

# Brunswick County Public Utilities - NC

PO Box 249  
Bolivia, NC 28422-0249

## LELAND N.C.

Client Project# NORTHWEST WATER PLANT  
Samples Received: 2/28/2025

### Analytical Report 0225-1259

#### PFAS by Isotope Dilution (non-potable water)

Report Issue Date: 3/26/2025

I certify that to the best of my knowledge all analytical data presented in this report have been checked for completeness, accuracy, errors and legibility in addition to having been conducted in accordance with approved protocol, and that all deviations and analytical problems are summarized in the appropriate narrative(s). This analytical report was prepared in Portable Document Format (.PDF) and contains 28 pages. This report shall not be reproduced except in full without approval of the laboratory. This will provide assurance that parts of the report are not taken out of context.

Amendment(s):

Signature:



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# Narrative Summary



# Enthalpy Analytical Narrative Summary

Company	Brunswick County Public Utilities - NC
Job No.	0225-1259-1
Client ID.	NORTHWEST WATER PLANT Site: LELAND N.C.

## 1. Custody

Meredith Curtis received the samples at 0.8 °C after being relinquished by Brunswick County Public Utilities - NC.

The samples were received in good condition. Prior to, during, and after analysis, the samples were kept under lock with access only to authorized personnel by Enthalpy Analytical, LLC.

**Table 1 - Sample Inventory**

EU Lab Sample ID	Client Sample ID	Matrix	Received
0225-1259-001-1	022825-SO1	aqueous	2025-02-28
0225-1259-001-1A	022825-SO1	aqueous	2025-02-28
0225-1259-002-1	022825-E01	aqueous	2025-02-28
0225-1259-002-1A	022825-E01	aqueous	2025-02-28

## 2. Methods and Analytes

A list of analytes of interest and corresponding methods of analysis is shown in Table 3. Abbreviations are defined in the listed Appendices.

**Table 3 - Methods and Analytes**

EU Method	Analytes	Cleanup Method
EU047	Brunswick List	ENVI-Carb

## 3. Analysis

The samples were analyzed using Sciex Triple Quad 7500 (LC/MS/MS "Bumblebee") and using Waters Acquity UPLC equipped with Xevo TQ MS (LC/MS/MS "Pippin").

The samples were analyzed on more than one analytical sequence in order to meet method acceptance criteria.

The samples were analyzed using more than one batch preparation to include all analytes of interest.

Polar compound PFPrA in the samples, including the method blank (MB) and Ongoing Precision Recovery (OPR) samples, was analyzed by direct inject calibration.

# Enthalpy Analytical Narrative Summary

Company	Brunswick County Public Utilities - NC
Job No.	0225-1259-1
Client ID.	NORTHWEST WATER PLANT Site: LELAND N.C.

## 4. Calibration

In the initial calibration, the reported analytes exhibited  $R^2$  of = 0.99. The reported analytes in the calibration standards, Initial Calibration Verification (ICV) and continuing calibration (concal) met the accuracy criterion for native analytes.

The Standards that did not were:

- SID BH57 (Hydro-EVE Acid, NFDHA, PEPA, PFECA-G, PFMOBA, R-PSDCA)
- SID BH58 (4:2 FTS, EVE Acid, Hydro-EVE Acid, NFDHA, PFDS, PFECA-G, PFMOBA, PFMOPrA, PFO4DA, PFO5DA, R-PSDA, R-PSDCA)

Analyte(s) that exceeded method control limits in the concals were not detected >LOQ in the samples. The data is reported without adverse impact.

- SID BH62 (N-MeFOSA, PFMOPrA) The alternate supplier unlabeled standard solution used in the ICV does not contain select analytes of interest.

## 5. QC Notes

Except where noted below, the QC sample analyses passed all method criteria.

QC samples that did not meet method acceptance criteria were:

- MB\_19063\_PFAS (M2-8:2 FTS, d3-N-MeFOSA, d5-N-EtFOSA) - See Reporting Notes below.
- OPR\_19063\_PFAS (M2-8:2 FTS) - See Reporting Notes below.

PFAS by Isotope Dilution (non-potable water) samples were extracted within 28 days, and extracts analyzed within 28 days.

## 6. Reporting Notes

The results presented in this report are representative of the samples as provided to the laboratory.

Some labeled extraction standards (ES) in the analyses recovered outside method control limits for ES recovery, as denoted by the "Q" qualifier. The target analytes are quantified based on their ratio to their labeled standard analogs. As a result, low or high labeled standard recovery do not cause any change to ratios or contribute any additional error in the measurement of the target analytes. When detected at a signal-to-noise above 10:1 the ES peak area is used to quantify its respective target analyte using accepted isotope dilution principles. The data is reported without adverse impact.

These analyses met the requirements of the TNI Standard. Any deviations from the requirements of the reference method or TNI Standard have been stated above.

Enthalpy Analytical, LLC in Wilmington NC is accredited by the Louisiana Department of Environmental Quality to the 2016 TNI Standard under certificate number 05075.

## General Reporting Notes – Data Qualifiers

The following are general reporting notes that are applicable to all Enthalpy Analytical, LLC - Wilmington, NC data reports, unless specifically noted otherwise.

### General Data Qualifiers

- Ac - Alternate calculation flag indicates the es recovery was calculated using the opening concal when either of the following situations is encountered in the data processing software: the ES recovery is over 400% or the JS is not detected.
- B – The analyte was found in the method blank, at a concentration that was at least 10% of the amount in the sample.
- Cxx – Two or more congeners co-elute. In EDDs, C denotes the lowest IUPAC congener in a co-elution group and additional co-eluters for the group ('xx') are shown with the number of the lowest IUPAC co-eluter.
- E – The reported concentration exceeds the calibration range (upper point of the calibration curve). For HRMS data, this condition does not imply additional measurement uncertainty. For LC-MS/MS data, these values should be considered as having measurement uncertainty higher than values within the calibration range.
- EDL – Estimated Detection Level: The EDL is unique to isotope dilution methods and reflects the conditions of analysis at the time of analysis, including the equipment used. Where the MDL is a static value, the EDL is a dynamic value.
- EMPC – Estimated Maximum Possible Concentration: EMPC is specific to Dioxin/Furan tests to indicate the determined ion-abundance ratio was outside the allowed theoretical range (usually due to being near the detection limit, although it can very rarely be caused by a co-eluting interference). The EMPC concentration is adjusted to reflect the value at the theoretical ion-abundance ratio.
- I/IR – The ion ratio between the primary and secondary ions was observed to be outside the method criteria. The analyte concentration may be inaccurate due to interference.
- J – The analyte has a concentration below the minimum calibration level (LOQ value) but greater than the LOD. These values should be considered as having measurement uncertainty higher than values within the calibration range
- L - For reports containing PFAS analytes only, this flag indicates that an analyte has a concentration below the Minimum Detection Limit (MDL) . The reported concentration is not recommended for regulatory use as the analyte signal may have a signal-to-noise ratio less than the criteria deemed necessary to be considered a detected analyte.
- LOD – Limit of Detection: For reports conforming to the DOD ELAP QSM, this is the QSM-defined LOD. For reports conforming to TNI requirements (but not DOD ELAP QSM requirements), this value is the minimum detection limit (MDL). The LOD is adjusted for sample weight or volume.



