

May 24, 2021

J. David Raper  
City of Adrian WWTP  
1001 Oakwood Rd.  
Adrian, MI 49221

RE: Project: Biosolids Analysis  
Pace Project No.: 50285626

Dear J. Raper:

Enclosed are the analytical results for sample(s) received by the laboratory on April 23, 2021. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:  
• Pace Analytical Services - Minneapolis

Revised Report. This report replaces the original dated 052121, it has been revised to include PFAS results report, which was originally omitted.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Melanie Booms  
melanie.booms@pacelabs.com  
(616)975-4500  
Project Manager

Enclosures



## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

## CERTIFICATIONS

Project: Biosolids Analysis  
 Pace Project No.: 50285626

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**Pace Analytical Services, LLC - Minneapolis MN**

1700 Elm Street SE, Minneapolis, MN 55414	Missouri Certification #: 10100
A2LA Certification #: 2926.01*	Montana Certification #: CERT0092
1800 Elm Street SE, Minneapolis, MN 55414--Satellite Air Lab	Nebraska Certification #: NE-OS-18-06
Alabama Certification #: 40770	Nevada Certification #: MN00064
Alaska Contaminated Sites Certification #: 17-009*	New Hampshire Certification #: 2081*
Alaska DW Certification #: MN00064	New Jersey Certification #: MN002
Arizona Certification #: AZ0014*	New York Certification #: 11647*
Arkansas DW Certification #: MN00064	North Carolina DW Certification #: 27700
Arkansas WW Certification #: 88-0680	North Carolina WW Certification #: 530
California Certification #: 2929	North Dakota Certification #: R-036
Colorado Certification #: MN00064	Ohio DW Certification #: 41244
Connecticut Certification #: PH-0256	Ohio VAP Certification (1700) #: CL101
EPA Region 8 Tribal Water Systems+Wyoming DW Certification #: via MN 027-053-137	Ohio VAP Certification (1800) #: CL110*
Florida Certification #: E87605*	Oklahoma Certification #: 9507*
Georgia Certification #: 959	Oregon Primary Certification #: MN300001
Hawaii Certification #: MN00064	Oregon Secondary Certification #: MN200001*
Idaho Certification #: MN00064	Pennsylvania Certification #: 68-00563*
Illinois Certification #: 200011	Puerto Rico Certification #: MN00064
Indiana Certification #: C-MN-01	South Carolina Certification #: 74003001
Iowa Certification #: 368	Tennessee Certification #: TN02818
Kansas Certification #: E-10167	Texas Certification #: T104704192*
Kentucky DW Certification #: 90062	Utah Certification #: MN00064*
Kentucky WW Certification #: 90062	Vermont Certification #: VT-027053137
Louisiana DEQ Certification #: AI-03086*	Virginia Certification #: 460163*
Louisiana DW Certification #: MN00064	Washington Certification #: C486*
Maine Certification #: MN00064*	West Virginia DEP Certification #: 382
Maryland Certification #: 322	West Virginia DW Certification #: 9952 C
Michigan Certification #: 9909	Wisconsin Certification #: 999407970
Minnesota Certification #: 027-053-137*	Wyoming UST Certification #: via A2LA 2926.01
Minnesota Dept of Ag Approval: via MN 027-053-137	USDA Permit #: P330-19-00208
Minnesota Petrofund Registration #: 1240*	*Please Note: Applicable air certifications are denoted with an asterisk (*).
Mississippi Certification #: MN00064	

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## SAMPLE SUMMARY

Project: Biosolids Analysis  
Pace Project No.: 50285626

Lab ID	Sample ID	Matrix	Date Collected	Date Received
50285626001	Cell Biosolids	Solid	04/22/21 07:30	04/23/21 09:50

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## SAMPLE ANALYTE COUNT

Project: Biosolids Analysis

Pace Project No.: 50285626

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
50285626001	Cell Biosolids	ASTM D2974	JL5	1	PASI-M

PASI-M = Pace Analytical Services - Minneapolis

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## ANALYTICAL RESULTS

Project: Biosolids Analysis

Pace Project No.: 50285626

Sample: Cell Biosolids      Lab ID: 50285626001      Collected: 04/22/21 07:30      Received: 04/23/21 09:50      Matrix: Solid

**Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.**

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974								
Percent Moisture	97.0	%	0.10	1		05/18/21 14:23		N2

## REPORT OF LABORATORY ANALYSIS

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## QUALITY CONTROL DATA

Project: Biosolids Analysis  
Pace Project No.: 50285626

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QC Batch:	742706	Analysis Method:	ASTM D2974
QC Batch Method:	ASTM D2974	Analysis Description:	Dry Weight / %M by ASTM D2974
		Laboratory:	Pace Analytical Services - Minneapolis

Associated Lab Samples: 50285626001

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SAMPLE DUPLICATE: 3961940

Parameter	Units	Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	31.3	27.7	12	30	N2

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SAMPLE DUPLICATE: 3961941

Parameter	Units	Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	11.1	10.6	5	30	N2

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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## QUALIFIERS

Project: Biosolids Analysis  
Pace Project No.: 50285626

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### DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.  
ND - Not Detected at or above adjusted reporting limit.  
TNTC - Too Numerous To Count  
J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.  
MDL - Adjusted Method Detection Limit.  
PQL - Practical Quantitation Limit.  
RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.  
S - Surrogate  
1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.  
Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.  
LCS(D) - Laboratory Control Sample (Duplicate)  
MS(D) - Matrix Spike (Duplicate)  
DUP - Sample Duplicate  
RPD - Relative Percent Difference  
NC - Not Calculable.  
SG - Silica Gel - Clean-Up  
U - Indicates the compound was analyzed for, but not detected.  
N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.  
Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.  
TNI - The NELAC Institute.

### ANALYTE QUALIFIERS

N2      The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.

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## QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Biosolids Analysis  
Pace Project No.: 50285626

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
50285626001	Cell Biosolids	ASTM D2974	742706		

## REPORT OF LABORATORY ANALYSIS

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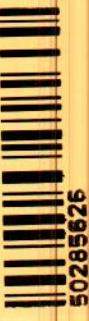


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# CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed.

