

Brunswick County Public Utilities - NC

PO Box 249
Bolivia, NC 28422-0249

LELAND N.C.

Client Project# NORTHWEST WATER PLANT
Samples Received: 3/21/2025

Analytical Report 0325-870

PFAS by Isotope Dilution (non-potable water)

Report Issue Date: 4/29/2025

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.	0325-870-1
Client ID.	NORTHWEST WATER PLANT Site: LELAND N.C.

1. Custody

Jayson-Shane Santos received the samples at 5.9 °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
0325-870-001-1	032125-SO1	aqueous	2025-03-21
0325-870-001-2	032125-SO1	aqueous	2025-03-21
0325-870-002-1	032125-EO1	aqueous	2025-03-21
0325-870-002-2	032125-EO1	aqueous	2025-03-21

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"), using Waters Acquity UPLC equipped with Xevo TQ MS (LC/MS/MS "Pippin"), and using Waters Acquity UPLC equipped with Xevo TQ MS (LC/MS/MS "Frodo").

A SOP deviation was employed for batch 19156 initial analytical sequence. SOP EU047 limits the number of field samples between concal injections to 10. In this sequence, eleven field samples were injected. However, the data validity was not affected.

The samples were analyzed using more than one batch preparation and analytical sequence to include all analytes of interest and to meet method acceptance criteria.

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

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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 (PFDS, PFMObA) Analyte(s) that exceeded method control limits in the convals were not detected >LOQ in the samples. The data is reported without adverse impact.
- SID BH62 (N-MeFOSA, PFECA-G, PFMOPrA) The alternate supplier of the 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_19156_PFAS (d3-N-MeFOSA, d5-N-EtFOSA) - See Reporting Notes below.
- OPR_19156_PFAS (d3-N-MeFOSA, d5-N-EtFOSA) - 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			Methods					
Acronym	CAS #	Compound Name	SOP EU047	EPA 1633 (B-24)	EPA 1633X	EPA 537.1	EPA 533	EPA 8327*
Target Analytes								
PFBA	375-22-4	Perfluorobutanoic Acid	X	X	X		X	X
PFPeA	2706-90-3	Perfluoropentanoic Acid	X	X	X		X	X
PFHxA	307-24-4	Perfluorohexanoic Acid	X	X	X	X	X	X
PFHpA	375-85-9	Perfluoroheptanoic Acid	X	X	X	X	X	X
PFOA	335-67-1	Perfluorooctanoic Acid	X	X	X	X	X	X