## General Reporting Notes – Data Qualifiers

- LOQ – Limit of Quantitation: For reports conforming to the DOD ELAP QSM, this is the QSM-defined LOQ. For reports conforming to TNI requirements (but not DOD ELAP QSM requirements), this value is the reporting limit (RL). The LOQ is adjusted for sample weight or volume.
- <LOD() – Analyte was not found at a concentration high enough to be reported as detected. It is reported as less than the LOD, and the LOD is given in the parentheses.
- <LOQ() – Analyte was not found at a concentration high enough to be reported as above the QSM-defined LOQ or TNI defined Reporting Limit. It is reported as less than the LOQ, and the LOQ is given in the parentheses.
- ND – Indicates a non-detect.
- NR – Indicates a value that is not reportable due to issues observed in sample preparation or analysis.
- PR – The associated congener(s) is(are) poorly resolved.
- QI – Indicates the presence of a quantitative interference.
- RL – Reporting Limit. Lowest reportable value. The level is higher than the MDL.
- SI – Denotes “Single Ion Mode” and is utilized for PCBs where the secondary ion trace has a significantly elevated noise level due to background PFK. Responses for such peaks are calculated using an EMPC approach based solely on the primary ion area(s) and may be considered estimates.
- U – The analyte was not detected.
- V / Q – The labeled standard recovery is not within method control limits.
- X – Indicates the result is from re-injection/repeat/second-column analysis.

### **Lab Identifiers/ Data Attributes**

- AR – Indicates use of the archived portion of the sample extract.
- CU – Indicates a sample that required additional clean-up prior to HRMS injection/processing.
- D – Dilution Data. Result was obtained from the analysis of a dilution. The number that follows the “D” indicates the dilution factor.
- DE – Indicates a dilution performed with the addition of ES (Extraction Standard) solution.
- DUP – Designation for a duplicate sample.
- MS – Designation for a matrix spike.
- MSD – Designation for a matrix spike duplicate.



## General Reporting Notes – Data Qualifiers

- R – Indicates a re-extraction of the sample.
- RJ – Indicates a reinjection of the sample extract.
- S – Indicates a sample split. The number that follows the “S” indicates the split factor.
- SAT – Indicates an analyte saturated the detector.

PFAS Compound Acronym List			
Acronym	CAS #	Compound Name	
* accredited for SOP EU047 / EPA method 1633 # Method 537.1 Accredited ^ Method 533 Accredited ~EPA 1633 extended list			
<b>Target Analytes</b>			
* , ^	PFBA	375-22-4	Perfluorobutanoic Acid
* , # , ^	PFPeA	2706-90-3	Perfluoropentanoic Acid
* , # , ^	PFHxA	307-24-4	Perfluorohexanoic Acid
* , # , ^	PFHpA	375-85-9	Perfluoroheptanoic Acid
* , # , ^	PFOA	335-67-1	Perfluorooctanoic Acid
* , # , ^	PFNA	375-95-1	Perfluorononanoic Acid
* , # , ^	PFDA	335-76-2	Perfluorodecanoic acid
* , # , ^	PFUnA (PFUnDA)	2058-94-8	Perfluoroundecanoic acid
* , #	PFDoA (PFDoDA)	307-55-1	Perfluorododecanoic acid
* , #	PFTriA (PFTriA)	72629-94-8	Perfluorotridecanoic acid
* , # , ^	PFTeDA (PFTA)	376-06-7	Perfluorotetradecanoic acid
* , ^	PFBS	375-73-5	Perfluorobutane sulfonic acid
* , # , ^	PFPeS	2706-91-4	Perfluoropentane sulfonic acid
* , ^	PFHxS	355-46-4	Perfluorohexane sulfonic acid
* , # , ^	PFHpS	375-92-8	Perfluoroheptane sulfonic acid
* , # , ^	PFOS	1763-23-1	Perfluorooctane sulfonic acid
* , #	PFNS	68259-12-1	Perfluorononane sulfonic acid
* , #	PFDS	335-77-3	Perfluorodecane sulfonic acid
* , ^	4:2 FTS	757124-72-4	4:2 fluorotelomer sulfonic acid
* , ^	6:2 FTS	27619-97-2	6:2 fluorotelomer sulfonic acid
* , ^	8:2 FTS	39108-34-4	8:2 fluorotelomer sulfonic acid
~	10:2 FTS	120226-60-0	Fluorotelomer sulfonate 10:2
~	FHxSA	41997-13-1	Perfluorohexanesulfonamide
* , #	PFOSA (FOSA)	754-91-6	Perfluorooctane sulfonamide
* , #	N-MeFOSAA	2355-31-9	N-methyl perfluorooctane sulfonamido acetic acid
* , #	N-MeFOSA	31506-32-8	N-methylperfluoro-1-octanesulfonamide
* , #	N-MeFOSE	24448-09-7	2-(N-methylperfluoro-1-octanesulfonamido)-ethanol
* , #	N-EtFOSAA	2991-50-6	N-ethyl perfluorooctane sulfonamido acetic acid
* , #	N-EtFOSA	4151-50-2	N-ethylperfluoro-1-octanesulfonamide
* , #	N-EtFOSE	1691-99-2	2-(N-methylperfluoro-1-octanesulfonamido)-ethanol
* , # , ^	HFPO-DA	13252-13-6	2,3,3,3-Tetrafluoro-2-(1,1,2,2,3,3,3-heptafluoropropoxy)-propanoic acid (Gen-X)
* , # , ^	11Cl-PF3OUdS	763051-92-9	11-chloroheptafluoro-3-oxadecane-1-sulfonic acid
* , # , ^	9Cl-PF3ONS	756426-58-1	9-chlorohexadecafluoro-3-oxanonane-1-sulfonic acid
* , # , ^	ADONA	919005-14-4	4,8-dioxa-3H-perfluorononanoic acid
* , ^	PFEESA	113507-82-7	Perfluoro(2-ethoxyethane)sulphonic acid
* , ^	PFMOBA (PFMBA)	863090-89-5	Perfluoro-4-methoxybutanoic acid
* , ^	NFDHA	151772-58-6	Nonafluoro-3,6-dioxahexanoic acid
* , ^	PFMOPrA (PFMPA)	377-73-1	Perfluoro-3-methoxypropanoic acid
~	PFPrA	422-64-0	2,2,3,3,3-Pentafluoropropionic acid
~	PFPrS (PFPS)	423-41-6	Perfluoropropanesulfonic acid
~	PFMOAA	674-13-5	Perfluoro-2-methoxyacetic acid
~	PFO2HxA	39492-88-1	Perfluoro (3,5-dioxahexanoic) acid
~	PFO3OA	39492-89-2	Perfluoro (3,5,7-trioxaoctanoic) acid
~	PFO4DA	39492-90-5	Perfluoro (3,5,7,9-tetraoxadecanoic) acid
~	PFO5DA	39492-91-6	Perfluoro(3,5,7,9,11-pentaoxadodecanoic) acid
~	Nafion Byproduct 1 (PS Acid)	29311-67-9	Nafion Byproduct 1
~	Nafion Byproduct 2 (Hydro-PS Acid)	749836-20-2	Nafion Byproduct 2
~	PEPA	267239-61-2	Perfluoro-2-ethoxypropanoic acid
~	PMPA	13140-29-9	Perfluoro-2-methoxypropanoic acid