WO# : 50285626



## Section A

## Required Client Information:

Company: City of Adrian WWTP	Report To: J. Reiter	Attention:	Company Name:	Regulatory Agency:																															
Address: 1001 Oakwood Rd.	Copy To: jreiter@ci.adrian.mi.us	Address:																																	
Adrian, MI 49221	Purchase Order #:	Pace Quote:																																	
Email: jreiter@ci.adrian.mi.gov	Project Name: Biosolids Analysis	Pace Project Manager: brian.hai@pacelabs.com,	State / Location: MI																																
Phone: 517-264-4867	Fax:	Pace Profile #: 9823																																	
Requested Due Date:																																			
Section B Required Project Information:																																			
<table border="1"> <tr> <th colspan="2">SAMPLE ID</th> <th colspan="3">COLLECTED</th> <th colspan="3">Preservatives</th> <th colspan="3">ANALYSES TEST</th> <th colspan="3">REQUESTED ANALYSIS FILTERED (Y/N)</th> </tr> <tr> <td rowspan="2">ITEM #</td> <td rowspan="2">One Character per box. (A-Z, 0-9, -, ) Sample Ids must be unique</td> <td rowspan="2">MATRIX CODE Drinking Water Water Waste Water Product Soil/Solid Oil Wipe Air Other Tissue</td> <td rowspan="2">SAMPLE TYPE (see valid codes to left) DW WT WW P SL WP AR OT TS</td> <td rowspan="2">START DATE</td> <td rowspan="2">TIME</td> <td rowspan="2">END DATE</td> <td rowspan="2">TIME</td> <td rowspan="2"># OF CONTAINERS</td> <td rowspan="2">PFAS ID M128</td> <td rowspan="2">Residual Chlorine (Y/N)</td> <td rowspan="2">N</td> <td rowspan="2">N</td> </tr> <tr> <td>COLLECTED</td> <td>Preservatives</td> <td>ANALYSES TEST</td> <td>REQUESTED ANALYSIS FILTERED (Y/N)</td> </tr> </table>					SAMPLE ID		COLLECTED			Preservatives			ANALYSES TEST			REQUESTED ANALYSIS FILTERED (Y/N)			ITEM #	One Character per box. (A-Z, 0-9, -, ) Sample Ids must be unique	MATRIX CODE Drinking Water Water Waste Water Product Soil/Solid Oil Wipe Air Other Tissue	SAMPLE TYPE (see valid codes to left) DW WT WW P SL WP AR OT TS	START DATE	TIME	END DATE	TIME	# OF CONTAINERS	PFAS ID M128	Residual Chlorine (Y/N)	N	N	COLLECTED	Preservatives	ANALYSES TEST	REQUESTED ANALYSIS FILTERED (Y/N)
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													COLLECTED	Preservatives	ANALYSES TEST	REQUESTED ANALYSIS FILTERED (Y/N)																			
1	Cell Biosolids	SL6	4/22/21	0730	1	X																													
2																																			
3																																			
4																																			
5																																			
6																																			
7																																			
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		J. James D. RAPER		4-22-21		8:00		4-23/21 09:00																											
SIGNATURE of SAMPLER: J. James D. RAPER					DATE Signed: 4-22-2021																														

## Sample Conditions Upon Receipt Form (SCUR)

Date/Time:	4.23.21	Evaluated by:	WDC	WO# : 50285626	or
Client:	City of Adrian		PM: MSB	Due Date: 05/17/21	
Project Manager:	BJH	Profile ID:	CLIENT: GR-Adrian		
Rush TAT Requested:	YES	NO	Due Date:		
Lab Notified of Rush or Short Holds:	YES	NO	Non Conformance Form Required: YES NO		
Samples Received Via:	FedEx	UPS	Client	Pace Courier	Other: _____
Comments:					
Custody Seals Present and Intact:			YES	NO	NA
Received Sample Information Form(s): Drinking Waters Only			YES	NO	NA
USDA Regulated Soils: (AL, AR, CA, FL, GA, ID, LA, MS, NM, NY, NC, OK, OR, SC, TN, TX, WA or Puerto Rico)			YES	NO	N/A
Short Holds Present (< 72 Hours):			YES	NO	
Samples Received in Hold:			YES	NO	
Custody Signatures Present:			YES	NO	
Collector Signature Present:			YES	NO	
Packing Material Used:			YES	NO	
Samples Collected Today and On Ice:			YES	NO	N/A
IR Gun #:	280	281	Digital Thermometer #:	282	283
Ice Type:	WET Bagged / WET Loose	BLUE	NONE	1. Cooler Temp Upon Receipt: 0.911.0 °C	
Ice Location:	TOP	BOTTOM	MIDDLE	Temp should be 0-6°C (Initial/Corrected)	
Temp Blank Received:			YES	NO	
Containers Intact:			YES	NO	
Correct Containers:			YES	NO	
Sufficient Volume:			YES	NO	
Sample pH Acceptable: All containers needing preservation are found to be in compliance with EPA recommendation			YES	NO	N/A
pH Strip Lot #: Exceptions are VOA, coliform, LLHG, O&G, or any container with a septum cap or preserved with HCl			YES	NO	
Residual Chlorine Absent: Cl <sub>2</sub> Strip Lot #: (SVOC/Pest 625, PCB 608, Total/Amenable/Available Cyanide)			YES	NO	N/A
VOA Headspace Acceptable (<6mm):			YES	NO	N/A
Trip Blank Received: HCl MeOH TSP OTHER			YES	NO	
Comments:			2. Cooler Temp Upon Receipt: _____ °C		
		3. Cooler Temp Upon Receipt: _____ °C			
		4. Cooler Temp Upon Receipt: _____ °C			

**Report Prepared for:**

Melanie Booms  
PACE Indianapolis  
5560 Corporate Exchange Ct.  
Grand Rapids MI 49512

**REPORT OF  
LABORATORY  
ANALYSIS  
FOR PFAAs**

**Report Prepared Date:**

May 14, 2021

**Report Information:**

**Pace Project #:** 10557217

**Sample Receipt Date:** 04/27/2021

**Client Project #:** 50285626 City of Adrian WWT

**Client Sub PO #:** N/A

**State Cert #:** N/A

**Invoicing & Reporting Options:**

The report provided has been invoiced as a Level 2 PFAA Report. If an upgrade of this report package is requested, an additional charge may be applied.

