday, July 12, 2017 15:59:26 Pacific Daylight Time
## Name: 170711M1_46, Date: 11-Jul-2017, Time: 18:37:02, ID: B7G0014-BLK1 Method Blank 0.125, Description: Method Blank

## 13C4-PFOS



13C6-PFDA



Quantify Sample Summary Report
MassLynx MassLynx V4.1 SCN945 SCN960

U:IQ4.PROIresults|170711M11170711M1-43.qld
Dataset:
Last Altered: Wednesday, July 12, 2017 15:56:09 Pacific Daylight Time Printed: Wednesday, July 12, 2017 15:56:14 Pacific Daylight Time
*outside method criteria

## Method: U:IQ4.PRO\MethDBIPFAS L14-7-5-17.mdb 10 Jul 2017 08:06:14

 Calibration: U:IQ4.PRO\CurveDBIC18_VAL-PFAS_Q4_7-10-17-L14.cdb 11 Jul 2017 08:36:22Name: 170711M1_43, Date: 11-Jul-2017, Time: 18:04:47, ID: B7G0014-BS1 OPR 0.125, Description: OPR

|  | \# Name | Trace | Area | IS Area | Wt./Vol. | RRF | Pred.RT | RT | y Axis Resp. | Conc. | \%Rec |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | 1 PFBS | $299>79.7$ | 7.72e3 | 4.94e3 | 0.125 |  | 2.92 | 2.87 | 19.5 | 69.0 | 86.3 |
| 2 | 2 PFHxA | $313.2>268.9$ | 4.43 e 4 | 1.63 e4 | 0.125 |  | 3.16 | 3.11 | 13.6 | 66.1 | 82.6 |
| 3 | 3 PFHpA | $363>318.9$ | 3.18 e4 | 3.48 e 4 | 0.125 |  | 3.43 | 3.38 | 11.4 | 63.4 | 79.3 |
| 4 | 4 PFHxS | $398.9>79.6$ | 5.15 e 3 | 3.61 e3 | 0.125 |  | 3.55 | 3.45 | 17.9 | 77.7 | 97.2 |
| 5 | 5 PFOA | $413>368.7$ | 3.91 e4 | 5.34 e 4 | 0.125 |  | 3.63 | 3.57 | 9.16 | 63.6 | 79.5 |
| 6 | 6 PFNA | $462.9>418.8$ | 3.66e4 | 3.78 e 4 | 0.125 |  | 3.82 | 3.75 | 12.1 | 70.7 | 88.4 |
| 7 | 7 PFOS | $499>79.9$ | 6.88 e 3 | 8.68 e 3 | 0.125 |  | 3.86 | 3.80 | 9.91 | 70.5 | 88.1 |
| 8 | 8 PFDA | $513>468.8$ | 2.96 e4 | 3.26 e 4 | 0.125 |  | 4.00 | 3.92 | 11.3 | 60.3 | 75.4 |
| 9 | 9 PFUnA | $562.9>518.9$ | 1.19 e 4 | 1.90 e 4 | 0.125 |  | 4.16 | 4.08 | 7.83 | 59.3 | 74.2 |
| 10 | 10 N-MeFOSAA | $570.1>419$ | 5.36 e 3 | 4.13 e3 | 0.125 |  | 4.00 | 3.95 | 16.2 | 69.6 | 86.9 |
| 11 | $11 \mathrm{~N}-\mathrm{EtFOSAA}$ | $584.2>419$ | 3.41 e 3 | 3.30 e 3 | 0.125 |  | 4.08 | 4.01 | 12.9 | 76.0 | 95.0 |
| 12 | 12 PFDoA | $612.9>318.8$ | 4.43 e 2 | 4.77 e 2 | 0.125 |  | 4.32 | 4.25 | 11.6 | 92.7 | 115.8 |
| 13 | 13 PFTrDA | $662.9>618.9$ | 1.69 e 3 | 4.77 e 2 | 0.125 |  | 4.50 | 4.40 | 44.2 | 26.2 | 32.8 |
| 14 | 14 PFTeDA | $712.9>668.8$ | 9.39 e 2 | 1.07e3 | 0.125 |  | 4.66 | 4.57 | 11.0 | 69.4 | 86.8 |
| 15 | 15 13C3-PFBA | $216.1>171.8$ | 2.60 e 4 | 2.76 e 4 | 0.125 | 0.918 | 1.43 | 1.33 | 11.8 | 103 | 102.7 |
| 16 | 16 13C3-PFPeA | $266>221.8$ | 3.87e4 | 2.76 e 4 | 0.125 | 1.784 | 2.72 | 2.63 | 17.5 | 78.5 | 78.5 |
| 17 | 17 13C3-PFBS | $302>98.8$ | 4.94 e 3 | 2.76 e 4 | 0.125 | 0.215 | 2.92 | 2.86 | 2.23 | 83.0 | 83.0 |
| 18 | 18 13C2-PFHXA | $315>269.8$ | 1.63 e 4 | 4.87 e 4 | 0.125 | 0.304 | 3.16 | 3.11 | 1.67 | 44.0 | 110.1 |
| 19 | 19 13C4-PFHpA | 367.2 > 321.8 | 3.48 e 4 | 4.87 e 4 | 0.125 | 0.306 | 3.43 | 3.37 | 3.58 | 93.5 | 93.5 |
| 20 | 20 1802-PFHxS | $403>102.6$ | 3.61 e 3 | 8.06 e 3 | 0.125 | 0.437 | 3.55 | 3.45 | 5.60 | 102 | 102.4 |
| 21 | 21 13C2-PFOA | $414.9>369.7$ | 5.34 e 4 | 4.19 e 4 | 0.125 | 1.292 | 3.63 | 3.57 | 16.0 | 98.8 | 98.8 |
| 22 | 22 13C5-PFNA | $468.2>422.9$ | 3.78e4 | 4.27 e 4 | 0.125 | 0.980 | 3.82 | 3.75 | 11.1 | 90.2 | 90.2 |
| 23 | 23 13C8-PFOS | $507>79.9$ | 8.68e3 | 7.65 e 3 | 0.125 | 1.098 | 3.86 | 3.80 | 14.2 | 103 | 103.4 |
| 24 | 24 13C2-PFDA | $515.1>469.9$ | 3.26 e 4 | 4.38 e 4 | 0.125 | 0.928 | 4.00 | 3.91 | 9.31 | 80.3 | 80.3 |
| 25 | 25 13C2-PFUnA | $565>519.8$ | 1.90 e4 | 2.40 e 4 | 0.125 | 1.083 | 4.16 | 4.08 | 9.89 | 73.1 | 73.1 |
| 26 | 26 d3-N-MeFOSAA | $573.3>419$ | 4.13 e 3 | 2.40 e 4 | 0.125 | 0.224 | 4.00 | 3.94 | 2.15 | 76.6 | 76.6 |
| 27 | 27 d5-N-EtFOSAA | $589.3>419$ | 3.30e3 | 2.40 e 4 | 0.125 | 0.230 | 4.08 | 4.01 | 1.72 | 59.8 | 59.8 |
| 28 | 28 13C2-PFDoA | $615>569.7$ | 4.77e2 | 2.40 e 4 | 0.125 | 0.130 | 4.32 | 4.24 | 0.248 | 15.3 | 15.3 |
| 29 | 29 13C2-PFTeDA | $714.8>669.6$ | 1.07e3 | 2.40 e 4 | 0.125 | 1.018 | 4.66 | 4.57 | 0.556 | 4.37 | 4.4 |
| 30 | 30 13C4-PFBA | $217>171.8$ | 2.76 e 4 | 2.76 e 4 | 0.125 | 1.000 | 1.43 | 1.33 | 12.5 | 100 | 100.0 |
| 31 | 31 13C5-PFHxA | $318>272.9$ | 4.87e4 | 4.87 e 4 | 0.125 | 1.000 | 3.18 | 3.11 | 5.00 | 40.0 | 100.0 |
| 32 | $32.13 \mathrm{C} 3-\mathrm{PFHxS}$ | $401.9>79.9$ | 8.06e3 | 8.06 e 3 | 0.125 . | 1.000 | 3.55 | 3.45 | 12.5 | 100 | 100.0 |

## Quantify Sample Summary Report

MassLynx MassLynx V4.1 SCN945 SCN960
Dataset:
U:IQ4.PROIresults|170711M11170711M1-43.qld
Last Altered: Wednesday, July 12, 2017 15:56:09 Pacific Daylight Time Printed: Wednesday, July 12, 2017 15:56:14 Pacific Daylight Time

## Name: 170711M1_43, Date: 11-Jul-2017, Time: 18:04:47, ID: B7G0014-BS1 OPR 0.125, Description: OPR

|  | \# Name | Trace | Area | IS Area | Wt./Vol. | RRF | Pred.RT | RT | y Axis Resp. | Conc. | \%Rec |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 33 | 33 13C8-PFOA | $421.3>376$ | 4.19 e 4 | 4.19 e 4 | 0.125 | 1.000 | 3.63 | 3.57 | 12.5 | 100 | 100.0 |
| 34 | 34 13C9-PFNA | $472.2>426.9$ | 4.27e4 | 4.27 e 4 | 0.125 | 1.000 | 3.82 | 3.75 | 12.5 | 100 | 100.0 |
| 35 | 35 13C4-PFOS | $503>79.9$ | 7.65 e 3 | 7.65 e 3 | 0.125 | 1.000 | 3.86 | 3.80 | 12.5 | 100 | 100.0 |
| 36 | 36 13C6-PFDA | $519.1>473.7$ | 4.38 e 4 | 4.38 e 4 | 0.125 | 1.000 | 4.00 | 3.91 | 12.5 | 100 | 100.0 |
| 37 | 37 13C7-PFUnA | $570.1>524.8$ | 2.40 e 4 | 2.40 e 4 | 0.125 | 1.000 | 4.16 | 4.08 | 12.5 | 100 | 100.0 |
| 38 | 38 Total PFBS | $299>79.7$ | 7.72 e 3 | 4.94 e 3 | 0.125 |  | 2.92 |  | 19.5 | 69.0 |  |
| 39 | 39 Total PFHxS | $398.9>79.6$ | 5.15 e 3 | 3.61e3 | 0.125 |  | 3.55 |  | 17.9 | 77.7 |  |
| 40 | 40 Total PFOA | $413>368.7$ | 3.91 e 4 | 5.34 e 4 | 0.125 |  | 3.63 |  | 9.16 | 63.6 |  |
| 41 | 41 Total PFOS | $499>79.9$ | 6.88 e 3 | 8.68 e 3 | 0.125 |  | 3.86 |  | 9.91 | 70.5 |  |
| 42 | 42 Total N-Me-FOSAA | $570.1>419$ | 5.36 e 3 | 4.13 e 3 | 0.125 |  | 4.20 |  | 16.2 | 69.6 |  |
| 43 | 43 Total N-EtFOSAA | $584.2>419$ | 3.41 e 3 | 3.30 e 3 | 0.125 |  | 4.30 |  | 12.9 | 76.0 |  |

## Quantify Totals Report MassLynx MassLynx V4.1 SCN945 SCN960

## Dataset: <br> U:IQ4.PRO|results1170711M11170711M1-43.qld

Last Altered: Wednesday, July 12, 2017 15:56:09 Pacific Daylight Time Printed: Wednesday, July 12, 2017 15:56:14 Pacific Daylight Time

## Method: U:\Q4.PRO\MethDB\PFAS_L14-7-5-17.mdb 10 Jul 2017 08:06:14

## Calibration: U:\Q4.PRO\CurveDBIC18_VAL-PFAS Q4_7-10-17-L14.cdb 11 Jul 2017 08:36:22

Name: 170711M1_43, Date: 11-Jul-2017, Time: 18:04:47, ID: B7G0014-BS1 OPR 0.125, Description: OPR

## Total PFBS

|  | \# Name | Trace | RT | Area | IS Area | Response | Primary Flags | Conc. |
| :--- | :--- | :--- | :--- | ---: | ---: | ---: | ---: | ---: |
| 1 | 1 PFBS | $299>79.7$ | 2.87 | 7719.271 | 4936.843 | 19.545 | bb | 69.0 |

## Total PFHxS

|  | \# Name | Trace | RT | Area | IS Area | Response | Primary Flags | Conc. |
| :--- | :--- | :--- | :--- | ---: | ---: | ---: | ---: | ---: |
| 1 | 4 PFHxS | $398.9>79.6$ | 3.45 | 5154.535 | 3605.924 | 17.868 | $M M$ | 77.7 |

## Total PFOA

|  | \# Name | Trace |  |  |  |  | RT | Area |
| :--- | :--- | :--- | :--- | ---: | ---: | ---: | ---: | ---: |
| 1 | 5 PFOA | $413>368.7$ | 3.57 | 39144.082 | 53438.535 | Area | Response | Primary Flags |

## Total PFOS

|  | \# Name | Trace | RT | Area | IS Area | Response | Primary Flags | Conc. |
| :--- | :--- | :--- | ---: | ---: | ---: | ---: | ---: | ---: |
| 1 | 7 PFOS | $499>79.9$ | 3.80 | 6882.703 | 8684.487 | 9.907 | $M M$ | 70.5 |

## Total N-Me-FOSAA

|  | \# Name | Trace | RT | Area | IS Area | Response | Primary Flags | Conc. |
| :--- | :--- | :--- | :--- | ---: | ---: | ---: | ---: | ---: |
| 1 | $10 ~ N-M e F O S A A ~$ | $570.1>419$ | 3.95 | 5360.221 | 4131.076 | 16.219 | bb | 69.6 |

## Total N-EtFOSAA

|  | \# Name | Trace | RT | Area | IS Area | Response | Primary Flags | Conc. |
| :--- | :--- | ---: | ---: | ---: | ---: | ---: | ---: | ---: |
| 1 | 11 N-EtFOSAA | $584.2>419$ | 4.01 | 3411.907 | 3300.977 | 12.920 | bb | 76.0 |

## Dataset: <br> U:IQ4.PRO|results|170711M11170711M1-43.qld

Last Altered: Wednesday, July 12, 2017 15:56:09 Pacific Daylight Time Printed: Wednesday, July 12, 2017 15:56:14 Pacific Daylight Time

## Method: U:|Q4.PRO\MethDB\PFAS_L14-7-5-17.mdb 10 Jul 2017 08:06:14

## Calibration: U:IQ4.PRO|CurveDBIC18_VAL-PFAS_Q4_7-10-17-L14.cdb 11 Jul 2017 08:36:22

## Name: 170711M1_43, Date: 11-Jul-2017, Time: 18:04:47, ID: B7G0014-BS1 OPR 0.125, Description: OPR




13C3-PFBS



13C2-PFHxA


## PFHpA




13C4-PFHpA


## Total PFHxS



1802-PFHxS


## Dataset: <br> U:IQ4.PRO|results|170711M11170711M1-43.qld

| Last Altered: | Wednesday, July 12, 2017 15:56:09 Pacific Daylight Time |
| :--- | :--- |
| Printed: | Wednesday, July 12, 2017 15:56:14 Pacific Daylight Time |

## Name: 170711M1_43, Date: 11-Jul-2017, Time: 18:04:47, ID: B7G0014-BS1 OPR 0.125, Description: OPR

\section*{Total PFOA <br> | 100 | F19:MRM of 2 channels,ES |  |
| :---: | :---: | :---: |
|  |  |  |
|  | PFOA | $9.009 \mathrm{e}+005$ |
|  | 3.57 |  |
|  | 3.91 e4 |  |
| \%- | 897942 bb |  |
|  | bb 3255.52 |  |



## 13C2-PFOA




13C5-PFNA


## Total PFOS




13C8-PFOS


## PFDA



13C2-PFUnA


## Dataset: <br> U:IQ4.PRO|results|170711M11170711M1-43.qld

Last Altered: Wednesday, July 12, 2017 15:56:09 Pacific Daylight Time Printed: Wednesday, July 12, 2017 15:56:14 Pacific Daylight Time

## Name: 170711M1_43, Date: 11-Jul-2017, Time: 18:04:47, ID: B7G0014-BS1 OPR 0.125, Description: OPR

## PFUnA


F43:MRM of 2 channels,ES-
$562.9>269$
$6.926 \mathrm{e}+004$
PFUnA
4.08
3.34 e 3
69024
bb
2948.16

13C2-PFUnA

## N-MeFOSAA


d3-N-MeFOSAA
F49:MRM of 1 channel,ES-


d5-N-EtFOSAA


## PFDoA



13C2-PFDoA


## Dataset:

U:IQ4.PRO|results|170711M11170711M1-43.qld

| Last Altered: | Wednesday, July 12, 2017 15:56:09 Pacific Daylight Time |
| :--- | :--- |
| Printed: | Wednesday, July 12, 2017 15:56:14 Pacific Daylight Time |

## Name: 170711M1_43, Date: 11-Jul-2017, Time: 18:04:47, ID: B7G0014-BS1 OPR 0.125, Description: OPR

## PFTeDA




## 13C2-PFTeDA




13C2-PFTeDA



13C8-PFOA


13C3-PFHxS


13C9-PFNA


## Quantify Sample Report

## Dataset: U:IQ4.PROTresults\170711M1\170711M1-43.qld

Last Altered: Wednesday, July 12, 2017 15:56:09 Pacific Daylight Time Printed: Wednesday, July 12, 2017 15:56:14 Pacific Daylight Time

## Name: 170711M1_43, Date: 11-Jul-2017, Time: 18:04:47, ID: B7G0014-BS1 OPR 0.125, Description: OPR

## 13C4-PFOS





## Quantify Sample Summary Report

 Vista Analytical LaboratoryDataset: U:IQ4.PRO\results\170713M11170713M1-8.qld
Last Altered: Wednesday, July 19, 2017 10:18:47 Pacific Daylight Time Printed: Wednesday, July 19, 2017 10:19:08 Pacific Daylight Time

## Method: U:IQ4.PRO\MethDB\PFAS L14-7-13-17.mdb 14 Jul 2017 08:41:09

 Calibration: U:\Q4.PRO\CurveDB\C18_VAL-PFAS_Q4_7-10-17-L14A.cdb 14 Jul 2017 08:57:46Name: 170713M1_8, Date: 13-Jul-2017, Time: 17:22:39, ID: B7G0054-BLK1 Method Blank 0.125, Description: Method Blank

|  | \# Name | Trace | Area | IS Area | Wt./Vol. | RRF | Pred.RT | RT | y Axis Resp. | Conc. | \%Rec |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | 1 PFBS | $299>79.7$ |  | 3.32e3 | 0.125 |  | 2.92 |  |  |  |  |
| 2 | 2 PFHxA | $313.2>268.9$ |  | 1.04 e 4 | 0.125 |  | 3.16 |  |  |  |  |
| 3 | 3 PFHpA | $363>318.9$ |  | 2.29 e 4 | 0.125 |  | 3.43 |  |  |  |  |
| 4 | 4 PFHxS | $398.9>79.6$ | 1.23 e 0 | 2.54 e 3 | 0.125 |  | 3.55 | 3.45 | 0.00604 | 0.430 |  |
| 5 | 5 PFOA | $413>368.7$ |  | 3.09 e 4 | 0.125 |  | 3.63 |  |  |  |  |
| 6 | 6 PFNA | $462.9>418.8$ |  | 1.75 e 4 | 0.125 |  | 3.82 |  |  |  |  |
| 7 | 7 PFOS | $499>79.9$ |  | 3.05 e 3 | 0.125 |  | 3.86 |  |  |  |  |
| 8 | 8 PFDA | $513>468.8$ |  | 6.88 e 3 | 0.125 |  | 4.00 |  |  |  |  |
| 9 | 9 PFUnA | $562.9>518.9$ |  | 1.76 e 3 | 0.125 |  | 4.16 |  |  |  |  |
| 10 | $10 \mathrm{~N}-\mathrm{MeFOSAA}$ | $570.1>419$ |  | 6.00 e 2 | 0.125 |  | 4.00 |  |  |  |  |
| 11 | $11 \mathrm{~N}-\mathrm{EtFOSAA}$ | $584.2>419$ |  | 4.47 e 2 | 0.125 |  | 4.08 |  |  |  |  |
| 12 | 12 PFDoA | $612.9>318.8$ |  | 4.80 e 1 | 0.125 |  | 4.32 |  |  |  |  |
| 13 | 13 PFTrDA | $662.9>618.9$ |  | 4.80 e 1 | 0.125 |  | 4.50 |  |  |  |  |
| 14 | 14 PFTeDA | $712.9>668.8$ |  | 1.07 e 3 | 0.125 |  | 4.66 |  |  |  |  |
| 15 | 15 13C3-PFBA | $216.1>171.8$ | 1.24 e 3 | 1.62 e 3 | 0.125 | 0.918 | 1.43 | 1.38 | 9.55 | 83.3 | 83.3 |
| 16 | 16 13C3-PFPeA | $266>221.8$ | 2.91 e 4 | 4.07 e 4 | 0.125 | 0.275 | 2.72 | 2.66 | 3.58 | 104 | 104.1 |
| 17 | 17 13C3-PFBS | $302>98.8$ | 3.32 e 3 | 4.07 e 4 | 0.125 | 0.033 | 2.92 | 2.88 | 0.408 | 98.4 | 98.4 |
| 18 | 18 13C2-PFHxA | $315>269.8$ | 1.04 e 4 | 4.07 e 4 | 0.125 | 0.304 | 3.16 | 3.12 | 1.28 | 33.6 | 84.1 |
| 19 | 19 13C4-PFHpA | $367.2>321.8$ | 2.29 e 4 | 4.07 e 4 | 0.125 | 0.306 | 3.43 | 3.38 | 2.82 | 73.6 | 73.6 |
| 20 | 20 18O2-PFHxS | $403>102.6$ | 2.54 e 3 | 5.99 e 3 | 0.125 | 0.437 | 3.55 | 3.45 | 5.31 | 97.1 | 97.1 |
| 21 | 21 13C2-PFOA | $414.9>369.7$ | 3.09 e 4 | 2.95 e 4 | 0.125 | 1.292 | 3.63 | 3.58 | 13.1 | 81.0 | 81.0 |
| 22 | 22 13C5-PFNA | $468.2>422.9$ | 1.75 e 4 | 2.26 e 4 | 0.125 | 0.980 | 3.82 | 3.76 | 9.68 | 79.0 | 79.0 |
| 23 | 23 13C8-PFOS | $507>79.9$ | 3.05e3 | 3.74 e 3 | 0.125 | 1.098 | 3.86 | 3.81 | 10.2 | 74.3 | 74.3 |
| 24 | 24 13C2-PFDA | $515.1>469.9$ | 6.88e3 | 1.00 e 4 | 0.125 | 0.928 | 4.00 | 3.93 | 8.58 | 73.9 | 73.9 |
| 25 | 25 13C2-PFUnA | $565>519.8$ | 1.76 e 3 | 2.64 e 3 | 0.125 | 1.083 | 4.16 | 4.09 | 8.33 | 61.5 | 61.5 |
| 26 | 26 d3-N-MeFOSAA | $573.3>419$ | 6.00 e 2 | 2.64 e 3 | 0.125 | 0.224 | 4.00 | 3.95 | 2.84 | 101 | 101.4 |
| 27 | 27 d5-N-EtFOSAA | $589.3>419$ | 4.47 e 2 | 2.64 e 3 | 0.125 | 0.230 | 4.08 | 4.02 | 2.12 | 73.7 | 73.7 |
| 28 | 28 13C2-PFDoA | $615>569.7$ | 4.80 e 1 | 2.64 e 3 | 0.125 | 0.130 | 4.32 | 4.24 | 0.228 | 14.0 | 14.0 |
| 29 | 29 13C2-PFTeDA | $714.8>669.6$ | 1.07 e 3 | 2.64 e 3 | 0.125 | 1.018 | 4.66 | 4.57 | 5.06 | 39.8 | 39.8 |
| 30 | 30 13C4-PFBA | $217>171.8$ | 1.62 e 3 | 1.62 e 3 | 0.125 | 1.000 | 1.43 | 1.38 | 12.5 | 100 | 100.0 |
| 31 | 31 13C5-PFHxA | $318>272.9$ | 4.07 e 4 | 4.07 e 4 | 0.125 | 1.000 | 3.18 | 3.12 | 5.00 | 40.0 | 100.0 |
| 32 | 32 13C3-PFHxS | $401.9>79.9$ | 5.99 e 3 | 5.99 e 3 | 0.125 | 1.000 | 3.55 | 3.45 | 12.5 | 100 | 100.0 |

## Quantify Sample Summary Report

 Vista Analytical Laboratory
## Dataset: <br> U:IQ4.PRO\results\170713M1\170713M1-8.qld

Last Altered: Wednesday, July 19, 2017 10:18:47 Pacific Daylight Time Printed: Wednesday, July 19, 2017 10:19:08 Pacific Daylight Time

## Name: 170713M1_8, Date: 13-Jul-2017, Time: 17:22:39, ID: B7G0054-BLK1 Method Blank 0.125, Description: Method Blank

|  | \# Name | Trace | Area | IS Area | Wt./Vol. | RRF | Pred.RT | RT | y Axis Resp. | Conc. | \%Rec |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 33 | 33 13C8-PFOA | $421.3>376$ | 2.95e4 | 2.95 e 4 | 0.125 | 1.000 | 3.63 | 3.58 | 12.5 | 100 | 100.0 |
| 34 | 34 13C9-PFNA | 472.2 > 426.9 | 2.26 e 4 | $2.26 e 4$ | 0.125 | 1.000 | 3.82 | 3.76 | 12.5 | 100 | 100.0 |
| 35 | 35 13C4-PFOS | $503>79.9$ | 3.74 e 3 | 3.74 e3 | 0.125 | 1.000 | 3.86 | 3.81 | 12.5 | 100 | 100.0 |
| 36 | 36 13C6-PFDA | $519.1>473.7$ | 1.00 e 4 | 1.00 e 4 | 0.125 | 1.000 | 4.00 | 3.92 | 12.5 | 100 | 100.0 |
| 37 | 37 13C7-PFUnA | $570.1>524.8$ | 2.64 e 3 | 2.64 e3 | 0.125 | 1.000 | 4.16 | 4.08 | 12.5 | 100 | 100.0 |
| 38 | 38 Total PFBS | $299>79.7$ | 0.00e0 | 3.32 e 3 | 0.125 |  | 2.92 |  | 0.000 |  |  |
| 39 | 39 Total PFHxS | $398.9>79.6$ | 1.23 e 0 | 2.54 e 3 | 0.125 |  | 3.55 |  | 0.00604 | 0.430 |  |
| 40 | 40 Total PFOA | $413>368.7$ | 0.00e0 | 3.09 e 4 | 0.125 |  | 3.63 |  | 0.000 |  |  |
| 41 | 41 Total PFOS | $499>79.9$ | 0.00e0 | 3.05 e 3 | 0.125 |  | 3.86 |  | 0.000 |  |  |
| 42 | 42 Total N-Me-FOSAA | $570.1>419$ | 0.00e0 | 6.00 e 2 | 0.125 |  | 4.20 |  | 0.000 |  |  |
| 43 | 43 Total N-EtFOSAA | $584.2>419$ | 0.00e0 | 4.47 e 2 | 0.125 |  | 4.30 |  | 0.000 |  |  |

## Quantify Totals Report MassLynx MassLynx V4.1 SCN945 SCN960

| Dataset: | U:IQ4.PRO\results\170713M11170713M1-8.qld |
| :--- | :--- |
| Last Altered: | Wednesday, July 19, 2017 10:18:47 Pacific Daylight Time |
| Printed: | Wednesday, July 19, 2017 10:19:08 Pacific Daylight Time |

Method: U:|Q4.PRO\MethDB\PFAS_L14-7-13-17.mdb 14 Jul 2017 08:41:09 Calibration: U:\Q4.PRO\CurveDBIC18_VAL-PFAS_Q4_7-10-17-L14A.cdb 14 Jul 2017 08:57:46

Name: 170713M1_8, Date: 13-Jul-2017, Time: 17:22:39, ID: B7G0054-BLK1 Method Blank 0.125, Description: Method Blank

## Total PFBS

|  | \# Name | Trace | RT | Area | IS Area | Response | Primary Flags | Conc. |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| 1 |  |  |  |  |  |  |  |  |

Total PFHxS

|  | \# Name | Trace | RT | Area | IS Area | Response | Primary Flags | Conc. |
| :--- | :--- | :--- | ---: | ---: | ---: | ---: | ---: | ---: |
| 1 | 4 PFHxS | $398.9>79.6$ | 3.45 | 1.230 | 2544.475 | 0.006 | MM | 0.4 |

## Total PFOA

|  | \# Name | Trace | RT | Area | IS Area | Response |
| :--- | :--- | ---: | ---: | ---: | ---: | ---: |

## Total PFOS

|  | \# Name | Trace | RT | Area | IS Area |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 1 |  |  | Response Primary Flags |  |  |

## Total N-Me-FOSAA

|  | \# Name | Trace | RT | Area | IS Area |
| :---: | :---: | :---: | :---: | :---: | :---: |

## Total N-EtFOSAA

| \# Name | Trace | RT | Area | IS Area | Response | Primary Flags | Conc. |
| :---: | :--- | :--- | :---: | :---: | :---: | :---: | :---: |
| 11 N-EtFOSAA | $584.2>419$ |  | 446.556 |  | MM-I |  |  |

## Dataset: U:IQ4.PRO|results1170713M11170713M1-8.qld

Last Altered: Wednesday, July 19, 2017 10:18:47 Pacific Daylight Time
Printed: Wednesday, July 19, 2017 10:19:08 Pacific Daylight Time

## Method: U:IQ4.PRO\MethDB\PFAS_L14-7-13-17.mdb 14 Jul 2017 08:41:09

## Calibration: U:\Q4.PRO\CurveDBIC18_VAL-PFAS_Q4_7-10-17-L14A.cdb 14 Jul 2017 08:57:46

## Name: 170713M1_8, Date: 13-Jul-2017, Time: 17:22:39, ID: B7G0054-BLK1 Method Blank 0.125, Description: Method Blank

## Total PFBS

F6:MRM of 2 channels,ES- | $299>79.7$ |
| ---: |
| $1.293 \mathrm{e}+002$ |



13C3-PFBS


PFHpA


13C4-PFHpA




1802-PFHxS


## Dataset:

U:\Q4.PRO\results|170713M1\170713M1-8.qld
Last Altered: Wednesday, July 19, 2017 10:18:47 Pacific Daylight Time Printed: Wednesday, July 19, 2017 10:19:08 Pacific Daylight Time

## Name: 170713M1_8, Date: 13-Jul-2017, Time: 17:22:39, ID: B7G0054-BLK1 Method Blank 0.125, Description: Method Blank

## Total PFOA






13C5-PFNA
13C5-PFNA F26:MRM of 1 channel,ES-


## Total PFOS



13C8-PFOS



13C2-PFUnA


## Dataset:

U:\Q4.PRO|results\170713M1\170713M1-8.qld
Last Altered: Wednesday, July 19, 2017 10:18:47 Pacific Daylight Time Printed: Wednesday, July 19, 2017 10:19:08 Pacific Daylight Time

## Name: 170713M1_8, Date: 13-Jul-2017, Time: 17:22:39, ID: B7G0054-BLK1 Method Blank 0.125, Description: Method Blank

## PFUnA




13C2-PFUnA

d3-N-MeFOSAA
F49:MRM of 1 channel,ES-


## N-EtFOSAA


d5-N-EtFOSAA


13C2-PFDoA


## Dataset:

U:\Q4.PRO|results\170713M1\170713M1-8.qld
Last Altered: Wednesday, July 19, 2017 10:18:47 Pacific Daylight Time Printed: Wednesday, July 19, 2017 10:19:08 Pacific Daylight Time

## Name: 170713M1_8, Date: 13-Jul-2017, Time: 17:22:39, ID: B7G0054-BLK1 Method Blank 0.125, Description: Method Blank

## PFTeDA



F58:MRM of 4 channels,ES-


13C2-PFTeDA



13C2-PFTeDA



13C8-PFOA


13C3-PFHxS


13C9-PFNA


## Quantify Sample Report

## Dataset: <br> U:\Q4.PRO|results\170713M1\170713M1-8.qld

Last Altered: Wednesday, July 19, 2017 10:18:47 Pacific Daylight Time Printed: Wednesday, July 19, 2017 10:19:08 Pacific Daylight Time

## Name: 170713M1_8, Date: 13-Jul-2017, Time: 17:22:39, ID: B7G0054-BLK1 Method Blank 0.125, Description: Method Blank

## 13C4-PFOS



13C6-PFDA



## Dataset: U:IQ4.PRO|results1170713M11170713M1-5.qld

Last Altered: Wednesday, July 19, 2017 10:02:43 Pacific Daylight Time Printed: Wednesday, July 19, 2017 10:03:07 Pacific Daylight Time

## Method: U:IQ4.PRO\MethDB\PFAS L14-7-13-17.mdb 14 Jul 2017 08:41:09

 Calibration: U:|Q4.PRO\CurveDBIC18_VAL-PFAS_Q4_7-10-17-L14A.cdb 14 Jul 2017 08:57:46Name: 170713M1_5, Date: 13-Jul-2017, Time: 16:49:10, ID: B7G0054-BS1 OPR 0.125, Description: OPR

|  | \# Name | Trace | Area | IS Area | Wt./Vol. | RRF | Pred.RT | RT | y Axis Resp. | Conc. | \%Rec |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | 1 PFBS | $299>79.7$ | 6.06 e 3 | 3.79 e 3 | 0.125 |  | 2.92 | 2.87 | 20.0 | 70.7 | 88.4 |
| 2 | 2 PFHxA | 313.2 > 268.9 | 3.73 e 4 | 1.24 e 4 | 0.125 |  | 3.16 | 3.11 | 15.0 | 73.2 | 91.5 |
| 3 | 3 PFHpA | $363>318.9$ | 2.61 e4 | 2.64 e 4 | 0.125 |  | 3.43 | 3.37 | 12.4 | 68.8 | 85.9 |
| 4 | 4 PFHxS | $398.9>79.6$ | 4.10 e 3 | 2.89 e 3 | 0.125 |  | 3.55 | 3.45 | 17.7 | 77.0 | 96.2 |
| 5 | 5 PFOA | $413>368.7$ | 2.42 e 4 | 2.93 e 4 | 0.125 |  | 3.63 | 3.57 | 10.3 | 72.0 | 90.0 |
| 6 | 6 PFNA | $462.9>418.8$ | 1.38 e 4 | 1.62 e 4 | 0.125 |  | 3.82 | 3.75 | 10.6 | 61.7 | 77.2 |
| 7 | 7 PFOS | $499>79.9$ | 1.95 e 3 | 2.29 e 3 | 0.125 |  | 3.86 | 3.80 | 10.7 | 75.8 | 94.7 |
| 8 | 8 PFDA | $513>468.8$ | 4.68 e 3 | 4.18 e 3 | 0.125 |  | 4.00 | 3.92 | 14.0 | 74.4 | 93.0 |
| 9 | 9 PFUnA | $562.9>518.9$ | 1.03 e 3 | 1.37 e 3 | 0.125 |  | 4.16 | 4.08 | 9.42 | 71.6 | 89.5 |
| 10 | 10 N-MeFOSAA | $570.1>419$ | 4.54 e 2 | 3.73 e 2 | 0.125 |  | 4.00 | 3.95 | 15.2 | 65.3 | 81.6 |
| 11 | $11 \mathrm{~N}-\mathrm{EtFOS} A \mathrm{~A}$ | $584.2>419$ | 2.77 e 2 | 1.98 e 2 | 0.125 |  | 4.08 | 4.02 | 17.5 | 102 | 127.8 |
| 12 | 12 PFDoA | $612.9>318.8$ | 1.34 e 2 | 8.53 e 1 | 0.125 |  | 4.32 | 4.24 | 19.6 | 173 | 215.8 |
| 13 | 13 PFTrDA | $662.9>618.9$ | 2.03 e 3 | 8.53 e 1 | 0.125 |  | 4.50 | 4.40 | 298 | 178 | 222.3 |
| 14 | 14 PFTeDA | $712.9>668.8$ | 3.84e3 | 4.26 e 3 | 0.125 |  | 4.66 | 4.56 | 11.3 | 71.4 | 89.2 |
| 15 | 15 13C3-PFBA | $216.1>171.8$ | 1.54 e 3 | 1.90 e3 | 0.125 | 0.918 | 1.43 | 1.36 | 10.1 | 88.2 | 88.2 |
| 16 | 16 13C3-PFPeA | $266>221.8$ | 3.31 e 4 | 4.67 e 4 | 0.125 | 0.275 | 2.72 | 2.64 | 3.54 | 103 | 103.2 |
| 17 | 17 13C3-PFBS | $302>98.8$ | 3.79 e 3 | 4.67 e 4 | 0.125 | 0.033 | 2.92 | 2.88 | 0.406 | 97.9 | 97.9 |
| 18 | 18 13C2-PFHxA | $315>269.8$ | 1.24 e 4 | 4.67 e 4 | 0.125 | 0.304 | 3.16 | 3.11 | 1.33 | 35.0 | 87.4 |
| 19 | 19 13C4-PFHpA | 367.2 > 321.8 | 2.64 e 4 | 4.67 e 4 | 0.125 | 0.306 | 3.43 | 3.37 | 2.83 | 73.9 | 73.9 |
| 20 | 20 1802-PFHxS | $403>102.6$ | 2.89 e 3 | 7.54e3 | 0.125 | 0.437 | 3.55 | 3.45 | 4.80 | 87.8 | 87.8 |
| 21 | 21 13C2-PFOA | $414.9>369.7$ | 2.93 e 4 | 3.08 e 4 | 0.125 | 1.292 | 3.63 | 3.57 | 11.9 | 73.5 | 73.5 |
| 22 | 22 13C5-PFNA | $468.2>422.9$ | 1.62 e 4 | 2.18 e 4 | 0.125 | 0.980 | 3.82 | 3.75 | 9.29 | 75.8 | 75.8 |
| 23 | 23 13C8-PFOS | $507>79.9$ | 2.29 e 3 | 2.40 e 3 | 0.125 | 1.098 | 3.86 | 3.80 | 11.9 | 86.6 | 86.6 |
| 24 | 24 13C2-PFDA | $515.1>469.9$ | 4.18 e 3 | 5.67 e 3 | 0.125 | 0.928 | 4.00 | 3.92 | 9.23 | 79.6 | 79.6 |
| 25 | 25 13C2-PFUnA | $565>519.8$ | 1.37 e 3 | 1.98 e 3 | 0.125 | 1.083 | 4.16 | 4.08 | 8.69 | 64.2 | 64.2 |
| 26 | 26 d3-N-MeFOSAA | $573.3>419$ | 3.73 e 2 | 1.98 e 3 | 0.125 | 0.224 | 4.00 | 3.95 | 2.36 | 84.2 | 84.2 |
| 27 | 27 d5-N-EtFOSAA | $589.3>419$ | 1.98 e 2 | 1.98 e 3 | 0.125 | 0.230 | 4.08 | 4.01 | 1.25 | 43.6 | 43.6 |
| 28 | 28 13C2-PFDoA | $615>569.7$ | 8.53 e 1 | 1.98 e 3 | 0.125 | 0.130 | 4.32 | 4.23 | 0.540 | 33.3 | 33.3 |
| 29 | 29 13C2-PFTeDA | $714.8>669.6$ | 4.26 e 3 | 1.98 e 3 | 0.125 | 1.018 | 4.66 | 4.56 | 26.9 | 212 | 211.7 |
| 30 | 30 13C4-PFBA | $217>171.8$ | 1.90 e 3 | 1.90 e3 | 0.125 | 1.000 | 1.43 | 1.36 | 12.5 | 100 | 100.0 |
| 31 | 31 13C5-PFHxA | $318>272.9$ | 4.67e4 | 4.67 e 4 | 0.125 | 1.000 | 3.18 | 3.11 | 5.00 | 40.0 | 100.0 |
| 32 | $32.13 \mathrm{C} 3-\mathrm{PFHxS}$ | $401.9>79.9$ | 7.54 e 3 | 7.54e3 | 0.125 | 1.000 | 3.55 | 3.44 | 12.5 | 100 | 100.0 |

## Quantify Sample Summary Report

 Vista Analytical Laboratory
## Dataset: <br> U:IQ4.PRO\results\170713M1\170713M1-5.qld

Last Altered: Wednesday, July 19, 2017 10:02:43 Pacific Daylight Time Printed: Wednesday, July 19, 2017 10:03:07 Pacific Daylight Time

## Name: 170713M1_5, Date: 13-Jul-2017, Time: 16:49:10, ID: B7G0054-BS1 OPR 0.125, Description: OPR

|  | \# Name | Trace | Area | IS Area | Wt./Vol. | RRF | Pred.RT | RT | y Axis Resp. | Conc. | \%Rec |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 33 | 33 13C8-PFOA | $421.3>376$ | 3.08 e 4 | 3.08 e 4 | 0.125 | 1.000 | 3.63 | 3.57 | 12.5 | 100 | 100.0 |
| 34 | 34 13C9-PFNA | $472.2>426.9$ | 2.18 e 4 | 2.18 e 4 | 0.125 | 1.000 | 3.82 | 3.75 | 12.5 | 100 | 100.0 |
| 35 | 35 13C4-PFOS | $503>79.9$ | 2.40 e 3 | 2.40 e 3 | 0.125 | 1.000 | 3.86 | 3.80 | 12.5 | 100 | 100.0 |
| 36 | 36 13C6-PFDA | $519.1>473.7$ | 5.67 e 3 | 5.67 e 3 | 0.125 | 1.000 | 4.00 | 3.91 | 12.5 | 100 | 100.0 |
| 37 | 37 13C7-PFUnA | $570.1>524.8$ | 1.98 e 3 | 1.98 e 3 | 0.125 | 1.000 | 4.16 | 4.08 | 12.5 | 100 | 100.0 |
| 38 | 38 Total PFBS | $299>79.7$ | 6.06e3 | 3.79 e 3 | 0.125 |  | 2.92 |  | 20.0 | 70.7 |  |
| 39 | 39 Total PFHxS | $398.9>79.6$ | 4.10 e 3 | 2.89 e 3 | 0.125 |  | 3.55 |  | 17.7 | 77.0 |  |
| 40 | 40 Total PFOA | $413>368.7$ | 2.42 e 4 | 2.93 e 4 | 0.125 |  | 3.63 |  | 10.3 | 72.0 |  |
| 41 | 41 Total PFOS | $499>79.9$ | 1.95 e 3 | 2.29 e 3 | 0.125 |  | 3.86 |  | 10.7 | 75.8 |  |
| 42 | 42 Total N-Me-FOSAA | $570.1>419$ | 4.54 e 2 | 3.73 e 2 | 0.125 |  | 4.20 |  | 15.2 | 65.3 |  |
| 43 | 43 Total N -EtFOSAA | $584.2>419$ | 2.77 e 2 | 1.98 e 2 | 0.125 |  | 4.30 |  | 17.5 | 102 |  |

## Quantify Totals Report MassLynx MassLynx V4.1 SCN945 SCN960

## Dataset: U:IQ4.PRO|results\170713M11170713M1-5.qld

Last Altered: Wednesday, July 19, 2017 10:02:43 Pacific Daylight Time Printed: Wednesday, July 19, 2017 10:03:07 Pacific Daylight Time

## Method: U:\Q4.PRO\MethDB\PFAS_L14-7-13-17.mdb 14 Jul 2017 08:41:09

## Calibration: U:|Q4.PRO\CurveDBIC18_VAL-PFAS_Q4_7-10-17-L14A.cdb 14 Jul 2017 08:57:46

## Name: 170713M1_5, Date: 13-Jul-2017, Time: 16:49:10, ID: B7G0054-BS1 OPR 0.125, Description: OPR

## Total PFBS

|  | \# Name | Trace | RT | Area | IS Area | Response | Primary Flags |
| ---: | :--- | ---: | ---: | ---: | ---: | ---: | ---: |
| 1 | 1 PFBS | $299>79.7$ | 2.87 | 6064.241 | 3785.388 | 20.025 | bb |

## Total PFHxS

|  | \# Name | Trace | RT | Area | IS Area | Response | Primary Flags | Conc. |
| :--- | :--- | :--- | :--- | :--- | :--- | ---: | ---: | ---: |
| 1 | 4 PFHxS | $398.9>79.6$ | 3.45 | 4099.135 | 2894.862 | 17.700 | $M M$ | 77.0 |

## Total PFOA

|  | \# Name | Trace |  |  |  |  |  |  |  |
| :--- | :--- | :--- | :--- | :--- | ---: | ---: | ---: | ---: | ---: |
| 1 | 5 PFOA | $413>368.7$ | 3.57 | 24245.152 | 29293.922 | Prea | IS Area | Response | Primary Flags |

## Total PFOS

|  | \# Name | Trace | RT | Area | IS Area | Response | Primary Flags | Conc. |
| :--- | :--- | :--- | ---: | ---: | ---: | ---: | ---: | ---: |
| 1 | 7 PFOS | $499>79.9$ | 3.80 | 1951.250 | 2287.804 | 10.661 | $M M$ | 75.8 |

## Total N-Me-FOSAA

|  | \# Name | Trace | RT | Area | IS Area | Response | Primary Flags |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | $10 \mathrm{~N}-\mathrm{MeFOSAA}$ | $570.1>419$ | 3.95 | 454.447 | 373.368 | 15.214 | bb |

## Total N-EtFOSAA

|  | \# Name | Trace | RT | Area | IS Area | Response | Primary Flags |
| :--- | :--- | :--- | ---: | ---: | ---: | ---: | ---: |
| 1 | 11 N-EtFOSAA | $584.2>419$ | 4.02 | 276.938 | 197.807 | 17.501 | bb |

## Dataset: <br> U:\Q4.PRO|results\170713M1\170713M1-5.qld

Last Altered: Wednesday, July 19, 2017 10:02:43 Pacific Daylight Time Printed: Wednesday, July 19, 2017 10:03:07 Pacific Daylight Time

## Method: U:\Q4.PRO\MethDB\PFAS_L14-7-13-17.mdb 14 Jul 2017 08:41:09

## Calibration: U:|Q4.PRO\CurveDBIC18_VAL-PFAS_Q4_7-10-17-L14A.cdb 14 Jul 2017 08:57:46

## Name: 170713M1_5, Date: 13-Jul-2017, Time: 16:49:10, ID: B7G0054-BS1 OPR 0.125, Description: OPR


 F6:MRM of 2 channels,ES-

13C3-PFBS


## PFHxA



13C2-PFHxA


PFHpA



13C4-PFHpA


## Total PFHxS



1802-PFHxS


## Dataset:

U:\Q4.PRO\results\170713M1\170713M1-5.qld
Last Altered: Wednesday, July 19, 2017 10:02:43 Pacific Daylight Time Printed: Wednesday, July 19, 2017 10:03:07 Pacific Daylight Time

## Name: 170713M1_5, Date: 13-Jul-2017, Time: 16:49:10, ID: B7G0054-BS1 OPR 0.125, Description: OPR

\section*{Total PFOA <br> | 100 | F19:MRM of 2 channels,ES- |  |
| :---: | :---: | :---: |
|  |  |  |
|  | PFOA | $5.829 \mathrm{e}+005$ |
|  | 3.57 |  |
|  | 2.42e4 |  |
| \%- | 572603 |  |
|  | bb 1308.31 |  |



13C2-PFOA


## PFNA



13C5-PFNA


## Total PFOS



13C8-PFOS



13C2-PFUnA


## Dataset:

U:\Q4.PRO|results\170713M1\170713M1-5.qld

Last Altered: Wednesday, July 19, 2017 10:02:43 Pacific Daylight Time Printed: Wednesday, July 19, 2017 10:03:07 Pacific Daylight Time

## Name: 170713M1_5, Date: 13-Jul-2017, Time: 16:49:10, ID: B7G0054-BS1 OPR 0.125, Description: OPR

## PFUnA



| F43:MRM of 2 channels,ES |  |  |
| :---: | :---: | :---: |
| 100 |  | $562.9>269$$6.228 \mathrm{e}+003$ |
|  | PFUnA |  |
|  | 4.07 |  |
|  | 2.68 e 2 |  |
| \%- | 6129 |  |
|  | bb 1015.02 |  |
|  | 1015.02 |  |
|  |  |  |
|  | 4.000 |  |

13C2-PFUnA


## N-MeFOSAA

| F45:MRM of 2 channels,ES- |  |
| :---: | ---: |
| $570.1>419$ |  |
| N-MeFOSAA | $9.926 e+003$ |
| 3.95 |  |
| 4.54 e 2 |  |
| 9814 |  |
| bb |  |
| 260.33 |  |
| 100 |  |


d3-N-MeFOSAA
F49:MRM of 1 channel,ES-


## N-EtFOSAA



d5-N-EtFOSAA


## PFDoA



13C2-PFDoA


## Dataset:

U:\Q4.PRO|results\170713M1\170713M1-5.qld

| Last Altered: | Wednesday, July 19, 2017 10:02:43 Pacific Daylight Time |
| :--- | :--- |
| Printed: | Wednesday, July 19, 2017 10:03:07 Pacific Daylight Time |

## Name: 170713M1_5, Date: 13-Jul-2017, Time: 16:49:10, ID: B7G0054-BS1 OPR 0.125, Description: OPR

## PFTeDA




13C2-PFTeDA



13C2-PFTeDA



13C8-PFOA


13C3-PFHxS


13C9-PFNA


## Quantify Sample Report

## Dataset: <br> U:\Q4.PRO|results\170713M1\170713M1-5.qld

Last Altered: Wednesday, July 19, 2017 10:02:43 Pacific Daylight Time Printed: Wednesday, July 19, 2017 10:03:07 Pacific Daylight Time

## Name: 170713M1_5, Date: 13-Jul-2017, Time: 16:49:10, ID: B7G0054-BS1 OPR 0.125, Description: OPR

## 13C4-PFOS



13C6-PFDA


13C7-PFUnA


## Quantify Sample Summary Report

 Vista Analytical Laboratory
## Dataset: <br> U:IQ4.PRO|results|170711M11170711M1-51.qld

## Last Altered: Wednesday, July 12, 2017 16:04:59 Pacific Daylight Time

 Printed: Wednesday, July 12, 2017 16:05:15 Pacific Daylight Time
## Method: U:|Q4.PRO\MethDB\PFAS L14-7-5-17.mdb 10 Jul 2017 08:06:14

 Calibration: U:IQ4.PRO\CurveDBIC18_VAL-PFAS_Q4_7-10-17-L14.cdb 11 Jul 2017 08:36:22Name: 170711M1_51, Date: 11-Jul-2017, Time: 19:30:24, ID: 1700803-01 SB01 0.12033, Description: SB01

|  | \# Name | Trace | Area | IS Area | Wt./Vol. | RRF | Pred.RT | RT | y Axis Resp. | Conc. | \%Rec |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | 1 PFBS | $299>79.7$ |  | 2.57e3 | 0.120 |  | 2.92 |  |  |  |  |
| 2 | 2 PFHxA | $313.2>268.9$ |  | 7.52e3 | 0.120 |  | 3.16 |  |  |  |  |
| 3 | 3 PFHpA | $363>318.9$ |  | 1.65 e 4 | 0.120 |  | 3.43 |  |  |  |  |
| 4 | 4 PFHxS | $398.9>79.6$ |  | 2.00 e 3 | 0.120 |  | 3.55 |  |  |  |  |
| 5 | 5 PFOA | $413>368.7$ |  | 2.34 e 4 | 0.120 |  | 3.63 |  |  |  |  |
| 6 | 6 PFNA | $462.9>418.8$ |  | 1.68 e 4 | 0.120 |  | 3.82 |  |  |  |  |
| 7 | 7 PFOS | $499>79.9$ |  | 3.12 e 3 | 0.120 |  | 3.86 |  |  |  |  |
| 8 | 8 PFDA | $513>468.8$ |  | 9.39 e 3 | 0.120 |  | 4.00 |  |  |  |  |
| 9 | 9 PFUnA | $562.9>518.9$ |  | 3.63 e 3 | 0.120 |  | 4.16 |  |  |  |  |
| 10 | $10 \mathrm{~N}-\mathrm{MeFOSAA}$ | $570.1>419$ |  | 1.03 e 3 | 0.120 |  | 4.00 |  |  |  |  |
| 11 | $11 \mathrm{~N}-\mathrm{EtFOSAA}$ | $584.2>419$ |  | 7.74 e 2 | 0.120 |  | 4.08 |  |  |  |  |
| 12 | 12 PFDoA | $612.9>318.8$ |  | 1.60 e 2 | 0.120 |  | 4.32 |  |  |  |  |
| 13 | 13 PFTrDA | $662.9>618.9$ |  | 1.60 e 2 | 0.120 |  | 4.50 |  |  |  |  |
| 14 | 14 PFTeDA | $712.9>668.8$ |  | 8.91 e 2 | 0.120 |  | 4.66 |  |  |  |  |
| 15 | 15 13C3-PFBA | $216.1>171.8$ | 1.30 e 4 | 1.38 e 4 | 0.120 | 0.918 | 1.43 | 1.33 | 11.8 | 107 | 103.0 |
| 16 | 16 13C3-PFPeA | $266>221.8$ | 1.83 e 4 | 1.38 e 4 | 0.120 | 1.784 | 2.72 | 2.63 | 16.6 | 77.3 | 74.4 |
| 17 | 17 13C3-PFBS | $302>98.8$ | 2.57 e 3 | 1.38 e 4 | 0.120 | 0.215 | 2.92 | 2.87 | 2.32 | 89.7 | 86.4 |
| 18 | 18 13C2-PFHxA | $315>269.8$ | 7.52 e 3 | 2.31 e 4 | 0.120 | 0.304 | 3.16 | 3.11 | 1.63 | 44.5 | 107.1 |
| 19 | 19 13C4-PFHpA | $367.2>321.8$ | 1.65 e 4 | 2.31 e 4 | 0.120 | 0.306 | 3.43 | 3.38 | 3.56 | 96.8 | 93.2 |
| 20 | 20 18O2-PFHxS | $403>102.6$ | 2.00 e 3 | 4.12 e 3 | 0.120 | 0.437 | 3.55 | 3.45 | 6.09 | 116 | 111.2 |
| 21 | 21 13C2-PFOA | 414.9 > 369.7 | 2.34 e 4 | 1.88 e 4 | 0.120 | 1.292 | 3.63 | 3.57 | 15.6 | 100 | 96.4 |
| 22 | 22 13C5-PFNA | $468.2>422.9$ | 1.68 e 4 | 2.05 e 4 | 0.120 | 0.980 | 3.82 | 3.75 | 10.2 | 86.6 | 83.4 |
| 23 | 23 13C8-PFOS | $507>79.9$ | 3.12 e 3 | 2.97 e 3 | 0.120 | 1.098 | 3.86 | 3.80 | 13.1 | 99.2 | 95.5 |
| 24 | 24 13C2-PFDA | $515.1>469.9$ | 9.39 e 3 | 1.33 e 4 | 0.120 | 0.928 | 4.00 | 3.92 | 8.81 | 78.9 | 75.9 |
| 25 | 25 13C2-PFUnA | $565>519.8$ | 3.63 e 3 | 4.18 e 3 | 0.120 | 1.083 | 4.16 | 4.08 | 10.9 | 83.3 | 80.2 |
| 26 | 26 d3-N-MeFOSAA | $573.3>419$ | 1.03 e 3 | 4.18 e 3 | 0.120 | 0.224 | 4.00 | 3.95 | 3.07 | 114 | 109.4 |
| 27 | $27 \mathrm{~d} 5-\mathrm{N}-\mathrm{EtFOSAA}$ | $589.3>419$ | 7.74 e 2 | 4.18 e 3 | 0.120 | 0.230 | 4.08 | 4.01 | 2.31 | 83.7 | 80.6 |
| 28 | 28 13C2-PFDoA | $615>569.7$ | 1.60 e 2 | 4.18 e 3 | 0.120 | 0.130 | 4.32 | 4.23 | 0.480 | 30.7 | 29.5 |
| 29 | 29 13C2-PFTeDA | $714.8>669.6$ | 8.91 e 2 | 4.18 e 3 | 0.120 | 1.018 | 4.66 | 4.57 | 2.67 | 21.8 | 20.9 |
| 30 | 30 13C4-PFBA | $217>171.8$ | 1.38 e 4 | 1.38 e 4 | 0.120 | 1.000 | 1.43 | 1.33 | 12.5 | 104 | 100.0 |
| 31 | 31 13C5-PFHxA | $318>272.9$ | 2.31 e 4 | 2.31 e 4 | 0.120 | 1.000 | 3.18 | 3.11 | 5.00 | 41.6 | 100.0 |
| 32 | 32 13C3-PFHxS | $401.9>79.9$ | 4.12 e 3 | 4.12 e 3 | 0.120 | 1.000 | 3.55 | 3.45 | 12.5 | 104 | 100.0 |

## Quantify Sample Summary Report

 Vista Analytical Laboratory
## Dataset: <br> U:IQ4.PRO|results1170711M11170711M1-51.qld

Last Altered: Wednesday, July 12, 2017 16:04:59 Pacific Daylight Time Printed: Wednesday, July 12, 2017 16:05:15 Pacific Daylight Time

## Name: 170711M1_51, Date: 11-Jul-2017, Time: 19:30:24, ID: 1700803-01 SB01 0.12033, Description: SB01

|  | \# Name | Trace | Area | IS Area | Wt./Vol. | RRF | Pred.RT | RT | y Axis Resp. | Conc. | \%Rec |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 33 | 33 13C8-PFOA | $421.3>376$ | 1.88 e 4 | 1.88 e 4 | 0.120 | 1.000 | 3.63 | 3.57 | 12.5 | 104 | 100.0 |
| 34 | 34 13C9-PFNA | $472.2>426.9$ | 2.05 e 4 | 2.05 e 4 | 0.120 | 1.000 | 3.82 | 3.75 | 12.5 | 104 | 100.0 |
| 35 | 35 13C4-PFOS | $503>79.9$ | 2.97e3 | 2.97e3 | 0.120 | 1.000 | 3.86 | 3.80 | 12.5 | 104 | 100.0 |
| 36 | 36 13C6-PFDA | $519.1>473.7$ | 1.33 e 4 | 1.33 e 4 | 0.120 | 1.000 | 4.00 | 3.91 | 12.5 | 104 | 100.0 |
| 37 | 37 13C7-PFUnA | $570.1>524.8$ | 4.18 e 3 | 4.18 e 3 | 0.120 | 1.000 | 4.16 | 4.08 | 12.5 | 104 | 100.0 |
| 38 | 38 Total PFBS | $299>79.7$ | 0.00 e 0 | 2.57 e 3 | 0.120 |  | 2.92 |  | 0.000 |  |  |
| 39 | 39 Total PFHxS | $398.9>79.6$ | 0.00 e 0 | 2.00 e 3 | 0.120 |  | 3.55 |  | 0.000 |  |  |
| 40 | 40 Total PFOA | $413>368.7$ | 0.00e0 | 2.34 e 4 | 0.120 |  | 3.63 |  | 0.000 |  |  |
| 41 | 41 Total PFOS | $499>79.9$ | 0.00e0 | 3.12 e 3 | 0.120 |  | 3.86 |  | 0.000 |  |  |
| 42 | 42 Total N-Me-FOSAA | $570.1>419$ | 0.00e0 | 1.03 e 3 | 0.120 |  | 4.20 |  | 0.000 |  |  |
| 43 | 43 Total N-EtFOSAA | $584.2>419$ | 0.00e0 | 7.74 e 2 | 0.120 |  | 4.30 |  | 0.000 |  |  |

## Quantify Totals Report MassLynx MassLynx V4.1 SCN945 SCN960

Last Altered: Wednesday, July 12, 2017 16:04:59 Pacific Daylight Time Printed: Wednesday, July 12, 2017 16:05:15 Pacific Daylight Time

Method: U:|Q4.PRO\MethDB\PFAS_L14-7-5-17.mdb 10 Jul 2017 08:06:14 Calibration: U:\Q4.PRO\CurveDBIC18_VAL-PFAS_Q4_7-10-17-L14.cdb 11 Jul 2017 08:36:22

Name: 170711M1_51, Date: 11-Jul-2017, Time: 19:30:24, ID: 1700803-01 SB01 0.12033, Description: SB01

## Total PFBS

|  | \# Name | Trace | RT | Area | IS Area |
| :--- | :--- | :--- | :--- | :--- | :--- |

Total PFHxS

| 1 | \# Name | Trace | RT | Area | IS Area | Response | Primary Flags | Conc. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |  |  |  |
| Total PFOA |  |  |  |  |  |  |  |  |
|  | \# Name | Trace | RT | Area | IS Area | Response | Primary Flags | Conc. |
| 1 | 5 PFOA | $413>368.7$ |  |  | 23351.072 |  | MM-I |  |

## Total PFOS

|  | \# Name | Trace | RT | Area | IS Area |
| :---: | :---: | :---: | :---: | :---: | :---: |

## Total N-Me-FOSAA

|  | \# Name | Trace | RT | Area | IS Area |
| :---: | :---: | :---: | :---: | :---: | :---: |

## Total N-EtFOSAA

|  | \# Name | Trace | RT | Area | IS Area | Response | Primary Flags |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| 1 |  |  |  |  |  |  |  |  |

## Dataset:

U:IQ4.PRO|results\170711M11170711M1-51.qld
Last Altered: Wednesday, July 12, 2017 16:04:59 Pacific Daylight Time Printed: Wednesday, July 12, 2017 16:05:15 Pacific Daylight Time

## Method: U:|Q4.PRO\MethDB\PFAS_L14-7-5-17.mdb 10 Jul 2017 08:06:14

## Calibration: U:IQ4.PRO|CurveDBIC18_VAL-PFAS_Q4_7-10-17-L14.cdb 11 Jul 2017 08:36:22

## Name: 170711M1_51, Date: 11-Jul-2017, Time: 19:30:24, ID: 1700803-01 SB01 0.12033, Description: SB01




13C3-PFBS



PFHpA

F8:MRM of 2 channels,ES$313.2>119$ $1.000 \mathrm{e}-003$


13C2-PFHxA




13C4-PFHpA


## Total PFHxS



1802-PFHxS


## Dataset:

U:IQ4.PRO|results\170711M11170711M1-51.qld
Last Altered: Wednesday, July 12, 2017 16:04:59 Pacific Daylight Time Printed: Wednesday, July 12, 2017 16:05:15 Pacific Daylight Time

## Name: 170711M1_51, Date: 11-Jul-2017, Time: 19:30:24, ID: 1700803-01 SB01 0.12033, Description: SB01

## Total PFOA






## Total PFOS




13C8-PFOS
13C5-PFNA



## PFDA



13C2-PFUnA


## Dataset:

U:\Q4.PRO\resultsl170711M11170711M1-51.qld

## Last Altered:

Wednesday, July 12, 2017 16:04:59 Pacific Daylight Time Printed: Wednesday, July 12, 2017 16:05:15 Pacific Daylight Time

## Name: 170711M1_51, Date: 11-Jul-2017, Time: 19:30:24, ID: 1700803-01 SB01 0.12033, Description: SB01

## PFUnA




13C2-PFUnA

## N-MeFOSAA


d3-N-MeFOSAA
F49:MRM of 1 channel,ES-


## N-EtFOSAA


d5-N-EtFOSAA


## PFDoA



13C2-PFDoA


## Dataset:

U:IQ4.PRO|results\170711M11170711M1-51.qld

| Last Altered: | Wednesday, July 12, 2017 16:04:59 Pacific Daylight Time |
| :--- | :--- |
| Printed: | Wednesday, July 12, 2017 16:05:15 Pacific Daylight Time |

## Name: 170711M1_51, Date: 11-Jul-2017, Time: 19:30:24, ID: 1700803-01 SB01 0.12033, Description: SB01



## 13C2-PFTeDA




13C2-PFTeDA



13C8-PFOA


13C3-PFHxS


13C9-PFNA


## Quantify Sample Report

## Dataset: <br> U:\Q4.PRO\resultsl170711M11170711M1-51.qld

Last Altered: Wednesday, July 12, 2017 16:04:59 Pacific Daylight Time Printed: Wednesday, July 12, 2017 16:05:15 Pacific Daylight Time

## Name: 170711M1_51, Date: 11-Jul-2017, Time: 19:30:24, ID: 1700803-01 SB01 0.12033, Description: SB01

## 13C4-PFOS



13C6-PFDA


13C7-PFUnA


## Quantify Sample Summary Report

 Vista Analytical Laboratory
## Dataset: <br> U:\Q4.PRO\resultsl170713M11170713M1-24.qld

## Last Altered: Wednesday, July 19, 2017 10:22:55 Pacific Daylight Time

 Printed:Wednesday, July 19, 2017 10:23:14 Pacific Daylight Time

## Method: U:|Q4.PRO\MethDB\PFAS L14-7-13-17.mdb 14 Jul 2017 08:41:09

 Calibration: U:|Q4.PRO\CurveDB\C18_VAL-PFAS_Q4_7-10-17-L14A.cdb 14 Jul 2017 08:57:46Name: 170713M1_24, Date: 13-Jul-2017, Time: 20:13:06, ID: 1700803-02RE1 EB01 0.12093, Description: EB01

|  | \# Name | Trace | Area | IS Area | Wt./Vol. | RRF | Pred.RT | RT | y Axis Resp. | Conc. | \%Rec |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | 1 PFBS | $299>79.7$ |  | 3.37 e 3 | 0.121 |  | 2.92 |  |  |  |  |
| 2 | 2 PFHxA | $313.2>268.9$ |  | 1.01 e 4 | 0.121 |  | 3.16 |  |  |  |  |
| 3 | 3 PFHpA | $363>318.9$ |  | 2.27 e 4 | 0.121 |  | 3.43 |  |  |  |  |
| 4 | 4 PFHxS | $398.9>79.6$ |  | 2.59 e 3 | 0.121 |  | 3.55 |  |  |  |  |
| 5 | 5 PFOA | $413>368.7$ |  | 2.98 e 4 | 0.121 |  | 3.63 |  |  |  |  |
| 6 | 6 PFNA | $462.9>418.8$ |  | 2.36 e 4 | 0.121 |  | 3.82 |  |  |  |  |
| 7 | 7 PFOS | $499>79.9$ | 1.34 e 1 | 4.99 e 3 | 0.121 |  | 3.86 | 3.77 | 0.0335 | 0.0336 |  |
| 8 | 8 PFDA | $513>468.8$ |  | 1.54 e 4 | 0.121 |  | 4.00 |  |  |  |  |
| 9 | 9 PFUnA | $562.9>518.9$ |  | 9.42 e 3 | 0.121 |  | 4.16 |  |  |  |  |
| 10 | 10 N-MeFOSAA | $570.1>419$ |  | 1.75 e 3 | 0.121 |  | 4.00 |  |  |  |  |
| 11 | $11 \mathrm{~N}-\mathrm{EtFOSAA}$ | $584.2>419$ |  | 2.20 e 3 | 0.121 |  | 4.08 |  |  |  |  |
| 12 | 12 PFDoA | $612.9>318.8$ |  | 4.67 e 2 | 0.121 |  | 4.32 |  |  |  |  |
| 13 | 13 PFTrDA | $662.9>618.9$ |  | 4.67 e 2 | 0.121 |  | 4.50 |  |  |  |  |
| 14 | 14 PFTeDA | $712.9>668.8$ |  | 3.22 e 3 | 0.121 |  | 4.66 |  |  |  |  |
| 15 | 15 13C3-PFBA | $216.1>171.8$ | 1.24 e 3 | 1.52 e 3 | 0.121 | 0.918 | 1.43 | 1.38 | 10.1 | 91.3 | 88.3 |
| 16 | 16 13C3-PFPeA | $266>221.8$ | 2.83 e 4 | 3.70 e 4 | 0.121 | 0.275 | 2.72 | 2.68 | 3.82 | 115 | 111.3 |
| 17 | 17 13C3-PFBS | $302>98.8$ | 3.37 e 3 | 3.70 e 4 | 0.121 | 0.033 | 2.92 | 2.90 | 0.455 | 113 | 109.8 |
| 18 | 18 13C2-PFHxA | $315>269.8$ | 1.01 e 4 | 3.70 e 4 | 0.121 | 0.304 | 3.16 | 3.14 | 1.36 | 37.1 | 89.7 |
| 19 | 19 13C4-PFHpA | $367.2>321.8$ | 2.27 e 4 | 3.70 e 4 | 0.121 | 0.306 | 3.43 | 3.40 | 3.06 | 82.6 | 80.0 |
| 20 | 20 18O2-PFHxS | $403>102.6$ | 2.59 e 3 | 5.98 e 3 | 0.121 | 0.437 | 3.55 | 3.47 | 5.41 | 102 | 98.9 |
| 21 | 21 13C2-PFOA | $414.9>369.7$ | 2.98 e 4 | 3.14 e 4 | 0.121 | 1.292 | 3.63 | 3.60 | 11.8 | 75.7 | 73.2 |
| 22 | 22 13C5-PFNA | $468.2>422.9$ | 2.36 e 4 | 2.69 e 4 | 0.121 | 0.980 | 3.82 | 3.77 | 11.0 | 92.5 | 89.5 |
| 23 | 23 13C8-PFOS | $507>79.9$ | 4.99 e 3 | 4.91 e 3 | 0.121 | 1.098 | 3.86 | 3.82 | 12.7 | 95.8 | 92.7 |
| 24 | 24 13C2-PFDA | $515.1>469.9$ | 1.54 e 4 | 2.02 e 4 | 0.121 | 0.928 | 4.00 | 3.94 | 9.53 | 84.9 | 82.2 |
| 25 | 25 13C2-PFUnA | $565>519.8$ | 9.42 e 3 | 1.31 e 4 | 0.121 | 1.083 | 4.16 | 4.10 | 9.01 | 68.9 | 66.6 |
| 26 | 26 d3-N-MeFOSAA | $573.3>419$ | 1.75 e 3 | 1.31 e 4 | 0.121 | 0.224 | 4.00 | 3.97 | 1.68 | 61.8 | 59.8 |
| 27 | $27 \mathrm{~d} 5-\mathrm{N}-\mathrm{EtFOSAA}$ | $589.3>419$ | 2.20 e 3 | 1.31 e 4 | 0.121 | 0.230 | 4.08 | 4.03 | 2.11 | 75.9 | 73.4 |
| 28 | 28 13C2-PFDoA | $615>569.7$ | 4.67 e 2 | 1.31 e 4 | 0.121 | 0.130 | 4.32 | 4.25 | 0.447 | 28.5 | 27.5 |
| 29 | 29 13C2-PFTeDA | $714.8>669.6$ | 3.22 e 3 | 1.31 e 4 | 0.121 | 1.018 | 4.66 | 4.58 | 3.08 | 25.0 | 24.2 |
| 30 | 30 13C4-PFBA | $217>171.8$ | 1.52 e 3 | 1.52 e 3 | 0.121 | 1.000 | 1.43 | 1.39 | 12.5 | 103 | 100.0 |
| 31 | 31 13C5-PFHxA | $318>272.9$ | 3.70 e 4 | 3.70 e 4 | 0.121 | 1.000 | 3.18 | 3.14 | 5.00 | 41.3 | 100.0 |
| 32 | 32 13C3-PFHxS | $401.9>79.9$ | 5.98 e 3 | 5.98 e 3 | 0.121 | 1.000 | 3.55 | 3.47 | 12.5 | 103 | 100.0 |

## Quantify Sample Summary Report

 Vista Analytical Laboratory
## Dataset: <br> U:IQ4.PRO|results1170713M11170713M1-24.qld

Last Altered: Wednesday, July 19, 2017 10:22:55 Pacific Daylight Time Printed: Wednesday, July 19, 2017 10:23:14 Pacific Daylight Time

## Name: 170713M1_24, Date: 13-Jul-2017, Time: 20:13:06, ID: 1700803-02RE1 EB01 0.12093, Description: EB01

|  | \# Name | Trace | Area | IS Area | Wt./Vol. | RRF | Pred.RT | RT | y Axis Resp. | Conc. | \%Rec |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 33 | 33 13C8-PFOA | $421.3>376$ | 3.14 e 4 | 3.14 e 4 | 0.121 | 1.000 | 3.63 | 3.60 | 12.5 | 103 | 100.0 |
| 34 | 34 13C9-PFNA | $472.2>426.9$ | 2.69 e 4 | 2.69 e 4 | 0.121 | 1.000 | 3.82 | 3.77 | 12.5 | 103 | 100.0 |
| 35 | 35 13C4-PFOS | $503>79.9$ | 4.91 e 3 | 4.91 e 3 | 0.121 | 1.000 | 3.86 | 3.82 | 12.5 | 103 | 100.0 |
| 36 | 36 13C6-PFDA | $519.1>473.7$ | 2.02 e 4 | 2.02 e 4 | 0.121 | 1.000 | 4.00 | 3.94 | 12.5 | 103 | 100.0 |
| 37 | 37 13C7-PFUnA | $570.1>524.8$ | 1.31 e 4 | 1.31 e 4 | 0.121 | 1.000 | 4.16 | 4.10 | 12.5 | 103 | 100.0 |
| 38 | 38 Total PFBS | $299>79.7$ | 0.00 e 0 | 3.37 e 3 | 0.121 |  | 2.92 |  | 0.000 |  |  |
| 39 | 39 Total PFHxS | $398.9>79.6$ | 0.00 e 0 | 2.59 e 3 | 0.121 |  | 3.55 |  | 0.000 |  |  |
| 40 | 40 Total PFOA | $413>368.7$ | 0.00 e 0 | 2.98 e 4 | 0.121 |  | 3.63 |  | 0.000 |  |  |
| 41 | 41 Total PFOS | $499>79.9$ | 1.34 e 1 | 4.99 e 3 | 0.121 |  | 3.86 |  | 0.0335 | 0.0336 |  |
| 42 | 42 Total N-Me-FOSAA | $570.1>419$ | 0.00 e 0 | 1.75 e 3 | 0.121 |  | 4.20 |  | 0.000 |  |  |
| 43 | 43 Total N-EtFOSAA | $584.2>419$ | 0.00 e 0 | 2.20 e 3 | 0.121 |  | 4.30 |  | 0.000 |  |  |

## Quantify Totals Report MassLynx MassLynx V4.1 SCN945 SCN960

Last Altered: Wednesday, July 19, 2017 10:22:55 Pacific Daylight Time Printed: Wednesday, July 19, 2017 10:23:14 Pacific Daylight Time

Method: U:|Q4.PRO\MethDB\PFAS_L14-7-13-17.mdb 14 Jul 2017 08:41:09


## Name: 170713M1_24, Date: 13-Jul-2017, Time: 20:13:06, ID: 1700803-02RE1 EB01 0.12093, Description: EB01

## Total PFBS

|  | \# Name | Trace | RT | Area | IS Area | Response | Primary Flags | Conc. |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| 1 |  |  |  |  |  |  |  |  |

Total PFHxS

|  | \# Name | Trace | RT | Area | IS Area | Response | Primary Flags | Conc. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1 |  |  |  |  |  |  |  |  |
| Total PFOA |  |  |  |  |  |  |  |  |
|  | \# Name | Trace | RT | Area | IS Area | Response | Primary Flags | Conc. |
| 1 | 5 PFOA | $413>368.7$ |  |  | 29751.359 |  | MM-I |  |

## Total PFOS

|  | \# Name | Trace | RT | Area | IS Area | Response | Primary Flags | Conc. |
| :--- | :--- | :--- | ---: | ---: | ---: | ---: | ---: | ---: |
| 7 | 4 PFOS | $499>79.9$ | 3.77 | 13.395 | 4994.194 | 0.034 | bb | 0.0 |

## Total N-Me-FOSAA

|  | \# Name | Trace | RT | Area | IS Area | Response Primary Flags |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1 |  |  |  |  |  |  |

## Total N-EtFOSAA

|  | \# Name | Trace | RT | Area | IS Area | Response Primary Flags |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| 1 |  |  |  |  |  |  |

## Dataset: <br> U:IQ4.PRO\results\170713M11170713M1-24.qld

Last Altered: Wednesday, July 19, 2017 10:22:55 Pacific Daylight Time Printed: Wednesday, July 19, 2017 10:23:14 Pacific Daylight Time

## Method: U:\Q4.PRO\MethDB\PFAS_L14-7-13-17.mdb 14 Jul 2017 08:41:09

## Calibration: U:|Q4.PRO\CurveDBIC18_VAL-PFAS_Q4_7-10-17-L14A.cdb 14 Jul 2017 08:57:46

## Name: 170713M1_24, Date: 13-Jul-2017, Time: 20:13:06, ID: 1700803-02RE1 EB01 0.12093, Description: EB01

## Total PFBS <br> F6:MRM of 2 channels,ES- $299>79.7$ $4.096 e+001$

F6:MRM of 2 channels,ES-

## PFHxA



13C2-PFHxA


## PFHpA




13C4-PFHpA


Total PFHxS
F16:MRM of 2 channels,ES $398.9>79.6$ $1.000 \mathrm{e}-003$

F16:MRM of 2 channels,ES
$398.9>99$ $1.645 \mathrm{e}+002$


1802-PFHxS


## Dataset:

U:IQ4.PRO|results\170713M11170713M1-24.qld
Last Altered: Wednesday, July 19, 2017 10:22:55 Pacific Daylight Time Printed: Wednesday, July 19, 2017 10:23:14 Pacific Daylight Time

## Name: 170713M1_24, Date: 13-Jul-2017, Time: 20:13:06, ID: 1700803-02RE1 EB01 0.12093, Description: EB01

## Total PFOA <br> 



13C2-PFOA



## Total PFOS

|  |  |  | F30:MRM of 2 channels,ES- $499>79.9$ |
| :---: | :---: | :---: | :---: |
| 100 | PFOS |  | $4.903 \mathrm{e}+002$ |
|  | 3.77 |  |  |
|  | 1.34 e 1 |  |  |
|  | 490 |  |  |
| \% | bb |  |  |
|  | 490.00 | 3.86 |  |
|  |  | 3.8 |  |



13C8-PFOS
13C5-PFNA



F35:MRM of 2 channels,ES


13C2-PFUnA


## Dataset:

U:\Q4.PRO\resultsl170713M11170713M1-24.qld

| Last Altered: | Wednesday, July 19, 2017 10:22:55 Pacific Daylight Time |
| :--- | :--- |
| Printed: | Wednesday, July 19, 2017 10:23:14 Pacific Daylight Time |

## Name: 170713M1_24, Date: 13-Jul-2017, Time: 20:13:06, ID: 1700803-02RE1 EB01 0.12093, Description: EB01

## PFUnA




13C2-PFUnA

## N-MeFOSAA


d3-N-MeFOSAA


d5-N-EtFOSAA


PFDoA


13C2-PFDoA


## Dataset:

U:IQ4.PRO|results\170713M11170713M1-24.qld
Last Altered: Wednesday, July 19, 2017 10:22:55 Pacific Daylight Time Printed: Wednesday, July 19, 2017 10:23:14 Pacific Daylight Time

## Name: 170713M1_24, Date: 13 -Jul-2017, Time: 20:13:06, ID: 1700803-02RE1 EB01 0.12093, Description: EB01

## PFTeDA




13C2-PFTeDA


## PFTrDA



13C2-PFTeDA



13C8-PFOA


13C3-PFHxS


13C9-PFNA


## Quantify Sample Report

## Dataset: U:IQ4.PRO\results\170713M1\170713M1-24.qld

Last Altered: Wednesday, July 19, 2017 10:22:55 Pacific Daylight Time Printed: Wednesday, July 19, 2017 10:23:14 Pacific Daylight Time

## Name: 170713M1_24, Date: 13-Jul-2017, Time: 20:13:06, ID: 1700803-02RE1 EB01 0.12093, Description: EB01

## 13C4-PFOS




13C7-PFUnA


## Quantify Sample Summary Report

 Vista Analytical Laboratory
## Dataset: <br> U:\Q4.PRO\resultsl170711M11170711M1-52.qld

## Last Altered: Wednesday, July 12, 2017 16:01:50 Pacific Daylight Time

 Printed:Wednesday, July 12, 2017 16:02:07 Pacific Daylight Time

## Method: U:IQ4.PRO\MethDB\PFAS L14-7-5-17.mdb 10 Jul 2017 08:06:14

 Calibration: U:IQ4.PRO\CurveDBIC18_VAL-PFAS_Q4_7-10-17-L14.cdb 11 Jul 2017 08:36:22Name: 170711M1_52, Date: 11-Jul-2017, Time: 19:41:03, ID: 1700803-03 IRPSite7-GW-46GW205-20170628 0.11772, Description: IRPSite7-GW-46GW205-20170628

|  | \# Name | Trace | Area | IS Area | Wt./Vol. | RRF | Pred.RT | RT | y Axis Resp. | Conc. | \%Rec |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | 1 PFBS | $299>79.7$ | 3.10 e 2 | 2.62 e 3 | 0.118 |  | 2.92 | 2.87 | 1.48 | 6.05 |  |
| 2 | 2 PFHxA | 313.2 > 268.9 |  | 7.22e3 | 0.118 |  | 3.16 |  |  |  |  |
| 3 | 3 PFHpA | $363>318.9$ | 7.12 e 2 | 1.69 e 4 | 0.118 |  | 3.43 | 3.38 | 0.527 | 2.92 |  |
| 4 | 4 PFHxS | $398.9>79.6$ | 2.59 e 2 | 2.06 e3 | 0.118 |  | 3.55 | 3.45 | 1.57 | 7.69 |  |
| 5 | 5 PFOA | $413>368.7$ | 1.91 e 3 | 2.24 e 4 | 0.118 |  | 3.63 | 3.58 | 1.06 | 7.05 |  |
| 6 | 6 PFNA | $462.9>418.8$ |  | 1.63 e 4 | 0.118 |  | 3.82 |  |  |  |  |
| 7 | 7 PFOS | $499>79.9$ | 2.72 e 2 | 4.16 e 3 | 0.118 |  | 3.86 | 3.76 | 0.819 | 6.07 |  |
| 8 | 8 PFDA | $513>468.8$ |  | 1.23 e 4 | 0.118 |  | 4.00 |  |  |  |  |
| 9 | 9 PFUnA | $562.9>518.9$ |  | 8.61 e3 | 0.118 |  | 4.16 |  |  |  |  |
| 10 | 10 N-MeFOSAA | $570.1>419$ |  | 2.04 e3 | 0.118 |  | 4.00 |  |  |  |  |
| 11 | $11 \mathrm{~N}-\mathrm{EtFOSAA}$ | $584.2>419$ |  | 1.59 e 3 | 0.118 |  | 4.08 |  |  |  |  |
| 12 | 12 PFDoA | $612.9>318.8$ |  | 6.59 e 1 | 0.118 |  | 4.32 |  |  |  |  |
| 13 | 13 PFTrDA | $662.9>618.9$ |  | 6.59 e 1 | 0.118 |  | 4.50 |  |  |  |  |
| 14 | 14 PFTeDA | $712.9>668.8$ |  | 5.96 e 2 | 0.118 |  | 4.66 |  |  |  |  |
| 15 | 15 13C3-PFBA | $216.1>171.8$ | 1.26 e 4 | 1.42 e 4 | 0.118 | 0.918 | 1.43 | 1.33 | 11.1 | 103 | 96.9 |
| 16 | 16 13C3-PFPeA | $266>221.8$ | 1.88 e 4 | 1.42 e 4 | 0.118 | 1.784 | 2.72 | 2.63 | 16.5 | 78.7 | 74.2 |
| 17 | 17 13C3-PFBS | $302>98.8$ | 2.62 e 3 | 1.42 e 4 | 0.118 | 0.215 | 2.92 | 2.87 | 2.31 | 91.0 | 85.7 |
| 18 | 18 13C2-PFHxA | $315>269.8$ | 7.22 e 3 | 2.34 e 4 | 0.118 | 0.304 | 3.16 | 3.11 | 1.54 | 43.1 | 101.5 |
| 19 | 19 13C4-PFHpA | 367.2 > 321.8 | 1.69 e 4 | 2.34 e 4 | 0.118 | 0.306 | 3.43 | 3.38 | 3.61 | 100 | 94.4 |
| 20 | 20 1802-PFHxS | $403>102.6$ | 2.06 e 3 | 4.19 e 3 | 0.118 | 0.437 | 3.55 | 3.45 | 6.15 | 119 | 112.5 |
| 21 | 21 13C2-PFOA | $414.9>369.7$ | 2.24 e 4 | 2.10 e 4 | 0.118 | 1.292 | 3.63 | 3.58 | 13.4 | 87.8 | 82.7 |
| 22 | 22 13C5-PFNA | $468.2>422.9$ | 1.63 e 4 | 1.95 e 4 | 0.118 | 0.980 | 3.82 | 3.76 | 10.4 | 90.5 | 85.3 |
| 23 | 23 13C8-PFOS | $507>79.9$ | 4.16 e 3 | 3.87 e 3 | 0.118 | 1.098 | 3.86 | 3.80 | 13.4 | 104 | 97.9 |
| 24 | 24 13C2-PFDA | $515.1>469.9$ | 1.23 e 4 | 1.85 e 4 | 0.118 | 0.928 | 4.00 | 3.92 | 8.29 | 75.9 | 71.5 |
| 25 | 25 13C2-PFUnA | $565>519.8$ | 8.61 e 3 | 1.20 e 4 | 0.118 | 1.083 | 4.16 | 4.08 | 8.96 | 70.3 | 66.2 |
| 26 | 26 d3-N-MeFOSAA | $573.3>419$ | 2.04 e 3 | 1.20 e 4 | 0.118 | 0.224 | 4.00 | 3.95 | 2.13 | 80.6 | 75.9 |
| 27 | 27 d5-N-EtFOSAA | $589.3>419$ | 1.59 e 3 | 1.20 e 4 | 0.118 | 0.230 | 4.08 | 4.01 | 1.65 | 61.0 | 57.5 |
| 28 | 28 13C2-PFDoA | $615>569.7$ | 6.59 e 1 | 1.20 e 4 | 0.118 | 0.130 | 4.32 | 4.25 | 0.0686 | 4.49 | 4.2 |
| 29 | 29 13C2-PFTeDA | $714.8>669.6$ | 5.96 e 2 | 1.20 e 4 | 0.118 | 1.018 | 4.66 | 4.57 | 0.621 | 5.18 | 4.9 |
| 30 | 30 13C4-PFBA | $217>171.8$ | 1.42 e 4 | 1.42 e 4 | 0.118 | 1.000 | 1.43 | 1.33 | 12.5 | 106 | 100.0 |
| 31 | 31 13C5-PFHxA | $318>272.9$ | 2.34 e 4 | 2.34 e 4 | 0.118 | 1.000 | 3.18 | 3.11 | 5.00 | 42.5 | 100.0 |
| 32 | $32.13 \mathrm{C} 3-\mathrm{PFHxS}$ | $401.9>79.9$ | 4.19 e 3 | 4.19 e 3 | 0.118 | 1.000 | 3.55 | 3.45 | 12.5 | 106 | 100.0 |

## Quantify Sample Summary Report

 Vista Analytical Laboratory
## Dataset: <br> U:IQ4.PRO|results1170711M11170711M1-52.qld

Last Altered: Wednesday, July 12, 2017 16:01:50 Pacific Daylight Time Printed: Wednesday, July 12, 2017 16:02:07 Pacific Daylight Time

Name: 170711M1_52, Date: 11-Jul-2017, Time: 19:41:03, ID: 1700803-03 IRPSite7-GW-46GW205-20170628 0.11772, Description: IRPSite7-GW-46GW205-20170628

|  | \# Name | Trace | Area | IS Area | Wt./Vol. | RRF | Pred.RT | RT | y Axis Resp. | Conc. | \%Rec |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 33 | 33 13C8-PFOA | $421.3>376$ | 2.10 e 4 | 2.10 e 4 | 0.118 | 1.000 | 3.63 | 3.57 | 12.5 | 106 | 100.0 |
| 34 | 34 13C9-PFNA | 472.2 > 426.9 | 1.95 e 4 | 1.95 e 4 | 0.118 | 1.000 | 3.82 | 3.75 | 12.5 | 106 | 100.0 |
| 35 | 35 13C4-PFOS | $503>79.9$ | 3.87e3 | 3.87e3 | 0.118 | 1.000 | 3.86 | 3.81 | 12.5 | 106 | 100.0 |
| 36 | 36 13C6-PFDA | $519.1>473.7$ | 1.85 e 4 | 1.85 e 4 | 0.118 | 1.000 | 4.00 | 3.92 | 12.5 | 106 | 100.0 |
| 37 | 37 13C7-PFUnA | $570.1>524.8$ | 1.20 e 4 | 1.20 e 4 | 0.118 | 1.000 | 4.16 | 4.08 | 12.5 | 106 | 100.0 |
| 38 | 38 Total PFBS | $299>79.7$ | 3.10 e 2 | 2.62 e 3 | 0.118 |  | 2.92 |  | 1.48 | 6.05 |  |
| 39 | 39 Total PFHxS | $398.9>79.6$ | 2.59 e 2 | 2.06 e 3 | 0.118 |  | 3.55 |  | 1.57 | 7.69 |  |
| 40 | 40 Total PFOA | $413>368.7$ | 2.03 e 3 | 2.24 e 4 | 0.118 |  | 3.63 |  | 1.06 | 7.05 |  |
| 41 | 41 Total PFOS | $499>79.9$ | 2.72 e 2 | 4.16 e 3 | 0.118 |  | 3.86 |  | 0.819 | 6.07 |  |
| 42 | 42 Total N-Me-FOSAA | $570.1>419$ | 0.00 e 0 | 2.04 e 3 | 0.118 |  | 4.20 |  | 0.000 |  |  |
| 43 | 43 Total N-EtFOSAA | $584.2>419$ | 0.00 e 0 | 1.59 e 3 | 0.118 |  | 4.30 |  | 0.000 |  |  |

## Quantify Totals Report MassLynx MassLynx V4.1 SCN945 SCN960

| Dataset: | U:IQ4.PROIresults 1170711M11170711M1-52.qld |
| :--- | :--- |
| Last Altered: | Wednesday, July 12, 2017 16:01:50 Pacific Daylight Time |
| Printed: | Wednesday, July 12, 2017 16:02:07 Pacific Daylight Time |

Method: U:|Q4.PRO\MethDB\PFAS_L14-7-5-17.mdb 10 Jul 2017 08:06:14
Calibration: U:\Q4.PRO\CurveDBIC18_VAL-PFAS_Q4_7-10-17-L14.cdb 11 Jul 2017 08:36:22
Name: 170711M1_52, Date: 11-Jul-2017, Time: 19:41:03, ID: 1700803-03 IRPSite7-GW-46GW205-20170628 0.11772, Description: IRPSite7-GW-46GW205-20170628

## Total PFBS

|  | \# Name | Trace |  |  |  |  |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| 1 | 1 PFBS | $299>79.7$ | 2.87 | 310.282 | 2617.608 | Area | IS Area |

Total PFHxS

|  | \# Name | Trace | RT | Area | IS Area | Response | Primary Flags | Conc. |
| :--- | :--- | :--- | :--- | :--- | :--- | ---: | ---: | ---: | ---: |
| 1 | 4 PFHxS | $398.9>79.6$ | 3.45 | 258.587 | 2060.851 | 1.568 | bb | 7.7 |

## Total PFOA

| \# Name | Trace | RT | Area | IS Area | Response | Primary Flags | Conc. |
| :---: | :--- | ---: | ---: | ---: | ---: | ---: | ---: |
| 5 PFOA | $413>368.7$ | 3.58 | 1905.110 | 22435.453 | 1.061 | MM |  |
| 40 Total PFOA | $413>368.7$ | 3.53 | 120.010 | 22435.453 | 0.067 | MMI |  |

## Total PFOS

|  | \# Name | Trace | RT | Area | IS Area | Response | Primary Flags | Conc. |
| :--- | :--- | :--- | ---: | ---: | ---: | ---: | ---: | ---: |
| 1 | 7 PFOS | $499>79.9$ | 3.76 | 272.429 | 4158.755 | 0.819 | $M M$ | 6.1 |

Total N-Me-FOSAA
\# Name
Trace
RT Area
IS Area
Response

Primary Flags
Conc.