PFAS Compound Acronym List		
Acronym	CAS #	Compound Name
* accredited for SOP EU047 / EPA method 1633	# Method 537.1 Accredited	^ Method 533 Accredited ~EPA 1633 extended list
~ PFECA-G	801212-59-9	4-(Heptafluoroisopropoxy)hexafluorobutanoic acid
~ PFHxDA	67905-19-5	Perfluorohexadecanoic acid
~ R-PSDA (Nafion Byproduct 4)	2416366-18-0	Perfluoro-4-(2-sulfoethoxy)pentanoic acid
Hydrolyzed PSDA (Nafion Byproduct 5)	2416366-19-1	2-fluoro-2-[1,1,2,3,3,3-hexafluoro-2-(1,1,2,2-tetrafluoro-2-sulfoethoxy)propoxy]-acetic acid
~ R-PSDCA (Nafion Byproduct 6)	2416366-21-5	1,1,2,2-tetrafluoro-2-[1,2,2,3,3-pentafluoro-1-(trifluoromethyl)propoxy] ethanesulfonic acid
~ EVE Acid	69087-46-3	2,2,3,3-tetrafluoro-3-({1,1,1,2,3,3-hexafluoro-3-[(1,2,2-trifluoroethenyl)oxy]propan-2-yl)oxy}propionic acid
~ FBSA	30334-69-1	Perfluorobutylsulfonamide
~ MeFBSA	68298-12-4	1-Butanesulfonamide; (N-(Methyl)nonafluorobutanesulfonamide)
~ Hydro-EVE Acid	773804-62-9	2,2,3,3-Tetrafluoro-3-[[1,1,1,2,3,3-hexafluoro-3-(1,2,2,2-tetrafluoroethoxy)propan-2-yl]oxy}propanoic acid
~ R-EVE Acid	2416366-22-6	4-(2-carboxy-1,1,2,2-tetrafluoroethoxy)-2,2,3,3,4,5,5,5-octafluoro-pentanoic acid
~ NVHOS	1132933-86-8	Perfluoroethoxysulfonic acid
*~ PFDoS	79780-39-5	Perfluorododecane sulfonic acid
~ PFODA	16517-11-6	Perfluorooctadecanoic acid
* 3:3 FTCA	356-02-5	2H,2H,3H,3H-Perfluorohexanoic acid
* 5:3 FTCA	914637-49-3	2H,2H,3H,3H-Perfluorooctanoic acid
* 7:3 FTCA	812-70-4	2H,2H,3H,3H-Perfluorodecanoic acid
~ N-AP-FHxSA	50598-28-2	N-(3-(Dimethylamino)propyl)tridecafluoro-1-hexanesulfonamide
~ N-CMAmP-6:2 FOSA	34455-29-3	N-(Carboxymethyl)-N,N-dimethyl-3-(((3,3,4,4,5,5,6,6,7,7,8,8,8-tridecafluorooctyl)sulfonyl)amino)1-propanaminium
~ BPAF	1478-61-1	Bisphenol AF
~ HQ-115	90076-65-6	Bis(trifluoromethane)sulfonimide lithium salt

# Results

# Enthalpy Analytical

Job No.: 0225-1259-1 PFAS by Isotope Dilution (non-potable water)

Brunswick County Public Utilities - NC NORTHWEST WATER PLANT LELAND N.C.

## Summary

	Compound	CAS	022825-SO1 ng/L	022825-E01 ng/L	
Acids	PFPrA	422-64-0	514 L	503 L	
	PFBA	375-22-4	3.42	2.45	
	PFPeA	2706-90-3	5.12	4.87	
	PFHxA	307-24-4	5.68	5.78	
	PFHpA	375-85-9	2.18	2.20	
	PFOA	335-67-1	5.47	5.50	
	PFNA	375-95-1	0.681	0.685	
	PFDA	335-76-2	0.210 J	0.200 J	
	PFUnDA	2058-94-8	ND U	ND U	
	PFDoDA	307-55-1	ND U	ND U	
	PFTrDA	72629-94-8	ND U	ND U	
	PFTeDA	376-06-7	ND U	ND U	
	PFHxDA	67905-19-5	ND U	ND U	
	Sulfonates	PFBS	375-73-5	2.73	2.86
		PFPeS	2706-91-4	0.399 J	0.377 J
PFHxS		355-46-4	2.53	2.67	
PFHpS		375-92-8	0.150 L	0.184 L	
PFOS		1763-23-1	10.5	10.1	
PFNS		68259-12-1	ND U	ND U	
PFDS		335-77-3	ND U	ND U	
4:2 FTS		757124-72-4	ND U	ND U	
6:2 FTS		27619-97-2	0.0569 L	0.0652 L	
8:2 FTS		39108-34-4	ND U	ND U	
10:2 FTS		120226-60-0	ND U	ND U	
Sulfonamidos	FBSA	30334-69-1	0.462 J	0.344 J	
	N-EtFOSA	4151-50-2	ND U	ND U	
	N-EtFOSAA	2991-50-6	ND U	ND U	
	N-EtFOSE	1691-99-2	ND U	ND U	
	N-MeFOSA	31506-32-8	ND U	ND U	
	N-MeFOSAA	2355-31-9	ND U	ND U	
	N-MeFOSE	24448-09-7	ND U	ND U	
	PFOSA	754-91-6	0.146 J	ND U	
PFECAs	ADONA	919005-14-4	ND U	ND U	
	EVE Acid	69087-46-3	ND U	ND U	
	HFPO-DA	13252-13-6	0.803	0.910	
	Hydro-EVE Acid	773804-62-9	ND U	ND U	
	NFDHA	151772-58-6	ND U	ND U	
	PEPA	267239-61-2	ND U	0.359 J	
	PFECA-G	801212-59-9	ND U	ND U	
	PFMOAA	674-13-5	2.61	2.19	
	PFMOBA	863090-89-5	ND U	ND U	
	PFMOPrA	377-73-1	ND U	ND U	
	PFO2HxA	39492-88-1	0.957	0.801	
	PFO3OA	39492-89-2	0.157 L	0.112 L	
	PFO4DA	39492-90-5	ND U	ND U	
	PFO5DA	39492-91-6	ND U	ND U	
	PMPA	13140-29-9	1.95	1.49	
	R-EVE	2416366-22-6	1.06 J	1.22 J	
	PFESAs	11Cl-PF3OUds	763051-92-9	ND U	ND U
		9Cl-PF3ONS	756426-58-1	ND U	ND U
		Hydrolyzed PSDA	2416366-19-1	0.440 J	0.392 J
Nafion Byproduct 1 (PS Acid)		29311-67-9	ND U	ND U	
Nafion Byproduct 2 (Hydro-PS Acid)		749836-20-2	ND U	ND U	
NVHOS		1132933-86-8	ND U	ND U	
PFEESA		113507-82-7	ND U	ND U	
R-PSDA		2416366-18-0	1.95 L	1.54 L	
R-PSDCA		2416366-21-5	ND U	ND U	

# Enthalpy Analytical

Job No.: 0225-1259-1 PFAS by Isotope Dilution (non-potable water)  
 Brunswick County Public Utilities - NC NORTHWEST WATER PLANT LELAND N.C.

## Details

Sample Name	022825-SO1		
Sampling Site			
Enthalpy ID	0225-1259-001-1	Prep Batch	EU19054
Matrix	aqueous	Analyst	jogres
Sampling Date	2025-02-28 11:55	Instrument	Bumblebee
Received Date	2025-02-28	Sample Vol mL	0.1
Prep Date	2025-03-05 17:00	Extract Vol mL	0.2
AnalysisDate	2025-03-07 13:10	Split Factor	N/A
SampleType	Sample	Method Code	EU-047-NPW
Bottle ID	A		

	Compound	CAS	Injection File Name	Sample Concentration ng/L	LOD ng/L	LOQ ng/L	Recovery Limits	Recovery	Flags
Acids	PFPfA	422-64-0	B070325-03071310	514	700	1530			L
ES	13C3-PFPfA		B070325-03071310				20-150%	108%	

# Enthalpy Analytical

Job No.: 0225-1259-1 PFAS by Isotope Dilution (non-potable water)

Brunswick County Public Utilities - NC NORTHWEST WATER PLANT LELAND N.C.