Please review the attached invoice for accuracy and forward any questions to Kirsten Hogberg, your Pace Project Manager.

**This report has been reviewed by:**



May 21, 2021

Kirsten Hogberg, Project Manager  
(612) 607-6407  
(612) 607-6444 (fax)  
kirsten.hogberg@pacelabs.com



**Report of Laboratory Analysis**

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The results relate only to the samples included in this report.

Page 11 of 30

## **DISCUSSION**

This report presents the results from the analyses performed on one sample submitted by a representative of PACE Indianapolis. The sample was analyzed for twenty-eight perfluorinated compounds using DOD QSM 5.3 for PFAS. Reporting limits were set to quantification limits.

A laboratory method blank was prepared and analyzed with the sample batch as part of our routine quality control procedures. The results show the blank was free of the target perfluorinated compounds at the reporting limits. This indicates that the sample processing procedures did not significantly contribute to the analyte content determined for the sample material.

A laboratory spike sample was also prepared with the sample batch using clean reference matrix that had been fortified with native standards. The recovery results were within the method limits. This spike indicates that extraction performed as expected. Matrix spikes were prepared with the sample batch using sample material from a separate project; results from that analysis will be provided upon request.

The four injection internal standards (13C4\_PFOA, 13C4\_PFOS, 13C2\_PFDA, and 13C2\_PFHxA) pass for each analysis in the batch verifying that the instrument detector is working as expected.

Elevated/diminished extracted internal standard (EIS) recovery (outside the suggested limits) were present in sample material. While the use of the isotope dilution method generally precludes any adverse impact on those individual native compounds that have a directly associated standard, in the case of the FTS compounds (13C2\_4:2FTS, 13C2\_6:2FTS, and 13C2\_8:2FTS), the recoveries are anomalously high, and are adversely impacted by matrix. The results for these native compounds should be considered estimated only.

It should be noted that Pace Analytical has not yet completed the certification process for all analytes in this method. Therefore, the results have been marked "N2" as qualified.



## Minnesota Laboratory Certifications

Authority	Certificate #	Authority	Certificate #
A2LA	2926.01	Missouri	10100
Alabama	40770	Montana	CERT0092
Alaska-DW	MN00064	Nebraska	NE-OS-18-06
Alaska-UST	17-009	Nevada	MN00064
Arizona	AZ0014	New Hampshire	2081
Arkansas - WW	88-0680	New Jersey	MN002
Arkansas-DW	MN00064	New York	11647
California	2929	North Carolina-	27700
Colorado	MN00064	North Carolina-	530
Connecticut	PH-0256	North Dakota	R-036
Florida	E87605	Ohio-DW	41244
Georgia	959	Ohio-VAP (170)	CL101
Hawaii	MN00064	Ohio-VAP (180)	CL110
Idaho	MN00064	Oklahoma	9507
Illinois	200011	Oregon- rimary	MN300001
Indiana	C-MN-01	Oregon-Second	MN200001
Iowa	368	Pennsylvania	68-00563
Kansas	E-10167	Puerto Rico	MN00064
Kentucky-DW	90062	South Carolina	74003
Kentucky-WW	90062	Tennessee	TN02818
Louisiana-DEQ	AI-84596	Texas	T104704192
Louisiana-DW	MN00064	Utah	MN00064
Maine	MN00064	Vermont	VT-027053137
Maryland	322	Virginia	460163
Michigan	9909	Washington	C486
Minnesota	027-053-137	West Virginia-D	382
Minnesota-Ag	via MN 027-053	West Virginia-D	9952C
Minnesota-Petr	1240	Wisconsin	999407970
Mississippi	MN00064	Wyoming-UST	via A2LA 2926.

## REPORT OF LABORATORY ANALYSIS

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## **Appendix A**

### **Sample Management**

# Internal Transfer Chain of Custody



Samples Pre-Logged into eCOC.

Pace Analytical<sup>®</sup>  
www.pacalabs.com

Workorder: 50285626 Workorder Name: Biosolids Analysis State Of Origin: MI  
Cert. Needed:  Yes  No  
Owner Received Date: 4/23/2021 Results Requested By: 5/17/2021

Report To	Subcontract To	Biosolids Analysis						
Melanie Booms Pace Analytical Grand Rapids 5560 Corporate Exchange Ct. SE Grand Rapids, MI 49512 Phone (616)975-4500								
Pace Analytical Minnesota 1700 Elm Street Suite 200 Minneapolis, MN 55414 Phone (612)607-1700								
						PFS MI ID28		
						Dry Weight		
						Preserved Containers		
Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Unpreserved	Preserved	Comments
1	Cell Biosolids	PS	4/22/2021 07:30	50285626001	Solid	1	X	
2								
3								
4								
5								

Transfers	Released By	Date/Time	Received By	Date/Time	Comments	
1				4/22/21 11:00	<i>J. S. Johnson</i>	
2						
3						

Cooler Temperature on Receipt *74 °C* Custody Seal *Y or N* Received on Ice *Y or N* Samples Intact *Y or N*

\*\*\*In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document.

This chain of custody is considered complete as is since this information is available in the owner laboratory.