Total N-EtFOSAA

| \# Name | Trace | RT | Area | IS Area |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 1 |  |  | Response |  |  |

## Dataset: U:IQ4.PRO\results\170711M1\170711M1-52.qld

Last Altered: Wednesday, July 12, 2017 16:01:50 Pacific Daylight Time
Printed: Wednesday, July 12, 2017 16:02:07 Pacific Daylight Time

## Method: U:|Q4.PRO\MethDB\PFAS_L14-7-5-17.mdb 10 Jul 2017 08:06:14

## Calibration: U:IQ4.PRO\CurveDBIC18_VAL-PFAS_Q4_7-10-17-L14.cdb 11 Jul 2017 08:36:22

## Name: 170711M1_52, Date: 11-Jul-2017, Time: 19:41:03, ID: 1700803-03 IRPSite7-GW-46GW205-20170628 0.11772, Description: IRPSite7-GW-46GW205-20170628


 $299>99$


13C3-PFBS


PFHxA


PFHpA



13C4-PFHpA


## Total PFHxS




1802-PFHxS


## Dataset:

U:IQ4.PRO|results|170711M11170711M1-52.qld

| Last Altered: | Wednesday, July 12, 2017 16:01:50 Pacific Daylight Time |
| :--- | :--- |
| Printed: | Wednesday, July 12, 2017 16:02:07 Pacific Daylight Time |

## Name: 170711M1_52, Date: 11-Jul-2017, Time: 19:41:03, ID: 1700803-03 IRPSite7-GW-46GW205-20170628 0.11772, Description: IRPSite7-GW-46GW205-20170628

\section*{Total PFOA <br> | 1007 | F19:MRM of 2 channels,ES |  |
| :---: | :---: | :---: |
|  | F19.MR | 413 > 368.7 |
|  | PFOA | $4.047 \mathrm{e}+004$ |
|  | 3.58 |  |
|  | 1.91 e 3 |  |
|  | 39703 |  |
| \%- | MM |  |
|  | $3.023 .21 \quad 39703.00$ |  |
|  | L $3.21 \sim \sim$ | 3.743 .85 |



13C2-PFOA



13C5-PFNA


## Total PFOS



13C8-PFOS


## PFDA



13C2-PFUnA


## Dataset:

U:IQ4.PRO|results|170711M11170711M1-52.qld

| Last Altered: | Wednesday, July 12, 2017 16:01:50 Pacific Daylight Time |
| :--- | :--- |
| Printed: | Wednesday, July 12, 2017 16:02:07 Pacific Daylight Time |

Name: 170711M1_52, Date: 11-Jul-2017, Time: 19:41:03, ID: 1700803-03 IRPSite7-GW-46GW205-20170628 0.11772, Description: IRPSite7-GW-46GW205-20170628

## PFUnA




13C2-PFUnA

## N-MeFOSAA


d3-N-MeFOSAA
F49:MRM of 1 channel,ES-


d5-N-EtFOSAA


PFDoA


13C2-PFDoA


## Dataset:

U:IQ4.PRO|results|170711M11170711M1-52.qld
Last Altered: Wednesday, July 12, 2017 16:01:50 Pacific Daylight Time Printed: Wednesday, July 12, 2017 16:02:07 Pacific Daylight Time

Name: 170711M1_52, Date: 11-Jul-2017, Time: 19:41:03, ID: 1700803-03 IRPSite7-GW-46GW205-20170628 0.11772, Description: IRPSite7-GW-46GW205-20170628

## PFTeDA




13C2-PFTeDA



13C2-PFTeDA
F59:MRM of 2 channels,ES-



13C8-PFOA


13C3-PFHxS


13C9-PFNA


## Quantify Sample Report

## Dataset: U:IQ4.PROTresults\170711M1\170711M1-52.qld

Last Altered: Wednesday, July 12, 2017 16:01:50 Pacific Daylight Time Printed: Wednesday, July 12, 2017 16:02:07 Pacific Daylight Time

## Name: 170711M1_52, Date: 11-Jul-2017, Time: 19:41:03, ID: 1700803-03 IRPSite7-GW-46GW205-20170628 0.11772, Description: IRPSite7-GW-46GW205-20170628

## 13C4-PFOS




13C7-PFUnA


## Quantify Sample Summary Report

 Vista Analytical Laboratory
## Dataset: <br> U:IQ4.PRO\results1170711M11170711M1-53.qld

Last Altered: Thursday, July 13, 2017 08:59:58 Pacific Daylight Time Printed: Thursday, July 13, 2017 09:00:31 Pacific Daylight Time

## Method: U:IQ4.PRO\MethDBIPFAS L14-7-5-17.mdb 10 Jul 2017 08:06:14

 Calibration: U:IQ4.PRO\CurveDBIC18_VAL-PFAS_Q4_7-10-17-L14.cdb 11 Jul 2017 08:36:22Name: 170711M1_53, Date: 11-Jul-2017, Time: 19:51:41, ID: 1700803-04 IRPSite7-GW-FD01-20170628 0.12078, Description: IRPSite7-GW-FD01-20170628

|  | \# Name | Trace | Area | IS Area | Wt./Vol. | RRF | Pred.RT | RT | y Axis Resp. | Conc. | \%Rec |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | 1 PFBS | $299>79.7$ | 1.96 e 2 | 4.53 e 3 | 0.121 |  | 2.92 | 2.87 | 0.541 | 2.48 |  |
| 2 | 2 PFHxA | 313.2 > 268.9 | 4.36 e 3 | 1.31 e 4 | 0.121 |  | 3.16 | 3.11 | 1.67 | 8.15 |  |
| 3 | 3 PFHpA | $363>318.9$ | 2.16 e 3 | 3.03 e 4 | 0.121 |  | 3.43 | 3.38 | 0.891 | 4.95 |  |
| 4 | 4 PFHxS | $398.9>79.6$ | 1.24 e 3 | 3.53 e 3 | 0.121 |  | 3.55 | 3.45 | 4.40 | 20.2 |  |
| 5 | 5 PFOA | $413>368.7$ | 7.17 e 3 | 4.07 e 4 | 0.121 |  | 3.63 | 3.57 | 2.20 | 15.2 |  |
| 6 | 6 PFNA | $462.9>418.8$ | 6.18 e 2 | 3.42e4 | 0.121 |  | 3.82 | 3.76 | 0.226 | 1.02 |  |
| 7 | 7 PFOS | $499>79.9$ | 1.68 e 3 | 6.88 e 3 | 0.121 |  | 3.86 | 3.80 | 3.06 | 22.6 |  |
| 8 | 8 PFDA | $513>468.8$ |  | 2.66 e 4 | 0.121 |  | 4.00 |  |  |  |  |
| 9 | 9 PFUnA | $562.9>518.9$ |  | 1.11 e 4 | 0.121 |  | 4.16 |  |  |  |  |
| 10 | 10 N-MeFOSAA | $570.1>419$ |  | 2.59 e 3 | 0.121 |  | 4.00 |  |  |  |  |
| 11 | $11 \mathrm{~N}-\mathrm{EtFOSAA}$ | $584.2>419$ |  | 1.73 e3 | 0.121 |  | 4.08 |  |  |  |  |
| 12 | 12 PFDoA | $612.9>318.8$ |  | 3.31 e 2 | 0.121 |  | 4.32 |  |  |  |  |
| 13 | 13 PFTrDA | $662.9>618.9$ |  | 3.31 e 2 | 0.121 |  | 4.50 |  |  |  |  |
| 14 | 14 PFTeDA | $712.9>668.8$ |  | 1.29 e 3 | 0.121 |  | 4.66 |  |  |  |  |
| 15 | 15 13C3-PFBA | $216.1>171.8$ | 2.37 e 4 | 2.53 e 4 | 0.121 | 0.918 | 1.43 | 1.33 | 11.7 | 106 | 102.1 |
| 16 | 16 13C3-PFPeA | $266>221.8$ | 3.44 e 4 | 2.53 e 4 | 0.121 | 1.784 | 2.72 | 2.63 | 17.0 | 79.1 | 76.4 |
| 17 | 17 13C3-PFBS | $302>98.8$ | 4.53 e 3 | 2.53 e 4 | 0.121 | 0.215 | 2.92 | 2.87 | 2.24 | 86.2 | 83.2 |
| 18 | 18 13C2-PFHXA | $315>269.8$ | 1.31 e 4 | 4.21 e 4 | 0.121 | 0.304 | 3.16 | 3.11 | 1.55 | 42.3 | 102.2 |
| 19 | 19 13C4-PFHpA | $367.2>321.8$ | 3.03 e 4 | 4.21 e 4 | 0.121 | 0.306 | 3.43 | 3.37 | 3.60 | 97.4 | 94.1 |
| 20 | 20 1802-PFHxS | $403>102.6$ | 3.53 e 3 | 7.44e3 | 0.121 | 0.437 | 3.55 | 3.45 | 5.94 | 112 | 108.6 |
| 21 | 21 13C2-PFOA | $414.9>369.7$ | 4.07e4 | 3.51 e 4 | 0.121 | 1.292 | 3.63 | 3.57 | 14.5 | 92.9 | 89.7 |
| 22 | 22 13C5-PFNA | $468.2>422.9$ | 3.42e4 | 3.39 e 4 | 0.121 | 0.980 | 3.82 | 3.75 | 12.6 | 106 | 102.8 |
| 23 | 23 13C8-PFOS | $507>79.9$ | 6.88 e 3 | 6.79 e 3 | 0.121 | 1.098 | 3.86 | 3.80 | 12.7 | 95.5 | 92.2 |
| 24 | 24 13C2-PFDA | $515.1>469.9$ | 2.66 e 4 | 2.81 e 4 | 0.121 | 0.928 | 4.00 | 3.92 | 11.9 | 106 | 102.2 |
| 25 | 25 13C2-PFUnA | $565>519.8$ | 1.11 e 4 | 1.31 e 4 | 0.121 | 1.083 | 4.16 | 4.08 | 10.6 | 81.1 | 78.3 |
| 26 | 26 d3-N-MeFOSAA | $573.3>419$ | 2.59 e 3 | 1.31 e 4 | 0.121 | 0.224 | 4.00 | 3.94 | 2.46 | 90.9 | 87.8 |
| 27 | 27 d5-N-EtFOSAA | $589.3>419$ | 1.73 e 3 | 1.31 e 4 | 0.121 | 0.230 | 4.08 | 4.01 | 1.65 | 59.3 | 57.3 |
| 28 | 28 13C2-PFDoA | $615>569.7$ | 3.31 e 2 | 1.31 e 4 | 0.121 | 0.130 | 4.32 | 4.23 | 0.315 | 20.1 | 19.4 |
| 29 | 29 13C2-PFTeDA | $714.8>669.6$ | 1.29 e 3 | 1.31 e 4 | 0.121 | 1.018 | 4.66 | 4.57 | 1.22 | 9.96 | 9.6 |
| 30 | 30 13C4-PFBA | $217>171.8$ | 2.53 e 4 | 2.53 e 4 | 0.121 | 1.000 | 1.43 | 1.33 | 12.5 | 103 | 100.0 |
| 31 | 31 13C5-PFHxA | $318>272.9$ | 4.21 e 4 | 4.21 e 4 | 0.121 | 1.000 | 3.18 | 3.11 | 5.00 | 41.4 | 100.0 |
| 32 | $32.13 \mathrm{C} 3-\mathrm{PFHxS}$ | $401.9>79.9$ | 7.44e3 | 7.44e3 | 0.121 | 1.000 | 3.55 | 3.45 | 12.5 | 103 | 100.0 |

## Quantify Sample Summary Report

MassLynx MassLynx V4.1 SCN945 SCN960

Dataset:
U:IQ4.PRO|results\170711M11170711M1-53.qld

## Last Altered: Thursday, July 13, 2017 08:59:58 Pacific Daylight Time

 Printed: Thursday, July 13, 2017 09:00:31 Pacific Daylight TimeName: 170711M1_53, Date: 11-Jul-2017, Time: 19:51:41, ID: 1700803-04 IRPSite7-GW-FD01-20170628 0.12078, Description: IRPSite7-GW-FD01-20170628

|  | \# Name | Trace | Area | IS Area | Wt./Vol. | RRF | Pred.RT | RT | y Axis Resp. | Conc. | \%Rec |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 33 | 33 13C8-PFOA | $421.3>376$ | 3.51 e 4 | 3.51 e 4 | 0.121 | 1.000 | 3.63 | 3.57 | 12.5 | 103 | 100.0 |
| 34 | 34 13C9-PFNA | $472.2>426.9$ | 3.39 e 4 | 3.39 e 4 | 0.121 | 1.000 | 3.82 | 3.75 | 12.5 | 103 | 100.0 |
| 35 | 35 13C4-PFOS | $503>79.9$ | 6.79 e 3 | 6.79 e 3 | 0.121 | 1.000 | 3.86 | 3.80 | 12.5 | 103 | 100.0 |
| 36 | 36 13C6-PFDA | $519.1>473.7$ | 2.81 e 4 | 2.81 e 4 | 0.121 | 1.000 | 4.00 | 3.91 | 12.5 | 103 | 100.0 |
| 37 | 37 13C7-PFUnA | $570.1>524.8$ | 1.31 e 4 | 1.31 e 4 | 0.121 | 1.000 | 4.16 | 4.08 | 12.5 | 103 | 100.0 |
| 38 | 38 Total PFBS | $299>79.7$ | 1.96 e 2 | 4.53 e 3 | 0.121 |  | 2.92 |  | 0.541 | 2.48 |  |
| 39 | 39 Total PFHxS | $398.9>79.6$ | 1.24 e 3 | 3.53 e 3 | 0.121 |  | 3.55 |  | 4.40 | 20.2 |  |
| 40 | 40 Total PFOA | $413>368.7$ | 7.56 e 3 | 4.07 e 4 | 0.121 |  | 3.63 |  | 2.32 | 15.2 |  |
| 41 | 41 Total PFOS | $499>79.9$ | 1.68 e 3 | 6.88e3 | 0.121 |  | 3.86 |  | 3.06 | 22.6 |  |
| 42 | 42 Total N-Me-FOSAA | $570.1>419$ | 0.00 e 0 | 2.59 e 3 | 0.121 |  | 4.20 |  | 0.000 |  |  |
| 43 | 43 Total N -EtFOSAA | $584.2>419$ | 0.00 e 0 | 1.73 e 3 | 0.121 |  | 4.30 |  | 0.000 |  |  |

## Quantify Totals Report MassLynx MassLynx V4.1 SCN945 SCN960

Dataset: U:\Q4.PRO|results\170711M1\170711M1-53.qld
Last Altered: Thursday, July 13, 2017 08:59:58 Pacific Daylight Time Printed: Thursday, July 13, 2017 09:00:31 Pacific Daylight Time

Method: U:|Q4.PRO\MethDB\PFAS_L14-7-5-17.mdb 10 Jul 2017 08:06:14 Calibration: U:IQ4.PROCCurveDBIC18_VAL-PFAS_Q4_7-10-17-L14.cdb 11 Jul 2017 08:36:22

Name: 170711M1_53, Date: 11-Jul-2017, Time: 19:51:41, ID: 1700803-04 IRPSite7-GW-FD01-20170628 0.12078, Description: IRPSite7-GW-FD01-20170628

## Total PFBS

|  | \# Name | Trace |  |  |  |  |  |  |
| :--- | :--- | :--- | :--- | ---: | ---: | ---: | ---: | ---: |
| 1 | 1 PFBS | $299>79.7$ | 2.87 | 195.995 | 4527.210 | Area | IS Area | Response |

Total PFHxS

|  | \# Name | Trace | RT | Area | IS Area | Response | Primary Flags |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| 1 | 4 PFHxS | $398.9>79.6$ | 3.45 | 1242.316 | 3531.970 | 4.397 | MM |

## Total PFOA

| \# Name | Trace | RT | Area | IS Area | Response | Primary Flags | Conc. |
| :---: | :--- | ---: | ---: | ---: | ---: | ---: | ---: | ---: |
| 5 PFOA | $413>368.7$ | 3.57 | 7174.512 | 40679.680 | 2.205 | MM |  |
| 40 Total PFOA | $413>368.7$ | 3.54 | 382.610 | 40679.680 | 0.118 | MM |  |

## Total PFOS

|  | \# Name | Trace | RT | Area | IS Area | Response | Primary Flags | Conc. |
| :--- | :--- | :--- | ---: | ---: | ---: | ---: | ---: | ---: |
| 1 | 7 PFOS | $499>79.9$ | 3.80 | 1682.811 | 6877.318 | 3.059 | $M M$ | 22.6 |

Total N-Me-FOSAA

|  | \# Name | Trace | RT | Area | IS Area | Response Primary Flags |
| :---: | :---: | :---: | ---: | ---: | ---: | ---: |
| 1 | 10 N-MeFOSAA | $570.1>419$ |  | 2587.154 | Conc. |  |

Total N-EtFOSAA

|  | \# Name | Trace | RT | Area | IS Area | Response Primary Flags |
| :---: | :---: | ---: | ---: | ---: | ---: | ---: |
| 1 | 11 N-EtFOSAA | $584.2>419$ |  | 1729.547 | Conc. |  |

## Dataset:

U:IQ4.PRO|results|170711M11170711M1-53.qld

## Last Altered: Thursday, July 13, 2017 08:59:58 Pacific Daylight Time

 Printed: Thursday, July 13, 2017 09:00:31 Pacific Daylight Time
## Method: U:|Q4.PRO\MethDB\PFAS_L14-7-5-17.mdb 10 Jul 2017 08:06:14

## Calibration: U:|Q4.PRO\CurveDBIC18_VAL-PFAS_Q4_7-10-17-L14.cdb 11 Jul 2017 08:36:22

## Name: 170711M1_53, Date: 11-Jul-2017, Time: 19:51:41, ID: 1700803-04 IRPSite7-GW-FD01-20170628 0.12078, Description: IRPSite7-GW-FD01-20170628



13C3-PFBS


## PFHxA



PFHpA


13C4-PFHpA


## Total PFHxS



1802-PFHxS


U:IQ4.PRO|resultsl170711M11170711M1-53.qld
Last Altered: Thursday, July 13, 2017 08:59:58 Pacific Daylight Time
Printed: Thursday, July 13, 2017 09:00:31 Pacific Daylight Time

Name: 170711M1_53, Date: 11-Jul-2017, Time: 19:51:41, ID: 1700803-04 IRPSite7-GW-FD01-20170628 0.12078, Description: IRPSite7-GW-FD01-20170628

\section*{Total PFOA <br> | 100 | F19:MRM of 2 channels,ES- |  |
| :---: | :---: | :---: |
|  |  | $413>368.7$ |
|  | PFOA | $1.610 \mathrm{e}+005$ |
|  | 3.57 |  |
|  | 7.17e3 |  |
| \%- | 159716 |  |
| \%- | MM |  |
|  | 582.76 |  |



13C2-PFOA



13C5-PFNA


## Total PFOS



13C8-PFOS


PFDA


13C2-PFUnA


U:IQ4.PRO|resultsl170711M11170711M1-53.qld
Last Altered: Thursday, July 13, 2017 08:59:58 Pacific Daylight Time
Printed: Thursday, July 13, 2017 09:00:31 Pacific Daylight Time

Name: 170711M1_53, Date: 11-Jul-2017, Time: 19:51:41, ID: 1700803-04 IRPSite7-GW-FD01-20170628 0.12078, Description: IRPSite7-GW-FD01-20170628

## PFUnA




13C2-PFUnA


## N-MeFOSAA


d3-N-MeFOSAA
F49:MRM of 1 channel,ES-


d5-N-EtFOSAA


PFDoA



13C2-PFDoA


U:\Q4.PRO\resultsl170711M11170711M1-53.qld
Last Altered: Thursday, July 13, 2017 08:59:58 Pacific Daylight Time
Printed: Thursday, July 13, 2017 09:00:31 Pacific Daylight Time

Name: 170711M1_53, Date: 11-Jul-2017, Time: 19:51:41, ID: 1700803-04 IRPSite7-GW-FD01-20170628 0.12078, Description: IRPSite7-GW-FD01-20170628

## PFTeDA



13C2-PFTeDA



13C2-PFTeDA



13C8-PFOA


13C3-PFHxS


13C9-PFNA


## Quantify Sample Report

## Dataset: <br> U:IQ4.PRO\results1170711M11170711M1-53.qld

Last Altered: Thursday, July 13, 2017 08:59:58 Pacific Daylight Time Printed: Thursday, July 13, 2017 09:00:31 Pacific Daylight Time

## Name: 170711M1_53, Date: 11-Jul-2017, Time: 19:51:41, ID: 1700803-04 IRPSite7-GW-FD01-20170628 0.12078, Description: IRPSite7-GW-FD01-20170628

## 13C4-PFOS



13C6-PFDA


13C7-PFUnA


## Quantify Sample Summary Report

 Vista Analytical Laboratory
## Dataset: <br> U:IQ4.PRO|results|170711M11170711M1-54.qld

## Last Altered: Thursday, July 13, 2017 09:04:50 Pacific Daylight Time

 Printed: Thursday, July 13, 2017 09:05:07 Pacific Daylight Time
## Method: U:|Q4.PRO\MethDB\PFAS L14-7-5-17.mdb 10 Jul 2017 08:06:14

 Calibration: U:IQ4.PRO\CurveDBIC18_VAL-PFAS_Q4_7-10-17-L14.cdb 11 Jul 2017 08:36:22Name: 170711M1_54, Date: 11-Jul-2017, Time: 20:02:19, ID: 1700803-05 IRPSite7-GW-07GW202-20170628 0.12196, Description: IRPSite7-GW-07GW202-20170628

|  | \# Name | Trace | Area | IS Area | Wt./Vol. | RRF | Pred.RT | RT | y Axis Resp. | Conc. | \%Rec |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | 1 PFBS | $299>79.7$ | 2.22 e 2 | 1.96 e 3 | 0.122 |  | 2.92 | 2.87 | 1.42 | 5.60 |  |
| 2 | 2 PFHxA | $313.2>268.9$ |  | 5.75 e 3 | 0.122 |  | 3.16 |  |  |  |  |
| 3 | 3 PFHpA | $363>318.9$ | 6.58 e 2 | 1.32 e 4 | 0.122 |  | 3.43 | 3.38 | 0.623 | 3.37 |  |
| 4 | 4 PFHxS | $398.9>79.6$ | 1.15 e 2 | 1.38 e 3 | 0.122 |  | 3.55 | 3.44 | 1.04 | 5.05 |  |
| 5 | 5 PFOA | $413>368.7$ | 1.64 e 3 | 1.83 e 4 | 0.122 |  | 3.63 | 3.57 | 1.12 | 7.22 |  |
| 6 | 6 PFNA | $462.9>418.8$ |  | 1.37 e 4 | 0.122 |  | 3.82 |  |  |  |  |
| 7 | 7 PFOS | $499>79.9$ | 2.48 e 2 | 2.91 e 3 | 0.122 |  | 3.86 | 3.79 | 1.07 | 7.68 |  |
| 8 | 8 PFDA | $513>468.8$ |  | 1.05 e 4 | 0.122 |  | 4.00 |  |  |  |  |
| 9 | 9 PFUnA | $562.9>518.9$ |  | 3.97 e 3 | 0.122 |  | 4.16 |  |  |  |  |
| 10 | 10 N-MeFOSAA | $570.1>419$ |  | 1.15 e 3 | 0.122 |  | 4.00 |  |  |  |  |
| 11 | $11 \mathrm{~N}-\mathrm{EtFOSAA}$ | $584.2>419$ |  | 8.73 e 2 | 0.122 |  | 4.08 |  |  |  |  |
| 12 | 12 PFDoA | $612.9>318.8$ |  | 2.13 e 2 | 0.122 |  | 4.32 |  |  |  |  |
| 13 | 13 PFTrDA | $662.9>618.9$ |  | 2.13 e 2 | 0.122 |  | 4.50 |  |  |  |  |
| 14 | 14 PFTeDA | $712.9>668.8$ |  | 1.07 e 3 | 0.122 |  | 4.66 |  |  |  |  |
| 15 | 15 13C3-PFBA | $216.1>171.8$ | 9.18 e 3 | 1.03 e 4 | 0.122 | 0.918 | 1.43 | 1.33 | 11.1 | 99.6 | 97.2 |
| 16 | 16 13C3-PFPeA | $266>221.8$ | 1.46 e 4 | 1.03 e 4 | 0.122 | 1.784 | 2.72 | 2.63 | 17.8 | 81.7 | 79.7 |
| 17 | 17 13C3-PFBS | $302>98.8$ | 1.96 e 3 | 1.03 e 4 | 0.122 | 0.215 | 2.92 | 2.86 | 2.38 | 90.8 | 88.6 |
| 18 | 18 13C2-PFHxA | $315>269.8$ | 5.75 e 3 | 1.78 e 4 | 0.122 | 0.304 | 3.16 | 3.11 | 1.62 | 43.8 | 106.7 |
| 19 | 19 13C4-PFHpA | $367.2>321.8$ | 1.32 e 4 | 1.78 e 4 | 0.122 | 0.306 | 3.43 | 3.37 | 3.72 | 99.6 | 97.2 |
| 20 | 20 18O2-PFHxS | $403>102.6$ | 1.38 e 3 | 3.41 e 3 | 0.122 | 0.437 | 3.55 | 3.44 | 5.06 | 94.9 | 92.6 |
| 21 | 21 13C2-PFOA | $414.9>369.7$ | 1.83 e 4 | 1.49 e 4 | 0.122 | 1.292 | 3.63 | 3.57 | 15.3 | 97.0 | 94.7 |
| 22 | 22 13C5-PFNA | $468.2>422.9$ | 1.37 e 4 | 1.65 e 4 | 0.122 | 0.980 | 3.82 | 3.75 | 10.4 | 87.3 | 85.1 |
| 23 | 23 13C8-PFOS | $507>79.9$ | 2.91 e 3 | 3.00 e 3 | 0.122 | 1.098 | 3.86 | 3.80 | 12.1 | 90.6 | 88.4 |
| 24 | 24 13C2-PFDA | $515.1>469.9$ | 1.05 e 4 | 1.23 e 4 | 0.122 | 0.928 | 4.00 | 3.92 | 10.7 | 94.8 | 92.4 |
| 25 | 25 13C2-PFUnA | $565>519.8$ | 3.97e3 | 5.26 e 3 | 0.122 | 1.083 | 4.16 | 4.09 | 9.44 | 71.5 | 69.8 |
| 26 | 26 d3-N-MeFOSAA | $573.3>419$ | 1.15 e 3 | 5.26 e 3 | 0.122 | 0.224 | 4.00 | 3.94 | 2.73 | 99.9 | 97.5 |
| 27 | $27 \mathrm{~d} 5-\mathrm{N}-\mathrm{EtFOSAA}$ | $589.3>419$ | 8.73 e 2 | 5.26 e 3 | 0.122 | 0.230 | 4.08 | 4.01 | 2.08 | 74.1 | 72.3 |
| 28 | 28 13C2-PFDoA | $615>569.7$ | 2.13 e 2 | 5.26 e 3 | 0.122 | 0.130 | 4.32 | 4.23 | 0.506 | 32.0 | 31.2 |
| 29 | 29 13C2-PFTeDA | $714.8>669.6$ | 1.07e3 | 5.26 e 3 | 0.122 | 1.018 | 4.66 | 4.57 | 2.56 | 20.6 | 20.1 |
| 30 | 30 13C4-PFBA | $217>171.8$ | 1.03 e 4 | 1.03 e 4 | 0.122 | 1.000 | 1.43 | 1.33 | 12.5 | 102 | 100.0 |
| 31 | 31 13C5-PFHxA | $318>272.9$ | 1.78 e 4 | 1.78 e 4 | 0.122 | 1.000 | 3.18 | 3.11 | 5.00 | 41.0 | 100.0 |
| 32 | 32 13C3-PFHxS | $401.9>79.9$ | 3.41 e 3 | 3.41 e 3 | 0.122 | 1.000 | 3.55 | 3.44 | 12.5 | 102 | 100.0 |

## Quantify Sample Summary Report

 Vista Analytical Laboratory
## Dataset: <br> U:IQ4.PRO|results1170711M11170711M1-54.qld

Last Altered: Thursday, July 13, 2017 09:04:50 Pacific Daylight Time Printed: Thursday, July 13, 2017 09:05:07 Pacific Daylight Time

Name: 170711M1_54, Date: 11-Jul-2017, Time: 20:02:19, ID: 1700803-05 IRPSite7-GW-07GW202-20170628 0.12196, Description: IRPSite7-GW-07GW202-20170628

|  | \# Name | Trace | Area | IS Area | Wt./Vol. | RRF | Pred.RT | RT | y Axis Resp. | Conc. | \%Rec |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 33 | 33 13C8-PFOA | $421.3>376$ | 1.49 e 4 | 1.49e4 | 0.122 | 1.000 | 3.63 | 3.57 | 12.5 | 102 | 100.0 |
| 34 | 34 13C9-PFNA | $472.2>426.9$ | 1.65 e 4 | 1.65 e 4 | 0.122 | 1.000 | 3.82 | 3.75 | 12.5 | 102 | 100.0 |
| 35 | 35 13C4-PFOS | $503>79.9$ | 3.00 e 3 | 3.00 e 3 | 0.122 | 1.000 | 3.86 | 3.80 | 12.5 | 102 | 100.0 |
| 36 | 36 13C6-PFDA | $519.1>473.7$ | 1.23 e 4 | 1.23 e 4 | 0.122 | 1.000 | 4.00 | 3.92 | 12.5 | 102 | 100.0 |
| 37 | 37 13C7-PFUnA | $570.1>524.8$ | 5.26 e 3 | 5.26 e 3 | 0.122 | 1.000 | 4.16 | 4.08 | 12.5 | 102 | 100.0 |
| 38 | 38 Total PFBS | $299>79.7$ | 2.22 e 2 | 1.96 e 3 | 0.122 |  | 2.92 |  | 1.42 | 5.60 |  |
| 39 | 39 Total PFHxS | $398.9>79.6$ | 1.15 e 2 | 1.38 e 3 | 0.122 |  | 3.55 |  | 1.04 | 5.05 |  |
| 40 | 40 Total PFOA | $413>368.7$ | 1.64 e 3 | 1.83 e 4 | 0.122 |  | 3.63 |  | 1.12 | 7.22 |  |
| 41 | 41 Total PFOS | $499>79.9$ | 2.48 e 2 | 2.91 e 3 | 0.122 |  | 3.86 |  | 1.07 | 7.68 |  |
| 42 | 42 Total N-Me-FOSAA | $570.1>419$ | 0.00 e 0 | 1.15 e 3 | 0.122 |  | 4.20 |  | 0.000 |  |  |
| 43 | 43 Total N-EtFOSAA | $584.2>419$ | 0.00 e 0 | 8.73 e 2 | 0.122 |  | 4.30 |  | 0.000 |  |  |

## Quantify Totals Report MassLynx MassLynx V4.1 SCN945 SCN960

```
Dataset: U:\Q4.PRO\results\170711M1\170711M1-54.q|d
```

Last Altered: Thursday, July 13, 2017 09:04:50 Pacific Daylight Time
Printed: Thursday, July 13, 2017 09:05:07 Pacific Daylight Time

Method: U:|Q4.PRO\MethDB\PFAS_L14-7-5-17.mdb 10 Jul 2017 08:06:14

## Calibration: U:\Q4.PRO\CurveDBIC18_VAL-PFAS_Q4_7-10-17-L14.cdb 11 Jul 2017 08:36:22

Name: 170711M1_54, Date: 11-Jul-2017, Time: 20:02:19, ID: 1700803-05 IRPSite7-GW-07GW202-20170628 0.12196, Description: IRPSite7-GW-07GW202-20170628

## Total PFBS

|  | Trace | RT | Area | IS Area | Response | Primary Flags | Conc. |  |
| :--- | :--- | :--- | ---: | ---: | ---: | ---: | ---: | ---: | ---: |
| 1 | \# Name | $299>79.7$ | 2.87 | 222.291 | 1963.417 | 1.415 | bb | 5.6 |

Total PFHxS

|  | \# Name | Trace | RT | Area | IS Area | Response | Primary Flags | Conc. |
| :--- | :--- | :--- | :--- | ---: | ---: | ---: | ---: | ---: | ---: |
| 1 | 4 PFHxS | $398.9>79.6$ | 3.44 | 114.625 | 1380.719 | 1.038 | $M M$ | 5.1 |

## Total PFOA

|  | \# Name | Trace | RT | Area | IS Area | Response | Primary Flags | Conc. |
| :--- | :--- | :--- | ---: | ---: | ---: | ---: | ---: | ---: |
| 1 | 5 PFOA | $413>368.7$ | 3.57 | 1637.018 | 18285.441 | 1.119 | bb | 7.2 |

## Total PFOS

|  | \# Name | Trace | RT | Area | IS Area | Response | Primary Flags | Conc. |
| :--- | :--- | :--- | :--- | ---: | ---: | ---: | ---: | ---: |
| 1 | 7 PFOS | $499>79.9$ | 3.79 | 247.968 | 2908.674 | 1.066 | MM | 7.7 |

## Total N-Me-FOSAA

|  | \# Name | Trace | RT | Area | IS Area |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 1 |  | Response Primary Flags |  |  |  |

## Total N-EtFOSAA

| \# Name | Trace | RT | Area | IS Area | Response | Primary Flags | Conc. |
| :---: | :--- | :---: | :---: | :---: | :---: | :---: | :---: |
| 11 N-EtFOSAA | $584.2>419$ |  | 873.336 |  | MM-I |  |  |

## Dataset:

U:IQ4.PRO|results|170711M11170711M1-54.qld
Last Altered: Thursday, July 13, 2017 09:04:50 Pacific Daylight Time Printed: Thursday, July 13, 2017 09:05:07 Pacific Daylight Time

## Method: U:|Q4.PRO\MethDB\PFAS_L14-7-5-17.mdb 10 Jul 2017 08:06:14

## Calibration: U:IQ4.PRO\CurveDBIC18_VAL-PFAS_Q4_7-10-17-L14.cdb 11 Jul 2017 08:36:22

## Name: 170711M1_54, Date: 11-Jul-2017, Time: 20:02:19, ID: 1700803-05 IRPSite7-GW-07GW202-20170628 0.12196, Description: IRPSite7-GW-07GW202-20170628


 $299>99$ $299>99$
$2.464 \mathrm{e}+003$


13C3-PFBS



F8:MRM of 2 channels,ES$313.2>119$ $1.000 \mathrm{e}-003$


13C2-PFHxA




13C4-PFHpA


## Total PFHxS




1802-PFHxS


## Dataset:

U:IQ4.PRO|results\170711M11170711M1-54.qld

## Last Altered: Thursday, July 13, 2017 09:04:50 Pacific Daylight Time

 Printed: Thursday, July 13, 2017 09:05:07 Pacific Daylight Time
## Name: 170711M1_54, Date: 11-Jul-2017, Time: 20:02:19, ID: 1700803-05 IRPSite7-GW-07GW202-20170628 0.12196, Description: IRPSite7-GW-07GW202-20170628

## Total PFOA



13C2-PFOA



## Total PFOS



13C8-PFOS


## PFDA



13C2-PFUnA

Printed: Thursday, July 13, 2017 09:05:07 Pacific Daylight Time

## Name: 170711M1_54, Date: 11-Jul-2017, Time: 20:02:19, ID: 1700803-05 IRPSite7-GW-07GW202-20170628 0.12196, Description: IRPSite7-GW-07GW202-20170628

## PFUnA




13C2-PFUnA

## N-MeFOSAA


d3-N-MeFOSAA
F49:MRM of 1 channel,ES-


d5-N-EtFOSAA



13C2-PFDoA

Printed: Thursday, July 13, 2017 09:05:07 Pacific Daylight Time

Name: 170711M1_54, Date: 11-Jul-2017, Time: 20:02:19, ID: 1700803-05 IRPSite7-GW-07GW202-20170628 0.12196, Description: IRPSite7-GW-07GW202-20170628

## PFTeDA



## 13C2-PFTeDA




13C2-PFTeDA
F59:MRM of 2 channels,ES$714.8>669.6$



13C8-PFOA


13C3-PFHxS


13C9-PFNA


## Quantify Sample Report

## Dataset: U:IQ4.PRO|results\170711M11170711M1-54.qlc

Last Altered: Thursday, July 13, 2017 09:04:50 Pacific Daylight Time Printed: Thursday, July 13, 2017 09:05:07 Pacific Daylight Time

## Name: 170711M1_54, Date: 11-Jul-2017, Time: 20:02:19, ID: 1700803-05 IRPSite7-GW-07GW202-20170628 0.12196, Description: IRPSite7-GW-07GW202-20170628

## 13C4-PFOS



13C6-PFDA

| F38:MRM of 1 channel,ES- |
| :---: |
| $519.1>473.7$ |
| $2.416 \mathrm{e}+005$ |

13C7-PFUnA


## Quantify Sample Summary Report

 Vista Analytical Laboratory
## Dataset: <br> U:IQ4.PRO|results|170711M11170711M1-55.qld

## Last Altered: Thursday, July 13, 2017 09:10:05 Pacific Daylight Time

 Printed: Thursday, July 13, 2017 09:10:41 Pacific Daylight Time
## Method: U:|Q4.PRO\MethDB\PFAS L14-7-5-17.mdb 10 Jul 2017 08:06:14

 Calibration: U:|Q4.PRO\CurveDBIC18_VAL-PFAS_Q4_7-10-17-L14.cdb 11 Jul 2017 08:36:22Name: 170711M1_55, Date: 11-Jul-2017, Time: 20:12:58, ID: 1700803-06 IRPSite7-GW-FRB01-20170628 0.12281, Description: IRPSite7-GW-FRB01-20170628

|  | \# Name | Trace | Area | IS Area | Wt./Vol. | RRF | Pred.RT | RT | y Axis Resp. | Conc. | \%Rec |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | 1 PFBS | $299>79.7$ |  | 2.33 e 3 | 0.123 |  | 2.92 |  |  |  |  |
| 2 | 2 PFHxA | $313.2>268.9$ |  | 6.67 e 3 | 0.123 |  | 3.16 |  |  |  |  |
| 3 | 3 PFHpA | $363>318.9$ |  | 1.58 e 4 | 0.123 |  | 3.43 |  |  |  |  |
| 4 | 4 PFHxS | $398.9>79.6$ |  | 1.66 e 3 | 0.123 |  | 3.55 |  |  |  |  |
| 5 | 5 PFOA | $413>368.7$ |  | 2.27 e 4 | 0.123 |  | 3.63 |  |  |  |  |
| 6 | 6 PFNA | $462.9>418.8$ |  | 1.63 e 4 | 0.123 |  | 3.82 |  |  |  |  |
| 7 | 7 PFOS | $499>79.9$ |  | 3.54 e 3 | 0.123 |  | 3.86 |  |  |  |  |
| 8 | 8 PFDA | $513>468.8$ |  | 1.30 e 4 | 0.123 |  | 4.00 |  |  |  |  |
| 9 | 9 PFUnA | $562.9>518.9$ |  | 5.90 e 3 | 0.123 |  | 4.16 |  |  |  |  |
| 10 | 10 N-MeFOSAA | $570.1>419$ |  | 1.76 e 3 | 0.123 |  | 4.00 |  |  |  |  |
| 11 | $11 \mathrm{~N}-\mathrm{EtFOSAA}$ | $584.2>419$ |  | 1.38 e 3 | 0.123 |  | 4.08 |  |  |  |  |
| 12 | 12 PFDoA | $612.9>318.8$ |  | 2.49 e 2 | 0.123 |  | 4.32 |  |  |  |  |
| 13 | 13 PFTrDA | $662.9>618.9$ |  | 2.49 e 2 | 0.123 |  | 4.50 |  |  |  |  |
| 14 | 14 PFTeDA | $712.9>668.8$ |  | 5.08 e 2 | 0.123 |  | 4.66 |  |  |  |  |
| 15 | 15 13C3-PFBA | $216.1>171.8$ | 1.10 e 4 | 1.14 e 4 | 0.123 | 0.918 | 1.43 | 1.33 | 12.0 | 107 | 104.7 |
| 16 | 16 13C3-PFPeA | $266>221.8$ | 1.61 e 4 | 1.14 e 4 | 0.123 | 1.784 | 2.72 | 2.63 | 17.7 | 80.6 | 79.2 |
| 17 | 17 13C3-PFBS | $302>98.8$ | 2.33 e 3 | 1.14 e 4 | 0.123 | 0.215 | 2.92 | 2.87 | 2.56 | 96.7 | 95.0 |
| 18 | 18 13C2-PFHxA | $315>269.8$ | 6.67e3 | 2.17 e 4 | 0.123 | 0.304 | 3.16 | 3.11 | 1.53 | 41.1 | 101.0 |
| 19 | 19 13C4-PFHpA | $367.2>321.8$ | 1.58 e 4 | 2.17 e 4 | 0.123 | 0.306 | 3.43 | 3.38 | 3.64 | 96.8 | 95.1 |
| 20 | 20 18O2-PFHxS | $403>102.6$ | 1.66 e 3 | 3.97 e 3 | 0.123 | 0.437 | 3.55 | 3.45 | 5.24 | 97.6 | 95.9 |
| 21 | 21 13C2-PFOA | $414.9>369.7$ | 2.27 e 4 | 1.73 e 4 | 0.123 | 1.292 | 3.63 | 3.57 | 16.4 | 103 | 101.6 |
| 22 | 22 13C5-PFNA | $468.2>422.9$ | 1.63 e 4 | 1.95 e 4 | 0.123 | 0.980 | 3.82 | 3.75 | 10.4 | 86.8 | 85.2 |
| 23 | 23 13C8-PFOS | $507>79.9$ | 3.54 e 3 | 3.38 e 3 | 0.123 | 1.098 | 3.86 | 3.80 | 13.1 | 96.9 | 95.2 |
| 24 | 24 13C2-PFDA | $515.1>469.9$ | 1.30 e 4 | 1.58 e 4 | 0.123 | 0.928 | 4.00 | 3.92 | 10.3 | 90.0 | 88.4 |
| 25 | 25 13C2-PFUnA | $565>519.8$ | 5.90 e 3 | 7.06 e 3 | 0.123 | 1.083 | 4.16 | 4.08 | 10.4 | 78.6 | 77.2 |
| 26 | 26 d3-N-MeFOSAA | $573.3>419$ | 1.76 e 3 | 7.06 e 3 | 0.123 | 0.224 | 4.00 | 3.95 | 3.12 | 113 | 111.2 |
| 27 | $27 \mathrm{~d} 5-\mathrm{N}-\mathrm{EtFOSAA}$ | $589.3>419$ | 1.38 e 3 | 7.06 e 3 | 0.123 | 0.230 | 4.08 | 4.01 | 2.44 | 86.3 | 84.8 |
| 28 | 28 13C2-PFDoA | $615>569.7$ | 2.49 e 2 | 7.06 e 3 | 0.123 | 0.130 | 4.32 | 4.25 | 0.440 | 27.6 | 27.1 |
| 29 | 29 13C2-PFTeDA | $714.8>669.6$ | 5.08 e 2 | 7.06 e 3 | 0.123 | 1.018 | 4.66 | 4.57 | 0.900 | 7.20 | 7.1 |
| 30 | 30 13C4-PFBA | $217>171.8$ | 1.14 e 4 | 1.14 e 4 | 0.123 | 1.000 | 1.43 | 1.33 | 12.5 | 102 | 100.0 |
| 31 | 31 13C5-PFHxA | $318>272.9$ | 2.17 e 4 | 2.17 e 4 | 0.123 | 1.000 | 3.18 | 3.11 | 5.00 | 40.7 | 100.0 |
| 32 | 32 13C3-PFHxS | $401.9>79.9$ | 3.97 e 3 | 3.97 e 3 | 0.123 | 1.000 | 3.55 | 3.45 | 12.5 | 102 | 100.0 |

## Quantify Sample Summary Report

 Vista Analytical Laboratory
## Dataset: <br> U:IQ4.PROTresults1170711M11170711M1-55.qld

Last Altered: Thursday, July 13, 2017 09:10:05 Pacific Daylight Time Printed: Thursday, July 13, 2017 09:10:41 Pacific Daylight Time

## Name: 170711M1_55, Date: 11-Jul-2017, Time: 20:12:58, ID: 1700803-06 IRPSite7-GW-FRB01-20170628 0.12281, Description: IRPSite7-GW-FRB01-20170628

|  | \# Name | Trace | Area | IS Area | Wt./Vol. | RRF | Pred.RT | RT | y Axis Resp. | Conc. | \%Rec |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 33 | 33 13C8-PFOA | $421.3>376$ | 1.73 e 4 | 1.73 e 4 | 0.123 | 1.000 | 3.63 | 3.57 | 12.5 | 102 | 100.0 |
| 34 | 34 13C9-PFNA | $472.2>426.9$ | $1.95{ }^{\text {e }}$ | 1.95 e 4 | 0.123 | 1.000 | 3.82 | 3.75 | 12.5 | 102 | 100.0 |
| 35 | 35 13C4-PFOS | $503>79.9$ | 3.38 e 3 | 3.38 e 3 | 0.123 | 1.000 | 3.86 | 3.80 | 12.5 | 102 | 100.0 |
| 36 | 36 13C6-PFDA | $519.1>473.7$ | 1.58 e 4 | 1.58 e 4 | 0.123 | 1.000 | 4.00 | 3.92 | 12.5 | 102 | 100.0 |
| 37 | 37 13C7-PFUnA | $570.1>524.8$ | 7.06 e 3 | 7.06 e 3 | 0.123 | 1.000 | 4.16 | 4.08 | 12.5 | 102 | 100.0 |
| 38 | 38 Total PFBS | $299>79.7$ | 0.00 e 0 | 2.33 e 3 | 0.123 |  | 2.92 |  | 0.000 |  |  |
| 39 | 39 Total PFHxS | $398.9>79.6$ | 0.00 e 0 | 1.66 e 3 | 0.123 |  | 3.55 |  | 0.000 |  |  |
| 40 | 40 Total PFOA | $413>368.7$ | 0.00e0 | 2.27 e 4 | 0.123 |  | 3.63 |  | 0.000 |  |  |
| 41 | 41 Total PFOS | $499>79.9$ | 0.00e0 | 3.54 e 3 | 0.123 |  | 3.86 |  | 0.000 |  |  |
| 42 | 42 Total N-Me-FOSAA | $570.1>419$ | 0.00e0 | 1.76 e 3 | 0.123 |  | 4.20 |  | 0.000 |  |  |
| 43 | 43 Total N-EtFOSAA | $584.2>419$ | 0.00e0 | 1.38 e 3 | 0.123 |  | 4.30 |  | 0.000 |  |  |

## Quantify Totals Report MassLynx MassLynx V4.1 SCN945 SCN960

Dataset: U:\Q4.PROTresults\170711M1\170711M1-55.qld
Last Altered: Thursday, July 13, 2017 09:10:05 Pacific Daylight Time Printed: Thursday, July 13, 2017 09:10:41 Pacific Daylight Time

## Method: U:\Q4.PRO\MethDB\PFAS_L14-7-5-17.mdb 10 Jul 2017 08:06:14

 Calibration: U:\Q4.PRO\CurveDBIC18_VAL-PFAS_Q4_7-10-17-L14.cdb 11 Jul 2017 08:36:22Name: 170711M1_55, Date: 11-Jul-2017, Time: 20:12:58, ID: 1700803-06 IRPSite7-GW-FRB01-20170628 0.12281, Description: IRPSite7-GW-FRB01-20170628
Total PFBS


Total PFHxS

|  | \# Name | Trace | RT | Area | IS Area | Response Primary Flags |
| :--- | :--- | :--- | ---: | ---: | ---: | ---: |
| 1 | 4 PFHxS | $398.9>79.6$ |  | 1663.925 | Conc. |  |

## Total PFOA

|  | \# Name | Trace | RT | Area | IS Area | Response |
| :--- | :--- | :--- | ---: | ---: | ---: | ---: |

## Total PFOS

|  | \# Name | Trace | RT | Area | IS Area |
| :---: | :---: | :---: | :---: | :---: | :---: |

## Total N-Me-FOSAA

|  | \# Name | Trace | RT | Area | IS Area | Response Primary Flags |
| :--- | :--- | :--- | ---: | ---: | ---: | ---: | ---: |
| 1 | 10 N-MeFOSAA | $570.1>419$ |  | 1761.115 | Conc. |  |

## Total N-EtFOSAA

| \# Name | Trace | RT | Area | IS Area | Response | Primary Flags |
| :---: | :--- | :---: | :---: | :---: | :---: | :---: |
| 11 N-EtFOSAA | $584.2>419$ |  | 1376.335 |  | MM-I |  |

## Dataset:

U:IQ4.PRO|results|170711M11170711M1-55.qld

## Last Altered: Thursday, July 13, 2017 09:10:05 Pacific Daylight Time

 Printed: Thursday, July 13, 2017 09:10:41 Pacific Daylight Time
## Method: U:|Q4.PRO\MethDB\PFAS_L14-7-5-17.mdb 10 Jul 2017 08:06:14

## Calibration: U:IQ4.PRO\CurveDBIC18_VAL-PFAS_Q4_7-10-17-L14.cdb 11 Jul 2017 08:36:22

## Name: 170711M1_55, Date: 11-Jul-2017, Time: 20:12:58, ID: 1700803-06 IRPSite7-GW-FRB01-20170628 0.12281, Description: IRPSite7-GW-FRB01-20170628

\section*{Total PFBS <br> 



13C3-PFBS



13C2-PFHxA


PFHpA



13C4-PFHpA


Total PFHxS



1802-PFHxS


## Dataset:

U:IQ4.PRO|results\170711M11170711M1-55.qld

## Last Altered: Thursday, July 13, 2017 09:10:05 Pacific Daylight Time

 Printed: Thursday, July 13, 2017 09:10:41 Pacific Daylight Time
## Name: 170711M1_55, Date: 11-Jul-2017, Time: 20:12:58, ID: 1700803-06 IRPSite7-GW-FRB01-20170628 0.12281, Description: IRPSite7-GW-FRB01-20170628

## Total PFOA



13C2-PFOA


## PFNA



13C5-PFNA
F26:MRM of 1 channel,ES-


## Total PFOS



13C8-PFOS


## PFDA



13C2-PFUnA

Printed: $\quad$ Thursday, July 13, 2017 09:10:41 Pacific Daylight Time

## Name: 170711M1_55, Date: 11-Jul-2017, Time: 20:12:58, ID: 1700803-06 IRPSite7-GW-FRB01-20170628 0.12281, Description: IRPSite7-GW-FRB01-20170628

## PFUnA




13C2-PFUnA

## N-MeFOSAA


d3-N-MeFOSAA
F49:MRM of 1 channel,ES-


d5-N-EtFOSAA


PFDoA



13C2-PFDoA


U:IQ4.PRO|results1170711M11170711M1-55.qld
Last Altered: Thursday, July 13, 2017 09:10:05 Pacific Daylight Time
Printed: Thursday, July 13, 2017 09:10:41 Pacific Daylight Time

Name: 170711M1_55, Date: 11-Jul-2017, Time: 20:12:58, ID: 1700803-06 IRPSite7-GW-FRB01-20170628 0.12281, Description: IRPSite7-GW-FRB01-20170628

## PFTeDA



## 13C2-PFTeDA




13C2-PFTeDA
F59:MRM of 2 channels,ES-



13C8-PFOA


13C3-PFHxS


13C9-PFNA


## Quantify Sample Report

## Dataset: <br> U:IQ4.PRO|results|170711M11170711M1-55.qld

Last Altered: Thursday, July 13, 2017 09:10:05 Pacific Daylight Time Printed: Thursday, July 13, 2017 09:10:41 Pacific Daylight Time

## Name: 170711M1_55, Date: 11-Jul-2017, Time: 20:12:58, ID: 1700803-06 IRPSite7-GW-FRB01-20170628 0.12281, Description: IRPSite7-GW-FRB01-20170628

## 13C4-PFOS




13C7-PFUnA


## Quantify Sample Summary Report

 Vista Analytical Laboratory
## Dataset: <br> U:IQ4.PRO\results1170711M11170711M1-56.qld

## Last Altered: Thursday, July 13, 2017 09:25:59 Pacific Daylight Time

 Printed: Thursday, July 13, 2017 09:27:59 Pacific Daylight Time
## Method: U:|Q4.PRO\MethDB\PFAS L14-7-5-17.mdb 10 Jul 2017 08:06:14

 Calibration: U:|Q4.PRO\CurveDBIC18_VAL-PFAS_Q4_7-10-17-L14.cdb 11 Jul 2017 08:36:22Name: 170711M1_56, Date: 11-Jul-2017, Time: 20:23:36, ID: 1700803-07 IRPSite5-GW-FRB01-20170628 0.11773, Description: IRPSite5-GW-FRB01-20170628

|  | \# Name | Trace | Area | IS Area | Wt./Vol. | RRF | Pred.RT | RT | y Axis Resp. | Conc. | \%Rec |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | 1 PFBS | $299>79.7$ |  | 2.79 e 3 | 0.118 |  | 2.92 |  |  |  |  |
| 2 | 2 PFHxA | $313.2>268.9$ |  | 8.03 e 3 | 0.118 |  | 3.16 |  |  |  |  |
| 3 | 3 PFHpA | $363>318.9$ |  | 1.82 e 4 | 0.118 |  | 3.43 |  |  |  |  |
| 4 | 4 PFHxS | $398.9>79.6$ | 4.73 e 0 | 1.89 e 3 | 0.118 |  | 3.55 | 3.46 | 0.0313 | 0.574 |  |
| 5 | 5 PFOA | $413>368.7$ |  | 2.50 e 4 | 0.118 |  | 3.63 |  |  |  |  |
| 6 | 6 PFNA | $462.9>418.8$ |  | 1.92 e 4 | 0.118 |  | 3.82 |  |  |  |  |
| 7 | 7 PFOS | $499>79.9$ |  | 4.51 e 3 | 0.118 |  | 3.86 |  |  |  |  |
| 8 | 8 PFDA | $513>468.8$ |  | 1.60 e 4 | 0.118 |  | 4.00 |  |  |  |  |
| 9 | 9 PFUnA | $562.9>518.9$ |  | 1.28 e 4 | 0.118 |  | 4.16 |  |  |  |  |
| 10 | 10 N-MeFOSAA | $570.1>419$ |  | 2.82 e 3 | 0.118 |  | 4.00 |  |  |  |  |
| 11 | $11 \mathrm{~N}-\mathrm{EtFOSAA}$ | $584.2>419$ |  | 2.58 e 3 | 0.118 |  | 4.08 |  |  |  |  |
| 12 | 12 PFDoA | $612.9>318.8$ |  | 3.91 e 2 | 0.118 |  | 4.32 |  |  |  |  |
| 13 | 13 PFTrDA | $662.9>618.9$ |  | 3.91 e 2 | 0.118 |  | 4.50 |  |  |  |  |
| 14 | 14 PFTeDA | $712.9>668.8$ |  | 6.86 e 2 | 0.118 |  | 4.66 |  |  |  |  |
| 15 | 15 13C3-PFBA | $216.1>171.8$ | 1.32 e 4 | 1.41 e 4 | 0.118 | 0.918 | 1.43 | 1.33 | 11.7 | 108 | 102.0 |
| 16 | 16 13C3-PFPeA | $266>221.8$ | 1.99 e 4 | 1.41 e 4 | 0.118 | 1.784 | 2.72 | 2.63 | 17.6 | 84.0 | 79.1 |
| 17 | 17 13C3-PFBS | $302>98.8$ | 2.79 e 3 | 1.41 e 4 | 0.118 | 0.215 | 2.92 | 2.86 | 2.47 | 97.5 | 91.8 |
| 18 | 18 13C2-PFHxA | $315>269.8$ | 8.03e3 | 2.63 e 4 | 0.118 | 0.304 | 3.16 | 3.11 | 1.52 | 42.6 | 100.4 |
| 19 | 19 13C4-PFHpA | $367.2>321.8$ | 1.82 e 4 | 2.63 e 4 | 0.118 | 0.306 | 3.43 | 3.37 | 3.45 | 95.8 | 90.3 |
| 20 | 20 18O2-PFHxS | $403>102.6$ | 1.89 e 3 | 4.35 e 3 | 0.118 | 0.437 | 3.55 | 3.45 | 5.43 | 105 | 99.3 |
| 21 | 21 13C2-PFOA | $414.9>369.7$ | 2.50 e 4 | 2.07 e 4 | 0.118 | 1.292 | 3.63 | 3.57 | 15.1 | 99.6 | 93.8 |
| 22 | 22 13C5-PFNA | $468.2>422.9$ | 1.92 e 4 | 2.26 e 4 | 0.118 | 0.980 | 3.82 | 3.75 | 10.6 | 92.1 | 86.7 |
| 23 | 23 13C8-PFOS | $507>79.9$ | 4.51 e 3 | 4.08 e 3 | 0.118 | 1.098 | 3.86 | 3.80 | 13.8 | 107 | 100.5 |
| 24 | 24 13C2-PFDA | $515.1>469.9$ | 1.60 e 4 | 2.05 e 4 | 0.118 | 0.928 | 4.00 | 3.91 | 9.73 | 89.0 | 83.9 |
| 25 | 25 13C2-PFUnA | $565>519.8$ | 1.28 e 4 | 1.30 e 4 | 0.118 | 1.083 | 4.16 | 4.07 | 12.3 | 96.1 | 90.5 |
| 26 | 26 d3-N-MeFOSAA | $573.3>419$ | 2.82 e 3 | 1.30 e 4 | 0.118 | 0.224 | 4.00 | 3.94 | 2.71 | 102 | 96.5 |
| 27 | $27 \mathrm{~d} 5-\mathrm{N}-\mathrm{EtFOSAA}$ | $589.3>419$ | 2.58 e 3 | 1.30 e 4 | 0.118 | 0.230 | 4.08 | 4.01 | 2.47 | 91.4 | 86.1 |
| 28 | 28 13C2-PFDoA | $615>569.7$ | 3.91 e 2 | 1.30 e 4 | 0.118 | 0.130 | 4.32 | 4.24 | 0.375 | 24.5 | 23.1 |
| 29 | 29 13C2-PFTeDA | $714.8>669.6$ | 6.86 e 2 | 1.30 e 4 | 0.118 | 1.018 | 4.66 | 4.56 | 0.658 | 5.49 | 5.2 |
| 30 | 30 13C4-PFBA | $217>171.8$ | 1.41 e 4 | 1.41 e 4 | 0.118 | 1.000 | 1.43 | 1.33 | 12.5 | 106 | 100.0 |
| 31 | 31 13C5-PFHxA | $318>272.9$ | 2.63 e 4 | 2.63 e 4 | 0.118 | 1.000 | 3.18 | 3.11 | 5.00 | 42.5 | 100.0 |
| 32 | 32 13C3-PFHxS | $401.9>79.9$ | 4.35 e 3 | 4.35 e 3 | 0.118 | 1.000 | 3.55 | 3.44 | 12.5 | 106 | 100.0 |

## Quantify Sample Summary Report

MassLynx MassLynx V4.1 SCN945 SCN960
Dataset:
U:IQ4.PRO|results\170711M11170711M1-56.qld
Last Altered: Thursday, July 13, 2017 09:25:59 Pacific Daylight Time Printed: Thursday, July 13, 2017 09:27:59 Pacific Daylight Time

Name: 170711M1_56, Date: 11-Jul-2017, Time: 20:23:36, ID: 1700803-07 IRPSite5-GW-FRB01-20170628 0.11773, Description: IRPSite5-GW-FRB01-20170628

|  | \# Name | Trace | Area | IS Area | Wt./Vol. | RRF | Pred.RT | RT | y Axis Resp. | Conc. | \%Rec |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 33 | 33 13C8-PFOA | $421.3>376$ | 2.07 e 4 | 2.07 e 4 | 0.118 | 1.000 | 3.63 | 3.57 | 12.5 | 106 | 100.0 |
| 34 | 34 13C9-PFNA | $472.2>426.9$ | 2.26 e 4 | 2.26 e 4 | 0.118 | 1.000 | 3.82 | 3.75 | 12.5 | 106 | 100.0 |
| 35 | 35 13C4-PFOS | $503>79.9$ | 4.08 e 3 | 4.08 e 3 | 0.118 | 1.000 | 3.86 | 3.80 | 12.5 | 106 | 100.0 |
| 36 | 36 13C6-PFDA | $519.1>473.7$ | 2.05 e4 | 2.05 e 4 | 0.118 | 1.000 | 4.00 | 3.91 | 12.5 | 106 | 100.0 |
| 37 | 37 13C7-PFUnA | $570.1>524.8$ | 1.30 e 4 | 1.30 e 4 | 0.118 | 1.000 | 4.16 | 4.08 | 12.5 | 106 | 100.0 |
| 38 | 38 Total PFBS | $299>79.7$ | 0.00 e 0 | 2.79 e3 | 0.118 |  | 2.92 |  | 0.000 |  |  |
| 39 | 39 Total PFHxS | $398.9>79.6$ | 4.73 e 0 | 1.89e3 | 0.118 |  | 3.55 |  | 0.0313 | 0.574 |  |
| 40 | 40 Total PFOA | $413>368.7$ | 0.00 e 0 | 2.50 e 4 | 0.118 |  | 3.63 |  | 0.000 |  |  |
| 41 | 41 Total PFOS | $499>79.9$ | 0.00 e 0 | 4.51 e 3 | 0.118 |  | 3.86 |  | 0.000 |  |  |
| 42 | 42 Total N-Me-FOSAA | $570.1>419$ | 0.00 e 0 | 2.82e3 | 0.118 |  | 4.20 |  | 0.000 |  |  |
| 43 | 43 Total N -EtFOSAA | $584.2>419$ | 0.00 e 0 | 2.58 e 3 | 0.118 |  | 4.30 |  | 0.000 |  |  |

## Quantify Totals Report MassLynx MassLynx V4.1 SCN945 SCN960

Dataset: U:\Q4.PROTresults\170711M1\170711M1-56.qld
Last Altered: Thursday, July 13, 2017 09:25:59 Pacific Daylight Time Printed: Thursday, July 13, 2017 09:27:59 Pacific Daylight Time

## Method: U:|Q4.PRO\MethDB\PFAS_L14-7-5-17.mdb 10 Jul 2017 08:06:14

## Calibration: U:|Q4.PRO\CurveDBIC18_VAL-PFAS Q4_7-10-17-L14.cdb 11 Jul 2017 08:36:22

Name: 170711M1_56, Date: 11-Jul-2017, Time: 20:23:36, ID: 1700803-07 IRPSite5-GW-FRB01-20170628 0.11773, Description: IRPSite5-GW-FRB01-20170628

## Total PFBS

| \# Name | Trace | RT | Area | IS Area |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 1 |  |  | Response Primary Flags |  |  |

Total PFHxS

|  | \# Name | Trace | RT | Area | IS Area | Response | Primary Flags | Conc. |
| :--- | :--- | :--- | :--- | :--- | :--- | ---: | ---: | ---: |
| 1 | 4 PFHxS | $398.9>79.6$ | 3.46 | 4.734 | 1887.659 | 0.031 | $M M$ | 0.6 |

## Total PFOA

|  | \# Name | Trace | RT | Area | IS Area | Response |
| :--- | :--- | :--- | ---: | ---: | ---: | ---: |

## Total PFOS

| 4 | \# Name | Trace | RT | Area | IS Area |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 1 |  |  | Response Primary Flags |  |  |

## Total N-Me-FOSAA

|  | \# Name | Trace | RT | Area | IS Area |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 1 |  |  | Response Primary Flags |  |  |

## Total N-EtFOSAA

| \# Name | Trace | RT | Area | IS Area | Response | Primary Flags |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
|  |  |  |  |  |  |  |  |

## Dataset:

U:IQ4.PRO|results\170711M11170711M1-56.qld

Last Altered:
Thursday, July 13, 2017 09:25:59 Pacific Daylight Time Printed: Thursday, July 13, 2017 09:27:59 Pacific Daylight Time

## Method: U:|Q4.PRO\MethDB\PFAS_L14-7-5-17.mdb 10 Jul 2017 08:06:14

## Calibration: U:IQ4.PRO|CurveDBIC18_VAL-PFAS_Q4_7-10-17-L14.cdb 11 Jul 2017 08:36:22

## Name: 170711M1_56, Date: 11-Jul-2017, Time: 20:23:36, ID: 1700803-07 IRPSite5-GW-FRB01-20170628 0.11773, Description: IRPSite5-GW-FRB01-20170628

## Total PFBS <br> Total PFBS F6:MRM of 2 channels,ES- $299>79.7$ $9.837 \mathrm{e}+001$



13C3-PFBS



13C2-PFHxA




13C4-PFHpA


## Total PFHxS

| F16:MRM of 2 channels,ES- |
| ---: |
| $398.9>79.6$ |
| 100 |
| $1.350 \mathrm{e}+002$ |



1802-PFHxS


U:IQ4.PROIresults1170711M11170711M1-56.qld
Last Altered: Thursday, July 13, 2017 09:25:59 Pacific Daylight Time
Printed: Thursday, July 13, 2017 09:27:59 Pacific Daylight Time

## Name: 170711M1_56, Date: 11-Jul-2017, Time: 20:23:36, ID: 1700803-07 IRPSite5-GW-FRB01-20170628 0.11773, Description: IRPSite5-GW-FRB01-20170628

## Total PFOA




13C2-PFOA



13C5-PFNA
13C5-PFNA F26:MRM of 1 channel,ES-


## Total PFOS



13C8-PFOS



13C2-PFUnA

Printed: Thursday, July 13, 2017 09:27:59 Pacific Daylight Time

Name: 170711M1_56, Date: 11-Jul-2017, Time: 20:23:36, ID: 1700803-07 IRPSite5-GW-FRB01-20170628 0.11773, Description: IRPSite5-GW-FRB01-20170628

## PFUnA




13C2-PFUnA

## N-MeFOSAA


d3-N-MeFOSAA
F49:MRM of 1 channel,ES-


d5-N-EtFOSAA



13C2-PFDoA


U:IQ4.PRO|results1170711M11170711M1-56.qld
Last Altered: Thursday, July 13, 2017 09:25:59 Pacific Daylight Time
Printed: Thursday, July 13, 2017 09:27:59 Pacific Daylight Time

Name: 170711M1_56, Date: 11-Jul-2017, Time: 20:23:36, ID: 1700803-07 IRPSite5-GW-FRB01-20170628 0.11773, Description: IRPSite5-GW-FRB01-20170628

## PFTeDA



13C2-PFTeDA



13C2-PFTeDA
F59:MRM of 2 channels,ES-
13C2-PFT $714.8>669.6$



13C8-PFOA


13C3-PFHxS


13C9-PFNA


## Quantify Sample Report

## Dataset: <br> U:\Q4.PRO\results1170711M11170711M1-56.qld

Last Altered: Thursday, July 13, 2017 09:25:59 Pacific Daylight Time Printed: Thursday, July 13, 2017 09:27:59 Pacific Daylight Time

## Name: 170711M1_56, Date: 11-Jul-2017, Time: 20:23:36, ID: 1700803-07 IRPSite5-GW-FRB01-20170628 0.11773, Description: IRPSite5-GW-FRB01-20170628

## 13C4-PFOS



13C6-PFDA


13C7-PFUnA


## Quantify Sample Summary Report

 Vista Analytical Laboratory
## Dataset: <br> U:IQ4.PRO\results1170711M11170711M1-57.qld

Last Altered: Thursday, July 13, 2017 09:37:22 Pacific Daylight Time Printed: Thursday, July 13, 2017 09:39:06 Pacific Daylight Time

## Method: U:IQ4.PRO\MethDBIPFAS L14-7-5-17.mdb 10 Jul 2017 08:06:14

 Calibration: U:|Q4.PRO\CurveDBIC18_VAL-PFAS_Q4_7-10-17-L14.cdb 11 Jul 2017 08:36:22Name: 170711M1_57, Date: 11-Jul-2017, Time: 20:34:15, ID: 1700803-08 IRPSite5-GW-04GW81S-20170628 0.12065, Description: IRPSite5-GW-04GW81S-20170628

|  | \# Name | Trace | Area | IS Area | Wt./Vol. | RRF | Pred.RT | RT | y Axis Resp. | Conc. | \%Rec |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | 1 PFBS | $299>79.7$ |  | 4.24 e3 | 0.121 |  | 2.92 |  |  |  |  |
| 2 | 2 PFHxA | 313.2 > 268.9 |  | 1.30 e 4 | 0.121 |  | 3.16 |  |  |  |  |
| 3 | 3 PFHpA | $363>318.9$ | 3.30 e 2 | 3.05 e 4 | 0.121 |  | 3.43 | 3.38 | 0.135 | 0.587 |  |
| 4 | 4 PFHxS | $398.9>79.6$ | 2.24 e 2 | 3.20 e 3 | 0.121 |  | 3.55 | 3.45 | 0.877 | 4.38 |  |
| 5 | 5 PFOA | $413>368.7$ | 1.00 e 3 | 4.00 e 4 | 0.121 |  | 3.63 | 3.58 | 0.314 | 1.43 |  |
| 6 | 6 PFNA | $462.9>418.8$ |  | 2.97 e 4 | 0.121 |  | 3.82 |  |  |  |  |
| 7 | 7 PFOS | $499>79.9$ | 1.07e2 | 5.48 e 3 | 0.121 |  | 3.86 | 3.75 | 0.243 | 1.61 |  |
| 8 | 8 PFDA | $513>468.8$ |  | 2.00 e 4 | 0.121 |  | 4.00 |  |  |  |  |
| 9 | 9 PFUnA | $562.9>518.9$ |  | 6.38 e 3 | 0.121 |  | 4.16 |  |  |  |  |
| 10 | 10 N-MeFOSAA | $570.1>419$ |  | 1.66 e 3 | 0.121 |  | 4.00 |  |  |  |  |
| 11 | $11 \mathrm{~N}-\mathrm{EtFOS} A \mathrm{~A}$ | $584.2>419$ |  | 1.05 e 3 | 0.121 |  | 4.08 |  |  |  |  |
| 12 | 12 PFDoA | $612.9>318.8$ |  | 1.04 e 2 | 0.121 |  | 4.32 |  |  |  |  |
| 13 | 13 PFTrDA | $662.9>618.9$ |  | 1.04 e 2 | 0.121 |  | 4.50 |  |  |  |  |
| 14 | 14 PFTeDA | $712.9>668.8$ |  | 1.96 e 3 | 0.121 |  | 4.66 |  |  |  |  |
| 15 | 15 13C3-PFBA | $216.1>171.8$ | 2.21e4 | 2.43 e 4 | 0.121 | 0.918 | 1.43 | 1.33 | 11.4 | 103 | 99.1 |
| 16 | 16 13C3-PFPeA | $266>221.8$ | 3.23 e 4 | 2.43 e 4 | 0.121 | 1.784 | 2.72 | 2.63 | 16.6 | 77.1 | 74.5 |
| 17 | 17 13C3-PFBS | $302>98.8$ | 4.24 e 3 | 2.43 e 4 | 0.121 | 0.215 | 2.92 | 2.87 | 2.18 | 83.9 | 81.0 |
| 18 | 18 13C2-PFHxA | $315>269.8$ | 1.30 e 4 | 4.35 e 4 | 0.121 | 0.304 | 3.16 | 3.12 | 1.49 | 40.8 | 98.3 |
| 19 | 19 13C4-PFHpA | 367.2 > 321.8 | 3.05 e 4 | 4.35 e 4 | 0.121 | 0.306 | 3.43 | 3.38 | 3.51 | 95.0 | 91.7 |
| 20 | 20 1802-PFHxS | $403>102.6$ | 3.20 e 3 | 7.03 e 3 | 0.121 | 0.437 | 3.55 | 3.45 | 5.68 | 108 | 104.0 |
| 21 | 21 13C2-PFOA | $414.9>369.7$ | 4.00 e 4 | 3.49 e 4 | 0.121 | 1.292 | 3.63 | 3.58 | 14.3 | 92.0 | 88.8 |
| 22 | 22 13C5-PFNA | $468.2>422.9$ | 2.97e4 | 3.54 e 4 | 0.121 | 0.980 | 3.82 | 3.76 | 10.5 | 88.8 | 85.7 |
| 23 | 23 13C8-PFOS | $507>79.9$ | 5.48 e 3 | 5.24 e 3 | 0.121 | 1.098 | 3.86 | 3.81 | 13.1 | 98.5 | 95.1 |
| 24 | 24 13C2-PFDA | $515.1>469.9$ | 2.00 e 4 | 2.73 e4 | 0.121 | 0.928 | 4.00 | 3.92 | 9.16 | 81.8 | 79.0 |
| 25 | 25 13C2-PFUnA | $565>519.8$ | 6.38 e 3 | 7.52 e 3 | 0.121 | 1.083 | 4.16 | 4.08 | 10.6 | 81.3 | 78.5 |
| 26 | 26 d3-N-MeFOSAA | $573.3>419$ | 1.66 e 3 | 7.52 e 3 | 0.121 | 0.224 | 4.00 | 3.95 | 2.77 | 102 | 98.6 |
| 27 | 27 d5-N-EtFOSAA | $589.3>419$ | 1.05 e 3 | 7.52 e 3 | 0.121 | 0.230 | 4.08 | 4.01 | 1.75 | 63.0 | 60.8 |
| 28 | 28 13C2-PFDoA | $615>569.7$ | 1.04 e 2 | 7.52 e 3 | 0.121 | 0.130 | 4.32 | 4.23 | 0.173 | 11.1 | 10.7 |
| 29 | 29 13C2-PFTeDA | $714.8>669.6$ | 1.96 e 3 | 7.52 e 3 | 0.121 | 1.018 | 4.66 | 4.57 | 3.26 | 26.5 | 25.6 |
| 30 | 30 13C4-PFBA | $217>171.8$ | 2.43 e 4 | 2.43 e 4 | 0.121 | 1.000 | 1.43 | 1.33 | 12.5 | 104 | 100.0 |
| 31 | 31 13C5-PFHxA | $318>272.9$ | 4.35 e 4 | 4.35 e 4 | 0.121 | 1.000 | 3.18 | 3.12 | 5.00 | 41.4 | 100.0 |
| 32 | $32.13 \mathrm{C} 3-\mathrm{PFHxS}$ | $401.9>79.9$ | 7.03 e 3 | 7.03 e 3 | 0.121 | 1.000 | 3.55 | 3.45 | 12.5 | 104 | 100.0 |

## Quantify Sample Summary Report

 Vista Analytical LaboratoryDataset: U:\Q4.PRO|results\170711M1\170711M1-57.qld
Last Altered: Thursday, July 13, 2017 09:37:22 Pacific Daylight Time Printed: Thursday, July 13, 2017 09:39:06 Pacific Daylight Time

Name: 170711M1_57, Date: 11-Jul-2017, Time: 20:34:15, ID: 1700803-08 IRPSite5-GW-04GW81S-20170628 0.12065, Description: IRPSite5-GW-04GW81S-20170628

|  | \# Name | Trace | Area | IS Area | Wt./Vol. | RRF | Pred.RT | RT | y Axis Resp. | Conc. | \%Rec |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 33 | 33 13C8-PFOA | $421.3>376$ | 3.49 e 4 | 3.49e4 | 0.121 | 1.000 | 3.63 | 3.58 | 12.5 | 104 | 100.0 |
| 34 | 34 13C9-PFNA | $472.2>426.9$ | 3.54 e 4 | 3.54 e 4 | 0.121 | 1.000 | 3.82 | 3.75 | 12.5 | 104 | 100.0 |
| 35 | 35 13C4-PFOS | $503>79.9$ | 5.24 e 3 | 5.24 e 3 | 0.121 | 1.000 | 3.86 | 3.80 | 12.5 | 104 | 100.0 |
| 36 | 36 13C6-PFDA | $519.1>473.7$ | 2.73 e 4 | 2.73 e 4 | 0.121 | 1.000 | 4.00 | 3.93 | 12.5 | 104 | 100.0 |
| 37 | 37 13C7-PFUnA | $570.1>524.8$ | 7.52 e 3 | 7.52 e 3 | 0.121 | 1.000 | 4.16 | 4.09 | 12.5 | 104 | 100.0 |
| 38 | 38 Total PFBS | $299>79.7$ | 0.00 e 0 | 4.24 e 3 | 0.121 |  | 2.92 |  | 0.000 |  |  |
| 39 | 39 Total PFHxS | $398.9>79.6$ | 2.24 e 2 | 3.20 e 3 | 0.121 |  | 3.55 |  | 0.877 | 4.38 |  |
| 40 | 40 Total PFOA | $413>368.7$ | 1.12 e 3 | 4.00 e 4 | 0.121 |  | 3.63 |  | 0.314 | 1.43 |  |
| 41 | 41 Total PFOS | $499>79.9$ | 1.07 e 2 | 5.48 e 3 | 0.121 |  | 3.86 |  | 0.243 | 1.61 |  |
| 42 | 42 Total N-Me-FOSAA | $570.1>419$ | 0.00e0 | 1.66 e 3 | 0.121 |  | 4.20 |  | 0.000 |  |  |
| 43 | 43 Total N -EtFOSAA | $584.2>419$ | 0.00 e 0 | 1.05 e 3 | 0.121 |  | 4.30 |  | 0.000 |  |  |

## Quantify Totals Report MassLynx MassLynx V4.1 SCN945 SCN960

| Dataset: | U:IQ4.PROIresults\170711M11170711M1-57.qld |
| :--- | :--- |
|  |  |
| Last Altered: | Thursday, July 13, 2017 09:37:22 Pacific Daylight Time |
| Printed: | Thursday, July 13, 2017 09:39:06 Pacific Daylight Time |

Method: U:|Q4.PRO\MethDB\PFAS_L14-7-5-17.mdb 10 Jul 2017 08:06:14
Calibration: U:\Q4.PRO\CurveDBIC18_VAL-PFAS_Q4_7-10-17-L14.cdb 11 Jul 2017 08:36:22
Name: 170711M1_57, Date: 11-Jul-2017, Time: 20:34:15, ID: 1700803-08 IRPSite5-GW-04GW81S-20170628 0.12065, Description: IRPSite5-GW-04GW81S-20170628

## Total PFBS

|  | \# Name | Trace | RT | Area | IS Area | Response | Primary Flags | Conc. |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| 1 |  |  |  |  |  |  |  |  |

Total PFHxS

|  | \# Name | Trace | RT | Area | IS Area | Response | Primary Flags | Conc. |
| :--- | :--- | :--- | :--- | ---: | ---: | ---: | ---: | ---: | ---: |
| 1 | 4 PFHxS | $398.9>79.6$ | 3.45 | 224.249 | 3195.837 | 0.877 | bb | 4.4 |

## Total PFOA

| \# Name | Trace | RT | Area | IS Area | Response | Primary Flags | Conc. |
| :---: | :--- | ---: | ---: | ---: | ---: | ---: | ---: |
| 5 PFOA | $413>368.7$ | 3.58 | 1003.136 | 39985.777 | 0.314 | MM |  |
| 40 Total PFOA | $413>368.7$ | 3.54 | 117.046 | 39985.777 | 0.037 | MMI |  |

## Total PFOS

|  | \# Name | Trace | RT | Area | IS Area | Response | Primary Flags | Conc. |
| :--- | :--- | :--- | ---: | ---: | ---: | ---: | ---: | ---: |
| 1 | 7 PFOS | $499>79.9$ | 3.75 | 106.536 | 5475.312 | 0.243 | MM | 1.6 |

Total N-Me-FOSAA

| 1 | \# Name | Trace | RT | Area | IS Area | Response | Primary Flags | Conc. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |  |  |  |

Total N-EtFOSAA

| \# Name | Trace | RT | Area | IS Area |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 1 |  |  | Response |  |  |

## Dataset:

U:IQ4.PRO|results\170711M11170711M1-57.qld

Last Altered:
Thursday, July 13, 2017 09:37:22 Pacific Daylight Time Printed: Thursday, July 13, 2017 09:39:06 Pacific Daylight Time

## Method: U:|Q4.PRO\MethDB|PFAS_L14-7-5-17.mdb 10 Jul 2017 08:06:14

## Calibration: U:IQ4.PRO|CurveDBIC18_VAL-PFAS_Q4_7-10-17-L14.cdb 11 Jul 2017 08:36:22

## Name: 170711M1_57, Date: 11-Jul-2017, Time: 20:34:15, ID: 1700803-08 IRPSite5-GW-04GW81S-20170628 0.12065, Description: IRPSite5-GW-04GW81S-20170628



F6:MRM of 2 channels,ES-


13C2-PFHxA




13C4-PFHpA


## Total PFHxS

| F16:MRM of 2 channels,ES- |
| ---: |
| $398.9>79.6$ |
| $4.622 e^{2}+003$ |
| PFHxS |
| 3.45 |
| 2.24 e 2 |
| 4620 |
| bb |
| 100 |



1802-PFHxS


## Dataset:

U:\Q4.PRO\resultsl170711M11170711M1-57.qld

## Last Altered: Thursday, July 13, 2017 09:37:22 Pacific Daylight Time

 Printed: Thursday, July 13, 2017 09:39:06 Pacific Daylight Time
## Name: 170711M1_57, Date: 11-Jul-2017, Time: 20:34:15, ID: 1700803-08 IRPSite5-GW-04GW81S-20170628 0.12065, Description: IRPSite5-GW-04GW81S-20170628

\section*{Total PFOA <br> 



13C2-PFOA



## Total PFOS




13C8-PFOS


PFDA


13C2-PFUnA


Name: 170711M1_57, Date: 11-Jul-2017, Time: 20:34:15, ID: 1700803-08 IRPSite5-GW-04GW81S-20170628 0.12065, Description: IRPSite5-GW-04GW81S-20170628


d3-N-MeFOSAA
F49:MRM of 1 channel,ES-


## N-EtFOSAA


d5-N-EtFOSAA



13C2-PFDoA


U:IQ4.PRO|results1170711M11170711M1-57.qld
Last Altered: Thursday, July 13, 2017 09:37:22 Pacific Daylight Time
Printed: Thursday, July 13, 2017 09:39:06 Pacific Daylight Time

Name: 170711M1_57, Date: 11-Jul-2017, Time: 20:34:15, ID: 1700803-08 IRPSite5-GW-04GW81S-20170628 0.12065, Description: IRPSite5-GW-04GW81S-20170628

## PFTeDA



13C2-PFTeDA



13C2-PFTeDA
F59:MRM of 2 channels,ES-
$13 C 2-$ PFT $\quad 714.8>669.6$



13C8-PFOA


13C3-PFHxS


13C9-PFNA


## Quantify Sample Report

## Dataset: U:IQ4.PRO\results\170711M11170711M1-57.qlc

Last Altered: Thursday, July 13, 2017 09:37:22 Pacific Daylight Time Printed: Thursday, July 13, 2017 09:39:06 Pacific Daylight Time

## Name: 170711M1_57, Date: 11-Jul-2017, Time: 20:34:15, ID: 1700803-08 IRPSite5-GW-04GW81S-20170628 0.12065, Description: IRPSite5-GW-04GW81S-20170628

## 13C4-PFOS



13C6-PFDA


13C7-PFUnA


## Quantify Sample Summary Report

 Vista Analytical Laboratory
## Dataset: <br> U:IQ4.PRO|results1170711M11170711M1-58.qld

## Last Altered: Thursday, July 13, 2017 09:52:15 Pacific Daylight Time

 Printed: Thursday, July 13, 2017 09:53:30 Pacific Daylight Time
## Method: U:|Q4.PRO\MethDB\PFAS L14-7-5-17.mdb 10 Jul 2017 08:06:14

 Calibration: U:|Q4.PRO\CurveDBIC18_VAL-PFAS_Q4_7-10-17-L14.cdb 11 Jul 2017 08:36:22Name: 170711M1_58, Date: 11-Jul-2017, Time: 20:44:53, ID: 1700803-09 IRPSite5-GW-04GW80-20170628 0.11892, Description: IRPSite5-GW-04GW80-20170628

|  | \# Name | Trace | Area | IS Area | Wt./Vol. | RRF | Pred.RT | RT | y Axis Resp. | Conc. | \%Rec |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | 1 PFBS | $299>79.7$ | 8.91 e2 | 3.46 e 3 | 0.119 |  | 2.92 | 2.87 | 3.22 | 12.4 |  |
| 2 | 2 PFHxA | 313.2 > 268.9 | 8.07 e 3 | 1.05 e 4 | 0.119 |  | 3.16 | 3.11 | 3.85 | 19.5 |  |
| 3 | 3 PFHpA | $363>318.9$ | 2.52 e 3 | 2.28 e 4 | 0.119 |  | 3.43 | 3.38 | 1.38 | 7.88 |  |
| 4 | 4 PFHxS | $398.9>79.6$ | 7.06 e 3 | 2.58 e3 | 0.119 |  | 3.55 | 3.45 | 34.2 | 155 |  |
| 5 | 5 PFOA | $413>368.7$ | 6.13 e 3 | 2.96 e4 | 0.119 |  | 3.63 | 3.57 | 2.59 | 18.3 |  |
| 6 | 6 PFNA | $462.9>418.8$ |  | 2.38 e 4 | 0.119 |  | 3.82 |  |  |  |  |
| 7 | 7 PFOS | $499>79.9$ | 6.13 e 3 | 6.06 e 3 | 0.119 |  | 3.86 | 3.74 | 12.7 | 94.3 |  |
| 8 | 8 PFDA | $513>468.8$ |  | 1.95 e 4 | 0.119 |  | 4.00 |  |  |  |  |
| 9 | 9 PFUnA | $562.9>518.9$ |  | 9.99 e 3 | 0.119 |  | 4.16 |  |  |  |  |
| 10 | 10 N-MeFOSAA | $570.1>419$ |  | 2.93 e3 | 0.119 |  | 4.00 |  |  |  |  |
| 11 | $11 \mathrm{~N}-\mathrm{EtFOS} A \mathrm{~A}$ | $584.2>419$ |  | 2.20 e3 | 0.119 |  | 4.08 |  |  |  |  |
| 12 | 12 PFDoA | $612.9>318.8$ |  | 4.86 e 2 | 0.119 |  | 4.32 |  |  |  |  |
| 13 | 13 PFTrDA | $662.9>618.9$ |  | 4.86 e 2 | 0.119 |  | 4.50 |  |  |  |  |
| 14 | 14 PFTeDA | $712.9>668.8$ |  | 2.74 e3 | 0.119 |  | 4.66 |  |  |  |  |
| 15 | 15 13C3-PFBA | $216.1>171.8$ | 1.66 e 4 | 1.77 e 4 | 0.119 | 0.918 | 1.43 | 1.33 | 11.7 | 107 | 101.9 |
| 16 | 16 13C3-PFPeA | $266>221.8$ | 2.49 e 4 | 1.77 e 4 | 0.119 | 1.784 | 2.72 | 2.63 | 17.6 | 82.8 | 78.7 |
| 17 | 17 13C3-PFBS | $302>98.8$ | 3.46 e 3 | 1.77 e 4 | 0.119 | 0.215 | 2.92 | 2.87 | 2.44 | 95.3 | 90.6 |
| 18 | 18 13C2-PFHXA | $315>269.8$ | 1.05 e 4 | 3.14 e 4 | 0.119 | 0.304 | 3.16 | 3.11 | 1.67 | 46.2 | 109.9 |
| 19 | 19 13C4-PFHpA | $367.2>321.8$ | 2.28 e 4 | 3.14 e 4 | 0.119 | 0.306 | 3.43 | 3.38 | 3.63 | 99.9 | 95.0 |
| 20 | 20 1802-PFHxS | $403>102.6$ | 2.58 e 3 | 5.69 e 3 | 0.119 | 0.437 | 3.55 | 3.45 | 5.68 | 109 | 103.9 |
| 21 | 21 13C2-PFOA | $414.9>369.7$ | 2.96 e 4 | 2.62 e 4 | 0.119 | 1.292 | 3.63 | 3.57 | 14.1 | 91.9 | 87.4 |
| 22 | 22 13C5-PFNA | $468.2>422.9$ | 2.38 e 4 | 2.68 e 4 | 0.119 | 0.980 | 3.82 | 3.75 | 11.1 | 95.3 | 90.7 |
| 23 | 23 13C8-PFOS | $507>79.9$ | 6.06e3 | 4.99 e 3 | 0.119 | 1.098 | 3.86 | 3.80 | 15.2 | 116 | 110.6 |
| 24 | 24 13C2-PFDA | $515.1>469.9$ | 1.95 e 4 | 2.50 e 4 | 0.119 | 0.928 | 4.00 | 3.91 | 9.72 | 88.1 | 83.8 |
| 25 | 25 13C2-PFUnA | $565>519.8$ | 9.99 e 3 | 1.02 e 4 | 0.119 | 1.083 | 4.16 | 4.08 | 12.2 | 94.8 | 90.2 |
| 26 | $26 \mathrm{~d} 3-\mathrm{N}-\mathrm{MeFOSAA}$ | $573.3>419$ | 2.93 e 3 | 1.02 e 4 | 0.119 | 0.224 | 4.00 | 3.94 | 3.58 | 134 | 127.6 |
| 27 | 27 d5-N-EtFOSAA | $589.3>419$ | 2.20 e 3 | 1.02 e 4 | 0.119 | 0.230 | 4.08 | 4.01 | 2.69 | 98.4 | 93.6 |
| 28 | 28 13C2-PFDoA | $615>569.7$ | 4.86 e 2 | 1.02 e 4 | 0.119 | 0.130 | 4.32 | 4.23 | 0.594 | 38.4 | 36.6 |
| 29 | 29 13C2-PFTeDA | $714.8>669.6$ | 2.74 e 3 | 1.02 e 4 | 0.119 | 1.018 | 4.66 | 4.57 | 3.35 | 27.6 | 26.3 |
| 30 | 30 13C4-PFBA | $217>171.8$ | 1.77e4 | 1.77 e 4 | 0.119 | 1.000 | 1.43 | 1.33 | 12.5 | 105 | 100.0 |
| 31 | 31 13C5-PFHxA | $318>272.9$ | 3.14 e 4 | 3.14 e 4 | 0.119 | 1.000 | 3.18 | 3.11 | 5.00 | 42.0 | 100.0 |
| 32 | $32.13 \mathrm{C} 3-\mathrm{PFHxS}$ | $401.9>79.9$ | 5.69 e 3 | 5.69 e 3 | 0.119 | 1.000 | 3.55 | 3.45 | 12.5 | 105 | 100.0 |

## Quantify Sample Summary Report

Dataset:
U:IQ4.PRO|results1170711M11170711M1-58.qld
Last Altered: Thursday, July 13, 2017 09:52:15 Pacific Daylight Time Printed: Thursday, July 13, 2017 09:53:30 Pacific Daylight Time

## Name: 170711M1_58, Date: 11-Jul-2017, Time: 20:44:53, ID: 1700803-09 IRPSite5-GW-04GW80-20170628 0.11892, Description: IRPSite5-GW-04GW80-20170628

|  | \# Name | Trace | Area | IS Area | Wt./Vol. | RRF | Pred.RT | RT | y Axis Resp. | Conc. | \%Rec |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 33 | 33 13C8-PFOA | $421.3>376$ | $2.62 e 4$ | $2.62 e 4$ | 0.119 | 1.000 | 3.63 | 3.57 | 12.5 | 105 | 100.0 |
| 34 | 34 13C9-PFNA | $472.2>426.9$ | 2.68 e 4 | 2.68 e 4 | 0.119 | 1.000 | 3.82 | 3.75 | 12.5 | 105 | 100.0 |
| 35 | 35 13C4-PFOS | $503>79.9$ | 4.99 e 3 | 4.99 e 3 | 0.119 | 1.000 | 3.86 | 3.80 | 12.5 | 105 | 100.0 |
| 36 | 36 13C6-PFDA | $519.1>473.7$ | 2.50 e 4 | 2.50 e 4 | 0.119 | 1.000 | 4.00 | 3.91 | 12.5 | 105 | 100.0 |
| 37 | 37 13C7-PFUnA | $570.1>524.8$ | 1.02 e 4 | 1.02 e 4 | 0.119 | 1.000 | 4.16 | 4.08 | 12.5 | 105 | 100.0 |
| 38 | 38 Total PFBS | $299>79.7$ | 8.91 e 2 | 3.46 e 3 | 0.119 |  | 2.92 |  | 3.22 | 12.4 |  |
| 39 | 39 Total PFHxS | $398.9>79.6$ | 7.06 e 3 | 2.58 e 3 | 0.119 |  | 3.55 |  | 34.2 | 155 |  |
| 40 | 40 Total PFOA | $413>368.7$ | 6.62 e3 | 2.96 e 4 | 0.119 |  | 3.63 |  | 2.80 | 18.9 |  |
| 41 | 41 Total PFOS | $499>79.9$ | 6.13 e 3 | 6.06e3 | 0.119 |  | 3.86 |  | 12.7 | 94.3 |  |
| 42 | 42 Total N-Me-FOSAA | $570.1>419$ | 0.00 e 0 | 2.93 e3 | 0.119 |  | 4.20 |  | 0.000 |  |  |
| 43 | 43 Total N-EtFOSAA | $584.2>419$ | 0.00 e 0 | 2.20 e 3 | 0.119 |  | 4.30 |  | 0.000 |  |  |

## Quantify Totals Report MassLynx MassLynx V4.1 SCN945 SCN960

Dataset: U:\Q4.PRO|results\170711M1\170711M1-58.qld
Last Altered: Thursday, July 13, 2017 09:52:15 Pacific Daylight Time Printed: Thursday, July 13, 2017 09:53:30 Pacific Daylight Time

Method: U:|Q4.PRO\MethDB\PFAS_L14-7-5-17.mdb 10 Jul 2017 08:06:14 Calibration: U:\Q4.PRO\CurveDBIC18_VAL-PFAS_Q4_7-10-17-L14.cdb 11 Jul 2017 08:36:22

Name: 170711M1_58, Date: 11-Jul-2017, Time: 20:44:53, ID: 1700803-09 IRPSite5-GW-04GW80-20170628 0.11892, Description: IRPSite5-GW-04GW80-20170628

## Total PFBS

|  | \# Name | Trace |  |  |  |  |  |  |
| :--- | :--- | :--- | ---: | ---: | ---: | ---: | ---: | ---: |
| 1 | 1 PFBS | $299>79.7$ | 2.87 | 891.061 | 3457.406 | Area | IS Area | Response |

Total PFHxS

|  | \# Name | Trace | RT | Area | IS Area | Response | Primary Flags | Conc. |
| :--- | :--- | :--- | ---: | ---: | ---: | ---: | ---: | ---: |
| 1 | $4 ~ P F H x S$ | $398.9>79.6$ | 3.45 | 7060.891 | 2584.454 | 34.151 | MM | 154.6 |

## Total PFOA

| \# Name | Trace | RT | Area | IS Area | Response | Primary Flags | Conc. |
| :---: | :--- | ---: | ---: | ---: | ---: | ---: | ---: | ---: |
| 5 PFOA | $413>368.7$ | 3.57 | 6132.433 | 29617.059 | 2.588 | $d b$ | 18.3 |
| 40 Total PFOA | $413>368.7$ | 3.52 | 491.528 | 29617.059 | 0.207 | bd | 0.7 |

## Total PFOS

|  | \# Name | Trace | RT | Area | IS Area | Response | Primary Flags | Conc. |
| :--- | :--- | :--- | ---: | ---: | ---: | ---: | ---: | ---: |
| 1 | 7 PFOS | $499>79.9$ | 3.74 | 6130.564 | 6057.152 | 12.651 | $M M$ | 94.3 |

Total N-Me-FOSAA
\# Name
Trace
RT Area
IS Area
Response Primary Flags

Conc.