## Details

Sample Name 022825-SO1  
 Sampling Site  
 Enthalpy ID 0225-1259-001-1A Prep Batch EU19063  
 Matrix aqueous Analyst zoeamdt  
 Sampling Date 2025-02-28 11:55 Instrument Pippin  
 Received Date 2025-02-28 Sample Vol mL 284.22  
 Prep Date 2025-03-07 14:55 Extract Vol mL 0.4  
 AnalysisDate 2025-03-10 22:27 Split Factor N/A  
 SampleType Sample Method Code EU-047-NPW  
 Bottle ID A

	Compound	CAS	Injection File Name	Sample Concentration ng/L	LOD ng/L	LOQ ng/L	Recovery Limits	Recovery	Flags
Acids	PFBA	375-22-4	P100325028	3.42	0.223	0.563			
	PFPeA	2706-90-3	P100325028	5.12	0.161	0.563			
	PFFhxA	307-24-4	P100325028	5.68	0.188	0.563			
	PFFHpA	375-85-9	P100325028	2.18	0.197	0.563			
	PFOA	335-67-1	P100325028	5.47	0.129	0.563			
	PFNA	375-95-1	P100325028	0.681	0.127	0.563			
	PFDA	335-76-2	P100325028	0.210	0.161	0.563			J
	PFUnDA	2058-94-8	P100325028	ND	0.127	0.563			U
	PFFDoDA	307-55-1	P100325028	ND	0.229	0.563			U
	PFFTrDA	72629-94-8	P100325028	ND	0.186	0.563			U
	PFFTeDA	376-06-7	P100325028	ND	0.215	0.563			U
	PFFHxDA	67905-19-5	P100325028	ND	0.299	0.563			U
	Sulfonates	PFBS	375-73-5	P100325028	2.73	0.299	0.563		
PFFPeS		2706-91-4	P100325028	0.399	0.116	0.530			J
PFFHxS		355-46-4	P100325028	2.53	0.435	0.516			
PFFHpS		375-92-8	P100325028	0.150	0.273	0.536			L
PFOS		1763-23-1	P100325028	10.5	0.297	0.521			
PFNS		68259-12-1	P100325028	ND	0.175	0.542			U
PFDS		335-77-3	P100325028	ND	0.296	0.542			U
4:2 FTS		757124-72-4	P100325028	ND	0.0730	0.527			U
6:2 FTS		27619-97-2	P100325028	0.0569	0.266	0.536			L
8:2 FTS		39108-34-4	P100325028	ND	0.126	0.539			U
10:2 FTS	120226-60-0	P100325028	ND	0.431	0.563			U	
Sulfonamidos	FBSA	30334-69-1	P100325028	0.462	0.267	0.563			J
	N-EiFOSA	4151-50-2	P100325028	ND	0.348	0.563			U
	N-EiFOSAA	2991-50-6	P100325028	ND	0.229	0.563			U
	N-EiFOSE	1691-99-2	P100325028	ND	0.862	2.53			U
	N-MeFOSA	31506-32-8	P100325028	ND	0.232	0.563			U
	N-MeFOSAA	2355-31-9	P100325028	ND	0.158	0.563			U
	N-MeFOSE	24448-09-7	P100325028	ND	0.535	2.53			U
	PFOSA	754-91-6	P100325028	0.146	0.0790	0.563			J
	ADONA	919005-14-4	P100325028	ND	0.153	0.533			U
	EVE Acid	69087-46-3	P100325028	ND	0.179	1.27			U
PFECAs	HFPO-DA	13252-13-6	P100325028	0.803	0.0596	0.563			
	Hydro-EVE Acid	773804-62-9	P100325028	ND	0.185	0.563			U
	NFDHA	151772-58-6	P100325028	ND	0.118	0.563			U
	PEPA	267239-61-2	P110325041	ND	0.106	0.563			U
	PFECA-G	801212-59-9	P100325028	ND	0.0751	0.563			U
	PFMOAA	674-13-5	P100325028	2.61	0.285	0.563			
	PFMOBA	863090-89-5	P100325028	ND	0.945	1.27			U
	PFMOPrA	377-73-1	P100325028	ND	0.201	0.563			U
	PFO2HxA	39492-88-1	P100325028	0.957	0.181	0.563			
	PFO3OA	39492-89-2	P100325028	0.157	0.259	0.563			L
	PFO4DA	39492-90-5	P100325028	ND	0.445	2.81			U
	PFO5DA	39492-91-6	P100325028	ND	0.450	2.81			U
	PMPA	13140-29-9	P100325028	1.95	0.133	0.563			
	R-EVE	2416366-22-6	P110325041	1.06	0.934	1.27			J
	PFESAs	11CI-PF3OUdS	763051-92-9	P100325028	ND	0.266	0.530		
9CI-PF3ONS		756426-58-1	P100325028	ND	0.361	0.524			U
Hydrolyzed PSDA		2416366-19-1	P110325041	0.440	0.375	0.563			J
Nafion Byproduct 1 (PS Acid)		29311-67-9	P100325028	ND	0.301	0.563			U
Nafion Byproduct 2 (Hydro-PS Acid)		749836-20-2	P100325028	ND	0.466	0.563			U
NVHOS		1132933-86-8	P100325028	ND	0.0867	0.563			U
PFEESA		113507-82-7	P100325028	ND	0.169	0.563			U
R-PSDA		2416366-18-0	P100325028	1.95	2.48	2.48			L
R-PSDCA		2416366-21-5	P100325028	ND	0.237	0.563			U
ES	MPFBA		P100325028				20-150%	91.0%	
	M5PFPeA		P100325028				20-150%	199%	Q
	M3PFBS		P100325028				20-150%	214%	Q
	M2-4:2 FTS		P100325028				20-150%	89.0%	
	M5PFFhxA		P100325028				20-150%	53.0%	
	M3HFPO-DA		P100325028				20-150%	64.3%	
	M4PFFHpA		P100325028				20-150%	68.9%	

# Enthalpy Analytical

Job No.: 0225-1259-1 PFAS by Isotope Dilution (non-potable water)  
 Brunswick County Public Utilities - NC NORTHWEST WATER PLANT LELAND N.C.

## Details

Sample Name	022825-SO1		
Sampling Site			
Enthalpy ID	0225-1259-001-1A	Prep Batch	EU19063
Matrix	aqueous	Analyst	zoeamdt
Sampling Date	2025-02-28 11:55	Instrument	Pippin
Received Date	2025-02-28	Sample Vol mL	284.22
Prep Date	2025-03-07 14:55	Extract Vol mL	0.4
AnalysisDate	2025-03-10 22:27	Split Factor	N/A
SampleType	Sample	Method Code	EU-047-NPW
Bottle ID	A		

Compound	CAS	Injection File Name	Sample Concentration ng/L	LOD ng/L	LOQ ng/L	Recovery Limits	Recovery	Flags
M3PFHxS		P100325028				20-150%	97.9%	
M2-6:2 FTS		P100325028				20-150%	130%	
M8PFOA		P100325028				20-150%	92.0%	
M9PFNA		P100325028				20-150%	94.7%	
M8PFOS		P100325028				20-150%	92.6%	
M2-8:2 FTS		P100325028				20-150%	226%	Q
M8FOSA-I		P100325028				20-150%	78.3%	
M6PFDA		P100325028				20-150%	93.1%	
d3-N-MeFOSAA		P100325028				20-150%	77.9%	
d5-N-EtFOSAA		P100325028				20-150%	74.9%	
M7PFUdA		P100325028				20-150%	67.0%	
MPPDoA		P100325028				20-150%	42.5%	
M2PFTeDA		P100325028				20-150%	8.59%	Q
d3-N-MeFOSA		P100325028				10-200%	3.63%	Q
d5-N-EtFOSA		P100325028				10-200%	2.43%	Q
d7-N-MeFOSE		P100325028				10-200%	12.1%	
d9-N-EtFOSE		P100325028				10-200%	8.08%	Q

# Enthalpy Analytical

Job No.: 0225-1259-1 PFAS by Isotope Dilution (non-potable water)  
 Brunswick County Public Utilities - NC NORTHWEST WATER PLANT LELAND N.C.