PFNA	375-95-1	Perfluorononanoic Acid	X	X	X	X	X	X
PFDA	335-76-2	Perfluorodecanoic acid	X	X	X	X	X	X
PFUnA (PFUnDA)	2058-94-8	Perfluoroundecanoic acid	X	X	X	X	X	X
PFDoA (PFDoDA)	307-55-1	Perfluorododecanoic acid	X	X	X	X		X
PFTrDA (PFTriA, PFTrDA)	72629-94-8	Perfluorotridecanoic acid	X	X	X	X		X
PFTeDA (PFTA, PFTreA)	376-06-7	Perfluorotetradecanoic acid	X	X	X	X		X
PFBS	375-73-5	Perfluorobutane sulfonic acid	X	X	X	X	X	X
PFPeS	2706-91-4	Perfluoropentane sulfonic acid	X	X	X		X	X
PFHxS	355-46-4	Perfluorohexane sulfonic acid	X	X	X	X	X	X
PFHpS	375-92-8	Perfluoroheptane sulfonic acid	X	X	X		X	X
PFOS	1763-23-1	Perfluorooctane sulfonic acid	X	X	X	X	X	X
PFNS	68259-12-1	Perfluorononane sulfonic acid	X	X	X			X
PFDS	335-77-3	Perfluorodecane sulfonic acid	X	X	X			X
4:2 FTS	757124-72-4	4:2 fluorotelomer sulfonic acid	X	X	X		X	X
6:2 FTS	27619-97-2	6:2 fluorotelomer sulfonic acid	X	X	X		X	X
8:2 FTS	39108-34-4	8:2 fluorotelomer sulfonic acid	X	X	X		X	X
10:2 FTS	120226-60-0	Fluorotelomer sulfonate 10:2						X
FHxSA	41997-13-1	Perfluorohexanesulfonamide			X			X
PFOSA (FOSA)	754-91-6	Perfluorooctane sulfonamide	X	X	X			X
N-MeFOSAA	2355-31-9	N-methyl perfluorooctane sulfonamido acetic acid	X	X	X	X		X
N-MeFOSA	31506-32-8	N-methylperfluoro-1-octanesulfonamide	X	X	X			X
N-MeFOSE	24448-09-7	2-(N-methylperfluoro-1-octanesulfonamido)-ethanol	X	X	X			X
N-EtFOSAA	2991-50-6	N-ethyl perfluorooctane sulfonamido acetic acid	X	X	X	X		X
N-EtFOSA	4151-50-2	N-ethylperfluoro-1-octanesulfonamide	X	X	X			X
N-EtFOSE	1691-99-2	2-(N-Ethylperfluoro-1-octanesulfonamido)-ethanol	X	X	X			X
HFPO-DA	13252-13-6	Hexafluoropropyleneoxide dimer acid (GenX)	X	X	X	X	X	X
11Cl-PF3OUds	763051-92-9	11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	X	X	X	X	X	X
9Cl-PF3ONS	756426-58-1	9-chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	X	X	X	X	X	X
ADONA	919005-14-4	4,8-dioxa-3H-perfluorononanoic acid	X	X	X	X	X	X
PFESA	113507-82-7	Perfluoro(2-ethoxyethane)sulfonic acid		X	X		X	X
PFMOBA (PFMBA)	863090-89-5	Perfluoro-4-methoxybutanoic acid		X	X		X	X
NFDHA	151772-58-6	Nonafluoro-3,6-dioxaheptanoic acid		X	X		X	X
PFMOPrA (PFMPA)	377-73-1	Perfluoro-3-methoxypropanoic acid		X	X		X	X
PFPrA	422-64-0	Perfluoropropionic acid, 2,2,3,3,3-Pentafluoropropionic acid			X			X
PFPrS (PFPS)	423-41-6	Perfluoropropanesulfonic acid			X			X