Document Name:  
**Sample Condition Upon Receipt (SCUR) - MN**

Document Revised: 14Apr2021  
**Page 1 of 1**  
Pace Analytical Services -  
Minneapolis

**Sample Condition  
Upon Receipt**

**Client Name:**

Pace Grand Rapids

**Project #:**

**WO# : 10557217**

**Courier:**

FedEx    UPS    USPS  
 Pace    SpeeDee    Commercial

Client

**PM: KNH**

**Due Date: 05/18/21**

**CLIENT: PASI-INDI**

**Tracking Number:**

**See Exceptions**   
ENV-FRM-MIN4-0142

**Custody Seal on Cooler/Box Present?**  Yes    No   **Seals Intact?**  Yes    No   **Biological Tissue Frozen?**  Yes    No    N/A

**Packing Material:**  Bubble Wrap    Bubble Bags    None    Other: \_\_\_\_\_   **Temp Blank?**  Yes    No

**Thermometer:**  T1(0461)    T2(1336)    T3(0459)    OS418-LS   **Type of Ice:**  Wet    Blue    None    Dry    Melted  
 T4(0254)    T5(0489)    160285052

**Did Samples Originate in West Virginia?**  Yes    No   **Were All Container Temps Taken?**  Yes    No    N/A

Temp should be above freezing to 6°C

**Cooler Temp Read w/temp blank:** 2 °C

**Average Corrected**

See Exceptions

ENV-FRM-MIN4-0142

**Temp (no temp blank only):** 1.8 °C

Container

**Correction Factor:** -0.2   **Cooler Temp Corrected w/temp blank:** 1.8 °C

**USDA Regulated Soil:** ( N/A, water sample/Other: \_\_\_\_\_)

**Date/Initials of Person Examining Contents:** 1/27/21 RS

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA,

Did samples originate from a foreign source (internationally, including

ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)?  Yes    No

Hawaii and Puerto Rico)?  Yes    No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

			<b>COMMENTS:</b>	
Chain of Custody Present and Filled Out?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	1.	
Chain of Custody Relinquished?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	2.	
Sampler Name and/or Signature on COC?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A	3.
Samples Arrived within Hold Time?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	4.	
Short Hold Time Analysis (<72 hr)?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	5. <input type="checkbox"/> Fecal Coliform <input type="checkbox"/> HPC <input type="checkbox"/> Total Coliform/E coli <input type="checkbox"/> BOD/cBOD <input type="checkbox"/> Hex Chrome <input type="checkbox"/> Turbidity <input type="checkbox"/> Nitrate <input type="checkbox"/> Nitrite <input type="checkbox"/> Orthophos <input type="checkbox"/> Other	
Rush Turn Around Time Requested?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	6.	
Sufficient Volume?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	7.	
Correct Containers Used? -Pace Containers Used?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	8.	
Containers Intact?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	9.	
Field Filtered Volume Received for Dissolved Tests?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> N/A	10. Is sediment visible in the dissolved container? <input type="checkbox"/> Yes <input type="checkbox"/> No
Is sufficient information available to reconcile the samples to the COC?	<input type="checkbox"/> Yes	<input type="checkbox"/> No		11. If no, write ID/ Date/Time on Container Below: See Exception <input type="checkbox"/> ENV-FRM-MIN4-0142
Matrix: <input checked="" type="checkbox"/> Water <input type="checkbox"/> Soil <input type="checkbox"/> Oil <input type="checkbox"/> Other				
All containers needing acid/base preservation have been checked?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> N/A	12. Sample #  <input type="checkbox"/> NaOH <input type="checkbox"/> HNO <sub>3</sub> <input type="checkbox"/> H <sub>2</sub> SO <sub>4</sub> <input type="checkbox"/> Zinc Acetate
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO <sub>3</sub> , H <sub>2</sub> SO <sub>4</sub> , <2pH, NaOH >9 Sulfide, NaOH>10 Cyanide)	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> N/A	Positive for Res. <input type="checkbox"/> Yes Chlorine? <input type="checkbox"/> No   pH Paper Lot# <input type="checkbox"/> See Exception <input type="checkbox"/> ENV-FRM-MIN4-0142
Exceptions: VOA, Coliform, TOC/DOC Oil and Grease, DRO/8015 (water) and Dioxin/PFAS	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A	Res. Chlorine   0-6 Roll   0-6 Strip   0-14 Strip
Extra labels present on soil VOA or WIDRO containers? Headspace in VOA Vials (greater than 6mm)?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> N/A	13. <input type="checkbox"/> See Exception <input type="checkbox"/> ENV-FRM-MIN4-0140
Trip Blank Present? Trip Blank Custody Seals Present?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> N/A	14. Pace Trip Blank Lot # (if purchased): _____

**CLIENT NOTIFICATION/RESOLUTION**

**Field Data Required?**  Yes    No

Person Contacted: \_\_\_\_\_

Date/Time: \_\_\_\_\_

Comments/Resolution: \_\_\_\_\_

**Project Manager Review:** Kirsten Hoppey

**Date:** 4/27/2021

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers).

## Reporting Flags

- A = Reporting Limit based on signal to noise (EDL)
- B = Less than 10x higher than method blank level
- C = Result obtained from confirmation analysis
- D = Result obtained from analysis of diluted sample
- E = Exceeds calibration range
- I = Interference present
- J = Estimated value
- L = Suppressive interference, analyte may be biased low
- Nn = Value obtained from additional analysis
- P = PCDEInterference
- R = Recovery outside target range
- S = Peak saturated
- U = Analyte not detected
- V = Result verified by confirmation analysis
- X = %D Exceeds limits
- Y = Calculated using average of daily RFs
- \* = SeeDiscussion

## REPORT OF LABORATORY ANALYSIS

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## **Appendix B**

### **Sample Analysis Summary**



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**Sample Analysis Summary**  
 PFAS by Isotope Dilution

**Page 1 of 4**

Client Sample ID	Cell Biosolids	Extraction Date	04/28/2021 10:00
Lab Sample ID	50285626001	Total Amount Extracted	5.01g
Lab File ID	Q210430A_025	Ical ID	210429A01
Matrix	Soil	CCal File	Q210430A_024
Collected	04/22/2021 07:30	Ending CCal File	Q210430A_037
Received	04/27/2021 11:00	Blank File	Q210429B_009