## Details

Sample Name	022825-E01		
Sampling Site			
Enthalpy ID	0225-1259-002-1	Prep Batch	EU19054
Matrix	aqueous	Analyst	jogres
Sampling Date	2025-02-28 11:55	Instrument	Bumblebee
Received Date	2025-02-28	Sample Vol mL	0.1
Prep Date	2025-03-05 17:00	Extract Vol mL	0.2
AnalysisDate	2025-03-07 13:21	Split Factor	N/A
SampleType	Sample	Method Code	EU-047-NPW
Bottle ID	A		

	Compound	CAS	Injection File Name	Sample Concentration ng/L	LOD ng/L	LOQ ng/L	Recovery Limits	Recovery	Flags
Acids	PFPrA	422-64-0	B070325-03071321	503	700	1530			L
ES	13C3-PFPrA		B070325-03071321				20-150%	111%	

# Enthalpy Analytical

Job No.: 0225-1259-1 PFAS by Isotope Dilution (non-potable water)

Brunswick County Public Utilities - NC NORTHWEST WATER PLANT LELAND N.C.

## Details

Sample Name	022825-E01	Prep Batch	EU19063
Sampling Site		Analyst	zoeamdt
Enthalpy ID	0225-1259-002-1A	Instrument	Pippin
Matrix	aqueous	Sample Vol mL	291.62
Sampling Date	2025-02-28 11:55	Extract Vol mL	0.4
Received Date	2025-02-28	Split Factor	N/A
Prep Date	2025-03-07 14:55	Method Code	EU-047-NPW
AnalysisDate	2025-03-10 22:50		
SampleType	Sample		
Bottle ID	A		

	Compound	CAS	Injection File Name	Sample Concentration ng/L	LOD ng/L	LOQ ng/L	Recovery Limits	Recovery	Flags	
Acids	PFBA	375-22-4	P100325029	2.45	0.218	0.549				
	PFPeA	2706-90-3	P100325029	4.87	0.157	0.549				
	PFFhxA	307-24-4	P100325029	5.78	0.183	0.549				
	PFFHpA	375-85-9	P100325029	2.20	0.192	0.549				
	PFOA	335-67-1	P100325029	5.50	0.126	0.549				
	PFNA	375-95-1	P100325029	0.685	0.124	0.549				
	PFDA	335-76-2	P100325029	0.200	0.157	0.549			J	
	PFUnDA	2058-94-8	P100325029	ND	0.124	0.549			U	
	PFFDoDA	307-55-1	P100325029	ND	0.223	0.549			U	
	PFFTrDA	72629-94-8	P100325029	ND	0.182	0.549			U	
	PFFTeDA	376-06-7	P100325029	ND	0.209	0.549			U	
	PFFHxDA	67905-19-5	P100325029	ND	0.291	0.549			U	
	Sulfonates	PFBS	375-73-5	P100325029	2.86	0.291	0.549			
PFFPeS		2706-91-4	P100325029	0.377	0.113	0.517			J	
PFFHxS		355-46-4	P100325029	2.67	0.423	0.502				
PFFHpS		375-92-8	P100325029	0.184	0.266	0.523			L	
PFOs		1763-23-1	P100325029	10.1	0.290	0.508				
PFNS		68259-12-1	P100325029	ND	0.170	0.528			U	
PFDs		335-77-3	P100325029	ND	0.288	0.528			U	
4:2 FTS		757124-72-4	P100325029	ND	0.0712	0.514			U	
6:2 FTS		27619-97-2	P100325029	0.0652	0.259	0.523			L	
8:2 FTS		39108-34-4	P100325029	ND	0.123	0.526			U	
10:2 FTS	120226-60-0	P100325029	ND	0.420	0.549			U		
Sulfonamidos	FBSA	30334-69-1	P100325029	0.344	0.261	0.549			J	
	N-EiFOSA	4151-50-2	P100325029	ND	0.339	0.549			U	
	N-EiFOSAA	2991-50-6	P100325029	ND	0.223	0.549			U	
	N-EiFOSE	1691-99-2	P100325029	ND	0.840	2.47			U	
	N-MeFOSA	31506-32-8	P100325029	ND	0.226	0.549			U	
	N-MeFOSAA	2355-31-9	P100325029	ND	0.154	0.549			U	
	N-MeFOSE	24448-09-7	P100325029	ND	0.521	2.47			U	
	PFOsA	754-91-6	P100325029	ND	0.0770	0.549			U	
	ADONA	919005-14-4	P100325029	ND	0.149	0.520			U	
	EVE Acid	69087-46-3	P100325029	ND	0.175	1.23			U	
PFECAs	HFPO-DA	13252-13-6	P100325029	0.910	0.0581	0.549				
	Hydro-EVE Acid	773804-62-9	P100325029	ND	0.180	0.549			U	
	NFDHA	151772-58-6	P100325029	ND	0.115	0.549			U	
	PEPA	267239-61-2	P110325042	0.359	0.103	0.549			J	
	PFECA-G	801212-59-9	P100325029	ND	0.0732	0.549			U	
	PfMOAA	674-13-5	P100325029	2.19	0.278	0.549				
	PfMOBA	863090-89-5	P100325029	ND	0.921	1.23			U	
	PfMOPrA	377-73-1	P100325029	ND	0.195	0.549			U	
	PFO2HxA	39492-88-1	P100325029	0.801	0.177	0.549				
	PFO3OA	39492-89-2	P100325029	0.112	0.252	0.549			L	
	PFO4DA	39492-90-5	P100325029	ND	0.434	2.74			U	
	PFO5DA	39492-91-6	P100325029	ND	0.439	2.74			U	
	PMPA	13140-29-9	P100325029	1.49	0.129	0.549				
	R-EVE	2416366-22-6	P110325042	1.22	0.910	1.23			J	
	PFESAs	11CI-PF3OUdS	763051-92-9	P100325029	ND	0.259	0.517			U
		9CI-PF3ONS	756426-58-1	P100325029	ND	0.351	0.511			U
	Hydrolyzed PSDA	2416366-19-1	P110325042	0.392	0.365	0.549			J	
	Nafion Byproduct 1 (PS Acid)	29311-67-9	P100325029	ND	0.293	0.549			U	
	Nafion Byproduct 2 (Hydro-PS Acid)	749836-20-2	P100325029	ND	0.454	0.549			U	
	NVHOS	1132933-86-8	P100325029	ND	0.0845	0.549			U	
	PFEESA	113507-82-7	P100325029	ND	0.165	0.549			U	
	R-PSDA	2416366-18-0	P100325029	1.54	2.42	2.42			L	
	R-PSDCA	2416366-21-5	P100325029	ND	0.231	0.549			U	
ES	MPFBA		P100325029				20-150%	92.3%		
	M5PFPeA		P100325029				20-150%	205%	Q	
	M3PFBS		P100325029				20-150%	255%	Q	
	M2-4:2 FTS		P100325029				20-150%	104%		
	M5PFFhxA		P100325029				20-150%	56.6%		
	M3HFPO-DA		P100325029				20-150%	64.8%		
	M4PFFHpA		P100325029				20-150%	67.5%		

# Enthalpy Analytical

Job No.: 0225-1259-1 PFAS by Isotope Dilution (non-potable water)  
 Brunswick County Public Utilities - NC NORTHWEST WATER PLANT LELAND N.C.