PFAS Compound Acronym List			Methods					
Acronym	CAS #	Compound Name	SOP EU047	EPA 1633 (B-24)	EPA 1633X	EPA 537.1	EPA 533	EPA 8327*
PFMOAA	674-13-5	Perfluoro-2-methoxyacetic acid;			X			X
PFO2HxA	39492-88-1	Perfluoro (3,5-dioxahexanoic) acid			X			X
PFO3OA	39492-89-2	Perfluoro (3,5,7-trioxaoctanoic) acid			X			X
PFO4DA	39492-90-5	Perfluoro (3,5,7,9-tetraoxadecanoic) acid			X			X
PFO5DA	39492-91-6	Perfluoro(3,5,7,9,11-pentaoxadodecanoic) acid			X			X
Nafion Byproduct 1 (PS Acid)	29311-67-9	1,1,2,2-tetrafluoro-2-[1,1,1,2,3,3-hexafluoro-3-(1,2,2-trifluoroethenoxy)propan-2-yl]oxyethanesulfonic acid			X			X
Nafion Byproduct 2 (Hydro-PS Acid)	749836-20-2	Perfluoro-2-[[perfluoro-3-(perfluoroethoxy)-2-propanyl]oxy]ethanesulfonic acid (Hydro-PS Acid)			X			X
PEPA	267239-61-2	Perfluoro-2-ethoxypropanoic acid			X			X
PMPA	13140-29-9	Perfluoro-2-methoxypropanoic acid			X			X
PFECA-G, (PFPE-1)	801212-59-9	4-(Heptafluoroisopropoxy)hexafluorobutanoic acid, Perfluoro-4-isopropoxybutanoic acid			X			X
PFHxDA	67905-19-5	Perfluorohexadecanoic acid			X			
R-PSDA (Nafion Byproduct 4)	2416366-18-0	Perfluoro-4-(2-sulfoethoxy)pentanoic acid; 2,2,3,3,4,5,5-Octafluoro-4-(1,1,2,2-tetrafluoro-2-sulfoethoxy)pentanoic acid			X			X
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			X			X
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			X			X
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			X			X
FBSA	30334-69-1	Perfluorobutylsulfonamide			X			X
MeFBSA	68298-12-4	1-Butanesulfonamide; (N-(Methyl)nonafluorobutanesulfonamide); 1,1,2,2,3,3,4,4,4-nonafluoro-N-methyl-1-Butanesulfonamide			X			X
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			X			X
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			X			X
NVHOS	1132933-86-8	Perfluoroethoxysulfonic acid; 1,1,2,2-Tetrafluoro-2-(1,2,2,2-tetrafluoroethoxy)ethane-1-sulfonic acid			X			X