## Total N-EtFOSAA

|  | \# Name | Trace | RT | Area | IS Area | Response | Primary Flags | Conc. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |

## Dataset:

U:IQ4.PRO|results|170711M11170711M1-58.qld

## Last Altered: Thursday, July 13, 2017 09:52:15 Pacific Daylight Time

 Printed: Thursday, July 13, 2017 09:53:30 Pacific Daylight Time
## Method: U:|Q4.PRO\MethDB\PFAS_L14-7-5-17.mdb 10 Jul 2017 08:06:14

## Calibration: U:IQ4.PRO|CurveDBIC18_VAL-PFAS_Q4_7-10-17-L14.cdb 11 Jul 2017 08:36:22

## Name: 170711M1_58, Date: 11-Jul-2017, Time: 20:44:53, ID: 1700803-09 IRPSite5-GW-04GW80-20170628 0.11892, Description: IRPSite5-GW-04GW80-20170628

| Total PFBS |  |  |
| :---: | :---: | :---: |
|  | F6:MRM of 2 channels,ES- |  |
|  | PFBS | $2.434 \mathrm{e}+004$ |
| 100 | 2.87 8.91 e 2 |  |
| \%- | 24140 |  |
| \%- | bb |  |
|  | 357.13 |  |



13C3-PFBS


## PFHxA

|  | F8:MRM of 2 channels,ES- |
| ---: | :--- |
| $313.2>268.9$ |  |
| $2.017 e+005$ |  |

PFHpA

| 100 |  | F14:MRM of 2 channels,ES- |  |
| :---: | :---: | :---: | :---: |
|  |  |  | 363 > 318.9 |
|  |  | PFHpA | $5.600 \mathrm{e}+004$ |
|  |  | 3.38 |  |
|  |  | 2.52 e 3 |  |
| \%- |  | 55601 |  |
|  |  | MM |  |
|  | 2.85 | 391.27 |  |



13C4-PFHpA


Total PFHxS
F16:MRM of 2 channels,ES-
$398.9>79.6$
$1.340 \mathrm{e}+005$
PFHxS
3.45
7.06 e 3
133988
MM
100


1802-PFHxS


## Dataset:

U:IQ4.PRO|results\170711M11170711M1-58.qld

## Last Altered: Thursday, July 13, 2017 09:52:15 Pacific Daylight Time

 Printed: Thursday, July 13, 2017 09:53:30 Pacific Daylight Time
## Name: 170711M1_58, Date: 11-Jul-2017, Time: 20:44:53, ID: 1700803-09 IRPSite5-GW-04GW80-20170628 0.11892, Description: IRPSite5-GW-04GW80-20170628

\section*{Total PFOA <br> | 100 | F19:MRM of 2 channels,ES |  |
| :---: | :---: | :---: |
|  |  | 413 > 368.7 |
|  | PFOA | $1.365 \mathrm{e}+005$ |
|  | 3.57 |  |
|  | 6.13 e 3 |  |
| \%- | 135475 |  |
|  | db |  |
|  | 135475.00 |  |



13C2-PFOA




## Total PFOS



13C8-PFOS


## PFDA



13C2-PFUnA

Printed: Thursday, July 13, 2017 09:53:30 Pacific Daylight Time

## Name: 170711M1_58, Date: 11-Jul-2017, Time: 20:44:53, ID: 1700803-09 IRPSite5-GW-04GW80-20170628 0.11892, Description: IRPSite5-GW-04GW80-20170628

## PFUnA



13C2-PFUnA


## N-MeFOSAA


d3-N-MeFOSAA


d5-N-EtFOSAA


## PFDoA



13C2-PFDoA


U:IQ4.PRO|results1170711M11170711M1-58.qld
Last Altered: Thursday, July 13, 2017 09:52:15 Pacific Daylight Time
Printed: Thursday, July 13, 2017 09:53:30 Pacific Daylight Time

## Name: 170711M1_58, Date: 11-Jul-2017, Time: 20:44:53, ID: 1700803-09 IRPSite5-GW-04GW80-20170628 0.11892, Description: IRPSite5-GW-04GW80-20170628

## PFTeDA



13C2-PFTeDA



13C2-PFTeDA



13C8-PFOA


13C3-PFHxS


13C9-PFNA


## Quantify Sample Report

## Dataset: <br> U:\Q4.PRO\results1170711M11170711M1-58.qld

Last Altered: Thursday, July 13, 2017 09:52:15 Pacific Daylight Time Printed: Thursday, July 13, 2017 09:53:30 Pacific Daylight Time

## Name: 170711M1_58, Date: 11-Jul-2017, Time: 20:44:53, ID: 1700803-09 IRPSite5-GW-04GW80-20170628 0.11892, Description: IRPSite5-GW-04GW80-20170628

## 13C4-PFOS



13C6-PFDA

| F38:MRM of 1 channel,ES- |
| :---: |
| $519.1>473.7$ |
| $5.352 \mathrm{e}+005$ |

13C7-PFUnA


## Dataset: <br> U:IQ4.PRO|results1170711M11170711M1-59.qld

Last Altered: Thursday, July 13, 2017 10:02:07 Pacific Daylight Time Printed: $\quad$ Thursday, July 13, 2017 10:05:58 Pacific Daylight Time

## Method: U:IQ4.PRO\MethDBIPFAS L14-7-5-17.mdb 10 Jul 2017 08:06:14

 Calibration: U:IQ4.PRO\CurveDBIC18_VAL-PFAS_Q4_7-10-17-L14.cdb 11 Jul 2017 08:36:22Name: 170711M1_59, Date: 11-Jul-2017, Time: 20:55:31, ID: B7G0014-MS1 Matrix Spike 0.12163, Description: Matrix Spike

|  | \# Name | Trace | Area | IS Area | Wt./Vol. | RRF | Pred.RT | RT | y Axis Resp. | Conc. | \%Rec |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | 1 PFBS | $299>79.7$ | 5.42 e 3 | 3.35 e 3 | 0.122 |  | 2.92 | 2.87 | 20.2 | 73.4 |  |
| 2 | 2 PFHxA | 313.2 > 268.9 | 3.42 e 4 | 9.54 e 3 | 0.122 |  | 3.16 | 3.11 | 17.9 | 89.5 |  |
| 3 | 3 PFHpA | $363>318.9$ | 2.22 e 4 | 2.14 e 4 | 0.122 |  | 3.43 | 3.38 | 13.0 | 74.0 |  |
| 4 | 4 PFHxS | $398.9>79.6$ | 9.78 e 3 | 2.27e3 | 0.122 |  | 3.55 | 3.45 | 53.8 | 236 |  |
| 5 | 5 PFOA | $413>368.7$ | 2.79 e 4 | 2.81 e 4 | 0.122 |  | 3.63 | 3.57 | 12.4 | 88.8 |  |
| 6 | 6 PFNA | $462.9>418.8$ | 2.08e4 | 2.33 e 4 | 0.122 |  | 3.82 | 3.75 | 11.2 | 67.1 |  |
| 7 | 7 PFOS | $499>79.9$ | 9.77 e 3 | 4.59 e 3 | 0.122 |  | 3.86 | 3.80 | 26.6 | 190 |  |
| 8 | 8 PFDA | $513>468.8$ | 1.74 e 4 | 1.75 e 4 | 0.122 |  | 4.00 | 3.91 | 12.4 | 67.7 |  |
| 9 | 9 PFUnA | $562.9>518.9$ | 4.47 e 3 | 7.30 e 3 | 0.122 |  | 4.16 | 4.08 | 7.65 | 59.5 |  |
| 10 | 10 N-MeFOSAA | $570.1>419$ | 2.42 e 3 | 1.84e3 | 0.122 |  | 4.00 | 3.95 | 16.5 | 72.6 |  |
| 11 | $11 \mathrm{~N}-\mathrm{EtFOS} A \mathrm{~A}$ | $584.2>419$ | 1.30 e 3 | 1.41 e 3 | 0.122 |  | 4.08 | 4.01 | 11.6 | 70.0 |  |
| 12 | 12 PFDoA | $612.9>318.8$ | 1.40 e 2 | 1.88 e 2 | 0.122 |  | 4.32 | 4.23 | 9.32 | 76.4 |  |
| 13 | 13 PFTrDA | $662.9>618.9$ | 1.19 e 3 | 1.88 e 2 | 0.122 |  | 4.50 | 4.40 | 79.1 | 48.3 |  |
| 14 | 14 PFTeDA | $712.9>668.8$ | 7.16 e 2 | 8.61 e2 | 0.122 |  | 4.66 | 4.56 | 10.4 | 67.5 |  |
| 15 | 15 13C3-PFBA | $216.1>171.8$ | 1.56 e 4 | 1.66 e 4 | 0.122 | 0.918 | 1.43 | 1.33 | 11.7 | 105 | 102.3 |
| 16 | 16 13C3-PFPeA | $266>221.8$ | 2.37 e 4 | 1.66 e 4 | 0.122 | 1.784 | 2.72 | 2.63 | 17.8 | 82.0 | 79.8 |
| 17 | 17 13C3-PFBS | $302>98.8$ | 3.35 e 3 | 1.66 e 4 | 0.122 | 0.215 | 2.92 | 2.87 | 2.52 | 96.2 | 93.6 |
| 18 | 18 13C2-PFHXA | $315>269.8$ | 9.54 e 3 | 3.02 e 4 | 0.122 | 0.304 | 3.16 | 3.11 | 1.58 | 42.7 | 104.0 |
| 19 | 19 13C4-PFHpA | $367.2>321.8$ | 2.14 e 4 | 3.02 e 4 | 0.122 | 0.306 | 3.43 | 3.38 | 3.55 | 95.3 | 92.7 |
| 20 | 20 1802-PFHxS | $403>102.6$ | 2.27e3 | 5.17 e 3 | 0.122 | 0.437 | 3.55 | 3.45 | 5.49 | 103 | 100.5 |
| 21 | 21 13C2-PFOA | $414.9>369.7$ | 2.81 e 4 | 2.15 e 4 | 0.122 | 1.292 | 3.63 | 3.57 | 16.4 | 104 | 101.2 |
| 22 | 22 13C5-PFNA | $468.2>422.9$ | 2.33 e 4 | 2.57 e 4 | 0.122 | 0.980 | 3.82 | 3.75 | 11.3 | 95.0 | 92.4 |
| 23 | 23 13C8-PFOS | $507>79.9$ | 4.59 e 3 | 4.47e3 | 0.122 | 1.098 | 3.86 | 3.80 | 12.8 | 96.0 | 93.5 |
| 24 | 24 13C2-PFDA | $515.1>469.9$ | 1.75 e 4 | 1.93 e 4 | 0.122 | 0.928 | 4.00 | 3.91 | 11.4 | 101 | 98.0 |
| 25 | 25 13C2-PFUnA | $565>519.8$ | 7.30 e 3 | 6.94e3 | 0.122 | 1.083 | 4.16 | 4.08 | 13.1 | 99.9 | 97.2 |
| 26 | 26 d3-N-MeFOSAA | $573.3>419$ | 1.84 e 3 | 6.94e3 | 0.122 | 0.224 | 4.00 | 3.95 | 3.31 | 121 | 118.1 |
| 27 | 27 d5-N-EtFOSAA | $589.3>419$ | 1.41 e 3 | 6.94e3 | 0.122 | 0.230 | 4.08 | 4.01 | 2.53 | 90.6 | 88.2 |
| 28 | 28 13C2-PFDoA | $615>569.7$ | 1.88 e 2 | 6.94e3 | 0.122 | 0.130 | 4.32 | 4.24 | 0.338 | 21.4 | 20.8 |
| 29 | 29 13C2-PFTeDA | $714.8>669.6$ | 8.61 e 2 | 6.94e3 | 0.122 | 1.018 | 4.66 | 4.56 | 1.55 | 12.5 | 12.2 |
| 30 | 30 13C4-PFBA | $217>171.8$ | 1.66 e 4 | 1.66 e 4 | 0.122 | 1.000 | 1.43 | 1.33 | 12.5 | 103 | 100.0 |
| 31 | 31 13C5-PFHxA | $318>272.9$ | 3.02 e 4 | 3.02 e 4 | 0.122 | 1.000 | 3.18 | 3.11 | 5.00 | 41.1 | 100.0 |
| 32 | $32.13 \mathrm{C} 3-\mathrm{PFHxS}$ | $401.9>79.9$ | 5.17e3 | 5.17 e 3 | 0.122 | 1.000 | 3.55 | 3.45 | 12.5 | 103 | 100.0 |

## Quantify Sample Summary Report

MassLynx MassLynx V4.1 SCN945 SCN960
Dataset:
U:\Q4.PRO\resultsl170711M11170711M1-59.qld
Last Altered: Thursday, July 13, 2017 10:02:07 Pacific Daylight Time Printed: Thursday, July 13, 2017 10:05:58 Pacific Daylight Time

## Name: 170711M1_59, Date: 11-Jul-2017, Time: 20:55:31, ID: B7G0014-MS1 Matrix Spike 0.12163, Description: Matrix Spike

|  | \# Name | Trace | Area | IS Area | Wt./Vol. | RRF | Pred.RT | RT | y Axis Resp. | Conc. | \%Rec |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 33 | 33 13C8-PFOA | $421.3>376$ | 2.15 e4 | 2.15 e 4 | 0.122 | 1.000 | 3.63 | 3.58 | 12.5 | 103 | 100.0 |
| 34 | 34 13C9-PFNA | $472.2>426.9$ | 2.57e4 | 2.57e4 | 0.122 | 1.000 | 3.82 | 3.75 | 12.5 | 103 | 100.0 |
| 35 | 35 13C4-PFOS | $503>79.9$ | 4.47 e 3 | 4.47 e 3 | 0.122 | 1.000 | 3.86 | 3.80 | 12.5 | 103 | 100.0 |
| 36 | 36 13C6-PFDA | $519.1>473.7$ | 1.93 e 4 | 1.93 e 4 | 0.122 | 1.000 | 4.00 | 3.92 | 12.5 | 103 | 100.0 |
| 37 | 37 13C7-PFUnA | $570.1>524.8$ | 6.94 e 3 | 6.94 e 3 | 0.122 | 1.000 | 4.16 | 4.08 | 12.5 | 103 | 100.0 |
| 38 | 38 Total PFBS | $299>79.7$ | 5.44 e 3 | 3.35 e 3 | 0.122 |  | 2.92 |  | 20.3 | 74.1 |  |
| 39 | 39 Total PFHxS | $398.9>79.6$ | 9.78 e 3 | 2.27 e 3 | 0.122 |  | 3.55 |  | 53.8 | 236 |  |
| 40 | 40 Total PFOA | $413>368.7$ | 2.79 e 4 | 2.81 e 4 | 0.122 |  | 3.63 |  | 12.4 | 88.8 |  |
| 41 | 41 Total PFOS | $499>79.9$ | 9.77 e 3 | 4.59 e 3 | 0.122 |  | 3.86 |  | 26.6 | 190 |  |
| 42 | 42 Total N-Me-FOSAA | $570.1>419$ | 2.42 e 3 | 1.84 e 3 | 0.122 |  | 4.20 |  | 16.5 | 72.6 |  |
| 43 | 43 Total N-EtFOSAA | $584.2>419$ | 1.30 e 3 | 1.41 e 3 | 0.122 |  | 4.30 |  | 11.6 | 70.0 |  |

## Quantify Totals Report MassLynx MassLynx V4.1 SCN945 SCN960

## Dataset: U:IQ4.PRO\results\170711M1\170711M1-59.qld

Last Altered: Thursday, July 13, 2017 10:02:07 Pacific Daylight Time Printed: Thursday, July 13, 2017 10:05:58 Pacific Daylight Time

## Method: U:\Q4.PRO\MethDB\PFAS_L14-7-5-17.mdb 10 Jul 2017 08:06:14

## Calibration: U:|Q4.PRO\CurveDBIC18_VAL-PFAS Q4_7-10-17-L14.cdb 11 Jul 2017 08:36:22

Name: 170711M1_59, Date: 11-Jul-2017, Time: 20:55:31, ID: B7G0014-MS1 Matrix Spike 0.12163, Description: Matrix Spike

## Total PFBS

|  | \# Name | Trace | RT | Area | IS Area | Response | Primary Flags | Conc. |
| :--- | :--- | :--- | ---: | ---: | ---: | ---: | ---: | ---: |
| 1 | 1 PFBS | $299>79.7$ | 2.87 | 5420.949 | 3349.300 | 20.232 | bb | 73.4 |
| 2 | 38 Total PFBS | $299>79.7$ | 2.74 | 14.886 | 3349.300 | 0.056 | bb | 0.7 |

Total PFHxS

|  | \# Name | Trace | RT | Area | IS Area | Response | Primary Flags | Conc. |
| :--- | :--- | :--- | ---: | ---: | ---: | ---: | ---: | ---: |
| 1 | 4 PFHxS | $398.9>79.6$ | 3.45 | 9777.453 | 2269.948 | 53.842 | $M M$ | 236.0 |

Total PFOA

|  | \# Name | Trace | RT | Area | IS Area | Response | Primary Flags | Conc. |
| :--- | :--- | :--- | :--- | ---: | ---: | ---: | ---: | ---: | ---: |
| 1 | 5 PFOA | $413>368.7$ | 3.57 | 27887.480 | 28112.367 | 12.400 | bb | 88.8 |

## Total PFOS

|  | \# Name | Trace | RT | Area | IS Area | Response | Primary Flags | Conc. |
| :--- | :--- | :--- | ---: | ---: | ---: | ---: | ---: | ---: |
| 1 | 7 PFOS | $499>79.9$ | 3.80 | 9774.232 | 4591.801 | 26.608 | $M M$ | 190.4 |

Total N-Me-FOSAA

|  | \# Name | Trace | RT | Area | IS Area | Response | Primary Flags | Conc. |
| :--- | :--- | :--- | ---: | ---: | ---: | ---: | ---: | ---: |
| 1 | 10 N-MeFOSAA | $570.1>419$ | 3.95 | 2423.729 | 1839.290 | 16.472 | bb | 72.6 |

Total N-EtFOSAA

|  | \# Name | Trace | RT | Area | IS Area | Response | Primary Flags | Conc. |
| :--- | :--- | :--- | ---: | ---: | ---: | ---: | ---: | ---: |
| 11 N-EtFOSAA | $584.2>419$ | 4.01 | 1300.647 | 1407.596 | 11.550 | bb | 70.0 |  |

## Dataset:

U:IQ4.PRO|results|170711M11170711M1-59.qld
Last Altered: Thursday, July 13, 2017 10:02:07 Pacific Daylight Time Printed: Thursday, July 13, 2017 10:05:58 Pacific Daylight Time

## Method: U:|Q4.PRO\MethDB|PFAS_L14-7-5-17.mdb 10 Jul 2017 08:06:14

## Calibration: U:IQ4.PRO|CurveDBIC18_VAL-PFAS_Q4_7-10-17-L14.cdb 11 Jul 2017 08:36:22

## Name: 170711M1_59, Date: 11-Jul-2017, Time: 20:55:31, ID: B7G0014-MS1 Matrix Spike 0.12163, Description: Matrix Spike




13C3-PFBS


## PFHxA



13C2-PFHxA


## PFHpA




13C4-PFHpA


## Total PFHxS



1802-PFHxS


U:\Q4.PRO\resultsl170711M11170711M1-59.qld

## Last Altered: Thursday, July 13, 2017 10:02:07 Pacific Daylight Time

 Printed: Thursday, July 13, 2017 10:05:58 Pacific Daylight Time
## Name: 170711M1_59, Date: 11-Jul-2017, Time: 20:55:31, ID: B7G0014-MS1 Matrix Spike 0.12163, Description: Matrix Spike

## Total PFOA


F19:MRM of 2 channels,ES-
$413>169$
PFOA
3.58
5.78 e 3
123206
bb
100
123206.00



13C5-PFNA


Total PFOS


F30:MRM of 2 channels,ES-


13C8-PFOS


PFDA


13C2-PFUnA

Printed: $\quad$ Thursday, July 13, 2017 10:05:58 Pacific Daylight Time

## Name: 170711M1_59, Date: 11-Jul-2017, Time: 20:55:31, ID: B7G0014-MS1 Matrix Spike 0.12163, Description: Matrix Spike

## PFUnA

F43:MRM of 2 channels,ES-
$562.9>518.9$
$9.404 \mathrm{e}+004$
PFUnA
4.08
4.47 e
92901
bb
92901.00


13C2-PFUnA


## N-MeFOSAA


d3-N-MeFOSAA
F49:MRM of 1 channel,ES-


N-EtFOSAA

d5-N-EtFOSAA



13C2-PFDoA


## Dataset:

U:IQ4.PRO|results|170711M11170711M1-59.qld

## Last Altered: Thursday, July 13, 2017 10:02:07 Pacific Daylight Time

 Printed: Thursday, July 13, 2017 10:05:58 Pacific Daylight Time
## Name: 170711M1_59, Date: 11-Jul-2017, Time: 20:55:31, ID: B7G0014-MS1 Matrix Spike 0.12163, Description: Matrix Spike

## PFTeDA



## 13C2-PFTeDA




13C2-PFTeDA
F59:MRM of 2 channels,ES$714.8>669.6$



13C8-PFOA


13C3-PFHxS


13C9-PFNA


## Quantify Sample Report

## Dataset: <br> U:IQ4.PRO\results1170711M11170711M1-59.qld

Last Altered: Thursday, July 13, 2017 10:02:07 Pacific Daylight Time Printed: Thursday, July 13, 2017 10:05:58 Pacific Daylight Time

## Name: 170711M1_59, Date: 11-Jul-2017, Time: 20:55:31, ID: B7G0014-MS1 Matrix Spike 0.12163, Description: Matrix Spike

## 13C4-PFOS



13C6-PFDA


13C7-PFUnA


## Dataset: <br> U:IQ4.PRO|results|170711M11170711M1-60.qld

Last Altered: Thursday, July 13, 2017 10:19:48 Pacific Daylight Time Printed: $\quad$ Thursday, July 13, 2017 10:20:45 Pacific Daylight Time

## Method: U:IQ4.PRO\MethDBIPFAS L14-7-5-17.mdb 10 Jul 2017 08:06:14

 Calibration: U:IQ4.PRO\CurveDBIC18_VAL-PFAS_Q4_7-10-17-L14.cdb 11 Jul 2017 08:36:22Name: 170711M1_60, Date: 11-Jul-2017, Time: 21:06:22, ID: B7G0014-MSD1 Matrix Spike Dup 0.1181, Description: Matrix Spike Dup

|  | \# Name | Trace | Area | IS Area | Wt./Vol. | RRF | Pred.RT | RT | y Axis Resp. | Conc. | \%Rec |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | 1 PFBS | $299>79.7$ | 4.80 e 3 | 2.69e3 | 0.118 |  | 2.92 | 2.87 | 22.3 | 83.4 |  |
| 2 | 2 PFHxA | 313.2 > 268.9 | 2.82e4 | 7.67e3 | 0.118 |  | 3.16 | 3.12 | 18.4 | 94.6 |  |
| 3 | 3 PFHpA | $363>318.9$ | 1.72 e 4 | 1.66 e 4 | 0.118 |  | 3.43 | 3.38 | 13.0 | 76.6 |  |
| 4 | 4 PFHxS | $398.9>79.6$ | 8.42 e 3 | 1.97 e3 | 0.118 |  | 3.55 | 3.45 | 53.4 | 241 |  |
| 5 | 5 PFOA | $413>368.7$ | 2.16 e 4 | 2.30 e 4 | 0.118 |  | 3.63 | 3.58 | 11.7 | 86.6 |  |
| 6 | 6 PFNA | $462.9>418.8$ | 1.56e4 | 1.77 e 4 | 0.118 |  | 3.82 | 3.76 | 11.0 | 67.9 |  |
| 7 | 7 PFOS | $499>79.9$ | 7.80 e 3 | 3.66 e 3 | 0.118 |  | 3.86 | 3.81 | 26.7 | 197 |  |
| 8 | 8 PFDA | $513>468.8$ | 1.26 e 4 | 1.40 e 4 | 0.118 |  | 4.00 | 3.92 | 11.3 | 63.7 |  |
| 9 | 9 PFUnA | $562.9>518.9$ | 3.38 e 3 | 4.79 e 3 | 0.118 |  | 4.16 | 4.09 | 8.82 | 70.9 |  |
| 10 | 10 N-MeFOSAA | $570.1>419$ | 1.94 e3 | 1.44e3 | 0.118 |  | 4.00 | 3.95 | 16.8 | 76.3 |  |
| 11 | $11 \mathrm{~N}-\mathrm{EtFOS} A \mathrm{~A}$ | $584.2>419$ | 1.07 e 3 | 8.94 e 2 | 0.118 |  | 4.08 | 4.02 | 14.9 | 92.6 |  |
| 12 | 12 PFDoA | $612.9>318.8$ | 1.31 e 2 | 8.81 e 1 | 0.118 |  | 4.32 | 4.25 | 18.6 | 157 |  |
| 13 | 13 PFTrDA | $662.9>618.9$ | 1.15 e 3 | 8.81 e 1 | 0.118 |  | 4.50 | 4.40 | 163 | 103 |  |
| 14 | 14 PFTeDA | $712.9>668.8$ | 8.89 e 2 | 9.66 e 2 | 0.118 |  | 4.66 | 4.57 | 11.5 | 77.0 |  |
| 15 | 15 13C3-PFBA | $216.1>171.8$ | 1.29 e 4 | 1.39 e 4 | 0.118 | 0.918 | 1.43 | 1.34 | 11.6 | 107 | 101.2 |
| 16 | 16 13C3-PFPeA | $266>221.8$ | 1.95 e 4 | 1.39 e 4 | 0.118 | 1.784 | 2.72 | 2.64 | 17.5 | 82.9 | 78.4 |
| 17 | 17 13C3-PFBS | $302>98.8$ | 2.69 e 3 | 1.39 e 4 | 0.118 | 0.215 | 2.92 | 2.88 | 2.41 | 94.8 | 89.5 |
| 18 | 18 13C2-PFHXA | $315>269.8$ | 7.67e3 | 2.33 e 4 | 0.118 | 0.304 | 3.16 | 3.12 | 1.65 | 45.9 | 108.4 |
| 19 | 19 13C4-PFHpA | $367.2>321.8$ | 1.66 e 4 | 2.33 e 4 | 0.118 | 0.306 | 3.43 | 3.38 | 3.55 | 98.4 | 92.9 |
| 20 | 20 1802-PFHxS | $403>102.6$ | 1.97 e 3 | 4.51 e3 | 0.118 | 0.437 | 3.55 | 3.45 | 5.47 | 106 | 100.1 |
| 21 | 21 13C2-PFOA | $414.9>369.7$ | 2.30 e 4 | 1.94 e 4 | 0.118 | 1.292 | 3.63 | 3.58 | 14.8 | 97.2 | 91.8 |
| 22 | 22 13C5-PFNA | $468.2>422.9$ | 1.77 e 4 | 1.94 e 4 | 0.118 | 0.980 | 3.82 | 3.76 | 11.4 | 98.7 | 93.3 |
| 23 | 23 13C8-PFOS | $507>79.9$ | 3.66 e 3 | 3.44 e 3 | 0.118 | 1.098 | 3.86 | 3.80 | 13.3 | 102 | 96.7 |
| 24 | 24 13C2-PFDA | $515.1>469.9$ | 1.40 e 4 | 1.59 e 4 | 0.118 | 0.928 | 4.00 | 3.93 | 11.0 | 100 | 94.6 |
| 25 | 25 13C2-PFUnA | $565>519.8$ | 4.79 e 3 | 4.95 e 3 | 0.118 | 1.083 | 4.16 | 4.08 | 12.1 | 94.5 | 89.3 |
| 26 | 26 d3-N-MeFOSAA | $573.3>419$ | 1.44 e 3 | 4.95 e3 | 0.118 | 0.224 | 4.00 | 3.95 | 3.64 | 137 | 129.9 |
| 27 | 27 d5-N-EtFOSAA | $589.3>419$ | 8.94 e 2 | 4.95 e 3 | 0.118 | 0.230 | 4.08 | 4.02 | 2.26 | 83.1 | 78.5 |
| 28 | 28 13C2-PFDoA | $615>569.7$ | 8.81 e 1 | 4.95 e 3 | 0.118 | 0.130 | 4.32 | 4.23 | 0.222 | 14.5 | 13.7 |
| 29 | 29 13C2-PFTeDA | $714.8>669.6$ | 9.66 e 2 | 4.95 e 3 | 0.118 | 1.018 | 4.66 | 4.57 | 2.44 | 20.3 | 19.2 |
| 30 | 30 13C4-PFBA | $217>171.8$ | 1.39 e 4 | 1.39 e 4 | 0.118 | 1.000 | 1.43 | 1.34 | 12.5 | 106 | 100.0 |
| 31 | 31 13C5-PFHxA | $318>272.9$ | 2.33 e 4 | 2.33 e 4 | 0.118 | 1.000 | 3.18 | 3.12 | 5.00 | 42.3 | 100.0 |
| 32 | $32.13 \mathrm{C} 3-\mathrm{PFHxS}$ | $401.9>79.9$ | 4.51 e 3 | 4.51 e 3 | 0.118 | 1.000 | 3.55 | 3.45 | 12.5 | 106 | 100.0 |

## Quantify Sample Summary Report

Dataset:
U:IQ4.PRO|results|170711M11170711M1-60.qld
Last Altered: Thursday, July 13, 2017 10:19:48 Pacific Daylight Time Printed: Thursday, July 13, 2017 10:20:45 Pacific Daylight Time

## Name: 170711M1_60, Date: 11-Jul-2017, Time: 21:06:22, ID: B7G0014-MSD1 Matrix Spike Dup 0.1181, Description: Matrix Spike Dup

|  | \# Name | Trace | Area | IS Area | Wt./Vol. | RRF | Pred.RT | RT | y Axis Resp. | Conc. | \%Rec |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 33 | 33 13C8-PFOA | $421.3>376$ | 1.94 e 4 | 1.94 e 4 | 0.118 | 1.000 | 3.63 | 3.58 | 12.5 | 106 | 100.0 |
| 34 | 34 13C9-PFNA | $472.2>426.9$ | 1.94 e 4 | 1.94 e 4 | 0.118 | 1.000 | 3.82 | 3.76 | 12.5 | 106 | 100.0 |
| 35 | 35 13C4-PFOS | $503>79.9$ | 3.44 e 3 | 3.44 e 3 | 0.118 | 1.000 | 3.86 | 3.80 | 12.5 | 106 | 100.0 |
| 36 | 36 13C6-PFDA | $519.1>473.7$ | 1.59 e 4 | 1.59 e 4 | 0.118 | 1.000 | 4.00 | 3.93 | 12.5 | 106 | 100.0 |
| 37 | 37 13C7-PFUnA | $570.1>524.8$ | 4.95 e 3 | 4.95 e 3 | 0.118 | 1.000 | 4.16 | 4.08 | 12.5 | 106 | 100.0 |
| 38 | 38 Total PFBS | $299>79.7$ | 4.80 e 3 | 2.69 e3 | 0.118 |  | 2.92 |  | 22.3 | 83.4 |  |
| 39 | 39 Total PFHxS | $398.9>79.6$ | 8.42 e3 | 1.97 e 3 | 0.118 |  | 3.55 |  | 53.4 | 241 |  |
| 40 | 40 Total PFOA | $413>368.7$ | 2.16 e 4 | 2.30 e 4 | 0.118 |  | 3.63 |  | 11.7 | 86.6 |  |
| 41 | 41 Total PFOS | $499>79.9$ | 7.80e3 | 3.66e3 | 0.118 |  | 3.86 |  | 26.7 | 197 |  |
| 42 | 42 Total N-Me-FOSAA | $570.1>419$ | 1.94 e 3 | 1.44 e 3 | 0.118 |  | 4.20 |  | 16.8 | 76.3 |  |
| 43 | 43 Total N-EtFOSAA | $584.2>419$ | 1.07e3 | 8.94 e 2 | 0.118 |  | 4.30 |  | 14.9 | 92.6 |  |

## Quantify Totals Report MassLynx MassLynx V4.1 SCN945 SCN960

## Dataset: U:IQ4.PRO\results\170711M1\170711M1-60.qld

Last Altered: Thursday, July 13, 2017 10:19:48 Pacific Daylight Time Printed: $\quad$ Thursday, July 13, 2017 10:20:45 Pacific Daylight Time

## Method: U:\Q4.PRO\MethDB\PFAS_L14-7-5-17.mdb 10 Jul 2017 08:06:14

## Calibration: U:\Q4.PRO\CurveDBIC18_VAL-PFAS Q4_7-10-17-L14.cdb 11 Jul 2017 08:36:22

Name: 170711M1_60, Date: 11-Jul-2017, Time: 21:06:22, ID: B7G0014-MSD1 Matrix Spike Dup 0.1181, Description: Matrix Spike Dup
Total PFBS

|  | \# Name | Trace | RT | Area | IS Area | Response | Primary Flags | Conc. |
| :--- | :--- | :--- | ---: | ---: | ---: | ---: | ---: | ---: |
| 1 | 1 PFBS | $299>79.7$ | 2.87 | 4803.958 | 2688.702 | 22.334 | bb | 83.4 |

Total PFHxS

|  | \# Name | Trace | RT | Area | IS Area | Response | Primary Flags | Conc. |
| :--- | :--- | :--- | :--- | ---: | ---: | ---: | ---: | ---: |
| 1 | 4 PFHxS | $398.9>79.6$ | 3.45 | 8417.562 | 1972.018 | 53.356 | $M M$ | 240.9 |

## Total PFOA

|  | \# Name | Trace |  |  |  | RT | Area | IS Area |
| :--- | :--- | :--- | :--- | ---: | ---: | ---: | ---: | ---: |
| 1 | 5 PFOA | $413>368.7$ | 3.58 | 21577.596 | 22968.748 | 11.743 | Response | Primary Flags |

## Total PFOS

|  | \# Name | Trace | RT | Area | IS Area | Response | Primary Flags | Conc. |
| :--- | :--- | :--- | ---: | ---: | ---: | ---: | ---: | ---: |
| 1 | 7 PFOS | $499>79.9$ | 3.81 | 7802.950 | 3656.938 | 26.672 | $M M$ | 196.5 |

## Total N-Me-FOSAA

|  | \# Name | Trace | RT | Area | IS Area | Response | Primary Flags | Conc. |
| :--- | :--- | :--- | ---: | ---: | ---: | ---: | ---: | ---: |
| 1 | $10 ~ N-M e F O S A A ~$ | $570.1>419$ | 3.95 | 1941.005 | 1443.576 | 16.807 | bb | 76.3 |

## Total N-EtFOSAA

|  | \# Name | Trace | RT | Area | IS Area | Response | Primary Flags | Conc. |
| :---: | :---: | :---: | ---: | ---: | ---: | ---: | ---: | ---: |
| 1 | 11 N-EtFOSAA | $584.2>419$ | 4.02 | 1066.116 | 893.742 | 14.911 | bb | 92.6 |

## Dataset:

U:IQ4.PRO|results|170711M11170711M1-60.qld

## Last Altered: Thursday, July 13, 2017 10:19:48 Pacific Daylight Time

 Printed: Thursday, July 13, 2017 10:20:45 Pacific Daylight Time
## Method: U:|Q4.PRO\MethDB\PFAS_L14-7-5-17.mdb 10 Jul 2017 08:06:14

## Calibration: U:IQ4.PRO\CurveDBIC18_VAL-PFAS_Q4_7-10-17-L14.cdb 11 Jul 2017 08:36:22

## Name: 170711M1_60, Date: 11-Jul-2017, Time: 21:06:22, ID: B7G0014-MSD1 Matrix Spike Dup 0.1181, Description: Matrix Spike Dup


F6:MRM of 2 channels,ES-


13C3-PFBS


## PFHxA



13C2-PFHxA


PFHpA

| 100 | F14:MRM of 2 channels,ES |  |
| :---: | :---: | :---: |
|  |  | $363>318.9$$3.886 \mathrm{e}+005$ |
|  | PFHpA |  |
|  | 3.38 |  |
|  | 1.72 e 4 |  |
| \% | 385504 |  |
|  | bb |  |
|  | 2825.51 |  |



13C4-PFHpA


## Total PFHxS



U:IQ4.PRO|results|170711M11170711M1-60.qld

## Last Altered: Thursday, July 13, 2017 10:19:48 Pacific Daylight Time

 Printed: Thursday, July 13, 2017 10:20:45 Pacific Daylight Time
## Name: 170711M1_60, Date: 11-Jul-2017, Time: 21:06:22, ID: B7G0014-MSD1 Matrix Spike Dup 0.1181, Description: Matrix Spike Dup

\section*{Total PFOA <br> | otal PFOA |  |  |
| :---: | :---: | :---: |
| 100 | F19:MRM of 2 channels,ES- |  |
|  | PFOA | $4.582 \mathrm{e}+005$ |
|  | 3.58 |  |
|  | 2.16 e 4 |  |
| \%- | 456605 |  |
| \% | bb |  |
|  | 3742.68 |  |

F19:MRM of 2 channels,ES-
$413>169$
$9.113 \mathrm{e}+004$
PFOA
3.58
4.14 e 3
87808
bb
87808.00

13C2-PFOA



13C5-PFNA


Total PFOS


13C8-PFOS


PFDA


13C2-PFUnA

Printed: $\quad$ Thursday, July 13, 2017 10:20:45 Pacific Daylight Time

Name: 170711M1_60, Date: 11-Jul-2017, Time: 21:06:22, ID: B7G0014-MSD1 Matrix Spike Dup 0.1181, Description: Matrix Spike Dup

## PFUnA




13C2-PFUnA

## N-MeFOSAA


d3-N-MeFOSAA


N-EtFOSAA

d5-N-EtFOSAA




13C2-PFDoA


## Dataset:

U:IQ4.PRO|results\170711M11170711M1-60.qld

## Last Altered: Thursday, July 13, 2017 10:19:48 Pacific Daylight Time

 Printed: Thursday, July 13, 2017 10:20:45 Pacific Daylight TimeName: 170711M1_60, Date: 11-Jul-2017, Time: 21:06:22, ID: B7G0014-MSD1 Matrix Spike Dup 0.1181, Description: Matrix Spike Dup

## PFTeDA




13C2-PFTeDA



13C2-PFTeDA



13C8-PFOA


13C3-PFHxS


13C9-PFNA


## Quantify Sample Report

U:IQ4.PRO|results|170711M11170711M1-60.qld
Last Altered: Thursday, July 13, 2017 10:19:48 Pacific Daylight Time Printed: Thursday, July 13, 2017 10:20:45 Pacific Daylight Time

## Name: 170711M1_60, Date: 11-Jul-2017, Time: 21:06:22, ID: B7G0014-MSD1 Matrix Spike Dup 0.1181, Description: Matrix Spike Dup

## 13C4-PFOS




13C7-PFUnA


## Quantify Sample Summary Report

 Vista Analytical Laboratory
## Dataset: <br> U:\Q4.PRO\resultsl170711M11170711M1-61.qld

## Last Altered: Thursday, July 13, 2017 10:31:19 Pacific Daylight Time

 Printed: Thursday, July 13, 2017 10:32:08 Pacific Daylight Time
## Method: U:|Q4.PRO\MethDB\PFAS L14-7-5-17.mdb 10 Jul 2017 08:06:14

 Calibration: U:IQ4.PRO\CurveDBIC18_VAL-PFAS_Q4_7-10-17-L14.cdb 11 Jul 2017 08:36:22Name: 170711M1_61, Date: 11-Jul-2017, Time: 21:17:12, ID: 1700803-10 EB02 0.10956, Description: EB02

|  | \# Name | Trace | Area | IS Area | Wt./Vol. | RRF | Pred.RT | RT | y Axis Resp. | Conc. | \%Rec |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | 1 PFBS | $299>79.7$ |  | 2.39 e 3 | 0.110 |  | 2.92 |  |  |  |  |
| 2 | 2 PFHxA | $313.2>268.9$ |  | 6.41 e 3 | 0.110 |  | 3.16 |  |  |  |  |
| 3 | 3 PFHpA | $363>318.9$ |  | 1.48 e 4 | 0.110 |  | 3.43 |  |  |  |  |
| 4 | 4 PFHxS | $398.9>79.6$ |  | 1.76 e 3 | 0.110 |  | 3.55 |  |  |  |  |
| 5 | 5 PFOA | $413>368.7$ |  | 2.28 e 4 | 0.110 |  | 3.63 |  |  |  |  |
| 6 | 6 PFNA | $462.9>418.8$ |  | 1.80 e 4 | 0.110 |  | 3.82 |  |  |  |  |
| 7 | 7 PFOS | $499>79.9$ |  | 3.84 e 3 | 0.110 |  | 3.86 |  |  |  |  |
| 8 | 8 PFDA | $513>468.8$ |  | 1.68 e 4 | 0.110 |  | 4.00 |  |  |  |  |
| 9 | 9 PFUnA | $562.9>518.9$ |  | 7.96 e 3 | 0.110 |  | 4.16 |  |  |  |  |
| 10 | 10 N-MeFOSAA | $570.1>419$ |  | 2.54 e 3 | 0.110 |  | 4.00 |  |  |  |  |
| 11 | $11 \mathrm{~N}-\mathrm{EtFOS} A \mathrm{~A}$ | $584.2>419$ |  | 2.00 e 3 | 0.110 |  | 4.08 |  |  |  |  |
| 12 | 12 PFDoA | $612.9>318.8$ |  | 2.58 e 2 | 0.110 |  | 4.32 |  |  |  |  |
| 13 | 13 PFTrDA | $662.9>618.9$ |  | 2.58 e 2 | 0.110 |  | 4.50 |  |  |  |  |
| 14 | 14 PFTeDA | $712.9>668.8$ |  | 1.09 e 3 | 0.110 |  | 4.66 |  |  |  |  |
| 15 | 15 13C3-PFBA | $216.1>171.8$ | 1.19 e 4 | 1.27 e 4 | 0.110 | 0.918 | 1.43 | 1.33 | 11.8 | 117 | 102.8 |
| 16 | 16 13C3-PFPeA | $266>221.8$ | 1.78 e 4 | 1.27 e 4 | 0.110 | 1.784 | 2.72 | 2.64 | 17.6 | 89.8 | 78.7 |
| 17 | 17 13C3-PFBS | $302>98.8$ | 2.39 e 3 | 1.27 e 4 | 0.110 | 0.215 | 2.92 | 2.87 | 2.36 | 100 | 87.7 |
| 18 | 18 13C2-PFHxA | $315>269.8$ | 6.41 e 3 | 2.18 e 4 | 0.110 | 0.304 | 3.16 | 3.11 | 1.47 | 44.2 | 96.9 |
| 19 | 19 13C4-PFHpA | 367.2 > 321.8 | 1.48 e 4 | 2.18 e 4 | 0.110 | 0.306 | 3.43 | 3.38 | 3.41 | 102 | 89.1 |
| 20 | 20 18O2-PFHxS | $403>102.6$ | 1.76 e 3 | 3.74 e 3 | 0.110 | 0.437 | 3.55 | 3.45 | 5.86 | 122 | 107.3 |
| 21 | 21 13C2-PFOA | $414.9>369.7$ | 2.28 e 4 | 1.80 e 4 | 0.110 | 1.292 | 3.63 | 3.58 | 15.8 | 112 | 97.8 |
| 22 | 22 13C5-PFNA | 468.2 > 422.9 | 1.80e4 | 2.08 e 4 | 0.110 | 0.980 | 3.82 | 3.76 | 10.8 | 101 | 88.3 |
| 23 | 23 13C8-PFOS | $507>79.9$ | 3.84 e 3 | 3.86e3 | 0.110 | 1.098 | 3.86 | 3.80 | 12.4 | 103 | 90.6 |
| 24 | 24 13C2-PFDA | $515.1>469.9$ | 1.68 e 4 | 1.95 e 4 | 0.110 | 0.928 | 4.00 | 3.92 | 10.8 | 106 | 93.3 |
| 25 | 25 13C2-PFUnA | $565>519.8$ | 7.96 e 3 | 9.81 e 3 | 0.110 | 1.083 | 4.16 | 4.08 | 10.1 | 85.6 | 75.0 |
| 26 | 26 d3-N-MeFOSAA | $573.3>419$ | 2.54 e 3 | 9.81 e 3 | 0.110 | 0.224 | 4.00 | 3.95 | 3.23 | 131 | 115.2 |
| 27 | 27 d5-N-EtFOSAA | $589.3>419$ | 2.00 e 3 | 9.81 e 3 | 0.110 | 0.230 | 4.08 | 4.01 | 2.55 | 101 | 88.7 |
| 28 | 28 13C2-PFDoA | $615>569.7$ | 2.58 e 2 | 9.81 e 3 | 0.110 | 0.130 | 4.32 | 4.23 | 0.329 | 23.1 | 20.3 |
| 29 | 29 13C2-PFTeDA | $714.8>669.6$ | 1.09 e 3 | 9.81 e 3 | 0.110 | 1.018 | 4.66 | 4.56 | 1.39 | 12.5 | 10.9 |
| 30 | 30 13C4-PFBA | $217>171.8$ | 1.27 e 4 | 1.27 e 4 | 0.110 | 1.000 | 1.43 | 1.33 | 12.5 | 114 | 100.0 |
| 31 | 31 13C5-PFHxA | $318>272.9$ | 2.18 e 4 | 2.18 e 4 | 0.110 | 1.000 | 3.18 | 3.11 | 5.00 | 45.6 | 100.0 |
| 32 | $32.13 \mathrm{C} 3-\mathrm{PFHxS}$ | $401.9>79.9$ | 3.74 e 3 | 3.74 e 3 | 0.110 | 1.000 | 3.55 | 3.45 | 12.5 | 114 | 100.0 |

## Quantify Sample Summary Report

Dataset:
U:IQ4.PRO|results1170711M11170711M1-61.qld

## Last Altered: Thursday, July 13, 2017 10:31:19 Pacific Daylight Time

 Printed: Thursday, July 13, 2017 10:32:08 Pacific Daylight Time
## Name: 170711M1_61, Date: 11-Jul-2017, Time: 21:17:12, ID: 1700803-10 EB02 0.10956, Description: EB02

|  | \# Name | Trace | Area | IS Area | Wt./Vol. | RRF | Pred.RT | RT | y Axis Resp. | Conc. | \%Rec |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 33 | 33 13C8-PFOA | $421.3>376$ | 1.80 e 4 | 1.80 e 4 | 0.110 | 1.000 | 3.63 | 3.58 | 12.5 | 114 | 100.0 |
| 34 | 34 13C9-PFNA | $472.2>426.9$ | 2.08 e 4 | 2.08 e 4 | 0.110 | 1.000 | 3.82 | 3.76 | 12.5 | 114 | 100.0 |
| 35 | 35 13C4-PFOS | $503>79.9$ | 3.86e3 | 3.86e3 | 0.110 | 1.000 | 3.86 | 3.80 | 12.5 | 114 | 100.0 |
| 36 | 36 13C6-PFDA | $519.1>473.7$ | 1.95 e 4 | 1.95 e 4 | 0.110 | 1.000 | 4.00 | 3.92 | 12.5 | 114 | 100.0 |
| 37 | 37 13C7-PFUnA | $570.1>524.8$ | 9.81 e 3 | 9.81 e 3 | 0.110 | 1.000 | 4.16 | 4.08 | 12.5 | 114 | 100.0 |
| 38 | 38 Total PFBS | $299>79.7$ | 0.00 e 0 | 2.39 e 3 | 0.110 |  | 2.92 |  | 0.000 |  |  |
| 39 | 39 Total PFHxS | $398.9>79.6$ | 0.00 e 0 | 1.76 e 3 | 0.110 |  | 3.55 |  | 0.000 |  |  |
| 40 | 40 Total PFOA | $413>368.7$ | 0.00e0 | 2.28 e 4 | 0.110 |  | 3.63 |  | 0.000 |  |  |
| 41 | 41 Total PFOS | $499>79.9$ | 0.00e0 | 3.84e3 | 0.110 |  | 3.86 |  | 0.000 |  |  |
| 42 | 42 Total N-Me-FOSAA | $570.1>419$ | 0.00e0 | 2.54 e 3 | 0.110 |  | 4.20 |  | 0.000 |  |  |
| 43 | 43 Total N-EtFOSAA | $584.2>419$ | 0.00e0 | 2.00 e 3 | 0.110 |  | 4.30 |  | 0.000 |  |  |

## Quantify Totals Report MassLynx MassLynx V4.1 SCN945 SCN960

| Dataset: | U:\Q4.PRO\results\170711M1\170711M1-61.qld |
| :--- | :--- |
|  |  |
| Last Altered: | Thursday, July 13, 2017 10:31:19 Pacific Daylight Time |
| Printed: | Thursday, July 13, 2017 10:32:08 Pacific Daylight Time |

Method: U:|Q4.PRO\MethDB\PFAS_L14-7-5-17.mdb 10 Jul 2017 08:06:14 Calibration: U:\Q4.PRO\CurveDBIC18_VAL-PFAS_Q4_7-10-17-L14.cdb 11 Jul 2017 08:36:22

Name: 170711M1_61, Date: 11-Jul-2017, Time: 21:17:12, ID: 1700803-10 EB02 0.10956, Description: EB02
Total PFBS

|  | \# Name | Trace | RT | Area | IS Area |
| :---: | :---: | :---: | :---: | :---: | :---: |

Total PFHxS

| 1 | \# Name | Trace | RT | Area | IS Area | Response | Primary Flags | Conc. |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| 1 |  |  |  |  |  |  |  |  |  |

## Total PFOS

|  | \# Name | Trace | RT | Area | IS Area |
| :---: | :---: | :---: | :---: | :---: | :---: |

## Total N-Me-FOSAA

|  | \# Name | Trace | RT | Area | IS Area |
| :---: | :---: | :---: | :---: | :---: | :---: |

## Total N-EtFOSAA

|  | \# Name | Trace | RT | Area | IS Area | Response Primary Flags |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| 1 |  |  |  |  |  |  |

## Dataset:

U:IQ4.PRO|results|170711M11170711M1-61.qld
Thursday, July 13, 2017 10:31:19 Pacific Daylight Time Printed: Thursday, July 13, 2017 10:32:08 Pacific Daylight Time

## Method: U:|Q4.PRO\MethDB\PFAS_L14-7-5-17.mdb 10 Jul 2017 08:06:14

## Calibration: U:IQ4.PRO\CurveDBIC18_VAL-PFAS_Q4_7-10-17-L14.cdb 11 Jul 2017 08:36:22

## Name: 170711M1_61, Date: 11-Jul-2017, Time: 21:17:12, ID: 1700803-10 EB02 0.10956, Description: EB02



13C3-PFBS



13C2-PFHxA



13C4-PFHpA


## Total PFHxS



1802-PFHxS


## Dataset:

U:IQ4.PRO|results|170711M11170711M1-61.qld
Last Altered: Thursday, July 13, 2017 10:31:19 Pacific Daylight Time Printed: Thursday, July 13, 2017 10:32:08 Pacific Daylight Time

## Name: 170711M1_61, Date: 11-Jul-2017, Time: 21:17:12, ID: 1700803-10 EB02 0.10956, Description: EB02

## Total PFOA



13C2-PFOA


## PFNA



13C5-PFNA


## Total PFOS



13C8-PFOS



13C2-PFUnA


## Dataset:

U:\Q4.PRO\resultsl170711M11170711M1-61.qld

## Last Altered: Thursday, July 13, 2017 10:31:19 Pacific Daylight Time

 Printed: Thursday, July 13, 2017 10:32:08 Pacific Daylight Time
## Name: 170711M1_61, Date: 11-Jul-2017, Time: 21:17:12, ID: 1700803-10 EB02 0.10956, Description: EB02

## PFUnA

F43:MRM of 2 channels,ES- | $\left.\begin{array}{c}562.9>518.9 \\ 568\end{array}\right)$ |
| :---: |



13C2-PFUnA

## N-MeFOSAA


d3-N-MeFOSAA



## Dataset:

U:IQ4.PRO|results\170711M11170711M1-61.qld

## Last Altered: Thursday, July 13, 2017 10:31:19 Pacific Daylight Time

 Printed: Thursday, July 13, 2017 10:32:08 Pacific Daylight Time
## Name: 170711M1_61, Date: 11-Jul-2017, Time: 21:17:12, ID: 1700803-10 EB02 0.10956, Description: EB02

## PFTeDA



13C2-PFTeDA



13C2-PFTeDA



13C8-PFOA


13C3-PFHxS


13C9-PFNA


## Quantify Sample Report

## Dataset: <br> U:\Q4.PRO\resultsl170711M11170711M1-61.qld

Last Altered: Thursday, July 13, 2017 10:31:19 Pacific Daylight Time Printed: Thursday, July 13, 2017 10:32:08 Pacific Daylight Time

## Name: 170711M1_61, Date: 11-Jul-2017, Time: 21:17:12, ID: 1700803-10 EB02 0.10956, Description: EB02

## 13C4-PFOS





## CONTINUING CALIBRATION

Dataset:
U:IQ4.PROTresults\170713M11170713M1-2.gld
Last Altered: Tuesday, July 18, 2017 07:37:58 Pacific Daylight Time
Printed: Tuesday, July 18, 2017 07:38:49 Pacific Daylight Time

Method: U:IQ4.PROIMethDBIPFAS_L14-7-13-17.mdb 14 Jul 2017 08:41:09
Calibration: U:IQ4.PROICurveDBIC18_VAL-PFAS_Q4_7-10-17-L14A.cdb 14 Jul 2017 08:57:46
Name: 170713M1_2, Date: 13-Jul-2017, Time: 16:10:55, ID: ST170713M1-1 PFC CS-1 17G1230, Description: PFC CS-1 17G1230

| - \# Name $\quad$ N Tma | Trace | Area | IS Area | Wt. Vol. | RRF | Pred.RT | WT RT Y Axis Resp - Conc. \%Rec |  |  |  | $70-130$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1 , 1 Kx 1 PFBS | $299>79.7$ | 2.13 e 2 | 2.13 e 3 | 1.0000 |  | 2.92 | 2.87 | 1.25 | 0.610 | 122.0 |  |
| 2 LmHz 2 PFHxA | $313.2>268.9$ | 1.40 e 3 | 7.13 e 3 | 1.0000 |  | 3.16 | 3.11 | 0.983 | 0.568 | 113.5 |  |
| 3 l 3 PFHpA | $363>318.9$ | 1.21 e 3 | 1.84 e 4 | 1.0000 |  | 3.43 | 3.37 | 0.823 | 0.550 | 110.0 |  |
| 4 - 4 PFHxS | $398.9>79.6$ | 1.87 e 2 | 2.18 e 3 | 1.0000 |  | 3.55 | 3.44 | 1.07 | 0.636 | 127.2 |  |
| 5 5 5 PFOA | $413>368.7$ | 1.61 e 3 | 3.31 e 4 | 1.0000 |  | 3.63 | 3.57 | 0.607 | 0.430 | 86.1 |  |
| 6 ¢ 4 ¢ 6 PFNA | $462.9>418.8$ | 2.27 e 3 | 3.99e4 | 1.0000 |  | 3.82 | 3.75 | 0.712 | 0.478 | 95.7 |  |
| 7.4 | $499>79.9$ | 4.80 e 2 | 8.73 e 3 | 1.0000 |  | 3.86 | 3.80 | 0.687 | 0.595 | 119.1 |  |
| 8.88 PFDA | $513>468.8$ | 1.97 e 3 | 3.72e4 | 1.0000 |  | 4.00 | 3.91 | 0.662 | 0.485 | 97.0 |  |
| 9.49 PFUnA | $562.9>518.9$ | 1.92 e 3 | 3.93 e 4 | 1.0000 |  | 4.16 | 4.08 | 0.611 | 0.453 | 90.6 |  |
| 10 , 10 N-MeFOSAA | $570.1>419$ | 7.33 e 2 | 9.71 e3 | 1.0000 |  | 4.00 | 3.95 | 0.944 | 0.561 | 112.1 |  |
| 11 W 11 N-EtFOSAA | $584.2>419$ | 6.43 e 2 | 1.11 e 4 | 1.0000 |  | 4.08 | 4.01 | 0.723 | 0.533 | 106.6 |  |
| 12.12 PFDoA | 612.9 > 318.8 | 1.65 e 2 | 3.86 e 3 | 1.0000 |  | 4.32 | 4.23 | 0.535 | 0.634 | 126.8 |  |
| 13.13 PFTrDA | $662.9>618.9$ | $2.60{ }^{\text {e }}$ | 3.86 e 3 | 1.0000 |  | 4.50 | 4.39 | 8.42 | 0.615 | 123.0 |  |
| 14.414 PFTeDA | $712.9>668.8$ | 1.84 e 3 | 2.95 e4 | 1.0000 |  | 4.66 | 4.55 | 0.778 | 0.552 | 110.3 | $\checkmark$ |
| 15 -4ily 15 13C3-PFBA | $216.1>171.8$ | 9.08 e 3 | 1.01 e 4 | 1.0000 | 0.918 | 1.43 | 1.35 | 11.2 | 12.2 | 97.5 | -150 |
|  | $266>221.8$ | 1.63 e 4 | 2.29 e 4 | 1.0000 | 0.275 | 2.72 | 2.63 | 3.56 | 13.0 | 103.6 |  |
| 17 - 17 13C3-PFBS | $302>98.8$ | 2.13 e 3 | 2.29 e 4 | 1.0000 | 0.033 | 2.92 | 2.87 | 0.465 | 14.0 | 112.2 |  |
| 18 -2ta 18 13C2-PFHxA | $315>269.8$ | 7.13 e 3 | 2.29 e 4 | 1.0000 | 0.304 | 3.16 | 3.11 | 1.56 | 5.12 | 102.4 |  |
| 19.219 13C4-PFHpA | $367.2>321.8$ | 1.84 e 4 | 2.29 e 4 | 1.0000 | 0.306 | 3.43 | 3.37 | 4.01 | 13.1 | 104.9 |  |
| $20 \quad 20$ 1802-PFHxS | $403>102.6$ | 2.18 e 3 | 4.93 e 3 | 1.0000 | 0.437 | 3.55 | 3.45 | 5.52 | 12.6 | 101.0 |  |
| 21.21 13C2-PFOA | 414.9 > 369.7 | 3.31 e 4 | 2.71 e 4 | 1.0000 | 1.292 | 3.63 | 3.57 | 15.3 | 11.8 | 94.4 |  |
| 22 - 22 13C5-PFNA | 468.2 > 422.9 | 3.99 e 4 | 3.81 e 4 | 1.0000 | 0.980 | 3.82 | 3.75 | 13.1 | 13.3 | 106.7 |  |
| 23 - 4evta 23 13C8-PFOS | $507>79.9$ | 8.73 e 3 | 7.91e3 | 1.0000 | 1.098 | 3.86 | 3.80 | 13.8 | 12.6 | 100.6 |  |
| 24.24 13C2-PFDA | $515.1>469.9$ | 3.72 e 4 | 3.67 e 4 | 1.0000 | 0.928 | 4.00 | 3.91 | 12.7 | 13.6 | 109.2 |  |
| 25 - 25 13C2-PFUnA | $565>519.8$ | 3.93 e 4 | 3.29 e 4 | 1.0000 | 1.083 | 4.16 | 4.07 | 14.9 | 13.8 | 110.3 |  |
| 26.5126 d3-N-MeFOSAA | $573.3>419$ | 9.71 e 3 | 3.29 e 4 | 1.0000 | 0.224 | 4.00 | 3.94 | 3.69 | 16.4 | 131.4 |  |
| 27.27 d5-N-EtFOSAA | $589.3>419$ | 1.11 e 4 | 3.29 e 4 | 1.0000 | 0.230 | 4.08 | 4.01 | 4.22 | 18.4 | 146.9 |  |
| 28 -6, 28 13C2-PFDoA | $615>569.7$ | 3.86 e 3 | 3.29 e 4 | 1.0000 | 0.130 | 4.32 | 4.23 | 1.47 | 11.3 | 90.3 |  |
| 29 ar 29 13C2-PFTeDA | $714.8>669.6$ | 2.95 e 4 | 3.29 e 4 | 1.0000 | 1.018 | 4.66 | 4.55 | 11.2 | 11.0 | 87.9 |  |
| 30.430 13C4-PFBA | $217>171.8$ | 1.01 e 4 | 1.01e4 | 1.0000 | 1.000 | 1.43 | 1.34 | 12.5 | 12.5 | 100.0 |  |
| 31 Work BrdAC57Plffex ${ }^{\text {a }}$ | $318>272.9$ | 2.29 e 4 | 2.29 e 4 | 1.0000 | 1.000 | 3.18 | 3.11 | 5.00 | 5.00 | 10tage | 166 of 382 |

Dataset: U:IQ4.PROIresults|170713M11170713M1-2.qld
Last Altered: Tuesday, July 18, 2017 07:37:58 Pacific Daylight Time
Printed: Tuesday, July 18, 2017 07:38:49 Pacific Daylight Time

## Name: 170713M1_2, Date: 13-Jul-2017, Time: 16:10:55, ID: ST170713M1-1 PFC CS-1 17G1230, Description: PFC CS-1 17G1230

| \# Name . .ataman | Trace | Area | IS Area | Wt./Nol. | RRF | Pred.RT | 4 RT y Axis Resp. . Conc. \%Rec |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $32-3213 \mathrm{C} 3-\mathrm{PFHxS}$ | $401.9>79.9$ | 4.93 e 3 | 4.93 e 3 | 1.0000 | 1.000 | 3.55 | 3.45 | 12.5 | 12.5 | 100.0 |
| 33 - 33 13C8-PFOA | $421.3>376$ | 2.71 e 4 | 2.71 e 4 | 1.0000 | 1.000 | 3.63 | 3.57 | 12.5 | 12.5 | 100.0 |
| 34 , 34 13C9-PFNA | $472.2>426.9$ | 3.81 e4 | 3.81e4 | 1.0000 | 1.000 | 3.82 | 3.75 | 12.5 | 12.5 | 100.0 |
| 35 - ${ }^{\text {a }}$, 35 13C4-PFOS | $503>79.9$ | 7.91 e 3 | 7.91e3 | 1.0000 | 1.000 | 3.86 | 3.80 | 12.5 | 12.5 | 100.0 |
| 36 - 36 13C6-PFDA | $519.1>473.7$ | 3.67 e 4 | 3.67 e 4 | 1.0000 | 1.000 | 4.00 | 3.91 | 12.5 | 12.5 | 100.0 |
| $37 \times 37$ 13C7-PFUnA | $570.1>524.8$ | 3.29 e 4 | 3.29 e 4 | 1.0000 | 1.000 | 4.16 | 4.08 | 12.5 | 12.5 | 100.0 |


| Quantify Compound Summary Report | MassLynx MassLynx V4.1 |
| :--- | :--- |
| Vista Analytical Laboratory |  |
| Dataset: | Untitled |
| Last Altered: | Tuesday, July 18, 2017 07:58:37 Pacific Daylight Time |
| Printed: | Tuesday, July 18, 2017 07:59:16 Pacific Daylight Time |

Method: U:IQ4.PROMethDBIPFAS_L14-7-13-17.mdb 14 Jul 2017 08:41:09
Calibration: U:IQ4.PROICurveDBIC18_VAL-PFAS_Q4_7-10-17-L14A.cdb 14 Jul 2017 08:57:46

## Compound name: PFBS



## Vista Analytical Laboratory

| Dataset: | Untitled |
| :--- | :--- |
| Last Altered: | Tuesday, July 18, 2017 07:58:37 Pacific Daylight Time |
| Printed: | Tuesday, July 18, 2017 07:59:16 Pacific Daylight Time |

## Compound name: PFBS

|  | Name | 1 I | Acq:Date | Acq.Time |
| :---: | :---: | :---: | :---: | :---: |
| 4x ${ }^{\text {d }}$ | 170713M1_32 | B7G0054-MS1 Matrix Spike 0.12064 | 13-Jul-17 | 21:38:13 |
| 33.453 | 170713M1_33 | B7G0054-MSD1 Matrix Spike Dup 0.11356 | 13-Jul-17 | 21:48:51 |
| 4W | 170713M1_34 | IPA | 13-Jul-17 | 21:59:30 |
| 35F5, | 170713M1_35 | ST170713M1-3 PFC CS3 17G1231 | 13-Jul-17 | 22:10:08 |
| 36 T | [170713M1_36 | IPA | 13-Jul-17 | 22:20:47 |
| Hivt | [170713M1_37 | 1700803-10RE1 EB02 0.12181 | 13-Jul-17 | 22:31:25 |
| 4 | 170713M1_38 | 1700836-01RE1 DPH-MW11 0.11781 | 13-Jul-17 | 22:42:03 |
|  | 170713M1_39 | 1700836-02RE1 DPH-B7 0.12115 | 13-Jul-17 | 22:52:42 |
| 02 ta | 170713M1_40 | 1700836-03RE1 DPH-MW3-17 0.11871 | 13-Jul-17 | 23:03:20 |
| 4 | 170713M1_41 | 1700836-04RE1 DPH-EX4 0.11551 | 13-Jul-17 | 23:13:59 |
|  | 170713M1_42 | 1700836-05RE1 DPH-MW6-17 0.11801 | 13-Jul-17 | 23:24:37 |
| 4 | -170713M1_43 | IPA | 13-Jul-17 | 23:35:15 |
| $44 \times 4$ | 170713M1_44 | ST170713M1-4 PFC CS3 17G1231 | 13-Jul-17 | 23:45:54 |

## LC Calibration Standards Review Checklist




Run Log Present: $\square$
\# of Samples per Sequence Checked: $\square$
Reviewed By:_ $\frac{\text { Cal } 7118 / 17}{\text { Initials/Date }}$

> Comments:
> (A) PFDOA exceeds method Criteria. No PFDOA in samples. AC -7/18/17

| Datase:: | U:IQ4.PROVresults1170713M11170713M1-2.qld |
| :--- | :--- |
| Last Altered: | Tuesday, July 18, 2017 07:37:58 Pacific Daylight Time |
| Printed: | Tuesday, July 18, 2017 07:38:49 Pacific Daylight Time |

Method: U:IQ4.PROIMethDBIPFAS_L14-7-13-17.mdb 14 Jul 2017 08:41:09

## Calibration: U:IQ4.PROICurveDBIC18_VAL-PFAS_Q4_7-10-17-L14A.cdb 14 Jul 2017 08:57:46

## Name: 170713M1_2, Date: 13-Jul-2017, Time: 16:10:55, ID: ST170713M1-1 PFC CS-1 17G1230, Description: PFC CS-1 17G1230

## Total PFBS




13C3-PFBS

## PFHxA




13C2-PFHxA



## 13C4-PFHpA



Total PFHxS


1802-PFHxS


## Vista Analytical Laboratory

Dataset:
U:IQ4.PROVresults\170713M11170713M1-2.qld
Last Altered: Tuesday, July 18, 2017 07:37:58 Pacific Daylight Time
Printed: $\quad$ Tuesday, July 18, 2017 07:38:49 Pacific Daylight Time

## Name: 170713M1_2, Date: 13-Jul-2017, Time: 16:10:55, ID: ST170713M1-1 PFC CS-1 17G1230, Description: PFC CS-1 17 G1230

## Total PFOA





13C5-PFNA



F30:MRM of 2 channels,ES$499>79.9$ $9.024 \mathrm{e}+003$



13C8-PFOS


PFDA
F35:MRM of 2 channels,ES $513>468.8$ $3.753 \mathrm{e}+004$



13C2-PFUnA


Dataset: U:IQ4.PRO\results\170713M1\170713M1-2.qld
Last Altered: $\quad$ Tuesday, July 18, 2017 07:37:58 Pacific Daylight Time
Printed: Tuesday, July 18, 2017 07:38:49 Pacific Daylight Time

Name: 170713M1_2, Date: 13-Jul-2017, Time: 16:10:55, ID: ST170713M1-1 PFC CS-1 17G1230, Description: PFC CS-1 17G1230


## 13C2-PFUnA



\section*{| N-MeFOSAA |  |
| ---: | ---: |
|  |  |
|  |  |
|  |  |}


d3-N-MeFOSAA


## N-EtFOSAA




## d5-N-EtFOSAA



## PFDoA



13C2-PFDoA


Last Altered: Tuesday, July 18, 2017 07:37:58 Pacific Daylight Time
Printed: Tuesday, July 18, 2017 07:38:49 Pacific Daylight Time

## Name: 170713M1_2, Date: 13-Jul-2017, Time: 16:10:55, ID: ST170713M1-1 PFC CS-1 17G1230, Description: PFC CS-1 17 G 1230




13C2-PFTeDA



## 13C2-PFTeDA

F59:MRM of 2 channels,ES-
$714.8>669.6$



13C8-PFOA


13C3-PFHxS
F17:MRM of 1 channel,ES-
$401.9>79.9$



| Quantify Sample Report $\quad$ MassLynx MassLynx V4.1 SCN 945 |  |
| :--- | :--- |
| Vista Analytical Laboratory |  |
| Dataset: | U:IQ4.PROVresults1170713M11170713M1-2.qld |
| Last Altered: | Tuesday, July 18, 2017 07:37:58 Pacific Daylight Time |
| Printed: | Tuesday, July 18, 2017 07:38:49 Pacific Daylight Time |

Name: 170713M1_2, Date: 13-Jul-2017, Time: 16:10:55, ID: ST170713M1-1 PFC CS-1 17G1230, Description: PFC CS-1 17G1230


Dataset:
U:IQ4.PRO|resultsl170713M11170713M1-20.qld
Last Altered: Tuesday, July 18, 2017 07:41:57 Pacific Daylight Time
Printed: Tuesday, July 18, 2017 07:48:39 Pacific Daylight Time

Method: U:IQ4.PROMMethDBIPFAS_L14-7-13-17.mdb 14 Jul 2017 08:41:09 Calibration: U:|Q4.PROICurveDBIC18_VAL-PFAS_Q4_7-10-17-L14A.cdb 14 Jul 2017 08:57:46

Name: 170713M1_20, Date: 13-Jul-2017, Time: 19:30:32, ID: ST170713M1-2 PFC CS3 17G1231, Description: PFC CS3 17G1231


| Dataset: | U:IQ4.PRO\results\170713M1\170713M1-20.qld |
| :--- | :--- |
| Last Altered: | Tuesday, July 18, 2017 07:41:57 Pacific Daylight Time |
| Printed: | Tuesday, July 18, 2017 07:48:39 Pacific Daylight Time |

## Name: 170713M1_20, Date: 13-Jul-2017, Time: 19:30:32, ID: ST170713M1-2 PFC CS3 17G1231, Description: PFC CS3 17G1231

|  | \# Name | Wear | Trace | Area | IS Area | Wt. Nol. | RRF | to PredRT | RT | sp. | Conc. | \%Rec |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 32. | 32 13C3-PFHxS |  | $401.9>79.9$ | 4.83 e 3 | 4.83 e 3 | 1.0000 | 1.000 | 3.55 | 3.47 | 12.5 | 12.5 | 100.0 |
| 33 - 4 Na | 33 13C8-PFOA |  | $421.3>376$ | 3.03 e 4 | 3.03 e4 | 1.0000 | 1.000 | 3.63 | 3.59 | 12.5 | 12.5 | 100.0 |
| 34 - | 34 13C9-PFNA |  | $472.2>426.9$ | 3.95 e 4 | 3.95 e4 | 1.0000 | 1.000 | 3.82 | 3.77 | 12.5 | 12.5 | 100.0 |
| 35 , - | 35 13C4-PFOS |  | $503>79.9$ | 7.99 e 3 | 7.99 e 3 | 1.0000 | 1.000 | 3.86 | 3.82 | 12.5 | 12.5 | 100.0 |
| 36. | 36 13C6-PFDA |  | $519.1>473.7$ | 4.31 e 4 | 4.31 e 4 | 1.0000 | 1.000 | 4.00 | 3.94 | 12.5 | 12.5 | 100.0 |
| 37 \% | 37 13C7-PFUnA |  | $570.1>524.8$ | 4.51 e 4 | 4.51 e 4 | 1.0000 | 1.000 | 4.16 | 4.10 | 12.5 | 12.5 | 100.0 |


| Quantify Compound Summary Report | MassLynx MassLynx V4．1 SCN 945 |
| :--- | :--- | :--- |
| Vista Analytical Laboratory |  |
| Dataset： | Untitled |
|  |  |
| Last Altered： | Tuesday，July 18，2017 07：58：37 Pacific Daylight Time |
| Printed： | Tuesday，July 18，2017 07：59：16 Pacific Daylight Time |

Method：U：IQ4．PROWMethDBIPFAS＿L14－7－13－17．mdb 14 Jul 2017 08：41：09
Calibration：U：IQ4．PROICurveDBIC18＿VAL－PFAS＿Q4＿7－10－17－L14A．cdb 14 Jul 2017 08：57：46

## Compound name：PFBS

|  |  | Acq．Date | Acat Time |
| :---: | :---: | :---: | :---: |
|  | IPA | 13－Jul－17 | 16：00：11 |
|  | ST170713M1－1 PFC CS－1 17G1230 | 13－Jul－17 | 16：10：55 |
|  | IPA | 13－Jul－17 | 16：21：34 |
|  | B7G0049－BS1 OPR 0.125 | 13－Jul－17 | 16：38：24 |
|  | B7G0054－BS1 OPR 0.125 | 13－Jul－17 | 16：49：10 |
|  | IPA | 13－Jul－17 | 16：59：57 |
|  | B7G0049－BLK1 Method Blank 0.125 | 13－Jul－17 | 17：10：36 |
| 約纉170713M1＿8 | B7G0054－BLK1 Method Blank 0.125 | 13－Jul－17 | 17：22：39 |
|  | 1700804－01RE1 IRPSite7－GW－07GW41－2017．．． | 13－Jul－17 | 17：33：22 |
| 36x ${ }^{\text {d }}$ 170713M1＿10 | 1700804－02RE1 IRPSite5－GW－05GW01－2017． | 13－Jul－17 | 17：44：00 |
|  | 1700804－03RE1 IRPSite5－GW－FD01－2017062．． | 13－Jul－17 | 17：54：39 |
|  | 1700804－04RE1 IRPSite33－GW－FRB01－2017．．． | 13－Jul－17 | 18：05：18 |
|  | 1700804－05RE1 IRPSite33－GW－11MW204D－2．． | 13－Jul－17 | 18：15：56 |
| 6484 170713M1＿14 | 1700804－06RE1 IRPSite33－GW－11MW204S－2．．． | 13－Jul－17 | 18：26：34 |
|  | 1700804－07RE1 Bldg 110－GW－11MW205D－20．．． | 13－Jul－17 | 18：37：13 |
| 教170713M1＿16 | 1700804－08RE1 Bldg 110－GW－FRB01－201706．．． | 13－Jul－17 | 18：47：51 |
| 變 170713M1＿17 | 1700804－09RE1 Bldg 110－GW－11MW205S－20．．． | 13－Jul－17 | 18：58：37 |
| 170713M1＿18 | 1700804－10RE1 IRPSite7－GW－07GW 102－201．．． | 13－Jul－17 | 19：09：16 |
| 170713M1＿19 | IPA | 13－Jul－17 | 19：19：54 |
| 170713M1＿20 | ST170713M1－2 PFC CS3 17G1231 | 13－Jul－17 | 19：30：32 |
| 6絞170713M1＿21 | IPA | 13－Jul－17 | 19：41：11 |
| 5x ${ }_{\text {W }{ }^{\text {a }} \text { 170713M1＿22 }}$ | 1700804－11RE1 IRPSite5－GW－04GW82－2017．．． | 13－Jul－17 | 19：51：49 |
| 䀜170713M1＿23 | 1700803－01RE1 SB01 0.11986 | 13－Jul－17 | 20：02：28 |
|  | 1700803－02RE1 EB01 0.12093 | 13－Jul－17 | 20：13：06 |
| 170713M1＿25 | 1700803－03RE1 IRPSite7－GW－46GW205－201．．． | 13－Jul－17 | 20：23：44 |
| 170713M1＿26 | 1700803－04RE1 IRPSite7－GW－FD01－2017062．．． | 13－Jul－17 | 20：34：23 |
| 170713M1＿27 | 1700803－05RE1 IRPSite7－GW－07GW202－201．．． | 13－Jul－17 | 20：45：01 |
| 170713M1＿28 | 1700803－06RE1 IRPSite7－GW－FRB01－20170．．． | 13－Jul－17 | 20：55：40 |
| 170713M1＿29 | 1700803－07RE1 IRPSSite5－GW－FRB01－20170．．． | 13－Jul－17 | 21：06：18 |
| 1779z13M103803 | 1700803－08RE1 IRPSite5－GW－04GW81S－201．．． | 13－Jul－17 | 21：16：56 |