## Details

Sample Name	022825-E01		
Sampling Site			
Enthalpy ID	0225-1259-002-1A	Prep Batch	EU19063
Matrix	aqueous	Analyst	zoeamdt
Sampling Date	2025-02-28 11:55	Instrument	Pippin
Received Date	2025-02-28	Sample Vol mL	291.62
Prep Date	2025-03-07 14:55	Extract Vol mL	0.4
AnalysisDate	2025-03-10 22:50	Split Factor	N/A
SampleType	Sample	Method Code	EU-047-NPW
Bottle ID	A		

Compound	CAS	Injection File Name	Sample Concentration ng/L	LOD ng/L	LOQ ng/L	Recovery Limits	Recovery	Flags
M3PFHxS		P100325029				20-150%	86.9%	
M2-6:2 FTS		P100325029				20-150%	140%	
M8PFOA		P100325029				20-150%	91.3%	
M9PFNA		P100325029				20-150%	89.2%	
M8PFOS		P100325029				20-150%	76.7%	
M2-8:2 FTS		P100325029				20-150%	186%	Q
M8FOSA-I		P100325029				20-150%	73.0%	
M6PFDA		P100325029				20-150%	81.3%	
d3-N-MeFOSAA		P100325029				20-150%	70.0%	
d5-N-EtFOSAA		P100325029				20-150%	67.2%	
M7PFUdA		P100325029				20-150%	63.9%	
MPFDoA		P100325029				20-150%	52.0%	
M2PFTeDA		P100325029				20-150%	19.8%	Q
d3-N-MeFOSA		P100325029				10-200%	3.81%	Q
d5-N-EtFOSA		P100325029				10-200%	3.76%	Q
d7-N-MeFOSE		P100325029				10-200%	29.2%	
d9-N-EtFOSE		P100325029				10-200%	22.3%	

# Enthalpy Analytical

Job No.: 0225-1259-1 PFAS by Isotope Dilution (non-potable water)

Brunswick County Public Utilities - NC NORTHWEST WATER PLANT LELAND N.C.

## Details

Sample Name	MB_19054_PFAS		
Sampling Site			
Enthalpy ID	MB_19054_PFAS	Prep Batch	EU19054
Matrix	aqueous	Analyst	jogres
Sampling Date		Instrument	Bumblebee
Received Date		Sample Vol mL	0.1
Prep Date	2025-03-05 17:00	Extract Vol mL	0.2
AnalysisDate	2025-03-07 12:46	Split Factor	N/A
SampleType	Blank	Method Code	EU-047-NPW
Bottle ID	-		

	Compound	CAS	Injection File Name	Sample Concentration ng/L	LOD ng/L	LOQ ng/L	Recovery Limits	Recovery	Flags
Acids	PFPrA	422-64-0	B070325-03071246	519	700	1530			L
ES	13C3-PFPrA		B070325-03071246				20-150%	111%	

# QC Data

# Enthalpy Analytical

Job No.: 0225-1259-1 PFAS by Isotope Dilution (non-potable water)

Brunswick County Public Utilities - NC NORTHWEST WATER PLANT LELAND N.C.

## Details

Sample Name	MB_19054_PFAS		
Sampling Site			
Enthalpy ID	MB_19054_PFAS	Prep Batch	EU19054
Matrix	aqueous	Analyst	jogres
Sampling Date		Instrument	Bumblebee
Received Date		Sample Vol mL	0.1
Prep Date	2025-03-05 17:00	Extract Vol mL	0.2
AnalysisDate	2025-03-07 12:46	Split Factor	N/A
SampleType	Blank	Method Code	EU-047-NPW
Bottle ID	-		

	Compound	CAS	Injection File Name	Sample Concentration ng/L	LOD ng/L	LOQ ng/L	Recovery Limits	Recovery	Flags
Acids	PFPrA	422-64-0	B070325-03071246	519	700	1530			L
ES	13C3-PFPrA		B070325-03071246				20-150%	111%	

# Enthalpy Analytical

Job No.: 0225-1259-1 PFAS by Isotope Dilution (non-potable water)

Brunswick County Public Utilities - NC NORTHWEST WATER PLANT LELAND N.C.

## Details

Sample Name	MB_19063_PFAS	Prep Batch	EU19063
Sampling Site		Analyst	zoeamdt
Enthalpy ID	MB_19063_PFAS	Instrument	Pippin
Matrix	aqueous	Sample Vol mL	250
Sampling Date		Extract Vol mL	0.4
Received Date		Split Factor	N/A
Prep Date	2025-03-07 14:55	Method Code	EU-047-NPW
AnalysisDate	2025-03-10 17:32		
SampleType	Blank		
Bottle ID	-		

	Compound	CAS	Injection File Name	Sample Concentration ng/L	LOD ng/L	LOQ ng/L	Recovery Limits	Recovery	Flags	
Acids	PFBA	375-22-4	P100325015	ND	0.254	0.640			U	
	PFPeA	2706-90-3	P100325015	ND	0.183	0.640			U	
	PFFhxA	307-24-4	P100325015	ND	0.214	0.640			U	
	PFFHpA	375-85-9	P100325015	ND	0.224	0.640			U	
	PFOA	335-67-1	P100325015	ND	0.146	0.640			U	
	PFNA	375-95-1	P100325015	ND	0.145	0.640			U	
	PFDA	335-76-2	P100325015	ND	0.183	0.640			U	
	PFUnDA	2058-94-8	P100325015	ND	0.145	0.640			U	
	PFDODA	307-55-1	P100325015	ND	0.260	0.640			U	
	PFTrDA	72629-94-8	P100325015	ND	0.212	0.640			U	
	PFTeDA	376-06-7	P100325015	ND	0.244	0.640			U	
	PFFhxDA	67905-19-5	P100325015	ND	0.340	0.640			U	
	Sulfonates	PFBS	375-73-5	P100325015	ND	0.340	0.640			U
		PFPeS	2706-91-4	P100325015	ND	0.131	0.603			U
		PFFhXS	355-46-4	P100325015	ND	0.494	0.586			U
PFFHpS		375-92-8	P100325015	ND	0.310	0.610			U	
PFOS		1763-23-1	P100325015	ND	0.338	0.593			U	
PFNS		68259-12-1	P100325015	ND	0.199	0.616			U	
PFDS		335-77-3	P110325028	ND	0.336	0.616			U	
4:2 FTS		757124-72-4	P110325028	ND	0.0830	0.600			U	
6:2 FTS		27619-97-2	P100325015	ND	0.302	0.610			U	
8:2 FTS		39108-34-4	P100325015	ND	0.143	0.613			U	
10:2 FTS	120226-60-0	P100325015	ND	0.490	0.640			U		
Sulfonamidos	FBSA	30334-69-1	P100325015	ND	0.304	0.640			U	
	N-EiFOSA	4151-50-2	P100325015	ND	0.396	0.640			U	
	N-EiFOSAA	2991-50-6	P100325015	ND	0.260	0.640			U	
	N-EiFOSE	1691-99-2	P100325015	ND	0.980	2.88			U	
	N-MeFOSA	31506-32-8	P100325015	ND	0.264	0.640			U	
	N-MeFOSAA	2355-31-9	P100325015	ND	0.180	0.640			U	
	N-MeFOSE	24448-09-7	P100325015	ND	0.608	2.88			U	
	PFOSA	754-91-6	P100325015	ND	0.0898	0.640			U	
	PFECAs	ADONA	919005-14-4	P100325015	ND	0.173	0.606			U
		EVE Acid	69087-46-3	P100325015	ND	0.204	1.44			U
HFPO-DA		13252-13-6	P100325015	ND	0.0678	0.640			U	
Hydro-EVE Acid		773804-62-9	P100325015	ND	0.210	0.640			U	
NFDHA		151772-58-6	P100325015	ND	0.135	0.640			U	
PEPA		267239-61-2	P110325028	ND	0.120	0.640			U	
PFECA-G		801212-59-9	P100325015	ND	0.0854	0.640			U	
PFMOAA		674-13-5	P100325015	ND	0.324	0.640			U	
PFMOBA		863090-89-5	P100325015	ND	1.07	1.44			U	
PFMOPrA		377-73-1	P100325015	ND	0.228	0.640			U	
PFO2HxA		39492-88-1	P100325015	ND	0.206	0.640			U	
PFO3OA		39492-89-2	P100325015	ND	0.294	0.640			U	
PFO4DA		39492-90-5	P100325015	ND	0.506	3.20			U	
PFO5DA		39492-91-6	P100325015	ND	0.512	3.20			U	
PMPA		13140-29-9	P100325015	ND	0.151	0.640			U	
R-EVE	2416366-22-6	P110325028	ND	1.06	1.44			U		
PFESAs	11CI-PF3OUdS	763051-92-9	P100325015	ND	0.302	0.603			U	
	9CI-PF3ONS	756426-58-1	P100325015	ND	0.410	0.596			U	
	Hydrolyzed PSDA	2416366-19-1	P110325028	ND	0.426	0.640			U	
	Nafion Byproduct 1 (PS Acid)	29311-67-9	P100325015	ND	0.342	0.640			U	
	Nafion Byproduct 2 (Hydro-PS Acid)	749836-20-2	P100325015	ND	0.530	0.640			U	
	NVHOS	1132933-86-8	P100325015	ND	0.0986	0.640			U	
	PFEESA	113507-82-7	P100325015	ND	0.192	0.640			U	
	R-PSDA	2416366-18-0	P100325015	ND	2.82	2.82			U	
	R-PSDCA	2416366-21-5	P100325015	ND	0.270	0.640			U	
	ES	MPFBA		P100325015				20-150%	88.1%	
M5PFPeA			P100325015				20-150%	88.4%		
M3PFBS			P100325015				20-150%	77.3%		
M2-4:2 FTS			P110325028				20-150%	94.8%		
M5PFFhxA			P100325015				20-150%	34.3%		
M3HFPO-DA			P100325015				20-150%	44.0%		
M4PFFHpA			P100325015				20-150%	84.0%		