PFAS Compound Acronym List			Methods					
Acronym	CAS #	Compound Name	SOP EU047	EPA 1633 (B-24)	EPA 1633X	EPA 537.1	EPA 533	EPA 8327*
PFDoS	79780-39-5	Perfluorododecane sulfonic acid		X	X			X
PFOA	16517-11-6	Perfluorooctadecanoic acid			X			
3:3 FTCA	356-02-5	2H,2H,3H,3H-Perfluorohexanoic acid		X	X			X
5:3 FTCA	914637-49-3	2H,2H,3H,3H-Perfluorooctanoic acid		X	X			X
7:3 FTCA	812-70-4	2H,2H,3H,3H-Perfluorodecanoic acid		X	X			X
N-AP-FHxSA	50598-28-2	N-(3-(Dimethylamino)propyl)tridecafluoro-1-hexanesulfonamide			X			X
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			X			X
BPAF	1478-61-1	Bisphenol AF			X			X
HQ-115	90076-65-6	Bis(trifluoromethane)sulfonimide lithium salt			X			X

* Accreditation pending

Results

Enthalpy Analytical

Job No.: 0325-870-1 PFAS by Isotope Dilution (non-potable water)

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

Summary

	Compound	CAS	032125-SO1 ng/L	032125-EO1 ng/L	
Acids	PFPrA	422-64-0	542 L	511 L	
	PFBA	375-22-4	3.16	ND U	
	PFPeA	2706-90-3	2.60	2.93	
	PFHxA	307-24-4	2.72	3.62	
	PFHpA	375-85-9	1.41	1.64	
	PFOA	335-67-1	2.58	3.51	
	PFNA	375-95-1	0.429 J	0.463 J	
	PFDA	335-76-2	0.103 L	0.134 L	
	PFUnDA	2058-94-8	ND U	ND U	
	PFDoDA	307-55-1	ND U	ND U	
	PFTriDA	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	1.89	2.46
		PFPeS	2706-91-4	0.227 J	0.486 J
PFHxS		355-46-4	2.28	3.19	
PFHpS		375-92-8	0.135 L	0.172 L	
PFOS		1763-23-1	6.88	7.78	
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	0.138 L	0.129 L	
8:2 FTS		39108-34-4	0.00489 L	0.00237 L	
10:2 FTS		120226-60-0	ND U	ND U	
Sulfonamido s	FBSA	30334-69-1	0.144 L	0.170 L	
	N-EiFOSA	4151-50-2	ND U	ND U	
	N-EiFOSAA	2991-50-6	ND U	ND U	
	N-EiFOSE	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	1.55	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	1.39	1.73	
	Hydro-EVE Acid	773804-62-9	0.0165 L	0.0171 L	
	NFDHA	151772-58-6	ND U	ND U	
	PEPA	267239-61-2	2.22	1.71	
	PFECA-G	801212-59-9	ND U	ND U	
	PFMOAA	674-13-5	6.92	5.20	
	PFMOBA	863090-89-5	ND U	ND U	
	PFMOPrA	377-73-1	ND U	ND U	
	PFO2HxA	39492-88-1	0.889	1.08	
	PFO3OA	39492-89-2	0.326 J	0.375 J	
	PFO4DA	39492-90-5	ND U	ND U	
	PFO5DA	39492-91-6	ND U	ND U	
	PMPA	13140-29-9	5.80	7.20	
R-EVE	2416366-22-6	1.18 J	0.920 L		
PFESAs	11Cl-PF3OUdS	763051-92-9	ND U	ND U	
	9Cl-PF3ONS	756426-58-1	ND U	ND U	
	Hydrolyzed PSDA	2416366-19-1	0.0172 L	0.0807 L	
	Nafion Byproduct 1 (PS Acid)	29311-67-9	ND U	ND U	
	Nafion Byproduct 2 (Hydro-PS Acid)	749836-20-2	0.270 L	0.116 L	
	NVHOS	1132933-86-8	ND U	ND U	
	PFEESA	113507-82-7	ND U	ND U	
	R-PSDA	2416366-18-0	1.15 L	0.656 L	
R-PSDCA	2416366-21-5	ND U	ND U		

Enthalpy Analytical

Job No.: 0325-870-1 PFAS by Isotope Dilution (non-potable water)
 Brunswick County Public Utilities - NC NORTHWEST WATER PLANT LELAND N.C.