Compound	Concentration (ng/Kg)	QL (ng/Kg)	RL (ng/Kg)	DL (ng/Kg)	Dil.	CAS No.	Qual.
PFBA	ND	100	100	21	1	375-22-4	N2
PFPeA	ND	100	100	23	1	2706-90-3	N2
HFPO-DA	ND	100	100	26	1	13252-13-6	N2
PFBS	ND	88	88	20	1	375-73-5	N2
PFHxA	170	100	100	32	1	307-24-4	N2
4:2 FTS	ND	93	93	33	1	757124-72-4	N2
PFPeS	ND	94	94	23	1	2706-91-4	N2
PFHpA	ND	100	100	28	1	375-85-9	N2
DONA	ND	94	94	31	1	919005-14-4	N2
PFHxS	ND	91	91	24	1	355-46-4	N2
PFOA	ND	100	100	19	1	335-67-1	N2
6:2 FTS	ND	95	95	31	1	27619-97-2	N2
PFHpS	ND	95	95	18	1	375-92-8	N2
PFNA	ND	100	100	22	1	375-95-1	N2
PFOSAm	ND	100	100	28	1	754-91-6	N2
PFOS	320	92	92	17	1	1763-23-1	N2
PFDA	ND	100	100	30	1	335-76-2	N2
8:2 FTS	ND	96	96	18	1	39108-34-4	N2
9-CI-PF3ON	ND	93	93	15	1	756426-58-1	N2
PFNS	ND	96	96	16	1	68259-12-1	N2
PFUnDA	ND	100	100	19	1	2058-94-8	N2
NMeFOSAA	550	100	100	12	1	2355-31-9	N2
NEtFOSAA	160	100	100	22	1	2991-50-6	N2
PFDS	ND	96	96	18	1	335-77-3	N2
PFDOA	ND	100	100	31	1	307-55-1	N2
11-CI-PF3OUdS	ND	94	94	14	1	763051-92-9	N2
PFTrDA	ND	100	100	20	1	72629-94-8	N2
PFODA	ND	100	100	25	1	16517-11-6	N2

**Injection Internal Standards**

Compound	Known Conc.	Conc. Found	%Recovery	Recovery Limits	Qualifiers
13C2_PFHxA	1000	1400	137	50-150	
13C4_PFOA	1000	1200	124	50-150	
13C2_PFDA	1000	1200	124	50-150	
13C4_PFOS	950	1000	109	50-150	

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**Sample Analysis Summary**  
PFAS by Isotope Dilution

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Lab Sample ID	50285626001	Total Amount Extracted	5.01g
Lab File ID	Q210430A_025	Ical ID	210429A01
Matrix	Soil	CCal File	Q210430A_024
Collected	04/22/2021 07:30	Ending CCal File	Q210430A_037
Received	04/27/2021 11:00	Blank File	Q210429B_009

**Extracted Internal Standards**

Compound	Known Conc.	Conc. Found	%Recovery	Recovery Limits	Qualifiers
13C4_PFBA	1000	1000	101	50-150	
13C5_PFPeA	1000	1100	109	50-150	
13C3_PFBS	930	1100	118	50-150	
13C2_4:2FTS	930	1600	171	50-150	R
13C5_PFHxA	1000	1100	113	50-150	
13C4_PFHxA	1000	1100	107	50-150	
13C3_PFHxS	940	970	103	50-150	
13C2_6:2FTS	950	1600	166	50-150	R
13C8_PFOA	1000	1000	101	50-150	
13C9_PFNA	1000	1200	116	50-150	
13C8_PFOS	950	950	99	50-150	
13C2_8:2FTS	960	1500	152	50-150	R
13C6_PFDA	1000	1100	108	50-150	
d3-MeFOSAA	1000	1000	102	50-150	
13C8_PFOSA	1000	730	73	50-150	
d5-EtFOSAA	1000	1100	111	50-150	
13C7_PFUdA	1000	800	81	50-150	
13C2_PFDa	1000	720	72	50-150	
13C2_PFTeDA	1000	580	59	50-150	
13C3_HFPO-DA	1000	1100	113	50-150	
13C2_PFHxDA	1000	350	35	50-150	R

**Injection Internal Standards**

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Qualifiers
13C2_PFHxA	N/A	N/A	6.21	6.21	
13C4_PFOA	N/A	N/A	7.59	7.60	
13C2_PFDA	N/A	N/A	8.96	9.01	
13C4_PFOS	N/A	N/A	9.44	9.46	

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**Sample Analysis Summary**  
PFAS by Isotope Dilution

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Lab Sample ID	50285626001	Total Amount Extracted	5.01g
Lab File ID	Q210430A_025	Ical ID	210429A01
Matrix	Soil	CCal File	Q210430A_024
Collected	04/22/2021 07:30	Ending CCal File	Q210430A_037
Received	04/27/2021 11:00	Blank File	Q210429B_009

**Extracted Internal Standards**

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Qualifiers
13C4 PFBA	N/A	N/A	4.71	4.73	
13C5 PFPeA	N/A	N/A	5.52	5.52	
13C3 PFBS	N/A	N/A	6.48	6.49	
13C2 4:2FTS	N/A	N/A	5.92	5.91	R
13C5 PFHxA	N/A	N/A	6.21	6.20	
13C4 PFHpA	N/A	N/A	6.90	6.90	
13C3 PFHxS	N/A	N/A	8.03	8.04	
13C2 6:2FTS	N/A	N/A	7.23	7.22	R
13C8 PFOA	N/A	N/A	7.59	7.59	
13C9 PFNA	N/A	N/A	8.28	8.29	
13C8 PFOS	N/A	N/A	9.44	9.51	
13C2 8:2FTS	N/A	N/A	8.57	8.59	R
13C6 PFDA	N/A	N/A	8.96	9.00	
d3-MeFOSAA	N/A	N/A	8.82	8.84	
13C8 PFOSA	N/A	N/A	11.31	11.29	
d5-EtFOSAA	N/A	N/A	9.13	9.16	
13C7 PFUdA	N/A	N/A	9.64	9.70	
13C2 PFDoA	N/A	N/A	10.34	10.40	
13C2 PFTeDA	N/A	N/A	11.71	11.76	
13C3 HFPO-DA	N/A	N/A	6.50	6.49	
13C2 PFHxDA	N/A	N/A	12.90	12.87	R

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PFAS by Isotope Dilution

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Lab Sample ID	50285626001	Total Amount Extracted	5.01g
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Matrix	Soil	CCal File	Q210430A_024
Collected	04/22/2021 07:30	Ending CCal File	Q210430A_037
Received	04/27/2021 11:00	Blank File	Q210429B_009