# Enthalpy Analytical

Job No.: 0225-1259-1 PFAS by Isotope Dilution (non-potable water)  
 Brunswick County Public Utilities - NC NORTHWEST WATER PLANT LELAND N.C.

## Details

Sample Name	MB_19063_PFAS		
Sampling Site			
Enthalpy ID	MB_19063_PFAS	Prep Batch	EU19063
Matrix	aqueous	Analyst	zoeamdt
Sampling Date		Instrument	Pippin
Received Date		Sample Vol mL	250
Prep Date	2025-03-07 14:55	Extract Vol mL	0.4
AnalysisDate	2025-03-10 17:32	Split Factor	N/A
SampleType	Blank	Method Code	EU-047-NPW
Bottle ID	-		

Compound	CAS	Injection File Name	Sample Concentration ng/L	LOD ng/L	LOQ ng/L	Recovery Limits	Recovery	Flags
M3PFHxS		P100325015				20-150%	83.3%	
M2-6:2 FTS		P100325015				20-150%	97.5%	
M8PFOA		P100325015				20-150%	89.6%	
M9PFNA		P100325015				20-150%	97.7%	
M8PFOS		P100325015				20-150%	86.9%	
M2-8:2 FTS		P100325015				20-150%	172%	Q
M8FOSA-I		P100325015				20-150%	77.8%	
M6PFDA		P100325015				20-150%	88.1%	
d3-N-MeFOSAA		P100325015				20-150%	61.3%	
d5-N-EtFOSAA		P100325015				20-150%	54.3%	
M7PFUdA		P100325015				20-150%	64.6%	
MPFDoA		P100325015				20-150%	59.1%	
M2PFTeDA		P100325015				20-150%	28.1%	
d3-N-MeFOSA		P100325015				10-200%	7.40%	Q
d5-N-EtFOSA		P100325015				10-200%	6.43%	Q
d7-N-MeFOSE		P100325015				10-200%	28.6%	
d9-N-EtFOSE		P100325015				10-200%	24.3%	

## Enthalpy Analytical

Job No.: 0225-1259-1 PFAS by Isotope Dilution (non-potable water)

Brunswick County Public Utilities - NC NORTHWEST WATER PLANT LELAND N.C.

Enthalpy ID	OPR_19054_PFAS	Prep Batch	EU19054	Sample Vol (mL)	0.08
Sample Name	OPR_19054_PFAS	Prep Date	2025-03-05 17:00	Extract Vol (mL)	0.2
Matrix	aqueous	Analysis Date	2025-03-07 12:58	Split Factor	N/A
Sampling Date		Analyst	jogres	Method Code	EU-047-NPW
Received Date		Instrument	Bumblebee	Sample Type	Control
		Bottle ID	-		

	Compound	CAS	InjFileName	Sample Concentration ng/L	LOD ng/L	LOQ ng/L	Recovery Limits	Recovery	Flags
Acids	PFPrA	422-64-0	B070325-03071258	28600	875	1910	40-150%	115%	
ES	13C3-PFPrA		B070325-03071258				20-150%	107%	

# Enthalpy Analytical

Job No.: 0225-1259-1 PFAS by Isotope Dilution (non-potable water)

Brunswick County Public Utilities - NC NORTHWEST WATER PLANT LELAND N.C.

Enthalpy ID	OPR_19063_PFAS	Prep Batch	EU19063	Sample Vol (mL)	250
Sample Name	OPR_19063_PFAS	Prep Date	2025-03-07 14:55	Extract Vol (mL)	0.4
Matrix	aqueous	Analysis Date	2025-03-10 17:55	Split Factor	N/A
Sampling Date		Analyst	zoeamndt	Method Code	EU-047-NPW
Received Date		Instrument	Pippin	Sample Type	Control
		Bottle ID	-		