## Dataset: Untitled

Last Altered: Tuesday, July 18, 2017 07:58:37 Pacific Daylight Time Printed: $\quad$ Tuesday, July 18, 2017 07:59:16 Pacific Daylight Time

## Compound name: PFBS

|  |  | Acq:Date | AcqTime |
| :---: | :---: | :---: | :---: |
|  | B7G0054-MS1 Matrix Spike 0.12064 | 13-Jul-17 | 21:38:13 |
|  | B7G0054-MSD1 Matrix Spike Dup 0.11356 | 13-Jul-17 | 21:48:51 |
|  | IPA | 13-Jul-17 | 21:59:30 |
|  | ST170713M1-3 PFC CS3 17G1231 | 13-Jul-17 | 22:10:08 |
|  | IPA | 13-Jul-17 | 22:20:47 |
|  | 1700803-10RE1 EB02 0.12181 | 13-Jul-17 | 22:31:25 |
|  | 1700836-01RE1 DPH-MW11 0.11781 | 13-Jul-17 | 22:42:03 |
|  | 1700836-02RE1 DPH-B7 0.12115 | 13-Jul-17 | 22:52:42 |
|  | 1700836-03RE1 DPH-MW3-17 0.11871 | 13-Jul-17 | 23:03:20 |
|  | 1700836-04RE1 DPH-EX4 0.11551 | 13-Jul-17 | 23:13:59 |
|  | 1700836-05RE1 DPH-MW6-17 0.11801 | 13-Jul-17 | 23:24:37 |
|  | IPA | 13-Jul-17 | 23:35:15 |
|  | ST170713M1-4 PFC CS3 17G1231 | 13-Jul-17 | 23:45:54 |

Vista Analytical Laboratory
Dataset: U:IQ4.PRO\results\170713M1\170713M1-20.qld
Last Altered: Tuesday, July 18, 2017 07:41:57 Pacific Daylight Time
Printed: $\quad$ Tuesday, July 18, 2017 07:48:39 Pacific Daylight Time

Method: U:\Q4.PRO\MethDBIPFAS_L14-7-13-17.mdb 14 Jul 2017 08:41:09
Calibration: U:IQ4.PROICurveDBIC18_VAL-PFAS_Q4_7-10-17-L14A.cdb 14 Jul 2017 08:57:46
Name: 170713M1_20, Date: 13-Jul-2017, Time: 19:30:32, ID: ST170713M1-2 PFC CS3 17G1231, Description: PFC CS3 $17 \mathrm{G1231}$



13C3-PFBS


13C2-PFHxA


PFHpA


13C4-PFHpA

Total PFHxS


1802-PFHxS


| Dataset: | U:\Q4.PRO\results\170713M1\170713M1-20.qld |
| :--- | :--- |
| Last Altered: | Tuesday, July 18, 2017 07:41:57 Pacific Daylight Time |
| Printed: | Tuesday, July 18, 2017 07:48:39 Pacific Daylight Time |

Name: 170713M1_20, Date: 13-Jul-2017, Time: 19:30:32, ID: ST170713M1-2 PFC CS3 17G1231, Description: PFC CS3 17 G1231



13C2-PFOA


PFNA



13C5-PFNA


## Total PFOS



13C8-PFOS



13C2-PFUnA


Last Altered: Tuesday, July 18, 2017 07:41:57 Pacific Daylight Time
Printed: Tuesday, July 18, 2017 07:48:39 Pacific Daylight Time

## Name: 170713M1_20, Date: 13-Jul-2017, Time: 19:30:32, ID: ST170713M1-2 PFC CS3 17G1231, Description: PFC CS3 17G1231




13C2-PFUnA


## N-MeFOSAA



d3-N-MeFOSAA


## N-EtFOSAA




## d5-N-EtFOSAA



## PFDOA



13C2-PFDoA


Name: 170713M1_20, Date: 13-Jul-2017, Time: 19:30:32, ID: ST170713M1-2 PFC CS3 17G1231, Description: PFC CS3 17 G 1231


| Datase:: | U:IQ4.PRO\|results1170713M11170713M1-20.qld |
| :--- | :--- |
| Last Altered: | Tuesday, July 18, 2017 07:41:57 Pacific Daylight Time |
| Printed: | Tuesday, July 18, 2017 07:48:39 Pacific Daylight Time |

## Name: 170713M1_20, Date: 13-Jul-2017, Time: 19:30:32, ID: ST170713M1-2 PFC CS3 17G1231, Description: PFC CS3 17G1231



13C7-PFUnA


Dataset:
U:IQ4.PRO|resultsI170713M11170713M1-35.qld
Last Altered: Tuesday, July 18, 2017 07:54:43 Pacific Daylight Time
Printed: Tuesday, July 18, 2017 07:55:24 Pacific Daylight Time
(A) Exceeds method chteria


Method: U:IQ4.PROIMethDBIPFAS_L14-7-13-17.mdb 14 Jul 2017 08:41:09
Calibration: U:IQ4.PROICurveDBIC18_VAL-PFAS_Q4_7-10-17-L14A.cdb 14 Jul 2017 08:57:46
Name: 170713M1_35, Date: 13-Jul-2017, Time: 22:10:08, ID: ST170713M1-3 PFC CS3 17G1231, Description: PFC CS3 17G1231


| Dataset: | U:IQ4.PRO\results\170713M11170713M1-35.qld |
| :--- | :--- |
| Last Altered: | Tuesday, July 18, 2017 07:54:43 Pacific Daylight Time |
| Printed: | Tuesday, July 18, 2017 07:55:24 Pacific Daylight Time |

## Name: 170713M1_35, Date: 13-Jul-2017, Time: 22:10:08, ID: ST170713M1-3 PFC CS3 17G1231, Description: PFC CS3 $17 \mathrm{G1231}$

| 4. \% \# Name | Tes Trace | Area | IS Area | Wt. Nol . | RRF | Pred.RT | RT | y Axis Resp. | Conc. \%Rec |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $32 \times 32$ 13C3-PFHxS | $401.9>79.9$ | 4.73 e 3 | 4.73 e 3 | 1.0000 | 1.000 | 3.55 | 3.47 | 12.5 | 12.5 | 100.0 |
| 33 - 3 - | $421.3>376$ | 3.00 e 4 | 3.00 e 4 | 1.0000 | 1.000 | 3.63 | 3.60 | 12.5 | 12.5 | 100.0 |
| $34 \geq 34$ 13C9-PFNA | $472.2>426.9$ | 3.92 e 4 | 3.92e4 | 1.0000 | 1.000 | 3.82 | 3.77 | 12.5 | 12.5 | 100.0 |
| 35 W 35 13C4-PFOS | $503>79.9$ | 7.96 e 3 | 7.96 e 3 | 1.0000 | 1.000 | 3.86 | 3.82 | 12.5 | 12.5 | 100.0 |
| 36 . 36 13C6-PFDA | $519.1>473.7$ | 3.67 e 4 | 3.67 e 4 | 1.0000 | 1.000 | 4.00 | 3.94 | 12.5 | 12.5 | 100.0 |
| $37 \sim 37$ 13C7-PFUnA | $570.1>524.8$ | 4.06 e 4 | 4.06 e 4 | 1.0000 | 1.000 | 4.16 | 4.10 | 12.5 | 12.5 | 100.0 |


| Dataset: | Untitled |
| :--- | :--- |
| Last Altered: | Tuesday, July 18, 2017 07:58:37 Pacific Daylight Time |
| Printed: | Tuesday, July 18, 2017 07:59:16 Pacific Daylight Time |

Method: U:IQ4.PROIMethDBIPFAS_L14-7-13-17.mdb 14 Jul 2017 08:41:09
Calibration: U:IQ4.PROICurveDBIC18_VAL-PFAS_Q4_7-10-17-L14A.cdb 14 JuI 2017 08:57:46

## Compound name: PFBS



Dataset: Untitled
Last Altered: Tuesday, July 18, 2017 07:58:37 Pacific Daylight Time Printed: $\quad$ Tuesday, July 18, 2017 07:59:16 Pacific Daylight Time

## Compound name: PFBS

|  |  | Acq:Däte | Acg Time |
| :---: | :---: | :---: | :---: |
| 98x | B7G0054-MS1 Matrix Spike 0.12064 | 13-Jul-17 | 21:38:13 |
|  | B7G0054-MSD1 Matrix Spike Dup 0.11356 | 13-Jul-17 | 21:48:51 |
|  | IPA | 13-Jul-17 | 21:59:30 |
|  | ST170713M1-3 PFC CS3 17G1231 | 13-Jul-17 | 22:10:08 |
|  | IPA | 13-Jul-17 | 22:20:47 |
| 4 | 1700803-10RE1 EB02 0.12181 | 13-Jul-17 | 22:31:25 |
|  | 1700836-01RE1 DPH-MW11 0.11781 | 13-Jul-17 | 22:42:03 |
|  | 1700836-02RE1 DPH-B7 0.12115 | 13-Jul-17 | 22:52:42 |
|  | 1700836-03RE1 DPH-MW3-17 0.11871 | 13-Jul-17 | 23:03:20 |
| 26 Wh 170713M1_41 | 1700836-04RE1 DPH-EX4 0.11551 | 13-Jul-17 | 23:13:59 |
|  | 1700836-05RE1 DPH-MW6-17 0.11801 | 13-Jul-17 | 23:24:37 |
| 4170713M1_43 | IPA | 13-Jul-17 | 23:35:15 |
| 4*** | ST170713M1-4 PFC CS3 17G1231 | 13-Jul-17 | 23:45:54 |

Vista Analytical Laboratory
Dataset:
U:\Q4.PRO\results\170713M1\170713M1-35.qld
Last Altered: Tuesday, July 18, 2017 07:54:43 Pacific Daylight Time
Printed:
Tuesday, July 18, 2017 07:55:24 Pacific Daylight Time

Method: U:\Q4.PROMMethDBIPFAS_L14-7-13-17.mdb 14 Jul 2017 08:41:09

## Calibration: U:IQ4.PROICurveDBIC18_VAL-PFAS_Q4_7-10-17-L14A.cdb 14 Jul 2017 08:57:46

Name: 170713M1_35, Date: 13-Jul-2017, Time: 22:10:08, ID: ST170713M1-3 PFC CS3 17G1231, Description: PFC CS3 17 G1231



13C3-PFBS



13C2-PFHxA


## PFHpA




13C4-PFHpA


## Total PFHxS



1802-PFHxS


| Dataset: | U:IQ4.PROVresults1170713M11170713M1-35.qld |
| :--- | :--- |
| Last Altered: | Tuesday, July 18, 2017 07:54:43 Pacific Daylight Time |
| Printed: | Tuesday, July 18, 2017 07:55:24 Pacific Daylight Time |

## Name: 170713M1_35, Date: 13-Jul-2017, Time: 22:10:08, ID: ST170713M1-3 PFC CS3 17G1231, Description: PFC CS3 17G1231




13C2-PFOA




13C5-PFNA


## Total PFOS



13C8-PFOS



13C2-PFUnA


## Name: 170713M1_35, Date: 13-Jul-2017, Time: 22:10:08, ID: ST170713M1-3 PFC CS3 17G1231, Description: PFC CS3 17G1231

## PFUnA




## 13C2-PFUnA



## N-MeFOSAA


d3-N-MeFOSAA


## N-EtFOSAA




## d5-N-EtFOSAA



## PFDoA



13C2-PFDoA


| Dataset: | U:IQ4.PROIresults1170713M11170713M1-35.qld |
| :--- | :--- |
| Last Altered: | Tuesday, July 18, 2017 07:54:43 Pacific Daylight Time |
| Printed: | Tuesday, July 18, 2017 07:55:24 Pacific Daylight Time |

Name: 170713M1_35, Date: 13-Jul-2017, Time: 22:10:08, ID: ST170713M1-3 PFC CS3 17G1231, Description: PFC CS3 17G1231

Printed: $\quad$ Tuesday, July 18, 2017 07:55:24 Pacific Daylight Time

Name: 170713M1_35, Date: 13-Jul-2017, Time: 22:10:08, ID: ST170713M1-3 PFC CS3 17G1231, Description: PFC CS3 17G1231


13C6-PFDA
F38:MRM of 1 channel,ES$519.1>473.7$ $7.042 \mathrm{e}+005$


13C7-PFUnA

Quantify Sample Summary Report MassLynx MassLynx V4.1

| Vista Analytical Laboratory |
| :--- |
| Dataset: |$\quad$ U:IQ4.PROIresults 1 170711M1\170711M1-41_L14.qld

Last Altered:
Thursday, July 13, 2017 10:49:12 Pacific Daylight Time
Printed:

Method: U:IQ4.PROIMethDBIPFAS_L14-7-5-17.mdb 10 Jul 2017 08:06:14
Calibration: U:IQ4.PROICurveDBIC18_VAL-PFAS_Q4_7-10-17-L14.cdb 11 Jul 2017 08:36:22
Last Altered: Thursday, July 13, 2017 10:49:12 Pacific Daylight Time
Printed: Thursday, July 13, 2017 10:52:03 Pacific Daylight Time

Name: 170711M1_41, Date: 11-Jul-2017, Time: 17:43:19, ID: ST170711M1-4 PFC CS3 17G1008, Description: PFC CS3 17G1008


| Dataset: | U:IQ4.PROIresults1170711M11170711M1-41_L14.qld |
| :--- | :--- |
|  |  |
| Last Altered: | Thursday, July 13, 2017 10:49:12 Pacific Daylight Time |
| Printed: | Thursday, July 13, 2017 10:52:03 Pacific Daylight Time |

## Name: 170711M1_41, Date: 11-Jul-2017, Time: 17:43:19, ID: ST170711M1-4 PFC CS3 17G1008, Description: PFC CS3 17G1008

|  | \# Name | S | Area | IS Area | WtiNol. | RRF | Pred.RT | RT | y Axis Resp. | Conc. | \%Rec |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 32 | 32 13C3-PFHxS | $401.9>79.9$ | 6.46e3 | 6.46 e 3 | 1.000 | 1.000 | 3.55 | 3.44 | 12.5 | 12.5 | 100.0 |
| 33 | 33 13C8-PFOA | $421.3>376$ | 4.16 e 4 | 4.16 e 4 | 1.000 | 1.000 | 3.63 | 3.58 | 12.5 | 12.5 | 100.0 |
| 34 | 34 13C9-PFNA | $472.2>426.9$ | 6.25 e4 | 6.25 e 4 | 1.000 | 1.000 | 3.82 | 3.75 | 12.5 | 12.5 | 100.0 |
| 35 | 35 13C4-PFOS | $503>79.9$ | 1.09 e 4 | 1.09 e 4 | 1.000 | 1.000 | 3.86 | 3.80 | 12.5 | 12.5 | 100.0 |
| 36 | 36 13C6-PFDA | $519.1>473.7$ | 6.86 e 4 | 6.86e4 | 1.000 | 1.000 | 4.00 | 3.91 | 12.5 | 12.5 | 100.0 |
| 37 | 37 13C7-PFUnA | $570.1>524.8$ | 6.95 e 4 | 6.95 e 4 | 1.000 | 1.000 | 4.16 | 4.08 | 12.5 | 12.5 | 100.0 |


| Dataset： | Untitled |
| :--- | :--- |
| Last Altered： | Friday，July 14，2017 11：59：09 Pacific Daylight Time |
| Printed： | Friday，July 14，2017 12：00：08 Pacific Daylight Time |

Method：U：IQ4．PRO\MethDBIPFAS＿L14－7－5－17．mdb 10 Jul 2017 08：06：14
Calibration：U：IQ4．PROICurveDBIC18＿VAL－PFAS＿Q4＿7－10－17－L14．cdb 11 Jul 2017 08：36：22

## Compound name：PFBS

|  |  | Name | ID | Acq Date | Acq．Time |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | THE世W | 170711M1＿1 | IPA | 11－Jul－17 | 08：51：57 |
| 2 |  | 170711M1＿2 | ST170711M1－1 PFC CS3 17G1008 | 11－Jul－17 | 09：02：53 |
| 3. | サそ\％ぞそ | 170711M1＿3 | IPA | 11－Jul－17 | 09：13：39 |
| 4 | \％ | 170711M1＿4 | B7E0157－BS1 OPR 1 | 11－Jul－17 | 09：24：20 |
| 5 |  | 170711M1＿5 | IPA | 11－Jul－17 | 09：35：03 |
| 6 |  | 170711M1＿6 | B7E0157－BLK1 Method Blank 1 | 11－Jul－17 | 09：45：42 |
|  |  | 170711M1＿7 | 1700655－01 Pedigree Chopped Ground Dinne．．． | 11－Jul－17 | 09：56：20 |
| 8 | \％ | 170711M1＿8 | 1700655－02 Purina Friskies Salmon Dinner CI．．． | 11－Jul－17 | 10：06：59 |
| 9 |  | 170711M1＿9 | IPA | 11－Jul－17 | 10：17：44 |
| 10 | We．tet | 170711M1＿10 | B7G0024－BS2 OPR 0.25 | 11－Jul－17 | 10：28：24 |
| 11 | （2\％ | 170711M1＿11 | IPA | 11－Jul－17 | 10：39：03 |
| 12 | ， | 170711M1＿12 | ST170711M1－2 PFC CS3 17G1008 | 11－Jul－17 | 10：49：41 |
| 13 |  | 170711M1＿13 | IPA | 11－Jul－17 | 11：00：27 |
| 14 | ＋ | 170711M1＿14 | B7G0029－BS1 OPR 0.005 | 11－Jul－17 | 12：51：34 |
| 15 | \％ | 170711M1＿15 | IPA | 11－Jul－17 | 13：02：29 |
| 16 |  | 170711M1＿16 | B7G0029－BLK1 Method Blank 0.005 | 11－Jul－17 | 13：13：07 |
| 17 |  | 170711M1＿17 | 1700842－01 Shaws／Littleton 0.005 | 11－Jul－17 | 13：23：46 |
| 18 | \％ | 170711M1＿18 | 1700842－02 Walmart／Gorham 0.005 | 11－Jul－17 | 13：34：24 |
| 19 | － | 170711M1＿19 | 1700842－03 Whole Foods／Nashua 0.005 | 11－Jul－17 | 13：45：02 |
| 20 | ［ | 170711M1＿20 | 1700842－04 Walmart／Epping 0.005 | 11－Jul－17 | 13：57：16 |
| 21 | Hermix | 170711M1＿21 | 1700842－05 Freshmarket／Portsmouth 0.005 | 11－Jul－17 | 14：08：28 |
| 22 | W＋ | 170711M1＿22 | 1700842－06 Trader Joes／Newington 0.005 | 11－Jul－17 | 14：19：07 |
| 23 |  | 170711M1＿23 | 1700842－07 Market Basket／Dover 0.005 | 11－Jul－17 | 14：29：45 |
| 24 | ： 5 ＋4 | 170711M1＿24 | 1700842－08 Hannaford／Keene 0.005 | 11－Jul－17 | 14：40：32 |
| 25 |  | 170711M1＿25 | 1700842－09 Market Basket／Claremont 0.005 | 11－Jul－17 | 14：51：10 |
| 26 |  | 170711M1＿26 | 1700842－10 Market Basket／Claremont 20.005 | 11－Jul－17 | 15：01：59 |
| 27 |  | 170711M1＿27 | IPA | 11－Jul－17 | 15：12：44 |
| 28 | WY： | 170711M1＿28 | ST170711M1－3 PFC CS3 17G1008 | 11－Jul－17 | 15：23：22 |
| 29 | W\％ | 170711M1＿29 | IPA | 11－Jul－17 | 15：34：09 |
| 30 | W | 170711M1＿30 | 1700842－11 Market Basket／Claremont 30.005 | 11－Jul－17 | 15：44：47 |
| 31 | Wevtru | 170711M1＿31 | 1700842－12 Price Chopper／W．Lebanon 0.005 | 11－Jul－17 | 15：55：26 |

Work Order 1700803
Quantify Compound Summary Report MassLynx MassLynx V4.1
Vista Analytical Laboratory

| Dataset: | Untitled |
| :--- | :--- |
| Last Altered: Friday, July 14, 2017 11:59:09 Pacific Daylight Time <br> Printed: Friday, July 14, 2017 12:00:08 Pacific Daylight Time |  |$.$

## Compound name: PFBS



| Dataset: | Untitled |
| :--- | :--- |
| Last Altered: | Friday, July 14, 2017 11:59:09 Pacific Daylight Time |
| Printed: | Friday, July 14, 2017 12:00:08 Pacific Daylight Time |

## Compound name: PFBS

|  | Name | 10 - | Aca Date | Acg Time |
| :---: | :---: | :---: | :---: | :---: |
| 66 | 170711M1_66 | 1700836-01 DPH-MW11 0.1236 | 11-Jul-17 | 22:10:40 |
| 67 | 170711M1_67 | 1700836-02 DPH-B7 0.1224 | 11-Jul-17 | 22:21:19 |
| 68 | 170711M1_68 | 1700836-03 DPH-MW3-17 0.1219 | 11-Jul-17 | 22:31:57 |
| 69 | 170711M1_69 | 1700836-04 DPH-EX4 0.12243 | 11-Jul-17 | 22:42:36 |
| 70 | 170711M1_70 | 1700836-05 DPH-MW6-17 0.12319 | 11-Jul-17 | 22:53:14 |
| 71 | 170711M1_71 | 1700844-01 20410100010.277 | 11-Jul-17 | 23:03:52 |
| 72 | 170711M1_72 | 1700845-01 MW-29S-20170707 0.12034 | 11-Jul-17 | 23:14:31 |
| 73 | 170711M1_73 | 1700845-02 DUP04-20170707 0.12279 | 11-Jul-17 | 23:25:17 |
| 74 | 17071 1M1_74 | 1700845-03 MW-27S-20170707 0.11824 | 11-Jul-17 | 23:36:03 |
| 75 | 170711M1_75 | B7G0033-MS1 Matrix Spike 0.12283 | 11-Jul-17 | 23:46:42 |
| 76 | 170711M1_76 | B7G0033-MSD1 Matrix Spike Dup 0.124 | 11-Jul-17 | 23:57:29 |
| 77 | 170711M1_77 | 1700845-04 MW-30S-20170707 0.11933 | 12-Jul-17. | 00:08:07 |
| 78 | 170711M1_78 | IPA | 12-Jul-17 | 00:18:45 |
| 79 | 170711M1_79 | ST170711M1-6 PFC CS3 17G1008 $\sqrt{ }$ | 12-Jul-17 | 00:29:24 |
| 80 | 170711M1_80 | IPA | 12-Jul-17 | 00:40:11 |

LC Calibration Standards Review Checklist Q4


## \# of Samples per Sequence Checked:



| Dataset: | U:\Q4.PROVresults\170711M1\170711M1-41_L14.qld |
| :--- | :--- |
|  |  |
| Last Altered: | Thursday, July 13, 2017 10:49:12 Pacific Daylight Time |
| Printed: | Thursday, July 13, 2017 10:52:03 Pacific Daylight Time |

Method: U:IQ4.PROMMethDBIPFAS_L14-7-5-17.mdb 10 Jul 2017 08:06:14 Calibration: U:IQ4.PROICurveDBIC18_VAL-PFAS_Q4_7-10-17-L14.cdb 11 Jul 2017 08:36:22

Name: 170711M1_41, Date: 11-Jul-2017, Time: 17:43:19, ID: ST170711M1-4 PFC CS3 17G1008, Description: PFC CS3 17G1008

## Total PFBS

|  | F6:MRM of 2 channels,ES-$299>79.7$ |  |
| :---: | :---: | :---: |
|  | PFBS | $1.299 \mathrm{e}+005$ |
| 1007 | 2.87 |  |
|  | 5.18 e 3 |  |
| \%- | 129640 |  |
|  | bb |  |
|  | 129640.00 |  |

## PFHxA




13C2-PFHxA


## PFHpA




13C4-PFHpA



1802-PFHxS


| Dataset: | U:IQ4.PROVresults\170711M11170711M1-41_L14.qld |
| :--- | :--- |
| Last Altered: | Thursday, July 13, 2017 10:49:12 Pacific Daylight Time |
| Printed: | Thursday, July 13, 2017 10:52:03 Pacific Daylight Time |

Name: 170711M1_41, Date: 11-Jul-2017, Time: 17:43:19, ID: ST170711M1-4 PFC CS3 17G1008, Description: PFC CS3 17 G1008

| Total PFOA |  |  |
| :---: | :---: | :---: |
|  | F19:MRM of 2 channels,ES- |  |
|  |  | $413>368.7$ |
| 1007 | PFOA | $1.164 \mathrm{e}+006$ |
|  | 3.57 |  |
|  | 5.19 e 4 |  |
| \%- | 1160741 |  |
|  | bb |  |
|  | 7787.88 = |  |



13C2-PFOA


## PFNA



13C5-PFNA



F30:MRM of 2 channels,ES-
$499>99$
$1.127 e+005$


13C8-PFOS


PFDA
F35:MRM of 2 channels,ES.
$513>468.8$ $1.637 \mathrm{e}+006$


F35:MRM of 2 channels,ES-
$513>219$
$1.988 \mathrm{e}+005$


13C2-PFUnA


## Dataset: U:IQ4.PROIresults1170711M11170711M1-41_L14.qld

## Last Altered:

(
Thursday, July 13, 2017 10:49:12 Pacific Daylight Time
Printed:
Thursday, July 13, 2017 10:52:03 Pacific Daylight Time

## Name: 170711M1_41, Date: 11-Jul-2017, Time: 17:43:19, ID: ST170711M1-4 PFC CS3 17G1008, Description: PFC CS3 17G1008

## PFUnA




13C2-PFUnA


## N-MeFOSAA

F45:MRM of 2 channels,ES-


F45:MRM of 2 channels,ES-

d3-N-MeFOSAA



d5-N-EtFOSAA



13C2-PFDoA


| Dataset: | U:IQ4.PROIresults1170711M11170711M1-41_L14.qld |
| :--- | :--- |
| Last Altered: | Thursday, July 13, 2017 10:49:12 Pacific Daylight Time |
| Printed: | Thursday, July 13, 2017 10:52:03 Pacific Daylight Time |

Name: 170711M1_41, Date: 11-Jul-2017, Time: 17:43:19, ID: ST170711M1-4 PFC CS3 17G1008, Description: PFC CS3 17G1008

## PFTeDA



F58:MRM of 4 channels,ES-


13C2-PFTeDA


## PFTrDA



F57:MRM of 2 channels,ES-


13C2-PFTeDA


## 13C5-PFHxA



13C8-PFOA


13C3-PFHxS


13C9-PFNA


| Dataset: | U:IQ4.PRO\|results1170711M11170711M1-41_L14.qld |
| :--- | :--- |
|  |  |
| Last Altered: | Thursday, July 13, 2017 10:49:12 Pacific Daylight Time |
| Printed: | Thursday, July 13, 2017 10:52:03 Pacific Daylight Time |



## Dataset:

U:IQ4.PRO|results|170711M11170711M1-63_L14.qld
Last Altered: Thursday, July 13, 2017 10:54:41 Pacific Daylight Time
Printed: Thursday, July 13, 2017 10:55:26 Pacific Daylight Time

## Method: U:IQ4.PROMMethDBIPFAS_L14-7-5-17.mdb 10 Jul 2017 08:06:14

 Calibration: U:IQ4.PROICurveDBIC18_VAL-PFAS_Q4_7-10-17-L14.cdb 11 Jul 2017 08:36:22Name: 170711M1_63, Date: 11-Jul-2017, Time: 21:38:37, ID: ST170711M1-5 PFC CS3 17G1008, Description: PFC CS3 17G1008

Dataset: U:IQ4.PROIresults 1 170711M11170711M1-63_L14.qld

Last Altered: Thursday, July 13, 2017 10:54:41 Pacific Daylight Time
Printed: Thursday, July 13, 2017 10:55:26 Pacific Daylight Time

Name: 170711M1_63, Date: 11-Jul-2017, Time: 21:38:37, ID: ST170711M1-5 PFC CS3 17G1008, Description: PFC CS3 17G1008


| Quantify Compound Summary Report MassLynx MassLynx V4.1 SCN945 SCN960 |
| :--- |
| Vista Analytical Laboratory |
| Dataset: $\quad$ Untitled |
| Last Altered: Friday, July 14, 2017 <br> 11:59:09 Pacific Daylight Time  <br> Printed: Friday, July 14, 2017 12:00:08 Pacific Daylight Time |

Method: U:IQ4.PROIMethDBIPFAS_L14-7-5-17.mdb 10 Jul 2017 08:06:14
Calibration: U:IQ4.PROICurveDBIC18_VAL-PFAS_Q4_7-10-17-L14.cdb 11 Jul 2017 08:36:22
Compound name: PFBS

|  |  |  |  |
| :---: | :---: | :---: | :---: |
|  | IPA | 11-Jul-17 | 08:51:57 |
| 170711M1_2 | ST170711M1-1 PFC CS3 17G1008 | 11-Jul-17 | 09:02:53 |
| 3\% | IPA | 11-Jul-17 | 09:13:39 |
| 34:3 ${ }^{\text {a }}$ 170711M1_4 | B7E0157-BS1 OPR 1 | 11-Jul-17 | 09:24:20 |
| 23: 170711M1_5 | IPA | 11-Jul-17 | 09:35:03 |
| [ 0 170711M1_6 | B7E0157-BLK1 Method Blank 1 | 11-Jul-17 | 09:45:42 |
|  | 1700655-01 Pedigree Chopped Ground Dinne... | 11-Jul-17 | 09:56:20 |
|  | 1700655-02 Purina Friskies Salmon Dinner Cl... | 11-Jul-17 | 10:06:59 |
|  | IPA | 11-Jul-17 | 10:17:44 |
| 10: | B7G0024-BS2 OPR 0.25 | 11-Jul-17 | 10:28:24 |
| O | IPA | 11-Jul-17 | 10:39:03 |
| 24:30170711M1_12 | ST170711M1-2 PFC CS3 17G1008 | 11-Jul-17 | 10:49:41 |
| - | IPA | 11-Jul-17 | 11:00:27 |
|  | B7G0029-BS1 OPR 0.005 | 11-Jul-17 | 12:51:34 |
| 170711M1_15 | IPA | 11-Jul-17 | 13:02:29 |
| 16 - \% in 170711M1_16 | B7G0029-BLK1 Method Blank 0.005 | 11-Jul-17 | 13:13:07 |
|  | 1700842-01 Shaws/Littleton 0.005 | 11-Jul-17 | 13:23:46 |
| 170711M1_18 | 1700842-02 Walmart/Gorham 0.005 | 11-Jul-17 | 13:34:24 |
| 170711M1_19 | 1700842-03 Whole Foods/Nashua 0.005 | 11-Jul-17 | 13:45:02 |
| 170711M1_20 | 1700842-04 Walmart/Epping 0.005 | 11-Jul-17 | 13:57:16 |
| 21: ${ }^{\text {2 }}$ | 1700842-05 Freshmarket/Portsmouth 0.005 | 11-Jul-17 | 14:08:28 |
|  | 1700842-06 Trader Joes/Newington 0.005 | 11-Jul-17 | 14:19:07 |
| 23\% 170711M1_23 | 1700842-07 Market Basket/Dover 0.005 | 11-Jul-17 | 14:29:45 |
|  | 1700842-08 Hannaford/Keene 0.005 | 11-Jul-17 | 14:40:32 |
| 170711M1_25 | 1700842-09 Market Basket/Claremont 0.005 | 11-Jul-17 | 14:51:10 |
| 170711M1_26 | 1700842-10 Market Basket/Claremont 20.005 | 11-Jul-17 | 15:01:59 |
| 170711M1_27 | IPA | 11-Jul-17 | 15:12:44 |
| 170711M1_28 | ST170711M1-3 PFC CS3 17G1008 | 11-Jul-17 | 15:23:22 |
|  | IPA | 11-Jul-17 | 15:34:09 |
| 30 \% | 1700842-11 Market Basket/Ciaremont 30.005 | 11-Jul-17 | 15:44:47 |
| $31-1.00711 M 1831$ | 1700842-12 Price Chopper/W.Lebanon 0.005 | 11-Jul-17 | 15:55:26 |


| Quantify Compound Summary Report $\quad$ MassLynx MassLynx V4 |  |
| :--- | :--- |
| Vista Analytical Laboratory |  |
| Dataset: | Untitled |
|  |  |
| Last Altered: | Friday, July 14, 2017 11:59:09 Pacific Daylight Time |
| Printed: | Friday, July 14, 2017 12:00:08 Pacific Daylight Time |

Compound name: PFBS

| Name | $\mathrm{D}$ |  |  |
| :---: | :---: | :---: | :---: |
| 32 | 1700842-13 Market Basket/Concord 0.005 | 11-Jul-17 | 16:06:13 |
| 33 S | 1700842-14 Cumberland Farms/Meredith 0.005 | 11-Jul-17 | 16:17:42 |
| 34 \%hemex 170711M1_34 | 1700842-15 EM-Heath/Center Harbor 0.005 | 11-Jul-17 | 16:28:34 |
|  | 1700842-16 Shaws/North Conway 0.005 | 11-Jul-17 | 16:39:13 |
|  | 1700842-17 Milk 10.005 | 11-Jul-17 | 16:49:59 |
|  | 1700842-18 Milk 20.005 | 11-Jul-17 | 17:00:38 |
| 386 | 170711_929 | 11-Jul-17 | 17:11:16 |
| 39.3ty | 170711_972 | 11-Jul-17 | 17:21:55 |
| 40_Wemudul $170711 \mathrm{M} 1 \_40$ | IPA | 11-Jul-17 | 17:32:33 |
|  | ST170711M1-4 PFC CS3 17G1008 | 11-Jul-17 | 17:43:19 |
|  | IPA | 11-Jul-17 | 17:54:06 |
|  | B7G0014-BS1 OPR 0.125 | 11-Jui-17 | 18:04:47 |
|  | B7G0033-BS1 OPR 0.125 | 11-Jul-17 | 18:15:31 |
| 45, \%uskutik 170711M1_45 | IPA | 11-Jul-17 | 18:26:18 |
| 46, | B7G0014-BLK1 Method Blank 0.125 | 11-Jul-17 | 18:37:02 |
|  | B7G0033-BLK1 Method Blank 0.125 | 11-Jul-17 | 18:47:43 |
| 48, ${ }^{2}$ | 1700792-11RE1 RB01-20170628 0.12273 | 11-Jul-17 | 18:58:21 |
|  | 1700792-08RE1 MH388.9-20170628 0.12326 | 11-Jul-17 | 19:09:07 |
| 50, | 1700792-01RE1 West Ditch In-20170627 0.12.. | 11-Jul-17 | 19:19:46 |
|  | 1700803-01 SB01 0.12033 | 11-Jul-17 | 19:30:24 |
| 523xtw | 1700803-03 IRPSite7-GW-46GW205-201706... | 11-Jul-17 | 19:41:03 |
|  | 1700803-04 IRPSite7-GW-FD01-20170628 0.... | 11-Jul-17 | 19:51:41 |
| 544ㄴNatisi 170711M1_54 | 1700803-05 IRPSite7-GW-07GW202-201706... | 11-Jul-17 | 20:02:19 |
| 55skdevidion11M1_55 | 1700803-06 IRPSite7-GW-FRB01-20170628 ... | 11-Jul-17 | 20:12:58 |
|  | 1700803-07 IRPSite5-GW-FRB01-20170628 ... | 11-Jul-17 | 20:23:36 |
|  | 1700803-08 IRPSite5-GW-04GW81S-201706... | 11-Jul-17 | 20:34:15 |
|  | 1700803-09 IRPSite5-GW-04GW80-2017062... | 11-Jul-17 | 20:44:53 |
|  | B7G0014-MS1 Matrix Spike 0.12163 | 11-Jul-17 | 20:55:31 |
| 60. | B7G0014-MSD1 Matrix Spike Dup 0.1181 | 11-Jul-17 | 21:06:22 |
| 170711M1_61 | 1700803-10 EB02 0.10956 | 11-Jul-17 | 21:17:12 |
| 62 =6, 紋s=170711M1_62 | IPA | 11-Jul-17 | 21:27:59 |
|  | ST170711M1-5 PFC CS3 17G1008 V | 11-Jul-17 | 21:38:37 |
| 6493約 | IPA | 11-Jul-17 | 21:49:23 |
|  | 1700820-01 MTBE_5527 0.26911 | 11-Jul-17 | 22:00:02 |

Work Order 1700803

| Quantify Compound Summary Report | MassLynx MassLynx V4.1 SCN945 SCN960 |
| :--- | :--- | :--- |
| Vista Analytical Laboratory |  |
| Dataset: | Untitled |
|  |  |
| Last Altered: | Friday, July 14, 2017 11:59:09 Pacific Daylight Time |
| Printed: | Friday, July 14, 2017 12:00:08 Pacific Daylight Time |

## Compound name: PFBS

| 66: | 1700836-01 DPH-MW11 0.1236 | 11-Jul-17 | 22:10:40 |
| :---: | :---: | :---: | :---: |
| 67futuk | 1700836-02 DPH-B7 0.1224 | 11-Jul-17 | 22:21:19 |
|  | 1700836-03 DPH-MW3-17 0.1219 | 11-Jul-17 | 22:31:57 |
| 170711M1_69 | 1700836-04 DPH-EX4 0.12243 | 11-Jul-17 | 22:42:36 |
| 70 | 1700836-05 DPH-MW6-17 0.12319 | 11-Jul-17 | 22:53:14 |
|  | 1700844-01 20410100010.277 | 11-Jul-17 | 23:03:52 |
|  | 1700845-01 MW-29S-20170707 0.12034 | 11-Jul-17 | 23:14:31 |
|  | 1700845-02 DUP04-20170707 0.12279 | 11-Jul-17 | 23:25:17 |
|  | 1700845-03 MW-27S-20170707 0.11824 | 11-Jul-17 | 23:36:03 |
|  | B7G0033-MS1 Matrix Spike 0.12283 | 11-Jul-17 | 23:46:42 |
|  | B7G0033-MSD1 Matrix Spike Dup 0.124 | 11-Jul-17 | 23:57:29 |
|  | 1700845-04 MW-30S-20170707 0.11933 | 12-Jul-17, | 00:08:07 |
|  | IPA | 12-Jul-17 | 00:18:45 |
|  | ST170711M1-6 PFC CS3 17G1008 | 12-Jul-17 | 00:29:24 |
|  | IPA | 12-Jul-17 | 00:40:11 |

Method: U:IQ4.PROIMethDBIPFAS_L14-7-5-17.mdb 10 Jul 2017 08:06:14

## Calibration: U:IQ4.PROICurveDBIC18_VAL-PFAS_Q4_7-10-17-L14.cdb 11 Jul 2017 08:36:22

Name: 170711M1_63, Date: 11-Jul-2017, Time: 21:38:37, ID: ST170711M1-5 PFC CS3 17G1008, Description: PFC CS3 17G1008

## Total PFBS


 13C3-PFBS

## PFHXA




13C2-PFHxA


PFHpA



13C4-PFHpA


## Total PFHxS



1802-PFHxS


| Quantify Sample Report $\quad$ MassLynx MassLynx V4.1 SCN945 SCN960 |  |
| :--- | :--- |
| Vista Analytical Laboratory |  |
| Dataset: | U:lQ4.PRO\results\170711M11170711M1-63_L14.qld |
|  |  |
| Last Altered: | Thursday, July 13, 2017 10:54:41 Pacific Daylight Time |
| Printed: | Thursday, July 13, 2017 10:55:26 Pacific Daylight Time |

Name: 170711M1_63, Date: 11-Jul-2017, Time: 21:38:37, ID: ST170711M1-5 PFC CS3 17G1008, Description: PFC CS3 17G1008



13C2-PFOA


## PFNA




13C5-PFNA


## Total PFOS



F30:MRM of 2 channels,ES$499>99$
$1.171 e+005$


13C8-PFOS


PFDA
F35:MRM of 2 channels,ES $513>468.8$ $1.585 e+006$


13C2-PFUnA


Name: 170711M1_63, Date: 11-Jul-2017, Time: 21:38:37, ID: ST170711M1-5 PFC CS3 17G1008, Description: PFC CS3 17G1008

## PFUnA




13C2-PFUnA



d3-N-MeFOSAA



d5-N-EtFOSAA




13C2-PFDoA

Printed: $\quad$ Thursday, July 13, 2017 10:55:26 Pacific Daylight Time

Name: 170711M1_63, Date: 11-Jul-2017, Time: 21:38:37, ID: ST170711M1-5 PFC CS3 17G1008, Description: PFC CS3 17G1008



13C2-PFTeDA
F59:MRM of 2 channels,ES-
$714.8>669.6$
13C2-PFTeDA 1.233e+006


## PFTrDA



F57:MRM of 2 channels,ES$662.9>319$


13C2-PFTeDA


## 13C5-PFHxA



13C8-PFOA


13C3-PFHxS


13C9-PFNA


| Quantify Sample Report |
| :--- |
| Vista Analytical Laboratory |


| Dataset: | U:IQ4.PROVresults\170711M1\170711M1-63_L14.qld |
| :--- | :--- |
|  |  |
| Last Altered: | Thursday, July 13, 2017 |
| Printed: | Thursday, July 13, 2017 10:54:41 Pacific Daylight Time |

Name: 170711M1_63, Date: 11-Jul-2017, Time: 21:38:37, ID: ST170711M1-5 PFC CS3 17G1008, Description: PFC CS3 17 G1008



13C7-PFUnA


## INITIAL CALIBRATION

# Quantify Compound Summary Report <br> Vista Analytical Laboratory 

Dataset:
U:IQ4.PRO\results\170710M31170710M3-CRV.qld
Last Altered: Tuesday, July 11, 2017 08:36:22 Pacific Daylight Time
Printed: $\quad$ Tuesday, July 11, 2017 08:39:03 Pacific Daylight Time

## Method: U:IQ4.PRO\MethDBIPFAS_L14-7-5-17.mdb 10 Jul 2017 08:06:14

Calibration: U:IQ4.PROICurveDBIC18_VAL-PFAS_Q4_7-10-17-L14.cdb 11 Jul 2017 08:36:22

## Compound name: PFBS

Correlation coefficient: $\mathrm{r}=0.999476, \mathrm{r}^{\wedge} 2=0.998952$
Calibration curve: $2.28219^{*} x+-0.143808$
Response type: Internal Std ( Ref 17 ), Area * (IS Conc. / IS Area )
Curve type: Linear, Origin: Exclude, Weighting: 1/x, Axis trans: None

| - | \# Name | Type | Std. Cone | RT | Area ISArea Response Conc. \%Dev Conc.Flag CoD $\sim$ CoD Flag - $x$ eexcluded |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 154.4. | 1 170710M3_2 | Standard | 0.250 | 2.97 | 64.107 | 1829.255 | 0.438 | 0.3 | 2.0 | NO | 0.999 | NO | bb |
| 2 2-5 | 2 170710M3_3 | Standard | 0.500 | 2.96 | 174.822 | 1889.439 | 1.157 | 0.6 | 14.0 | NO | 0.999 | NO | bb |
| $3-$ | 3 170710M3_4 | Standard | 1.000 | 2.95 | 250.827 | 1680.475 | 1.866 | 0.9 | -11.9 | NO | 0.999 | NO | bb |
| 4 - | 4 170710M3_5 | Standard | 2.000 | 2.95 | 664.245 | 1675.008 | 4.957 | 2.2 | 11.8 | NO | 0.999 | NO | bb |
| 5 | 5 170710M3_6 | Standard | 5.000 | 2.95 | 1423.155 | 1827.422 | 9.735 | 4.3 | -13.4 | NO | 0.999 | NO | bb |
| 6 | 6 170710M3_7 | Standard | 10.000 | 2.95 | 3293.945 | 1863.759 | 22.092 | 9.7 | -2.6 | NO | 0.999 | NO | bb |
| 7 | 7 170710M3_8 | Standard | 50.000 | 2.95 | 14448.479 | 1600.534 | 112.841 | 49.5 | -1.0 | NO | 0.999 | NO | bb |
| 8.8 | 8 170710M3_9 | Standard | 100.000 | 2.95 | 31826.346 | 1723.074 | 230.883 | 101.2 | 1.2 | NO | 0.999 | NO | bb |

## Compound name: PFHxA

Correlation coefficient: $\mathrm{r}=0.999913, \mathrm{r}^{\wedge} 2=0.999826$
Calibration curve: 1.63833 * $x+0.053424$
Response type: Internal Std (Ref 18 ), Area * (IS Conc. / IS Area )
Curve type: Linear, Origin: Exclude, Weighting: 1/x, Axis trans: None

|  | \# Name s.s - Type |  | Std. Cone | RT Area IS Area Response |  |  |  | \%Dev Conc. Flag . CoD |  |  |  | DF |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 1 170710M3_2 | Standard | 0.250 | 3.19 | 518.924 | 6599.234 | 0.393 | 0.2 | -17.1 | NO | 1.000 | NO | bb |
| $2=2=$ | 2 170710M3_3 | Standard | 0.500 | 3.19 | 1190.925 | 6260.955 | 0.951 | 0.5 | 9.6 | NO | 1.000 | NO | bb |
| 3 | 3 170710M3_4 | Standard | 1.000 | 3.18 | 2031.727 | 5844.579 | 1.738 | 1.0 | 2.8 | NO | 1.000 | NO | bb |
| 4. 4 $^{\text {a }}$ | 4 170710M3_5 | Standard | 2.000 | 3.18 | 4143.116 | 6095.467 | 3.399 | 2.0 | 2.1 | NO | 1.000 | NO | bb |
| $5$ | 5 170710M3_6 | Standard | 5.000 | 3.18 | 11189.35C | 6584.623 | 8.497 | 5.2 | 3.1 | NO | 1.000 | NO | bb |
| $6$ | 6 170710M3_7 | Standard | 10.000 | 3.19 | 22422.309 | 6880.506 | 16.294 | 9.9 | -0.9 | NO | 1.000 | NO | bb |
| $7=-3 / 4$ | 7 170710M3_8 | Standard | 50.000 | 3.19 | 107894.484 | 6517.125 | 82.778 | 50.5 | 1.0 | NO | 1.000 | NO | bb |
| 8. ${ }^{\text {a }}$ | 8 170710M3_9 | Standard | 100.000 | 3.18 | 224318.094 | 6887.408 | 162.847 | 99.4 | -0.6 | NO | 1.000 | NO | bb |

Last Altered:
Tuesday, July 11, 2017 08:36:22 Pacific Daylight Time
Printed: Tuesday, July 11, 2017 08:39:03 Pacific Daylight Time

## Compound name: PFHpA

Correlation coefficient: $\mathrm{r}=0.999627, \mathrm{r}^{\wedge} 2=0.999254$
Calibration curve: 1.43595 * x + 0.0332012
Response type: Internal Std (Ref 19 ), Area * (IS Conc. / IS Area )
Curve type: Linear, Origin: Exclude, Weighting: 1/x, Axis trans: None

|  | \# Name | Type | Std. Conc | RT | Wed Area | 15 Area | Response | Conc. | \%Dev | nc. | COD | D | xcl |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1.4-4 | 1 170710M3_2 | Standard | 0.250 | 3.46 | 484.804 | 16912.918 | 0.358 | 0.2 | -9.4 | NO | 0.999 | NO | bb |
| $2 \mathrm{C}=$ | 2 170710M3_3 | Standard | 0.500 | 3.45 | 1094.714 | 15983.809 | 0.856 | 0.6 | 14.6 | NO | 0.999 | NO | db |
| $3+3$ | 3 170710M3_4 | Standard | 1.000 | 3.44 | 1816.426 | 14729.492 | 1.541 | 1.1 | 5.0 | NO | 0.999 | NO | bb |
| T: | 4.170710M3_5 | Standard | 2.000 | 3.44 | 3368.228 | 16736.117 | 2.516 | 1.7 | -13.6 | NO | 0.999 | NO | bb |
| 5 \% ${ }^{\text {a }}$ | 5 170710M3_6 | Standard | 5.000 | 3.44 | 9552.159 | 16831.109 | 7.094 | 4.9 | -1.7 | NO | 0.999 | NO | bb |
| - | 6 170710M3_7 | Standard | 10.000 | 3.45 | 19620.016 | 16406.695 | 14.948 | 10.4 | 3.9 | NO | 0.999 | NO | bb |
| 7. ${ }^{\text {a }}$. | 7 170710M3_8 | Standard | 50.000 | 3.45 | 91102.258 | 15463.272 | 73.644 | 51.3 | 2.5 | NO | 0.999 | NO | bb |
| 8. | 8 170710M3_9 | Standard | 100.000 | 3.45 | 193055.844 | 17039.475 | 141.624 | 98.6 | -1.4 | NO | 0.999 | NO | bb |

## Compound name: PFHxS

Coefficient of Determination: $R^{\wedge} 2=0.997055$
Calibration curve: $0.00158619^{*} x^{\wedge} 2+1.83332{ }^{*} x+-0.0924995$
Response type: Internal Std ( Ref 20 ), Area * (IS Conc. / IS Area )
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None

|  | \# Name | Type | Stde Conc | RT | - Area | IS Area | Response | Conc. | \%Dev | Cone. Flag | CoD | Cod Frag | $\mathrm{x}=$ excluded |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | 1 170710M3_2 | Standard | 0.250 | 3.52 | 58.724 | 1651.524 | 0.444 | 0.3 | 17.1 | NO | 0.997 | NO | bb |
| 2 | 2 170710M3_3 | Standard | 0.500 | 3.51 | 92.843 | 1720.000 | 0.675 | 0.4 | -16.3 | NO | 0.997 | NO | MM |
| 3 | 3 170710M3_4 | Standard | 1.000 | 3.51 | 174.046 | 1350.057 | 1.611 | 0.9 | -7.1 | NO | 0.997 | NO | db |
| 4.4 | 4 170710M3_5 | Standard | 2.000 | 3.51 | 444.710 | 1600.253 | 3.474 | 1.9 | -2.9 | NO | 0.997 | NO | MM |
| 5 | 5 170710M3_6 | Standard | 5.000 | 3.51 | 1145.275 | 1665.698 | 8.595 | 4.7 | -5.6 | NO | 0.997 | NO | bb |
| 6 | 6 170710M3_7 | Standard | 10.000 | 3.51 | 2600.573 | 1486.850 | 21.863 | 11.9 | 18.5 | NO | 0.997 | NO | MM |
| 7 \% | 7 170710M3_8 | Standard | 50.000 | 3.51 | 10991.491 | 1511.473 | 90.900 | 47.7 | -4.7 | NO | 0.997 | NO | MM |
| $8=3$ | 8 170710M3_9 | Standard | 100.000 | 3.51 | 25585.689 | 1590.326 | 201.104 | 100.9 | 0.9 | NO | 0.997 | NO | MM |

## Quantify Compound Summary Report MassLynx MassLynx V4.1 SCN945 SCN960

## Vista Analytical Laboratory

Dataset: U:IQ4.PRO\results\170710M3\170710M3-CRV.qld
Last Altered: Tuesday, July 11, 2017 08:36:22 Pacific Daylight Time
Printed: Tuesday, July 11, 2017 08:39:03 Pacific Daylight Time

## Compound name: PFOA

Correlation coefficient: $r=0.999752, r^{\wedge} 2=0.999504$
Calibration curve: 1.13698 * x + 0.117502
Response type: Internal Std (Ref 21), Area * (IS Conc. / IS Area )
Curve type: Linear, Origin: Exclude, Weighting: 1/x, Axis trans: None

|  | \# Namer |  | Std. Conc | RT Area |  | IS Area | ponse |  | De |  |  | D Fl | cluded |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1.20 | 1 170710M3_2 | Standard | 0.250 | 3.65 | 719.562 | 24338.092 | 0.370 | 0.2 | -11.3 | NO | 1.000 | NO | bb |
| 2 \% | 2 170710M3_3 | Standard | 0.500 | 3.65 | 1500.520 | 25154.738 | 0.746 | 0.6 | 10.5 | NO | 1.000 | NO | bb |
| $3$ | 3 170710M3_4 | Standard | 1.000 | 3.65 | 2177.131 | 22319.385 | 1.219 | 1.0 | -3.1 | NO | 1.000 | NO | bb |
| $4$ | $41707.10 \mathrm{M} 3 \ldots$ | . Standard | 2.000 | 3.65 | 4933.051 | 25531.586 | 2.415 | 2.0 | 1.0 | NO | 1.000 | NO | bb |
| $5$ | 5 170710M3_6 | Standard | 5.000 | 3.64 | 12429.696 | 27012.830 | 5.752 | 5.0 | -0.9 | NO | 1.000 | NO | bb |
| $6$ | 6170710 M 3 _ 7 | Standard | 10.000 | 3.65 | 25517.219 | 27058.725 | 11.788 | 10.3 | 2.6 | NO | 1.000 | NO | bb |
| $17$ | 7 170710M3_8 | Standard | 50.000 | 3.64 | 123694.688 | 26424.334 | 58.514 | 51.4 | 2.7 | NO | 1.000 | NO | bb |
| 8. | 8170710 M 3 _9 | Standard | 100.000 | 3.65 | 248919.391 | 27780.598 | 112.002 | 98.4 | -1.6 | NO | 1.000 | NO | bb |

## Compound name: PFNA

Correlation coefficient: $r=0.999771, r^{\wedge} 2=0.999542$
Calibration curve: 1.36517 * x + 0.0586296
Response type: Internal Std ( Ref 22 ), Area * ( IS Conc. / IS Area )
Curve type: Linear, Origin: Include, Weighting: 1/x, Axis trans: None


## Quantify Compound Summary Report MassLynx MassLynx V4.1 SCN945 SCN960

Dataset:
U:\Q4.PRO\results\170710M31170710M3-CRV.qld
Last Altered: Tuesday, July 11, 2017 08:36:22 Pacific Daylight Time
Printed: Tuesday, July 11, 2017 08:39:03 Pacific Daylight Time

## Compound name: PFOS

Coefficient of Determination: $\mathbf{R}^{\wedge} 2=0.999061$
Calibration curve: 0.00185446 * $x^{\wedge} 2+1.10476$ * $x+0.0290336$
Response type: Internal Std ( Ref 23 ), Area * (IS Conc. / IS Area )
Curve type: 2nd Order, Origin: Include, Weighting: 1/x, Axis trans: None

| - | \# Name |  | Std Conc $=$ RT |  | Area | IS Area | Response | Conc. | \%Dev Conc. Fla |  | Cob CODFlag |  | xelu |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 1 170710M3_2 | Standard | 0.250 | 3.88 | 115.763 | 5370.698 | 0.269 | 0.2 | -13.0 | No | 0.999 | NO | bb |
| 2 2- | 2 170710M3_3 | Standard | 0.500 | 3.87 | 241.388 | 5419.104 | 0.557 | 0.5 | -4.5 | NO | 0.999 | NO | MM |
| $3 \quad 3$ | 3 170710M3_4 | Standard | 1.000 | 3.88 | 500.986 | 5346.955 | 1.171 | 1.0 | 3.2 | NO | 0.999 | NO | bb |
| $4{ }^{4}$ | 4 170710M3_5 | Standard | 2.000 | 3.88 | 1168.767 | 5508.184 | 2.652 | 2.4 | 18.3 | NO | 0.999 | NO | bb |
| 5 | 5 170710M3_6 | Standard | 5.000 | 3.87 | 2478.524 | 5282.377 | 5.865 | 5.2 | 4.7 | NO | 0.999 | NO | bb |
| 6.4 | $6170710 \mathrm{M3} 3$ 7 | Standard | 10.000 | 3.88 | 5348.684 | 5677.549 | 11.776 | 10.4 | 4.5 | NO | 0.999 | NO | bb |
| $7$ | 7 170710M3_8 | Standard | 50.000 | 3.88 | 26226.332 | 5678.869 | 57.728 | 48.3 | -3.4 | NO | 0.999 | NO | bb |
| 8 - | 8 170710M3_9 | Standard | 100.000 | 3.88 | 56412.301 | 5421.565 | 130.065 | 100.7 | 0.7 | NO | 0.999 | NO | bb |

## Compound name: PFDA

Coefficient of Determination: R^2 $=0.998836$
Calibration curve: 0.000679513 * $x^{\wedge} 2+1.50572$ * $x+-0.0681733$
Response type: Internal Std ( Ref 24), Area * (IS Conc. /IS Area )
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None

| (20 | \# Name | Type | Std. Conc | RT | Area | IS Area | Response | Conc. | \%Dev | Conc. Flag | COD | CoD Flag | $x=$ excluded |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | 1 170710M3_2 | Standard | 0.250 | 3.99 | 972.213 | 28930.936 | 0.420 | 0.3 | 29.7 | NO | 0.999 | NO | db |
| 2.10 | 2 170710M3_3 | Standard | 0.500 | 4.00 | 1382.475 | 29747.686 | 0.581 | 0.4 | -13.8 | No | 0.999 | NO | bb |
| 3 | 3 170710M3_4 | Standard | 1.000 | 3.99 | 3557.009 | 31897.771 | 1.394 | 1.0 | -2.9 | NO | 0.999 | NO | bb |
| 4 | 4 170710M3_5 | Standard | 2.000 | 3.99 | 7354.864 | 31493.791 | 2.919 | 2.0 | -0.9 | NO | 0.999 | NO | bb |
| 5 | 5 170710M3_6 | Standard | 5.000 | 4.00 | 16044.657 | 29596.766 | 6.776 | 4.5 | -9.3 | NO | 0.999 | NO | bb |
|  | 6 170710M3_7 | Standard | 10.000 | 3.99 | 37473.484 | 33043.109 | 14.176 | 9.4 | -5.8 | NO | 0.999 | NO | bb |
| 7. 5 3 $=$ | 7 170710M3_8 | Standard | 50.000 | 3.99 | 195941.813 | 30631.795 | 79.959 | 51.9 | 3.9 | NO | 0.999 | NO | bb |
| 8 m | $8170710 \mathrm{M3}$ _9 | Standard | 100.000 | 3.99 | 392413.031 | 31463.066 | 155.902 | 99.1 | -0.9 | NO | 0.999 | NO | bb |

## Vista Analytical Laboratory

Dataset: U:IQ4.PRO\results\170710M3\170710M3-CRV.qld
Last Altered: Tuesday, July 11, 2017 08:36:22 Pacific Daylight Time
Printed: Tuesday, July 11, 2017 08:39:03 Pacific Daylight Time

## Compound name: PFUnA

Correlation coefficient: $\mathrm{r}=0.998876, \mathrm{r}^{\wedge} 2=0.997753$
Calibration curve: 1.03711 * $\mathrm{x}+0.141151$
Response type: Internal Std ( Ref 25 ), Area * (IS Conc. / IS Area )
Curve type: Linear, Origin: Exclude, Weighting: 1/x, Axis trans: None

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 34* | 1 170710M3_2 | Standard | 0.250 | 4.15 | 1000.258 | 28511.633 | 0.439 | 0.3 | 14.7 | NO | 0.998 | NO | bb |
| 4tix | 2 170710M3_3 | Standard | 0.500 | 4.15 | 1613.189 | 35214.363 | 0.573 | 0.4 | -16.8 | NO | 0.998 | NO | bb |
| 3 3- | 3 170710M3_4 | Standard | 1.000 | 4.15 | 3030.180 | 29618.668 | 1.279 | 1.1 | 9.7 | NO | 0.998 | NO | bb |
| 4.2 | 4 170710M3_5 | Standard | 2.000 | 4.15 | 5814.139 | 32452.291 | 2.239 | 2.0 | 1.2 | NO | 0.998 | NO. | bb |
| 4 | 5 170710M3_6 | Standard | 5.000 | 4.15 | 14655.979 | 32879.375 | 5.572 | 5.2 | 4.7 | NO | 0.998 | NO | bb |
| $6$ | 6 170710M3_7 | Standard | 10.000 | 4.15 | 29217.963 | 39593.965 | 9.224 | 8.8 | -12.4 | NO | 0.998 | NO | bb |
| 7 | 7 170710M3_8 | Standard | 50.000 | 4.15 | 137931.563 | 34542.293 | 49.914 | 48.0 | -4.0 | NO | 0.998 | NO | bb |
| 8.4 | 8 170710M3_9 | Standard | 100.000 | 4.15 | 285394.844 | 33371.344 | 106.901 | 102.9 | 2.9 | NO | 0.998 | NO | bb |

## Compound name: N-MeFOSAA

Coefficient of Determination: $\mathrm{R}^{\wedge} 2=0.999758$
Calibration curve: $-0.000725393^{*} x^{\wedge} 2+1.88459$ * $x+-0.112345$
Response type: Internal Std (Ref 26 ), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Include, Weighting: 1/x, Axis trans: None


## Compound name: N-EtFOSAA

Coefficient of Determination: $\mathrm{R}^{\wedge} 2=0.998485$
Calibration curve: 0.00300948 * $x^{\wedge} 2+1.32985{ }^{*} x+0.0134202$
Response type: Internal Std ( Ref 27 ), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Include, Weighting: 1/x, Axis trans: None

|  |  |  |  | RT Area IS Area Response |  |  |  | Conc. \%Dev Conc. Flag |  |  | CoD | CoD Flag |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 12 | 1 170710M3_2 | Standard | 0.250 | 4.09 | 234.930 | 7680.203 | 0.382 | 0.3 | 10.9 | NO | 0.998 | No | bb |
|  | 2 170710M3_3 | Standard | 0.500 | 4.09 | 302.139 | 7756.188 | 0.487 | 0.4 | -28.8 | NO | 0.998 | NO | bb |
| $3 \times$ | 3 170710M3_4 | Standard | 1.000 | 4.09 | 661.819 | 6483.096 | 1.276 | 0.9 | -5.3 | NO | 0.998 | NO | bb |
| $4-5$ | 4 170710M3_5 | Standard | 2.000 | 4.09 | 1767.924 | 6911.000 | 3.198 | 2.4 | 19.1 | NO | 0.998 | NO. | bb |
|  | 5 170710M3_6 | Standard | 5.000 | 4.09 | 4013.729 | 7309.417 | 6.864 | 5.1 | 1.9 | NO | 0.998 | NO | bb |
| 6 | 6 170710M3_7 | Standard | 10.000 | 4.09 | 8229.293 | 6897.159 | 14.914 | 10.9 | 9.3 | NO | 0.998 | NO | bb |
| 7 7- | 7 170710M3_8 | Standard | 50.000 | 4.09 | 40260.930 | 7098.953 | 70.892 | 48.1 | -3.9 | NO | 0.998 | NO | bb |
| 8 C | 8 170710M3_9 | Standard | 100.000 | 4.09 | 81647.523 | 6203.575 | 164.517 | 100.7 | 0.7 | NO | 0.998 | NO | bb |

## Compound name: PFDoA

Coefficient of Determination: $\mathrm{R}^{\wedge} 2=0.991885$
Calibration curve: 1.00263 * $x$
Response type: Internal Std ( Ref 28 ), Area * ( IS Conc. / IS Area)
Curve type: Linear, Origin: Force, Weighting: Null, Axis trans: None

|  | \# Name | Type | Std Conc | RT | Area | IS Area | Response | Conc. | \%Dev | Conc. Flag | CoD | Cob Flag $\mathrm{x}=$ excluded |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1. | 1 170710M3_2 | Standard | 0.250 | 4.31 | 48.922 | 4029.594 | 0.152 | 0.2 | -39.5 | YES | 0.992 | NO | MMX |
| $2$ | 2 170710M3_3 | Standard | 0.500 | 4.30 | 130.253 | 4364.951 | 0.373 | 0.4 | -25.6 | NO | 0.992 | NO | MM |
|  | 3 170710M3_4 | Standard | 1.000 | 4.31 | 250.646 | 3671.525 | 0.853 | 0.9 | -14.9 | NO | 0.992 | NO | MM |
|  | 4 170710M3_5 | Standard | 2.000 | 4.31 | 576.522 | 3407.532 | 2.115 | 2.1 | 5.5 | NO | 0.992 | NO | MM |
| 5. | 5 170710M3_6 | Standard | 5.000 | 4.31 | 1409.589 | 4397.531 | 4.007 | 4.0 | -20.1 | NO | 0.992 | NO | bb |
| $6$ | 6 170710M3_7 | Standard | 10.000 | 4.31 | 2715.122 | 4609.228 | 7.363 | 7.3 | -26.6 | NO | 0.992 | NO | bb |
| $7$ | 7 170710M3_8 | Standard | 50.000 | 4.31 | 16155.003 | 3523.270 | 57.315 | 57.2 | 14.3 | NO | 0.992 | NO | bb |
| 8, | $8170710 \mathrm{M3}$ _9 | Standard | 100.000 | 4.31 | 30002.807 | 3866.813 | 96.988 | 96.7 | -3.3 | NO | 0.992 | NO | bb |

## Vista Analytical Laboratory

Dataset: U:\Q4.PRO\results\170710M3\170710M3-CRV.qld

Last Altered: Tuesday, July 11, 2017 08:36:22 Pacific Daylight Time
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## Compound name: PFTrDA

Coefficient of Determination: $\mathrm{R}^{\wedge} 2=0.998284$
Calibration curve: $-0.0031383^{*} x^{\wedge} 2+13.4645$ * $x+0.137265$
Response type: Internal Std (Ref 28 ), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None


## Compound name: PFTeDA

Coefficient of Determination: $\mathrm{R}^{\wedge} 2=0.999913$
Calibration curve: -0.000928994 * $x^{\wedge} 2+1.26436$ * $x+0.081381$
Response type: Internal Std ( Ref 29 ), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None

|  | \# Name | Type | Std. Conc | RT | - Area | IS Area | Response | Conc. | \%Dev | Conc. Flag | COD | CoD Flag | $x$-excluded |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | 1 170710M3_2 | Standard | 0.250 | 4.65 | 1083.578 | 33198.340 | 0.408 | 0.3 | 3.3 | NO | 1.000 | NO | MM |
| $2-3$ | 2 170710M3_3 | Standard | 0.500 | 4.64 | 1820.870 | 32091.508 | 0.709 | 0.5 | -0.6 | NO | 1.000 | NO | bb |
| $3-4$ | 3 170710M3_4 | Standard | 1.000 | 4.64 | 2825.587 | 26986.623 | 1.309 | 1.0 | -2.9 | NO | 1.000 | NO | bb |
| 4 | 4 170710M3_5 | Standard | 2.000 | 4.64 | 6951.492 | 32219.420 | 2.697 | 2.1 | 3.6 | NO | 1.000 | NO | bd |
| 5. | 5 170710M3_6 | Standard | 5.000 | 4.64 | 15829.568 | 31939.072 | 6.195 | 4.9 | -2.9 | NO | 1.000 | NO | bb |
| 6. | 6 170710M3_7 | Standard | 10.000 | 4.64 | 32960.660 | 32979.863 | 12.493 | 9.9 | -1.1 | NO | 1.000 | NO | bb |
| 7. | 7 170710M3_8 | Standard | 50.000 | 4.64 | 144863.203 | 29463.150 | 61.459 | 50.4 | 0.8 | NO | 1.000 | NO | bb |
| 8 - | 8 170710M3_9 | Standard | 100.000 | 4.64 | 289834.000 | 30963.135 | 117.008 | 99.8 | -0.2 | NO | 1.000 | NO | bb |

## Quantify Compound Summary Report MassLynx MassLynx V4.1 SCN945 SCN960 <br> Vista Analytical Laboratory

| Dataset: | U:IQ4.PROIresults\170710M3\170710M3-CRV.qld |
| :--- | :--- |
|  |  |
| Last Altered: | Tuesday, July 11, 2017 08:36:22 Pacific Daylight Time |
| Printed: | Tuesday, July 11, 2017 08:39:03 Pacific Daylight Time |

## Compound name: 13C3-PFBA

Response Factor: 0.917788
RRF SD: 0.0220833 , Relative SD: 2.40614
Response type: Internal Std ( Ref 30 ), Area * (IS Conc. / IS Area )
Curve type: RF


## Compound name: 13C3-PFPeA

Response Factor: 1.78391
RRF SD: 0.0438606, Relative SD: 2.45868
Response type: Internal Std ( Ref 30 ), Area * (IS Conc. / IS Area)
Curve type: RF


Last Altered: Tuesday, July 11, 2017 08:36:22 Pacific Daylight Time

## Compound name: 13C3-PFBS

## Response Factor: 0.215343

RRF SD: 0.0150837, Relative SD: 7.00446
Response type: Internal Std (Ref 30 ), Area * (IS Conc. / IS Area )
Curve type: RF

|  | \# Name |  | Std Cone | RT | Area | Response |  | Conc. \%Dev Conc. Flag |  |  | CoD - CoD Flag x=excluded |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1.3 | 1 170710M3_2 | Standard | 12.500 | 2.97 | 1829.255 | 8045.280 | 2.842 | 13.2 | 5.6 | NO | NO | bb |
| $2$ | 2 170710M3_3 | Standard | 12.500 | 2.96 | 1889.439 | 8103.498 | 2.915 | 13.5 | 8.3 | NO | NO | bb |
| 3 L | 3 170710M3_4 | Standard | 12.500 | 2.96 | 1680.475 | 7483.426 | 2.807 | 13.0 | 4.3 | NO | NO | bb |
| 4.518 | 4.170710 M 3 _5 | Standard | 12.500 | 2.95 | 1675.008 | 8401.936 | 2.492 | 11.6 | -7.4 | No | NO | bb |
| 5.2 | 5 170710M3_6 | Standard | 12.500 | 2.95 | 1827.422 | 8412.924 | 2.715 | 12.6 | 0.9 | NO | NO | bb |
| $6.4{ }^{2}+$ | 6 170710M3_7 | Standard | 12.500 | 2.95 | 1863.759 | 8228.657 | 2.831 | 13.1 | 5.2 | No | NO | bb |
| $7 \times 4$ | 7 170710M3_8 | Standard | 12.500 | 2.95 | 1600.534 | 8207.246 | 2.438 | 11.3 | -9.4 | NO | NO | bb |
| 8 8 | 8 170710M3_9 | Standard | 12.500 | 2.95 | 1723.074 | 8634.025 | 2.495 | 11.6 | -7.3 | NO | NO | bb |

## Compound name: 13C2-PFHxA

Response Factor: 0.303795
RRF SD: 0.0121481, Relative SD: 3.99878
Response type: Internal Std ( Ref 31 ), Area * (IS Conc. / IS Area )
Curve type: RF

|  | \# Name | Type | Std. Conc | RT ATM Area IS Area |  |  | Response | Conc. \%Dev Conc. Flag |  |  | COD CoDFlag | $x=$ excluded |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 1 170710M3_2 | Standard | 5.000 | 3.20 | 6599.234 | 21818.400 | 1.512 | 5.0 | -0.4 | NO | NO | bb |
| 2.48 | 2 170710M3_3 | Standard | 5.000 | 3.19 | 6260.955 | 21557.213 | 1.452 | 4.8 | -4.4 | NO | NO | bb |
| 3 | 3 170710M3_4 | Standard | 5.000 | 3.19 | 5844.579 | 19500.141 | 1.499 | 4.9 | -1.3 | NO | NO | bb |
|  | 4 170710M3_5 | Standard | 5.000 | 3.18 | 6095.467 | 20840.465 | 1.462 | 4.8 | -3.7 | NO | NO | bb |
| 5.4.3 | 5 170710M3_6 | Standard | 5.000 | 3.18 | 6584.623 | 22435.646 | 1.467 | 4.8 | -3.4 | NO | NO | bb |
| $6{ }^{6}$ | 6 170710M3_7 | Standard | 5.000 | 3.19 | 6880.506 | 21282.260 | 1.616 | 5.3 | 6.4 | NO | NO | bb |
| $7 \times 4$ | 7 170710M3_8 | Standard | 5.000 | 3.19 | 6517.125 | 20826.820 | 1.565 | 5.2 | 3.0 | NO | NO | bb |
| 8 8 | 8 170710M3_9 | Standard | 5.000 | 3.18 | 6887.408 | 21826.197 | 1.578 | 5.2 | 3.9 | NO | NO | bb |

## Compound name: 13C4-PFHpA

Response Factor: 0.305965
RRF SD: 0.00856155, Relative SD: 2.79821
Response type: Internal Std (Ref 31 ), Area * (IS Conc. / IS Area )
Curve type: RF

| - 3 x | \# Name F/ T. Type |  | Std. Conc ${ }^{\text {a }}$ RT |  | Area | IS Area | Response Conc. \%Dev Conc. Flag . CoD |  |  |  | COD Flag $x=$ excluded |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 1 170710M3_2 | Standard | 12.500 | 3.45 | 16912.918 | 21818.400 | 3.876 | 12.7 | 1.3 | NO | NO | bb |
| 2.4 | $2170710 \mathrm{M3} 3$ | Standard | 12.500 | 3.45 | 15983.809 | 21557.213 | 3.707 | 12.1 | -3.1 | NO | NO | bb |
| 3.4 | 3 170710M3_4 | Standard | 12.500 | 3.45 | 14729.492 | 19500.141 | 3.777 | 12.3 | -1.2 | NO | NO | bb |
| $4.3+{ }^{4}$ | 4 170710M3_5 | Standard | 12.500 | 3.45 | 16736.117 | 20840.465 | 4.015 | 13.1 | 5.0 | NO | NO. | bb |
| 2- | 5 170710M3_6 | Standard | 12.500 | 3.44 | 16831.109 | 22435.646 | 3.751 | 12.3 | -1.9 | NO | NO | bb |
| 1 | 6 170710M3_7 | Standard | 12.500 | 3.45 | 16406.695 | 21282.260 | 3.855 | 12.6 | 0.8 | NO | NO | bb |
| T | 7 170710M3_8 | Standard | 12.500 | 3.44 | 15463.272 | 20826.820 | 3.712 | 12.1 | -2.9 | NO | NO | bb |
| 8 - | 8 170710M3_9 | Standard | 12.500 | 3.45 | 17039.475 | 21826.197 | 3.903 | 12.8 | 2.1 | NO | NO | bb |

## Compound name: 1802-PFHxS

Response Factor: 0.437301
RRF SD: 0.0226112 , Relative SD: 5.17063
Response type: Internal Std (Ref 32 ), Area * (IS Conc. / IS Area)
Curve type: RF


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## Compound name: 13C2-PFOA

Response Factor: 1.29206
RRF SD: 0.0648147, Relative SD: 5.01639
Response type: Internal $\operatorname{Std}$ ( $\operatorname{Ref} 33$ ), Area * (IS Conc. / IS Area )
Curve type: RF


## Compound name: 13C5-PFNA

Response Factor: 0.980095
RRF SD: 0.0617584 , Relative SD: 6.30126
Response type: Internal Std (Ref 34 ), Area * (IS Conc. / IS Area )
Curve type: RF

|  | \# Name | Type | Std. Conc | RT | Area | IS Area | Response Conc. \%Dev |  |  | Conc. Flas | CoD Cod Flag | $x=e x c l u d e d ~$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $1{ }^{1}$ | 1 170710M3_2 | Standard | 12.500 | 3.83 | 23133.879 | 24826.572 | 11.648 | 11.9 | -4.9 | NO | NO | bb |
| + | 2 170710M3_3 | Standard | 12.500 | 3.82 | 25510.555 | 25407.900 | 12.551 | 12.8 | 2.4 | NO | NO | bb |
| 3. | 3 170710M3_4 | Standard | 12.500 | 3.82 | 25152.525 | 26987.840 | 11.650 | 11.9 | -4.9 | No | NO | bb |
| 4 - ${ }^{\text {2 }}$ | 4 170710M3_5 | Standard | 12.500 | 3.82 | 27896.482 | 30615.023 | 11.390 | 11.6 | -7.0 | NO | NO | bb |
| 5. | 5 170710M3_6 | Standard | 12.500 | 3.82 | 27575.711 | 27704.439 | 12.442 | 12.7 | 1.6 | NO | NO | bb |
| 6 - ${ }^{\text {c }}$ | 6 170710M3_7 | Standard | 12.500 | 3.82 | 30707.572 | 28246.664 | 13.589 | 13.9 | 10.9 | NO | NO | bb |
| $7 \pm 4$ | 7 170710M3_8 | Standard | 12.500 | 3.82 | 26401.301 | 25411.732 | 12.987 | 13.3 | 6.0 | NO | NO | bb |
| 8 \% | 8 170710M3_9 | Standard | 12.500 | 3.82 | 28967.555 | 30807.039 | 11.754 | 12.0 | -4.1 | NO | NO | bb |

Dataset: U:IQ4.PRO\results\170710M31170710M3-CRV.qld

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## Compound name: 13C8-PFOS

Response Factor: 1.09812
RRF SD: 0.106578 , Relative SD: 9.7055
Response type: Internal Std (Ref 35 ), Area * (IS Conc. / IS Area)
Curve type: RF


## Compound name: 13C2-PFDA

Response Factor: 0.927939
RRF SD: 0.0650889, Relative SD: 7.01435
Response type: Internal Std (Ref 36 ), Area * (IS Conc. / IS Area )
Curve type: RF


## Vista Analytical Laboratory

Dataset: U:IQ4.PROlresults\170710M31170710M3-CRV.qld
Last Altered: Tuesday, July 11, 2017 08:36:22 Pacific Daylight Time
Printed: $\quad$ Tuesday, July 11, 2017 08:39:03 Pacific Daylight Time

## Compound name: 13C2-PFUnA

Response Factor: 1.08252
RRF SD: 0.0785153, Relative SD: 7.25299
Response type: Internal Std ( Ref 37 ), Area * ( IS Conc. / IS Area )
Curve type: RF


## Compound name: d3-N-MeFOSAA

## Response Factor: 0.224351

RRF SD: 0.0203519, Relative SD: 9.07147
Response type: Internal Std ( Ref 37 ), Area * ( IS Conc. / IS Area )
Curve type: RF

Printed: $\quad$ Tuesday, July 11, 2017 08:39:03 Pacific Daylight Time

## Compound name: d5-N-EtFOSAA

Response Factor: 0.22983
RRF SD: 0.0205291, Relative SD: 8.9323
Response type: Internal Std (Ref 37 ), Area * (IS Conc. / IS Area)
Curve type: RF

|  | \# Name |  | Wrestd. Conc RT |  | Area | IS Area | Response | Conc. | Dev | anc. Flag | CODFl | x=excluded |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 1 170710M3_2 | Standard | 12.500 | 4.09 | 7680.203 | 29392.709 | 3.266 | 14.2 | 13.7 | NO | NO | bb |
|  | 2 170710M3_3 | Standard | 12.500 | 4.09 | 7756.188 | 33292.914 | 2.912 | 12.7 | 1.4 | NO | NO | bb |
| $3 \leqslant 4$. | 3 170710M3_4 | Standard | 12.500 | 4.09 | 6483.096 | 25046.889 | 3.235 | 14.1 | 12.6 | No | NO | bb |
| $44^{4}$ | 4 170710M3_5 | Standard | 12.500 | 4.09 | 6911.000 | 31311.639. | 2.759 | 12.0 | -4.0 | No | NO. | bb |
| $5$ | 5 170710M3_6 | Standard | 12.500 | 4.09 | 7309.417 | 32131.605 | 2.844 | 12.4 | -1.0 | NO | NO | bb |
| $6$ | 6 170710M3_7 | Standard | 12.500 | 4.09 | 6897.159 | 33095.688 | 2.605 | 11.3 | -9.3 | NO | NO | bb |
| $7$ | 7 170710M3_8 | Standard | 12.500 | 4.09 | 7098.953 | 32101.432 | 2.764 | 12.0 | -3.8 | NO | NO | bb |
| 8 - + | 8 170710M3_9 | Standard | 12.500 | 4.09 | 6203.575 | 29853.807 | 2.597 | 11.3 | -9.6 | NO | NO | bb |

## Compound name: 13C2-PFDoA

Response Factor: 0.129878
RRF SD: 0.0137216, Relative SD: 10.565
Response type: Internal Std ( Ref 37 ), Area * (IS Conc. / IS Area )
Curve type: RF


## Vista Analytical Laboratory

Dataset: U:IQ4.PRO\results\170710M3\170710M3-CRV.qld
Last Altered: Tuesday, July 11, 2017 08:36:22 Pacific Daylight Time
Printed: Tuesday, July 11, 2017 08:39:03 Pacific Daylight Time

## Compound name: 13C2-PFTeDA

Response Factor: 1.01816
RRF SD: 0.0659527, Relative SD: 6.47762
Response type: Internal Std ( Ref 37 ), Area * ( IS Conc. / IS Area )
Curve type: RF


## Compound name: 13C4-PFBA

## Response Factor: 1

RRF SD: 0 , Relative SD: 0
Response type: Internal Std ( Ref 30 ), Area * ( IS Conc. / IS Area)
Curve type: RF

| [ \# Name |  |  | Std. Conc RT |  | Area | IS Area | Response | Conc: | \%Dev Conc. Flag |  | CoD Flag $x=$ excluded |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1. 3 | 1 170710M3_2 | Standard | 12.500 | 1.53 | 8045.280 | 8045.280 | 12.500 | 12.5 | 0.0 | NO | NO | bb |
| 2 | 2 170710M3_3 | Standard | 12.500 | 1.53 | 8103.498 | 8103.498 | 12.500 | 12.5 | 0.0 | NO | NO | bb |
| 3 | 3 170710M3_4 | Standard | 12.500 | 1.52 | 7483.426 | 7483.426 | 12.500 | 12.5 | 0.0 | NO | NO | bb |
| 4.4 | 4 170710M3_5 | Standard | 12.500 | 1.53 | 8401.936 | 8401.936 | 12.500 | 12.5 | 0.0 | NO | NO | bb |
| + | $5170710 \mathrm{M3} 36$ | Standard | 12.500 | 1.53 | 8412.924 | 8412.924 | 12.500 | 12.5 | 0.0 | NO | NO | bb |
| 6 | 6 170710M3_7 | Standard | 12.500 | 1.52 | 8228.657 | 8228.657 | 12.500 | 12.5 | 0.0 | NO | NO | bb |
| W | 7 170710M3_8 | Standard | 12.500 | 1.53 | 8207.246 | 8207.246 | 12.500 | 12.5 | 0.0 | NO | NO | bb |
| 8. ${ }^{\text {a }}$ | 8 170710M3_9 | Standard | 12.500 | 1.53 | 8634.025 | 8634.025 | 12.500 | 12.5 | 0.0 | NO | NO | bb |

## Quantify Compound Summary Report <br> Vista Analytical Laboratory

Dataset:
U:\Q4.PRO\results\170710M3\170710M3-CRV.qld
Last Altered: Tuesday, July 11, 2017 08:36:22 Pacific Daylight Time
Printed: $\quad$ Tuesday, July 11, 2017 08:39:03 Pacific Daylight Time

## Compound name: 13C5-PFHxA

## Response Factor: 1

RRF SD: 0, Relative SD: 0
Response type: Internal Std (Ref 31), Area * (IS Conc. / IS Area)
Curve type: RF

| + | \# Name |  | Std. Conc | RT Mrea IS Area Response |  |  |  | Conc. \% $\%$ Dev |  | Conc. Flag CoD | - CoD Flag $\mathrm{x}=$ excluded |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 15 | 1 170710M3_2 | Standard | 5.000 | 3.19 | 21818.400 | 21818.400 | 5.000 | 5.0 | 0.0 | NO | NO | bb |
| 23 | 2 170710M3_3 | Standard | 5.000 | 3.19 | 21557.213 | 21557.213 | 5.000 | 5.0 | 0.0 | NO | NO | bb |
| 3 - | 3 170710M3_4 | Standard | 5.000 | 3.18 | 19500.141 | 19500.141 | 5.000 | 5.0 | 0.0 | NO | NO | bb |
| $44^{-12}$ | 4.170710M3_5 | Standard | 5.000 | 3.19 | 20840.465 | 20840.465 | 5.000 | 5.0 | 0.0 | NO | NO | bb |
|  | 5 170710M3_6 | Standard | 5.000 | 3.18 | 22435.646 | 22435.646 | 5.000 | 5.0 | 0.0 | NO | NO | bb |
| 6 6-mix | 6 170710M3_7 | Standard | 5.000 | 3.19 | 21282.260 | 21282.260 | 5.000 | 5.0 | 0.0 | NO | NO | bb |
| 7. | 7 170710M3_8 | Standard | 5.000 | 3.19 | 20826.820 | 20826.820 | 5.000 | 5.0 | 0.0 | No | NO | bb |
| 8 | 8 170710M3_9 | Standard | 5.000 | 3.18 | 21826.197 | 21826.197 | 5.000 | 5.0 | 0.0 | NO | NO | bb |

## Compound name: 13C3-PFHxS

Response Factor: 1
RRF SD: 1.11022e-016, Relative SD: 1.11022e-014
Response type: Internal Std (Ref 32 ), Area * (IS Conc. / IS Area)
Curve type: RF


## Vista Analytical Laboratory

## Dataset: U:IQ4.PROIresults|170710M31170710M3-CRV.qld

Last Altered: Tuesday, July 11, 2017 08:36:22 Pacific Daylight Time
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## Compound name: 13C8-PFOA

## Response Factor: 1

RRF SD: 4.19625e-017, Relative SD: 4.19625e-015
Response type: Internal Std ( Ref 33 ), Area * ( IS Conc. / IS Area )
Curve type: RF


## Compound name: 13C9-PFNA

Response Factor: 1
RRF SD: 1.25887e-016, Relative SD: 1.25887e-014
Response type: Internal Std ( Ref 34 ), Area * (IS Conc. / IS Area )
Curve type: RF

| T | \# Name | Type | Std. Conc | RT | Werse Area | IS Area | Response | Conc. | \%Dev | nc. Flag | COD | CoD Flag | x-excluded |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1.4 | 1 170710M3_2 | Standard | 12.500 | 3.82 | 24826.572 | 24826.572 | 12.500 | 12.5 | 0.0 | NO |  | NO | bb |
| 2 | 2 170710M3_3 | Standard | 12.500 | 3.82 | 25407.900 | 25407.900 | 12.500 | 12.5 | 0.0 | No |  | NO | bb |
| 3 | 3 170710M3_4 | Standard | 12.500 | 3.82 | 26987.840 | 26987.840 | 12.500 | 12.5 | 0.0 | NO |  | NO | bb |
| 4 | 4 170710M3_5 | Standard | 12.500 | 3.82 | 30615.023 | 30615.023 | 12.500 | 12.5 | 0.0 | No |  | NO | bb |
| 5 5 ${ }^{\text {a }}$ | 5 170710M3_6 | Standard | 12.500 | 3.82 | 27704.439 | 27704.439 | 12.500 | 12.5 | 0.0 | NO |  | NO | bb |
| 6. | 6 170710M3_7 | Standard | 12.500 | 3.82 | 28246.664 | 28246.664 | 12.500 | 12.5 | 0.0 | NO |  | NO | bb |
| $7 \times 1$ | 7 170710M3_8 | Standard | 12.500 | 3.82 | 25411.732 | 25411.732 | 12.500 | 12.5 | 0.0 | No |  | NO | bb |
| 83 | 8 170710M3_9 | Standard | 12.500 | 3.82 | 30807.039 | 30807.039 | 12.500 | 12.5 | 0.0 | NO |  | NO | bb |

Dataset: U:IQ4.PRO\results\170710M3\170710M3-CRV.qld

Last Altered: Tuesday, July 11, 2017 08:36:22 Pacific Daylight Time
Printed: Tuesday, July 11, 2017 08:39:03 Pacific Daylight Time