**Native Analytes**

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Qualifiers
PFBA	N/A	N/A	0.00	4.74	
PFPeA	N/A	N/A	5.52	5.52	
HFPO-DA	0.000	0.470	0.00	6.51	
PFBS	0.094	0.340	6.44	6.51	
PFHxA	0.070	0.0670	6.22	6.22	
4:2 FTS	0.000	0.820	0.00	5.92	
PFPeS	0.000	0.380	7.35	7.30	
PFHpA	0.550	0.470	6.90	6.91	
DONA	0.000	0.390	0.00	7.17	
PFHxS	0.250	0.280	8.04	8.07	
PFOA	0.240	0.200	7.59	7.61	
6:2 FTS	0.990	1.10	7.23	7.23	
PFHpS	0.000	0.400	8.78	8.81	
PFNA	0.240	0.260	8.29	8.31	
PFOSAm	N/A	N/A	11.33	11.30	
PFOS	0.200	0.230	9.45	9.54	
PFDA	0.120	0.140	8.97	9.02	
8:2 FTS	1.90	1.30	8.56	8.60	
9-Cl-PF3ON	0.000	0.0390	0.00	9.98	
PFNS	0.000	0.220	10.07	10.18	
PFUnDA	0.088	0.140	9.65	9.66	
NMeFOSAA	0.740	0.740	8.84	8.87	
NetFOSAA	0.570	0.500	9.15	9.18	
PFDS	0.260	0.260	10.83	10.86	
PFDOA	0.130	0.160	10.35	10.41	
11-Cl-PF3OUdS	0.000	0.0270	0.00	11.34	
PFTrDA	0.200	0.160	11.05	11.12	
PFODA	0.000	0.150	13.71	13.70	

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## Method Blank Analysis Summary

PFAS by Isotope Dilution

Page 1 of 4

Client Sample ID	BLKSS	Extraction Date	04/28/2021 10:00
Lab Sample ID	BLANK-89563	Total Amount Extracted	5.01g
Lab File ID	Q210429B_009	Ical ID	210429A01
Matrix	Soil	CCal File	Q210429B_008
Collected	04/27/2021 16:07	Ending CCal File	Q210429B_019
Received	04/27/2021 16:07	Blank File	Q210429B_009

Compound	Concentration (ng/Kg)	QL (ng/Kg)	RL (ng/Kg)	DL (ng/Kg)	Dil.	CAS No.	Qual.
PFBA	ND	100	100	21	1	375-22-4	N2
PFPeA	ND	100	100	23	1	2706-90-3	N2
HFPO-DA	ND	100	100	26	1	13252-13-6	N2
PFBS	ND	88	88	20	1	375-73-5	N2
PFHxA	ND	100	100	32	1	307-24-4	N2
4:2 FTS	ND	93	93	33	1	757124-72-4	N2
PFPeS	ND	94	94	23	1	2706-91-4	N2
PFHpA	ND	100	100	28	1	375-85-9	N2
DONA	ND	94	94	31	1	919005-14-4	N2
PFHxS	ND	91	91	24	1	355-46-4	N2
PFOA	ND	100	100	19	1	335-67-1	N2
6:2 FTS	ND	95	95	31	1	27619-97-2	N2
PFHpS	ND	95	95	18	1	375-92-8	N2
PFNA	ND	100	100	22	1	375-95-1	N2
PFOSAm	ND	100	100	28	1	754-91-6	N2
PFOS	ND	92	92	17	1	1763-23-1	N2
PFDA	ND	100	100	30	1	335-76-2	N2
8:2 FTS	ND	96	96	18	1	39108-34-4	N2
9-CI-PF3ON	ND	93	93	15	1	756426-58-1	N2
PFNS	ND	96	96	16	1	68259-12-1	N2
PFUnDA	ND	100	100	19	1	2058-94-8	N2
NMeFOSAA	ND	100	100	12	1	2355-31-9	N2
NEtFOSAA	ND	100	100	22	1	2991-50-6	N2
PFDS	ND	96	96	18	1	335-77-3	N2
PFDOA	ND	100	100	31	1	307-55-1	N2
11-CI-PF3OUdS	ND	94	94	14	1	763051-92-9	N2
PFTrDA	ND	100	100	20	1	72629-94-8	N2
PFODA	ND	100	100	25	1	16517-11-6	N2

### Injection Internal Standards

Compound	Known Conc.	Conc. Found	%Recovery	Recovery Limits	Qualifiers
13C2_PFHxA	1000	1000	105	50-150	
13C4_PFOA	1000	1100	112	50-150	
13C2_PFDA	1000	1200	116	50-150	
13C4_PFOS	950	1200	122	50-150	

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PFAS by Isotope Dilution

**Page 2 of 4**

Client Sample ID	BLKSS	Extraction Date	04/28/2021 10:00
Lab Sample ID	BLANK-89563	Total Amount Extracted	5.01g
Lab File ID	Q210429B_009	Ical ID	210429A01
Matrix	Soil	CCal File	Q210429B_008
Collected	04/27/2021 16:07	Ending CCal File	Q210429B_019
Received	04/27/2021 16:07	Blank File	Q210429B_009

**Extracted Internal Standards**

Compound	Known Conc.	Conc. Found	%Recovery	Recovery Limits	Qualifiers
13C4_PFBA	1000	940	95	50-150	
13C5_PFPeA	1000	950	95	50-150	
13C3_PFBS	930	800	86	50-150	
13C2_4:2FTS	930	830	89	50-150	
13C5_PFHxA	1000	950	95	50-150	
13C4_PFHxA	1000	940	95	50-150	
13C3_PFHxS	940	910	97	50-150	
13C2_6:2FTS	950	940	100	50-150	
13C8_PFOA	1000	900	90	50-150	
13C9_PFNA	1000	1000	100	50-150	
13C8_PFOS	950	910	95	50-150	
13C2_8:2FTS	960	930	97	50-150	
13C6_PFDA	1000	970	98	50-150	
d3-MeFOSAA	1000	1100	115	50-150	
13C8_PFOSA	1000	900	90	50-150	
d5-EtFOSAA	1000	980	99	50-150	
13C7_PFUdA	1000	960	96	50-150	
13C2_PFDa	1000	1100	111	50-150	
13C2_PFTeDA	1000	960	96	50-150	
13C3_HFPO-DA	1000	910	92	50-150	
13C2_PFHxDA	1000	900	90	50-150	