Details

Sample Name	032125-SO1	Prep Batch	EU19156
Sampling Site		Analyst	jogres
Enthalpy ID	0325-870-001-1	Instrument	Pippin
Matrix	aqueous	Sample Vol mL	288.88
Sampling Date	2025-03-21 13:50	Extract Vol mL	0.4
Received Date	2025-03-21	Split Factor	N/A
Prep Date	2025-03-26 12:43	Method Code	EU-047-NPW
AnalysisDate	2025-03-28 04:00		
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	P270325037	3.16	0.220	0.554			
	PFPeA	2706-90-3	P270325037	2.60	0.158	0.554			
	PFFhxA	307-24-4	P270325037	2.72	0.185	0.554			
	PFFHpA	375-85-9	P270325037	1.41	0.194	0.554			
	PFOA	335-67-1	P270325037	2.58	0.127	0.554			
	PFNA	375-95-1	P270325037	0.429	0.125	0.554			J
	PFDA	335-76-2	P270325037	0.103	0.158	0.554			L
	PFUnDA	2058-94-8	P270325037	ND	0.125	0.554			U
	PFFDoDA	307-55-1	P270325037	ND	0.225	0.554			U
	PFTTrDA	72629-94-8	P270325037	ND	0.183	0.554			U
	PFTeDA	376-06-7	P270325037	ND	0.211	0.554			U
	PFFhxDA	67905-19-5	P270325037	ND	0.294	0.554			U
	Sulfonates	PFBS	375-73-5	P270325037	1.89	0.294	0.554		
PFPeS		2706-91-4	FR160425030	0.227	0.114	0.522			J
PFFhXS		355-46-4	P270325037	2.28	0.428	0.507			
PFFHpS		375-92-8	P270325037	0.135	0.268	0.528			L
PFOS		1763-23-1	P270325037	6.88	0.293	0.513			
PFNS		68259-12-1	P270325037	ND	0.172	0.533			U
PFDS		335-77-3	P270325037	ND	0.291	0.533			U
4:2 FTS		757124-72-4	P270325037	ND	0.0718	0.519			U
6:2 FTS		27619-97-2	P270325037	0.138	0.261	0.528			L
8:2 FTS		39108-34-4	P270325037	0.00489	0.124	0.531			L
10:2 FTS	120226-60-0	P270325037	ND	0.424	0.554			U	
Sulfonamidos	FBSA	30334-69-1	P270325037	0.144	0.263	0.554			L
	N-EiFOSA	4151-50-2	P270325037	ND	0.343	0.554			U
	N-EiFOSAA	2991-50-6	P270325037	ND	0.225	0.554			U
	N-EiFOSE	1691-99-2	P270325037	ND	0.848	2.49			U
	N-MeFOSA	31506-32-8	P270325037	ND	0.228	0.554			U
	N-MeFOSAA	2355-31-9	P270325037	ND	0.156	0.554			U
	N-MeFOSE	24448-09-7	P270325037	ND	0.526	2.49			U
	PFOSA	754-91-6	P270325037	1.55	0.0777	0.554			
	ADONA	919005-14-4	P270325037	ND	0.150	0.525			U
PFECAs	EVE Acid	69087-46-3	P270325037	ND	0.177	1.25			U
	HFPO-DA	13252-13-6	P270325037	1.39	0.0587	0.554			
	Hydro-EVE Acid	773804-62-9	P270325037	0.0165	0.182	0.554			L
	NFDHA	151772-58-6	P270325037	ND	0.116	0.554			U
	PEPA	267239-61-2	P270325037	2.22	0.104	0.554			
	PFECA-G	801212-59-9	P270325037	ND	0.0739	0.554			U
	PFMOAA	674-13-5	P270325037	6.92	0.280	0.554			
	PFMOBA	863090-89-5	P270325037	ND	0.929	1.25			U
	PFMOPrA	377-73-1	P270325037	ND	0.197	0.554			U
	PFO2HxA	39492-88-1	P270325037	0.889	0.178	0.554			
	PFO3OA	39492-89-2	P270325037	0.326	0.254	0.554			J
	PFO4DA	39492-90-5	P270325037	ND	0.438	2.77			U
	PFO5DA	39492-91-6	P270325037	ND	0.443	2.77			U
	PMPA	13140-29-9	P270325037	5.80	0.131	0.554			
	R-EVE	2416366-22-6	P270325037	1.18	0.919	1.25			J
PFESAs	11Cl-PF3OUdS	763051-92-9	P270325037	ND	0.261	0.522			U
	9Cl-PF3ONS	756426-58-1	P270325037	ND	0.355	0.516			U
	Hydrolyzed PSDA	2416366-19-1	P270325037	0.0172	0.369	0.554			L
	Nafion Byproduct 1 (PS Acid)	29311-67-9	P270325037	ND	0.296	0.554			U
	Nafion Byproduct 2 (Hydro-PS Acid)	749836-20-2	P270325037	0.270	0.459	0.554			L
	NVHOS	1132933-86-8	P270325037	ND	0.0853	0.554			U
	PFEESA	113507-82-7	P270325037	ND	0.167	0.554			U
	R-PSDA	2416366-18-0	P270325037	1.15	2.44	2.44			L
ES	R-PSDCA	2416366-21-5	P270325037	ND	0.234	0.554			U
	MPFBA		P270325037				20-150%	92.0%	
	M5PFPeA		P270325037				20-150%	60.4%	Ac
	M3PFBS		P270325037				20-150%	85.4%	Ac
	M2-4:2 FTS		P270325037				20-150%	113%	Ac
	M5PFFhxA		P270325037				20-150%	202%	Q
	M3HFPO-DA		P270325037				20-150%	175%	Q
M4PFFHpA		P270325037				20-150%	77.6%		

Enthalpy Analytical

Job No.: 0325-870-1 PFAS by Isotope Dilution (non-potable water)
 Brunswick County Public Utilities - NC NORTHWEST WATER PLANT LELAND N.C.