## Compound name: 13C4-PFOS

Response Factor: 1
RRF SD: $8.3925 \mathrm{e}-017$, Relative SD: $8.3925 \mathrm{e}-015$
Response type: Internal Std (Ref 35 ), Area * (IS Conc. / IS Area )
Curve type: RF

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1-5ivilu | 1 170710M3_2 | Standard | 12.500 | 3.88 | 4072.196 | 4072.196 | 12.500 | 12.5 | 0.0 | NO | NO | bb |
| 2.4. | 2 170710M3_3 | Standard | 12.500 | 3.88 | 5130.696 | 5130.696 | 12.500 | 12.5 | 0.0 | NO | NO | bb |
| $3$ | 3 170710M3_4 | Standard | 12.500 | 3.87 | 4837.479 | 4837.479 | 12.500 | 12.5 | 0.0 | NO | NO | bb |
| $4$ | 4 170710M3_5 | Standard | 12.500 | 3.87 | 5669.458 | 5669.458 | 12.500 | 12.5 | ${ }^{0} 0$ | NO | NO | bb |
| $5$ | 5 170710M3_6 | Standard | 12.500 | 3.88 | 5068.695 | 5068.695 | 12.500 | 12.5 | 0.0 | NO | NO | bb |
| $6$ | 6 170710M3_7 | Standard | 12.500 | 3.87 | 5023.010 | 5023.010 | 12.500 | 12.5 | 0.0 | NO | NO | bb |
| $17$ | 7 170710M3_8 | Standard | 12.500 | 3.87 | 4963.667 | 4963.667 | 12.500 | 12.5 | 0.0 | NO | NO | bb |
| $8$ | 8 170710M3_9 | Standard | 12.500 | 3.88 | 5333.926 | 5333.926 | 12.500 | 12.5 | 0.0 | NO | NO | bb |

## Compound name: 13C6-PFDA

Response Factor: 1
RRF SD: $5.93439 \mathrm{e}-017$, Relative SD: $5.93439 \mathrm{e}-015$
Response type: Internal Std ( Ref 36 ), Area * (IS Conc. / IS Area )
Curve type: RF


## Quantify Compound Summary Report MassLynx MassLynx V4.1 SCN945 SCN960

Vista Analytical Laboratory

| Dataset: | U:IQ4.PRO\results\170710M3\170710M3-CRV.qld |
| :--- | :--- |
|  |  |
| Last Altered: | Tuesday, July 11, 2017 08:36:22 Pacific Daylight Time |
| Printed: | Tuesday, July 11, 2017 08:39:03 Pacific Daylight Time |

## Compound name: 13C7-PFUnA

Response Factor: 1
RRF SD: 1.18688e-016, Relative SD: 1.18688e-014
Response type: Internal Std ( Ref 37 ), Area * (IS Conc. / IS Area )
Curve type: RF

|  | \# Name ${ }^{\text {a }}$ Type ${ }^{\text {a }}$ |  | Std. Conc | RT | Area IS Area Response |  |  | Conc. \%Dev Conc. Flag |  |  | COD | COD Flag $x=$ excluded |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 1 170710M3_2 | Standard | 12.500 | 4.15 | 29392.709 | 29392.709 | 12.500 | 12.5 | 0.0 | NO |  | NO | bb |
| $2 \times$ | 2 170710M3_3 | Standard | 12.500 | 4.15 | 33292.914 | 33292.914 | 12.500 | 12.5 | 0.0 | NO |  | NO | bb |
| 3 | 3 170710M3_4 | Standard | 12.500 | 4.15 | 25046.889 | 25046.889 | 12.500 | 12.5 | 0.0 | NO |  | NO | bb |
| 4.4 | 4 170710M3_5 | Standard | 12.500 | 4.15 | 31311.639 | 31311.639 | 12.500 | 12.5 | 0.0 | NO |  | . NO. | bb |
| 5.75 | 5 170710M3_6 | Standard | 12.500 | 4.15 | 32131.605 | 32131.605 | 12.500 | 12.5 | 0.0 . | NO |  | NO | bb |
| 6 | 6 170710M3_7 | Standard | 12.500 | 4.15 | 33095.688 | 33095.688 | 12.500 | 12.5 | 0.0 | NO |  | NO | bb |
| 7 Heter | 7 170710M3_8 | Standard | 12.500 | 4.15 | 32101.432 | 32101.432 | 12.500 | 12.5 | 0.0 | NO |  | NO | bb |
| 8 8. | 8 170710M3_9 | Standard | 12.500 | 4.15 | 29853.807 | 29853.807 | 12.500 | 12.5 | 0.0 | NO |  | NO | bb |


| Dataset: | Untitled |
| :--- | :--- |
| Last Altered: | Tuesday, July 11, 2017 08:48:12 Pacific Daylight Time |
| Printed: | Tuesday, July 11, 2017 08:48:46 Pacific Daylight Time |

Method: U:IQ4.PROIMethDBIPFAS_L14-7-5-17.mdb 10 Jul 2017 08:06:14
Calibration: U:IQ4.PROICurveDBIC18_VAL-PFAS_Q4_7-10-17-L14.cdb 11 Jul 2017 08:36:22
Compound name: PFBS


| Dataset: | Untitled |
| :--- | :--- |
| Last Altered: | Tuesday, July 11, 2017 08:48:12 Pacific Daylight Time |
| Printed: | Tuesday, July 11, 2017 08:48:46 Pacific Daylight Time |

## Compound name: PFBS

|  |  | Name | ID | Acq Date | Acq. Time |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 32 |  | 170710M3_32 | IPA | 10-Jul-17 | 21:58:44 |
| 33 |  | 170710M3_33 | ST170710M3-9 PFC CS3 17G1008 | 10-Jul-17 | 22:09:22 |
| 34 |  | 170710M3_34 | IPA | 10-Jul-17 | 22:20:01 |
| 35 |  | 170710M3_35 | 1700804-03 IRPSite5-GW-FD01-20170629 0... | 10-Jul-17 | 22:31:27 |
| 36 |  | 170710M3_36 | 1700804-04 IRPSite33-GW-FRB01-20170629... | 10-Jul-17 | 22:42:07 |
| 37 |  | 170710M3_37 | 1700804-05 IRPSite33-GW-11MW204D-2017.. | 10-Jul-17 | 22:52:45 |
| 38 |  | 170710M3_38 | 1700804-06 IRPSite33-GW-11MW204S-2017... | 10-Jul-17 | 23:03:24 |
| 39 |  | 170710M3_39 | 1700804-07 Bldg 110-GW-11MW205D-20170... | 10-Jul-17 | 23:14:02 |
| 40 |  | 170710M3_40 | 1700804-08 Bldg 110-GW-FRB01-20170629 0... | 10-Jul-17 | 23:24:41 |
| 41 |  | 170710M3_41 | 1700804-09 Bldg 110-GW-11MW205S-20170.. | 10-Jul-17 | 23:35:19 |
| 42 |  | 170710M3_42 | 1700804-10 IRPSite7-GW-07GW102-201706... | 10-Jul-17 | 23:45:57 |
| 43 |  | 170710M3_43 | 1700804-11 IRPSite5-GW-04GW82-2017062... | 10-Jul-17 | 23:56:36 |
| 44 |  | 170710M3_44 | 1700751-01RE1 NH0100960_10.23355 | 11-Jul-17 | 00:07:41 |
| 45 |  | 170710M3_45 | IPA | 11-Jul-17 | 00:18:50 |
| 46 |  | 170710M3_46 | ST170710M3-10 PFC CS3 17G1008 | 11-Jul-17 | 00:29:28 |
| 47 |  | 170710M3_47 | IPA | 11-Jul-17 | 00:40:16 |
| 48 |  | 170710M3_48 | 1700751-02RE1 NH0100960_E 0.24913 | 11-Jul-17 | 00:51:03 |
| 49 |  | 170710M3_49 | 1700751-03RE1 NH0100901_10.25207 | 11-Jul-17 | 01:01:51 |
| 50 |  | 170710M3_50 | 1700751-04RE1 NH0100901_E 0.24547 | 11-Jul-17 | 01:12:29 |
| 51 |  | 170710M3_51 | 1700751-05RE1 NH0100668_1 0.22393 | 11-Jul-17 | 01:23:08 |
| 52 |  | 170710M3_52 | 1700751-06RE1 NH0100668_E 0.24262 | 11-Jul-17 | 01:33:46 |
| 53 |  | 170710M3_53 | 1700751-07RE1 NH0101303_1 0.05246 | 11-Jul-17 | 01:44:33 |
| 54 |  | 170710M3_54 | 1700751-08RE1 NH0101303_E 0.24891 | 11-Jul-17 | 01:55:11 |
| 55. |  | 170710M3_55 | 1700751-09RE1 NH0101311_1 0.23975 | 11-Jul-17 | 02:06:00 |
| 56 |  | 170710M3_56 | 1700751-10RE1 NH0101311_E 0.25554 | 11-Jul-17 | 02:17:45 |
| 57 |  | 170710M3_57 | 1700752-01RE1 STP-MW-71-061917 0.11831 | 11-Jul-17 | 02:28:31 |
| 58 |  | 170710M3_58 | IPA | 11-Jul-17 | 02:39:10 |
| 59 |  | -170710M3_59 | ST170710M3-11 PFC CS3 17G1008 | 11-Jul-17 | 02:49:48 |
| 60 |  | 170710M3_60 | IPA | 11-Jul-17 | 03:00:35 |
| 61 |  | 170710M3_61 | 1700752-02RE1 STP-MW-72-061917 0.02754 | 11-Jul-17 | 03:11:21 |
| 62 |  | 170710M3_62 | 1700752-03RE1 STP-MW-73-061917 0.11524 | 11-Jul-17 | 03:21:59 |
| 63 |  | 170710M3_63 | 1700752-04RE1 STP-MW-70-062017 0.11762 | 11-Jul-17 | 03:32:38 |
| 64 |  | 170710M3_64 | 1700752-05RE1 STP-MW-34-062017 0.11783 | 11-Jul-17 | 03:43:24 |
| 65 | + | 170710M3_65 | 1700752-06RE1 STP-EB3-061917 0.11814 | 11-Jul-17 | 03:54:11 |


| Dataset: | Untitled |
| :--- | :--- |
| Last Altered: | Tuesday, July 11, 2017 08:48:12 Pacific Daylight Time |
| Printed: | Tuesday, July 11, 2017 08:48:46 Pacific Daylight Time |

Compound name: PFBS

|  | Name | 10 | Aca Date | Acd Time |
| :---: | :---: | :---: | :---: | :---: |
| 66. | 170710M3_66 | 1700752-07RE1 STP-EB4-062017 0.1185 | 11-Jul-17 | 04:04:49 |
| 67 | 170710M3_67 | IPA | 11-Jul-17 | 04:15:27 |
| 68 | 170710M3_68 | ST170710M3-12 PFC CS3 17G1008 | 11-Jul-17 | 04:26:06 |
| 69 | 170710M3_69 | IPA | 11-Jul-17 | 04:36:48 |

## Dataset: U:IQ4.PRO\results\170710M3\170710M3-CRV.qld

Last Altered:
Tuesday, July 11, 2017 08:36:22 Pacific Daylight Time
Printed: Tuesday, July 11, 2017 08:38:33 Pacific Daylight Time

## Method: U:IQ4.PROIMethDBIPFAS_L14-7-5-17.mdb 10 Jul 2017 08:06:14

Calibration: U:IQ4.PROICurveDBIC18_VAL-PFAS_Q4_7-10-17-L14.cdb 11 Jul 2017 08:36:22
Compound name: PFBS
Correlation coefficient: $\mathrm{r}=0.999476, \mathrm{r}^{\wedge} 2=0.998952$
Calibration curve: 2.28219 * $x+-0.143808$
Response type: Internal Std (Ref 17 ), Area * (IS Conc. / IS Area )
Curve type: Linear, Origin: Exclude, Weighting: 1/x, Axis trans: None


## Vista Analytical Laboratory Q1

Dataset: U:IQ4.PROVresults\170710M3\170710M3-CRV.qld
Last Altered: Tuesday, July 11, 2017 08:36:22 Pacific Daylight Time
Printed: Tuesday, July 11, 2017 08:38:33 Pacific Daylight Time

Compound name: PFHxA
Correlation coefficient: $\mathrm{r}=0.999913, \mathrm{r}^{\wedge} 2=0.999826$
Calibration curve: 1.63833 * x + 0.053424
Response type: Internal Std (Ref 18 ), Area * (IS Conc. / IS Area )
Curve type: Linear, Origin: Exclude, Weighting: 1/x, Axis trans: None


## Dataset: <br> U:\Q4.PRO\results\170710M3\170710M3-CRV.qld

Last Altered: Tuesday, July 11, 2017 08:36:22 Pacific Daylight Time
Printed: Tuesday, July 11, 2017 08:38:33 Pacific Daylight Time

Compound name: PFHpA
Correlation coefficient: $\mathrm{r}=0.999627, \mathrm{r}^{\wedge} 2=0.999254$
Calibration curve: 1.43595 * x + 0.0332012
Response type: Internal Std (Ref 19 ), Area * (IS Conc. / IS Area )
Curve type: Linear, Origin: Exclude, Weighting: 1/x, Axis trans: None


## Quantify Calibration Report

## MassLynx MassLynx V4.1 SCN945 SCN960

## Vista Analytical Laboratory Q1

Dataset: U:IQ4.PRO\results\170710M3\170710M3-CRV.qld
Last Altered: Tuesday, July 11, 2017 08:36:22 Pacific Daylight Time
Printed: Tuesday, July 11, 2017 08:38:33 Pacific Daylight Time

Compound name: PFHxS
Coefficient of Determination: $\mathrm{R}^{\wedge} 2=0.997055$
Calibration curve: 0.00158619 * $x^{\wedge} 2+1.83332$ * $x+-0.0924995$
Response type: Internal Std (Ref 20 ), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None


## Quantify Calibration Report

Vista Analytical Laboratory Q1
Dataset: U:IQ4.PRO\results\170710M3\170710M3-CRV.qld
Last Altered:
Tuesday, July 11, 2017 08:36:22 Pacific Daylight Time
Printed: Tuesday, July 11, 2017 08:38:33 Pacific Daylight Time

Compound name: PFOA
Correlation coefficient: $\mathrm{r}=0.999752, \mathrm{r}^{\wedge} 2=0.999504$
Calibration curve: 1.13698 * $x+0.117502$
Response type: Internal Std (Ref 21 ), Area * (IS Conc. / IS Area )
Curve type: Linear, Origin: Exclude, Weighting: 1/x, Axis trans: None


## Dataset: U:IQ4.PRO\results\170710M3\170710M3-CRV.qld

Last Altered: Tuesday, July 11, 2017 08:36:22 Pacific Daylight Time
Printed: Tuesday, July 11, 2017 08:38:33 Pacific Daylight Time

Compound name: PFNA
Correlation coefficient: $\mathrm{r}=0.999771, \mathrm{r}^{\wedge} 2=0.999542$
Calibration curve: 1.36517 * x + 0.0586296
Response type: Internal Std ( Ref 22 ), Area * (IS Conc. / IS Area )
Curve type: Linear, Origin: Include, Weighting: 1/x, Axis trans: None


## Quantify Calibration Report

Vista Analytical Laboratory Q1

## Dataset: <br> U:\Q4.PRO\results\170710M3\170710M3-CRV.qld

Last Altered:
Tuesday, July 11, 2017 08:36:22 Pacific Daylight Time
Printed: Tuesday, July 11, 2017 08:38:33 Pacific Daylight Time

## Compound name: PFOS

Coefficient of Determination: $\mathbf{R}^{\wedge} 2=0.999061$
Calibration curve: 0.00185446 * $x^{\wedge} 2+1.10476$ * $x+0.0290336$
Response type: Internal Std (Ref 23 ), Area * (IS Conc. / IS Area )
Curve type: 2nd Order, Origin: Include, Weighting: 1/x, Axis trans: None


## Vista Analytical Laboratory Q1

## Dataset: U:IQ4.PRO\results\170710M3\170710M3-CRV.qld

Last Altered: Tuesday, July 11, 2017 08:36:22 Pacific Daylight Time
Printed: Tuesday, July 11, 2017 08:38:33 Pacific Daylight Time

Compound name: PFDA
Coefficient of Determination: $R^{\wedge} 2=0.998836$
Calibration curve: $0.000679513^{*} x^{\wedge} 2+1.50572$ * $x+-0.0681733$
Response type: Internal Std (Ref 24 ), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None


## Dataset: U:IQ4.PRO|results\170710M3\170710M3-CRV.qld

Last Altered: Tuesday, July 11, 2017 08:36:22 Pacific Daylight Time Printed: $\quad$ Tuesday, July 11, 2017 08:38:33 Pacific Daylight Time

Compound name: PFUnA
Correlation coefficient: $\mathrm{r}=0.998876, \mathrm{r}^{\wedge} 2=0.997753$
Calibration curve: 1.03711 * x + 0.141151
Response type: Internal Std (Ref 25), Area * (IS Conc. / IS Area )
Curve type: Linear, Origin: Exclude, Weighting: 1/x, Axis trans: None


## Quantify Calibration Report

## Vista Analytical Laboratory Q1

## Dataset: U:IQ4.PROlresults\170710M3\170710M3-CRV.qld

$\begin{array}{ll}\text { Last Altered: } & \text { Tuesday, July 11, } 2017 \text { 08:36:22 Pacific Daylight Time } \\ \text { Printed: } & \text { Tuesday, July 11, 2017 08:38:33 Pacific Daylight Time }\end{array}$ Printed: Tuesday, July 11, 2017 08:38:33 Pacific Daylight Time

Compound name: N-MeFOSAA
Coefficient of Determination: $\mathrm{R}^{\wedge} 2=0.999758$
Calibration curve: $-0.000725393^{*} x^{\wedge} 2+1.88459$ * $x+-0.112345$
Response type: Internal Std ( Ref 26 ), Area * (IS Conc. / IS Area )
Curve type: 2nd Order, Origin: Include, Weighting: 1/x, Axis trans: None


## Vista Analytical Laboratory Q1

Dataset: U:\Q4.PRO\results\170710M3\170710M3-CRV.qld
Last Altered: Tuesday, July 11, 2017 08:36:22 Pacific Daylight Time
Printed: $\quad$ Tuesday, July 11, 2017 08:38:33 Pacific Daylight Time

Compound name: N-EtFOSAA
Coefficient of Determination: $\mathrm{R}^{\wedge} 2=0.998485$
Calibration curve: $0.00300948^{*} x^{\wedge} 2+1.32985$ * $x+0.0134202$
Response type: Internal Std (Ref 27 ), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Include, Weighting: 1/x, Axis trans: None


## Dataset: U:IQ4.PRO\results\170710M31170710M3-CRV.qld

Last Altered: Tuesday, July 11, 2017 08:36:22 Pacific Daylight Time
Printed: $\quad$ Tuesday, July 11, 2017 08:38:33 Pacific Daylight Time

## Compound name: PFDoA

Coefficient of Determination: $\mathrm{R}^{\wedge} 2=0.991885$
Calibration curve: 1.00263 * $x$
Response type: Internal Std (Ref 28 ), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Force, Weighting: Null, Axis trans: None


## Dataset: U:IQ4.PRO\results\170710M3\170710M3-CRV.qld

Last Altered: Tuesday, July 11, 2017 08:36:22 Pacific Daylight Time Printed: Tuesday, July 11, 2017 08:38:33 Pacific Daylight Time

## Compound name: PFTrDA

Coefficient of Determination: $R^{\wedge} 2=0.998284$
Calibration curve: -0.0031383 * $x^{\wedge} 2+13.4645$ * $x+0.137265$
Response type: Internal Std (Ref 28 ), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None


## Vista Analytical Laboratory Q1

## Dataset: U:IQ4.PRO\results\170710M3\170710M3-CRV.qld

Last Altered: Tuesday, July 11, 2017 08:36:22 Pacific Daylight Time
Printed: $\quad$ Tuesday, July 11, 2017 08:38:33 Pacific Daylight Time

Compound name: PFTeDA
Coefficient of Determination: $\mathrm{R}^{\wedge} 2=0.999913$
Calibration curve: -0.000928994 * $x^{\wedge} 2+1.26436$ * $x+0.081381$
Response type: Internal Std (Ref 29 ), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None


| Dataset: | U:\Q4.PRO\results\170710M3\170710M3-CRV.qld |
| :--- | :--- |
| Last Altered: | Tuesday, July 11, 2017 08:36:22 Pacific Daylight Time |
| Printed: | Tuesday, July 11, 2017 08:36:35 Pacific Daylight Time |

Method: U:IQ4.PROMethDBIPFAS_L14-7-5-17.mdb 10 Jul 2017 08:06:14

## Calibration: 11 Jul 2017 08:36:22

Name: 170710M3_2, Date: 10-Jul-2017, Time: 16:35:25, ID: ST170710M3-1 PFC CS-2 17G1003, Description: PFC CS-2 17G1003


13C3-PFBS



13C2-PFHxA



## 13C4-PFHpA



## Total PFHxS

F16:MRM of 2 channels,ES$398.9>79.6$


1802-PFHxS
F18:MRM of 1 channel,ES-
$403>102.6$


| Dataset: | U:IQ4.PROIresults1170710M31170710M3-CRV.qld |
| :--- | :--- |
| Last Altered: | Tuesday, July 11, 2017 08:36:22 Pacific Daylight Time |
| Printed: | Tuesday, July 11, 2017 08:36:35 Pacific Daylight Time |

Name: 170710M3_2, Date: 10-Jul-2017, Time: 16:35:25, ID: ST170710M3-1 PFC CS-2 17G1003, Description: PFC CS-2 17G1003



13C2-PFOA


PFNA


F25:MRM of 2 channels,ES-


13C5-PFNA


PFDA



13C2-PFDA



F30:MRM of 2 channels,ES-


13C8-PFOS
F33:MRM of 1 channel,ES-
$507>79.9$
13C8-PFOS 1.118e+005


Dataset: U:
U:IQ4.PRO|results1170710M31170710M3-CRV.qld
Last Altered: Tuesday, July 11, 2017 08:36:22 Pacific Daylight Time
Printed: Tuesday, July 11, 2017 08:36:35 Pacific Daylight Time

## Name: 170710M3_2, Date: 10-Jul-2017, Time: 16:35:25, ID: ST170710M3-1 PFC CS-2 17G1003, Description: PFC CS-2 17G1003

## PFUnA




13C2-PFUnA


## N-MeFOSAA



F45:MRM of 2 channels,ES$570.1>483$ $8.820 \mathrm{e}+002$

d3-N-MeFOSAA
F49:MRM of 1 channel,ES$573.3>419$


## N-EtFOSAA


d5-N-EtFOSAA
F48:MRM of 1 channel,ES
$589.3>419$ $1.557 \mathrm{e}+005$


PFDoA
F51:MRM of 2 channels,ES$612.9>318.8$
 $612.9>569$


13C2-PFDoA
F52:MRM of 1 channel,ES$615>569.7$


Name: 170710M3_2, Date: 10-Jul-2017, Time: 16:35:25, ID: ST170710M3-1 PFC CS-2 17G1003, Description: PFC CS-2 17G1003


13C2-PFTeDA


## PFTeDA



13C2-PFTeDA
F59:MRM of 2 channels,ES-




13C3-PFHxS


Dataset: U:IQ4.PROIresults1170710M31170710M3-CRV.qid
Last Altered: Tuesday, July 11, 2017 08:36:22 Pacific Daylight Time
Printed: Tuesday, July 11, 2017 08:36:35 Pacific Daylight Time

Name: 170710M3_2, Date: 10-Jul-2017, Time: 16:35:25, ID: ST170710M3-1 PFC CS-2 17G1003, Description: PFC CS-2 17G1003

13C6-PFDA


| Dataset: | U:IQ4.PROIresults1170710M31170710M3-CRV.qld |
| :--- | :--- |
| Last Altered: | Tuesday, July 11, 2017 08:36:22 Pacific Daylight Time |
| Printed: | Tuesday, July 11, 2017 08:36:35 Pacific Daylight Time |

Name: 170710M3_3, Date: 10-Jul-2017, Time: 16:46:13, ID: ST170710M3-2 PFC CS-1 17G1004, Description: PFC CS-1 17G1004



13C3-PFBS




13C2-PFHxA


PFHpA


F14:MRM of 2 channels,ES


13C4-PFHpA


## Total PFHxS



F16:MRM of 2 channels,ES-
$398.9>99$


1802-PFHxS


| Dataset: | U:IQ4.PROIresults1170710M31170710M3-CRV.qld |
| :--- | :--- |
| Last Altered: | Tuesday, July 11, 2017 08:36:22 Pacific Daylight Time |
| Printed: | Tuesday, July 11, 2017 08:36:35 Pacific Daylight Time |

Name: 170710M3_3, Date: 10-Jul-2017, Time: 16:46:13, ID: ST170710M3-2 PFC CS-1 17G1004, Description: PFC CS-1 17G1004


13C2-PFOA


## PFNA



13C5-PFNA


## PFDA



13C2-PFDA


## Total PFOS



13C8-PFOS
F33:MRM of 1 channel,ES-
507 > 79.9


| Dataset: | U:IQ4.PROIresults1170710M31170710M3-CRV.qld |
| :--- | :--- |
| Last Altered: | Tuesday, July 11, 2017 08:36:22 Pacific Daylight Time |
| Printed: | Tuesday, July 11, 2017 08:36:35 Pacific Daylight Time |

Name: 170710M3_3, Date: 10-Jul-2017, Time: 16:46:13, ID: ST170710M3-2 PFC CS-1 17G1004, Description: PFC CS-1 17G1004

## PFUnA

|  |  |  |
| :---: | :---: | :---: |
| 100 | F43:MRM of 2 channels, ES$562.9>518.9$ |  |
|  | PFUnA | $3.690 \mathrm{e}+004$ |
|  | 4.15 |  |
|  | 1.61 e 3 展 |  |
| \%- | 35266 |  |
|  | 3.92 bb ¢ |  |
|  | 216.56 | 4.40 |



## 13C2-PFUnA



## N-MeFOSAA



d3-N-MeFOSAA



d5-N-EtFOSAA


PFDoA
F51:MRM of 2 channels,ES$612.9>318.8$


F51:MRM of 2 channels,ES$612.9>569$


13C2-PFDoA


## Name: 170710M3_3, Date: 10-Jul-2017, Time: 16:46:13, ID: ST170710M3-2 PFC CS-1 17G1004, Description: PFC CS-1 17 G 1004






## PFTeDA



58:MRM of 4 channels,ES$712.9>369$ $4.227 \mathrm{e}+003$


13C2-PFTeDA


13C5-PFHxA


## 13C8-PFOA



13C3-PFHxS

Dataset: U:IQ4.PROVresults\170710M3\170710M3-CRV.qld

Last Altered: Tuesday, July 11, 2017 08:36:22 Pacific Daylight Time
Printed: Tuesday, July 11, 2017 08:36:35 Pacific Daylight Time

Name: 170710M3_3, Date: 10-Jul-2017, Time: 16:46:13, ID: ST170710M3-2 PFC CS-1 17G1004, Description: PFC CS-1 17G1004


13C7-PFUnA


Vista Analytical Laboratory
Dataset: U:\Q4.PRO\results\170710M3\170710M3-CRV.qld
Last Altered: Tuesday, July 11, 2017 08:36:22 Pacific Daylight Time
Printed: Tuesday, July 11, 2017 08:36:35 Pacific Daylight Time

## Name: 170710M3_4, Date: 10-Jul-2017, Time: 16:56:56, ID: ST170710M3-3 PFC CS0 17G1005, Description: PFC CS0 17G1005






13C2-PFHxA
$313.2>119$
$1.000 \mathrm{e}-003$


## PFHpA



Total PFHxS


1802-PFHxS


| Dataset: | U:IQ4.PROIresults1170710M31170710M3-CRV.qld |
| :--- | :--- |
|  |  |
| Last Altered: | Tuesday, July 11, 2017 08:36:22 Pacific Daylight Time |
| Printed: | Tuesday, July 11, 2017 08:36:35 Pacific Daylight Time |

## Name: 170710M3_4, Date: 10-Jul-2017, Time: 16:56:56, ID: ST170710M3-3 PFC CS0 17G1005, Description: PFC CSO 17G1005




13C2-PFOA




13C5-PFNA


PFDA


13C2-PFDA


Total PFOS
F30:MRM of 2 channels,ES499 > 79.9


F30:MRM of 2 channels, ÉS-
$499>99$


13C8-PFOS
F33:MRM of 1 channel,ES-
$507>79.9$


Dataset: U:IQ4.PROVresults1170710M31170710M3-CRV.qld
Last Altered: Tuesday, July 11, 2017 08:36:22 Pacific Daylight Time
Printed: Tuesday, July 11, 2017 08:36:35 Pacific Daylight Time

Name: 170710M3_4, Date: 10-Jul-2017, Time: 16:56:56, ID: ST170710M3-3 PFC CSO 17G1005, Description: PFC CSO 17G1005

## PFUnA




13C2-PFUnA


d3-N-MeFOSAA


d5-N-EtFOSAA



13C2-PFDOA


| Dataset: | U:IQ4.PROIresults1170710M31170710M3-CRV.qld |
| :--- | :--- |
| Last Altered: | Tuesday, July 11, 2017 08:36:22 Pacific Daylight Time |
| Printed: | Tuesday, July 11, 2017 08:36:35 Pacific Daylight Time |

## Name: 170710M3_4, Date: 10-Jul-2017, Time: 16:56:56, ID: ST170710M3-3 PFC CS0 17G1005, Description: PFC CS0 17G1005



13C2-PFTeDA


## PFTeDA



13C2-PFTeDA



13C8-PFOA


13C3-PFHxS



## Name: 170710M3_4, Date: 10-Jul-2017, Time: 16:56:56, ID: ST170710M3-3 PFC CS0 17G1005, Description: PFC CS0 $17 G 1005$


13C6-PFDA


## Dataset: U:IQ4.PROIresults1170710M31170710M3-CRV.qld

Last Altered: Tuesday, July 11, 2017 08:36:22 Pacific Daylight Time
Printed: $\quad$ Tuesday, July 11, 2017 08:36:35 Pacific Daylight Time

## Name: 170710M3_5, Date: 10-Jul-2017, Time: 17:07:35, ID: ST170710M3-4 PFC CS1 17G1006, Description: PFC CS1 17G1006

## Total PFBS <br> 



13C3-PFBS






## PFHpA



Total PFHxS


1802-PFHxS

Dataset: U:\Q4.PRO\results\170710M3\170710M3-CRV.qld

Last Altered: Tuesday, July 11, 2017 08:36:22 Pacific Daylight Time
Printed: $\quad$ Tuesday, July 11, 2017 08:36:35 Pacific Daylight Time

## Name: 170710M3_5, Date: 10-Jul-2017, Time: 17:07:35, ID: ST170710M3-4 PFC CS1 17G1006, Description: PFC CS1 17G1006

## Total PFOA




13C2-PFOA


## PFNA




13C5-PFNA


## PFDA




13C2-PFDA


Total PFOS


13C8-PFOS


Last Altered: Tuesday, July 11, 2017 08:36:22 Pacific Daylight Time
Printed: $\quad$ Tuesday, July 11, 2017 08:36:35 Pacific Daylight Time

Name: 170710M3_5, Date: 10-Jul-2017, Time: 17:07:35, ID: ST170710M3-4 PFC CS1 17G1006, Description: PFC CS1 17G1006



13C2-PFUnA



d3-N-MeFOSAA




## d5-N-EtFOSAA



PFDoA
F51:MRM of 2 channels,ES$612.9>318.8$ $1.081 e+004$


F51:MRM of 2 channels,ES$612.9>569$ $1.982 \mathrm{e}+004$


13C2-PFDoA
F52:MRM of 1 channel,ES-


| Dataset: | U:\Q4.PRO\results\170710M3\170710M3-CRV.qld |
| :--- | :--- |
| Last Altered: | Tuesday, July 11, 2017 08:36:22 Pacific Daylight Time |
| Printed: | Tuesday, July 11, 2017 08:36:35 Pacific Daylight Time |

## Name: 170710M3_5, Date: 10-Jul-2017, Time: 17:07:35, ID: ST170710M3-4 PFC CS1 17G1006, Description: PFC CS1 17G1006

## PFTrDA

| F57:MRM of 2 channels,ES- |
| ---: |
| $662.9>618.9$ |
|  |
| 100 |



13C2-PFTeDA



13C2-PFTeDA


## 

13C8-PFOA


13C3-PFHxS


Printed: Tuesday, July 11, 2017 08:36:35 Pacific Daylight Time

Name: 170710M3_5, Date: 10-Jul-2017, Time: 17:07:35, ID: ST170710M3-4 PFC CS1 17G1006, Description: PFC CS1 17G1006

13C6-PFDA

13C7-PFUnA


Dataset:
U:IQ4.PRO\results1170710M3\170710M3-CRV.qld
Last Altered: Tuesday, July 11, 2017 08:36:22 Pacific Daylight Time
Printed:
Tuesday, July 11, 2017 08:36:35 Pacific Daylight Time

Name: 170710M3_6, Date: 10-Jul-2017, Time: 17:18:21, ID: ST170710M3-5 PFC CS2 17G1007, Description: PFC CS2 17G1007



13C3-PFBS



13C2-PFHxA



13C4-PFHpA


## Total PFHxS




1802-PFHxS
F18:MRM of 1 channel,ES-


| Dataset: | U:IQ4.PRO\|results1170710M31170710M3-CRV.qld |
| :--- | :--- |
| Last Altered: | Tuesday, July 11, 2017 08:36:22 Pacific Daylight Time |
| Printed: | Tuesday, July 11, 2017 08:36:35 Pacific Daylight Time |

Name: 170710M3_6, Date: 10-Jul-2017, Time: 17:18:21, ID: ST170710M3-5 PFC CS2 17G1007, Description: PFC CS2 17G1007



13C2-PFOA


## PFNA



13C5-PFNA


## PFDA




13C2-PFDA


## Total PFOS



F30:MRM of 2 channeis,ES-
$499>99$
$2.042 \mathrm{e}+004$


13C8-PFOS
F33:MRM of 1 channel,ES-
$507>79.9$


Vista Analytical Laboratory
Dataset:
U:\Q4.PRO\results\170710M3\170710M3-CRV.qld
Last Altered: Tuesday, July 11, 2017 08:36:22 Pacific Daylight Time
Printed: $\quad$ Tuesday, July 11, 2017 08:36:35 Pacific Daylight Time

Name: 170710M3_6, Date: 10-Jul-2017, Time: 17:18:21, ID: ST170710M3-5 PFC CS2 17G1007, Description: PFC CS2 17G1007


d5-N-EtFOSAA



13C2-PFDoA


Name: 170710M3_6, Date: 10-Jul-2017, Time: 17:18:21, ID: ST170710M3-5 PFC CS2 17G1007, Description: PFC CS2 17G1007


13C2-PFTeDA



## 13C2-PFTeDA

F59:MRM of 2 channels, ES-
$714.8>669.6$



## 13C8-PFOA




## Dataset: U:IQ4.PROIresults1170710M31170710M3-CRV.qld

Last Altered: Tuesday, July 11, 2017 08:36:22 Pacific Daylight Time
Printed: Tuesday, July 11, 2017 08:36:35 Pacific Daylight Time

Name: 170710M3_6, Date: 10-Jul-2017, Time: 17:18:21, ID: ST170710M3-5 PFC CS2 17G1007, Description: PFC CS2 17G1007



13C7-PFUnA
F46:MRM of 1 channel,ES $570.1>524.8$


| Dataset: | U:IQ4.PROVresults1170710M31170710M3-CRV.qld |
| :--- | :--- |
| Last Altered: | Tuesday, July 11, 2017 08:36:22 Paciic Daylight Time <br> Tuesday, July 11, 2017 08:36:35 Pacific Daylight Time |
| Printed: |  |

Name: 170710M3_7, Date: 10-Jul-2017, Time: 17:28:59, ID: ST170710M3-6 PFC CS3 17G1008, Description: PFC CS3 17G1008


13C3-PFBS


## PFHxA



13C2-PFHxA



## 13C4-PFHpA



## Total PFHxS

F16:MRM of 2 channels,ES-
$398.9>79.6$


1802-PFHxS
F18:MRM of 1 channel,ES-


| Dataset: | U:IQ4.PROIresults1170710M31170710M3-CRV.qld |
| :--- | :--- |
| Last Altered: | Tuesday, July 11, 2017 08:36:22 Pacific Daylight Time |
| Printed: | Tuesday, July 11, 2017 08:36:35 Pacific Daylight Time |

## Name: 170710M3_7, Date: 10-Jul-2017, Time: 17:28:59, ID: ST170710M3-6 PFC CS3 17G1008, Description: PFC CS3 17G1008

## Total PFOA

F19:MRM of 2 channels,ES-
$413>368.7$
PFOA
$5.791 e^{+005}$
100
2.55 e 4
573576
bb
3097.22


## 13C2-PFOA



## PFNA




13C5-PFNA


## PFDA




## 13C2-PFDA



Total PFOS


13C8-PFOS
F33:MRM of 1 channel,ES-
507 > 79.9


Dataset: U:\Q4.PRO\results\170710M3\170710M3-CRV.qld
Last Altered: Tuesday, July 11, 2017 08:36:22 Pacific Daylight Time
Printed: $\quad$ Tuesday, July 11, 2017 08:36:35 Pacific Daylight Time

Name: 170710M3_7, Date: 10-Jul-2017, Time: 17:28:59, ID: ST170710M3-6 PFC CS3 17G1008, Description: PFC CS3 17G1008

## PFUnA



13C2-PFUnA


## N-MeFOSAA


d3-N-MeFOSAA


## N-EtFOSAA



d5-N-EtFOSAA


PFDoA


13C2-PFDoA
F52:MRM of 1 channel,ES$615>569.7$


## Dataset:

U:\Q4.PRO|results\170710M3\170710M3-CRV.qld
Last Altered: Tuesday, July 11, 2017 08:36:22 Pacific Daylight Time
Printed: Tuesday, July 11, 2017 08:36:35 Pacific Daylight Time

Name: 170710M3_7, Date: 10-Jul-2017, Time: 17:28:59, ID: ST170710M3-6 PFC CS3 17G1008, Description: PFC CS3 17G1008


13C2-PFTeDA


## PFTeDA



13C2-PFTeDA
F59:MRM of 2 channels,ES-


## 13C5-PFHxA



13C8-PFOA


13C3-PFHxS


13C9-PFNA


| Dataset: | U:IQ4.PROIresults1170710M31170710M3-CRV.qld |
| :--- | :--- |
|  |  |
| Last Altered: | Tuesday, July 11, 2017 08:36:22 Pacific Daylight Time |
| Printed: | Tuesday, July 11, 2017 08:36:35 Pacific Daylight Time |



Dataset: U:\Q4.PRO\results\170710M3\170710M3-CRV.qld
Last Altered: Tuesday, July 11, 2017 08:36:22 Pacific Daylight Time
Printed: $\quad$ Tuesday, July 11, 2017 08:36:35 Pacific Daylight Time

Name: 170710M3_8, Date: 10-Jul-2017, Time: 17:39:46, ID: ST170710M3-7 PFC CS4 17G1009, Description: PFC CS4 17G1009


13C3-PFBS


## PFHxA



13C2-PFHxA




13C4-PFHpA


## Total PFHxS



1802-PFHxS


| Dataset: | U:\Q4.PRO\results\170710M3\170710M3-CRV.qld |
| :--- | :--- |
| Last Altered: | Tuesday, July 11, 2017 08:36:22 Pacific Daylight Time |
| Printed: | Tuesday, July 11, 2017 08:36:35 Pacific Daylight Time |

Name: 170710M3_8, Date: 10-Jul-2017, Time: 17:39:46, ID: ST170710M3-7 PFC CS4 17G1009, Description: PFC CS4 17G1009



13C2-PFOA


## PFNA




13C5-PFNA




13C2-PFDA


## Total PFOS

F30:MRM of 2 channels,ES$499>79.9$


30:MRM of 2 channels,ES$499>99$


13C8-PFOS
F33:MRM of 1 channel,ES$507>79.9$


| Dataset: | U:IQ4.PRO\results 1 170710M3\170710M3-CRV.qld |
| :--- | :--- |
|  |  |
| Last Altered: | Tuesday, July 11, 2017 08:36:22 Pacific Daylight Time |
| Printed: | Tuesday, July 11, 2017 08:36:35 Pacific Daylight Time |

Name: 170710M3_8, Date: 10-Jul-2017, Time: 17:39:46, ID: ST170710M3-7 PFC CS4 17G1009, Description: PFC CS4 17G1009


## 13C2-PFUnA

F44:MRM of 1 channel,ES$565>519.8$



d3-N-MeFOSAA


d5-N-EtFOSAA
F48:MRM of 1 channel,ES $589.3>419$ $1.465 \mathrm{e}+005$


## PFDoA

F51:MRM of 2 channels,ES612.9 > 318.8



13C2-PFDoA


| Dataset: | U:IQ4.PRO\results\170710M31170710M3-CRV.qld |
| :--- | :--- |
|  |  |
| Last Altered: | Tuesday, July 11, 2017 08:36:22 Pacific Daylight Time |
| Printed: | Tuesday, July 11, 2017 08:36:35 Pacific Daylight Time |

Name: 170710M3_8, Date: 10-Jul-2017, Time: 17:39:46, ID: ST170710M3-7 PFC CS4 17G1009, Description: PFC CS4 17G1009


13C2-PFTeDA



13C2-PFTeDA
F59:MRM of 2 channels,ES-
$714.8>669.6$



13C3-PFHxS


13C9-PFNA


| Dataset: | U:IQ4.PRO\results\170710M3\170710M3-CRV.qid |
| :--- | :--- |
|  |  |
| Last Altered: | Tuesday, July 11, 2017 08:36:22 Pacific Daylight Time |
| Printed: | Tuesday, July 11, 2017 08:36:35 Pacific Daylight Time |

Name: 170710M3_8, Date: 10-Jul-2017, Time: 17:39:46, ID: ST170710M3-7 PFC CS4 17G1009, Description: PFC CS4 17G1009




| Dataset: | U:\Q4.PRO\results\170710M3\170710M3-CRV.qld |
| :--- | :--- |
| Last Altered: | Tuesday, July 11, 2017 08:36:22 Pacific Daylight Time |
| Printed: | Tuesday, July 11, 2017 08:36:35 Pacific Daylight Time |

## Name: 170710M3_9, Date: 10-Jul-2017, Time: 17:50:33, ID: ST170710M3-8 PFC CS5 17G1010, Description: PFC CS5 17G1010





13C4-PFHpA


Total PFHxS



1802-PFHxS


Last Altered: Tuesday, July 11, 2017 08:36:22 Pacific Daylight Time
Printed: $\quad$ Tuesday, July 11, 2017 08:36:35 Pacific Daylight Time

Name: 170710M3_9, Date: 10-Jul-2017, Time: 17:50:33, ID: ST170710M3-8 PFC CS5 17G1010, Description: PFC CS5 $17 G 1010$



## PFNA




13C5-PFNA





## Total PFOS

F30:MRM of 2 channels,ES-
$499>79.9$
$8.958 \mathrm{e}+005$



13C8-PFOS
F33:MRM of 1 channel,ES-
$507>79.9$


## Vista Analytical Laboratory

| Dataset: | U:\Q4.PRO\results\170710M31170710M3-CRV.qld |
| :--- | :--- |
|  |  |
| Last Altered: | Tuesday, July 11, 2017 08:36:22 Pacific Daylight Time |
| Printed: | Tuesday, July 11, 2017 08:36:35 Pacific Daylight Time |

Name: 170710M3_9, Date: 10-Jul-2017, Time: 17:50:33, ID: ST170710M3-8 PFC CS5 17G1010, Description: PFC CS5 17 G1010


## Dataset: U:\Q4.PRO\results\170710M3\170710M3-CRV.qld

Last Altered: Tuesday, July 11, 2017 08:36:22 Pacific Daylight Time
Printed: $\quad$ Tuesday, July 11, 2017 08:36:35 Pacific Daylight Time

Name: 170710M3_9, Date: 10-Jul-2017, Time: 17:50:33, ID: ST170710M3-8 PFC CS5 17G1010, Description: PFC CS5 17 G1010




13C2-PFTeDA


13C5-PFHxA


13C8-PFOA


13C3-PFHxS


13C9-PFNA
F27:MRM of 1 channel,ES$472.2>426.9$


Vista Analytical Laboratory
Dataset: U:IQ4.PRO\results\170710M3\170710M3-CRV.qld
Last Altered: Tuesday, July 11, 2017 08:36:22 Pacific Daylight Time
Printed: Tuesday, July 11, 2017 08:36:35 Pacific Daylight Time

Name: 170710M3_9, Date: 10-Jul-2017, Time: 17:50:33, ID: ST170710M3-8 PFC CS5 17G1010, Description: PFC CS5 17 G 1010



13C7-PFUnA


| Dataset: | U:IQ4.PROIresults1170710M31170710M3-11. ald |
| :--- | :--- |
| Last Altered: | Tuesday, July 11, 2017 08:45:10 Pacific Daylight Time |
| Printed: | Tuesday, July 11, 2017 08:46:04 Pacific Daylight Time |

Method: U:IQ4.PROIMethDBIPFAS_L14-7-5-17.mdb 10 Jul 2017 08:06:14 Calibration: U:IQ4.PROICurveDBIC18_VAL-PFAS_Q4_7-10-17-L14.cdb 11 Jul 2017 08:36:22


Name: 170710M3_11, Date: 10-Jul-2017, Time: 18:11:57, ID: SS170710M3-1 PFC SSS 17G1011, Description: PFC SSS 17 G1011


Vista Analytical Laboratory

| Dataset: | U:IQ4.PROlresults\170710M3\170710M3-11.qld |
| :--- | :--- |
| Last Altered: | Tuesday, July 11, 2017 08:45:10 Pacific Daylight Time |
| Printed: | Tuesday, July 11, 2017 08:46:04 Pacific Daylight Time |

Name: 170710M3_11, Date: 10-Jul-2017, Time: 18:11:57, ID: SS170710M3-1 PFC SSS 17G1011, Description: PFC SSS 17G1011

|  | \# Name | Trace | Area | IS Area | Wt.Nol. | RRF | PredRT | RT | y Axis Resp. | Conc. | \%Rec |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 32 | 32 13C3-PFHxS | $401.9>79.9$ | 3.46 e 3 | 3.46 e 3 | 1.000 | 1.000 | 3.55 | 3.52 | 12.5 | 12.5 | 100.0 |
| 33 | 33 13C8-PFOA | $421.3>376$ | 1.73 e 4 | 1.73 e4 | 1.000 | 1.000 | 3.63 | 3.65 | 12.5 | 12.5 | 100.0 |
| 34 | 34 13C9-PFNA | $472.2>426.9$ | 2.84 e 4 | 2.84 e4 | 1.000 | 1.000 | 3.82 | 3.82 | 12.5 | 12.5 | 100.0 |
| 35 | $3513 \mathrm{C} 4-\mathrm{PFOS}$ | $503>79.9$ | 5.16 e 3 | 5.16 e 3 | 1.000 | 1.000 | 3.86 | 3.87 | 12.5 | 12.5 | 100.0 |
| 36 | 36 13C6-PFDA | $519.1>473.7$ | 3.44 e 4 | 3.44 e 4 | 1.000 | 1.000 | 4.00 | 3.99 | 12.5 | 12.5 | 100.0 |
| 37 | 37 13C7-PFUnA | $570.1>524.8$ | 3.24 e 4 | 3.24e4 | 1.000 | 1.000 | 4.16 | 4.15 | 12.5 | 12.5 | 100.0 |

## Quantify Totals Report MassLynx MassLynx V4.1 SCN945 SCN960

Vista Analytical Laboratory

| Dataset: | U:\Q4.PRO\results1170710M31170710M3-11.qld |
| :--- | :--- |
|  |  |
| Last Altered: | Tuesday, July 11, 2017 08:45:10 Pacific Daylight Time |
| Printed: | Tuesday, July 11, 2017 08:46:04 Pacific Daylight Time |

Method: U:IQ4.PROIMethDBIPFAS_L14-7-5-17.mdb 10 Jul 2017 08:06:14 Calibration: U:IQ4.PROICurveDBIC18_VAL-PFAS_Q4_7-10-17-L14.cdb 11 Jul 2017 08:36:22

Name: 170710M3_11, Date: 10-Jul-2017, Time: 18:11:57, ID: SS170710M3-1 PFC SSS 17G1011, Description: PFC SSS $17 \mathrm{G1011}$
Total PFBS


## Total PFHxS



Total PFOA

|  | \# Name | Trace | RT | Area | IS Area | Response | ary | onc. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1. | 5 PFOA | $413>368.7$ | 3.65 | 20695.668 | 24419.633 | 10.594 | bb | 9.2 |

## Total PFOS

|  | \# Name | Trace | RT | Area | IS Area | Response | Primary Flags | Cone. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1. | 7 PFOS | $499>79.9$ | 3.88 | 4203.497 | 4851.198 | 10.831 | MM | 9.6 |

Total N-Me-FOSAA

|  | \# Name | Trace | RT | Area | is Area | Response | Primary Flags | Conc. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1-W\%\% | 10 N-MeFOSAA | $570.1>419$ | 4.02 | 8560.757 | 6402.873 | 16.713 | bb | 9.0 |

## Total N-EtFOSAA



| Dataset: | U:\Q4.PRO\results\170710M3\170710M3-11.qld |
| :--- | :--- |
|  |  |
| Last Altered: | Tuesday, July 11, 2017 08:45:10 Pacific Daylight Time |
| Printed: | Tuesday, July 11, 2017 08:46:04 Pacific Daylight Time |

Method: U:IQ4.PROIMethDBIPFAS_L14-7-5-17.mdb 10 Jul 2017 08:06:14
Calibration: U:IQ4.PROICurveDBIC18_VAL-PFAS_Q4_7-10-17-L14.cdb 11 Jul 2017 08:36:22
Name: 170710M3_11, Date: 10-Jul-2017, Time: 18:11:57, ID: SS170710M3-1 PFC SSS 17G1011, Description: PFC SSS 17 G1011

## Total PFBS




2.600rk Orde800700803.000

PFHpA


F14:MRM of 2 channels,ES-


13C2-PFHxA


Total PFHxS


F16:MRM of 2 channels,ES$398.9>99$


1802-PFHxS


| Dataset: | U:\Q4.PRO\results\170710M3\170710M3-11.qld |
| :--- | :--- |
|  |  |
| Last Altered: | Tuesday, July 11, 2017 08:45:10 Pacific Daylight Time |
| Printed: | Tuesday, July 11, 2017 08:46:04 Pacific Daylight Time |

## Name: 170710M3_11, Date: 10-Jul-2017, Time: 18:11:57, ID: SS170710M3-1 PFC SSS 17G1011, Description: PFC SSS 17 G1011




13C2-PFOA


## PFNA




13C5-PFNA


## Total PFOS



F30:MRM of 2 channels, ES $499>99$ $1.000 \mathrm{e}-003$


13C8-PFOS


## PFDA



13C2-PFUnA


| Dataset: | U:IQ4.PROIresults1170710M31170710M3-11.qld |
| :--- | :--- |
| Last Altered: | Tuesday, July 11, 2017 08:45:10 Pacific Daylight Time |
| Printed: | Tuesday, July 11, 2017 08:46:04 Pacific Daylight Time |

Name: 170710M3_11, Date: 10-Jul-2017, Time: 18:11:57, ID: SS170710M3-1 PFC SSS 17G1011, Description: PFC SSS 17G1011

## PFUnA <br> 



13C2-PFUnA


## N-MeFOSAA <br> 




d5-N-EtFOSAA



13C2-PFDoA


| Dataset: | U:IQ4.PROVresults1170710M31170710M3-11.qld |
| :--- | :--- |
|  |  |
| Last Altered: | Tuesday, July 11, 2017 08:45:10 Pacific Daylight Time |
| Printed: | Tuesday, July 11, 2017 08:46:04 Pacific Daylight Time |

Name: 170710M3_11, Date: 10-Jul-2017, Time: 18:11:57, ID: SS170710M3-1 PFC SSS 17G1011, Description: PFC SSS $17 \mathrm{G1011}$

PFTeDA


F58:MRM of 4 channels,ES
$712.9>369$ 4.698e+004


13C2-PFTeDA




13C2-PFTeDA



13C8-PFOA



13C9-PFNA


| Dataset: | U:IQ4.PROIresults1170710M31170710M3-11. qld |
| :--- | :--- |
|  |  |
| Last Altered: | Tuesday, July 11, 2017 08:45:10 Pacific Daylight Time |
| Printed: | Tuesday, July 11, 2017 08:46:04 Pacific Daylight Time |

Name: 170710M3_11, Date: 10-Jul-2017, Time: 18:11:57, ID: SS170710M3-1 PFC SSS 17G1011, Description: PFC SSS 17G1011


Dataset: U:IQ4.PROIresults1170710M31170710M3-CRV-L14A.qld
Last Altered: Friday, July 14, 2017 08:57:46 Pacific Daylight Time
Printed: Friday, July 14, 2017 08:58:48 Pacific Daylight Time

Method: U:IQ4.PRO\MethDBIPFAS_L14-7-5-17.mdb 10 Jul 2017 08:06:14
Calibration: U:IQ4.PROICurveDBIC18_VAL-PFAS_Q4_7-10-17-L14A.cdb 14 Jul 2017 08:57:46

## Compound name: PFBS

Correlation coefficient: $\mathrm{r}=0.999476, \mathrm{r}^{\wedge} 2=0.998952$
Calibration curve: 2.28219 * x + - 0.143808


Response type: Internal Std ( Ref 17 ), Area * ( IS Conc. / IS Area)
Curve type: Linear, Origin: Exclude, Weighting: 1/x, Axis trans: None


## Compound name: PFHXA

Correlation coefficient: $\mathrm{r}=0.999913, \mathrm{r}$ 2 $2=0.999826$
Calibration curve: 1.63833 * $x+0.053424$
Response type: Internal Std (Ref 18 ), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Exclude, Weighting: 1/x, Axis trans: None


## Vista Analytical Laboratory

Dataset: U:\Q4.PROIresults1170710M31170710M3-CRV-L14A.qld
Last Altered: Friday, July 14, 2017 08:57:46 Pacific Daylight Time
Printed:
Friday, July 14, 2017 08:58:48 Pacific Daylight Time

## Compound name: PFHpA

Correlation coefficient: $\mathrm{r}=0.999627, \mathrm{r}^{\wedge} 2=0.999254$
Calibration curve: 1.43595 * $x+0.0332012$
Response type: Internal Std (Ref 19), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Exclude, Weighting: 1/x, Axis trans: None

| - | \# Name | Type | Std. Conc | RT | Area | IS Area | Response | Conc. | \%Dev | Conc. Flag | Cob | CoD Flag | $x=$ excluded |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | 1 170710M3_2 | Standard | 0.250 | 3.46 | 484.804 | 16912.918 | 0.358 | 0.2 | -9.4 | NO | 0.999 | NO | bb |
| 2 | 2 170710M3_3 | Standard | 0.500 | 3.45 | 1094.714 | 15983.809 | 0.856 | 0.6 | 14.6 | NO | 0.999 | NO | db |
| 3 3- | 3 170710M3_4 | Standard | 1.000 | 3.44 | 1816.426 | 14729.492 | 1.541 | 1.1 | 5.0 | NO | 0.999 | NO | bb |
| 4 | 4 170710M3_5 | Standard | 2.000 | 3.44 | 3368.228 | 16736.117 | 2.516 | 1.7 | -13.6 | NO | 0.999 | NO | bb |
| 5 | 5 170710M3_6 | Standard | 5.000 | 3.44 | 9552.159 | 16831.109 | 7.094 | 4.9 | -1.7 | NO | 0.999 | NO | bb |
|  | $6170710 \mathrm{M3} 3$ | Standard | 10.000 | 3.45 | 19620.016 | 16406.695 | 14.948 | 10.4 | 3.9 | NO | 0.999 | NO | bb |
| 7 | 7 170710M3_8 | Standard | 50.000 | 3.45 | 91102.258 | 15463.272 | 73.644 | 51.3 | 2.5 | NO | 0.999 | NO | bb |
| 8 - | 8 170710M3_9 | Standard | 100.000 | 3.45 | 193055.844 | 17039.475 | 141.624 | 98.6 | -1.4 | NO | 0.999 | NO | bb |

## Compound name: PFHxS

Coefficient of Determination: $\mathrm{R}^{\wedge} 2=0.997055$
Calibration curve: 0.00158619 * $x^{\wedge} 2+1.83332$ * $x+-0.0924995$
Response type: Internal Std (Ref 20), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None

|  |  | \# Name | Type | Std. Conc | RT | Area | IS Area | Response | Cone. | \% Dev | Conc. Flag | CoD | CoD Flag | $x=e x c l u d e d$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1 |  | 1 170710M3_2 | Standard | 0.250 | 3.52 | 58.724 | 1651.524 | 0.444 | 0.3 | 17.1 | NO | 0.997 | NO | bb |
| 2 | \% | 2 170710M3_3 | Standard | 0.500 | 3.51 | 92.843 | 1720.000 | 0.675 | 0.4 | -16.3 | NO | 0.997 | NO | MM |
| 3 |  | 3 170710M3_4 | Standard | 1.000 | 3.51 | 174.046 | 1350.057 | 1.611 | 0.9 | -7.1 | NO | 0.997 | NO | db |
| 4 |  | 4 170710M3_5 | Standard | 2.000 | 3.51 | 444.710 | 1600.253 | 3.474 | 1.9 | -2.9 | NO | 0.997 | NO | MM |
| 5 | (3trutit | $5170710 \mathrm{M3}$-6 | Standard | 5.000 | 3.51 | 1145.275 | 1665.698 | 8.595 | 4.7 | -5.6 | NO | 0.997 | NO | bb |
| 6 |  | 6 170710M3_7 | Standard | 10.000 | 3.51 | 2600.573 | 1486.850 | 21.863 | 11.9 | 18.5 | NO | 0.997 | NO | MM |
| 7 |  | 7 170710M3_8 | Standard | 50.000 | 3.51 | 10991.491 | 1511.473 | 90.900 | 47.7 | -4.7 | NO | 0.997 | NO | MM |
| 8 | (\%ywn | 8 170710M3_9 | Standard | 100.000 | 3.51 | 25585.689 | 1590.326 | 201.104 | 100.9 | 0.9 | NO | 0.997 | NO | MM |

Quantify Compound Summary Report

| Dataset: | U:\Q4.PRO\results1170710M31170710M3-CRV-L14A.qld |
| :--- | :--- |
| Last Altered: | Friday, July 14, 2017 08:57:46 Pacific Daylight Time |
| Printed: | Friday, July 14, 2017 08:58:48 Pacific Daylight Time |

## Compound name: PFOA

Correlation coefficient: $\mathrm{r}=0.999752, \mathrm{r}^{\wedge} 2=0.999504$
Calibration curve: 1.13698 * $x+0.117502$
Response type: Internal Std (Ref 21 ), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Exclude, Weighting: 1/x, Axis trans: None

|  | \# Name | Type | Std. Conc | RT | Area | 15 Area | Response | Cone. | \%Dev | Conc. Flag | CoD | CoD Flag | $x=e x c l u d e d$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1.: | 1 170710M3_2 | Standard | 0.250 | 3.65 | 719.562 | 24338.092 | 0.370 | 0.2 | -11.3 | NO | 1.000 | NO | bb |
| 2 2: | 2 170710M3_3 | Standard | 0.500 | 3.65 | 1500.520 | 25154.738 | 0.746 | 0.6 | 10.5 | NO | 1.000 | NO | bb |
| 3 3 | 3 170710M3_4 | Standard | 1.000 | 3.65 | 2177.131 | 22319.385 | 1.219 | 1.0 | -3.1 | NO | 1.000 | NO | bb |
| 4 | 4 170710M3_5 | Standard | 2.000 | 3.65 | 4933.051 | 25531.586 | 2.415 | 2.0 | 1.0 | NO | 1.000 | NO | bb |
| 5. | 5 170710M3_6 | Standard | 5.000 | 3.64 | 12429.696 | 27012.830 | 5.752 | 5.0 | -0.9 | NO | 1.000 | NO | bb |
| $6$ | 6 170710M3_7 | Standard | 10.000 | 3.65 | 25517.219 | 27058.725 | 11.788 | 10.3 | 2.6 | NO | 1.000 | NO | bb |
| $7$ | 7 170710M3_8 | Standard | 50.000 | 3.64 | 123694.688 | 26424.334 | 58.514 | 51.4 | 2.7 | NO | 1.000 | NO | bb |
| 8: | 8 170710M3_9 | Standard | 100.000 | 3.65 | 248919.391 | 27780.598 | 112.002 | 98.4 | -1.6 | NO | 1.000 | NO | bb |

## Compound name: PFNA

Correlation coefficient: $r=0.999771,{ }^{\wedge} 2=0.999542$
Calibration curve: 1.36517 * x + 0.0586296
Response type: Internal Std (Ref 22 ), Area * (IS Conc. / IS Area )
Curve type: Linear, Origin: Include, Weighting: $1 / x$, Axis trans: None

|  | \# Name | Type | Std. Conc | RT | Area | IS Area | Response | Conc. | \% Dev | Conc. Flag | CoD | CobFlag | $\mathrm{x}=$ excluded |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | 1 170710M3_2 | Standard | 0.250 | 3.83 | 809.352 | 23133.879 | 0.437 | 0.3 | 11.0 | NO | 1.000 | NO | bb |
| 2. | 2 170710M3_3 | Standard | 0.500 | 3.82 | 1465.662 | 25510.555 | 0.718 | 0.5 | -3.4 | NO | 1.000 | NO | bb |
| $3$ | 3 170710M3_4 | Standard | 1.000 | 3.82 | 2763.543 | 25152.525 | 1.373 | 1.0 | -3.7 | NO | 1.000 | NO | bb |
| 4 | 4 170710M3_5 | Standard | 2.000 | 3.82 | 6805.311 | 27896.482 | 3.049 | 2.2 | 9.5 | NO | 1.000 | NO | bb |
| $5$ | 5 170710M3_6 | Standard | 5.000 | 3.82 | 16015.691 | 27575.711 | 7.260 | 5.3 | 5.5 | NO | 1.000 | NO | bb |
| 6 6\% | 6 170710M3_7 | Standard | 10.000 | 3.82 | 32890.461 | 30707.572 | 13.389 | 9.8 | -2.4 | NO | 1.000 | NO | bb |
| $17$ | 7 170710M3_8 | Standard | 50.000 | 3.82 | 146644.188 | 26401.301 | 69.430 | 50.8 | 1.6 | NO | 1.000 | NO | bb |
| 8. | 8 170710M3_9 | Standard | 100.000 | 3.82 | 313277.875 | 28967.555 | 135.185 | 99.0 | -1.0 | NO | 1.000 | NO | bb |


| Dataset: | U:IQ4.PRO\resultsI170710M31170710M3-CRV-L14A.qld |
| :--- | :--- |
| Last Altered: | Friday, July 14, 2017 08:57:46 Pacific Daylight Time |
| Printed: | Friday, July 14, 2017 08:58:48 Pacific Daylight Time |

## Compound name: PFOS

Coefficient of Determination: $R^{\wedge} 2=0.999061$
Calibration curve: 0.00185446 * $x^{\wedge} 2+1.10476$ * $x+0.0290336$
Response type: Internal Std (Ref 23), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Include, Weighting: $1 / x$, Axis trans: None

|  | \# Name | Type | Std. Conc | RT | Area | IS Area | Response | Conc. | \% Dev | Conc Fag | CoD | CoDFlag | $x=e x c l u d e d$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | 1 170710M3_2 | Standard | 0.250 | 3.88 | 115.763 | 5370.698 | 0.269 | 0.2 | -13.0 | NO | 0.999 | NO | bb |
| 2 2- | 2 170710M3_3 | Standard | 0.500 | 3.87 | 241.388 | 5419.104 | 0.557 | 0.5 | -4.5 | NO | 0.999 | NO | MM |
| 3.WW | 3 170710M3_4 | Standard | 1.000 | 3.88 | 500.986 | 5346.955 | 1.171 | 1.0 | 3.2 | NO | 0.999 | NO | bb |
| $4$ | 4 170710M3_5 | Standard | 2.000 | 3.88 | 1168.767 | 5508.184 | 2.652 | 2.4 | 18.3 | NO | 0.999 | NO | bb |
| $5$ | 5 170710M3_6 | Standard | 5.000 | 3.87 | 2478.524 | 5282.377 | 5.865 | 5.2 | 4.7 | NO | 0.999 | NO | bb |
| $6$ | 6 170710M3_7 | Standard | 10.000 | 3.88 | 5348.684 | 5677.549 | 11.776 | 10.4 | 4.5 | NO | 0.999 | NO | bb |
| $7$ | 7 170710M3_8 | Standard | 50.000 | 3.88 | 26226.332 | 5678.869 | 57.728 | 48.3 | -3.4 | NO | 0.999 | NO | bb |
| 8.2wturty | 8 170710M3_9 | Standard | 100.000 | 3.88 | 56412.301 | 5421.565 | 130.065 | 100.7 | 0.7 | NO | 0.999 | NO | bb |

## Compound name: PFDA

Coefficient of Determination: $\mathrm{R}^{\wedge} 2=0.998836$
Calibration curve: $0.000679513^{*} x^{\wedge} 2+1.50572$ * $x+-0.0681733$
Response type: Internal Std (Ref 24 ), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None

|  | \# Name | Type | Std. Conc | RT | Area | IS Area | Respanse | Cone. | \%Dev | Conc. Flag | CoD | CoD Flag | $x=e x c l u d e d$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 142\% | 1 170710M3_2 | Standard | 0.250 | 3.99 | 972.213 | 28930.936 | 0.420 | 0.3 | 29.7 | NO | 0.999 | NO | db |
| 2 2\% ${ }^{2}$ | 2 170710M3_3 | Standard | 0.500 | 4.00 | 1382.475 | 29747.686 | 0.581 | 0.4 | -13.8 | NO | 0.999 | NO | bb |
| $3$ | 3 170710M3_4 | Standard | 1.000 | 3.99 | 3557.009 | 31897.771 | 1.394 | 1.0 | -2.9 | NO | 0.999 | NO | bb |
| $4$ | 4 170710M3_5 | Standard | 2.000 | 3.99 | 7354.864 | 31493.791 | 2.919 | 2.0 | -0.9 | NO | 0.999 | NO | bb |
| 5. | 5 170710M3_6 | Standard | 5.000 | 4.00 | 16044.657 | 29596.766 | 6.776 | 4.5 | -9.3 | NO | 0.999 | NO | bb |
| 6 | 6 170710M3_7 | Standard | 10.000 | 3.99 | 37473.484 | 33043.109 | 14.176 | 9.4 | -5.8 | NO | 0.999 | NO | bb |
| $7$ | 7 170710M3_8 | Standard | 50.000 | 3.99 | 195941.813 | 30631.795 | 79.959 | 51.9 | 3.9 | NO | 0.999 | NO | bb |
| 82niut metm | 8 170710M3_9 | Standard | 100.000 | 3.99 | 392413.031 | 31463.066 | 155.902 | 99.1 | -0.9 | NO | 0.999 | NO | bb |

Dataset: U:IQ4.PROIresults1170710M31170710M3-CRV-L14A.qid
Last Altered: Friday, July 14, 2017 08:57:46 Pacific Daylight Time
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## Compound name: PFUnA

Correlation coefficient: $r=0.998876, r^{\wedge} 2=0.997753$
Calibration curve: $1.03711^{*} \times+0.141151$
Response type: Internal Std (Ref 25), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Exclude, Weighting: 1/x, Axis trans: None

|  | \# Name | Type | Std. Conc | RT | Area | IS Area | Response | Cone. | \%Dev | Conc. Flag | COD | CoDFlag | x=excluded |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | 1 170710M3_2 | Standard | 0.250 | 4.15 | 1000.258 | 28511.633 | 0.439 | 0.3 | 14.7 | NO | 0.998 | NO | bb |
| 2 | 2 170710M3_3 | Standard | 0.500 | 4.15 | 1613.189 | 35214.363 | 0.573 | 0.4 | -16.8 | NO | 0.998 | NO | bb |
| 3. | 3 170710M3_4 | Standard | 1.000 | 4.15 | 3030.180 | 29618.668 | 1.279 | 1.1 | 9.7 | NO | 0.998 | NO | bb |
| $14$ | 4 170710M3_5 | Standard | 2.000 | 4.15 | 5814.139 | 32452.291 | 2.239 | 2.0 | 1.2 | NO | 0.998 | NO | bb |
| $5$ | 5 170710M3_6 | Standard | 5.000 | 4.15 | 14655.979 | 32879.375 | 5.572 | 5.2 | 4.7 | NO | 0.998 | NO | bb |
| $6$ | 6 170710M3_7 | Standard | 10.000 | 4.15 | 29217.963 | 39593.965 | 9.224 | 8.8 | -12.4 | NO | 0.998 | NO | bb |
| 7 7\% | 7 170710M3_8 | Standard | 50.000 | 4.15 | 137931.563 | 34542.293 | 49.914 | 48.0 | -4.0 | NO | 0.998 | NO | bb |
| 8. ${ }^{\text {Whem}}$ | $8170710 \mathrm{M3}$ _9 | Standard | 100.000 | 4.15 | 285394.844 | 33371.344 | 106.901 | 102.9 | 2.9 | NO | 0.998 | NO | bb |

## Compound name: N-MeFOSAA

Coefficient of Determination: $\mathrm{R}^{\wedge} 2=0.999758$
Calibration curve: -0.000725393 * $x^{\wedge} 2+1.88459$ * $x+-0.112345$
Response type: Internal Std (Ref 26 ), Area * (IS Conc. / IS Area )
Curve type: 2nd Order, Origin: Include, Weighting: $1 / x$, Axis trans: None


| Dataset: | U:IQ4.PRO\results\170710M31170710M3-CRV-L14A.qld |
| :--- | :--- |
| Last Altered: | Friday, July 14, 2017 08:57:46 Pacific Daylight Time |
| Printed: | Friday, July 14, 2017 08:58:48 Pacific Daylight Time |

## Compound name: N-EtFOSAA

Coefficient of Determination: $\mathrm{R}^{\wedge} 2=0.998485$
Calibration curve: $0.00300948^{*} x^{\wedge} 2+1.32985^{*} x+0.0134202$
Response type: Internal Std (Ref 27), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Include, Weighting: 1/x, Axis trans: None

|  | \# Name | Type | Sta. Conc | RT. | Area | IS Area | Response | Conc. | \%Dev | Conc. Flag | CoD | Cobrlag | x=excluded |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 1 170710M3_2 | Standard | 0.250 | 4.09 | 234.930 | 7680.203 | 0.382 | 0.3 | 10.9 | NO | 0.998 | NO | bb |
| $2$ | 2 170710M3_3 | Standard | 0.500 | 4.09 | 302.139 | 7756.188 | 0.487 | 0.4 | -28.8 | NO | 0.998 | NO | bb |
| 3 | 3 170710M3_4 | Standard | 1.000 | 4.09 | 661.819 | 6483.096 | 1.276 | 0.9 | -5.3 | NO | 0.998 | NO | bb |
| $4$ | 4 170710M3_5 | Standard | 2.000 | 4.09 | 1767.924 | 6911.000 | 3.198 | 2.4 | 19.1 | NO | 0.998 | NO | bb |
| $5: 3 \%$ | 5 170710M3_6 | Standard | 5.000 | 4.09 | 4013.729 | 7309.417 | 6.864 | 5.1 | 1.9 | NO | 0.998 | NO | bb |
| $6$ | 6 170710M3_7 | Standard | 10.000 | 4.09 | 8229.293 | 6897.159 | 14.914 | 10.9 | 9.3 | NO | 0.998 | NO | bb |
| 7 | 7 170710M3_8 | Standard | 50.000 | 4.09 | 40260.930 | 7098.953 | 70.892 | 48.1 | -3.9 | NO | 0.998 | NO | bb |
| 8 \% | 8 170710M3_9 | Standard | 100.000 | 4.09 | 81647.523 | 6203.575 | 164.517 | 100.7 | 0.7 | NO | 0.998 | NO | bb |

## Compound name: PFDoA

Coefficient of Determination: $\mathrm{R}^{\wedge} 2=0.996663$
Calibration curve: $0.00839285^{*} x^{\wedge} 2+0.722755^{*} x+0.0737712$
Response type: Internal Std (Ref 28), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Include, Weighting: 1/x, Axis trans: None

|  | \# Name | Type | Std. Conc | RT | Area | IS Area | Response | Conc. | \%Dev | Conc Flag | CoD | CoDFlag | $x=$ excluded |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | 1 170710M3_2 | Standard | 0.250 | 4.31 | 48.922 | 4029.594 | 0.152 | 0.1 | -56.9 | YES | 0.997 | NO | MMX |
| 2 | 2 170710M3_3 | Standard | 0.500 | 4.30 | 130.253 | 4364.951 | 0.373 | 0.4 | -17.6 | NO | 0.997 | NO | MM |
| 3 | $3170710 \mathrm{M3} 4$ | Standard | 1.000 | 4.31 | 250.646 | 3671.525 | 0.853 | 1.1 | 6.5 | NO | 0.997 | NO | MM |
| $4{ }^{\text {\% }}$ ! | 4 170710M3_5 | Standard | 2.000 | 4.31 | 576.522 | 3407.532 | 2.115 | 2.7 | 36.9 | YES | 0.997 | NO | MM |
| 5 | 5 170710M3_6 | Standard | 5.000 | 4.31 | 1409.589 | 4397.531 | 4.007 | 5.1 | 2.7 | NO | 0.997 | NO | bb |
| $6$ | $6170710 \mathrm{M3}$ _7 | Standard | 10.000 | 4.31 | 2715.122 | 4609.228 | 7.363 | 9.1 | -8.8 | NO | 0.997 | NO | bb |
| $7$ | $7170710 \mathrm{M3} 8$ | Standard | 50.000 | 4.31 | 16155.003 | 3523.270 | 57.315 | 50.1 | 0.2 | NO | 0.997 | NO | bb |
| 8\%tutu | 8 170710M3_9 | Standard | 100.000 | 4.31 | 30002.807 | 3866.813 | 96.988 | 72.7 | -27.3 | NO | 0.997 | NO | bbX |

Quantify Compound Summary Report
Vista Analytical Laboratory

| Dataset: | U:\Q4.PRO\results\170710M31170710M3-CRV-L14A.qld |
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## Compound name: PFTrDA

Coefficient of Determination: $\mathrm{R}^{\wedge} 2=0.998284$
Calibration curve: -0.0031383 * $x^{\wedge} 2+13.4645$ * x + 0.137265
Response type: Internal Std (Ref 28 ), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None


## Compound name: PFTeDA

Coefficient of Determination: $\mathrm{R}^{\wedge} 2=0.999913$
Calibration curve: -0.000928994 * $x^{\wedge} 2+1.26436$ * $x+0.081381$
Response type: Internal Std (Ref 29 ), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None


| Dataset: | U:\Q4.PRO\results\170710M3\170710M3-CRV-L14A.qld |
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## Compound name: 13C3-PFBA

Response Factor: 0.917788
RRF SD: 0.0220833, Relative SD: 2.40614
Response type: Internal Std (Ref 30), Area * (IS Conc. / IS Area)
Curve type: RF

|  | \# Name | Type | Std. Conc | RT | Area | IS Area | Response | Conc. | \%Dev | Conc. Flag | CoD | CoD Flag | $x=$ excluded |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 12 | 1 170710M3_2 | Standard | 12.500 | 1.53 | 7397.170 | 8045.280 | 11.493 | 12.5 | 0.2 | NO |  | NO | bb |
| 2- | 2 170710M3_3 | Standard | 12.500 | 1.53 | 7319.772 | 8103.498 | 11.291 | 12.3 | -1.6 | NO |  | NO | bb |
| 3 | 3 170710M3_4 | Standard | 12.500 | 1.52 | 6882.142 | 7483.426 | 11.496 | 12.5 | 0.2 | NO |  | NO | bb |
| 4. | 4 170710M3_5 | Standard | 12.500 | 1.53 | 7838.344 | 8401.936 | 11.662 | 12.7 | 1.6 | NO |  | NO | bb |
| $5$ | 5 170710M3_6 | Standard | 12.500 | 1.53 | 7407.220 | 8412.924 | 11.006 | 12.0 | -4.1 | NO |  | NO | bb |
| 6 6: | 6 170710M3_7 | Standard | 12.500 | 1.52 | 7861.154 | 8228.657 | 11.942 | 13.0 | 4.1 | NO |  | NO | bb |
| $17$ | 7 170710M3_8 | Standard | 12.500 | 1.53 | 7586.854 | 8207.246 | 11.555 | 12.6 | 0.7 | NO |  | NO | bb |
| 8\% | 8 170710M3_9 | Standard | 12.500 | 1.53 | 7829.357 | 8634.025 | 11.335 | 12.4 | -1.2 | NO |  | NO | bb |

## Compound name: 13C3-PFPeA

Response Factor: 0.274834
RRF SD: 0.00525449, Relative SD: 1.91188
Response type: Internal Std (Ref 31 ), Area * (IS Conc. / IS Area)
Curve type: RF


Quantify Compound Summary Report

## Vista Analytical Laboratory

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Compound name: 13C3-PFBS
Response Factor: 0.0331429
RRF SD: 0.00163339 , Relative SD: 4.92831
Response type: Internal Std (Ref 31 ), Area * (IS Conc. / IS Area)
Curve type: RF

|  | \# Name | Type | Std. Conc | RT | Area | IS Area | Response | Conc. | \%Der | Conc. Flag | CoD | CoD Flag | $x=$ excluded |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $12+5$ | 1 170710M3_2 | Standard | 12.500 | 2.97 | 1829.255 | 21818.400 | 0.419 | 12.6 | 1.2 | NO |  | NO | bb |
| 2 | 2 170710M3_3 | Standard | 12.500 | 2.96 | 1889.439 | 21557.213 | 0.438 | 13.2 | 5.8 | NO |  | NO | bb |
| $3 \quad=$ | 3 170710M3_4 | Standard | 12.500 | 2.96 | 1680.475 | 19500.141 | 0.431 | 13.0 | 4.0 | NO |  | NO | bb |
| - | 4 170710M3_5 | Standard | 12.500 | 2.95 | 1675.008 | 20840.465 | 0.402 | 12.1 | -3.0 | NO |  | NO | bb |
| 5 | 5 170710M3_6 | Standard | 12.500 | 2.95 | 1827.422 | 22435.646 | 0.407 | 12.3 | -1.7 | NO |  | NO | bb |
| 6 | 6 170710M3_7 | Standard | 12.500 | 2.95 | 1863.759 | 21282.260 | 0.438 | 13.2 | 5.7 | NO |  | NO | bb |
| $\pm$ | 7 170710M3_8 | Standard | 12.500 | 2.95 | 1600.534 | 20826.820 | 0.384 | 11.6 | -7.3 | NO |  | NO | bb |
| 8 - | $8170710 \mathrm{M3}$ _9 | Standard | 12.500 | 2.95 | 1723.074 | 21826.197 | 0.395 | 11.9 | -4.7 | NO |  | NO | bb |

## Compound name: 13C2-PFHxA

Response Factor: 0.303795
RRF SD: 0.0121481, Relative SD: 3.99878
Response type: Internal Std (Ref 31 ), Area * ( IS Conc. / IS Area)
Curve type: RF


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## Compound name: 13C4-PFHpA

Response Factor: 0.305965
RRF SD: 0.00856155, Relative SD: 2.79821
Response type: Internal Std (Ref 31), Area * (IS Conc. / IS Area)
Curve type: RF

|  | \# Name | Type | Std. Cone | RT | Area | IS Area | ponse | Conc. | \%Dev | Conc. Flag | CoD | CoDFlag | $x=$ excluded |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | 1 170710M3_2 | Standard | 12.500 | 3.45 | 16912.918 | 21818.400 | 3.876 | 12.7 | 1.3 | NO |  | NO | bb |
| 2 | 2 170710M3_3 | Standard | 12.500 | 3.45 | 15983.809 | 21557.213 | 3.707 | 12.1 | -3.1 | NO |  | NO | bb |
| 3 \% | 3 170710M3_4 | Standard | 12.500 | 3.45 | 14729.492 | 19500.141 | 3.777 | 12.3 | -1.2 | NO |  | NO | bb |
| $4$ | 4 170710M3_5 | Standard | 12.500 | 3.45 | 16736.117 | 20840.465 | 4.015 | 13.1 | 5.0 | NO |  | NO | bb |
| $5$ | 5 170710M3_6 | Standard | 12.500 | 3.44 | 16831.109 | 22435.646 | 3.751 | 12.3 | -1.9 | NO |  | NO | bb |
| $6$ | 6 170710M3_7 | Standard | 12.500 | 3.45 | 16406.695 | 21282.260 | 3.855 | 12.6 | 0.8 | NO |  | NO | bb |
| $7$ | 7 170710M3_8 | Standard | 12.500 | 3.44 | 15463.272 | 20826.820 | 3.712 | 12.1 | -2.9 | NO |  | NO | bb |
|  | 8170710 M 3 _9 | Standard | 12.500 | 3.45 | 17039.475 | 21826.197 | 3.903 | 12.8 | 2.1 | NO |  | NO | bb |

## Compound name: 1802-PFHxS

Response Factor: 0.437301
RRF SD: 0.0226112, Relative SD: 5.17063
Response type: Internal Std (Ref 32 ), Area * (IS Conc. / IS Area)
Curve type: RF

|  | \# Name | Type | Std. Conc | RT | Area | IS Area | Response | Conc. | \%Dev | Conc. Flag | COD | CoD Flag | $x=$ excluded |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1treme | 1 170710M3_2 | Standard | 12.500 | 3.52 | 1651.524 | 3795.795 | 5.439 | 12.4 | -0.5 | NO |  | NO | bb |
|  | 2 170710M3_3 | Standard | 12.500 | 3.52 | 1720.000 | 3856.194 | 5.575 | 12.7 | 2.0 | NO |  | NO | bb |
| 3. | 3 170710M3_4 | Standard | 12.500 | 3.52 | 1350.057 | 3265.055 | 5.169 | 11.8 | -5.4 | NO |  | NO | bb |
| $4$ | 4 170710M3_5 | Standard | 12.500 | 3.52 | 1600.253 | 3796.757 | 5.268 | 12.0 | -3.6 | NO |  | NO | bb |
| $5$ | 5 170710M3_6 | Standard | 12.500 | 3.52 | 1665.698 | 3472.170 | 5.997 | 13.7 | 9.7 | NO |  | NO | bb |
| 6. | $6170710 \mathrm{M3}$ _7 | Standard | 12.500 | 3.51 | 1486.850 | 3371.803 | 5.512 | 12.6 | 0.8 | NO |  | NO | bb |
| $7$ | 7 170710M3_8 | Standard | 12.500 | 3.51 | 1511.473 | 3354.416 | 5.632 | 12.9 | 3.0 | NO |  | NO | bb |
| 8\% | 8 170710M3_9 | Standard | 12.500 | 3.52 | 1590.326 | 3869.111 | 5.138 | 11.7 | -6.0 | NO |  | NO | bb |

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Compound name: 13C2-PFOA
Response Factor: 1.29206
RRF SD: 0.0648147, Relative SD: 5.01639
Response type: Internal Std (Ref 33 ), Area * (IS Conc. / IS Area )
Curve type: RF

|  | \# Name | Type | Std. Conc | RT | Area | IS Area | Response | Conc. | $\%$ Dev | Conc. Flag | CoD | CoD Flag | $x=e x$ cluded |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1.itam | 1 170710M3_2 | Standard | 12.500 | 3.65 | 24338.092 | 17959.266 | 16.940 | 13.1 | 4.9 | NO |  | NO | bb |
| 2 2\% | 2 170710M3_3 | Standard | 12.500 | 3.65 | 25154.738 | 19184.902 | 16.390 | 12.7 | 1.5 | NO |  | NO | bb |
| 3. | 3 170710M3_4 | Standard | 12.500 | 3.65 | 22319.385 | 18247.898 | 15.289 | 11.8 | -5.3 | NO |  | NO | bb |
| 4 4t+ | 4 170710M3_5 | Standard | 12.500 | 3.65 | 25531.586 | 20935.916 | 15.244 | 11.8 | -5.6 | NO |  | NO | bb |
| 5\%\%\%H\% | 5 170710M3_6 | Standard | 12.500 | 3.64 | 27012.830 | 21746.758 | 15.527 | 12.0 | -3.9 | NO |  | NO | bb |
| 6 \% | 6 170710M3_7 | Standard | 12.500 | 3.65 | 27058.725 | 19624.896 | 17.235 | 13.3 | 6.7 | NO |  | NO | bb |
| $7$ | $7170710 \mathrm{M3} 8$ | Standard | 12.500 | 3.65 | 26424.334 | 21065.352 | 15.680 | 12.1 | -2.9 | NO |  | NO | bb |
| 8. | 8 170710M3_9 | Standard | 12.500 | 3.65 | 27780.598 | 20545.762 | 16.902 | 13.1 | 4.6 | NO |  | NO | bb |

## Compound name: 13C5-PFNA

Response Factor: 0.980095
RRF SD: 0.0617584, Relative SD: 6.30126
Response type: Internal Std ( Ref 34 ), Area * (IS Conc. / IS Area)
Curve type: RF

|  | \# Name | Type | Std. Conc | RT | Area | IS Area | Response | Cone. | \%Dev | Conc. Flag | CoD | CoD Flag | $x=e x c l u d e d$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1. | 1 170710M3_2 | Standard | 12.500 | 3.83 | 23133.879 | 24826.572 | 11.648 | 11.9 | -4.9 | NO |  | NO | bb |
| 2 | 2 170710M3_3 | Standard | 12.500 | 3.82 | 25510.555 | 25407.900 | 12.551 | 12.8 | 2.4 | NO |  | NO | bb |
| 3. | 3 170710M3_4 | Standard | 12.500 | 3.82 | 25152.525 | 26987.840 | 11.650 | 11.9 | -4.9 | NO |  | NO | bb |
|  | 4 170710M3_5 | Standard | 12.500 | 3.82 | 27896.482 | 30615.023 | 11.390 | 11.6 | -7.0 | NO |  | NO | bb |
| 5. | 5 170710M3_6 | Standard | 12.500 | 3.82 | 27575.711 | 27704.439 | 12.442 | 12.7 | 1.6 | NO |  | NO | bb |
| $6$ | 6 170710M3_7 | Standard | 12.500 | 3.82 | 30707.572 | 28246.664 | 13.589 | 13.9 | 10.9 | NO |  | NO | bb |
| $7$ | 7 170710M3_8 | Standard | 12.500 | 3.82 | 26401.301 | 25411.732 | 12.987 | 13.3 | 6.0 | NO |  | NO | bb |
| 8.WWUSEM | 8 170710M3_9 | Standard | 12.500 | 3.82 | 28967.555 | 30807.039 | 11.754 | 12.0 | -4.1 | NO |  | NO | bb |