**Injection Internal Standards**

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Qualifiers
13C2_PFHxA	N/A	N/A	6.19	6.21	
13C4_PFOA	N/A	N/A	7.56	7.60	
13C2_PFDA	N/A	N/A	8.95	9.01	
13C4_PFOS	N/A	N/A	9.44	9.46	

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PFAS by Isotope Dilution

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Lab Sample ID	BLANK-89563	Total Amount Extracted	5.01g
Lab File ID	Q210429B_009	Ical ID	210429A01
Matrix	Soil	CCal File	Q210429B_008
Collected	04/27/2021 16:07	Ending CCal File	Q210429B_019
Received	04/27/2021 16:07	Blank File	Q210429B_009

### Extracted Internal Standards

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Qualifiers
13C4 PFBA	N/A	N/A	4.73	4.73	
13C5 PFPeA	N/A	N/A	5.51	5.52	
13C3 PFBS	N/A	N/A	6.47	6.49	
13C2 4:2FTS	N/A	N/A	5.90	5.91	
13C5 PFHxA	N/A	N/A	6.19	6.20	
13C4 PFHpA	N/A	N/A	6.87	6.90	
13C3 PFHxS	N/A	N/A	8.01	8.04	
13C2 6:2FTS	N/A	N/A	7.19	7.22	
13C8 PFOA	N/A	N/A	7.56	7.59	
13C9 PFNA	N/A	N/A	8.25	8.29	
13C8 PFOS	N/A	N/A	9.45	9.51	
13C2 8:2FTS	N/A	N/A	8.54	8.59	
13C6 PFDA	N/A	N/A	8.95	9.00	
d3-MeFOSAA	N/A	N/A	8.80	8.84	
13C8 PFOSA	N/A	N/A	11.28	11.29	
d5-EtFOSAA	N/A	N/A	9.12	9.16	
13C7 PFUdA	N/A	N/A	9.65	9.70	
13C2 PFDoA	N/A	N/A	10.34	10.40	
13C2 PFTeDA	N/A	N/A	11.68	11.76	
13C3 HFPO-DA	N/A	N/A	6.47	6.49	
13C2 PFHxDA	N/A	N/A	12.85	12.87	

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Matrix	Soil	CCal File	Q210429B_008
Collected	04/27/2021 16:07	Ending CCal File	Q210429B_019
Received	04/27/2021 16:07	Blank File	Q210429B_009

### Native Analytes

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Qualifiers
PFBA	N/A	N/A	0.00	4.74	
PFPeA	N/A	N/A	0.00	5.54	
HFPO-DA	0.000	0.390	6.52	6.51	
PFBS	0.140	0.330	6.48	6.51	
PFHxA	0.520	0.0640	6.23	6.22	
4:2 FTS	0.140	1.00	5.90	5.92	
PFPeS	0.150	0.370	7.26	7.30	
PFHpA	0.000	0.480	0.00	6.91	
DONA	0.000	0.370	0.00	7.17	
PFHxS	0.076	0.270	8.06	8.07	
PFOA	0.120	0.200	7.58	7.61	
6:2 FTS	3.20	1.10	7.19	7.23	
PFHpS	0.170	0.380	8.86	8.81	
PFNA	0.110	0.230	8.26	8.31	
PFOSAm	N/A	N/A	11.29	11.30	
PFOS	0.160	0.210	9.49	9.54	
PFDA	0.000	0.130	0.00	9.02	
8:2 FTS	0.180	1.40	8.56	8.60	
9-Cl-PF3ON	0.000	0.0400	0.00	9.98	
PFNS	0.000	0.200	0.00	10.18	
PFUnDA	0.000	0.130	0.00	9.66	
NMeFOSAA	0.000	0.730	8.70	8.87	
NetFOSAA	0.000	0.550	0.00	9.18	
PFDS	5.40	0.260	10.90	10.86	
PFDOA	0.000	0.160	0.00	10.41	
11-Cl-PF3OUdS	0.000	0.0290	11.14	11.34	
PFTrDA	0.000	0.180	0.00	11.12	
PFODA	0.350	0.180	13.66	13.70	

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**LCS Analysis Summary**  
PFAS by Isotope Dilution

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Lab Sample ID	LCS-89564	Instrument ID	10LCMS01
Run File Name	Q210429B_010	Column ID	118AB10133
Analyzed	04/29/2021 16:28	Ical ID	210429A01
Injected By	NH	Level	L

**Injection Internal Standards**

Compound	Known Conc.	Conc. Found	%Recovery	Recovery Limits	Qualifiers
13C2_PFHxA	1000	1200	116	50-150	
13C4_PFOA	1000	1200	117	50-150	
13C2_PFDA	1000	1100	109	50-150	
13C4_PFOS	950	1200	123	50-150	

**Extracted Internal Standards**

Compound	Known Conc.	Conc. Found	%Recovery	Recovery Limits	Qualifiers
13C4_PFBA	1000	970	97	50-150	
13C5_PFPeA	1000	980	98	50-150	
13C3_PFBs	930	830	90	50-150	
13C2_4:2FTS	930	960	103	50-150	
13C5_PFHxA	1000	950	96	50-150	
13C4_PFHpA	1000	890	89	50-150	
13C3_PFHxS	940	960	101	50-150	
13C2_6:2FTS	950	1000	106	50-150	
13C8_PFOA	1000	980	99	50-150	
13C9_PFNA	1000	1000	105	50-150	
13C8_PFOS	950	1000	106	50-150	
13C2_8:2FTS	960	920	97	50-150	
13C6_PFDA	1000	950	95	50-150	
d3-MeFOSAA	1000	1200	122	50-150	
13C8_PFOSA	1000	930	93	50-150	
d5-EtFOSAA	1000	1100	112	50-150	
13C7_PFUdA	1000	1000	103	50-150	
13C2_PFDa	1000	1300	128	50-150	
13C2_PFTeDA	1000	1000	103	50-150	
13C3_HFPO-DA	1000	940	94	50-150	
13C2_PFHxDA	1000	950	96	50-150	