	Compound	CAS	InjFileName	Sample Concentration ng/L	LOD ng/L	LOQ ng/L	Recovery Limits	Recovery	Flags	
Acids	PFBA	375-22-4	P100325016	16.9	0.254	0.640	47.9-144%	84.6%		
	PFPeA	2706-90-3	P100325016	20.8	0.183	0.640	41.7-159%	104%		
	PFHxA	307-24-4	P100325016	21.6	0.214	0.640	43.2-154%	108%		
	PFHpA	375-85-9	P100325016	16.5	0.224	0.640	42.1-155%	82.4%		
	PFOA	335-67-1	P100325016	18.2	0.146	0.640	51.1-148%	91.2%		
	PFNA	375-95-1	P100325016	18.8	0.145	0.640	51.6-153%	94.0%		
	PFDA	335-76-2	P100325016	19.5	0.183	0.640	44.5-156%	97.4%		
	PFUnDA	2058-94-8	P100325016	20.0	0.145	0.640	40.3-156%	99.9%		
	PFDoDA	307-55-1	P100325016	18.6	0.260	0.640	40.4-158%	93.2%		
	PFTeDA	72629-94-8	P100325016	30.4	0.212	0.640	42.2-201%	152%		
	PFTeDA	376-06-7	P100325016	19.9	0.244	0.640	43-162%	99.5%		
	Sulfonates	PFBs	375-73-5	P100325016	15.9	0.340	0.640	42.7-155%	89.9%	
		PFPeS	2706-91-4	P100325016	17.9	0.131	0.603	40.3-152%	95.1%	
		PFHxS	355-46-4	P100325016	16.6	0.494	0.586	45-148%	90.7%	
PFHpS		375-92-8	P100325016	16.5	0.310	0.610	39.8-166%	86.8%		
PFOS		1763-23-1	P100325016	18.0	0.338	0.593	59.2-132%	96.9%		
PFNS		68259-12-1	P100325016	16.1	0.199	0.616	38.1-153%	83.7%		
PFDS		335-77-3	P110325029	18.5	0.336	0.616	28.6-148%	95.9%		
4:2 FTS		757124-72-4	P110325029	20.1	0.0830	0.600	41.5-157%	107%		
6:2 FTS		27619-97-2	P100325016	19.1	0.302	0.610	44.5-160%	100%		
8:2 FTS		39108-34-4	P100325016	17.5	0.143	0.613	39.4-166%	91.0%		
Sulfonamidos	N-EtFOSA	4151-50-2	P100325016	22.3	0.396	0.640	26.7-172%	111%		
	N-EtFOSAA	2991-50-6	P100325016	21.4	0.260	0.640	42.8-156%	107%		
	N-EtFOSE	1691-99-2	P100325016	94.2	0.980	2.88	38.9-161%	105%		
	N-MeFOSA	31506-32-8	P100325016	23.1	0.264	0.640	26.4-183%	116%		
	N-MeFOSAA	2355-31-9	P100325016	21.1	0.180	0.640	42-155%	105%		
	N-MeFOSE	24448-09-7	P100325016	102	0.608	2.88	37.6-155%	113%		
	PFOSA	754-91-6	P100325016	18.1	0.0898	0.640	39.1-158%	90.4%		
	PFECAs	ADONA	919005-14-4	P100325016	17.9	0.173	0.606	32.2-151%	89.3%	
HFPO-DA		13252-13-6	P100325016	21.6	0.0678	0.640	61.8-131%	108%		
PFESAs	11Cl-PF3OUdS	763051-92-9	P100325016	12.9	0.302	0.603	21.8-141%	64.7%		
	9Cl-PF3ONS	756426-58-1	P100325016	16.5	0.410	0.596	37.6-146%	82.3%		
ES	MPFBA		P100325016				20-150%	89.9%		
	M5PFPeA		P100325016				20-150%	94.4%		
	M3PFBS		P100325016				20-150%	84.8%		
	M2-4:2 FTS		P110325029				20-150%	96.0%		
	M5PFHxA		P100325016				20-150%	36.8%		
	M3HFPO-DA		P100325016				20-150%	48.5%		
	M4PFHpA		P100325016				20-150%	82.8%		
	M3PFHxS		P100325016				20-150%	87.1%		
	M2-6:2 FTS		P100325016				20-150%	102%		
	M8PFOA		P100325016				20-150%	92.6%		
	M9PFNA		P100325016				20-150%	98.0%		
	M8PFOS		P100325016				20-150%	89.5%		
	M2-8:2 FTS		P100325016				20-150%	185% Q		
	M8FOSA-I		P100325016				20-150%	85.2%		
	M6PFDA		P100325016				20-150%	95.3%		
	d3-N-MeFOSAA		P100325016				20-150%	62.9%		
	d5-N-EtFOSAA		P100325016				20-150%	57.8%		
	M7PFUdA		P100325016				20-150%	68.4%		
	MPFDcA		P100325016				20-150%	62.2%		
	M2PFTeDA		P100325016				20-150%	30.7%		
	d3-N-MeFOSA		P100325016				10-200%	15.7%		
	d5-N-EtFOSA		P100325016				10-200%	12.5%		
	d7-N-MeFOSE		P100325016				10-200%	31.8%		
d9-N-EtFOSE		P100325016				10-200%	27.5%			

# Sample Custody



0225-1259  
**Chain of Custody Record**

**Special Handling:**

- Standard Turn Around Time
- Rush Turn Around Time -- Date Needed \_\_\_\_\_
- All Fast TATs Subject to Approval by Enthalpy Analytical, Inc.
- All Samples Disposed of After 6 months Unless Otherwise Instructed.

Enthalpy Analytical-Wilmington, NC has added enhancements to standard methods to improve accuracy, precision and permit an assessment of laboratory performance in the context of your specific data needs. For more information email Cindy.James@enthalpy.com.

Enthalpy Ultratrace Job#: \_\_\_\_\_ COC Page 1 of 1

Client Name: BRUNSWICK COUNTY UTILITIES  
 Project Manager: GLENN WALKER  
 Report To: SAME

Project Number: \_\_\_\_\_  
 Site Name: NORTHWEST WATER PLANT  
 Location: LELAND N.C.

PO#: \_\_\_\_\_  
 Telephone#: \_\_\_\_\_  
 Email: \_\_\_\_\_

This Chain of Custody is applicable to Non-Air samples. Standard TAT differ per analysis and are provided by request.

**Client Special Instructions:**  
 Matrix: GW-Groundwater, WW-Wastewater, NW-Non-Potable Water, DW-Drinking Water, S-Soil, SL-Sludge, BT-Biological Tissue, O-Other  
 Type: G=Grab C=Composite Q=Quality Control

**Sample Containers**      **Analyses:**

Sample ID	Date	Time	Sample Volume	Type	Matrix	Sample Containers				Analyses:							Notes:			
						# of Bottles	# of Jars	# of Bags	# Other	Method 1613	Method 8290	Method 1668A/B/C PCE	PFAS by LC/MS/MS	PAHs by HPLC/HRMS	Sample on Hold	Method 23		ALL PFAS		
022825-SO1022825-EO1 <i>*</i>	2/28/2025	1155AM	250 ml	G	NW	2												X	Please Add PFPRA and	
022125-EO1	2/28/2025	1155AM	250 ml	G	DW	2													X	PFHpA To The Testing.
																				Mark Hager Knows About
																				This If you Have Questions
																				<i>*Sample 2 was added into Sample 1's ID M.A.C. 2/28/25</i>

Relinquished By:	Date:	Received By:	Date:	Time:	Sample Temperature Upon Receipt:
<i>[Signature]</i> BILLY BENTON	2/28/2025	<i>Meredith Curcio</i>	2/28/25	14:54	<input checked="" type="checkbox"/> Iced <input type="checkbox"/> Ambient   °C <u>0.8</u>
					<input type="checkbox"/> Iced <input type="checkbox"/> Ambient   °C _____
					<input type="checkbox"/> Iced <input type="checkbox"/> Ambient   °C _____

JOB ID: 0225-1259

Date / Time: 2/28/25 14:54

Initials: M.A.C.

OR

Client: Brunswick County Public Utilities

Cooler 1 of 1

Temp °C: 0.8

Thermometer ID: T1b

- Received via
- FedEx
- UPS
- DHL
- USPS
- Courier
- Other

*Check one*

On ice:

Melted ice:

Ambient:

*Check one*

in a Box:

in a Cooler:

Cooler in Box:

	Yes	No
Cooler seals:	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Sample seals:	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Good condition:	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Comment:

Empty comment box

Cooler of

Temp °C:

Thermometer ID:

- Received via
- FedEx
- UPS
- DHL
- USPS
- Courier
- Other

*Check one*

On ice:

Melted ice:

Ambient:

*Check one*

in a Box:

in a Cooler:

Cooler in Box:

	Yes	No
Cooler seals:	<input type="checkbox"/>	<input type="checkbox"/>
Sample seals:	<input type="checkbox"/>	<input type="checkbox"/>
Good condition:	<input type="checkbox"/>	<input type="checkbox"/>

Comment:

Empty comment box

Cooler of

Temp °C:

Thermometer ID:

- Received via
- FedEx
- UPS
- DHL
- USPS
- Courier
- Other

*Check one*

On ice:

Melted ice:

Ambient:

*Check one*

in a Box:

in a Cooler:

Cooler in Box:

	Yes	No
Cooler seals:	<input type="checkbox"/>	<input type="checkbox"/>
Sample seals:	<input type="checkbox"/>	<input type="checkbox"/>
Good condition:	<input type="checkbox"/>	<input type="checkbox"/>

Comment:

Empty comment box