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## Compound name: 13C8-PFOS

Response Factor: 1.09812
RRF SD: 0.106578, Relative SD: 9.7055
Response type: Internal Std (Ref 35 ), Area * (IS Conc. / IS Area )
Curve type: RF

|  | \# Name | Type | Std. Conc | RT | Area | IS Area | Response | Conc: | \%Dev | Conc. Flag | CoD | CoD Flag | $x=e x c l u d e d$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1 \% | 1 170710M3_2 | Standard | 12.500 | 3.88 | 5370.698 | 4072.196 | 16.486 | 15.0 | 20.1 | NO |  | NO | bb |
| 2 | 2 170710M3_3 | Standard | 12.500 | 3.88 | 5419.104 | 5130.696 | 13.203 | 12.0 | -3.8 | NO |  | NO | bb |
| 3 3 | 3 170710M3_4 | Standard | 12.500 | 3.87 | 5346.955 | 4837.479 | 13.816 | 12.6 | 0.7 | NO |  | NO | bb |
| 4 | 4 170710M3_5 | Standard | 12.500 | 3.88 | 5508.184 | 5669.458 | 12.144 | 11.1 | -11.5 | NO |  | NO | bb |
| TII | 5 170710M3_6 | Standard | 12.500 | 3.87 | 5282.377 | 5068.695 | 13.027 | 11.9 | -5.1 | NO |  | NO | bb |
| 6 | 6 170710M3_7 | Standard | 12.500 | 3.88 | 5677.549 | 5023.010 | 14.129 | 12.9 | 2.9 | NO |  | NO | bb |
| $7{ }^{7}$ | 7 170710M3_8 | Standard | 12.500 | 3.87 | 5678.869 | 4963.667 | 14.301 | 13.0 | 4.2 | NO |  | NO | bb |
| 8 8- | 8 170710M3_9 | Standard | 12.500 | 3.88 | 5421.565 | 5333.926 | 12.705 | 11.6 | -7.4 | NO |  | NO | bd |

## Compound name: 13C2-PFDA

Response Factor: 0.927939
RRF SD: 0.0650889, Relative SD: 7.01435
Response type: Internal Std (Ref 36 ), Area * (IS Conc. / IS Area)
Curve type: RF


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## Compound name: 13C2-PFUnA

Response Factor: 1.08252
RRF SD: 0.0785153, Relative SD: 7.25299
Response type: Internal Std (Ref 37 ), Area * (IS Conc. / IS Area)
Curve type: RF

|  | \# Name | Type | Std. Conc | RT | Area | Is Area | Response | Conc. | \%Dev | Conc. Flag | COD | CoD Flag | $x$-excluded |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | 1 170710M3_2 | Standard | 12.500 | 4.15 | 28511.633 | 29392.709 | 12.125 | 11.2 | -10.4 | NO |  | NO | bb |
| 2 | 2 170710M3_3 | Standard | 12.500 | 4.15 | 35214.363 | 33292.914 | 13.221 | 12.2 | -2.3 | NO |  | NO | db |
| $3{ }^{3}$ | 3 170710M3_4 | Standard | 12.500 | 4.15 | 29618.668 | 25046.889 | 14.782 | 13.7 | 9.2 | NO |  | NO | bb |
| 4 | 4 170710M3_5 | Standard | 12.500 | 4.15 | 32452.291 | 31311.639 | 12.955 | 12.0 | -4.3 | NO |  | NO | bb |
| 5 5-7\% | 5 170710M3_6 | Standard | 12.500 | 4.15 | 32879.375 | 32131.605 | 12.791 | 11.8 | -5.5 | NO |  | NO | bb |
| 6 | 6 170710M3_7 | Standard | 12.500 | 4.15 | 39593.965 | 33095.688 | 14.954 | 13.8 | 10.5 | NO |  | NO | bb |
| 7 | 7 170710M3_8 | Standard | 12.500 | 4.15 | 34542.293 | 32101.432 | 13.450 | 12.4 | -0.6 | NO |  | NO | bb |
| 8 8- | 8 170710M3_9 | Standard | 12.500 | 4.15 | 33371.344 | 29853.807 | 13.973 | 12.9 | 3.3 | NO |  | NO | bb |

## Compound name: d3-N-MeFOSAA

Response Factor: 0.224351
RRF SD: 0.0203519, Relative SD: 9.07147
Response type: Internal Std (Ref 37 ), Area * (IS Conc. / IS Area)
Curve type: RF

|  | \# Name | Type | Std. Conc | RT | Area | IS Area | Response | Conc. | \%Dev | Conc. Flag | CoD | CoDFlag |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1\%H! | 1 170710M3_2 | Standard | 12.500 | 4.02 | 7235.550 | 29392.709 | 3.077 | 13.7 | 9.7 | NO |  | NO | bb |
| 2 | 2 170710M3_3 | Standard | 12.500 | 4.02 | 7333.048 | 33292.914 | 2.753 | 12.3 | -1.8 | NO |  | NO | bb |
| $3$ | 3 170710M3_4 | Standard | 12.500 | 4.02 | 6481.465 | 25046.889 | 3.235 | 14.4 | 15.3 | NO |  | NO | bb |
| $4{ }^{\text {4, }}$ | 4 170710M3_5 | Standard | 12.500 | 4.02 | 6639.098 | 31311.639 | 2.650 | 11.8 | -5.5 | NO |  | NO | bb |
| 5 | 5 170710M3_6 | Standard | 12.500 | 4.02 | 6875.079 | 32131.605 | 2.675 | 11.9 | -4.6 | NO |  | NO | bb |
| 6 | $6170710 \mathrm{M3}$ _7 | Standard | 12.500 | 4.02 | 7052.758 | 33095.688 | 2.664 | 11.9 | -5.0 | NO |  | NO | bb |
| 7 | 7 170710M3_8 | Standard | 12.500 | 4.02 | 6322.343 | 32101.432 | 2.462 | 11.0 | -12.2 | NO |  | NO | bb |
|  | 8 170710M3_9 | Standard | 12.500 | 4.02 | 6972.632 | 29853.807 | 2.919 | 13.0 | 4.1 | NO |  | NO | bb |


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## Compound name: d5-N-EtFOSAA

Response Factor: 0.22983
RRF SD: 0.0205291, Relative SD: 8.9323
Response type: Internal Std ( Ref 37 ), Area * (IS Conc. / IS Area)
Curve type: RF

|  | \# Name | Type | Std. Conc | RT | Area | IS Area | Response | Conc. | \%Dev | Conc. Fiag | CoD | CoD Flag | $x=$ excluded |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | 1 170710M3_2 | Standard | 12.500 | 4.09 | 7680.203 | 29392.709 | 3.266 | 14.2 | 13.7 | NO |  | NO | bb |
| 2 - | 2 170710M3_3 | Standard | 12.500 | 4.09 | 7756.188 | 33292.914 | 2.912 | 12.7 | 1.4 | NO |  | NO | bb |
| 3 | 3 170710M3_4 | Standard | 12.500 | 4.09 | 6483.096 | 25046.889 | 3.235 | 14.1 | 12.6 | No |  | No | bb |
| 4 | 4 170710M3_5 | Standard | 12.500 | 4.09 | 6911.000 | 31311.639 | 2.759 | 12.0 | -4.0 | NO |  | NO | bb |
| 5 | 5 170710M3_6 | Standard | 12.500 | 4.09 | 7309.417 | 32131.605 | 2.844 | 12.4 | -1.0 | No |  | NO | bb |
| 6 \% | 6 170710M3_7 | Standard | 12.500 | 4.09 | 6897.159 | 33095.688 | 2.605 | 11.3 | -9.3 | NO |  | NO | bb |
| 7 | 7 170710M3_8 | Standard | 12.500 | 4.09 | 7098.953 | 32101.432 | 2.764 | 12.0 | -3.8 | NO |  | NO | bb |
| 8 - | 8 170710M3_9 | Standard | 12.500 | 4.09 | 6203.575 | 29853.807 | 2.597 | 11.3 | -9.6 | NO |  | NO | bb |

## Compound name: 13C2-PFDoA

Response Factor: 0.129878
RRF SD: 0.0137216, Relative SD: 10.565
Response type: Internal Std (Ref 37 ), Area * (IS Conc. / IS Area)
Curve type: RF

|  | \# Name | Type | Std. Cone | RT | Area | IS Area | Response | Conc. | \%Dev | Conc. Flag | CoD | CoD Flag | $\mathrm{x}=$ excluded |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | 1 170710M3_2 | Standard | 12.500 | 4.31 | 4029.594 | 29392.709 | 1.714 | 13.2 | 5.6 | NO |  | NO | bb |
| 2 | 2 170710M3_3 | Standard | 12.500 | 4.31 | 4364.951 | 33292.914 | 1.639 | 12.6 | 0.9 | NO |  | NO | bb |
| 3 | $3170710 \mathrm{M3} 4$ | Standard | 12.500 | 4.30 | 3671.525 | 25046.889 | 1.832 | 14.1 | 12.9 | NO |  | NO | bb |
| 4 | 4 170710M3_5 | Standard | 12.500 | 4.31 | 3407.532 | 31311.639 | 1.360 | 10.5 | -16.2 | NO |  | NO | bb |
| 5 | 5 170710M3_6 | Standard | 12.500 | 4.30 | 4397.531 | 32131.605 | 1.711 | 13.2 | 5.4 | NO |  | NO | bb |
| 6 | 6 170710M3_7 | Standard | 12.500 | 4.31 | 4609.228 | 33095.688 | 1.741 | 13.4 | 7.2 | NO |  | NO | bb |
| \% | 7 170710M3_8 | Standard | 12.500 | 4.30 | 3523.270 | 32101.432 | 1.372 | 10.6 | -15.5 | NO |  | NO | bb |
| + | 8 170710M3_9 | Standard | 12.500 | 4.31 | 3866.813 | 29853.807 | 1.619 | 12.5 | -0.3 | NO |  | NO | bb |

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## Compound name: 13C2-PFTeDA

Response Factor: 1.01816
RRF SD: 0.0659527, Relative SD: 6.47762
Response type: Internal Std (Ref 37 ), Area * (IS Conc. / IS Area)
Curve type: RF


## Compound name: 13C4-PFBA

Response Factor: 1
RRF SD: 0, Relative SD: 0
Response type: Internal Std (Ref 30 ), Area * (IS Conc. / IS Area)
Curve type: RF


Dataset: U:\Q4.PRO\results1170710M31170710M3-CRV-L14A.qld
Last Altered: Friday, July 14, 2017 08:57:46 Pacific Daylight Time
Printed:
Friday, July 14, 2017 08:58:48 Pacific Daylight Time

## Compound name: 13C5-PFHxA

Response Factor: 1
RRF SD: 0, Relative SD: 0
Response type: Internal Std (Ref 31), Area * (IS Conc. / IS Area)
Curve type: RF


## Compound name: 13C3-PFHxS

Response Factor: 1
RRF SD: 1.11022e-016, Relative SD: 1.11022e-014
Response type: Internal Std (Ref 32 ), Area * (IS Conc. / IS Area)
Curve type: RF

|  | \# Name | Type | 3 | RT | Area | IS Area | Response | Conc. | \%Dev | Conc. Flag | CoD | CoDFlag | $x=e x$ cluded |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 1 170710M3_2 | Standard | 12.500 | 3.52 | 3795.795 | 3795.795 | 12.500 | 12.5 | 0.0 | NO |  | NO | bb |
| 2 | 2 170710M3_3 | Standard | 12.500 | 3.52 | 3856.194 | 3856.194 | 12.500 | 12.5 | 0.0 | NO |  | NO | bb |
| $3$ | 3 170710M3_4 | Standard | 12.500 | 3.51 | 3265.055 | 3265.055 | 12.500 | 12.5 | 0.0 | NO |  | NO | bb |
| $4$ | 4 170710M3_5 | Standard | 12.500 | 3.52 | 3796.757 | 3796.757 | 12.500 | 12.5 | 0.0 | NO |  | NO | bb |
| $5$ | 5 170710M3_6 | Standard | 12.500 | 3.51 | 3472.170 | 3472.170 | 12.500 | 12.5 | 0.0 | NO |  | NO | bb |
| $6$ | 6 170710M3_7 | Standard | 12.500 | 3.52 | 3371.803 | 3371.803 | 12.500 | 12.5 | 0.0 | NO |  | NO | bb |
| $7$ | 7 170710M3_8 | Standard | 12.500 | 3.52 | 3354.416 | 3354.416 | 12.500 | 12.5 | 0.0 | NO |  | NO | bb |
|  | 8 170710M3_9 | Standard | 12.500 | 3.52 | 3869.111 | 3869.111 | 12.500 | 12.5 | 0.0 | NO |  | NO | bb |

Last Altered: Friday, July 14, 2017 08:57:46 Pacific Daylight Time
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## Compound name: 13C8-PFOA

Response Factor: 1
RRF SD: $4.19625 \mathrm{e}-017$, Relative SD: $4.19625 \mathrm{e}-015$
Response type: Internal Std (Ref 33 ), Area * (IS Conc. / IS Area)
Curve type: RF

| - | \# Name | Type | Std. Conc | RT | Area | IS Area | Response | Conc. | \%Dev | Conc. Flag | COD | CoD Flag | $x=$ excluded |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | 1 170710M3_2 | Standard | 12.500 | 3.65 | 17959.266 | 17959.266 | 12.500 | 12.5 | 0.0 | NO |  | NO | bb |
| 2 | 2 170710M3_3 | Standard | 12.500 | 3.65 | 19184.902 | 19184.902 | 12.500 | 12.5 | 0.0 | NO |  | NO | bb |
| $3{ }^{32}$ | 3 170710M3_4 | Standard | 12.500 | 3.64 | 18247.898 | 18247.898 | 12.500 | 12.5 | 0.0 | NO |  | NO | bb |
| 4. | 4 170710M3_5 | Standard | 12.500 | 3.65 | 20935.916 | 20935.916 | 12.500 | 12.5 | 0.0 | NO |  | NO | bb |
| 5 | 5 170710M3_6 | Standard | 12.500 | 3.64 | 21746.758 | 21746.758 | 12.500 | 12.5 | 0.0 | NO |  | NO | bb |
| 6 | 6 170710M3_7 | Standard | 12.500 | 3.65 | 19624.896 | 19624.896 | 12.500 | 12.5 | 0.0 | NO |  | NO | bb |
| $7 \times$ | 7 170710M3_8 | Standard | 12.500 | 3.65 | 21065.352 | 21065.352 | 12.500 | 12.5 | 0.0 | NO |  | NO | bb |
| 8 8-5 | 8 170710M3_9 | Standard | 12.500 | 3.65 | 20545.762 | 20545.762 | 12.500 | 12.5 | 0.0 | NO |  | NO | bb |

## Compound name: 13C9-PFNA

Response Factor: 1
RRF SD: 1.25887e-016, Relative SD: 1.25887e-014
Response type: Internal Std (Ref 34 ), Area * (IS Conc. / IS Area )
Curve type: RF

|  | \# Name | Type | Std. Conc | RT | Area | IS Area | Response | Conc. | \%Dev | Conc. Flag | CoD | Cob Flag | $x=e x$ cluded |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 114.t. | 1 170710M3_2 | Standard | 12.500 | 3.82 | 24826.572 | 24826.572 | 12.500 | 12.5 | 0.0 | NO |  | NO | bb |
| 2: | 2 170710M3_3 | Standard | 12.500 | 3.82 | 25407.900 | 25407.900 | 12.500 | 12.5 | 0.0 | NO |  | NO | bb |
| 3 | 3 170710M3_4 | Standard | 12.500 | 3.82 | 26987.840 | 26987.840 | 12.500 | 12.5 | 0.0 | NO |  | NO | bb |
| 4. | 4 170710M3_5 | Standard | 12.500 | 3.82 | 30615.023 | 30615.023 | 12.500 | 12.5 | 0.0 | NO |  | NO | bb |
| $5$ | 5 170710M3_6 | Standard | 12.500 | 3.82 | 27704.439 | 27704.439 | 12.500 | 12.5 | 0.0 | NO |  | NO | bb |
| $6$ | 6 170710M3_7 | Standard | 12.500 | 3.82 | 28246.664 | 28246.664 | 12.500 | 12.5 | 0.0 | NO |  | NO | bb |
| $7$ | 7 170710M3_8 | Standard | 12.500 | 3.82 | 25411.732 | 25411.732 | 12.500 | 12.5 | 0.0 | NO |  | NO | bb |
| 8 | 8 170710M3_9 | Standard | 12.500 | 3.82 | 30807.039 | 30807.039 | 12.500 | 12.5 | 0.0 | NO |  | NO | bb |


| Quantify Compound Summary Report Vista Analytical Laboratory |  |  | MassLynx MassLynx V4.1 SCN945 SCN960 |  |  |  |  |  |  |  |  | Page 18 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Dataset: | U:IQ4.PRO\results\170710M3\170710M3-CRV-L14A.qld |  |  |  |  |  |  |  |  |  |  |  |  |
| Last Altered: Printed: | Friday, July 14, 2017 08:57:46 Pacific Daylight Time Friday, July 14, 2017 08:58:48 Pacific Daylight Time |  |  |  |  |  |  |  |  |  |  |  |  |
| ```Compound name: 13C4-PFOS Response Factor: } RRF SD: 8.3925e-017, Relative SD: 8.3925e-015 Response type: Internal Std (Ref 35 ), Area * (IS Conc. / IS Area) Curve type: RF``` |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | \# Name | Type | Std. Conc | RT | Area | IS Area | Response | Conc. | \%Dev | Conc. Flag | CoD | CoD Flag | x=excluded |
|  | 1 170710M3_2 | Standard | 12.500 | 3.88 | 4072.196 | 4072.196 | 12.500 | 12.5 | 0.0 | NO |  | NO | bb |
|  | 2 170710M3_3 | Standard | 12.500 | 3.88 | 5130.696 | 5130.696 | 12.500 | 12.5 | 0.0 | NO |  | NO | bb |
|  | 3 170710M3_4 | Standard | 12.500 | 3.87 | 4837.479 | 4837.479 | 12.500 | 12.5 | 0.0 | NO |  | NO | bb |
|  | 4 170710M3_5 | Standard | 12.500 | 3.87 | 5669.458 | 5669.458 | 12.500 | 12.5 | 0.0 | NO |  | NO | bb |
|  | 5 170710M3_6 | Standard | 12.500 | 3.88 | 5068.695 | 5068.695 | 12.500 | 12.5 | 0.0 | NO |  | NO | bb |
|  | $6170710 \mathrm{M3}$-7 | Standard | 12.500 | 3.87 | 5023.010 | 5023.010 | 12.500 | 12.5 | 0.0 | NO |  | NO | bb |
|  | 7 170710M3_8 | Standard | 12.500 | 3.87 | 4963.667 | 4963.667 | 12.500 | 12.5 | 0.0 | NO |  | NO | bb |
|  | $8170710 \mathrm{M3}$ _9 | Standard | 12.500 | 3.88 | 5333.926 | 5333.926 | 12.500 | 12.5 | 0.0 | NO |  | NO | bb |

## Compound name: 13C6-PFDA

## Response Factor: 1

RRF SD: 5.93439e-017, Relative SD: 5.93439e-015
Response type: Internal Std (Ref 36 ), Area * (IS Conc. / IS Area)
Curve type: RF

|  | \# Name | Type | Std. Conc | RT | Area | IS Area | Response | Conc. | \%Dev | Conc Flag | CoD | Codrlag | $x=e x c l u d e d$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 1 170710M3_2 | Standard | 12.500 | 3.99 | 30066.424 | 30066.424 | 12.500 | 12.5 | 0.0 | NO |  | NO | bb |
| 2 2\% | 2 170710M3_3 | Standard | 12.500 | 3.99 | 34644.785 | 34644.785 | 12.500 | 12.5 | 0.0 | NO |  | NO | bb |
| 3. | $3170710 \mathrm{M} 3 \ldots 4$ | Standard | 12.500 | 3.99 | 35483.492 | 35483.492 | 12.500 | 12.5 | 0.0 | NO |  | NO | bb |
| $4$ | 4 170710M3_5 | Standard | 12.500 | 3.99 | 33241.297 | 33241.297 | 12.500 | 12.5 | 0.0 | NO |  | NO | bb |
| $5$ | 5 170710M3_6 | Standard | 12.500 | 3.99 | 34417.320 | 34417.320 | 12.500 | 12.5 | 0.0 | NO |  | NO | bb |
| $6$ | 6170710 M 3 _7 | Standard | 12.500 | 4.00 | 37874.355 | 37874.355 | 12.500 | 12.5 | 0.0 | NO |  | NO | bb |
| 7 7, | 7 170710M3_8 | Standard | 12.500 | 3.99 | 30816.412 | 30816.412 | 12.500 | 12.5 | 0.0 | NO |  | NO | bb |
| 8'tumektum | 8 170710M3_9 | Standard | 12.500 | 3.99 | 30550.707 | 30550.707 | 12.500 | 12.5 | 0.0 | NO |  | NO | bb |

Last Altered: Friday, July 14, 2017 08:57:46 Pacific Daylight Time
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## Compound name: 13C7-PFUnA

Response Factor: 1
RRF SD: 1.18688e-016, Relative SD: 1.18688e-014
Response type: Internal Std (Ref 37 ), Area * (IS Conc. / IS Area)
Curve type: RF

| 3 | \# Name | Type | Std. Conc | RT | Area | IS Area | Response | Conc. | \%Dev | Conc. Flag | CoD | CoD Flag | $\mathrm{x}=$ excluded |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1. | 1 170710M3_2 | Standard | 12.500 | 4.15 | 29392.709 | 29392.709 | 12.500 | 12.5 | 0.0 | NO |  | NO | bb |
| 2 2- | 2 170710M3_3 | Standard | 12.500 | 4.15 | 33292.914 | 33292.914 | 12.500 | 12.5 | 0.0 | NO |  | NO | bb |
| 3 | 3 170710M3_4 | Standard | 12.500 | 4.15 | 25046.889 | 25046.889 | 12.500 | 12.5 | 0.0 | NO |  | NO | bb |
| 4. ${ }^{3}+5$ | 4 170710M3_5 | Standard | 12.500 | 4.15 | 31311.639 | 31311.639 | 12.500 | 12.5 | 0.0 | NO |  | No | bb |
| 5 | 5 170710M3_6 | Standard | 12.500 | 4.15 | 32131.605 | 32131.605 | 12.500 | 12.5 | 0.0 | NO |  | NO | bb |
| 6 | 6 170710M3_7 | Standard | 12.500 | 4.15 | 33095.688 | 33095.688 | 12.500 | 12.5 | 0.0 | NO |  | NO | bb |
| 7 7-5 | 7 170710M3_8 | Standard | 12.500 | 4.15 | 32101.432 | 32101.432 | 12.500 | 12.5 | 0.0 | NO |  | NO | bb |
| $8{ }^{-3+4}$ | 8 170710M3_9 | Standard | 12.500 | 4.15 | 29853.807 | 29853.807 | 12.500 | 12.5 | 0.0 | NO |  | NO | bb |

Printed: Friday, July 14, 2017 09:03:26 Pacific Daylight Time

Method: U:IQ4.PROIMethDBIPFAS_L14-7-13-17.mdb 14 Jul 2017 08:41:09
Calibration: U:IQ4.PROICurveDBIC18_VAL-PFAS_Q4_7-10-17-L14A.cdb 14 Jul 2017 08:57:46

## Compound name: PFBS

|  |  | Name |  | Acq Date | Acq. Time |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 1 |  | 170710M3_1 | IPA | 10-Jul-17 | 16:24:39 |
| 2 |  | 170710M3_2 | ST170710M3-1 PFC CS-2 17G1003 | 10-Jul-17 | 16:35:25 |
| 3 |  | 170710M3_3 | ST170710M3-2 PFC CS-1 17G1004 | 10-Jul-17 | 16:46:13 |
| 4 |  | 170710M3_4 | ST170710M3-3 PFC CS0 17G1005 | 10-Jul-17 | 16:56:56 |
| 5 | (\#\#\#\#1) | 170710M3_5 | ST170710M3-4 PFC CS1 17G1006 | 10-Jul-17 | 17:07:35 |
| 6 | IItex | 170710M3_6 | ST170710M3-5 PFC CS2 17G1007 | 10-Jul-17 | 17:18:21 |
|  | 3\% | 170710M3_7 | ST170710M3-6 PFC CS3 17G1008 | 10-Jul-17 | 17:28:59 |
|  | \% | 170710M3_8 | ST170710M3-7 PFC CS4 17G1009 | 10-Jul-17 | 17:39:46 |
| 9 | \% | 170710M3_9 | ST170710M3-8 PFC CS5 17G1010 | 10-Jul-17 | 17:50:33 |
| 10 | 0. | 170710M3_10 | IPA | 10-Jul-17 | 18:01:19 |
| 11 |  | 170710M3_11 | SS170710M3-1 PFC SSS 17G1011 | 10-Jul-17 | 18:11:57 |
| 12 | 2 | 170710M3_12 | IPA | 10-Jul-17 | 18:22:44 |
| 13. |  | 170710M3_13 | B7G0013-BS1 OPR 0.125 | 10-Jul-17 | 18:33:22 |
| 14 |  | 170710M3_14 | B7G0020-BS1 OPR 0.25 | 10-Jul-17 | 18:44:08 |
| 15 | 5. | 170710M3_15 | B7G0024-BS1 OPR 0.25 | 10-Jul-17 | 18:54:55 |
| 16 | 6. | 170710M3_16 | B7G0024-BS2 OPR 0.25 | 10-Jul-17 | 19:06:07 |
| 17. | 7. | 170710M3_17 | IPA | 10-Jul-17 | 19:17:52 |
| 18 | 8 | 170710M3_18 | B7G0013-BLK1 Method Blank 0.125 | 10-Jul-17 | 19:29:17 |
| 19 | . | 170710M3_19 | B7G0020-BLK1 Method Blank 0.25 | 10-Jul-17 | 19:40:01 |
| 20 | 0. | 170710M3_20 | B7G0024-BLK1 Method Blank 0.25 | 10-Jul-17 | 19:50:39 |
| 21 | 1 | 170710M3_21 | 1700757-01RE1 DPH-MW6 0.11883 | 10-Jul-17 | 20:01:26 |
| 22 | 2 | 170710M3_22 | 1700757-02RE1 DPH-B5 0.12231 | 10-Jul-17 | 20:12:04 |
| 23 | 3 | 170710M3_23 | 1700757-03RE1 DPH-105 0.11689 | 10-Jul-17 | 20:22:43 |
| 24 | 4.4.? | 170710M3_24 | 1700767-01RE1 1 Main 0.24476 | 10-Jul-17 | 20:33:21 |
| 25 | 5 | 170710M3_25 | 1700767-02RE1 2 Keyser 0.2358 | 10-Jul-17 | 20:43:59 |
| 26 | 6. | 170710M3_26 | 1700767-03RE1 3 College 0.24414 | 10-Jul-17 | 20:54:46 |
| 27. | 7. | 170710M3_27 | 1700767-04RE1 4 College 0.24491 | 10-Jul-17 | 21:05:24 |
| 28 | 8. | 170710M3_28 | 1700767-05RE1 5 Sunrise 0.24353 | 10-Jul-17 | 21:16:02 |
| 29 | $9$ | 170710M3_29 | 1700803-02 EB01 0.11989 | 10-Jul-17 | 21:26:41 |
| 30 | 0 | 170710M3_30 | 1700804-01 IRPSite7-GW-07GW41-2017062... | 10-Jul-17 | 21:37:19 |
| 31 |  | 170710M3_31 | 1700804-02 IRPSite5-GW-05GW01-2017062... | 10-Jul-17 | 21:48:06 |


| Dataset: | Untitled |
| :--- | :--- |
|  |  |
| Last Altered: | Friday, July 14, 2017 09:02:22 Pacific Daylight Time |
| Printed: | Friday, July 14, 2017 09:03:26 Pacific Daylight Time |

Compound name: PFBS

|  | Name | ID | Acq. Date | Aca Time |
| :---: | :---: | :---: | :---: | :---: |
| 32 | 170710M3_32 | IPA | 10-Jul-17 | 21:58:44 |
| 33 | 170710M3_33 | ST170710M3-9 PFC CS3 17G1008 | 10-Jul-17 | 22:09:22 |
| 34 | 170710M3_34 | IPA | 10-Jul-17 | 22:20:01 |
| 35 | 170710M3_35 | 1700804-03 IRPSite5-GW-FD01-20170629 0... | 10-Jul-17 | 22:31:27 |
| 36 | 170710M3_36 | 1700804-04 IRPSite33-GW-FRB01-20170629... | 10-Jul-17 | 22:42:07 |
| 37 | 170710M3_37 | 1700804-05 IRPSite33-GW-11MW204D-2017... | 10-Jul-17 | 22:52:45 |
| 38 | 170710M3_38 | 1700804-06 IRPSite33-GW-11MW204S-2017... | 10-Jul-17 | 23:03:24 |
| 39 | 170710M3_39 | 1700804-07 Bldg 110-GW-11MW205D-20170... | 10-Jul-17 | 23:14:02 |
| 40 | 170710M3_40 | 1700804-08 Bldg 110-GW-FRB01-20170629 0... | 10-Jul-17 | 23:24:41 |
| 41 | 170710M3_41 | 1700804-09 Bldg 110-GW-11MW205S-20170... | 10-Jul-17 | 23:35:19 |
| 42 | 170710M3_42 | 1700804-10 IRPSite7-GW-07GW102-201706... | 10-Jul-17 | 23:45:57 |
| 43 | 170710M3_43 | 1700804-11 IRPSite5-GW-04GW82-2017062... | 10-Jul-17 | 23:56:36 |
| 44 | 170710M3_44 | 1700751-01RE1 NH0100960_10.23355 | 11-Jul-17 | 00:07:41 |
| 45 | 170710M3_45 | IPA | 11-Jul-17 | 00:18:50 |
| 46 | 170710M3_46 | ST170710M3-10 PFC CS3 17G1008 | 11-Jul-17 | 00:29:28 |
| 47 | 170710M3_47 | IPA | 11-Jul-17 | 00:40:16 |
| 48 | 170710M3_48 | 1700751-02RE1 NH0100960_E 0.24913 | 11-Jul-17 | 00:51:03 |
| 49 | 170710M3_49 | 1700751-03RE1 NH0100901_1 0.25207 | 11-Jul-17 | 01:01:51 |
| 50 | 170710M3_50 | 1700751-04RE1 NH0100901_E 0.24547 | 11-Jul-17 | 01:12:29 |
| 51 | 170710M3_51 | 1700751-05RE1 NH0100668_I 0.22393 | 11-Jul-17 | 01:23:08 |
| 52 | 170710M3_52 | 1700751-06RE1 NH0100668_E 0.24262 | 11-Jul-17 | 01:33:46 |
| 53 | 170710M3_53 | 1700751-07RE1 NH0101303_I 0.05246 | 11-Jul-17 | 01:44:33 |
| 54 | 170710M3_54 | 1700751-08RE1 NH0101303_E 0.24891 | 11-Jul-17 | 01:55:11 |
| 55 | 170710M3_55 | 1700751-09RE1 NH0101311_1 0.23975 | 11-Jul-17 | 02:06:00 |
| 56 | 170710M3_56 | 1700751-10RE1 NH0101311_E 0.25554 | 11-Jul-17 | 02:17:45 |
| 57. | 170710M3_57 | 1700752-01RE1 STP-MW-71-061917 0.11831 | 11-Jul-17 | 02:28:31 |
| 58 | 170710M3_58 | IPA | 11-Jul-17 | 02:39:10 |
| 59 | 170710M3_59 | ST170710M3-11 PFC CS3 17G1008 | 11-Jul-17 | 02:49:48 |
| 60 | 170710M3_60 | IPA | 11-Jul-17 | 03:00:35 |
| 61. | 170710M3_61 | 1700752-02RE1 STP-MW-72-061917 0.02754 | 11-Jul-17 | 03:11:21 |
| 62 | 170710M3_62 | 1700752-03RE1 STP-MW-73-061917 0.11524 | 11-Jul-17 | 03:21:59 |
| 63 | 170710M3_63 | 1700752-04RE1 STP-MW-70-062017 0.11762 | 11-Jul-17 | 03:32:38 |
| 64 | 170710M3_64 | 1700752-05RE1 STP-MW-34-062017 0.11783 | 11-Jul-17 | 03:43:24 |
| 65 | -170710M3_65 | 1700752-06RE1 STP-EB3-061917 0.11814 | 11-Jul-17 | 03:54:11 |


| Dataset: | Untitled |
| :--- | :--- |
| Last Altered: | Friday, July 14, 2017 09:02:22 Pacific Daylight Time |
| Printed: | Friday, July 14, 2017 09:03:26 Pacific Daylight Time |

## Compound name: PFBS

|  | Name | ID | Acq Date | Acq Time |
| :---: | :---: | :---: | :---: | :---: |
| 66 | 170710M3_66 | 1700752-07RE1 STP-EB4-062017 0.1185 | 11-Jul-17 | 04:04:49 |
| 67 | 170710M3_67 | IPA | 11-Jul-17 | 04:15:27 |
| 68 | 170710M3_68 | ST170710M3-12 PFC CS3 17G1008 | 11-Jul-17 | 04:26:06 |
| 69 | 170710M3_69 | IPA | 11-Jul-17 | 04:36:48 |

Dataset:
U:IQ4.PRO\results 1 170710M31170710M3-CRV-L14A.qld
Last Altered: Friday, July 14, 2017 08:46:00 Pacific Daylight Time
Printed: Friday, July 14, 2017 08:53:58 Pacific Daylight Time

## Method: U:IQ4.PRO\MethDB\PFAS_L14-7-5-17.mdb 10 Jul 2017 08:06:14

Calibration: U:IQ4.PROICurveDBIC18_VAL-PFAS_Q4_7-10-17-L14A.cdb 14 Jul 2017 08:45:55
Compound name: PFBS
Correlation coefficient: $\mathrm{r}=0.999476, \mathrm{r}^{\wedge} 2=0.998952$
Calibration curve: $2.28219^{*} x+-0.143808$
Response type: Internal Std (Ref 17 ), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Exclude, Weighting: 1/x, Axis trans: None


Vista Analytical Laboratory Q1
Dataset: U:\Q4.PROIresults1170710M31170710M3-CRV-L14A.qld
Last Altered: Friday, July 14, 2017 08:46:00 Pacific Daylight Time
Printed: Friday, July 14, 2017 08:53:58 Pacific Daylight Time

Compound name: PFHXA
Correlation coefficient: $\mathrm{r}=0.999913, \mathrm{r}^{\wedge} 2=0.999826$
Calibration curve: $1.63833^{*} \mathrm{x}+0.053424$
Response type: Internal Std (Ref 18 ), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Exclude, Weighting: 1/x, Axis trans: None


## Quantify Calibration Report

Dataset: U:\Q4.PROIresults1170710M31170710M3-CRV-L14A.qld

## Last Altered: <br> Friday, July 14, 2017 08:46:00 Pacific Daylight Time <br> Printed: Friday, July 14, 2017 08:53:58 Pacific Daylight Time

## Compound name: PFHpA

Correlation coefficient: $\mathrm{r}=0.999627, \mathrm{r}^{\wedge} 2=0.999254$
Calibration curve: 1.43595 * $x+0.0332012$
Response type: Internal Std (Ref 19), Area * (IS Conc. / IS Area )
Curve type: Linear, Origin: Exclude, Weighting: 1/x, Axis trans: None


Dataset:
U:IQ4.PRO\results1170710M31170710M3-CRV-L14A.qld
Last Altered: Friday, July 14, 2017 08:46:00 Pacific Daylight Time
Printed: Friday, July 14, 2017 08:53:58 Pacific Daylight Time

Compound name: PFHxS
Coefficient of Determination: $\mathrm{R}^{\wedge} 2=0.997055$
Calibration curve: 0.00158619 * $x^{\wedge} 2+1.83332$ * $x+-0.0924995$
Response type: Internal Std (Ref 20), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None


## Dataset: U:\Q4.PRO\results1170710M31170710M3-CRV-L14A.qld

Last Altered: Friday, July 14, 2017 08:46:00 Pacific Daylight Time Printed: $\quad$ Friday, July 14, 2017 08:53:58 Pacific Daylight Time

Compound name: PFOA
Correlation coefficient: $\mathrm{r}=0.999752, \mathrm{r}^{\wedge} 2=0.999504$
Calibration curve: 1.13698 * x + 0.117502
Response type: Internal Std (Ref 21 ), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Exclude, Weighting: 1/x, Axis trans: None


## Quantify Calibration Report <br> Vista Analytical Laboratory Q1

Dataset: U:\Q4.PROVresults1170710M3\170710M3-CRV-L14A.qld
Last Altered:
Friday, July 14, 2017 08:46:00 Pacific Daylight Time
Printed: Friday, July 14, 2017 08:53:58 Pacific Daylight Time

## Compound name: PFNA

Correlation coefficient: $\mathrm{r}=0.999771, \mathrm{r}^{\wedge} 2=0.999542$
Calibration curve: 1.36517 * $x+0.0586296$
Response type: Internal Std (Ref 22 ), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Include, Weighting: 1/x, Axis trans: None


Vista Analytical Laboratory Q1
Dataset: U:IQ4.PRO\results\170710M31170710M3-CRV-L14A.qld
Last Altered: Friday, July 14, 2017 08:46:00 Pacific Daylight Time
Printed: Friday, July 14, 2017 08:53:58 Pacific Daylight Time

Compound name: PFOS
Coefficient of Determination: $\mathrm{R}^{\wedge} 2=0.999061$
Calibration curve: 0.00185446 * $x^{\wedge} 2+1.10476$ * $x+0.0290336$
Response type: Internal Std (Ref 23), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Include, Weighting: 1/x, Axis trans: None


## Vista Analytical Laboratory Q1

Dataset: U:IQ4.PRO\results\170710M3\170710M3-CRV-L14A.qld
Last Altered: Friday, July 14, 2017 08:46:00 Pacific Daylight Time
Printed: Friday, July 14, 2017 08:53:58 Pacific Daylight Time

Compound name: PFDA
Coefficient of Determination: $\mathrm{R}^{\wedge} 2=0.998836$
Calibration curve: 0.000679513 * $x^{\wedge} 2+1.50572$ * $x+-0.0681733$
Response type: Internal Std (Ref 24 ), Area * (IS Conc. / IS Area )
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None


Dataset: U:\Q4.PRO\results\170710M31170710M3-CRV-L14A.qld
Last Altered:
Friday, July 14, 2017 08:46:00 Pacific Daylight Time

Printed:
Friday, July 14, 2017 08:53:58 Pacific Daylight Time

Compound name: PFUnA
Correlation coefficient: $r=0.998876, r^{\wedge} 2=0.997753$
Calibration curve: 1.03711 * $x+0.141151$
Response type: Internal Std (Ref 25 ), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Exclude, Weighting: 1/x, Axis trans: None


## Dataset: U:\Q4.PRO\results\170710M31170710M3-CRV-L14A.qld

| Last Altered: | Friday, July 14, 2017 08:46:00 Pacific Daylight Time |
| :--- | :--- |
| Printed: | Friday, July 14, 2017 08:53:58 Pacific Daylight Time |

Compound name: N-MeFOSAA
Coefficient of Determination: $\mathrm{R}^{\wedge} 2=0.999758$
Calibration curve: $-0.000725393^{*} x^{\wedge} 2+1.88459$ * $x+-0.112345$
Response type: Internal Std (Ref 26 ), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Include, Weighting: 1/x, Axis trans: None


Vista Analytical Laboratory Q1
Dataset: U:IQ4.PRO\resultsi170710M31170710M3-CRV-L14A.qld
Last Altered: Friday, July 14, 2017 08:46:00 Pacific Daylight Time
Printed: Friday, July 14, 2017 08:53:58 Pacific Daylight Time

Compound name: N-EtFOSAA
Coefficient of Determination: $\mathrm{R}^{\wedge} 2=0.998485$
Calibration curve: $0.00300948{ }^{*} x^{\wedge} 2+1.32985$ * $x+0.0134202$
Response type: Internal Std (Ref 27), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Include, Weighting: 1/x, Axis trans: None


## Vista Analytical Laboratory Q1

Dataset: U:IQ4.PROIresults1170710M31170710M3-CRV-L14A.qld
$\begin{array}{ll}\text { Last Altered: } & \text { Friday, July 14, } 2017 \text { 08:57:46 Pacific Daylight Time } \\ \text { Printed: } & \text { Friday, July 14, } 2017 \text { 08:59:07 Pacific Daylight Time }\end{array}$

Method: U:IQ4.PROMMethDBIPFAS L14-7-5-17.mdb 10 Jul 2017 08:06:14
Calibration: U:IQ4.PROICurveDBIC18_VAL-PFAS_Q4_7-10-17-L14A.cdb 14 Jul 2017 08:57:46
Compound name: PFDoA
Coefficient of Determination: $\mathrm{R}^{\wedge} 2=0.996663$
Calibration curve: $0.00839285^{*} x^{\wedge} 2+0.722755^{*} x+0.0737712$
Response type: Internal Std (Ref 28 ), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Include, Weighting: 1/x, Axis trans: None


## Vista Analytical Laboratory Q1

## Dataset: U:IQ4.PRO\resultsI170710M31170710M3-CRV-L14A.qld

Last Altered: Friday, July 14, 2017 08:46:00 Pacific Daylight Time
Printed: Friday, July 14, 2017 08:53:58 Pacific Daylight Time

Compound name: PFTrDA
Coefficient of Determination: $\mathrm{R}^{\wedge} 2=0.998284$
Calibration curve: $-0.0031383^{*} x^{\wedge} 2+13.4645$ * $x+0.137265$
Response type: Internal Std (Ref 28 ), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None


## Vista Analytical Laboratory Q1

Dataset: U:\Q4.PRO\results1170710M31170710M3-CRV-L14A.qld
$\begin{array}{ll}\text { Last Altered: } & \text { Friday, July 14, } 2017 \text { 08:46:00 Pacific Daylight Time } \\ \text { Printed: } & \text { Friday, July 14, 2017 08:53:58 Pacific Daylight Time }\end{array}$
Printed:
Friday, July 14, 2017 08:53:58 Pacific Daylight Time

Compound name: PFTeDA
Coefficient of Determination: $\mathrm{R}^{\wedge} 2=0.999913$
Calibration curve: $-0.0009289944^{*} x^{\wedge} 2+1.26436$ * $x+0.081381$
Response type: Internal Std (Ref 29 ), Area * ( IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None


| Dataset: | U:\Q4.PRO\results\170710M3\170710M3-CRV-L14A.qld |
| :--- | :--- |
|  |  |
| Last Altered: | Friday, July 14, 2017 08:46:00 Pacific Daylight Time |
| Printed: | Friday, July 14, 2017 08:49:41 Pacific Daylight Time |

Method: U:IQ4.PROMMethDBIPFAS_L14-7-5-17.mdb 10 Jul 2017 08:06:14
Calibration: U:IQ4.PROICurveDBIC18_VAL-PFAS_Q4_7-10-17-L14A.cdb 14 Jul 2017 08:45:55
Name: 170710M3_2, Date: 10-Jul-2017, Time: 16:35:25, ID: ST170710M3-1 PFC CS-2 17G1003, Description: PFC CS-2 17G1003

## Total PFBS <br> 



13C3-PFBS




13C2-PFHxA


## PFHpA




13C4-PFHpA


## Total PFHxS



1802-PFHxS


Dataset: U:\Q4.PRO\results\170710M31170710M3-CRV-L14A.qld
Last Altered: Friday, July 14, 2017 08:46:00 Pacific Daylight Time
Printed:
Friday, July 14, 2017 08:49:41 Pacific Daylight Time

Name: 170710M3_2, Date: 10-Jul-2017, Time: 16:35:25, ID: ST170710M3-1 PFC CS-2 17G1003, Description: PFC CS-2 17G1003

## Total PFOA

F19:MRM of 2 channels,ES-
$413>368.7$
$2.012 \mathrm{e}+004$


13C2-PFOA



13C5-PFNA


## PFDA



Total PFOS


13C8-PFOS


## Dataset: U:IQ4.PRO\results\170710M31170710M3-CRV-L14A.qld

Last Altered: Friday, July 14, 2017 08:46:00 Pacific Daylight Time
Printed:
Friday, July 14, 2017 08:49:41 Pacific Daylight Time

Name: 170710M3_2, Date: 10-Jul-2017, Time: 16:35:25, ID: ST170710M3-1 PFC CS-2 17G1003, Description: PFC CS-2 17G1003

## PFUnA




13C2-PFUnA


d3-N-MeFOSAA


## N-EtFOSAA



d5-N-EtFOSAA


PFDoA
F51:MRM of 2 channels, ES$612.9>318.8$ $1.309 \mathrm{e}+003$



13C2-PFDoA


Dataset: U:IQ4.PRO\results\170710M3\170710M3-CRV-L14A.qld
Last Altered: Friday, July 14, 2017 08:46:00 Pacific Daylight Time
Printed: $\quad$ Friday, July 14, 2017 08:49:41 Pacific Daylight Time

Name: 170710M3_2, Date: 10-Jul-2017, Time: 16:35:25, ID: ST170710M3-1 PFC CS-2 17G1003, Description: PFC CS-2 17G1003


13C2-PFTeDA


## PFTeDA



13C2-PFTeDA



13C8-PFOA


13C3-PFHxS


13C9-PFNA


| Dataset: | U:\Q4.PRO\results\170710M3\170710M3-CRV-L14A.qld |
| :--- | :--- |
|  |  |
| Last Altered: | Friday, July 14, 2017 08:46:00 Pacific Daylight Time |
| Printed: | Friday, July 14, 2017 08:49:41 Pacific Daylight Time |

Name: 170710M3_2, Date: 10-Jul-2017, Time: 16:35:25, ID: ST170710M3-1 PFC CS-2 17G1003, Description: PFC CS-2 17G1003



13C7-PFUnA
F46:MRM of 1 channel,ES$570.1>524.8$


## Dataset: <br> U:\Q4.PRO\results\170710M3\170710M3-CRV-L14A.qld

| Last Altered: | Friday, July 14, 2017 08:46:00 Pacific Daylight Time |
| :--- | :--- |
| Printed: | Friday, July 14, 2017 08:49:41 Pacific Daylight Time |

Name: 170710M3_3, Date: 10-Jul-2017, Time: 16:46:13, ID: ST170710M3-2 PFC CS-1 17G1004, Description: PFC CS-1 $17 \mathrm{G1004}$

## Total PFBS





## PFHxA


$313.2>119$ $1.000 \mathrm{e}-003$


13C2-PFHxA


## PFHpA




13C4-PFHpA


Total PFHxS


1802-PFHxS


| Dataset: | U:\Q4.PRO\results\170710M3\170710M3-CRV-L14A.qld |
| :--- | :--- |
| Last Altered: | Friday, July 14, 2017 08:46:00 Pacific Daylight Time |
| Printed: | Friday, July 14, 2017 08:49:41 Pacific Daylight Time |

Name: 170710M3_3, Date: 10-Jul-2017, Time: 16:46:13, ID: ST170710M3-2 PFC CS-1 17G1004, Description: PFC CS-1 $17 \mathrm{G1004}$

## Total PFOA

F19:MRM of 2 channels,ES-
$413>368.7$
$3.101 \mathrm{e}+004$


13C2-PFOA


## PFNA








13C2-PFDA


Total PFOS


13C8-PFOS


| Dataset: | U:\Q4.PRO\results\170710M3\170710M3-CRV-L14A.qld |
| :--- | :--- |
| Last Altered: | Friday, July 14, 2017 08:46:00 Pacific Daylight Time |
| Printed: | Friday, July 14, 2017 08:49:41 Pacific Daylight Time |

Name: 170710M3_3, Date: 10-Jul-2017, Time: 16:46:13, ID: ST170710M3-2 PFC CS-1 17G1004, Description: PFC CS-1 $17 \mathrm{G1004}$

## PFUnA




## 13C2-PFUnA

F44:MRM of 1 channel,ES-


## N-MeFOSAA



F45:MRM of 2 channels, ES
$570.1>483$

d3-N-MeFOSAA



d5-N-EtFOSAA


PFDoA


F51:MRM of 2 channels,ES$612.9>569$


13C2-PFDoA


| Dataset: | U:IQ4.PRO\results\170710M3\170710M3-CRV-L14A.qld |
| :--- | :--- |
| Last Altered: | Friday, July 14, 2017 08:46:00 Pacific Daylight Time |
| Printed: | Friday, July 14, 2017 08:49:41 Pacific Daylight Time |

## Name: 170710M3_3, Date: 10-Jul-2017, Time: 16:46:13, ID: ST170710M3-2 PFC CS-1 17G1004, Description: PFC CS-1 17G1004

## PFTrDA




13C2-PFTeDA


PFTeDA


13C2-PFTeDA


## 13C5-PFHxA



13C8-PFOA


13C3-PFHxS


13C9-PFNA


| Dataset: | U:IQ4.PROlresults\170710M31170710M3-CRV-L14A.qld |
| :--- | :--- |
|  |  |
| Last Altered: | Friday, July 14, 2017 08:46:00 Pacific Daylight Time |
| Printed: | Friday, July 14, 2017 08:49:41 Pacific Daylight Time |

Name: 170710M3_3, Date: 10-Jul-2017, Time: 16:46:13, ID: ST170710M3-2 PFC CS-1 17G1004, Description: PFC CS-1 17G1004

13C6-PFDA


Dataset: U:IQ4.PRO\results\170710M3\170710M3-CRV-L14A.qld
Last Altered: Friday, July 14, 2017 08:46:00 Pacific Daylight Time
Printed:
Friday, July 14, 2017 08:49:41 Pacific Daylight Time

Name: 170710M3_4, Date: 10-Jul-2017, Time: 16:56:56, ID: ST170710M3-3 PFC CS0 17G1005, Description: PFC CS0 17G1005

\section*{Total PFBS <br> |  | F6:MRM of 2 channels,ES$299>79.7$ |
| :---: | :---: |
| 100 | PFBS 6.446e+003 |
| 1007 | 2.95 |
|  | 2.51 e 2 |
| \%- | 6444 = |
|  | bb |
|  | 6444.00 \% |




## PFHxA


8.MRM of 2 channels, ES
313.2 > 11 $1.000 \mathrm{e}-003$

13C2-PFHxA


## PFHpA




13C4-PFHpA


Total PFHxS

|  |  |
| ---: | ---: |
|  | F16:MRM of 2 channels, ES- |
| $398.9>79.6$ |  |
| $3.652 \mathrm{e}+003$ |  |



1802-PFHxS


| Dataset: | U:IQ4.PROlresults\170710M31170710M3-CRV-L14A.qld |
| :--- | :--- |
| Last Altered: | Friday, July 14, 2017 08:46:00 Pacific Daylight Time |
| Printed: | Friday, July 14, 2017 08:49:41 Pacific Daylight Time |

## Name: 170710M3_4, Date: 10-Jul-2017, Time: 16:56:56, ID: ST170710M3-3 PFC CS0 17G1005, Description: PFC CS0 17G1005

## Total PFOA



F19:MRM of 2 channels,ES-


## PFDA



F35:MRM of 2 channels, ES$513>219$ $8.678 \mathrm{e}+003$


13C2-PFDA


Total PFOS


13C8-PFOS


| Dataset: | U:IQ4.PRO\results\170710M3\170710M3-CRV-L14A.qld |
| :--- | :--- |
| Last Altered: | Friday, July 14, 2017 08:46:00 Pacific Daylight Time |
| Printed: | Friday, July 14, 2017 08:49:41 Pacific Daylight Time |

Name: 170710M3_4, Date: 10-Jul-2017, Time: 16:56:56, ID: ST170710M3-3 PFC CSO 17G1005, Description: PFC CS0 17 G1005

## PFUnA

|  | F43:MRM of 2 channels,ES-$562.9>518.9$ |  |
| :---: | :---: | :---: |
| 100 | PFUnA | $6.629 \mathrm{e}+004$ |
|  | 4.15 |  |
|  | 3.03 e 3 |  |
| \%- | 64824 |  |
|  | bb |  |
|  | $3.80 \quad 64824.00$ ) |  |



## 13C2-PFUnA



## N-MeFOSAA


d3-N-MeFOSAA
F49:MRM of 1 channel,ES



d5-N-EtFOSAA


## PFDoA



13C2-PFDoA


| Dataset: | U:IQ4.PRO\results1170710M31170710M3-CRV-L14A.qld |
| :--- | :--- |
|  |  |
| Last Altered: | Friday, July 14, 2017 08:46:00 Pacific Daylight Time |
| Printed: | Friday, July 14, 2017 08:49:41 Pacific Daylight Time |

## Name: 170710M3_4, Date: 10-Jul-2017, Time: 16:56:56, ID: ST170710M3-3 PFC CSO 17G1005, Description: PFC CS0 17G1005

## PFTrDA

| 100 | F57:MRM of 2 channels,ES-$662.9>618.9$ |  |
| :---: | :---: | :---: |
|  | PFTrDA | $8.533 \mathrm{e}+004$ |
|  | 4.47 4.11 e 3 |  |
| \%- | 82327 , |  |
|  | bd |  |
|  | 2068.54 |  |



13C2-PFTeDA


## PFTeDA



13C2-PFTeDA


## 13C5-PFHxA



13C8-PFOA


13C3-PFHxS


13C9-PFNA


Last Altered:
Friday, July 14, 2017 08:46:00 Pacific Daylight Time
Printed: Friday, July 14, 2017 08:49:41 Pacific Daylight Time

Name: 170710M3_4, Date: 10-Jul-2017, Time: 16:56:56, ID: ST170710M3-3 PFC CS0 17G1005, Description: PFC CS0 17G1005


13C7-PFUnA


Dataset: U:\Q4.PRO\results\170710M3\170710M3-CRV-L14A.qld

| Last Altered: | Friday, July 14, 2017 08:46:00 Pacific Daylight Time |
| :--- | :--- |
| Printed: | Friday, July 14, 2017 08:49:41 Pacific Daylight Time |

Name: 170710M3_5, Date: 10-Jul-2017, Time: 17:07:35, ID: ST170710M3-4 PFC CS1 17G1006, Description: PFC CS1 17G1006



## 13C2-PFHxA



PFHpA


13C4-PFHpA


## Total PFHxS



1802-PFHxS


| Dataset: | U:IQ4.PRO\results\170710M3\170710M3-CRV-L14A.qld |
| :--- | :--- |
| Last Altered: | Friday, July 14, 2017 08:46:00 Pacific Daylight Time |
| Printed: | Friday, July 14, 2017 08:49:41 Pacific Daylight Time |

Name: 170710M3_5, Date: 10-Jul-2017, Time: 17:07:35, ID: ST170710M3-4 PFC CS1 17G1006, Description: PFC CS1 17 G1006



## 13C2-PFOA



PFNA


13C5-PFNA




## 13C2-PFDA



## Total PFOS



13C8-PFOS
F33:MRM of 1 channel,ES-


| Dataset: | U:IQ4.PRO\results1170710M3\170710M3-CRV-L14A.qld |
| :--- | :--- |
| Last Altered: | Friday, July 14, 2017 08:46:00 Pacific Daylight Time |
| Printed: | Friday, July 14, 2017 08:49:41 Pacific Daylight Time |

Name: 170710M3_5, Date: 10-Jul-2017, Time: 17:07:35, ID: ST170710M3-4 PFC CS1 17G1006, Description: PFC CS1 17 G 1006

## PFUnA

| F43:MRM of 2 channels,ES- |
| :---: |
|  |
|  |
|  |
| 100 |



13C2-PFUnA


## N-MeFOSAA



## d3-N-MeFOSAA



## N-EtFOSAA



d5-N-EtFOSAA


PFDoA
F51:MRM of 2 channels, ES$12.9>318.8$

51.MRM of 2 channels,ES $612.9>569$ $1.982 \mathrm{e}+004$


## 13C2-PFDoA


Dataset: U:IQ4.PROIresults1170710M31170710M3-CRV-L14A.qld

| Last Altered: | Friday, July 14, 2017 08:46:00 Pacific Daylight Time <br> Friday, July 14, 2017 08:49:41 Pacific Daylight Time |
| :--- | :--- |

## Name: 170710M3_5, Date: 10-Jul-2017, Time: 17:07:35, ID: ST170710M3-4 PFC CS1 17G1006, Description: PFC CS1 17 G 1006

## PFTrDA




13C2-PFTeDA


## PFTeDA



13C2-PFTeDA


## 13C5-PFHxA



## 13C8-PFOA



13C3-PFHxS


13C9-PFNA


| Dataset: | U:\Q4.PRO\results\170710M3\170710M3-CRV-L14A.qld |
| :--- | :--- |
| Last Altered: | Friday, July 14, 2017 08:46:00 Pacific Daylight Time |
| Printed: | Friday, July 14, 2017 08:49:41 Pacific Daylight Time |

## Name: 170710M3_5, Date: 10-Jul-2017, Time: 17:07:35, ID: ST170710M3-4 PFC CS1 17G1006, Description: PFC CS1 $17 \mathrm{G1} 006$

13C6-PFDA


13C7-PFUnA
F46:MRM of 1 channel,ES$570.1>524.8$

Dataset:
U:IQ4.PRO\results\170710M3\170710M3-CRV-L14A.qld
Last Altered:
Friday, July 14, 2017 08:46:00 Pacific Daylight Time
Printed:
Friday, July 14, 2017 08:49:41 Pacific Daylight Time

## Name: 170710M3_6, Date: 10-Jul-2017, Time: 17:18:21, ID: ST170710M3-5 PFC CS2 17G1007, Description: PFC CS2 17G1007

## Total PFBS



F6:MRM of 2 channels, ES-


13C3-PFBS


## \section*{PFHxA} <br> F8:MRM of 2 channels,ES- $313.2>268.9$ $2.812 \mathrm{e}+005$ PFHXA 3.18 1.12 e 4 280174 bb 280174.00



13C2-PFHxA




## 13C4-PFHpA



## Total PFHxS




1802-PFHxS


## Vista Analytical Laboratory

## Dataset: U:IQ4.PRO\results1170710M3\170710M3-CRV-L14A.qld

Last Altered: Friday, July 14, 2017 08:46:00 Pacific Daylight Time
Printed:
Friday, July 14, 2017 08:49:41 Pacific Daylight Time

## Name: 170710M3_6, Date: 10-Jul-2017, Time: 17:18:21, ID: ST゙170710M3-5 PFC CS2 17G1007, Description: PFC CS2 17 G1007

## Total PFOA

| 1007 | F19:MRM of 2 channels, ES- |
| :---: | :---: |
|  | $413>368.7$ |
|  | PFOA $2.966 \mathrm{e}+005$ |
|  | 3.64 |
|  | 291710 |
|  | bb |
|  | 1008.02 |



13C2-PFOA
F20:MRM of 1 channel, ES-


## PFNA <br> 



## 13C5-PFNA





## 13C2-PFDA



Total PFOS


13C8-PFOS
F33:MRM of 1 channel,ES-

| Dataset: | U:IQ4.PROlresults1170710M31170710M3-CRV-L14A.qld |
| :--- | :--- |
| Last Altered: | Friday, July 14, 2017 08:46:00 Pacific Daylight Time |
| Printed: | Friday, July 14, 2017 08:49:41 Pacific Daylight Time |

Name: 170710M3_6, Date: 10-Jul-2017, Time: 17:18:21, ID: ST170710M3-5 PFC CS2 17G1007, Description: PFC CS2 17G1007

## PFUnA



F43:MRM of 2 channels,ES-

|  | F43:MRM of 2 channels,ES- |  |
| :---: | :---: | :---: |
| 1007 | PFUnA | $7.515 \mathrm{e}+004$ |
|  | 4.15 |  |
|  | 3.54 e 3 |  |
| \%- | 74752 |  |
|  | bb |  |
|  | 5484.66 / |  |
| 0 | 1717017 | TT1 |
|  | 4.000 |  |

## 13C2-PFUnA

F44:MRM of 1 channel,ES-


## N-MeFOSAA



F45:MRM of 2 channels,ES$570.1>483$

d3-N-MeFOSAA


## N-EtFOSAA

|  | F47:MRM of 2 channels, ES- |  |
| :---: | :---: | :---: |
|  |  | $584.2>419$ |
| 1007 | N-EtFOSAA | $8.467 \mathrm{e}+004$ |
|  | 4.09 |  |
|  | 4.01 e 3 |  |
| \%- | 84076 |  |
|  | bb |  |
|  | 1613.16 |  |


d5-N-EtFOSAA


PFDoA


13C2-PFDoA


| Dataset: | U:IQ4.PRO\results\170710M3\170710M3-CRV-L14A.qld |
| :--- | :--- |
|  |  |
| Last Altered: | Friday, July 14, 2017 08:46:00 Pacific Daylight Time |
| Printed: | Friday, July 14, 2017 08:49:41 Pacific Daylight Time |

Name: 170710M3_6, Date: 10-Jul-2017, Time: 17:18:21, ID: ST170710M3-5 PFC CS2 17G1007, Description: PFC CS2 17G1007

## PFTrDA



| 1007 | F57:MRM of 2 channels,ES-$662.9>319$ |  |
| :---: | :---: | :---: |
|  | PFTrDA | $4.317 \mathrm{e}+004$ |
|  | $\begin{gathered} 4.47 \\ 1.99 \mathrm{e} 3 \end{gathered}$ |  |
| \%- | 42063 |  |
| - | bb |  |
|  | 1708.39 |  |

13C2-PFTeDA



13C2-PFTeDA


13C5-PFHxA


13C8-PFOA


13C3-PFHxS


## 13C9-PFNA



## Vista Analytical Laboratory

## Dataset: <br> U:IQ4.PRO\results\170710M31170710M3-CRV-L14A.qld

Last Altered: Friday, July 14, 2017 08:46:00 Pacific Daylight Time
Printed: Friday, July 14, 2017 08:49:41 Pacific Daylight Time

Name: 170710M3_6, Date: 10-Jul-2017, Time: 17:18:21, ID: ST170710M3-5 PFC CS2 17G1007, Description: PFC CS2 17G1007


## Dataset: U:\Q4.PRO\results\170710M31170710M3-CRV-L14A.qld

Last Altered: Friday, July 14, 2017 08:46:00 Pacific Daylight Time
Printed:
Friday, July 14, 2017 08:49:41 Pacific Daylight Time

## Name: 170710M3_7, Date: 10-Jul-2017, Time: 17:28:59, ID: ST170710M3-6 PFC CS3 17G1008, Description: PFC CS3 17G1008

## Total PFBS

|  | F6:MRM of 2 channels, ES- $299>79.7$ |
| :---: | :---: |
|  | PFBS $8.220 \mathrm{e}+004$ |
| 1007 | $\begin{gathered} 2.95 \\ 3.29 \mathrm{e} 3 \end{gathered}$ |
| \%- | 82056 |
|  | bb |
|  | 82056.00 * |



## 13C2-PFHxA



## PFHpA



F14:MRM of 2 channels,ES-


## 13C4-PFHpA

Total PFHxS


F16:MRM of 2 channels,ES$398.9>99$


1802-PFHxS


## Dataset:

U:\Q4.PROVresults\170710M31170710M3-CRV-L14A.qld
Last Altered: Friday, July 14, 2017 08:46:00 Pacific Daylight Time
Printed: Friday, July 14, 2017 08:49:41 Pacific Daylight Time

Name: 170710M3_7, Date: 10-Jul-2017, Time: 17:28:59, ID: ST170710M3-6 PFC CS3 17G1008, Description: PFC CS3 17G1008

## Total PFOA




13C2-PFOA

## PFNA





F35:MRM of 2 channels,ES-
$513>219$ $9.866 e+004$


13C2-PFDA

## PFDA



## Total PFOS



13C8-PFOS


## Vista Analytical Laboratory

## Dataset: <br> U:\Q4.PRO\results\170710M3\170710M3-CRV-L14A.qld

Last Altered: Friday, July 14, 2017 08:46:00 Pacific Daylight Time
Printed: $\quad$ Friday, July 14, 2017 08:49:41 Pacific Daylight Time

## Name: 170710M3_7, Date: 10-Jul-2017, Time: 17:28:59, ID: ST170710M3-6 PFC CS3 17G1008, Description: PFC CS3 $17 \mathrm{G1008}$




13C2-PFUnA


## N-MeFOSAA



45:MRM of 2 channels,ES $570.1>483$ $1.418 \mathrm{e}+004$

d3-N-MeFOSAA


## N-EtFOSAA



d5-N-EtFOSAA


PFDoA


13C2-PFDoA


## Dataset: U:\Q4.PRO\results\170710M3\170710M3-CRV-L14A.qld

Last Altered: Friday, July 14, 2017 08:46:00 Pacific Daylight Time
Printed:
Friday, July 14, 2017 08:49:41 Pacific Daylight Time

Name: 170710M3_7, Date: 10-Jul-2017, Time: 17:28:59, ID: ST170710M3-6 PFC CS3 17G1008, Description: PFC CS3 17G1008



13C2-PFTeDA


## PFTeDA



13C2-PFTeDA



13C8-PFOA


13C3-PFHxS


13C9-PFNA


## Dataset: U:\Q4.PRO\results\170710M31170710M3-CRV-L14A.qld

Last Altered: Friday, July 14, 2017 08:46:00 Pacific Daylight Time
Printed: Friday, July 14, 2017 08:49:41 Pacific Daylight Time

Name: 170710M3_7, Date: 10-Jul-2017, Time: 17:28:59, ID: ST170710M3-6 PFC CS3 17G1008, Description: PFC CS3 17G1008



13C7-PFUnA
F46:MRM of 1 channel,ES-


| Dataset: | U:\Q4.PRO\results\170710M3\170710M3-CRV-L14A.qld |
| :--- | :--- |
| Last Altered: | Friday, July 14, 2017 08:46:00 Pacific Daylight Time |
| Printed: | Friday, July 14, 2017 08:49:41 Pacific Daylight Time |

Name: 170710M3_8, Date: 10-Jul-2017, Time: 17:39:46, ID: ST170710M3-7 PFC CS4 17G1009, Description: PFC CS4 17G1009

| Total PFBS |  |
| :---: | :---: |
| 100 | F6:MRM of 2 channels,ES- $299>79.7$ |
|  | PFBS 3.690e+005 |
|  | 2.95 |
|  | 1.44 e 4 |
| \%- | 368152 |
| \% | bb |
|  | $368152.00 /=$ |

13C3-PFBS




## PFHpA

F14:MRM of 2 channels,ES-
$363>318.9$
$2.004 \mathrm{e}+006$

F14:MRM of 2 channels,ES-


13C4-PFHpA


Total PFHxS


F16:MRM of 2 channels,ES-
$398.9>99$


1802-PFHxS


Last Altered: Friday, July 14, 2017 08:46:00 Pacific Daylight Time
Printed:
Friday, July 14, 2017 08:49:41 Pacific Daylight Time

Name: 170710M3_8, Date: 10-Jul-2017, Time: 17:39:46, ID: ST170710M3-7 PFC CS4 17G1009, Description: PFC CS4 17G1009

## Total PFOA

| 1007 | F19:MRM of 2 channels,ES-$413>368.7$ |  |
| :---: | :---: | :---: |
|  | PFOA | $2.907 \mathrm{e}+006$ |
|  | 3.64 1.24 e 5 |  |
| \%- | 2895739 |  |
|  | bb |  |



13C2-PFOA



13C5-PFNA


## PFDA




13C2-PFDA
F36:MRM of 1 channel,ES-
$515.1>469.9$


Total PFOS


F30:MRM of 2 channels,ES $499>99$


13C8-PFOS


| Dataset: | U:\Q4.PRO\results\170710M3\170710M3-CRV-L14A.qld |
| :--- | :--- |
|  |  |
| Last Altered: | Friday, July 14, 2017 08:46:00 Pacific Daylight Time |
| Printed: | Friday, July 14, 2017 08:49:41 Pacific Daylight Time |

## Name: 170710M3_8, Date: 10-Jul-2017, Time: 17:39:46, ID: ST170710M3-7 PFC CS4 17G1009, Description: PFC CS4 17G1009

## PFUnA

|  | F43:MRM of 2 channels,ES-$562.9>518.9$ |  |
| :---: | :---: | :---: |
| 100- | PFUnA | $3.029 \mathrm{e}+006$ |
|  | $\begin{gathered} 4.15 \\ 1.38 \mathrm{e} 5 \end{gathered}$ |  |
|  | 3022676 |  |
| \% | bb |  |
|  | 3022676.00 |  |



13C2-PFUnA


## N-MeFOSAA



F45:MRM of 2 channels,ES-
$570.1>483$ $6.513 \mathrm{e}+004$

d3-N-MeFOSAA


## N-EtFOSAA



d5-N-EtFOSAA


PFDoA


13C2-PFDoA


| Dataset: | U:IQ4.PROlresults1170710M31170710M3-CRV-L14A.qld |
| :--- | :--- |
|  |  |
| Last Altered: | Friday, July 14, 2017 08:46:00 Pacific Daylight Time |
| Printed: | Friday, July 14, 2017 08:49:41 Pacific Daylight Time |

Name: 170710M3_8, Date: 10-Jul-2017, Time: 17:39:46, ID: ST170710M3-7 PFC CS4 17G1009, Description: PFC CS4 17G1009

## PFTrDA

| F57:MRM of 2 channels,ES- |
| :---: |
|  |
|  |
|  |
| 100 |



13C2-PFTeDA


## PFTeDA



13C2-PFTeDA


## 13C5-PFHxA



13C8-PFOA


13C3-PFHxS


13C9-PFNA

Dataset: U:IQ4.PRO\results\170710M31170710M3-CRV-L14A.qld
Last Altered: Friday, July 14, 2017 08:46:00 Pacific Daylight Time
Printed: Friday, July 14, 2017 08:49:41 Pacific Daylight Time

## Name: 170710M3_8, Date: 10-Jul-2017, Time: 17:39:46, ID: ST170710M3-7 PFC CS4 17G1009, Description: PFC CS4 17G1009

13C6-PFDA


13C7-PFUnA
F46:MRM of 1 channel,ES-
$570.1>524.8$

Dataset:
U:\Q4.PROVresults\170710M31170710M3-CRV-L14A.qld
Last Altered: Friday, July 14, 2017 08:46:00 Pacific Daylight Time
Printed:
Friday, July 14, 2017 08:49:41 Pacific Daylight Time

Name: 170710M3_9, Date: 10-Jul-2017, Time: 17:50:33, ID: ST170710M3-8 PFC CS5 17G1010, Description: PFC CS5 17G1010

## Total PFBS




13C3-PFBS



13C2-PFHxA



Total PFHxS



13C4-PFHpA



## Vista Analytical Laboratory

## Dataset: <br> U:IQ4.PRO\results\170710M3I170710M3-CRV-L14A.qld

Last Altered: Friday, July 14, 2017 08:46:00 Pacific Daylight Time
Printed:
Friday, July 14, 2017 08:49:41 Pacific Daylight Time

## Name: 170710M3_9, Date: 10-Jul-2017, Time: 17:50:33, ID: ST170710M3-8 PFC CS5 17G1010, Description: PFC CS5 17 G1010




13C2-PFOA


13C5-PFNA


## PFDA





Total PFOS


F30:MRM of 2 channels,ES
$499>99$


13C8-PFOS
F33:MRM of 1 channel,ES-


Dataset: U:IQ4.PRO\results1170710M3I170710M3-CRV-L14A.qld
Last Altered: Friday, July 14, 2017 08:46:00 Pacific Daylight Time
Printed:
Friday, July 14, 2017 08:49:41 Pacific Daylight Time

Name: 170710M3_9, Date: 10-Jul-2017, Time: 17:50:33, ID: ST170710M3-8 PFC CS5 17G1010, Description: PFC CS5 17G1010

## PFUnA

| F43:MRM of 2 channels,ES- |
| ---: |
| $562.9>518.9$ |
| $6.297 \mathrm{e}+006$ |
| 100 |
| PFUnA |
| 4.15 |
| 2.85 e 5 |
| 6281883 |
| bb |



13C2-PFUnA


## N-MeFOSAA



F45:MRM of 2 channeis,ES-




d5-N-EtFOSAA


PFDoA


13C2-PFDoA


| Dataset: | U:\Q4.PROlresults1170710M3\170710M3-CRV-L14A.qld |
| :--- | :--- |
| Last Altered: | Friday, July 14, 2017 08:46:00 Pacific Daylight Time |
| Printed: | Friday, July 14, 2017 08:49:41 Pacific Daylight Time |

Name: 170710M3_9, Date: 10-Jul-2017, Time: 17:50:33, ID: ST170710M3-8 PFC CS5 17G1010, Description: PFC CS5 17G1010

## PFTrDA



13C2-PFTeDA


PFTeDA


13C2-PFTeDA
F59:MRM of 2 channels,ES-


13C3-PFHxS


| Dataset: | U:IQ4.PRO\results\170710M31170710M3-CRV-L14A.qld |
| :--- | :--- |
|  |  |
| Last Altered: | Friday, July 14, 2017 08:46:00 Pacific Daylight Time |
| Printed: | Friday, July 14, 2017 08:49:41 Pacific Daylight Time |

Name: 170710M3_9, Date: 10-Jul-2017, Time: 17:50:33, ID: ST170710M3-8 PFC CS5 17G1010, Description: PFC CS5 17 G1010



13C7-PFUnA
F46:MRM of 1 channel,ES$570.1>524.8$


| Dataset: | U:IQ4.PROIresults1170710M31170710M3-11-L14A.qld |
| :--- | :--- |
| Last Altered: | Friday, July 14, 2017 09:05:59 Pacific Daylight Time |
| Printed: | Friday, July 14, 2017 09:06:30 Pacific Daylight Time |

Method: U:IQ4.PROIMethDBIPFAS_L14-7-13-17.mdb 14 Jul 2017 08:41:09
Calibration: U:IQ4.PROICurveDBIC18_VAL-PFAS_Q4_7-10-17-L14A.cdb 14 Jul 2017 08:57:46
Name: 170710M3_11, Date: 10-Jul-2017, Time: 18:11:57, ID: SS170710M3-1 PFC SSS 17G1011, Description: PFC SSS 17G1011


| Dataset: | U:IQ4.PRO\results1170710M31170710M3-11-L14A.qld |
| :--- | :--- |
| Last Altered: | Friday, July 14, 2017 09:05:59 Pacific Daylight Time |
| Printed: | Friday, July 14, 2017 09:06:30 Pacific Daylight Time |

Name: 170710M3_11, Date: 10-Jul-2017, Time: 18:11:57, ID: SS170710M3-1 PFC SSS 17G1011, Description: PFC SSS 17 G1011


## Vista Analytical Laboratory

## Dataset: U:IQ4.PROIresults\170710M3\170710M3-11-L14A.qld

Last Altered: Friday, July 14, 2017 09:05:59 Pacific Daylight Time
Printed: Friday, July 14, 2017 09:06:30 Pacific Daylight Time

## Method: U:IQ4.PROIMethDBIPFAS_L14-7-13-17.mdb 14 Jul 2017 08:41:09

 Calibration: U:IQ4.PROICurveDBIC18_VAL-PFAS_Q4_7-10-17-L14A.cdb 14 Jul 2017 08:57:46Name: 170710M3_11, Date: 10-Jul-2017, Time: 18:11:57, ID: SS170710M3-1 PFC SSS 17G1011, Description: PFC SSS $17 \mathrm{G1011}$

\section*{Total PFBS <br> |  | F6:MRM of 2 channels,ES- $299>79.7$ |
| :---: | :---: |
| 100 | PFBS 6.150e+004 |
| 1007 | 2.95 |
|  | 2.41 e 3 |
| \% | 61324 |
|  | bb |
|  | 61324.00/* |



PFHxA



## 13C2-PFHxA





## 13C4-PFHpA

Total PFHxS


1802-PFHxS
F18:MRM of 1 channel,ES-


Dataset: U:\Q4.PRO\results1170710M3I170710M3-11-L14A.qld
Last Altered: Friday, July 14, 2017 09:05:59 Pacific Daylight Time
Printed:
Friday, July 14, 2017 09:06:30 Pacific Daylight Time

## Name: 170710M3_11, Date: 10-Jul-2017, Time: 18:11:57, ID: SS170710M3-1 PFC SSS 17G1011, Description: PFC SSS 17 G1011

## Total PFOA

|  |  |  |
| :---: | :---: | :---: |
| ${ }^{100}-$ | F19:MRM of 2 | channels,ES- $413>368.7$ |
|  | PFOA | $4.510 \mathrm{e}+005$ |
|  | $3.65]$ |  |
|  | 2.07 e 4 |  |
| \% - | 446404 |  |
| $\%$ | bb |  |
|  | 2032.89 | , |



13C2-PFOA


## PFNA




13C5-PFNA


Total PFOS


F30:MRM of 2 channels,ES
$499>99$


13C8-PFOS


## PFDA

F35:MRM of 2 channels,ES
$513>468.8$ $5.962 \mathrm{e}+005$


F35:MRM of 2 channels,ES-
$513>219$
$8145 e+004$


13C2-PFUnA


| Dataset: | U:IQ4.PRO\results1170710M3\170710M3-11-L14A.qld |
| :--- | :--- |
| Last Altered: | Friday, July 14, 2017 09:05:59 Pacific Daylight Time |
| Printed: | Friday, July 14, 2017 09:06:30 Pacific Daylight Time |

## Name: 170710M3_11, Date: 10-Jul-2017, Time: 18:11:57, ID: SS170710M3-1 PFC SSS 17G1011, Description: PFC SSS 17 G1011



13C2-PFUnA


## N-MeFOSAA


d3-N-MeFOSAA


## N-EtFOSAA



F47:MRM of 2 channels,ES $584.2>483$

d5-N-EtFOSAA


PFDoA
F51:MRM of 2 channels,ES$612.9>318.8$ $5.726 \mathrm{e}+004$


F51:MRM of 2 channels,ES$612.9>569$ 8.115e+004


13C2-PFDoA


| Dataset: | U:IQ4.PRO\results1170710M31170710M3-11-L14A.qid |
| :--- | :--- |
|  |  |
| Last Altered: | Friday, July 14, 2017 09:05:59 Pacific Daylight Time |
| Printed: | Friday, July 14, 2017 09:06:30 Pacific Daylight Time |

Name: 170710M3_11, Date: 10-Jul-2017, Time: 18:11:57, ID: SS170710M3-1 PFC SSS 17G1011, Description: PFC SSS 17 G 1011

## PFTeDA



F58:MRM of 4 channels,ES-


13C2-PFTeDA



13C2-PFTeDA



13C8-PFOA


13C3-PFHxS


| Dataset: | U:IQ4.PRO\|results1170710M31170710M3-11-L14A.qld |
| :--- | :--- |
| Last Altered: | Friday, July 14, 2017 09:05:59 Pacific Daylight Time |
| Printed: | Friday, July 14, 2017 09:06:30 Pacific Daylight Time |

Name: 170710M3_11, Date: 10-Jul-2017, Time: 18:11:57, ID: SS170710M3-1 PFC SSS 17G1011, Description: PFC SSS 17 G1011


13C7-PFUnA

"sys_sample_code","lab_anl_method_name","analysis_date","analysis_time","total_or_dissolved","column_number","t est_type","cas_rn","chemical_name",","result_value","result_error_delta","result_type_code","reportable_result","detect_ flag","lab_qualifiers","organic_yn","method_detection_limit","reporting_detection_limit","quantatation_limit","result_u nit","detection_limit_unit","tic_retention_time","result_comment","qc_original_conc","qc_spike_added","qc_spike_me asured","qc_spike_recovery","qc_dup_original_conc","qc_dup_spike_added","qc_dup_spike_measured","qc_dup_spik e_recovery","qc_rpd","qc_spike_lcl","qc_spike_ucl","qc_rpd_cl","qc_spike_status","qc_dup_spike_status","qc_rpd_sta tus"
"SB01","537_MOD","07/11/17","19:30","N","NA","000","375-73-
5","PFBS","","","TRG","Yes","N","U","Y","1.86","5.21","8.31","NG_L","NG_L","","","","","","","","","","","","","","" "" "" ""
"SB01","537_MOD","07/11/17","19:30","N","NA","000","307-24-4","PERFLUOROHEXANOIC ACID (PFHXA)","","","TRG","Yes","N","U","Y","2.26","5.21","8.31","NG_L","NG_L","","","","","","","","","","","","","","" "" "" ""
"SB01","537_MOD","07/11/17","19:30","N","NA","000","375-85-9","PERFLUOROHEPTANOIC ACID
(PFHPA)","","","TRG","Yes","N","U","Y","0.614","5.21","8.31","NG_L","NG_L","","","","","","","","","","","","",""," " "" "" ""
"SB01","537_MOD","07/11/17","19:30","N","NA","000","355-46-4","PERFLUOROHEXANESULFONIC ACID (PFHXS)","","","TRG","Yes","N","U","Y","0.984","5.21","8.31","NG_L","NG_L","","","","","","","","","","","","",""," " "" "" ""
"SB01","537_MOD","07/11/17","19:30","N","NA","000","335-67-1","PERFLUOROOCTANOIC ACID
(PFOA)","","","TRG","Yes","N","U","Y","0.676","5.21","8.31","NG_L","NG_L","","","","","","","","","",","","","","", "" "" ""
"SB01","537_MOD","07/11/17","19:30","N","NA","000","1763-23-1","HEPTADECAFLUOROACTANESULFONIC ACID SOLUTION
","","","TRG","Yes","N","U","Y","0.838","5.21","8.31","NG_L","NG_L","","","","","","","","","","","","","","","","","" "SB01","537_MOD","07/11/17","19:30","N","NA","000","375-95-1","PERFLUORONONANOIC ACID
(PFNA)","","","TRG","Yes","N","U","Y","0.841","5.21","8.31","NG_L","NG_L","","","","","","","","","","","","","","", "" "" ""
"SB01","537_MOD","07/11/17","19:30","N","NA","000","335-76-2","PERFLUORODECANOIC ACID
(PFDA)","","","TRG","Yes","N","U","Y","1.55","5.21","8.31","NG_L","NG_L","","","","","","","","","","","","","",""," ","","
"SB01","537_MOD","07/11/17","19:30","N","NA","000","2355-31-
9","MeFOSAA","","","TRG","Yes","N","U","Y","1.71","5.21","8.31","NG_L","NG_L","","","","","","","","","","","","" "" "" "" "" ""
"SB01","537_MOD","07/11/17","19:30","N","NA","000","2058-94-8","PERFLUOROUNDECANOIC ACID
(PFUNA)","","","TRG","Yes","N","U","Y","1.09","5.21","8.31","NG_L","NG_L","","","","","","","","","","","","","","" "","",""
"SB01","537_MOD","07/11/17","19:30","N","NA","000","2991-50-
6","EtFOSAĀ","","","TRG","Yes","N","U","Y","1.42","5.21","8.31","NG_L","NG_L","","","","","","","","",","","","", "" "" "" "" ""
"SB01","537_MOD","07/11/17","19:30","N","NA","000","307-55-1","PERFLUORODODECANOIC ACID (PFDOA)","","","TRG","Yes","N","U","Y","0.823","5.21","8.31","NG_L","NG_L","","","","","","","","","","","","",""," " "" "" ""
"SB01","537_MOD","07/11/17","19:30","N","NA","000","72629-94-
8","PFTrDA","","","TRG","Yes","N","U","Y","0.513","5.21","8.31","NG_L","NG_L","","","","","","","","","","","",""," ","","",",""
"SB01","537_MOD","07/11/17","19:30","N","NA","000","376-06-
7","PFTeDA","","","TRG","Yes","N","U","Y","0.784","5.21","8.31","NG_L","NG_L","","","","","","","","","","","","", "","","","",""
"SB01","537_MOD","07/11/17","19:30","N","NA","000","13C3-PFBS","13C3-
PFBS","86.4","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","86.4","86.4","","","","","","50","150","", "","",""
"SB01","537_MOD","07/11/17","19:30","N","NA","000","13C2-PFHxA","13C2-

PFHxA","107","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","107","107","","","","","","50","150","", " " " " ""
"SB01","537_MOD","07/11/17","19:30","N","NA","000","13C4-PFHpA","13C4-
PFHpA","93.2","","IS","Yes","Y","","Y","","","","PCT_REC","","","",","100","93.2","93.2","","","","","","50","150"," " "" "" ""
"SB01","537 MOD","07/11/17","19:30","N","NA","000","18O2-PFHxS","18O2-
PFHxS","111","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","111","111","","","","","","50","150","", "" "" ""
"SB01","537_MOD","07/11/17","19:30","N","NA","000","13C2-PFOA","13C2-
PFOA","96.4","","IS","Yes","Y","","Y","","","","PCT_REC","","","",","100","96.4","96.4","","","","","","50","150","" "" "" ""
"SB01","537_MOD","07/11/17","19:30","N","NA","000","13C8-PFOS","13C8-
PFOS","95.5","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","95.5","95.5","","","","","","50","150","", "" "" ""
"SB01","537_MOD","07/11/17","19:30","N","NA","000","13C5-PFNA","13C5-
PFNA","83.4","","IS","Yes","Y","","Y","","","","PCT_REC","","","",","100","83.4","83.4","","","","","","50","150","" "" "" ""
"SB01","537 MOD","07/11/17","19:30","N","NA","000","13C2-PFDA","13C2-
PFDA","75.9","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","75.9","75.9","","","","","","50","150","" "" "" ""
"SB01","537_MOD","07/11/17","19:30","N","NA","000","d3-MeFOSAA","d3-
MeFOSAA","109","","IS","Yes","Y","","Y","","",","PCT_REC","","","","","100","109","109","","","","","","50","150 " "" "" "" ""
"SB01","537_MOD","07/11/17","19:30","N","NA","000","13C2-PFUnA","13C2-
PFUnA","80.2","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","80.2","80.2","","","","","","50","150"," " "" "" ""
"SB01","537_MOD","07/11/17","19:30","N","NA","000","d5-EtFOSAA","d5-
EtFOSAA","80.6","","IS","Yes","Y","","Y","","","","PCT_REC","","",","","100","80.6","80.6","","","","","","50","150 " "" "" "" ""
"SB01","537 MOD","07/11/17","19:30","N","NA","000","13C2-PFDoA","13C2-
PFDoA","29.5","","IS","Yes","Y","H","Y","","","","PCT_REC","","","","","100","29.5","29.5","","","","","","50","150" "" "*" "" ""
"SB01","537_MOD","07/11/17","19:30","N","NA","000","13C2-PFTeDA","13C2-
PFTeDA","20.9","","IS","Yes","Y","H","Y","","","","PCT_REC","","","","","100","20.9","20.9","","","","","","50","15 0","","*","",""
"EB01","537 MOD","07/13/17","20:13","N","NA","000","375-73-
5","PFBS","","","TRG","Yes","N","U","Y","1.85","5.17","8.27","NG_L","NG_L","","","","","","","","","","","","","","" "" "" ""
"EB01","537_MOD","07/13/17","20:13","N","NA","000","307-24-4","PERFLUOROHEXANOIC ACID
(PFHXA)","","","TRG","Yes","N","U","Y","2.25","5.17","8.27","NG_L","NG_L","","","","","","","","","","","","","","" "" "" ""
"EB01","537 MOD","07/13/17","20:13","N","NA","000","375-85-9","PERFLUOROHEPTANOIC ACID
(PFHPA)","","","TRG","Yes","N","U","Y","0.611","5.17","8.27","NG_L","NG_L","","","","","","","","","","","","",""," " "" "" ""
"EB01","537_MOD","07/13/17","20:13","N","NA","000","355-46-4","PERFLUOROHEXANESULFONIC ACID
(PFHXS)","","","TRG","Yes","N","U","Y","0.979","5.17","8.27","NG_L","NG_L","","","","","","","","","","","","",""," ","","",""
"EB01","537_MOD","07/13/17","20:13","N","NA","000","335-67-1","PERFLUOROOCTANOIC ACID
(PFOA)","","","TRG","Yes","N","U","Y","0.673","5.17","8.27","NG_L","NG_L","","","","","","","","","","","","","","", "" "" ""
"EB01","537_MOD","07/13/17","20:13","N","NA","000","1763-23-1","HEPTADECAFLUOROACTANESULFONIC ACID SOLUTION
","","","TRG","Yes","N","U","Y","0.834","5.17","8.27","NG_L","NG_L","","","","","","","","","","","","","","","","","" "EB01","537_MOD","07/13/17","20:13","N","NA","000","375-95-1","PERFLUORONONANOIC ACID
(PFNA)",","","TRG","Yes","N","U","Y","0.837","5.17","8.27","NG_L","NG_L","","",","",","","",","","",","","","", "" "" ""
"EB01","537 MOD","07/13/17","20:13","N","NA","000","335-76-2","PERFLUORODECANOIC ACID
(PFDA)","","","TRG","Yes","N","U","Y","1.54","5.17","8.27","NG_L","NG_L","","","","",","","","",","","","","",""," " "" ""
"EB01","537_MOD","07/13/17","20:13","N","NA","000","2355-31-
9","MeFOSAA",","","TRG","Yes","N","U","Y","1.71","5.17","8.27","NG_L","NG_L","","",","","","",","","","","","" "" "" "" "" ""
"EB01","537_MOD","07/13/17","20:13","N","NA","000","2058-94-8","PERFLUOROUNDECANOIC ACID
(PFUNA)","","","TRG","Yes","N","U","Y","1.09","5.17","8.27","NG_L","NG_L","","","",","","","",","","","","","","" "" "" ""
"EB01","537 MOD","07/13/17","20:13","N","NA","000","2991-50-
6","EtFOSAA","",",",TRG","Yes","N","U","Y","1.42","5.17","8.27","NG_L","NG_L","",","","",","","","",","","","", "" "" "" "" ""
"EB01","537_MOD","07/13/17","20:13","N","NA","000","307-55-1","PERFLUORODODECANOIC ACID
(PFDOA)","",",",TRG","Yes","N","U","Y","0.819","5.17","8.27","NG_L","NG_L","","",","","",","","","",","","",""," ","","" ""
"EB01","537_MOD","07/13/17","20:13","N","NA","000","72629-94-
8","PFTrDA","",","TRG","Yes","N","U","Y","0.511","5.17","8.27","NG_L","NG_L",","","",","","","",","","","","," " "" "" "" ""
"EB01","537_MOD","07/13/17","20:13","N","NA","000","376-06-
7","PFTeDA","","","TRG","Yes","N","U","Y","0.780","5.17","8.27","NG_L","NG_L","",","","","",","","",","","","", "" "" "" "" ""
"EB01","537_MOD","07/13/17","20:13","N","NA","000","13C3-PFBS","13C3-
PFBS","110","","IS","Yes","Y","","Y","","",",",PCT_REC","","","",","100","110","110","",","","",","50","150","","" ""","
"EB01","537_MOD","07/13/17","20:13","N","NA","000","13C2-PFHxA","13C2-
PFHxA","89.7","","IS","Yes","Y",","Y","",","","PCT_REC","","",","","100","89.7","89.7","","",","","","50","150"," ","","",""
"EB01","537_MOD","07/13/17","20:13","N","NA","000","13C4-PFHpA","13C4-
PFHpA","80.0","","IS","Yes","Y","","Y",","","","PCT_REC","","",","","100","80.0","80.0","",","","",","50","150"," " "" "" ""
"EB01","537_MOD","07/13/17","20:13","N","NA","000","18O2-PFHxS","18O2-
PFHxS","98.9","","IS","Yes","Y","","Y","",","","PCT_REC","",","","","100","98.9","98.9","","",","",","50","150"," " "" "" ""
"EB01","537_MOD","07/13/17","20:13","N","NA","000","13C2-PFOA","13C2-
PFOA","73.2","","IS","Yes","Y","","Y","","",","PCT_REC","","",","","100","73.2","73.2","","","",","","50","150","" "" "" ""
"EB01","537_MOD","07/13/17","20:13","N","NA","000","13C8-PFOS","13C8-
PFOS","92.7","","IS","Yes","Y","","Y","",","","PCT_REC","","",","","100","92.7","92.7","",","","","","50","150","", "" "" ""
"EB01","537_MOD","07/13/17","20:13","N","NA","000","13C5-PFNA","13C5-
PFNA","89.5","","IS","Yes","Y","","Y","","",","PCT_REC","",","","","100","89.5","89.5","","","",","","50","150","" "" "",""
"EB01","537_MOD","07/13/17","20:13","N","NA","000","13C2-PFDA","13C2-
PFDA","82.2","","IS","Yes","Y","","Y","",","","PCT_REC","",","","","100","82.2","82.2","",","","","","50","150","" "" "",""
"EB01","537_MOD","07/13/17","20:13","N","NA","000","d3-MeFOSAA","d3-
MeFOSAA","59.8","","IS","Yes","Y",","Y","","",","PCT_REC","",","","","100","59.8","59.8","","",","","","50","15 0","",","",""
"EB01","537_MOD","07/13/17","20:13","N","NA","000","13C2-PFUnA","13C2-
PFUnA","66.6","","IS","Yes","Y","","Y","",","","PCT_REC","",","","","100","66.6","66.6","",","","","","50","150"," ","","","
"EB01","537_MOD","07/13/17","20:13","N","NA","000","d5-EtFOSAA","d5-