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Run File Name	Q210429B_010	Column ID	118AB10133
Analyzed	04/29/2021 16:28	Ical ID	210429A01
Injected By	NH	Level	L

**Native Analytes**

Compound	Known Conc.	Conc. Found	%Recovery	Recovery Limits	Qualifiers	CAS No.
PFBA	200	210	104	71-135		375-22-4
PFPeA	200	200	102	69-132		2706-90-3
HFPO-DA	200	220	111	70-140		13252-13-6
PFBS	180	200	116	72-128		375-73-5
PFHxA	200	200	100	70-132		307-24-4
4:2 FTS	190	190	102	62-145		757124-72-4
PFPeS	190	180	94	73-123		2706-91-4
PFHpA	200	190	97	71-131		375-85-9
DONA	190	190	102	70-140		919005-14-4
PFHxS	180	170	93	67-130		355-46-4
PFOA	200	200	100	69-133		335-67-1
6:2 FTS	190	210	112	64-140		27619-97-2
PFHpS	190	180	96	70-132		375-92-8
PFNA	200	210	104	72-129		375-95-1
PFOSAm	200	200	100	67-137		754-91-6
PFOS	180	180	96	68-136		1763-23-1
PFDA	200	200	100	69-133		335-76-2
8:2 FTS	190	180	93	65-137		39108-34-4
9-CI-PF3ON	190	170	91	70-140		756426-58-1
PFNS	190	180	93	69-125		68259-12-1
PFUnDA	200	170	85	64-136		2058-94-8
NMeFOSAA	200	190	96	63-144		2355-31-9
NETFOSAA	200	210	105	61-139		2991-50-6
PFDS	190	170	91	59-134		335-77-3
PFDOA	200	190	97	69-135		307-55-1
11-CI-PF3OuDS	190	160	85	70-140		763051-92-9
PFTrDA	200	150	74	66-139		72629-94-8
PFODA	200	160	79	70-140		16517-11-6

**Injection Internal Standards**

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Qualifiers
13C2 PFHxA	N/A	N/A	6.19	6.21	
13C4 PFOA	N/A	N/A	7.56	7.60	
13C2 PFDA	N/A	N/A	8.94	9.01	
13C4 PFOS	N/A	N/A	9.44	9.46	

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Lab Sample ID	LCS-89564	Instrument ID	10LCMS01
Run File Name	Q210429B_010	Column ID	118AB10133
Analyzed	04/29/2021 16:28	Ical ID	210429A01
Injected By	NH	Level	L

**Extracted Internal Standards**

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Qualifiers
13C4 PFBA	N/A	N/A	4.72	4.73	
13C5 PFPeA	N/A	N/A	5.51	5.52	
13C3 PFBS	N/A	N/A	6.46	6.49	
13C2 4:2FTS	N/A	N/A	5.90	5.91	
13C5 PFHxA	N/A	N/A	6.19	6.20	
13C4 PFHpa	N/A	N/A	6.87	6.90	
13C3 PFHxs	N/A	N/A	8.00	8.04	
13C2 6:2FTS	N/A	N/A	7.20	7.22	
13C8 PFOA	N/A	N/A	7.56	7.59	
13C9 PFNA	N/A	N/A	8.25	8.29	
13C8 PFOS	N/A	N/A	9.44	9.51	
13C2 8:2FTS	N/A	N/A	8.54	8.59	
13C6 PFDA	N/A	N/A	8.95	9.00	
d3-MeFOSAA	N/A	N/A	8.80	8.84	
13C8 PFOSA	N/A	N/A	11.28	11.29	
d5-EtFOSAA	N/A	N/A	9.12	9.16	
13C7 PFUdA	N/A	N/A	9.64	9.70	
13C2 PFDoA	N/A	N/A	10.34	10.40	
13C2 PFTeDA	N/A	N/A	11.68	11.76	
13C3 HFPO-DA	N/A	N/A	6.47	6.49	
13C2 PFHxDA	N/A	N/A	12.85	12.87	

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Run File Name	Q210429B_010	Column ID	118AB10133
Analyzed	04/29/2021 16:28	Ical ID	210429A01
Injected By	NH	Level	L

**Native Analytes**

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Qualifiers
PFBA	N/A	N/A	4.73	4.74	
PFPeA	N/A	N/A	5.51	5.54	
HFPO-DA	0.47	0.39	6.49	6.51	
PFBS	0.25	0.33	6.47	6.51	
PFHxA	0.07	0.06	6.20	6.22	
4:2 FTS	0.85	1.00	5.90	5.92	
PFPeS	0.37	0.37	7.26	7.30	
PFHpA	0.44	0.48	6.88	6.91	
DONA	0.40	0.37	7.13	7.17	
PFHxS	0.30	0.27	8.01	8.07	
PFOA	0.19	0.20	7.57	7.61	
6:2 FTS	1.00	1.10	7.20	7.23	
PFHpS	0.38	0.38	8.74	8.81	
PFNA	0.19	0.23	8.26	8.31	
PFOSAm	N/A	N/A	11.29	11.30	
PFOS	0.20	0.21	9.45	9.54	
PFDA	0.14	0.13	8.96	9.02	
8:2 FTS	1.60	1.40	8.55	8.60	
9-CI-PF3ON	0.04	0.04	9.96	9.98	
PFNS	0.23	0.20	10.15	10.18	
PFUnDA	0.14	0.13	9.65	9.66	
NMeFOSAA	0.58	0.73	8.81	8.87	
NEtFOSAA	0.43	0.55	9.13	9.18	
PFDS	0.28	0.26	10.83	10.86	
PFDOA	0.14	0.16	10.34	10.41	
11-CI-PF3OUdS	0.03	0.02	11.31	11.34	
PFTrDA	0.19	0.18	11.03	11.12	
PFODA	0.19	0.18	13.65	13.70	

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