EtFOSAA","73.4","","IS","Yes","Y","","Y","","","","PCT_REC","","",","","100","73.4","73.4","",","","","","50","150 " "" "" "" ""
"EB01","537_MOD","07/13/17","20:13","N","NA","000","13C2-PFDoA","13C2-
PFDoA","27.5","","IS","Yes","Y","H","Y","",","","PCT_REC","","",","","100","27.5","27.5","","",","","","50","150" "" "*" "" ""
"EB01","537 MOD","07/13/17","20:13","N","NA","000","13C2-PFTeDA","13C2-
PFTeDA","24.2","","IS","Yes","Y","H","Y","",","","PCT_REC","","","","","100","24.2","24.2","","",","","","50","15 0","","*","",""
"IRPSite7-GW-46GW205-20170628","537_MOD","07/11/17","19:41","N","NA","000","375-73-
5","PFBS","6.05","","TRG","Yes","Y","J","Y","1.90","5.30","8.49","NG_L","NG_L","",","","","",","","","","","",""," " "" "" "" ""
"IRPSite7-GW-46GW205-20170628","537_MOD","07/11/17","19:41","N","NA","000","307-244","PERFLUOROHEXANOIC ACID
(PFHXA)","","","TRG","Yes","N","U","Y","2.31","5.30","8.49","NG_L","NG_L","","","",","","","",","","","","","","" "" "" ""
"IRPSite7-GW-46GW205-20170628","537_MOD","07/11/17","19:41","N","NA","000","375-859","PERFLUOROHEPTANOIC ACID
(PFHPA)","2.92","","TRG","Yes","Y","J","Y","0.628","5.30","8.49","NG_L","NG_L","",","","","",","","","","","","",

"IRPSSte7-GW-46GW205-20170628","537_MOD","07/11/17","19:41","N","NA","000","355-464","PERFLUOROHEXANESULFONIC AC̄ID
(PFHXS)","7.69","","TRG","Yes","Y","J","Y","1.01","5.30","8.49","NG_L","NG_L","","","",","","",","",","","",""," " "" "" "" ""
"IRPSite7-GW-46GW205-20170628","537_MOD","07/11/17","19:41","N","NA","000","335-67-
1","PERFLUOROOCTANOIC ACID
(PFOA)","7.05","","TRG","Yes","Y","J","Y","0.691","5.30","8.49","NG_L","NG_L","","",","","","",","","","",","","" "" "" "" ""
"IRPSite7-GW-46GW205-20170628","537_MOD","07/11/17","19:41","N","NA","000","1763-23-
1","HEPTADECAFLUOROACTANESULFONIC ACID SOLUTION
","6.07","","TRG","Yes","Y","J","Y","0.857","5.30","8.49","NG_L","NG_L","","",","","",","","","","","","",","","","" ""
"IRPSite7-GW-46GW205-20170628","537_MOD","07/11/17","19:41","N","NA","000","375-95-
1","PERFLUORONONANOIC ACID
(PFNA)","",","TRG","Yes","N","U","Y","0.860","5.30","8.49","NG_L","NG_L","","",","","","",","","",","","","","", "'" "" " "
"IRPSite7-GW-46GW205-20170628","537_MOD","07/11/17","19:41","N","NA","000","335-76-
2","PERFLUORODECANOIC ACID
(PFDA)","","","TRG","Yes","N","U","Y","1.58","5.30","8.49","NG_L","NG_L","",","","",","","",","","","",","",""," " "" ""
"IRPSite7-GW-46GW205-20170628","537_MOD","07/11/17","19:41","N","NA","000","2355-31-
9","MeFOSAA","","","TRG","Yes","N","U","Y","1.75","5.30","8.49","NG L","NG L","",","","","",","","","","","","" "" "" "" "" ""
"IRPSite7-GW-46GW205-20170628","537_MOD","07/11/17","19:41","N","NA","000","2058-948","PERFLUOROUNDECANOIC ACID
(PFUNA)","","","TRG","Yes","N","U","Y","1.11","5.30","8.49","NG_L","NG_L","",","","",","","",","","","",","","" "",""""
"IRPSite7-GW-46GW205-20170628","537_MOD","07/11/17","19:41","N","NA","000","2991-50-
6","EtFOSAA","",",",TRG","Yes","N","U","Y","1.45","5.30","8.49","NG_L","NG_L","","",","","","","","",","","","", "" "" "" "" ""
"IRPSite7-GW-46GW205-20170628","537_MOD","07/11/17","19:41","N","NA","000","307-55-
1","PERFLUORODODECANOIC ACID
(PFDOA)","","","TRG","Yes","N","U","Y","0.841","5.30","8.49","NG_L","NG_L","",","","","",","","","",","","",""," ","","",""
"IRPSite7-GW-46GW205-20170628","537_MOD","07/11/17","19:41","N","NA","000","72629-94-

8","PFTrDA","",","TRG","Yes","N","U","Y","0.525","5.30","8.49","NG_L","NG_L","",","","",","","",","","","",""," " "" "" "" ""
"IRPSite7-GW-46GW205-20170628","537_MOD","07/11/17","19:41","N","NA","000","376-06-
7","PFTeDA","","","TRG","Yes","N","U","Y","0.802","5.30","8.49","NG_L","NG_L","",","","","","",","","","","","", "t" "r "r" "r" "r"
"IRPSite7-GW-46GW205-20170628","537 MOD","07/11/17","19:41","N","NA","000","13C3-PFBS","13C3-
PFBS","85.7","","IS","Yes","Y","","Y","","","","PCT_REC","","","",","100","85.7","85.7","","",","","","50","150","", "" "" ""
"IRPSite7-GW-46GW205-20170628","537_MOD","07/11/17","19:41","N","NA","000","13C2-PFHxA","13C2-
PFHxA","102","","IS","Yes","Y","","Y",","","","PCT_REC","",","",",",100","102","102","","",","","","50","150","", "" "" ""
"IRPSite7-GW-46GW205-20170628","537_MOD","07/11/17","19:41","N","NA","000","13C4-PFHpA","13C4-
PFHpA","94.4","","IS","Yes","Y",","Y","",","","PCT_REC","","",","","100","94.4","94.4","",","","","","50","150"," " "" "" ""
"IRPSite7-GW-46GW205-20170628","537_MOD","07/11/17","19:41","N","NA","000","18O2-PFHxS","18O2-
PFHxS","113","","IS","Yes","Y","","Y","","",","PCT_REC","","","",","100","113","113","",","","",","50","150","", "" "" ""
"IRPSite7-GW-46GW205-20170628","537_MOD","07/11/17","19:41","N","NA","000","13C2-PFOA","13C2-
PFOA","82.7","","IS","Yes","Y","","Y","","",","PCT_REC","","",","","100","82.7","82.7","","","",","","50","150","" "" "" ""
"IRPSite7-GW-46GW205-20170628","537_MOD","07/11/17","19:41","N","NA","000","13C8-PFOS","13C8-
PFOS","97.9","","IS","Yes","Y","","Y","",","","PCT_REC","",","","","100","97.9","97.9","","",","",","50","150","", "" "" ""
"IRPSite7-GW-46GW205-20170628","537 MOD","07/11/17","19:41","N","NA","000","13C5-PFNA","13C5-
PFNA","85.3","","IS","Yes","Y","","Y","","",","PCT_REC","","",","","100","85.3","85.3","",","","","","50","150","" "" "" ""
"IRPSite7-GW-46GW205-20170628","537_MOD","07/11/17","19:41","N","NA","000","13C2-PFDA","13C2-
PFDA","71.5","","IS","Yes","Y","","Y","","",","PCT_REC","",","","","100","71.5","71.5","","","",","","50","150","" "","",""
"IRPSite7-GW-46GW205-20170628","537_MOD","07/11/17","19:41","N","NA","000","d3-MeFOSAA","d3-
MeFOSAA","75.9","","IS","Yes","Y","","Y","",","","PCT_REC","",","","","100","75.9","75.9","",","","",","50","15 0","","","",""
"IRPSite7-GW-46GW205-20170628","537_MOD","07/11/17","19:41","N","NA","000","13C2-PFUnA","13C2-
PFUnA","66.2","","IS","Yes","Y",",",Y","",","","PCT_REC","","",","","100","66.2","66.2","",","","","","50","150"," " "" "" ""
"IRPSite7-GW-46GW205-20170628","537_MOD","07/11/17","19:41","N","NA","000","d5-EtFOSAA","d5-
EtFOSAA","57.5","","IS","Yes","Y","","Y","","",","PCT_REC",","","",","100","57.5","57.5","",","","","","50","150

"IRPSite7-GW-46GW205-20170628","537_MOD","07/11/17","19:41","N","NA","000","13C2-PFDoA","13C2-
PFDoA","4.20","","IS","Yes","Y","H","Y","",","","PCT_REC","","",","","100","4.20","4.20","","",","","","50","150" "" "*" "" ""
"IRPSite7-GW-46GW205-20170628","537_MOD","07/11/17","19:41","N","NA","000","13C2-PFTeDA","13C2-
PFTeDA","4.90","","IS","Yes","Y","H","Y","",","","PCT_REC","","",","","100","4.90","4.90","",","","","","50","15 0","","*","",""
"IRPSite7-GW-FD01-20170628","537_MOD","07/11/17","19:51","N","NA","000","375-73-
5","PFBS","2.48","","TRG","Yes","Y","J","Y","1.85","5.17","8.28","NG_L","NG_L","",","","","",","","","","","",""," ","","","","
"IRPSite7-GW-FD01-20170628","537_MOD","07/11/17","19:51","N","NA","000","307-24-
4","PERFLUOROHEXANOIC ACID
(PFHXA)","8.15","","TRG","Yes","Y","J","Y","2.26","5.17","8.28","NG_L","NG_L","",","","","",","","",","","",""," " "" "" "" ""
"IRPSite7-GW-FD01-20170628","537_MOD","07/11/17","19:51","N","NA","000","375-85-
9","PERFLUOROHEPTANOIC ACID
(PFHPA)","4.95","","TRG","Yes","Y","J","Y","0.612","5.17","8.28","NG_L","NG_L","",","","",","","","",","","","",
"IRPSite7-GW-FD01-20170628","537_MOD","07/11/17","19:51","N","NA","000","355-46-

## 4","PERFLUOROHEXANESULFONIC ACID

(PFHXS)","20.2","","TRG","Yes","Y","","Y","0.980","5.17","8.28","NG_L","NG_L","","","","","","","","","","","",""," " "" "" "" ""
"IRPSite7-GW-FD01-20170628","537_MOD","07/11/17","19:51","N","NA","000","335-67-
1","PERFLUOROOCTANOIC ACID
(PFOA)","15.2","","TRG","Yes","Y","","Y","0.674","5.17","8.28","NG_L","NG_L","","","","","","","","","","","","","", "" "" "" ""
"IRPSite7-GW-FD01-20170628","537_MOD","07/11/17","19:51","N","NA","000","1763-23-
1","HEPTADECAFLUOROACTANESULFONIC ACID SOLUTION
","22.6","","TRG","Yes","Y","","Y","0.835","5.17","8.28","NG_L","NG_L","","","","","","","","","","","","","","","","", ""
"IRPSite7-GW-FD01-20170628","537_MOD","07/11/17","19:51","N","NA","000","375-95-
1","PERFLUORONONANOIC ACID
(PFNA)","1.02","","TRG","Yes","Y","J","Y","0.838","5.17","8.28","NG L","NG L","","","","","","","","","","","","","" "" "" "" ""
"IRPSite7-GW-FD01-20170628","537_MOD","07/11/17","19:51","N","NA","000","335-76-
2","PERFLUORODECANOIC ACID
(PFDA)","","","TRG","Yes","N","U","Y","1.54","5.17","8.28","NG_L","NG_L","","","","","","","","","","","","","",""," " "" ""
"IRPSite7-GW-FD01-20170628","537_MOD","07/11/17","19:51","N","NA","000","2355-31-
9","MeFOSAA","","","TRG","Yes","N","U","Y","1.71","5.17","8.28","NG L","NG L","","","","","","","","","","","","" ""","","","","
"IRPSite7-GW-FD01-20170628","537_MOD","07/11/17","19:51","N","NA","000","2058-94-
8","PERFLUOROUNDECANOIC ACID
(PFUNA)","","","TRG","Yes","N","U","Y","1.09","5.17","8.28","NG_L","NG_L","","","","","","","","","","","","","","" "","",""
"IRPSite7-GW-FD01-20170628","537_MOD","07/11/17","19:51","N","NA","000","2991-50-
6","EtFOSAA","","","TRG","Yes","N","U","Y","1.42","5.17","8.28","NG_L","NG_L","","","","","","","","","","","","", "" "" "" "" ""
"IRPSite7-GW-FD01-20170628","537_MOD","07/11/17","19:51","N","NA","000","307-55-
1","PERFLUORODODECANOIC ACID
(PFDOA)","","","TRG","Yes","N","U","Y","0.820","5.17","8.28","NG_L","NG_L","","","","","","","","","","","","",""," " "" "",""
"IRPSite7-GW-FD01-20170628","537 MOD","07/11/17","19:51","N","NA","000","72629-94-
8","PFTrDA","","","TRG","Yes","N","U","Y","0.511","5.17","8.28","NG L","NG L","","","","","","","","","","","",""," " "" "" "" ""
"IRPSite7-GW-FD01-20170628","537_MOD","07/11/17","19:51","N","NA","000","376-06-
7","PFTeDA","","","TRG","Yes","N","U","Y","0.781","5.17","8.28","NG_L","NG_L","","","","","","","","","","","","", "" "" "" "" ""
"IRPSite7-GW-FD01-20170628","537_MOD","07/11/17","19:51","N","NA","000","13C3-PFBS","13C3-
PFBS","83.2","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","83.2","83.2","","","","","","50","150","", "" "" ""
"IRPSite7-GW-FD01-20170628","537_MOD","07/11/17","19:51","N","NA","000","13C2-PFHxA","13C2-
PFHxA","102","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","102","102","","","","","","50","150","", "" "" ""
"IRPSite7-GW-FD01-20170628","537_MOD","07/11/17","19:51","N","NA","000","13C4-PFHpA","13C4-
PFHpA","94.1","","IS","Yes","Y","","Y","","","","PCT_REC","","",","","100","94.1","94.1","","","","",","50","150"," " "" "" ""
"IRPSite7-GW-FD01-20170628","537_MOD","07/11/17","19:51","N","NA","000","18O2-PFHxS","18O2-
PFHxS","109","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","109","109","","","","","","50","150","", "" "" ""
"IRPSite7-GW-FD01-20170628","537_MOD","07/11/17","19:51","N","NA","000","13C2-PFOA","13C2-

PFOA","89.7","","IS","Yes","Y","","Y","","","","PCT_REC","","","",","100","89.7","89.7","","","","","","50","150","" "" "" ""
"IRPSite7-GW-FD01-20170628","537_MOD","07/11/17","19:51","N","NA","000","13C8-PFOS","13C8-
PFOS","92.2","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","92.2","92.2","","","","","","50","150","", "" "" ""
"IRPSite7-GW-FD01-20170628","537 MOD","07/11/17","19:51","N","NA","000","13C5-PFNA","13C5-
PFNA","103","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","103","103","","","","","","50","150","","
" "" ""
"IRPSite7-GW-FD01-20170628","537_MOD","07/11/17","19:51","N","NA","000","13C2-PFDA","13C2-
PFDA","102","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","102","102","","","","","","50","150",""," ","","
"IRPSite7-GW-FD01-20170628","537_MOD","07/11/17","19:51","N","NA","000","d3-MeFOSAA","d3-
MeFOSAA","87.8","","IS","Yes","Y","","Y","","","","PCT_REC","","","",","100","87.8","87.8","","","","","","50","15 0","","","",""
"IRPSite7-GW-FD01-20170628","537_MOD","07/11/17","19:51","N","NA","000","13C2-PFUnA","13C2-
PFUnA","78.3","","IS","Yes","Y","","Y","","","","PCT_REC","","",","","100","78.3","78.3","","","","","","50","150"," ","","","
"IRPSite7-GW-FD01-20170628","537_MOD","07/11/17","19:51","N","NA","000","d5-EtFOSAA","d5-
EtFOSAA","57.3","","IS","Yes","Y","","Y","","","","PCT_REC","","","",","100","57.3","57.3","","","","","","50","150 " "" "" "" ""
"IRPSite7-GW-FD01-20170628","537_MOD","07/11/17","19:51","N","NA","000","13C2-PFDoA","13C2-
PFDoA","19.4","","IS","Yes","Y","H","Y","","","","PCT_REC","","","","","100","19.4","19.4","","","","","","50","150" "" "*" "" ""
"IRPSite7-GW-FD01-20170628","537_MOD","07/11/17","19:51","N","NA","000","13C2-PFTeDA","13C2-
PFTeDA","9.60","","IS","Yes","Y","H","Y","","","","PCT_REC","","","","","100","9.60","9.60","","","","","","50","15 0","","*","",""
"IRPSite7-GW-07GW202-20170628","537_MOD","07/11/17","20:02","N","NA","000","375-73-
5","PFBS","5.60","","TRG","Yes","Y","J","Y","1.83","5.12","8.20","NG_L","NG_L","","","","","","","","","","","",""," " "" "" "" ""
"IRPSite7-GW-07GW202-20170628","537_MOD","07/11/17","20:02","N","NA","000","307-244","PERFLUOROHEXANOIC ACID
(PFHXA)","","","TRG","Yes","N","U","Y","2.23","5.12","8.20","NG_L","NG_L","","","","","","","","","","","","","","" "" "" ""
"IRPSite7-GW-07GW202-20170628","537_MOD","07/11/17","20:02","N","NA","000","375-85-
9","PERFLUOROHEPTANOIC ACID
(PFHPA)","3.37","","TRG","Yes","Y","J","Y","0.606","5.12","8.20","NG_L","NG_L","","","","","","","","","","","","", "" "" "" "" ""
"IRPSite7-GW-07GW202-20170628","537_MOD","07/11/17","20:02","N","NA","000","355-464","PERFLUOROHEXANESULFONIC ACID
(PFHXS)","5.05","","TRG","Yes","Y","J","Y","0.971","5.12","8.20","NG_L","NG_L","","","","","","","","","","","","", "" "" "" "" ""
"IRPSite7-GW-07GW202-20170628","537_MOD","07/11/17","20:02","N","NA","000","335-67-
1","PERFLUOROOCTANOIC ACID
(PFOA)","7.22","","TRG","Yes","Y","J","Y","0.667","5.12","8.20","NG_L","NG_L","","","","","","","","","","","","","" "" "" "" ""
"IRPSite7-GW-07GW202-20170628","537_MOD","07/11/17","20:02","N","NA","000","1763-23-
1","HEPTADECAFLUOROACTANESULFONIC ACID SOLUTION
","7.68","","TRG","Yes","Y","J","Y","0.827","5.12","8.20","NG_L","NG_L","","","","","","","","","","","","","","","","" ""
"IRPSite7-GW-07GW202-20170628","537_MOD","07/11/17","20:02","N","NA","000","375-95-
1","PERFLUORONONANOIC ACID
(PFNA)","","","TRG","Yes","N","U","Y","0.830","5.12","8.20","NG_L","NG_L","","","","","","","","",","","","","","", "" "" ""
"IRPSite7-GW-07GW202-20170628","537_MOD","07/11/17","20:02","N","NA","000","335-76-

## 2","PERFLUORODECANOIC ACID

(PFDA)","","","TRG","Yes","N","U","Y","1.53","5.12","8.20","NG_L","NG_L","","","","","","","","","","","","","",""," " "" ""
"IRPSite7-GW-07GW202-20170628","537_MOD","07/11/17","20:02","N","NA","000","2355-31-
9","MeFOSAA","","","TRG","Yes","N","U","Y","1.69","5.12","8.20","NG L","NG L","","","","","","","","","","","","" "" "" "" "" ""
"IRPSite7-GW-07GW202-20170628","537_MOD","07/11/17","20:02","N","NA","000","2058-94-

## 8","PERFLUOROUNDECANOIC ACID

(PFUNA)","","","TRG","Yes","N","U","Y","1.08","5.12","8.20","NG_L","NG_L","","","","","","","","","","","","","","" "" "", ""
"IRPSite7-GW-07GW202-20170628","537_MOD","07/11/17","20:02","N","NA","000","2991-50-
6","EtFOSAA","","","TRG","Yes","N","U","Y","1.40","5.12","8.20","NG_L","NG_L","","","","","","","","","","","","", "" "!" """ ""! ""
"IRPSite7-GW-07GW202-20170628","537_MOD","07/11/17","20:02","N","NA","000","307-55-

## 1","PERFLUORODODECANOIC ACID

(PFDOA)","","","TRG","Yes","N","U","Y","0.812","5.12","8.20","NG_L","NG_L","","","","","","","","","","","","",""," " "" "" ""
"IRPSite7-GW-07GW202-20170628","537 MOD","07/11/17","20:02","N","NA","000","72629-94-
8","PFTrDA","","","TRG","Yes","N","U","Y","0.506","5.12","8.20","NG L","NG L","","","","","","","","","","","",""," " "" "" "" ""
"IRPSite7-GW-07GW202-20170628","537_MOD","07/11/17","20:02","N","NA","000","376-06-
7","PFTeDA","","","TRG","Yes","N","U","Y","0.774","5.12","8.20","NG_L","NG_L","","","","","","","","","","","","",

"IRPSite7-GW-07GW202-20170628","537 MOD","07/11/17","20:02","N","NA","000","13C3-PFBS","13C3-
PFBS","88.6","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","88.6","88.6","","","","","","50","150","", "" "" ""
"IRPSite7-GW-07GW202-20170628","537_MOD","07/11/17","20:02","N","NA","000","13C2-PFHxA","13C2-
PFHxA","107","","IS","Yes","Y","","Y","","",","PCT_REC","","","","","100","107","107","","","","","","50","150","", "" "" ""
"IRPSite7-GW-07GW202-20170628","537_MOD","07/11/17","20:02","N","NA","000","13C4-PFHpA","13C4-
PFHpA","97.2","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","97.2","97.2","","","","",","50","150"," " "" "" ""
"IRPSite7-GW-07GW202-20170628","537_MOD","07/11/17","20:02","N","NA","000","18O2-PFHxS","18O2-
PFHxS","92.6","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","92.6","92.6","","","","","","50","150"," " "" "" ""
"IRPSite7-GW-07GW202-20170628","537 MOD","07/11/17","20:02","N","NA","000","13C2-PFOA","13C2-
PFOA","94.7","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","94.7","94.7","","","","","","50","150","" "" "" ""
"IRPSite7-GW-07GW202-20170628","537_MOD","07/11/17","20:02","N","NA","000","13C8-PFOS","13C8-
PFOS","88.4","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","88.4","88.4","","","","","","50","150","", "" "" ""
"IRPSite7-GW-07GW202-20170628","537_MOD","07/11/17","20:02","N","NA","000","13C5-PFNA","13C5-
PFNA","85.1","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","85.1","85.1","","","",","","50","150","" "" "" ""
"IRPSite7-GW-07GW202-20170628","537_MOD","07/11/17","20:02","N","NA","000","13C2-PFDA","13C2-
PFDA","92.4","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","92.4","92.4","","","","","","50","150","" "'" "'" ""'
"IRPSite7-GW-07GW202-20170628","537_MOD","07/11/17","20:02","N","NA","000","d3-MeFOSAA","d3MeFOSAA","97.5","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","97.5","97.5","","","","","","50","15 0","","","",""
"IRPSite7-GW-07GW202-20170628","537_MOD","07/11/17","20:02","N","NA","000","13C2-PFUnA","13C2-
PFUnA","69.8","","IS","Yes","Y","","Y","","","","PCT_REC","","","",","100","69.8","69.8","","","","","","50","150"," " "" "" ""
"IRPSite7-GW-07GW202-20170628","537_MOD","07/11/17","20:02","N","NA","000","d5-EtFOSAA","d5-

EtFOSAA","72.3","","IS","Yes","Y","","Y","","","","PCT_REC","","","",","100","72.3","72.3","","","","","","50","150

"IRPSite7-GW-07GW202-20170628","537_MOD","07/11/17","20:02","N","NA","000","13C2-PFDoA","13C2-
PFDoA","31.2","","IS","Yes","Y","H","Y","","","","PCT_REC","","","","","100","31.2","31.2","","","","","","50","150" "" "*" "" ""
"IRPSite7-GW-07GW202-20170628","537_MOD","07/11/17","20:02","N","NA","000","13C2-PFTeDA","13C2-
PFTeDA","20.1","","IS","Yes","Y","H","Y","","","","PCT_REC","","","","","100","20.1","20.1","","","","","","50","15 0","","*","",""
"IRPSite7-GW-FRB01-20170628","537_MOD","07/11/17","20:12","N","NA","000","375-73-
5","PFBS","","","TRG","Yes","N","U","Y","1.82","5.08","8.14","NG_L","NG_L","","","","","","","","","","","","","","" ""","","
"IRPSite7-GW-FRB01-20170628","537_MOD","07/11/17","20:12","N","NA","000","307-244","PERFLUOROHEXANOIC ACID
(PFHXA)","","","TRG","Yes","N","U","Y","2.22","5.08","8.14","NG_L","NG_L","","","","","","","","","","","","","","" "" "" ""
"IRPSite7-GW-FRB01-20170628","537_MOD","07/11/17","20:12","N","NA","000","375-85-
9","PERFLUOROHEPTANOIC ACID
(PFHPA)","","","TRG","Yes","N","U","Y","0.602","5.08","8.14","NG_L","NG_L","","","","","","","","","","","","",""," " "" "" ""
"IRPSite7-GW-FRB01-20170628","537_MOD","07/11/17","20:12","N","NA","000","355-46-
4","PERFLUOROHEXANESULFONIC ACID
(PFHXS)","","","TRG","Yes","N","U","Y","0.964","5.08","8.14","NG_L","NG_L","","","","","","","","","","","","",""," " "" "" ""
"IRPSite7-GW-FRB01-20170628","537_MOD","07/11/17","20:12","N","NA","000","335-67-
1","PERFLUOROOCTANOIC ACID
(PFOA)","","","TRG","Yes","N","U","Y","0.663","5.08","8.14","NG_L","NG_L","","","","","","","","","","","","","","", "" "" ""
"IRPSite7-GW-FRB01-20170628","537_MOD","07/11/17","20:12","N","NA","000","1763-23-
1","HEPTADECAFLUOROACTANESULFONIC ACID SOLUTION
","","","TRG","Yes","N","U","Y","0.821","5.08","8.14","NG L","NG L","","","","","","","","","","","","","","","","","" "IRPSite7-GW-FRB01-20170628","537_MOD","07/11/17","20:12","N","NA","000","375-95-
1","PERFLUORONONANOIC ACID
(PFNA)","","","TRG","Yes","N","U","Y","0.824","5.08","8.14","NG_L","NG_L","","","","","","","","",","","","","","", "" "" ""
"IRPSite7-GW-FRB01-20170628","537_MOD","07/11/17","20:12","N","NA","000","335-76-
2","PERFLUORODECANOIC ACID
(PFDA)","","","TRG","Yes","N","U","Y","1.52","5.08","8.14","NG_L","NG_L","","","","","","","","","","","","","",""," " "" ""
"IRPSite7-GW-FRB01-20170628","537_MOD","07/11/17","20:12","N","NA","000","2355-31-
9","MeFOSAA","","","TRG","Yes","N","U","Y","1.68","5.08","8.14","NG_L","NG_L","","","","","","","","","","","","" "" "" "" "" ""
"IRPSite7-GW-FRB01-20170628","537_MOD","07/11/17","20:12","N","NA","000","2058-94-
8","PERFLUOROUNDECANOIC ACID
(PFUNA)","","","TRG","Yes","N","U","Y","1.07","5.08","8.14","NG_L","NG_L","","","","","","","","","","","","","","" "" "" ""
"IRPSite7-GW-FRB01-20170628","537_MOD","07/11/17","20:12","N","NA","000","2991-50-
6","EtFOSAA","","","TRG","Yes","N","U","Y","1.39","5.08","8.14","NG_L","NG_L","","","","","","","","","","","","",

"IRPSite7-GW-FRB01-20170628","537_MOD","07/11/17","20:12","N","NA","000","307-55-
1","PERFLUORODODECANOIC ACID
(PFDOA)","","","TRG","Yes","N","U","Y","0.806","5.08","8.14","NG_L","NG_L","","","","","","","","","","","","",""," ","","","
"IRPSite7-GW-FRB01-20170628","537_MOD","07/11/17","20:12","N","NA","000","72629-94-
8","PFTrDA","","","TRG","Yes","N","U","Y","0.503","5.08","8.14","NG_L","NG_L","","","","","","","","","","","","","
"IRPSite7-GW-FRB01-20170628","537 MOD","07/11/17","20:12","N","NA","000","13C3-PFBS","13C3-
PFBS","95.0","","IS","Yes","Y","","Y","",","","PCT_REC","","","",","100","95.0","95.0","","",","","","50","150","", """ """ ""
"IRPSite7-GW-FRB01-20170628","537_MOD","07/11/17","20:12","N","NA","000","13C2-PFHxA","13C2-
PFHxA","101","","IS","Yes","Y","","Y","",","","PCT_REC","",","","","100","101","101","",","","","","50","150","", "" " " " "
"IRPSite7-GW-FRB01-20170628","537_MOD","07/11/17","20:12","N","NA","000","13C4-PFHpA","13C4-
PFHpA","95.1","","IS","Yes","Y",",""Y","",","","PCT_REC","","",","","100","95.1","95.1","","",","","","50","150"," " "r" "t" "t"
"IRPSite7-GW-FRB01-20170628","537_MOD","07/11/17","20:12","N","NA","000","18O2-PFHxS","18O2-
PFHxS","95.9","","IS","Yes","Y","","Y","",","","PCT_REC",","","","","100","95.9","95.9","","",","",","50","150"," " "" "" ""
"IRPSite7-GW-FRB01-20170628","537 MOD","07/11/17","20:12","N","NA","000","13C2-PFOA","13C2-
PFOA","102","","IS","Yes","Y","","Y","",","","PCT_REC","",","","","100","102","102","",","","",","50","150",""," " " " " " 1
"IRPSite7-GW-FRB01-20170628","537_MOD","07/11/17","20:12","N","NA","000","13C8-PFOS","13C8-
PFOS","95.2","","IS","Yes","Y",","Y","",","","PCT_REC","","",","","100","95.2","95.2","",","","",","50","150","", "" "" ""
"IRPSite7-GW-FRB01-20170628","537_MOD","07/11/17","20:12","N","NA","000","13C5-PFNA","13C5-
PFNA","85.2","","IS","Yes","Y","","Y","","",","PCT_REC","","",","","100","85.2","85.2","",","","","","50","150","" "" "" ""
"IRPSite7-GW-FRB01-20170628","537_MOD","07/11/17","20:12","N","NA","000","13C2-PFDA","13C2-
PFDA","88.4","","IS","Yes","Y","","Y","","",","PCT_REC","",","","","100","88.4","88.4",","","","","","50","150","" "" "" ""
"IRPSite7-GW-FRB01-20170628","537_MOD","07/11/17","20:12","N","NA","000","d3-MeFOSAA","d3-
MeFOSAA","111","","IS","Yes","Y",",""Y","",","","PCT_REC","","",","","100","111","111","",","","","","50","150 " "" "" "" ""
"IRPSite7-GW-FRB01-20170628","537_MOD","07/11/17","20:12","N","NA","000","13C2-PFUnA","13C2-
PFUnA","77.2","","IS","Yes","Y",","Y","",","","PCT_REC","","",","","100","77.2","77.2","",","","","","50","150"," ","" "" ""
"IRPSite7-GW-FRB01-20170628","537_MOD","07/11/17","20:12","N","NA","000","d5-EtFOSAA","d5-
EtFOSAA","84.8","","IS","Yes","Y","","Y","",","","PCT_REC",","","",","100","84.8","84.8","",","","","","50","150 " "" "" "" ""
"IRPSite7-GW-FRB01-20170628","537_MOD","07/11/17","20:12","N","NA","000","13C2-PFDoA","13C2-
PFDoA","27.1","","IS","Yes","Y","H","Y","",","","PCT_REC","","",","","100","27.1","27.1","",","","",","50","150" "" "*" "" ""
"IRPSite7-GW-FRB01-20170628","537_MOD","07/11/17","20:12","N","NA","000","13C2-PFTeDA","13C2-
PFTeDA","7.10","","IS","Yes","Y","H","Y","",","","PCT_REC","","",","","100","7.10","7.10","",","","","","50","15 0","","*","",""
"IRPSite5-GW-FRB01-20170628","537_MOD","07/11/17","20:23","N","NA","000","375-73-
5","PFBS","","","TRG","Yes","N","U","Y","1.90","5.30","8.49","NG_L","NG_L","","",","","","",","","","",","","","" "'" "'" ""'
"IRPSite5-GW-FRB01-20170628","537_MOD","07/11/17","20:23","N","NA","000","307-244","PERFLUOROHEXANOIC ACID
(PFHXA)","","","TRG","Yes","N","U","Y","2.31","5.30","8.49","NG_L","NG_L",","","","","","",","","","",","","","" "" "" ""
"IRPSite5-GW-FRB01-20170628","537_MOD","07/11/17","20:23","N","NA","000","375-85-
9","PERFLUOROHEPTANOIC ACID
(PFHPA)","",","TRG","Yes","N","U","Y","0.627","5.30","8.49","NG_L","NG_L","",","","","",","","","",","","",""," " "'r "'" ""
"IRPSite5-GW-FRB01-20170628","537_MOD","07/11/17","20:23","N","NA","000","355-464","PERFLUOROHEXANESULFONIC ACID
(PFHXS)","","","TRG","Yes","N","U","Y","1.01","5.30","8.49","NG_L","NG_L","","","","","","","",","","","","","","", "" "" ""
"IRPSite5-GW-FRB01-20170628","537_MOD","07/11/17","20:23","N","NA","000","335-67-
1","PERFLUOROOCTANOIC ACID
(PFOA)","","","TRG","Yes","N","U","Y","0.691","5.30","8.49","NG_L","NG_L","","","","","","","","","","","","","","", "" "" ""
"IRPSite5-GW-FRB01-20170628","537_MOD","07/11/17","20:23","N","NA","000","1763-23-
1","HEPTADECAFLUOROACTANESULFONIC ACID SOLUTION
","","","TRG","Yes","N","U","Y","0.857","5.30","8.49","NG L","NG L","","","","","","","","","","","","","","","","","" "IRPSite5-GW-FRB01-20170628","537_MOD","07/11/17","20:23","N","NA","000","375-95-
1","PERFLUORONONANOIC ACID
(PFNA)","","","TRG","Yes","N","U","Y","0.860","5.30","8.49","NG_L","NG_L","","","","","","","","","","","","","","", "" "" ""
"IRPSite5-GW-FRB01-20170628","537_MOD","07/11/17","20:23","N","NA","000","335-76-
2","PERFLUORODECANOIC ACID
(PFDA)","","","TRG","Yes","N","U","Y","1.58","5.30","8.49","NG L","NG L","","","","","","","","","","","","","",""," " "" ""
"IRPSite5-GW-FRB01-20170628","537 MOD","07/11/17","20:23","N","NA","000","2355-31-
9","MeFOSAA","","","TRG","Yes","N","U","Y","1.75","5.30","8.49","NG_L","NG_L","","","","","","","","","","","","" "" "" "" "" ""
"IRPSite5-GW-FRB01-20170628","537_MOD","07/11/17","20:23","N","NA","000","2058-94-
8","PERFLUOROUNDECANOIC ACID
(PFUNA)","","","TRG","Yes","N","U","Y","1.11","5.30","8.49","NG_L","NG_L","","","","","","","","","","","","","","" "" "" ""
"IRPSite5-GW-FRB01-20170628","537_MOD","07/11/17","20:23","N","NA","000","2991-50-
6","EtFOSAA","","","TRG","Yes","N","U","Y","1.45","5.30","8.49","NG_L","NG_L","","","","","","","","","","","","", "" "" "" "" ""
"IRPSite5-GW-FRB01-20170628","537_MOD","07/11/17","20:23","N","NA","000","307-55-
1","PERFLUORODODECANOIC ACID
(PFDOA)","","","TRG","Yes","N","U","Y","0.841","5.30","8.49","NG_L","NG_L","","","","","","","","","","","","",""," "," "" ""
"IRPSite5-GW-FRB01-20170628","537_MOD","07/11/17","20:23","N","NA","000","72629-94-
8","PFTrDA","","","TRG","Yes","N","U","Y","0.525","5.30","8.49","NG_L","NG_L","","","","","","","","","","","",""," " "" "" "" ""
"IRPSite5-GW-FRB01-20170628","537_MOD","07/11/17","20:23","N","NA","000","376-06-
7","PFTeDA","","","TRG","Yes","N","U","Y","0.802","5.30","8.49","NG_L","NG_L","","","","","","","","","","","","", "" "" "" "" ""
"IRPSite5-GW-FRB01-20170628","537_MOD","07/11/17","20:23","N","NA","000","13C3-PFBS","13C3-
PFBS","91.8","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","91.8","91.8","","","","","","50","150","", "" "" ""
"IRPSite5-GW-FRB01-20170628","537_MOD","07/11/17","20:23","N","NA","000","13C2-PFHxA","13C2-
PFHxA","100","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","100","100","","","","","","50","150","", "" "" ""
"IRPSite5-GW-FRB01-20170628","537_MOD","07/11/17","20:23","N","NA","000","13C4-PFHpA","13C4-
PFHpA","90.3","","IS","Yes","Y","","Y","","","","PCT_REC","","",","","100","90.3","90.3","","","","","","50","150"," " "" "" ""
"IRPSite5-GW-FRB01-20170628","537 MOD","07/11/17","20:23","N","NA","000","18O2-PFHxS","18O2-
PFHxS","99.3","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","99.3","99.3","","","","","","50","150"," " "" "" ""
"IRPSite5-GW-FRB01-20170628","537_MOD","07/11/17","20:23","N","NA","000","13C2-PFOA","13C2-
PFOA","93.8","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","93.8","93.8","","","","","","50","150","" "" "" ""
"IRPSite5-GW-FRB01-20170628","537_MOD","07/11/17","20:23","N","NA","000","13C8-PFOS","13C8-
PFOS","101","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","101","101","","","","","","50","150","","" "" ""
"IRPSite5-GW-FRB01-20170628","537_MOD","07/11/17","20:23","N","NA","000","13C5-PFNA","13C5-
PFNA","86.7","","IS","Yes","Y","","Y","","","","PCT_REC","","","",","100","86.7","86.7","","","","","","50","150","" """," ""
"IRPSite5-GW-FRB01-20170628","537_MOD","07/11/17","20:23","N","NA","000","13C2-PFDA","13C2-
PFDA","83.9","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","83.9","83.9","","","","","","50","150","" "","","
"IRPSite5-GW-FRB01-20170628","537_MOD","07/11/17","20:23","N","NA","000","d3-MeFOSAA","d3-
MeFOSAA","96.5","","IS","Yes","Y","","Y","","","","PCT_REC","","","",","100","96.5","96.5","","","","","","50","15 0","","","",""
"IRPSite5-GW-FRB01-20170628","537_MOD","07/11/17","20:23","N","NA","000","13C2-PFUnA","13C2-
PFUnA","90.5","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","90.5","90.5","","","","","","50","150","
" "" "" ""
"IRPSite5-GW-FRB01-20170628","537_MOD","07/11/17","20:23","N","NA","000","d5-EtFOSAA","d5-
EtFOSAA","86.1","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","86.1","86.1","","","","","","50","150 " "" "" "" ""
"IRPSite5-GW-FRB01-20170628","537_MOD","07/11/17","20:23","N","NA","000","13C2-PFDoA","13C2-
PFDoA","23.1","","IS","Yes","Y","H","Y","","","","PCT_REC","","","","","100","23.1","23.1","","","","","","50","150" "" "*" "" ""
"IRPSite ${ }^{\prime}-G W-F R B 01-20170628 ", " 537$ MOD","07/11/17","20:23","N","NA","000","13C2-PFTeDA","13C2-
PFTeDA","5.20","","IS","Yes","Y","H","Y","","","","PCT_REC","","","","","100","5.20","5.20","","","","","","50","15 0","","*","",""
"IRPSite5-GW-04GW81S-20170628","537_MOD","07/11/17","20:34","N","NA","000","375-73-
5","PFBS","","","TRG","Yes","N","U","Y","1.85","5.17","8.29","NG_L","NG_L","","","","","","","","","","","","","","" "" "" ""
"IRPSite5-GW-04GW81S-20170628","537_MOD","07/11/17","20:34","N","NA","000","307-244","PERFLUOROHEXANOIC ACID
(PFHXA)","","","TRG","Yes","N","U","Y","2.26","5.17","8.29","NG_L","NG_L","","","","","","","","","","","","","","" "" "" ""
"IRPSite5-GW-04GW81S-20170628","537_MOD","07/11/17","20:34","N","NA","000","375-85-
9","PERFLUOROHEPTANOIC ACID
(PFHPA)","","","TRG","Yes","N","U","Y","0.612","5.17","8.29","NG_L","NG_L","","","","","","","","","","","","",""," ","","" ""
"IRPSite5-GW-04GW81S-20170628","537 MOD","07/11/17","20:34","N","NA","000","355-464","PERFLUOROHEXANESULFONIC ACID
(PFHXS)","4.38","","TRG","Yes","Y","J","Y","0.981","5.17","8.29","NG_L","NG_L","","","","","","","","","","",","", "" "" "" "" ""
"IRPSite5-GW-04GW81S-20170628","537_MOD","07/11/17","20:34","N","NA","000","335-67-
1","PERFLUOROOCTANOIC ACID
(PFOA)","1.43","","TRG","Yes","Y","J","Y","0.674","5.17","8.29","NG_L","NG_L","","","","","","","","","","","","","" "" "" "" ""
"IRPSite5-GW-04GW81S-20170628","537_MOD","07/11/17","20:34","N","NA","000","1763-23-
1","HEPTADECAFLUOROACTANESULFONIC ACID SOLUTION
","1.61","","TRG","Yes","Y","J","Y","0.836","5.17","8.29","NG_L","NG_L","","","","","","","","","","","","","","","","" ""
"IRPSite5-GW-04GW81S-20170628","537_MOD","07/11/17","20:34","N","NA","000","375-95-
1","PERFLUORONONANOIC ACID
(PFNA)","","","TRG","Yes","N","U","Y","0.839","5.17","8.29","NG_L","NG_L","","","","","","","","","","","","","","", "" "" ""
"IRPSite5-GW-04GW81S-20170628","537_MOD","07/11/17","20:34","N","NA","000","335-76-
2","PERFLUORODECANOIC ACID
(PFDA)","","","TRG","Yes","N","U","Y","1.54","5.17","8.29","NG_L","NG_L","","","","","","","","","","","","","","","
" "'" ""
"IRPSite5-GW-04GW81S-20170628","537_MOD","07/11/17","20:34","N","NA","000","2355-31-
9","MeFOSAA","","","TRG","Yes","N","U","Y","1.71","5.17","8.29","NG_L","NG_L","",","","",","","","","",","",""

"IRPSite5-GW-04GW81S-20170628","537_MOD","07/11/17","20:34","N","NA","000","2058-94-
8","PERFLUOROUNDECANOIC ACID
(PFUNA)","","","TRG","Yes","N","U","Y","1.09","5.17","8.29","NG_L","NG_L","","","",","","","",","","","","","","" "'r $\quad$ "t $\quad$ "r
"IRPSite5-GW-04GW81S-20170628","537_MOD","07/11/17","20:34","N","NA","000","2991-50-
6","EtFOSAA","",",",TRG","Yes","N","U","Y","1.42","5.17","8.29","NG_L","NG_L","",","","","",","","","","","","", "'" "" " "' " "' " "
"IRPSite5-GW-04GW81S-20170628","537_MOD","07/11/17","20:34","N","NA","000","307-55-
1","PERFLUORODODECANOIC ACID
(PFDOA)","",","TRG","Yes","N","U","Y","0.821","5.17","8.29","NG_L","NG_L","",","","","",","","","",","","",""," ","","" ""
"IRPSite5-GW-04GW81S-20170628","537_MOD","07/11/17","20:34","N","NA","000","72629-94-
8","PFTrDA","",","TRG","Yes","N","U","Y","0.512","5.17","8.29","NG_L","NG L","",","","","","","",","","","",""," " "" "" "" ""
"IRPSite5-GW-04GW81S-20170628","537 MOD","07/11/17","20:34","N","NA","000","376-06-
7","PFTeDA","","","TRG","Yes","N","U","Y","0.782","5.17","8.29","NG_L","NG_L","","",","","","","","",","","","", "","","",",""
"IRPSite5-GW-04GW81S-20170628","537_MOD","07/11/17","20:34","N","NA","000","13C3-PFBS","13C3-
PFBS","81.0","","IS","Yes","Y","","Y","",","","PCT_REC","",","","","100","81.0","81.0","",","",","","50","150","", "" "" ""
"IRPSite5-GW-04GW81S-20170628","537_MOD","07/11/17","20:34","N","NA","000","13C2-PFHxA","13C2-
PFHxA","98.3","","IS","Yes","Y","","Y","","","","PCT_REC","","",","","100","98.3","98.3","","",","","","50","150"," ","" "" ""
"IRPSite5-GW-04GW81S-20170628","537_MOD","07/11/17","20:34","N","NA","000","13C4-PFHpA","13C4-
PFHpA","91.7","","IS","Yes","Y",","Y","",","","PCT_REC","","",","","100","91.7","91.7","",","","","","50","150"," ","","" ""
"IRPSite5-GW-04GW81S-20170628","537_MOD","07/11/17","20:34","N","NA","000","18O2-PFHxS","18O2-
PFHxS","104",","IS","Yes","Y","","Y","","","","PCT_REC","","","",","100","104","104","",","","","","50","150","", "" "" ""
"IRPSite5-GW-04GW81S-20170628","537_MOD","07/11/17","20:34","N","NA","000","13C2-PFOA","13C2-
PFOA","88.8","","IS","Yes","Y","","Y","",","","PCT_REC","",","","","100","88.8","88.8","",","","","","50","150","" "" "",""
"IRPSite5-GW-04GW81S-20170628","537_MOD","07/11/17","20:34","N","NA","000","13C8-PFOS","13C8-
PFOS","95.1","","IS","Yes","Y",","Y","","",",",PCT_REC","","",","","100","95.1","95.1","",","","","","50","150","", "" "" ""
"IRPSite5-GW-04GW81S-20170628","537_MOD","07/11/17","20:34","N","NA","000","13C5-PFNA","13C5-
PFNA","85.7","","IS","Yes","Y","","Y","",","","PCT_REC","",","","","100","85.7","85.7","",","","","","50","150","" "","",""
"IRPSite5-GW-04GW81S-20170628","537_MOD","07/11/17","20:34","N","NA","000","13C2-PFDA","13C2-
PFDA","79.0","","IS","Yes","Y","","Y","","",","PCT_REC","",","","","100","79.0","79.0","","","",","","50","150","" "","","
"IRPSite5-GW-04GW81S-20170628","537_MOD","07/11/17","20:34","N","NA","000","d3-MeFOSAA","d3MeFOSAA","98.6",","IS","Yes","Y","","Y","","",","PCT_REC","","","",","100","98.6","98.6","",","","","","50","15 0","","","",""
"IRPSite5-GW-04GW81S-20170628","537_MOD","07/11/17","20:34","N","NA","000","13C2-PFUnA","13C2-
PFUnA","78.5","","IS","Yes","Y","","Y","","","","PCT_REC","","","",","100","78.5","78.5","","","",","","50","150"," " "" "" ""
"IRPSite5-GW-04GW81S-20170628","537_MOD","07/11/17","20:34","N","NA","000","d5-EtFOSAA","d5-
EtFOSAA","60.8","","IS","Yes","Y","","Y","","",","PCT_REC","","",","","100","60.8","60.8","","",","","","50","150 " "'r " " " " " " "
"IRPSite5-GW-04GW81S-20170628","537_MOD","07/11/17","20:34","N","NA","000","13C2-PFDoA","13C2-
PFDoA","10.7","","IS","Yes","Y","H","Y","","","","PCT_REC","","","","","100","10.7","10.7","","","","","","50","150" "" "*" "" ""
"IRPSite5-GW-04GW81S-20170628","537_MOD","07/11/17","20:34","N","NA","000","13C2-PFTeDA","13C2-
PFTeDA","25.6","","IS","Yes","Y","H","Y","","","","PCT_REC","","","","","100","25.6","25.6","","","","","","50","15 0","","*","",""
"IRPSite5-GW-04GW80-20170628","537_MOD","07/11/17","20:44","N","NA","000","375-73-
5","PFBS","12.4","","TRG","Yes","Y","","Y","1.88","5.25","8.41","NG_L","NG_L","","","","","","","","","","","","","" ,"","","",""
"IRPSite5-GW-04GW80-20170628","537_MOD","07/11/17","20:44","N","NA","000","307-244","PERFLUOROHEXANOIC ACID
(PFHXA)","19.5","","TRG","Yes","Y","","Y","2.29","5.25","8.41","NG_L","NG_L","","","","","","","","","","","","","" "","","",""
"IRPSite5-GW-04GW80-20170628","537_MOD","07/11/17","20:44","N","NA","000","375-85-
9","PERFLUOROHEPTANOIC ACID
(PFHPA)","7.88","","TRG","Yes","Y","J","Y","0.621","5.25","8.41","NG_L","NG_L","","","","","","","","","","",","", "" "" "" "" ""
"IRPSite5-GW-04GW80-20170628","537_MOD","07/11/17","20:44","N","NA","000","355-464","PERFLUOROHEXANESULFONIC ACID
(PFHXS)","155","","TRG","Yes","Y","","Y","0.995","5.25","8.41","NG_L","NG_L","","","","","","","","","","","","","" "" "" "" ""
"IRPSite5-GW-04GW80-20170628","537_MOD","07/11/17","20:44","N","NA","000","335-67-
1","PERFLUOROOCTANOIC ACID
(PFOA)","18.9","","TRG","Yes","Y","","Y","0.684","5.25","8.41","NG_L","NG_L","","","","","","","","","","","","","", "" "" "" ""
"IRPSite5-GW-04GW80-20170628","537_MOD","07/11/17","20:44","N","NA","000","1763-23-
1","HEPTADECAFLUOROACTANESULFONIC ACID SOLUTION
","94.3","","TRG","Yes","Y","","Y","0.848","5.25","8.41","NG_L","NG_L","","","","","","","","","","","","","","","","", ""
"IRPSite5-GW-04GW80-20170628","537_MOD","07/11/17","20:44","N","NA","000","375-95-
1","PERFLUORONONANOIC ACID
(PFNA)","","","TRG","Yes","N","U","Y","0.851","5.25","8.41","NG_L","NG_L","","","","","","","","","","","","","","", "" "" ""
"IRPSite5-GW-04GW80-20170628","537_MOD","07/11/17","20:44","N","NA","000","335-76-
2","PERFLUORODECANOIC ACID
(PFDA)","","","TRG","Yes","N","U","Y","1.57","5.25","8.41","NG_L","NG_L","","","","","","","","","","","","","",""," " "" ""
"IRPSite5-GW-04GW80-20170628","537_MOD","07/11/17","20:44","N","NA","000","2355-31-
9","MeFOSAA","","","TRG","Yes","N","U","Y","1.73","5.25","8.41","NG_L","NG_L","","","","","","","","","","","","" ""","","","","
"IRPSite5-GW-04GW80-20170628","537_MOD","07/11/17","20:44","N","NA","000","2058-94-
8","PERFLUOROUNDECANOIC ACID
(PFUNA)","","","TRG","Yes","N","U","Y","1.10","5.25","8.41","NG_L","NG_L","","","","","","","","","","","","","","" ""","","
"IRPSite5-GW-04GW80-20170628","537_MOD","07/11/17","20:44","N","NA","000","2991-50-
6","EtFOSAA","","","TRG","Yes","N","U","Y","1.44","5.25","8.41","NG_L","NG_L","","","","","","","","","","","","", "","","","" ""
"IRPSite5-GW-04GW80-20170628","537_MOD","07/11/17","20:44","N","NA","000","307-55-
1","PERFLUORODODECANOIC ACID
(PFDOA)","","","TRG","Yes","N","U","Y","0.832","5.25","8.41","NG_L","NG_L","","","","","","","","","","","","",""," ","","",""
"IRPSite5-GW-04GW80-20170628","537_MOD","07/11/17","20:44","N","NA","000","72629-94-
8","PFTrDA","","","TRG","Yes","N","U","Y","0.519","5.25","8.41","NG_L","NG_L","","","","","","","","","","","",""," " "" "" "" ""
"IRPSite5-GW-04GW80-20170628","537 MOD","07/11/17","20:44","N","NA","000","376-06-
7","PFTeDA","","","TRG","Yes","N","U","Y","0.794","5.25","8.41","NG_L","NG_L","","","","","","","","","","","","", "" "" "" "" ""
"IRPSite5-GW-04GW80-20170628","537 MOD","07/11/17","20:44","N","NA","000","13C3-PFBS","13C3-
PFBS","90.6","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","90.6","90.6","","","","","","50","150","", "" "" ""
"IRPSite5-GW-04GW80-20170628","537 MOD","07/11/17","20:44","N","NA","000","13C2-PFHxA","13C2-
PFHxA","110","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","110","110","","","","","","50","150","",
"" "" ""
"IRPSite5-GW-04GW80-20170628","537_MOD","07/11/17","20:44","N","NA","000","13C4-PFHpA","13C4-
PFHpA","95.0","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","95.0","95.0","","","","",","50","150"," " "" "" ""
"IRPSite5-GW-04GW80-20170628","537_MOD","07/11/17","20:44","N","NA","000","18O2-PFHxS","18O2-
PFHxS","104","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","104","104","","","","","","50","150","",
" " "" ""
"IRPSite5-GW-04GW80-20170628","537_MOD","07/11/17","20:44","N","NA","000","13C2-PFOA","13C2-
PFOA","87.4","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","87.4","87.4","","","","","","50","150","" "" "" ""
"IRPSite5-GW-04GW80-20170628","537_MOD","07/11/17","20:44","N","NA","000","13C8-PFOS","13C8-
PFOS","111","","IS","Yes","Y","","Y","","","","PCT REC","","","","","100","111","111","","","","","","50","150","","" "" ""
"IRPSite5-GW-04GW80-20170628","537_MOD","07/11/17","20:44","N","NA","000","13C5-PFNA","13C5PFNA","90.7","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","90.7","90.7","","","","","","50","150","" "" "" ""
"IRPSite5-GW-04GW80-20170628","537_MOD","07/11/17","20:44","N","NA","000","13C2-PFDA","13C2-
PFDA","83.8","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","83.8","83.8","","","","","","50","150","" "" "" ""
"IRPSite5-GW-04GW80-20170628","537_MOD","07/11/17","20:44","N","NA","000","d3-MeFOSAA","d3MeFOSAA","128","","IS","Yes","Y","","Y","","",","PCT_REC","","","","","100","128","128","","","","","","50","150 " "" "" "" ""
"IRPSite5-GW-04GW80-20170628","537_MOD","07/11/17","20:44","N","NA","000","13C2-PFUnA","13C2-
PFUnA","90.2","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","90.2","90.2","","","","","","50","150"," " "" "" ""
"IRPSite5-GW-04GW80-20170628","537_MOD","07/11/17","20:44","N","NA","000","d5-EtFOSAA","d5-
EtFOSAA","93.6","","IS","Yes","Y","","Y","","","","PCT_REC","","","",","100","93.6","93.6","","","","",","50","150 " "" "" "" ""
"IRPSite5-GW-04GW80-20170628","537 MOD","07/11/17","20:44","N","NA","000","13C2-PFDoA","13C2-
PFDoA","36.6","","IS","Yes","Y","H","Y","","","","PCT_REC","","","","","100","36.6","36.6","","","","","","50","150" "" "*" "" ""
"IRPSite5-GW-04GW80-20170628","537_MOD","07/11/17","20:44","N","NA","000","13C2-PFTeDA","13C2-
PFTeDA","26.3","","IS","Yes","Y","H","Y","","","","PCT_REC","","","","","100","26.3","26.3","","","","","","50","15 0","","*","",""
"EB02","537 MOD","07/11/17","21:17","N","NA","000","375-73-
5","PFBS","","","TRG","Yes","N","U","Y","2.04","5.68","9.13","NG_L","NG_L","","","","","","","","","","","","","","" "" "" ""
"EB02","537_MOD","07/11/17","21:17","N","NA","000","307-24-4","PERFLUOROHEXANOIC ACID
(PFHXA)","","","TRG","Yes","N","U","Y","2.49","5.68","9.13","NG_L","NG_L","","","","","","","","","","","","","","" "'" "t" "'"
"EB02","537_MOD","07/11/17","21:17","N","NA","000","375-85-9","PERFLUOROHEPTANOIC ACID
(PFHPA)","","","TRG","Yes","N","U","Y","0.674","5.68","9.13","NG_L","NG_L","","","","","","","","","","","","","","

"EB02","537_MOD","07/11/17","21:17","N","NA","000","355-46-4","PERFLUOROHEXANESULFONIC ACID (PFHXS)","","","TRG","Yes","N","U","Y","1.08","5.68","9.13","NG_L","NG_L","","","","","","","","","","","","","","", "" "" " "
"EB02","537_MOD","07/11/17","21:17","N","NA","000","335-67-1","PERFLUOROOCTANOIC ACID
(PFOA)","","","TRG","Yes","N","U","Y","0.743","5.68","9.13","NG_L","NG_L","","","","","","","","","","","","","","", "" "" ""
"EB02","537_MOD","07/11/17","21:17","N","NA","000","1763-23-1","HEPTADECAFLUOROACTANESULFONIC ACID SOLUTION
","","","TRG","Yes","N","U","Y","0.921","5.68","9.13","NG_L","NG_L","","","","","","","","","","","","","","","","","" "EB02","537_MOD","07/11/17","21:17","N","NA","000","375-95-1","PERFLUORONONANOIC ACID (PFNA)","","","TRG","Yes","N","U","Y","0.924","5.68","9.13","NG_L","NG_L","","","","","","","","","","","","","","", "" "" ""
"EB02","537_MOD","07/11/17","21:17","N","NA","000","335-76-2","PERFLUORODECANOIC ACID
(PFDA)","","","TRG","Yes","N","U","Y","1.70","5.68","9.13","NG_L","NG_L","","","","","","","","","","","","","",""," " "" ""
"EB02","537_MOD","07/11/17","21:17","N","NA","000","2355-31-
9","MeFOSAA","","","TRG","Yes","N","U","Y","1.88","5.68","9.13","NG_L","NG_L","","","","","","","","","","","","" ""","",","",""
"EB02","537_MOD","07/11/17","21:17","N","NA","000","2058-94-8","PERFLUOROUNDECANOIC ACID
(PFUNA)","","","TRG","Yes","N","U","Y","1.20","5.68","9.13","NG_L","NG_L","","","","","","","","","","","","","","" "" "" ""
"EB02","537_MOD","07/11/17","21:17","N","NA","000","2991-50-
6","EtFOSAĀ","","","TRG","Yes","N","U","Y","1.56","5.68","9.13","NG_L","NG_L","","","","","","","",","","","","", "" "" "" "" ""
"EB02", "537_MOD","07/11/17","21:17","N","NA","000","307-55-1","PERFLUORODODECANOIC ACID
(PFDOA)","","","TRG","Yes","N","U","Y","0.904","5.68","9.13","NG_L","NG_L","","","","","","","","","","","","",""," " "" "" ""
"EB02","537_MOD","07/11/17","21:17","N","NA","000","72629-94-
8","PFTrDA","","","TRG","Yes","N","U","Y","0.564","5.68","9.13","NG_L","NG_L","","","","","","","","","","","",""," ","","","" ""
"EB02","537_MOD","07/11/17","21:17","N","NA","000","376-06-
7","PFTeDA","","","TRG","Yes","N","U","Y","0.861","5.68","9.13","NG_L","NG_L","","","","","","","","","","","","", "" "" "" "" """
"EB02","537_MOD","07/11/17","21:17","N","NA","000","13C3-PFBS","13C3-
PFBS","87.7","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","87.7","87.7","","","","","","50","150","", "" "" ""
"EB02","537_MOD","07/11/17","21:17","N","NA","000","13C2-PFHxA","13C2-
PFHxA","96.9","","IS","Yes","Y","","Y","","","","PCT_REC","","","",","100","96.9","96.9","","","","","","50","150"," " "" "" ""
"EB02","537_MOD","07/11/17","21:17","N","NA","000","13C4-PFHpA","13C4-
PFHpA","89.1","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","89.1","89.1","","","",","","50","150"," ","" "" ""
"EB02","537_MOD","07/11/17","21:17","N","NA","000","18O2-PFHxS","18O2-
PFHxS","107","","IS","Yes","Y","","Y","","","","PCT_REC","","","",","100","107","107","","","","",","50","150","", "" "" ""
"EB02","537_MOD","07/11/17","21:17","N","NA","000","13C2-PFOA","13C2-
PFOA","97.8","","IS","Yes","Y","","Y","","","","PCT_REC","","","",","100","97.8","97.8","","","",","","50","150","" "" "" ""
"EB02","537_MOD","07/11/17","21:17","N","NA","000","13C8-PFOS","13C8-
PFOS","90.6","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","90.6","90.6","","","","","","50","150","", "" "" ""
"EB02","537_MOD","07/11/17","21:17","N","NA","000","13C5-PFNA","13C5-
PFNA","88.3","","IS","Yes","Y","","Y","","","","PCT_REC","","","",","100","88.3","88.3","","","","",","50","150","" """"" ""
"EB02","537_MOD","07/11/17","21:17","N","NA","000","13C2-PFDA","13C2-
PFDA","93.3","","IS","Yes","Y","","Y","","","","PCT_REC","","","",","100","93.3","93.3","","","","","","50","150","" "" "" ""
"EB02","537 MOD","07/11/17","21:17","N","NA","000","d3-MeFOSAA","d3-
MeFOSAA","115","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","115","115","","","","","","50","150 "
"EB02","537_MOD","07/11/17","21:17","N","NA","000","13C2-PFUnA","13C2-
PFUnA","75.0","","IS","Yes","Y","","Y","","","","PCT_REC","","","",","100","75.0","75.0","","","","","","50","150"," " "" "" ""
"EB02","537 MOD","07/11/17","21:17","N","NA","000","d5-EtFOSAA","d5-
EtFOSAA","88.7","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","88.7","88.7","","","","","","50","150
" "" "" "" ""
"EB02","537_MOD","07/11/17","21:17","N","NA","000","13C2-PFDoA","13C2-
PFDoA","20.3","","IS","Yes","Y","H","Y","","","","PCT_REC","","","","","100","20.3","20.3","","","","","","50","150" "" "*" "" ""
"EB02","537_MOD","07/11/17","21:17","N","NA","000","13C2-PFTeDA","13C2-
PFTeDA","10.9","","IS","Yes","Y","H","Y","","","","PCT_REC","","","","","100","10.9","10.9","","","","","","50","15 0","","*","",""
"B7G0014-BLK1","537_MOD","07/11/17","18:37","N","NA","000","375-73-
5","PFBS","","","TRG","Yes","N","U","Y","1.79","5.00","8.00","NG L","NG L","","","","","","","","","",","","","","" "" "" ""
"B7G0014-BLK1","537 MOD","07/11/17","18:37","N","NA","000","307-24-4","PERFLUOROHEXANOIC ACID (PFHXA)","","","TRG","Yes","N","U","Y","2.18","5.00","8.00","NG_L","NG_L","","","","","","","","","",","","","","" "" "" ""
"B7G0014-BLK1","537_MOD","07/11/17","18:37","N","NA","000","375-85-9","PERFLUOROHEPTANOIC ACID (PFHPA)","","","TRG","Yes","N","U","Y","0.591","5.00","8.00","NG_L","NG_L","","","","","","","","","","","","",""," " "" "" ""
"B7G0014-BLK1","537_MOD","07/11/17","18:37","N","NA","000","355-46-4","PERFLUOROHEXANESULFONIC ACID
(PFHXS)","","","TRG","Yes","N","U","Y","0.947","5.00","8.00","NG_L","NG_L","","","","","","","","","","","","",""," ","" "" ""
"B7G0014-BLK1","537_MOD","07/11/17","18:37","N","NA","000","335-67-1","PERFLUOROOCTANOIC ACID (PFOA)","","","TRG","Yes","N","U","Y","0.651","5.00","8.00","NG_L","NG_L","","","","","","","","","","","","","","", "" "" ""
"B7G0014-BLK1","537_MOD","07/11/17","18:37","N","NA","000","1763-23-
1","HEPTADECAFLUÖROACTANESULFONIC ACID SOLUTION
","","","TRG","Yes","N","U","Y","0.807","5.00","8.00","NG_L","NG_L","","","","","","","","","","","","","","","","","" "B7G0014-BLK1","537_MOD","07/11/17","18:37","N","NA","000"," $375-95-1 "$, "PERFLUORONONANOIC ACID (PFNA)","","","TRG","Yes","N","U","Y","0.810","5.00","8.00","NG_L","NG_L","","","","","","","","","","","","","","", "" "" ""
"B7G0014-BLK1","537_MOD","07/11/17","18:37","N","NA","000","335-76-2","PERFLUORODECANOIC ACID (PFDA)","","","TRG","Yes","N","U","Y","1.49","5.00","8.00","NG_L","NG_L","","","","","","","","","","","","","",""," " "" ""
"B7G0014-BLK1","537_MOD","07/11/17","18:37","N","NA","000","2355-31-
9","MeFOSAA","","","TRG","Yes","N","U","Y","1.65","5.00","8.00","NG_L","NG_L","","","","","","","","","","","","" "" "" "" "" ""
"B7G0014-BLK1","537_MOD","07/11/17","18:37","N","NA","000","2058-94-8","PERFLUOROUNDECANOIC
ACID
(PFUNA)","","","TRG","Yes","N","U","Y","1.05","5.00","8.00","NG_L","NG_L","","","","","","","","","","","","","","" "" "" ""
"B7G0014-BLK1","537_MOD","07/11/17","18:37","N","NA","000","2991-50-
6","EtFOSAA","","","TRG","Yes","N","U","Y","1.37","5.00","8.00","NG_L","NG_L","","","","","","","","","","","","", "" "" "" "" ""
"B7G0014-BLK1","537_MOD","07/11/17","18:37","N","NA","000","307-55-1","PERFLUORODODECANOIC ACID (PFDOA)","","","TRG","Yes","N","U","Y","0.792","5.00","8.00","NG_L","NG_L","","","","","","","","","","","","",""," ","" "" ""
"B7G0014-BLK1","537_MOD","07/11/17","18:37","N","NA","000","72629-94-

8","PFTrDA","",","TRG","Yes","N","U","Y","0.494","5.00","8.00","NG_L","NG_L","",","","","","","",","","","",""," " "" "" "" ""
"B7G0014-BLK1","537_MOD","07/11/17","18:37","N","NA","000","376-06-
7","PFTeDA","","","TRG","Yes","N","U","Y","0.755","5.00","8.00","NG_L","NG_L","","",","","","","","",","","","", "t "t" "t" "tr ""
"B7G0014-BLK1","537_MOD","07/11/17","18:37","N","NA","000","13C3-PFBS","13C3-
PFBS","84.6","","IS","Yes","Y","","Y","",","","PCT_REC","","","",",",100","84.6","84.6","","",","","","50","150","", "" "" ""
"B7G0014-BLK1","537_MOD","07/11/17","18:37","N","NA","000","13C2-PFHxA","13C2-
PFHxA","99.1","","IS","Yes","Y","","Y","",","","PCT_REC",","","","","100","99.1","99.1","","",","","","50","150"," " "" "" ""
"B7G0014-BLK1","537_MOD","07/11/17","18:37","N","NA","000","13C4-PFHpA","13C4-
PFHpA","97.9","","IS","Yes","Y","","Y","",","","PCT_REC","",","","","100","97.9","97.9","","",","","","50","150"," " "" "" ""
"B7G0014-BLK1","537_MOD","07/11/17","18:37","N","NA","000","18O2-PFHxS","18O2-
PFHxS","92.4","","IS","Yes","Y","","Y","",","","PCT_REC",","","","","100","92.4","92.4",","","",","","50","150"," " "" "" ""
"B7G0014-BLK1","537 MOD","07/11/17","18:37","N","NA","000","13C2-PFOA","13C2-
PFOA","92.0","","IS","Ȳes","Y","","Y","","",","PCT_REC","","","","","100","92.0","92.0","","","",","","50","150","" "" "" ""
"B7G0014-BLK1","537_MOD","07/11/17","18:37","N","NA","000","13C8-PFOS","13C8-
PFOS","96.1","","IS","Yes","Y","","Y","",","","PCT_REC","",","","","100","96.1","96.1","","",","","","50","150","", "" "" ""
"B7G0014-BLK1","537_MOD","07/11/17","18:37","N","NA","000","13C5-PFNA","13C5-
PFNA","91.6","","IS","Ȳes","Y","","Y","","",","PCT_REC","","","","","100","91.6","91.6","","","",","","50","150","" "",""""
"B7G0014-BLK1","537_MOD","07/11/17","18:37","N","NA","000","13C2-PFDA","13C2-
PFDA","91.9","","IS","Yes","Y","","Y","","",","PCT_REC","","",","","100","91.9","91.9","",","","","","50","150","" "" "" ""
"B7G0014-BLK1","537 MOD","07/11/17","18:37","N","NA","000","d3-MeFOSAA","d3-
MeFOSAA","126","","IS̄","Yes","Y",",""Y","",","","PCT_REC","","",","","100","126","126","","","",","","50","150 " "" "" "" ""
"B7G0014-BLK1","537_MOD","07/11/17","18:37","N","NA","000","13C2-PFUnA","13C2-
PFUnA","94.1","","IS","Yes","Y","","Y","",","","PCT_REC",","","","","100","94.1","94.1","","",","","","50","150"," " "" "" ""
"B7G0014-BLK1","537 MOD","07/11/17","18:37","N","NA","000","d5-EtFOSAA","d5-
EtFOSAA","83.7","","IS","Yes","Y","","Y","","","","PCT_REC",","","","","100","83.7","83.7","",","","","","50","150 " "" "" "" ""
"B7G0014-BLK1","537_MOD","07/11/17","18:37","N","NA","000","13C2-PFDoA","13C2-
PFDoA","29.5","","IS","Yes","Y","H","Y","",","","PCT_REC","","","",","100","29.5","29.5","","","",","","50","150" "","+","","
"B7G0014-BLK1","537_MOD","07/11/17","18:37","N","NA","000","13C2-PFTeDA","13C2-
PFTeDA","11.3","","IS","Yes","Y","H","Y","",","","PCT_REC","","",","","100","11.3","11.3","","",","","","50","15 0","","+","",""
"B7G0014-BS1","537_MOD","07/11/17","18:04","N","NA","000","375-73-
5","PFBS","69.0","","TRG","Yes","Y","","Y","1.79","5.00","8.00","NG_L","NG_L","",","","80.0","69.0","86.3","","", "","","","70","130","","","",""
"B7G0014-BS1","537_MOD","07/11/17","18:04","N","NA","000","307-24-4","PERFLUOROHEXANOIC ACID (PFHXA)","66.1","","TRG","Yes","Y","","Y","2.18","5.00","8.00","NG_L","NG_L","",","","80.0","66.1","82.6","","", "","","","70","130","","","",""
"B7G0014-BS1","537_MOD","07/11/17","18:04","N","NA","000","375-85-9","PERFLUOROHEPTANOIC ACID (PFHPA)","63.4","","TRG","Yes","Y","","Y","0.591","5.00","8.00","NG_L","NG_L","",","","80.0","63.4","79.3",""," ","","",","70","130","",","",""
"B7G0014-BS1","537_MOD","07/11/17","18:04","N","NA","000","355-46-4","PERFLUOROHEXANESULFONIC

ACID
(PFHXS)","77.7","","TRG","Yes","Y","","Y","0.947","5.00","8.00","NG_L","NG_L","","","","80.0","77.7","97.2",""," ","","","","70","130","","","",""
"B7G0014-BS1","537_MOD","07/11/17","18:04","N","NA","000","335-67-1","PERFLUOROOCTANOIC ACID (PFOA)","63.6","","TRG","Yes","Y","","Y","0.651","5.00","8.00","NG_L","NG_L","","","","80.0","63.6","79.5","","", "","","","70","130","","","",""
"B7G0014-BS1","537_MOD","07/11/17","18:04","N","NA","000","1763-23-
1","HEPTADECAFLŪOROACTANESULFONIC ACID SOLUTION
","70.5","","TRG","Yes","Y","","Y","0.807","5.00","8.00","NG_L","NG_L","","","","80.0","70.5","88.1","","","","","", "70","130","","","",""
"B7G0014-BS1","537_MOD","07/11/17","18:04","N","NA","000","375-95-1","PERFLUORONONANOIC ACID (PFNA)","70.7","","TRG","Yes","Y","","Y","0.810","5.00","8.00","NG_L","NG_L","","","","80.0","70.7","88.4","","", "","","","70","130","","","",""
"B7G0014-BS1","537_MOD","07/11/17","18:04","N","NA","000","335-76-2","PERFLUORODECANOIC ACID (PFDA)","60.3","","TRG","Yes","Y","","Y","1.49","5.00","8.00","NG_L","NG_L","","","","80.0","60.3","75.4","",""," ","","","70","130","","","",""
"B7G0014-BS1","537_MOD","07/11/17","18:04","N","NA","000","2355-31-
9","MeFOSAA","69.6","","TRG","Yes","Y","","Y","1.65","5.00","8.00","NG_L","NG_L","","","","80.0","69.6","86.9" ,"","","","","","70","130","","","",""
"B7G0014-BS1","537_MOD","07/11/17","18:04","N","NA","000","2058-94-8","PERFLUOROUNDECANOIC ACID (PFUNA)","59.3","","TRG","Yes","Y","","Y","1.05","5.00","8.00","NG_L","NG_L","","","","80.0","59.3","74.2","","", "","","","70","130","","","",""
"B7G0014-BS1","537_MOD","07/11/17","18:04","N","NA","000","2991-50-
6","EtFOSAA","76.0","","TRG","Yes","Y","","Y","1.37","5.00","8.00","NG_L","NG_L","","","","80.0","76.0","95.0", "","","","","","70","130","","","",""
"B7G0014-BS1","537_MOD","07/11/17","18:04","N","NA","000","307-55-1","PERFLUORODODECANOIC ACID (PFDOA)","92.7","","TRG","Yes","Y","","Y","0.792","5.00","8.00","NG_L","NG_L","","",","80.0","92.7","116","","" ,"","","","70","130","","","",""
"B7G0014-BS1","537_MOD","07/11/17","18:04","N","NA","000","72629-94-
8","PFTrDA","26.2","","TRG","Yes","Y","H","Y","0.494","5.00","8.00","NG_L","NG_L","","","","80.0","26.2","32.8" ,"","","","","","60","130","","+","",""
"B7G0014-BS1","537_MOD","07/11/17","18:04","N","NA","000","376-06-
7","PFTeDA","69.4","","TRG","Yes","Y","","Y","0.755","5.00","8.00","NG_L","NG_L","","","","80.0","69.4","86.8"," ","","","","","70","130","","","",""
"B7G0014-BS1","537_MOD","07/11/17","18:04","N","NA","000","13C3-PFBS","13C3-
PFBS","83.0","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","83.0","83.0","","","","","","50","150","", " " "" ""
"B7G0014-BS1","537_MOD","07/11/17","18:04","N","NA","000","13C2-PFHxA","13C2-
PFHxA","110","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","110","110","","","","","","50","150","", "" "" ""
"B7G0014-BS1","537_MOD","07/11/17","18:04","N","NA","000","13C4-PFHpA","13C4-
PFHpA","93.5","","IS","Yes","Y","","Y","","","","PCT_REC","","","",","100","93.5","93.5","","","","","","50","150"," " "" "" ""
"B7G0014-BS1","537_MOD","07/11/17","18:04","N","NA","000","18O2-PFHxS","18O2-
PFHxS","102","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","102","102","","","","","","50","150","", "" "" ""
"B7G0014-BS1","537_MOD","07/11/17","18:04","N","NA","000","13C2-PFOA","13C2-
PFOA","98.8","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","98.8","98.8","","","","",","50","150","" "" "" ""
"B7G0014-BS1","537_MOD","07/11/17","18:04","N","NA","000","13C8-PFOS","13C8-
PFOS","103","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","103","103","","","","","","50","150","","" "",""
"B7G0014-BS1","537_MOD","07/11/17","18:04","N","NA","000","13C5-PFNA","13C5-
PFNA","90.2","","IS","Yes","Y","","Y","","","","PCT_REC","","","",","100","90.2","90.2","","","","","","50","150",""
"B7G0014-BS1","537_MOD","07/11/17","18:04","N","NA","000","13C2-PFDA","13C2-
PFDA","80.3","","IS","Yes","Y","","Y","","","","PCT_REC","","","",","100","80.3","80.3","","","","",","50","150","" "" "" ""
"B7G0014-BS1","537_MOD","07/11/17","18:04","N","NA","000","d3-MeFOSAA","d3-
MeFOSAA","76.6","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","76.6","76.6","","","","","","50","15 0","","","",""
"B7G0014-BS1","537_MOD","07/11/17","18:04","N","NA","000","13C2-PFUnA","13C2-
PFUnA","73.1","","IS","Yes","Y","","Y","","","","PCT_REC","","","",","100","73.1","73.1","","","","","","50","150"," " "" "" ""
"B7G0014-BS1","537_MOD","07/11/17","18:04","N","NA","000","d5-EtFOSAA","d5-
EtFOSAA","59.8","","IS","Yes","Y","","Y","","","","PCT_REC","","","",","100","59.8","59.8","","","","","","50","150

"B7G0014-BS1","537_MOD","07/11/17","18:04","N","NA","000","13C2-PFDoA","13C2-
PFDoA","15.3","","IS","Yes","Y","H","Y","","",","PCT_REC","","","","","100","15.3","15.3","","","","","","50","150" "", "+","" ""
"B7G0014-BS1","537_MOD","07/11/17","18:04","N","NA","000","13C2-PFTeDA","13C2-
PFTeDA","4.40","","IS","Yes","Y","H","Y","","","","PCT_REC","","","","","100","4.40","4.40","","","","","","50","15 0","","+","",""
"B7G0014-MS1","537_MOD","07/11/17","20:55","N","NA","000","375-73-
5","PFBS","74.1","","TRG","Yes","Y","","Y","1.84","5.12","8.22","NG_L","NG_L","","","12.4","82.2","74.1","75.1"," ","","","","","70","130","","","",""
"B7G0014-MS1","537_MOD","07/11/17","20:55","N","NA","000","307-24-4","PERFLUOROHEXANOIC ACID (PFHXA)","89.5","","TRG","Yes","Y","","Y","2.24","5.12","8.22","NG_L","NG_L","","","19.5","82.2","89.5","85.2", "","","","","","70","130","","","",""
"B7G0014-MS1","537_MOD","07/11/17","20:55","N","NA","000","375-85-9","PERFLUOROHEPTANOIC ACID (PFHPA)","74.0","","TRG","Yes","Y","","Y","0.607","5.12","8.22","NG_L","NG_L","","","7.88","82.2","74.0","80.5", "","","","","","70","130","","","",""
"B7G0014-MS1","537_MOD","07/11/17","20:55","N","NA","000","355-46-4","PERFLUOROHEXANESULFONIC ACID
(PFHXS)","236","","TRG","Yes","Y","","Y","0.973","5.12","8.22","NG_L","NG_L","","","155","82.2","236","99.0","" ,"","",","","70","130","","","",""
"B7G0014-MS1","537_MOD","07/11/17","20:55","N","NA","000","335-67-1","PERFLUOROOCTANOIC ACID (PFOA)","88.8","","TRG","Yes","Y","","Y","0.669","5.12","8.22","NG_L","NG_L","",","18.9","82.2","88.8","85.0"," ","","","","","70","130","","","",""
"B7G0014-MS1","537_MOD","07/11/17","20:55","N","NA","000","1763-23-
1","HEPTADECAFLUOROACTANESULFONIC ACID SOLUTION
","190","","TRG","Yes","Y","","Y","0.829","5.12","8.22","NG_L","NG_L","","","94.3","82.2","190","117","","","","", "","70","130","","","",""
"B7G0014-MS1","537_MOD","07/11/17","20:55","N","NA","000","375-95-1","PERFLUORONONANOIC ACID (PFNA)","67.1","","TRG","Yes","Y",","Y","0.832","5.12","8.22","NG_L","NG_L","",","","82.2","67.1","81.6","","", "","","","70","130","","","",""
"B7G0014-MS1","537_MOD","07/11/17","20:55","N","NA","000","335-76-2","PERFLUORODECANOIC ACID (PFDA)","67.7","","TRG","Yes","Y","","Y","1.53","5.12","8.22","NG_L","NG_L","","",","82.2","67.7","82.4","",""," ","","","70","130","","","",""
"B7G0014-MS1","537_MOD","07/11/17","20:55","N","NA","000","2355-31-
9","MeFOSAA","72.6","","TRG","Yes","Y","","Y","1.70","5.12","8.22","NG_L","NG_L","","",","82.2","72.6","88.3" "","","","","","70","130","",","",""
"B7G0014-MS1","537_MOD","07/11/17","20:55","N","NA","000","2058-94-8","PERFLUOROUNDECANOIC ACID (PFUNA)","59.5","","TTRG","Yes","Y","","Y","1.08","5.12","8.22","NG_L","NG_L","","",","82.2","59.5","72.4","","", "",","","70","130","","","",""
"B7G0014-MS1","537_MOD","07/11/17","20:55","N","NA","000","2991-50-
6","EtFOSAA","70.0","","TRG","Yes","Y","","Y","1.41","5.12","8.22","NG_L","NG_L","",","","82.2","70.0","85.1", "","","","","","70","130","","","",""
"B7G0014-MS1","537_MOD","07/11/17","20:55","N","NA","000","307-55-1","PERFLUORODODECANOIC ACID (PFDOA)","76.4","","TRG","Yes","Y","","Y","0.814","5.12","8.22","NG_L","NG_L","","","","82.2","76.4","93.0",""," ","","","","70","130","","","",""
"B7G0014-MS1","537_MOD","07/11/17","20:55","N","NA","000","72629-94-
8","PFTrDA","48.3","","TRG","Yes","Y","H","Y","0.508","5.12","8.22","NG_L","NG_L","","","","82.2","48.3","58.7" ,"","","","","","60","130","","+","",""
"B7G0014-MS1","537_MOD","07/11/17","20:55","N","NA","000","376-06-
7","PFTeDA","67.5","","TRG","Yes","Y","","Y","0.776","5.12","8.22","NG_L","NG_L","","","","82.2","67.5","82.1"," ","","","","","70","130","","","",""
"B7G0014-MS1","537_MOD","07/11/17","20:55","N","NA","000","13C3-PFBS","13C3-
PFBS","93.6","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","93.6","93.6","","","","","","50","150","", "" "" ""
"B7G0014-MS1","537_MOD","07/11/17","20:55","N","NA","000","13C2-PFHxA","13C2-
PFHxA","104","","IS","Yes","Y","","Y","","",","PCT_REC","","","","","100","104","104","","","","","","50","150","", "" "" ""
"B7G0014-MS1","537_MOD","07/11/17","20:55","N","NA","000","13C4-PFHpA","13C4-
PFHpA","92.7","","IS","Yes","Y","","Y","","","","PCT_REC","","",","","100","92.7","92.7","","","","","","50","150"," " "" "" ""
"B7G0014-MS1","537_MOD","07/11/17","20:55","N","NA","000","18O2-PFHxS","18O2-
PFHxS","101","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","101","101","","","","","","50","150","", "" "" ""
"B7G0014-MS1","537_MOD","07/11/17","20:55","N","NA","000","13C2-PFOA","13C2-
PFOA","101","","IS","Yes","Y","","Y","","","","PCT_REC","","","",","100","101","101","","","","","","50","150",""," " "" ""
"B7G0014-MS1","537_MOD","07/11/17","20:55","N","NA","000","13C8-PFOS","13C8-
PFOS","93.5","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","93.5","93.5","","","","","","50","150","", "" "" ""
"B7G0014-MS1","537_MOD","07/11/17","20:55","N","NA","000","13C5-PFNA","13C5-
PFNA","92.4","","IS","Yes","Y","","Y","","","","PCT_REC","","","",","100","92.4","92.4","","","","","","50","150","" "'r "t" ""
"B7G0014-MS1","537_MOD","07/11/17","20:55","N","NA","000","13C2-PFDA","13C2-
PFDA","98.0","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","98.0","98.0","","","","","","50","150","" "" "" ""
"B7G0014-MS1","537_MOD","07/11/17","20:55","N","NA","000","d3-MeFOSAA","d3-
MeFOSAA","118","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","118","118","","","","","","50","150 " "" "" "" ""
"B7G0014-MS1","537 MOD","07/11/17","20:55","N","NA","000","13C2-PFUnA","13C2-
PFUnA","97.2","","IS","Yes","Y","","Y","","",","PCT_REC","","","",","100","97.2","97.2","","","","",","50","150"," " "" "" ""
"B7G0014-MS1","537_MOD","07/11/17","20:55","N","NA","000","d5-EtFOSAA","d5-
EtFOSAA","88.2","","IS","Yes","Y","","Y","","","","PCT_REC","","",","","100","88.2","88.2","","","","","","50","150 " "" "" " "" ""
"B7G0014-MS1","537_MOD","07/11/17","20:55","N","NA","000","13C2-PFDoA","13C2-
PFDoA","20.8","","IS","Yes","Y","H","Y","","","","PCT_REC","","","","","100","20.8","20.8","","","","","","50","150" ,"","+","",""
"B7G0014-MS1","537_MOD","07/11/17","20:55","N","NA","000","13C2-PFTeDA","13C2-
PFTeDA","12.2","","IS","Yes","Y","H","Y","","","","PCT_REC","","","","","100","12.2","12.2","","","","","","50","15 0","","+","",""
"B7G0014-MSD1","537 MOD","07/11/17","21:06","N","NA","000","375-73-
5","PFBS","83.4","","TRG","Yes","Y","","Y","1.89","5.30","8.47","NG_L","NG_L","","","12.4","84.7","83.4","83.8"," 74.1","84.7","83.4","83.8","11.0","70","130","25","","",""
"B7G0014-MSD1","537_MOD","07/11/17","21:06","N","NA","000","307-24-4","PERFLUOROHEXANOIC ACID (PFHXA)","94.6","","TRG","Yes","Y","","Y","2.31","5.30","8.47","NG_L","NG_L","","","19.5","84.7","94.6","88.8", "89.5","84.7","94.6","88.8","4.14","70","130","25","","",""
"B7G0014-MSD1","537_MOD","07/11/17","21:06","N","NA","000","375-85-9","PERFLUOROHEPTANOIC ACID (PFHPA)","76.6","","TRG","Yes","Y","","Y","0.626","5.30","8.47","NG_L","NG_L","","","7.88","84.7","76.6","81.1", "74.0","84.7","76.6","81.1","0.743","70","130","25","","",""
"B7G0014-MSD1","537_MOD","07/11/17","21:06","N","NA","000","355-46-4","PERFLUOROHEXANESULFONIC ACID
(PFHXS)","241","","TRG","Yes","Y","","Y","1.00","5.30","8.47","NG_L","NG_L","","","155","84.7","241","102","23 6","84.7","241","102","2.99","70","130","25","","",""
"B7G0014-MSD1","537_MOD","07/11/17","21:06","N","NA","000","335-67-1","PERFLUOROOCTANOIC ACID (PFOA)","86.6","","TRG","Yes","Y","","Y","0.689","5.30","8.47","NG_L","NG_L","","","18.9","84.7","86.6","79.9"," 88.8","84.7","86.6","79.9","6.19","70","130","25","","",""
"B7G0014-MSD1","537_MOD","07/11/17","21:06","N","NA","000","1763-23-
1","HEPTADECAFLUOROACTANESULFONIC ACID SOLUTION
","197","","TRG","Yes","Y","","Y","0.854","5.30","8.47","NG_L","NG_L","","","94.3","84.7","197","121","190","84. 7","197","121","3.36","70","130","25","","",""
"B7G0014-MSD1","537_MOD","07/11/17","21:06","N","NA","000","375-95-1","PERFLUORONONANOIC ACID (PFNA)","67.9","","TRG","Yes","Y","","Y","0.857","5.30","8.47","NG_L","NG_L","","","","84.7","67.9","80.1","67.1 ","84.7","67.9","80.1","1.86","70","130","25","","",""
"B7G0014-MSD1","537_MOD","07/11/17","21:06","N","NA","000","335-76-2","PERFLUORODECANOIC ACID (PFDA)","63.7","","TRḠ","Yes","Y","","Y","1.58","5.30","8.47","NG_L","NG_L","","","","84.7","63.7","75.2","67.7", "84.7","63.7","75.2","9.14","70","130","25","","",""
"B7G0014-MSD1","537_MOD","07/11/17","21:06","N","NA","000","2355-31-
9","MeFOSAA","76.3","","TRG","Yes","Y","","Y","1.75","5.30","8.47","NG_L","NG_L","","","","84.7","76.3","90.1" ,"72.6","84.7","76.3","90.1","2.02","70","130","25","","",""
"B7G0014-MSD1","537_MOD","07/11/17","21:06","N","NA","000","2058-94-8","PERFLUOROUNDECANOIC ACID
(PFUNA)","70.9","","TRG","Yes","Y","","Y","1.11","5.30","8.47","NG_L","NG_L","","","","84.7","70.9","83.7","59. 5","84.7","70.9","83.7","14.5","70","130","25","","",""
"B7G0014-MSD1","537_MOD","07/11/17","21:06","N","NA","000","2991-50-
6","EtFOSAA","92.6","","TRG","Yes","Y","","Y","1.45","5.30","8.47","NG_L","NG_L","","","","84.7","92.6","109"," 70.0","84.7","92.6","109","24.6","70","130","25","","",""
"B7G0014-MSD1","537_MOD","07/11/17","21:06","N","NA","000","307-55-1","PERFLUORODODECANOIC
ACID
(PFDOA)","157","","TRG","Yes","Y","H","Y","0.838","5.30","8.47","NG_L","NG_L","","","","84.7","157","185","76. 4","84.7","157","185","66.2","70","130","25","","*","*"
"B7G0014-MSD1","537_MOD","07/11/17","21:06","N","NA","000","72629-94-
8","PFTrDA","103","","TRG","Yes","Y","H","Y","0.523","5.30","8.47","NG_L","NG_L","","","","84.7","103","122"," 48.3","84.7","103","122","70.1","60","130","25","","","*"
"B7G0014-MSD1","537_MOD","07/11/17","21:06","N","NA","000","376-06-
7","PFTeDA","77.0","","TRG","Yes","Y","","Y","0.799","5.30","8.47","NG_L","NG_L","","","","84.7","77.0","90.9"," 67.5","84.7","77.0","90.9","10.2","70","130","25","","",""
"B7G0014-MSD1","537_MOD","07/11/17","21:06","N","NA","000","13C3-PFBS","13C3-
PFBS","89.5","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","89.5","89.5","","","","","","50","150","", "" "" ""
"B7G0014-MSD1","537_MOD","07/11/17","21:06","N","NA","000","13C2-PFHxA","13C2-
PFHxA","108","","IS","Yes","Y","","Y","","",","PCT_REC","","","","","100","108","108","","","","","","50","150","", "" "" ""
"B7G0014-MSD1","537_MOD","07/11/17","21:06","N","NA","000","13C4-PFHpA","13C4-
PFHpA","92.9","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","92.9","92.9","","","","","","50","150"," " "" "" ""
"B7G0014-MSD1","537_MOD","07/11/17","21:06","N","NA","000","18O2-PFHxS","18O2-
PFHxS","100","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","100","100","","","","","","50","150","", "" "" ""
"B7G0014-MSD1","537_MOD","07/11/17","21:06","N","NA","000","13C2-PFOA","13C2-
PFOA","91.8","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","91.8","91.8","","","","","","50","150",""
" "' " "' " "
"B7G0014-MSD1","537_MOD","07/11/17","21:06","N","NA","000","13C8-PFOS","13C8-
PFOS","96.7","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","96.7","96.7","","","","","","50","150","", "" "" ""
"B7G0014-MSD1","537_MOD","07/11/17","21:06","N","NA","000","13C5-PFNA","13C5-
PFNA","93.3","","IS","Yes","Y","","Y","","","","PCT_REC","","","",","100","93.3","93.3","","","","","","50","150","" "" "t" ""
"B7G0014-MSD1","537_MOD","07/11/17","21:06","N","NA","000","13C2-PFDA","13C2-
PFDA","94.6","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","94.6","94.6","","","","","","50","150","" "" "" ""
"B7G0014-MSD1","537_MOD","07/11/17","21:06","N","NA","000","d3-MeFOSAA","d3-
MeFOSAA","130","","IS","Yes","Y","","Y","","",","PCT_REC","","","","","100","130","130","","","","","","50","150
" "" "" "" ""
"B7G0014-MSD1","537_MOD","07/11/17","21:06","N","NA","000","13C2-PFUnA","13C2-
PFUnA","89.3","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","89.3","89.3","","","","","","50","150"," " "" "" ""
"B7G0014-MSD1","537_MOD","07/11/17","21:06","N","NA","000","d5-EtFOSAA","d5-
EtFOSAA","78.5","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","78.5","78.5","","","","","","50","150 " "" "" "" ""
"B7G0014-MSD1","537_MOD","07/11/17","21:06","N","NA","000","13C2-PFDoA","13C2-
PFDoA","13.7","","IS","Yes","Y","H","Y","","","","PCT_REC","","","","","100","13.7","13.7","","","","","","50","150" ,"","+","",""
"B7G0014-MSD1","537_MOD","07/11/17","21:06","N","NA","000","13C2-PFTeDA","13C2-
PFTeDA","19.2","","IS","Yes","Y","H","Y","","","","PCT_REC","","","","","100","19.2","19.2","","","","","","50","15 0","","+","",""
"B7G0054-BLK1","537_MOD","07/13/17","17:22","N","NA","000","375-73-
5","PFBS","","","TRG","Yes","N","U","Y","1.79","5.00","8.00","NG_L","NG_L","","","","","","","","","","","","","","" "" "" ""
"B7G0054-BLK1","537_MOD","07/13/17","17:22","N","NA","000","307-24-4","PERFLUOROHEXANOIC ACID (PFHXA)","","","TRG","Yes","N","U","Y","2.18","5.00","8.00","NG_L","NG_L","","","","","","","","","","","","","","" "","",""
"B7G0054-BLK1","537_MOD","07/13/17","17:22","N","NA","000","375-85-9","PERFLUOROHEPTANOIC ACID (PFHPA)","","","TRG","Yes","N","U","Y","0.591","5.00","8.00","NG_L","NG_L","","","","","","","","","","","","",""," ","","","
"B7G0054-BLK1","537_MOD","07/13/17","17:22","N","NA","000","355-46-4","PERFLUOROHEXANESULFONIC ACID
(PFHXS)","","","TRG","Yes","N","U","Y","0.947","5.00","8.00","NG_L","NG_L","","","","","","","","","","","","",""," " "" "" ""
"B7G0054-BLK1","537_MOD","07/13/17","17:22","N","NA","000","335-67-1","PERFLUOROOCTANOIC ACID (PFOA)","","","TRG","Yes","N","U","Y","0.651","5.00","8.00","NG_L","NG_L","","","","","","","","","","","","","","", "" "" ""
"B7G0054-BLK1","537_MOD","07/13/17","17:22","N","NA","000","1763-23-
1","HEPTADECAFLUOROACTANESULFONIC ACID SOLUTION
","","","TRG","Yes","N","U","Y","0.807","5.00","8.00","NG_L","NG_L","","","","","","","","","","","","","","","","","" "B7G0054-BLK1","537_MOD","07/13/17","17:22","N","NA","000"," $375-95-1 "$, "PERFLUORONONANOIC ACID (PFNA)","","","TRG","Yes","N","U","Y","0.810","5.00","8.00","NG_L","NG_L","","","","","","","","","","","","","","", "" "" ""
"B7G0054-BLK1","537_MOD","07/13/17","17:22","N","NA","000","335-76-2","PERFLUORODECANOIC ACID (PFDA)","","","TRG","Yes","N","U","Y","1.49","5.00","8.00","NG_L","NG_L","","","","","","","","","","","","","",""," ","",""
"B7G0054-BLK1","537_MOD","07/13/17","17:22","N","NA","000","2355-31-
9","MeFOSAA","","","TRG","Yes","N","U","Y","1.65","5.00","8.00","NG_L","NG_L","","","","","","","","","","","","" ""","",","",""
"B7G0054-BLK1","537_MOD","07/13/17","17:22","N","NA","000","2058-94-8","PERFLUOROUNDECANOIC

ACID
(PFUNA)","","","TRG","Yes","N","U","Y","1.05","5.00","8.00","NG_L","NG_L","","","","","","","","","","","","",","" "" "" ""
"B7G0054-BLK1","537_MOD","07/13/17","17:22","N","NA","000","2991-50-
6","EtFOSAA","","","TRG","Yes","N","U","Y","1.37","5.00","8.00","NG_L","NG_L","","","","","","","","","","","","", "" "" "" "" ""
"B7G0054-BLK1","537_MOD","07/13/17","17:22","N","NA","000","307-55-1","PERFLUORODODECANOIC ACID (PFDOA)","","","TRG","Yes","N","U","Y","0.792","5.00","8.00","NG_L","NG_L","","","","","","","","","","","","",""," " "" "" ""
"B7G0054-BLK1","537_MOD","07/13/17","17:22","N","NA","000","72629-94-
8","PFTrDA","","","TRG","Yes","N","U","Y","0.494","5.00","8.00","NG_L","NG_L","","","","","","","","","","","",""," " "" "" "" ""
"B7G0054-BLK1","537_MOD","07/13/17","17:22","N","NA","000","376-06-
7","PFTeDA","","","TRḠ","Yes","N","U","Y","0.755","5.00","8.00","NG_L","NG_L","","","","","","","","","","","","", "" "" "" "" ""
"B7G0054-BLK1","537_MOD","07/13/17","17:22","N","NA","000","13C3-PFBS","13C3-
PFBS","98.4","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","98.4","98.4","","","","","","50","150","", "" "" ""
"B7G0054-BLK1","537_MOD","07/13/17","17:22","N","NA","000","13C2-PFHxA","13C2-
PFHxA","84.1","","IS","Yes","Y","","Y","","","","PCT_REC","","",","","100","84.1","84.1","","","","","","50","150"," " "" "" ""
"B7G0054-BLK1","537_MOD","07/13/17","17:22","N","NA","000","13C4-PFHpA","13C4-
PFHpA","73.6","","IS","Yes","Y","","Y","","","","PCT_REC","","","",","100","73.6","73.6","","","","","","50","150"," " "" "" ""
"B7G0054-BLK1","537_MOD","07/13/17","17:22","N","NA","000","18O2-PFHxS","18O2-
PFHxS","97.1","","IS","Yes","Y","","Y","","","","PCT REC","","","","","100","97.1","97.1","","","","","","50","150"," " "" "" ""
"B7G0054-BLK1","537_MOD","07/13/17","17:22","N","NA","000","13C2-PFOA","13C2-
PFOA","81.0","","IS","Yes","Y","","Y","","","","PCT_REC","","","",","100","81.0","81.0","","","","","","50","150","" "" "" ""
"B7G0054-BLK1","537_MOD","07/13/17","17:22","N","NA","000","13C8-PFOS","13C8-
PFOS","74.3","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","74.3","74.3","","","","","","50","150","", "" "" ""
"B7G0054-BLK1","537_MOD","07/13/17","17:22","N","NA","000","13C5-PFNA","13C5-
PFNA","79.0","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","79.0","79.0","","","","","","50","150","" "" "" ""
"B7G0054-BLK1","537_MOD","07/13/17","17:22","N","NA","000","13C2-PFDA","13C2-
PFDA","73.9","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","73.9","73.9","","","","","","50","150","" "" "" ""
"B7G0054-BLK1","537_MOD","07/13/17","17:22","N","NA","000","d3-MeFOSAA","d3-
MeFOSAA","101","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","101","101","","","","","","50","150 " "" "" "" ""
"B7G0054-BLK1","537 MOD","07/13/17","17:22","N","NA","000","13C2-PFUnA","13C2-
PFUnA","61.5","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","61.5","61.5","","","","","","50","150"," ","" "","
"B7G0054-BLK1","537_MOD","07/13/17","17:22","N","NA","000","d5-EtFOSAA","d5-
EtFOSAA","73.7","","IS","Yes","Y","","Y","","","","PCT_REC","","","",","100","73.7","73.7","","","","","","50","150 " "" "" "" ""
"B7G0054-BLK1","537_MOD","07/13/17","17:22","N","NA","000","13C2-PFDoA","13C2-
PFDoA","14.0","","IS","Yes","Y","H","Y","","","","PCT_REC","","","","","100","14.0","14.0","","","","","","50","150" ,"","+","","
"B7G0054-BLK1","537_MOD","07/13/17","17:22","N","NA","000","13C2-PFTeDA","13C2-
PFTeDA","39.8","","IS","Yes","Y","H","Y","","","","PCT_REC","","","","","100","39.8","39.8","","","","","","50","15 0","","+","",""
"B7G0054-BS1","537 MOD","07/13/17","16:49","N","NA","000","375-73-
5","PFBS","70.7","","TRG","Yes","Y","","Y","1.79","5.00","8.00","NG_L","NG_L","","","","80.0","70.7","88.4","","", "","","","70","130","","","",""
"B7G0054-BS1","537_MOD","07/13/17","16:49","N","NA","000","307-24-4","PERFLUOROHEXANOIC ACID (PFHXA)","73.2","","TRG","Yes","Y","","Y","2.18","5.00","8.00","NG_L","NG_L","","","","80.0","73.2","91.5","","", "","","","70","130","","","",""
"B7G0054-BS1","537_MOD","07/13/17","16:49","N","NA","000","375-85-9","PERFLUOROHEPTANOIC ACID (PFHPA)","68.8","","TRG","Yes","Y","","Y","0.591","5.00","8.00","NG_L","NG_L","","","","80.0","68.8","85.9",""," ","","","","70","130","","","",""
"B7G0054-BS1","537_MOD","07/13/17","16:49","N","NA","000","355-46-4","PERFLUOROHEXANESULFONIC ACID
(PFHXS)","77.0","","TRG","Yes","Y","","Y","0.947","5.00","8.00","NG_L","NG_L","","","","80.0","77.0","96.2",""," ","","","","70","130","","","",""
"B7G0054-BS1","537_MOD","07/13/17","16:49","N","NA","000","335-67-1","PERFLUOROOCTANOIC ACID (PFOA)","72.0","","TRG","Yes","Y","","Y","0.651","5.00","8.00","NG_L","NG_L","","","","80.0","72.0","90.0","","", "","","","70","130","","","",""
"B7G0054-BS1","537_MOD","07/13/17","16:49","N","NA","000","1763-23-
1","HEPTADECAFLUOROACTANESULFONIC ACID SOLUTION
","75.8","","TRG","Yes","Y","","Y","0.807","5.00","8.00","NG_L","NG_L","","","","80.0","75.8","94.7","","","","","", "70","130","","","",""
"B7G0054-BS1","537_MOD","07/13/17","16:49","N","NA","000","375-95-1","PERFLUORONONANOIC ACID (PFNA)","61.7","","TRG","Yes","Y","","Y","0.810","5.00","8.00","NG_L","NG_L","","","","80.0","61.7","77.2","","", "","","","70","130","","","",""
"B7G0054-BS1","537_MOD","07/13/17","16:49","N","NA","000","335-76-2","PERFLUORODECANOIC ACID (PFDA)","74.4","","TRG","Yes","Y","","Y","1.49","5.00","8.00","NG_L","NG_L","","","","80.0","74.4","93.0","",""," ","","","70","130","","","",""
"B7G0054-BS1","537_MOD","07/13/17","16:49","N","NA","000","2355-31-
9","MeFOSAA","65.3","","TRG","Yes","Y","","Y","1.65","5.00","8.00","NG_L","NG_L","","","","80.0","65.3","81.6" ,"","","","","","70","130","","","",""
"B7G0054-BS1","537_MOD","07/13/17","16:49","N","NA","000","2058-94-8","PERFLUOROUNDECANOIC ACID (PFUNA)","71.6","","TRG","Yes","Y","","Y","1.05","5.00","8.00","NG_L","NG_L","","","","80.0","71.6","89.5","","", "","","","70","130","","","",""
"B7G0054-BS1","537_MOD","07/13/17","16:49","N","NA","000","2991-50-
6","EtFOSAA","102","","TRG","Yes","Y","","Y","1.37","5.00","8.00","NG_L","NG_L","","","","80.0","102","128","", "","","","","70","130","","","",""
"B7G0054-BS1","537_MOD","07/13/17","16:49","N","NA","000","307-55-1","PERFLUORODODECANOIC ACID (PFDOA)","173","","TRG","Yes","Y","H","Y","0.792","5.00","8.00","NG_L","NG_L","","","","80.0","173","216",""," ","","","","70","130","","+","",""
"B7G0054-BS1","537_MOD","07/13/17","16:49","N","NA","000","72629-94-
8","PFTrDA","178","","TRG","Yes","Y","H","Y","0.494","5.00","8.00","NG_L","NG_L","","","","80.0","178","222"," ","","","","","60","130","","+","",""
"B7G0054-BS1","537_MOD","07/13/17","16:49","N","NA","000","376-06-
7","PFTeDA","71.4","","TRG","Yes","Y","","Y","0.755","5.00","8.00","NG_L","NG_L","","","","80.0","71.4","89.2"," ","","","","","70","130","","","",""
"B7G0054-BS1","537_MOD","07/13/17","16:49","N","NA","000","13C3-PFBS","13C3-
PFBS","97.9","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","97.9","97.9","","","","","","50","150","", "" "" ""
"B7G0054-BS1","537_MOD","07/13/17","16:49","N","NA","000","13C2-PFHxA","13C2-
PFHxA","87.4","","IS","Yes","Y","","Y","","","","PCT_REC","","","",","100","87.4","87.4","","","","",","50","150"," " "" "" ""
"B7G0054-BS1","537_MOD","07/13/17","16:49","N","NA","000","13C4-PFHpA","13C4-
PFHpA","73.9","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","73.9","73.9","","","","","","50","150"," ","","" ""
"B7G0054-BS1","537_MOD","07/13/17","16:49","N","NA","000","18O2-PFHxS","18O2-

PFHxS","87.8","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","87.8","87.8","","","","","","50","150"," " "" "" ""
"B7G0054-BS1","537_MOD","07/13/17","16:49","N","NA","000","13C2-PFOA","13C2-
PFOA","73.5","","IS","Yes","Y","","Y","","","","PCT_REC","","",","","100","73.5","73.5","","","","","","50","150","" "'" "r" ""
"B7Gํ0054-BS1","537 MOD","07/13/17","16:49","N","NA","000","13C8-PFOS","13C8-
PFOS","86.6","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","86.6","86.6","","","","","","50","150","", "" "" ""
"B7G0054-BS1","537_MOD","07/13/17","16:49","N","NA","000","13C5-PFNA","13C5-
PFNA","75.8","","IS","Yes","Y","","Y","","","","PCT_REC","","","",","100","75.8","75.8","","","","","","50","150","" "" "" ""
"B7G0054-BS1","537_MOD","07/13/17","16:49","N","NA","000","13C2-PFDA","13C2-
PFDA","79.6","","IS","Yes","Y","","Y","","","","PCT_REC","","","",","100","79.6","79.6","","","","","","50","150","" "" "" ""
"B7G0054-BS1","537_MOD","07/13/17","16:49","N","NA","000","d3-MeFOSAA","d3-
MeFOSAA","84.2","","IS","Yes","Y","","Y","","","","PCT_REC","","",","","100","84.2","84.2","","","","","","50","15 0","","","",""
"B7G0054-BS1","537_MOD","07/13/17","16:49","N","NA","000","13C2-PFUnA","13C2-
PFUnA","64.2","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","64.2","64.2","","","","","","50","150"," ","" "" ""
"B7G0054-BS1","537_MOD","07/13/17","16:49","N","NA","000","d5-EtFOSAA","d5-
EtFOSAA","43.6","","IS","Yes","Y","H","Y","","","","PCT_REC","","","","","100","43.6","43.6","","","","","","50","1 50","","+","",""
"B7G0054-BS1","537_MOD","07/13/17","16:49","N","NA","000","13C2-PFDoA","13C2-
PFDoA","33.3","","IS","Yes","Y","H","Y","","","","PCT_REC","","","","","100","33.3","33.3","","","","","","50","150" ,"","+","",""
"B7G0054-BS1","537_MOD","07/13/17","16:49","N","NA","000","13C2-PFTeDA","13C2-
PFTeDA","212","","IS","Yes","Y","H","Y","","","","PCT_REC","","","","","100","212","212","","","","","","50","150" "","+","","

AMEC Foster Wheeler, Inc.
August 8, 2017
7376 SW Durham Road
Portland, OR 97224
Attn: Ms. Medora Hackler
SUBJECT: White Oak, Data Validation
Dear Ms. Hackler,
Enclosed are the final validation reports for the fraction listed below. These SDGs were received on August 2, 2017. Attachment 1 is a summary of the samples that were reviewed for each analysis.

## LDC Project \#39198:

SDG \#
1700803, 1700804, 1700887

## Fraction

## Perfluorinated Alkyl Acids

The data validation was performed under Stage 2B \& 4 guidelines. The analyses were validated using the following documents, as applicable to each method:

- Final Sampling and Analysis Plan for Initial Assessment of Perf-fluorinated Compounds or Per-and Polyfluoralkyl Substances Sites at Various Base Realignment and Closure Installations, June 2017
- U.S. Department of Defense Quality Systems Manual for Environmental Laboratories, Version 5.1, 2017
- USEPA National Functional Guidelines (NFG) for Organic Superfund Methods Data Review, January 2017
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; update IV, February 2007; update V, July 2014

Please feel free to contact us if you have any questions.
Sincerely,


Pei Geng
Project Manager/Senior Chemist


# Laboratory Data Consultants, Inc. Data Validation Report 

Project/Site Name:
LDC Report Date:
Parameters:
Validation Level:
Laboratory:

White Oak
August 4, 2017
Perfluorinated Alkyl Acids
Stage 2B
Vista Analytical Laboratory

Sample Delivery Group (SDG): 1700803

| Sample Identification | Laboratory Sample <br> Identification | Matrix | Collection <br> Date |
| :--- | :--- | :--- | :--- |
| IRPSite7-GW-46GW205-20170628 | $1700803-03$ | Water | $06 / 28 / 17$ |
| IRPSite7-GW-FD01-20170628 | $1700803-04$ | Water | $06 / 28 / 17$ |
| IRPSite7-GW-07GW202-20170628 | $1700803-05$ | Water | $06 / 28 / 17$ |
| IRPSite5-GW-04GW81S-20170628 | $1700803-08$ | Water | $06 / 28 / 17$ |
| IRPSite5-GW-04GW80-20170628 | $1700803-09$ | Water | $06 / 28 / 17$ |
| IRPSite5-GW-04GW80-20170628MS | $1700803-09 M S$ | Water | $06 / 28 / 17$ |
| IRPSite5-GW-04GW80-20170628MSD | $1700803-09 M S D$ | Water | $06 / 28 / 17$ |

## Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Final Sampling and Analysis Plan (Field Sampling and Analysis Plan) for Initial Assessment of Perf-fluorinated Compounds (PFCS) or Per- and Polyfluoralkyl Substances (PFAS) Sites at Various Base Realignment and Closure (BRAC) Installations (June 2017), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.1 (2017), and a modified outline of the USEPA National Functional Guidelines (NFG) for Organic Superfund Methods Data Review (January 2017). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

## Perfluorinated Alkyl Acids by Environmental Protection Agency (EPA) Method 537

All sample results were subjected to Stage 2B data validation, which comprises an evaluation of quality control (QC) summary results.

The following are definitions of the data qualifiers utilized during data validation:
J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to nonconformances discovered during data validation.

U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the compound or analyte should be considered nondetected at the reported concentration due to the presence of contaminants detected in the associated blank(s).

UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.

R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.

NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected compound or analyte in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

## I. Sample Receipt and Technical Holding Times

All samples were received in good condition and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

## II. LC/MS Instrument Performance Check

Instrument performance check was performed prior to initial calibration.

## III. Initial Calibration and Initial Calibration Verification

Initial calibration was performed as required by the method.
For compounds where average relative response factors (RRFs) were utilized, the percent relative standard deviations (\%RSD) were less than or equal to $20.0 \%$.

In the case where the laboratory used a calibration curve to evaluate the compounds, all coefficients of determination $\left(\mathrm{r}^{2}\right)$ were greater than or equal to 0.990 .

For each calibration point, the percent differences (\%D) of its true value were less than or equal to $30.0 \%$ for all compounds with the following exceptions:

| Date | Standard | Compound | \%D | Associated <br> Samples | Flag | - A or P |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $07 / 10 / 17$ | ICAL-CS02 | PFDoA | -56.9 | All samples in SDG <br> 1700803 | UJ (all non-detects) | P |
| $07 / 10 / 17$ | ICAL-CS2 | PFDoA | +36.9 | All samples in SDG <br> 1700803 | NA | - |

The percent differences (\%D) of the initial calibration verification (ICV) standard were less than or equal to $30.0 \%$ for all compounds.

## IV. Continuing Calibration

Continuing calibration was performed at required frequencies.
The percent differences (\%D) were less than or equal to $30.0 \%$ for all compounds.

## V. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

## VI. Field Blanks

Samples IRPSite7-GW-FRB01-20170628 and IRPSite5-GW-FRB01-20170628 were identified as field rinsate blanks. No contaminants were found.

Samples EB01 and EB02 were identified as equipment blanks. No contaminants were found.

Sample SB01 was identified as a source blank. No contaminants were found.

## VII. Surrogates

Surrogates were not performed for this SDG.

## VIII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) sample analysis was performed on an associated project sample. Percent recoveries (\%R) were within QC limits with the following exceptions:

| Spike ID <br> (Associated Samples) | Compound | MS (\%R) <br> (Limits) | MSD (\%R) <br> (Limits) | Flag | A or P |
| :---: | :--- | :---: | :---: | :---: | :---: |
| IRPSite5-GW-04GW80-20170628MS/MSD <br> (IRPSite5-GW-04GW80-20170628) | PFDoA | - | $185(70-130)$ | NA | - |

Relative percent differences (RPD) were within QC limits with the following exceptions:

| Spike ID (Associated Samples) | Compound | $\underset{\text { (Limits) }}{\text { RPD }}$ | Flag | A or P |
| :---: | :---: | :---: | :---: | :---: |
| IRPSite5-GW-04GW80-20170628MS/MSD (IRPSite5-GW-04GW80-20170628) | $\begin{aligned} & \text { PFDoA } \\ & \text { PFTrDA } \end{aligned}$ | $\begin{aligned} & 66.2(\leq 30) \\ & 70.1(\leq 30) \end{aligned}$ | NA | - |

## IX. Ongoing Precision Recovery Samples

Ongoing precision recovery (OPR) samples were analyzed as required by the method. Percent recoveries (\%R) were within QC limits.

## X. Field Duplicates

Samples IRPSite7-GW-46GW205-20170628 and IRPSite7-GW-FD01-20170628 were identified as field duplicates. No results were detected in any of the samples with the following exceptions:

| Compound | Concentration (ng/L) |  | $\begin{gathered} \text { RPD } \\ \text { (Limits) } \\ \hline \end{gathered}$ | $\begin{gathered} \text { Differences } \\ \text { (Limits) } \\ \hline \hline \end{gathered}$ | Flag | A or P |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | IRPSite7-GW-46GW205-20170628 | IRPSite7-GW-FD01-20170628 |  |  |  |  |
| PFBS | 6.05 | 2.48 | - | 3.57 ( $\leq 8.49$ ) | - | - |
| PFHpA | 2.92 | 4.95 | - | 2.03 ( $<8.49$ ) | - | - |
| PFHxS | 7.69 | 20.2 | - | 12.51 ( $\leq 8.49$ ) | $J$ (all detects) | A |
| PFOA | 7.05 | 15.2 | - | 8.15 ( 58.49 ) | - | - |
| PFOS | 6.07 | 22.6 | - | 16.53 ( 58.49 ) | $J$ (all detects) | A |
| PFHxA | 5.30 U | 8.15 | - | 2.85 ( 58.49 ) | - | - |
| PFNA | 5.30 U | 1.02 | - | 4.28 ( 58.49 ) | - | - |

## XI. Internal Standards

All internal standard areas and retention times were within QC limits with the following exceptions:

| Sample | Internal <br> Standards | Area (Limits) | Affected <br> Compound | Flag | A or P |
| :---: | :---: | :---: | :---: | :---: | :---: |
| IRPSite7-GW-46GW205-20170628 | ${ }^{13} \mathrm{C}_{2}$-PFDoA <br> ${ }^{13} \mathrm{C}_{2}$-PFTeDA | $\begin{aligned} & 4.20(50-150) \\ & 4.90(50-150) \end{aligned}$ | $\begin{aligned} & \text { PFDoA } \\ & \text { PFTrDA } \\ & \text { PFTeDA } \end{aligned}$ | UJ (all non-detects) <br> UJ (all non-detects) <br> UJ (all non-detects) | P |
| IRPSite7-GW-FD01-20170628 | ${ }^{13} \mathrm{C}_{2}$-PFDoA <br> ${ }^{13} \mathrm{C}_{2}$-PFTeDA | $\begin{aligned} & 19.4(50-150) \\ & 9.60(50-150) \end{aligned}$ | $\begin{aligned} & \text { PFDoA } \\ & \text { PFTrDA } \\ & \text { PFTeDA } \end{aligned}$ | UJ (all non-detects) <br> UJ (all non-detects) <br> UJ (all non-detects) | P |
| IRPSite7-GW-07GW202-20170628 | ${ }^{13} \mathrm{C}_{2}$-PFDoA <br> ${ }^{13} \mathrm{C}_{2}$-PFTeDA | $\begin{aligned} & 31.2(50-150) \\ & 20.1(50-150) \end{aligned}$ | $\begin{aligned} & \text { PFDoA } \\ & \text { PFTrDA } \\ & \text { PFTeDA } \end{aligned}$ | UJ (all non-detects) <br> UJ (all non-detects) <br> UJ (all non-detects) | P |
| IRPSite5-GW-04GW81S-20170628 | ${ }^{13} \mathrm{C}_{2}$-PFDoA <br> ${ }^{13} \mathrm{C}_{2}$-PFTeDA | $\begin{aligned} & 10.7(50-150) \\ & 25.6(50-150) \end{aligned}$ | $\begin{aligned} & \text { PFDoA } \\ & \text { PFTrDA } \\ & \text { PFTeDA } \end{aligned}$ | UJ (all non-detects) <br> UJ (all non-detects) <br> UJ (all non-detects) | P |
| IRPSite5-GW-04GW80-20170628 | ${ }^{13} \mathrm{C}_{2}$-PFDoA <br> ${ }^{13} \mathrm{C}_{2}$-PFTeDA | $\begin{aligned} & 36.6(50-150) \\ & 26.3(50-150) \end{aligned}$ | $\begin{aligned} & \text { PFDoA } \\ & \text { PFTrDA } \\ & \text { PFTeDA } \end{aligned}$ | UJ (all non-detects) <br> UJ (all non-detects) <br> UJ (all non-detects) | P |

## XII. Compound Quantitation

The laboratory limit of quantitation (LOQ) and limit of detection (LOD) with no moisture or dilution are higher than the QAPP LOQ and LOD.

The laboratory detection limit (DL) with no moisture or dilution for PFOS is higher than the QAPP DL.

Raw data were not reviewed for Stage 2B validation.

## XIII. Target Compound Identifications

Raw data were not reviewed for Stage 2B validation.

## XIV. System Performance

Raw data were not reviewed for Stage 2B validation.

## XV. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Due to initial calibration \%D, field duplicate differences, and internal standards area, data were qualified as estimated in five samples.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable. Sample results that were found to be estimated (J) are usable for limited purposes only. Based upon the data validation all other results are considered valid and usable for all purposes.

White Oak
Perfluorinated Alkyl Acids - Data Qualification Summary - SDG 1700803

| Sample |  |  |  |  |
| :--- | :--- | :--- | :--- | :--- |
| IRPSite7-GW-46GW205-20170628 <br> IRPSite7-GW-FD01-20170628 <br> IRPSite7-GW-07GW202-20170628 <br> IRPSite5-GW-04GW81S-20170628 <br> IRPSite5-GW-04GW80-20170628 | PFDoA | Fompound |  | Flag |

## White Oak <br> Perfluorinated Alkyl Acids - Laboratory Blank Data Qualification Summary - SDG 1700803

No Sample Data Qualified in this SDG

LDC \#: 39198A96
SD \#: 1700803
Laboratory: Vista Analytical Laboratory

Date:
Page:
Reviewer: 2nd Reviewer: $\qquad$

METHOD: LCMS Perfluorinated Alkyl Acids (EPA Method 537)
The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.


Note: $\quad A=$ Acceptable
$N=$ Not provided/applicable
SW = See worksheet

ND = No compounds detected
$\mathrm{R}=$ Rinsate
$\mathrm{FB}=$ Field blank
$\mathrm{D}=$ Duplicate
$T B=$ Trip blank
$E B=$ Equipment blank


TARGET COMPOUND WORKSHEET
METHOD: PFOS/PFOAs


|  | see qualific <br> N／A <br> N／A <br> N／A | Did the laboratory perform a 5 point calibration prior to sample analysis？ <br> Did the initial calibration meet the curve fit acceptance criteria of $\geq 0.990$ ？ <br> Were all percent relative standard deviations（\％RSD）$\leq 20 \%$ ？ <br> Were all analytes within $70-130 \%$ or percent differences（\％D）$\leq 30 \%$ of their true value for each calibration standard？ |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| \＃ | Date | Standard ID | Compound | Finding \％RSD／ $\mathrm{r}^{2}$ | Finding \％D | Associated Samples | Qualifications |
|  | troliz | $1 C A C-C 502$ | PFDoA | $\bigcirc$－ | －56．9 | All（NO） | $\checkmark / N /$ 为 |
|  |  | $\downarrow \mathrm{Csz}$ | $\downarrow$ |  | $+36.9$ |  | Vets／去中 |
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METHOD: LC/MS PFOS/PFOAs (EPA Method 537M)
Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

VALIDATION FINDINGS WORKSHEET Field Duplicates

Page: / of / Reviewer:


METHOD: PFCs (Method 537 mod)

| Compound | Concentration (ng/L) |  | $(\leq 30)$ <br> RPD | Difference | Limits | Qual |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 3 | 4 |  |  |  |  |
| J | 6.05 | 2.48 |  | 3.57 | $\leq 8.49$ |  |
| B | 2.92 | 4.95 |  | 2.03 | 58.49 |  |
| K | 7.69 | 20.2 |  | 12.51 | $\leq 8.49$ | $13$ |
| C | 7.05 | 15.2 |  | 8.15 | $\leq 8.49$ |  |
| M | 6.07 | 22.6 |  | 16.53 | $\leq 8.49$ | $17$ |
| A | 5.30 U | 8.15 |  | 2.85 | $\leq 8.49$ |  |
| D | 5.30 U | 1.02 |  | 4.28 | $\leq 8.49$ |  |

VALIDATION FINDINGS WORKSHEET
Internal Standards

Page: $\qquad$
Reviewer: $\qquad$ 2nd Reviewer:
METHOD: LC/MS PECs
Please see qualifications below for all questions answered " $N$ ". Not applicable questions are identified as "N/A".
$Y$ N/A Were all internal standard area counts within $50-150 \%$ limits?
Were the retention times of the internal standards within $+/-30$ seconds of the retention times of the associated calibration standard?


METHOD: LC/MS PFCs
Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".
Y N N/A Were all internal standard area counts within $50-150 \%$ limits?

| YN |  | he reten | tan | of th | the associa | ard? |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| \# | Date | Sample id | Internal Standard | Area (Limits) | RT (Limits) | Qualifications |
|  |  | 12 (Ms) | 13CZ-PFDoA | $20.8(50-150)$ |  | No Cnal |
|  |  |  | $13 C^{-P-P F P D A ~}$ | 12.2 |  | d |
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VALIDATION FINDINGS WORKSHEET Compound Quantitation and Reported RLs

Page: Cof $/$ Reviewer: 2nd Reviewer: —р

METHOD: LC/MS PFCs
Please see qualifications below for all questions answered " N ". Not applicable questions are identified as " $\mathrm{N} / \mathrm{A}$ ".
Y N //A Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound? Y N (N/A Were compound quantitation and RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?

| \# | Date | Sample ID |  |  |  |
| :--- | :--- | :--- | :--- | :--- | :--- |
|  |  | All | Lab rerported LOD/LOQ > LOD/LOQ in the QAPP |  | Qualifications |
|  |  |  |  |  |  |
|  |  | All | The DL for PFOS $=0.807$ ng/L, DL in the QAPP $=0.305 \mathrm{ng} / \mathrm{L}$ |  |  |
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Comments: See sample calculation verification worksheet for recalculations

# Laboratory Data Consultants, Inc. Data Validation Report 

Project/Site Name: White Oak<br>LDC Report Date:<br>Parameters:<br>Validation Level:<br>Laboratory:<br>August 4, 2017<br>Perfluorinated Alkyl Acids<br>Stage 2B \& 4<br>Vista Analytical Laboratory<br>Sample Delivery Group (SDG): 1700804

| Sample Identification | Laboratory Sample <br> Identification | Matrix | Collection <br> Date |
| :--- | :--- | :--- | :---: |
| IRPSite7-GW-07GW41-20170629 | $1700804-01$ | Water | $06 / 29 / 17$ |
| IRPSite5-GW-05GW01-20170629 | $1700804-02$ | Water | $06 / 29 / 17$ |
| IRPSite5-GW-FD01-20170629 | $1700804-03$ | Water | $06 / 29 / 17$ |
| IRPSite33-GW-11MW204D-20170629 | $1700804-05$ | Water | $06 / 29 / 17$ |
| IRPSite33-GW-11MW204S 20170629 | $1700804-06$ | Water | $06 / 29 / 17$ |
| Bldg 110-GW-11MW205D-20170629 | $1700804-07$ | Water | $06 / 29 / 17$ |
| BIdg 110-GW-11MW205S 20170629 | $1700804-09$ | Water | $06 / 29 / 17$ |
| IRPSite7-GW-07GW102 20170629** | $1700804-10^{* *}$ | Water | $06 / 29 / 17$ |
| IRPSite5-GW-04GW82-20170629 | $1700804-11$ | Water | $06 / 29 / 17$ |

**Indicates sample underwent Stage 4 validation

## Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Final Sampling and Analysis Plan (Field Sampling and Analysis Plan) for Initial Assessment of Perf-fluorinated Compounds (PFCS) or Per- and Polyfluoralkyl Substances (PFAS) Sites at Various Base Realignment and Closure (BRAC) Installations (June 2017), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.1 (2017), and a modified outline of the USEPA National Functional Guidelines (NFG) for Organic Superfund Methods Data Review (January 2017). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

## Perfluorinated Alkyl Acids by Environmental Protection Agency (EPA) Method 537

All sample results were subjected to Stage 2B data validation, which comprises an evaluation of quality control (QC) summary results. Samples appended with a double asterisk on the cover page were subjected to Stage 4 data validation, which is comprised of the QC summary forms as well as the raw data, to confirm sample quantitation and identification.

The following are definitions of the data qualifiers utilized during data validation:
J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to nonconformances discovered during data validation.

U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the compound or analyte should be considered nondetected at the reported concentration due to the presence of contaminants detected in the associated blank(s).

UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.

R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.

NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected compound or analyte in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

## I. Sample Receipt and Technical Holding Times

All samples were received in good condition and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

## II. LC/MS Instrument Performance Check

Instrument performance check was performed prior to initial calibration.

## III. Initial Calibration and Initial Calibration Verification

Initial calibration was performed as required by the method.
For compounds where average relative response factors (RRFs) were utilized, the percent relative standard deviations (\%RSD) were less than or equal to $20.0 \%$.

In the case where the laboratory used a calibration curve to evaluate the compounds, all coefficients of determination $\left(r^{2}\right)$ were greater than or equal to 0.990 .

For each calibration point, the percent differences (\%D) of its true value were less than or equal to $30.0 \%$ for all compounds with the following exceptions:

| Date | Standard | Compound | \%D | Associated <br> Samples | Flag | A or P |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $07 / 10 / 17$ | ICAL-CS02 | PFDoA | -56.9 | All samples in SDG <br> 1700804 | UJ (all non-detects) | P |
| $07 / 10 / 17$ | ICAL-CS2 | PFDoA | +36.9 | All samples in SDG <br> 1700804 | NA | - |

The percent differences (\%D) of the initial calibration verification (ICV) standard were less than or equal to $30.0 \%$ for all compounds.

## IV. Continuing Calibration

Continuing calibration was performed at required frequencies.
The percent differences (\%D) were less than or equal to $30.0 \%$ for all compounds with the following exceptions:
\(\left.\begin{array}{|c|c|c|c|c|c|c||}\hline Date \& Standard \& Compound \& \& \& Associated <br>

Samples\end{array}\right]\)| Flag |
| :---: |


| Date | Standard | Compound | \%D | Associated <br> Samples | Flag | A or P |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $07 / 13 / 17$ | $170713 M 1 \_35$ | PFDoA | +135 | IRPSite5-GW-04GW82-20170629 | NA | - |

## V. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

## VI. Field Blanks

Samples IRPSite7-GW-FRB01-20170628, IRPSite5-GW-FRB01-20170628 (both from SDG 1700803), IRPSite33-GW-FRB01-20170629, and Bldg 110-GW-FRB01 20170629 were identified as field rinsate blanks. No contaminants were found.

Sample SB01 (from SDG 1700803) was identified as a source blank. No contaminants were found.

## VII. Surrogates

Surrogates were not performed for this SDG.

## VIII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

## IX. Ongoing Precision Recovery Samples

Ongoing precision recovery (OPR) samples were analyzed as required by the method. Percent recoveries (\%R) were within QC limits.

## X. Field Duplicates

Samples IRPSite5-GW-05GW01-20170629 and IRPSite5-GW-FD01-20170629 were identified as field duplicates. No results were detected in any of the samples with the following exceptions:

| Compound | Concentration (ng/L) |  | $\begin{gathered} \text { RPD } \\ \text { (Limits) } \end{gathered}$ | $\begin{gathered} \begin{array}{c} \text { Differences } \\ \text { (Limits) } \end{array} \\ \hline \hline \end{gathered}$ | Flag | A or P |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | IRPSite5-GW-05GW01-20170629 | IRPSite5-GW-FD01-20170629 |  |  |  |  |
| PFHxA | 6.98 | 6.86 | - | 0.12 ( 58.88 ) | - | - |
| PFHpA | 3.96 | 3.17 | - | 0.79 ( 58.88 ) | - | - |


| Compound | Concentration (ng/L) |  | $\begin{gathered} \text { RPD } \\ \text { (Limits) } \\ \hline \end{gathered}$ | $\begin{gathered} \begin{array}{c} \text { Differences } \\ \text { (Limits) } \end{array} \\ \hline \hline \end{gathered}$ | Flag | A or P |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | IRPSite5-GW-05GW01-20170629 | IRPSite5-GW-FD01-20170629 |  |  |  |  |
| PFHxS | 61.1 | 64.9 | 6 ( 530 ) | - | - | - |
| PFOA | 48.8 | 51.3 | $5(\leq 30)$ | - | - | - |
| PFOS | 205 | 199 | $3(\leq 30)$ | - | - | - |
| PFNA | 3.24 | 2.82 | - | 0.42 ( 58.88 ) | - | - |
| PFBS | 5.43 U | 2.30 | - | 3.13 ( 58.88 ) | - | - |

## XI. Internal Standards

All internal standard areas and retention times were within QC limits with the following exceptions:

| Sample | Internal Standards | Area (Limits) | Affected Compound | Flag | A or P |
| :---: | :---: | :---: | :---: | :---: | :---: |
| IRPSite5-GW-05GW01-20170629 | ${ }^{13} \mathrm{C}_{2}$-PFDoA | 37.4 (50-150) | $\begin{aligned} & \text { PFDoA } \\ & \text { PFTriA } \end{aligned}$ | UJ (all non-detects) UJ (all non-detects) | P |
| IRPSite33-GW-11MW204D-20170629 | ${ }^{13} \mathrm{C}_{2}$-PFDoA | 37.4 (50-150) | $\begin{aligned} & \text { PFDoA } \\ & \text { PFTriA } \end{aligned}$ | UJ (all non-detects) <br> UJ (all non-detects) | P |
| Bldg 110-GW-11MW205D-20170629 | ${ }^{13} \mathrm{C}_{2}$-PFDoA | 41.4 (50-150) | $\begin{aligned} & \text { PFDoA } \\ & \text { PFTriA } \end{aligned}$ | UJ (all non-detects) <br> UJ (all non-detects) | P |
| IRPSite5-GW-04GW82-20170629 | ${ }^{13} \mathrm{C}_{2}$-PFDoA | 37.0 (50-150) | PFDoA PFTriA | UJ (all non-detects) <br> UJ (all non-detects) | P |

## XII. Compound Quantitation

The laboratory limit of quantitation (LOQ) and limit of detection (LOD) with no moisture or dilution are higher than the QAPP LOQ and LOD.

The laboratory detection limit (DL) with no moisture or dilution for PFOS is higher than the QAPP DL.

All compound quantitations met validation criteria for samples which underwent Stage 4 validation. Raw data were not reviewed for Stage 2B validation.

## XIII. Target Compound Identifications

All target compound identifications met validation criteria for samples which underwent Stage 4 validation. Raw data were not reviewed for Stage 2B validation.

## XIV. System Performance

The system performance was acceptable for samples which underwent Stage 4 validation. Raw data were not reviewed for Stage 2B validation.

## XV. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Due to initial calibration \%D and internal standards area, data were qualified as estimated in nine samples.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable. Sample results that were found to be estimated (J) are usable for limited purposes only. Based upon the data validation all other results are considered valid and usable for all purposes.

## White Oak

Perfluorinated Alkyl Acids - Data Qualification Summary - SDG 1700804

| Sample | Compound | Flag | A or P | Reason |
| :---: | :---: | :---: | :---: | :---: |
| IRPSite7-GW-07GW41-20170629 <br> IRPSite5-GW-05GW01-20170629 <br> IRPSite5-GW-FD01-20170629 <br> IRPSite33-GW-11MW204D-20170629 <br> IRPSite33-GW-11MW204S 20170629 <br> Bldg 110-GW-11MW205D-20170629 <br> Bldg 110-GW-11MW205S 20170629 <br> IRPSite7-GW-07GW102 20170629** <br> IRPSite5-GW-04GW82-20170629 | PFDoA | UJ (all non-detects) | P | Initial calibration (\%D) |
| IRPSite5-GW-05GW01-20170629 <br> IRPSite33-GW-11MW204D-20170629 <br> Bldg 110-GW-11MW205D-20170629 <br> IRPSite5-GW-04GW82-20170629 | PFDoA PFTriA | UJ (all non-detects) <br> UJ (all non-detects) | P | Internal standards (area) |

## White Oak

## Perfluorinated Alkyl Acids - Laboratory Blank Data Qualification Summary - SDG

 1700804No Sample Data Qualified in this SDG

LDC \#: 39198B96
SD \#: 1700804
Laboratory: Vista Analytical Laboratory
METHOD: LCMS Perfluorinated Alkyl Acids (EPA Method 537)

Date:
Page:
Reviewer:


2nd Reviewer:


The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.


Note: $\quad \mathrm{A}=$ Acceptable
$\mathrm{N}=$ Not provided/applicable
SW = See worksheet
** Indicates sample underwent Stage 4 validation


Method: LCMS (EPA Method 537 )

| Validation Area | Yes | No | NA Findings/Comments |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Technical holding times |  |  |  |  |  |
| Were all technical holding times met? |  |  |  |  |  |
| Was cooler temperature criteria met? |  |  |  |  |  |
| II. LCIMS Instrument performance check |  |  |  |  |  |
| Were the instrument performance reviewed and found to be within the specified criteria? |  |  |  |  |  |
| Were all samples analyzed within the 12 hour clock criteria? |  |  |  |  |  |
| IIIa. Initial calibration |  |  |  |  |  |
| Did the laboratory perform a 5 point calibration prior to sample analysis? |  |  |  |  |  |
| Were all percent relative standard deviations (\%RSD) $\leq 20 \%$ ? |  |  |  |  |  |
| Was a curve fit used for evaluation? If yes, did the initial calibration meet the curve fit criteria of $\geq 0.990$ ? |  |  |  |  |  |
| Were all analytes within $70-130 \%$ or percent differences (\%D) $\leq 30 \%$ of their true value for each calibration standard |  |  |  |  |  |
| IIIb. Initial Calibration Verification |  |  |  |  |  |
| Was an initial calibration verification standard analyzed after each initial calibration for each instrument? |  |  |  |  |  |
| Were all percent differences (\%D) $\leq 30 \%$ ? |  |  |  |  |  |
| IV. Continuing calibration: |  |  |  |  |  |
| Was a continuing calibration analyzed daily? |  |  |  |  |  |
| Were all percent differences (\%D) of the continuing calibration $\leq 30 \%$ ? |  |  |  |  |  |
| V. Laboratory Blanks |  |  |  |  |  |
| Was a laboratory blank associated with every sample in this SDG? |  |  |  |  |  |
| Was a laboratory blank analyzed for each matrix and concentration? |  |  |  |  |  |
| Was there contamination in the laboratory blanks? If yes, please see the Blanks validation completeness worksheet. |  |  |  |  |  |
| Vi. Field blanks |  |  |  |  |  |
| Were field blanks identified in this SDG? |  |  |  |  |  |
| Were target compounds detected in the field blanks? |  |  |  |  |  |
| VIII. Matrix spike/Matrix spike duplicates |  |  |  |  |  |
| Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water. |  |  |  |  |  |
| Was a MS/MSD analyzed every 20 samples of each matrix? |  |  |  |  |  |
| Were the MS/MSD percent recoveries (\%R) and the relative percent differences (RPD) within the QC limits? |  |  |  |  |  |
| IX. Laboratory control samples |  |  |  |  |  |
| Was an LCS analyzed for this SDG? | $<$ |  |  |  |  |

Page: $\qquad$ 2nd Reviewer $\qquad$

| Validation Area | Yes | No | NA | Findings/Comments |
| :---: | :---: | :---: | :---: | :---: |
| Was an LCS analyzed per extraction batch? | $\lambda$ |  |  |  |
| Were the LCS percent recoveries (\%R) and relative percent difference (RPD) within the QC limits? |  |  |  |  |
| X. Field duplicates |  |  |  |  |
| Were field duplicate pairs identified in this SDG? | 7 |  |  |  |
| Were target compounds detected in the field duplicates?. | 7 |  |  |  |
| XI. Internal standards |  |  |  |  |
| Were internal standard area counts within $\pm 50 \%$ of the associated calibration standard? |  |  |  |  |
| XII. Compound quantitation |  |  |  |  |
| Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound? | $\bigcirc$ |  |  |  |
| Were compound quantitation and RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation? |  |  |  |  |
| XIII. Target compound identification |  |  |  |  |
| Were relative retention times ( $R R T ' s$ ) within $\pm 0.06$ RRT units of the standard? |  |  |  |  |
| Did compound spectra meet specified EPA "Functional Guidelines" criteria? |  |  |  |  |
| Were chromatogram peaks verified and accounted for? |  |  |  |  |
| XIV. System performance |  |  |  |  |
| System performance was found to be acceptable. |  |  |  |  |
| XIII. Overall assessment of data |  |  |  |  |
| Overall assessment of data was found to be acceptable. |  |  |  |  |

TARGET COMPOUND WORKSHEET
METHOD: PFOS/PFOAs


Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A"
Did the initial calibration meet the curve fit acceptance criteria of $\geq 0.990$ ?
$\bar{Y}$ (N) N/A Were all percent relative standard deviations (\%RSD) $\leq 20 \%$ ?

| \# | Date | Standard ID | Compound | Finding \%RSD/r ${ }^{2}$ | Finding \%D | Associated Samples | Qualifications |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $71017$ | $3 A-C S$ | FWo |  | $-56$ | $4 \\| C N D)$ | $-1 / 1+1 / 5$ |
|  | - | $1 \angle$ | $\checkmark$ |  | +36.9 |  | $10+\cos$ |
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VALIDATION FINDINGS WORKSHEET Continuing Calibration

METHOD: LC/MS PFOS/PFOAs (EPA Method 537M)
2nd Reviewer: $\qquad$
Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".
Was a continuing calibration standard analyzed after every 10 injections for each instrument?
Were all continuing calibration percent differences (\%D) $\leq 30 \%$ ?

| \# | Date | Standard ID | Compound | $\begin{gathered} \text { Finding \%D } \\ \text { (Limit: } \leq 30.0 \% \text { ) } \end{gathered}$ | Finding RRF (Limit: ) | Associated Samples | Qualifications |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $7 / 13 / 17$ | $170713 \mathrm{Ml}=20$ | PFTOA | $+88.0$ |  | All (NO) | Letets/A |
|  |  |  |  |  |  |  | 17 |
|  |  |  |  |  |  |  | - |
|  | 712317 | 1707/3M1/-35 | 9FOOA | $+135$ |  | $1 /(N O)$ | $\geqslant$ \# |
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VALIDATION FINDINGS WORKSHEET
Field Duplicates

METHOD: PFCs (Method 537 mod)

| Compound | Concentration (ng/L) |  | $(\leq 30)$ <br> RPD | Difference | Limits | Qual |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 2 | 3 |  |  |  |  |
| A | 6.98 | 6.86 |  | 0.12 | $\leq 8.88$ |  |
| B | 3.96 | 3.17 |  | 0.79 | $\leq 8.88$ |  |
| K | 61.1 | 64.9 | 6 |  |  |  |
| C | 48.8 | 51.3 | 5 |  |  |  |
| M | 205 | 199 | 3 |  |  |  |
| D | 3.24 | 2.82 |  | 0.42 | $\leq 8.88$ |  |
| J | 5.43 U | 2.30 |  | 3.13 | $\leq 8.88$ |  |

Please see qualifications below for all questions answered " $N$ ". Not applicable questions are identified as "N/A".
Y(DN/A Were all internal standard area counts within 50-150\% limits?
N N/A Were the retention times of the internal standards within $+/-30$ seconds of the retention times of the associated calibration standard?

| \# | Date | Sample ID | Internal <br> Standard | Area (Limits) | RT(Limits) | Qualifications |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | 2 (ND) | 13C2-PFDOA | 37.4 |  | 1/14/p(4.H) |
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|  |  | 5 CNOI |  | $3 T .4$ |  |  |
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|  |  | 7 (ND |  | 41.4 |  |  |
|  |  |  |  |  |  | 1 |
|  |  | $11(N D)$ | $v$ | 37.0 |  | 1 |
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> VALIDATION FINDINGS WORKSHEET Compound Quantitation and Reported RLs

## METHOD: LC/MS PFCs

Please see qualifications below for all questions answered " N ". Not applicable questions are identified as " $\mathrm{N} / \mathrm{A}$ ".
Y N J/A Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?
Y N N/A Were compound quantitation and RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?

| \# | Date | Sample io | Finding | Qualifications |
| :---: | :---: | :---: | :---: | :---: |
|  |  | All | Lab rerported LODLOQ > LOD/LOQ in the QAPP | Text |
|  |  |  |  |  |
|  |  | All | The DL for PFOS $=0.807 \mathrm{ng} \mathrm{l}$, DL in the QAPP $=0.305 \mathrm{ng} / \mathrm{L}$ | Text |
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Comments: See sample calculation verification worksheet for recalculations

| Calibration Date | System | Compound | Standard | Y) <br> Response | (X) Concentration |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 7/10/2017 | Q4 | PFBS | 0 | 0.4380675 | 0.25 |
|  |  |  | s1 | 1.1565725 | 0.50 |
|  |  |  | s2 | 1.8657437 | 1.00 |
|  |  |  | s3 | 4.9570275 | 2.00 |
|  |  |  | s4 | 9.7347175 | 5.00 |
|  |  |  | s5 | 22.092078 | 10.00 |
|  |  |  | s6 | 112.84108 | 50.00 |
|  |  |  | s7 | 230.883470 | 100.00 |


| Regression Output |  | Reported |
| :---: | :---: | :---: |
| Constant | -0.636769 | -0.143808 |
| Std Err of Y Est |  |  |
| R Squared | 0.999849 | 0.998952 |
| Degrees of Freedom |  |  |
|  |  |  |
| X Coefficient(s) | 2.305558 | 2.282190 |
| Std Err of Coef. |  |  |
|  |  |  |
| Correlation Coefficient | 0.999925 |  |
| Coefficient of Determination ( $\mathrm{r}^{\wedge} 2$ ) | 0.999849 | 0.998952 |

* $1 / \times W+$

Page:_ / of / Reviewer: $Q$ and Reviewer: $\qquad$


The percent difference (\%D) of the initial calibration average Calibration Factors (CF) and the continuing calibration CF were recalculated for the compounds identified below using the following calculation:

Where: ave. $C F=$ initial calibration average $C F$
$C F=$ continuing calibration $C F$
$A=$ Area of compound
$\mathrm{C}=$ Concentration of compound


Comments: Refer to Continuing Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within $10.0 \%$ of the recalculated results.

VALIDATION FINDINGS WORKSHEET
Laboratory Control Sample/Laboratory Control Sample Duplicate Results Verification

METHOD: $\qquad$ GC $\sqrt{H P L C} / \mu=$

The percent recoveries (\%R) and Relative Percent difference (RPD) of the laboratory control sample and laboratory control sample duplicate were recalculated for the compounds identified below using the following calculation:
$\%$ Recovery $=100^{*}(S S C-S C) / S A$
RPD $=1$ SSCLCS - SSCLCSD | * $2 /(S S C L C S ~+S S C L C S D) ~$ LCS/LCSD samples:

|  |  |  | Spiked Sample Concentration $(n s / 4$ |  | LCS |  | LCSD |  | LCS/LCSD |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Compound |  |  | Percent Recovery | Percent Recovery |  | RPD |  |
|  | LCS | LCSD |  |  | LCS | LCSD | Reported | Recalc. | Reported | Recalc. | Reported | Recalc. |
| Gasoline (8015) |  |  |  |  |  |  |  |  |  |  |
| Diesel (8015) |  |  |  |  |  |  |  |  |  |  |
| Benzene (8021B) |  |  |  |  |  |  |  |  |  |  |
| Methane (RSK-175) |  |  |  |  |  |  |  |  |  |  |
| 2,4-D (8151) |  |  |  |  |  |  |  |  |  |  |
| Dinoseb (8151) |  |  |  |  |  |  |  |  |  |  |
| Naphthalene (8310) |  |  |  |  |  |  |  |  |  |  |
| Anthracene (8310) |  |  |  |  |  |  |  |  |  |  |
| HMX (8330) |  |  |  |  |  |  |  |  |  |  |
| 2,4,6-Trinitrotoluene (8330) |  |  |  |  |  |  |  |  |  |  |
| $\triangle A B 5$ | 80.0 | N才 | 655 | $N / A$ | 51.9 | 81.0 |  |  |  |  |

Comments: Refer to Laboratory Control Sample/Laboratory Control Sample Duplicate findings worksheet for list of qualifications and associated samples when reported results do not agree within $10.0 \%$ of the recalculated results.

Were all recalculated results for detected target compounds agree within $10 \%$ of the reported results?

Concentration $=\frac{(\mathrm{A})(\mathrm{Fv})(\mathrm{Df})}{(\mathrm{RF})(\mathrm{Vs} \text { or } \mathrm{Ws})(\% \mathrm{~S} / 100)}$
$A=$ Area or height of the compound to be measured
Tv= Final Volume of extract
If= Dilution Factor
$R F=$ Average response factor of the compound In the initial calibration
Vs= Initial volume of the sample
Ns= Initial weight of the sample
$\% \mathrm{~S}=$ Percent Solid

Example:
Sample ID. $\qquad$ 10 Compound Name $\qquad$ PFBS

$$
=9.05 \mathrm{n} 3 / \mathrm{L}
$$


omments: $\qquad$

VALIDATION FINDINGS WORKSHEET Compound Quantitation and Reported RLs

Page:
Reviewer: 2nd Reviewer: $\qquad$
METHOD: LC/MS PFCs
Please see qualifications below for all questions answered " N ". Not applicable questions are identified as "N/A".
(1) N/A Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?
$Y$ N N/A Were compound quantitation and RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?

| \# | Date | Sample ID |  |  |  |
| :--- | :--- | :--- | :--- | :--- | :--- |
|  |  | All | Lab rerported LOD/LOQ > LOD/LOQ in the QAPP |  | Qualifications |
|  |  |  |  |  |  |
| Text |  |  |  |  |  |
|  |  | All | The DL for PFOS $=0.807$ ng LL, DL in the QAPP $=0.305 \mathrm{ng} / \mathrm{L}$ |  |  |
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Comments: See sample calculation verification worksheet for recalculations

# Laboratory Data Consultants, Inc. Data Validation Report 

Project/Site Name:
LDC Report Date:
Parameters:
Validation Level:
Laboratory:

White Oak
August 4, 2017
Perfluorinated Alkyl Acids
Stage 2B \& 4
Vista Analytical Laboratory

Sample Delivery Group (SDG): 1700887

| Sample Identification | Laboratory Sample <br> Identification | Matrix | Collection <br> Date |
| :--- | :--- | :--- | :---: |
| IRPSite 6-GW-06GW01-20170712 | $1700887-01$ | Water | $07 / 12 / 17$ |
| IRPSite 6-GW-06GW02-20170712 | $1700887-02$ | Water | $07 / 12 / 17$ |
| Site 33-GW-33GW01-20170712 | $1700887-04$ | Water | $07 / 12 / 17$ |
| Building110-GW-110GW01-20170712** | $1700887-05^{* *}$ | Water | $07 / 12 / 17$ |
| IRPSite 6-GW-06FD01-20170712 | $1700887-06$ | Water | $07 / 12 / 17$ |

[^4]
## Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Final Sampling and Analysis Plan (Field Sampling and Analysis Plan) for Initial Assessment of Perf-fluorinated Compounds (PFCS) or Per- and Polyfluoralkyl Substances (PFAS) Sites at Various Base Realignment and Closure (BRAC) Installations (June 2017), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.1 (2017), and a modified outline of the USEPA National Functional Guidelines (NFG) for Organic Superfund Methods Data Review (January 2017). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

## Perfluorinated Alkyl Acids by Environmental Protection Agency (EPA) Method 537

All sample results were subjected to Stage 2B data validation, which comprises an evaluation of quality control (QC) summary results. Samples appended with a double asterisk on the cover page were subjected to Stage 4 data validation, which is comprised of the QC summary forms as well as the raw data, to confirm sample quantitation and identification.

The following are definitions of the data qualifiers utilized during data validation:
J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to nonconformances discovered during data validation.

U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the compound or analyte should be considered nondetected at the reported concentration due to the presence of contaminants detected in the associated blank(s).

UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.

R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.

NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected compound or analyte in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

## I. Sample Receipt and Technical Holding Times

All samples were received in good condition and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

## II. LC/MS Instrument Performance Check

Instrument performance check was performed prior to initial calibration.

## III. Initial Calibration and Initial Calibration Verification

Initial calibration was performed as required by the method.
For compounds where average relative response factors (RRFs) were utilized, the percent relative standard deviations (\%RSD) were less than or equal to $20.0 \%$.

In the case where the laboratory used a calibration curve to evaluate the compounds, all coefficients of determination $\left(r^{2}\right)$ were greater than or equal to 0.990 .

For each calibration point, the percent differences (\%D) of its true value were less than or equal to $30.0 \%$ for all compounds.

The percent differences (\%D) of the initial calibration verification (ICV) standard were less than or equal to $30.0 \%$ for all compounds.

## IV. Continuing Calibration

Continuing calibration was performed at required frequencies.
The percent differences (\%D) were less than or equal to $30.0 \%$ for all compounds.

## V. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

## VI. Field Blanks

Samples IRPSite33-GW-FRB01-20170629, Bldg 110-GW-FRB01 20170629 (both from SDG 1700804), and IRPSite 6-GW-FRB01-20170712 were identified as field rinsate blanks. No contaminants were found.

Sample SB01 (from SDG 1700803) was identified as a source blank. No contaminants were found.

## VII. Surrogates

Surrogates were not performed for this SDG.

## VIII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

## IX. Ongoing Precision Recovery Samples

Ongoing precision recovery (OPR) samples were analyzed as required by the method. Percent recoveries (\%R) were within QC limits.

## X. Field Duplicates

Samples IRPSite 6-GW-06GW02-20170712 and IRPSite 6-GW-06FD01-20170712 were identified as field duplicates. No results were detected in any of the samples with the following exceptions:

| Compound | Concentration (ng/L) |  | $\begin{gathered} \text { RPD } \\ \text { (Limits) } \end{gathered}$ | Differences (Limits) | Flag | A or P |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | IRPSite 6-GW-06GW02-20170712 | IRPSite 6-GW-06FD01-20170712 |  |  |  |  |
| PFBS | 21.8 | 21.7 | $0(\leq 30)$ | - | - | - |
| PFHxA | 20.0 | 17.6 | 13 ( 530 ) | - | - | - |
| PFHpA | 10.3 | 9.00 | - | 1.3 ( $\leq 10.1$ ) | - | - |
| PFHxS | 6.18 | 5.70 | - | 0.48 ( $\leq 10.1$ ) | - | - |
| PFOA | 20.1 | 20.6 | $2(\leq 30)$ | - | - | - |
| PFOS | 16.5 | 13.5 | $20(\leq 30)$ | - | - | - |
| PFNA | 3.81 | 2.80 | - | 1.01 ( 510.1 ) | - | - |

## XI. Internal Standards

All internal standard areas and retention times were within QC limits.

## XII. Compound Quantitation

The laboratory limit of quantitation (LOQ) and limit of detection (LOD) with no moisture or dilution are higher than the QAPP LOQ and LOD.

The laboratory detection limit (DL) with no moisture or dilution for PFOS is higher than the QAPP DL.

All compound quantitations met validation criteria for samples which underwent Stage 4 validation. Raw data were not reviewed for Stage $2 B$ validation.

## XIII. Target Compound Identifications

All target compound identifications met validation criteria for samples which underwent Stage 4 validation. Raw data were not reviewed for Stage 2B validation.

## XIV. System Performance

The system performance was acceptable for samples which underwent Stage 4 validation. Raw data were not reviewed for Stage 2B validation.

## XV. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

The quality control criteria reviewed were met and are considered acceptable. Based upon the data validation all results are considered valid and usable for all purposes.

White Oak
Perfluorinated Alkyl Acids - Data Qualification Summary - SDG 1700887
No Sample Data Qualified in this SDG
White Oak
Perfluorinated Alkyl Acids - Laboratory Blank Data Qualification Summary - SDG 1700887

No Sample Data Qualified in this SDG

LDC \#: 39198C96
VALIDATION COMPLETENESS WORKSHEET
SDG \#: 1700887
Stage 2B/4
Laboratory: Vista Analytical Laboratory
METHOD: LCMS Perfluorinated Alkyl Acids (EPA Method 537)

Date:


The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.


Note: $\quad \mathrm{A}=$ Acceptable
$\mathrm{N}=$ Not provided/applicable SW = See worksheet

ND = No compounds detected $\mathrm{R}=$ Rinsate $\mathrm{FB}=$ Field blank
$\mathrm{D}=$ Duplicate
TB = Trip blank
$E B=$ Equipment blank

SB=Source blank OTHER:
** Indicates sample underwent Stage 4 validation

|  | Client ID | La |
| :--- | :--- | :--- |
| 1 | IRPSite 6-GW-06GW01-20170712 | 17 |
| 2 | IRPSite 6-GW-06GW02-20170712 | 17 |
| 3 | IRPSiteG-GW-FRB01-20470742 | 47 |
| 4 | Site 33-GW-33GW01-20170712 | 17 |
| 5 | Building110-GW-110GW01-20170712** | 17 |
| 6 | IRPSite 6-GW-06FD01-20170712 | 17 |
| 7 |  |  |
| 8 |  |  |


| Lab ID | Matrix | Date |
| :--- | :--- | :--- |
| $1700887-01$ | Water | $07 / 12 / 17$ |
| $1700887-02$ | Water | $07 / 12 / 17$ |
| $4700807-03$ | Water | $07 / 42 / 47$ |
| $1700887-04$ | Water | $07 / 12 / 17$ |
| $1700887-05^{* *}$ | Water | $07 / 12 / 17$ |
| $1700887-06$ | Water | $07 / 12 / 17$ |
|  |  |  |

Notes:

| $\square$ |  |  |  |  |
| :--- | :--- | :--- | :--- | :--- |
|  |  |  |  |  |

* see next page in late section

VALIDATION FINDINGS CHECKLIST
Page: $\qquad$
Reviewer: 2nd Reviewer: $\qquad$
Method: LCMS (EPA Method 537 )


Page:
Reviewer: 2 ofz 2nd Reviewer:


| Validation Area | Yes | No | NA | Findings/Comments |
| :---: | :---: | :---: | :---: | :---: |
| Was an LCS analyzed per extraction batch? | 7 |  |  |  |
| Were the LCS percent recoveries (\%R) and relative percent difference (RPD) within the QC limits? | 7 |  |  |  |
| X. Field duplicates |  |  |  |  |
| Were field duplicate pairs identified in this SDG? | , |  |  |  |
| Were target compounds detected in the field duplicates? | $\bigcirc$ |  |  |  |
| XI. Internal standards |  |  |  |  |
| Were internal standard area counts within $\pm 50 \%$ of the associated calibration standard? |  |  |  |  |
| XII. Compound quantit |  |  |  |  |
| Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound? | $\checkmark$ |  |  |  |
| Were compound quantitation and RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation? | 7 |  |  |  |
| XIII. Target compound identification |  |  |  |  |
| Were relative retention times (RRT's) within $\pm 0.06 \mathrm{RRT}$ units of the standard? | $\square$ |  |  |  |
| Did compound spectra meet specified EPA "Functional Guidelines" criteria? | $r$ |  |  |  |
|  | 7 |  |  |  |
| XIV. System performance |  |  |  |  |
| System performance was found to be acceptable. |  |  |  |  |
| XIII. Overall assessment of data |  |  |  |  |
| Overall assessment of data was found to be acceptable. | - |  |  |  |

TARGET COMPOUND WORKSHEET

| A. Porflurohexan (PFHxA) |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
| B. Perfluoroheptanoic acid (PFHpA) |  |  |  |  |
| C. Perfluorooctanoic dcid (PFOA) |  |  |  |  |
| D. Perfluorononanoif acid (PFNA) |  |  |  |  |
| E. Perfluorodecandc acid (PFDA) |  |  |  |  |
| F. Perfluoroundec |  |  |  |  |
| G. Perfluorododecanoic acid (PFDoA) |  |  |  |  |
| H. Perfluorotridecanoic acid (PFTriA) |  |  |  |  |
| 1. Perfluorotetredecanoic acid (PFTeA) |  |  |  |  |
| J. Perfluorob tanesulfonic acid (PFBS) |  |  |  |  |
| K. Perfluoror exanesulfonic acid (PFHxS) |  |  |  |  |
| L. Perfluorqheptanesulfonic acid (PFHpS) |  |  |  |  |
| M. Perfluofroctanesulfonic acid (PFOS) |  |  |  |  |
| N.Perflugrodecanesulfonic acid (PFDS) |  |  |  |  |
| O. Perflubrooctane Sulfonamide (FOSA) |  |  |  |  |
| Perflyorobutanoic acid (PFBA) |  |  |  |  |
| Q. Pefturopentano (PFPeA) |  |  |  |  |
| R. 6:2FTS |  |  |  |  |
| S. 8:2FTS |  |  |  |  |
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LDC\#:39198c96
VALIDATION FINDINGS WORKSHEET
Field Duplicates
METHOD: PFCs (Method 537 mod)

| Compound | Concentration (ng/L) |  | $(\leq 30)$ <br> RPD | Difference | Limits | Qual |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 2 | 6 |  |  |  |  |
| J | 21.8 | 21.7 | 0 |  |  |  |
| A | 20.0 | 17.6 | 13 |  |  |  |
| B | 10.3 | 9.00 |  | 1.3 | $\leq 10.1$ |  |
| K | 6.18 | 5.70 |  | 0.48 | $\leq 10.1$ |  |
| C | 20.1 | 20.6 | 2 |  |  |  |
| M | 16.5 | 13.5 | 20 |  |  |  |
| D | 3.81 | 2.80 |  | 1.01 | $\leq 10.1$ |  |

## METHOD: LC/MS PFCs

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".
Y N/A Were all internal standard area counts within 50-150\% limits?
TPN N/A Were the retention times of the internal standards within $+/-30$ seconds of the retention times of the associated calibration standard?

| \# | Date | Sample ID | Internal Standard | Area (Limits) | RT (Limits) | Qualifications |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | 37Foolcter | $13 C 3 F+4 \text { PD }$ | $45.1(50-150)$ |  | whas cartexA |
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METHOD: LC/MS PFCs
Please see qualifications below for all questions answered " N ". Not applicable questions are identified as "N/A".
Y N N/A Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?
Y N N/A Were compound quantitation and RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?

| \# | Date | Sample ID | Finding | Qualifications |
| :---: | :---: | :---: | :---: | :---: |
|  |  | All | Lab rerported LOD/LOQ > LODLOQ in the QAPP | Text |
|  |  |  |  |  |
|  |  | All | The DL for PFOS $=0.807 \mathrm{ng} / \mathrm{L}$, DL in the QAPP $=0.305 \mathrm{ng} / \mathrm{L}$ | Text |
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Comments: See sample calculation verification worksheet for recalculations

VALIDATION FINDINGS WORKSHEET Initial Calibration Calculation Verification

Page: $\quad /$ of $\rightarrow$
Reviewer:
2nd Reviewer: $\mp$

Method: LC/MS/MS PFCs

| $\begin{gathered} \hline \text { Calibration } \\ \text { Date } \end{gathered}$ | System | Compound | Standard | (Y) <br> Response | $(\mathrm{X})$ Concentration |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 7/27/2017 | Q2 | PFBS | s1 | 1.4453125 | 0.50 |
|  |  |  | s2 | 2.0194375 | 1.00 |
|  |  |  | s3 | 3.541275 | 2.00 |
|  |  |  | s4 | 9.4866062 | 5.00 |
|  |  |  | s5 | 16.99074 | 10.00 |
|  |  |  | s6 | 83.904108 | 50.00 |
|  |  |  | s7 | 157.926820 | 100.00 |

Regression Output
Reported

| Constant | 0.593256 |  |
| :--- | ---: | :---: |
| Std Err of Y Est | 1.183817 |  |
| R Squared |  | 0.998731 |
| Degrees of Freedom |  |  |
|  |  |  |
| X Coefficient(s) |  | 1.999221 |
| Std Err of Coef. |  |  |
| Correlation Coefficient |  |  |
| Coefficient of Determination $\left(r^{\wedge} 2\right)$ | 0.9996733 |  |

Page: 2 of 2

Method: LC/MS/MS PFCs

| Calibration Date | System | Compound | Standard | (Y) <br> Response | (X) <br> Concentration |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 7/28/2017 | Q2 | PFDoA | 0 | 0.0331250 | 0.25 |
|  |  |  | s1 | 0.0527637 | 0.50 |
|  |  |  | s2 | 0.1130487 | 1.00 |
|  |  |  | s3 | 0.266025 | 2.00 |
|  |  |  | S4 | 0.6203462 | 5.00 |
|  |  |  | s5 | 1.2761775 | 10.00 |
|  |  |  | s6 | 6.096625 | 50.00 |
|  |  |  | s7 | 12.084870 | 100.00 |


| Regression Output |
| :--- |
| Constant Reported  <br> Std Err of Y Est  0.017917 <br> R Squared  0.000590 <br> Degrees of Freedom  0.999957 <br>    <br> S Coefficient(s)  0.999601 <br> Std Err of Coef.  0.120887 <br> Correlation Coefficient   <br> Coefficient of Determination $\left(\mathrm{r}^{\wedge} 2\right)$ 0.999979  |

## VALIDATION FINDINGS WORKSHEET

Continuing Calibration Results Verification

Page:
Reviewer: $\qquad$

METHOD: GC $\qquad$ HPLC/MS
The percent difference (\%D) of the initial calibration average Calibration Factors (CF) and the continuing calibration CF were recalculated for the compounds identified below using the following calculation:

| $\begin{aligned} & \% \text { Difference }=100 \text { * (ave. } C F-C F \text { )/ave. } C F \\ & C F=A / C \end{aligned}$ | Where: | ave. $C F=$ initial calibration average $C F$ CF = continuing calibration CF <br> $A=$ Area of compound <br> $C=$ Concentration of compound |
| :---: | :---: | :---: |



Comments: Refer to Continuing Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within $10.0 \%$ of the recalculated results.

Reviewer: 2nd Reviewer: $\qquad$分

## METHOD: _Gc $\sqrt{ }$ hple hes

The percent recoveries (\%R) and Relative Percent difference (RPD) of the laboratory control sample and laboratory control sample duplicate were recalculated for the compounds identified below using the following calculation:

| \% Recovery $=100^{*}($ SSC-SC $) /$ SA | Where: | SSC = Spiked sample concentration | SC = Concentration |
| :--- | :--- | :--- | :--- |
| RPD $=1$ SSCLCS - SSCLCSD $~^{*} 2 /($ SSCLCS + SSCLCSD $)$ | SA $=$ Spike added |  |  |
| LCS $=$ Laboratory control sample percent recovery | LCSD = Laboratory control sample duplicate percent recovery |  |  |


| Compound | $\begin{gathered} \text { Spike } \\ \text { Addeded } \\ (\mathrm{nS} / 4 \end{gathered}$ |  | Spiked Sample Concentration (1) 12 |  | Lcs |  | LCSD |  | LCSILCSD |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Percent Recovery | Percent Recovery |  | RPD |  |
| - | Lcs | LCSD |  |  | Lcs | LCSD | Reported | Recalc. | Reported | Recalc. | Reported | Recalc. |
| Gasoline (8015) |  |  |  |  |  |  |  |  |  |  |
| Diesel (8015) |  |  |  |  |  |  |  |  |  |  |
| Benzene (8021B) |  |  |  |  |  |  |  |  |  |  |
| Methane (RSK-175) |  |  |  |  |  |  |  |  |  |  |
| 2,4-D (8151) |  |  |  |  |  |  |  |  |  |  |
| Dinoseb (8151) |  |  |  |  |  |  |  |  |  |  |
| Naphthalene (8310) |  |  |  |  |  |  |  |  |  |  |
| Anthracene (8310) |  |  |  |  |  |  |  |  |  |  |
| HMX (8330) |  |  |  |  |  |  |  |  |  |  |
| 2,4,6-Trinitrotoluene (8330) |  |  |  |  |  |  |  |  |  |  |
| PFBS | $80^{\circ}$ | NA | 74.1 | $N A$ | 9at 6 | 92.6 |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |

Comments: Refer to Laboratory Control Sample/Laboratory Control Sample Duplicate findings worksheet for list of qualifications and associated samples when reported results do not agree within $10.0 \%$ of the recalculated results.

## VALIDATION FINDINGS WORKSHEET <br> Sample Calculation Verification

Page: $\_$of $\_$
Reviewer: $\frac{\square}{5}$ 2nd Reviewer: $F$

METHOD: __GC $\sqrt{ }$ HPLC/MS
Y N N/A Were all reported results recalculated and verified for all level IV samples?
Y N N/A Were all recalculated results for detected target compounds agree within $10 \%$ of the reported results?

Concentration=
(A)(Fv)(Df)

Example:
$(\mathrm{RF})(\mathrm{Vs}$ or Ws$)(\% \mathrm{~S} / 100)$
$A=$ Area or height of the compound to be measured
$\mathrm{Fv}=$ Final Volume of extract
$D f=$ Dilution Factor
$R F=$ Average response factor of the compound In the initial calibration
$\mathrm{Vs}=$ Initial volume of the sample Ws= Initial weight of the sample $\% S=$ Percent Solid

$$
\text { Sample ID. } 5 \quad \text { Compound Name } \not \subset F S
$$



| \# | Sample ID | Compound | $\qquad$ | Recalculated Results Concentrations 1 $\qquad$ | Qualifications |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | 5 | qeps | 39.2 |  |  |
|  |  |  | . |  |  |
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omments:

The LDC job number listed above was entered by $\qquad$ $\varepsilon$


Notes: $\qquad$

| INSTALLATION_ID | SITE_NAME | LOCATION_NAME | LOCATION_TYPE | LOCATION_TYPE_DESC | COORD_X | COORD_Y | SAMPLE_NAME | SAMPLE_MATRIX | SAMPLE_MATRIX_DESC | COLLECT_DATE | ANALYTICAL_METHOD_GRP_DESC | SDG |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| WHITE_OAK_NSWC | SITE 00004 | 04GW80 | WLM | Monitoring Well | 1324355.06 | 500473.78 | IRPSITE5-GW-04GW80-20170628 | WG | Ground water | 28-Jun-17 | Perfluoroalkyl Compounds | 1700803 |
| WHITE_OAK_NSWC | SITE 00004 | 04GW81S | WLM | Monitoring Well | 1324486.16 | 500473.75 | IRPSITE5-GW-04GW81S-20170628 | WG | Ground water | 28-Jun-17 | Perfluoroalkyl Compounds | 1700803 |
| WHITE_OAK_NSWC | SITE 00007 | 07GW202 | WLM | Monitoring Well | 1325058.192 | 500261.2294 | IRPSITE7-GW-07GW202-20170628 | WG | Ground water | 28-Jun-17 | Perfluoroalkyl Compounds | 1700803 |
| WHITE_OAK_NSWC | SITE 00046 | 46GW205 | WLM | Monitoring Well | 1325660.587 | 499882.28 | IRPSITE7-GW-46GW205-20170628 | WG | Ground water | 28-Jun-17 | Perfluoroalkyl Compounds | 1700803 |
| WHITE_OAK_NSWC | SITE 00046 | 46GW205 | WLM | Monitoring Well | 1325660.587 | 499882.28 | IRPSITE7-GW-FD01-20170628 | WG | Ground water | 28-Jun-17 | Perfluoroalkyl Compounds | 1700803 |


[^0]:    LCL-UCL - Lower control limit - upper control limit

[^1]:    LCL-UCL - Lower control limit - upper control limit

[^2]:    LCL-UCL - Lower control limit - upper control limit

[^3]:    LCL-UCL - Lower control limit - upper control limit

[^4]:    **Indicates sample underwent Stage 4 validation