Details

Sample Name	032125-SO1		
Sampling Site			
Enthalpy ID	0325-870-001-1	Prep Batch	EU19156
Matrix	aqueous	Analyst	jogres
Sampling Date	2025-03-21 13:50	Instrument	Pippin
Received Date	2025-03-21	Sample Vol mL	288.88
Prep Date	2025-03-26 12:43	Extract Vol mL	0.4
AnalysisDate	2025-03-28 04:00	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		P270325037				20-150%	169%	Q
M2-6:2 FTS		P270325037				20-150%	191%	Q
M8PFOA		P270325037				20-150%	99.7%	
M9PFNA		P270325037				20-150%	61.9%	
M8PFOS		P270325037				20-150%	81.4%	
M2-8:2 FTS		P270325037				20-150%	81.5%	
M8FOSA-I		P270325037				20-150%	47.2%	
M6PFDA		P270325037				20-150%	84.6%	
d3-N-MeFOSAA		P270325037				20-150%	83.1%	
d5-N-EtFOSAA		P270325037				20-150%	76.3%	
M7PFUdA		P270325037				20-150%	73.8%	
MPFDoA		P270325037				20-150%	42.9%	
M2PFTeDA		P270325037				20-150%	14.5%	Q
d3-N-MeFOSA		P270325037				10-200%	0.267%	Q
d5-N-EtFOSA		P270325037				10-200%	0.265%	Q
d7-N-MeFOSE		P270325037				10-200%	17.7%	
d9-N-EtFOSE		P270325037				10-200%	13.8%	

Enthalpy Analytical

Job No.: 0325-870-1 PFAS by Isotope Dilution (non-potable water)
 Brunswick County Public Utilities - NC NORTHWEST WATER PLANT LELAND N.C.

Details

Sample Name	032125-SO1		
Sampling Site			
Enthalpy ID	0325-870-001-2	Prep Batch	EU19199
Matrix	aqueous	Analyst	zoeamdt
Sampling Date	2025-03-21 13:50	Instrument	Bumblebee
Received Date	2025-03-21	Sample Vol mL	0.1
Prep Date	2025-04-01 11:10	Extract Vol mL	0.2
AnalysisDate	2025-04-01 18:03	Split Factor	N/A
SampleType	Sample	Method Code	EU-047-NPW
Bottle ID	B		

	Compound	CAS	Injection File Name	Sample Concentration ng/L	LOD ng/L	LOQ ng/L	Recovery Limits	Recovery	Flags
Acids	PFPfA	422-64-0	B010425-04011803	542	700	1530			L
ES	13C3-PFPfA		B010425-04011803				20-150%	92.9%	

Enthalpy Analytical

Job No.: 0325-870-1 PFAS by Isotope Dilution (non-potable water)
 Brunswick County Public Utilities - NC NORTHWEST WATER PLANT LELAND N.C.

Details

Sample Name	032125-EO1	Prep Batch	EU19156
Sampling Site		Analyst	jogres
Enthalpy ID	0325-870-002-1	Instrument	Pippin
Matrix	aqueous	Sample Vol mL	284.31
Sampling Date	2025-03-21 13:50	Extract Vol mL	0.4
Received Date	2025-03-21	Split Factor	N/A
Prep Date	2025-03-26 12:43	Method Code	EU-047-NPW
AnalysisDate	2025-03-28 04:22		
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	P270325038	ND	0.223	0.563			U
	PFPeA	2706-90-3	P270325038	2.93	0.161	0.563			
	PFFhxA	307-24-4	P270325038	3.62	0.188	0.563			
	PFFHpA	375-85-9	P270325038	1.64	0.197	0.563			
	PFOA	335-67-1	P270325038	3.51	0.129	0.563			
	PFNA	375-95-1	P270325038	0.463	0.127	0.563			J
	PFDA	335-76-2	P270325038	0.134	0.161	0.563			L
	PFUnDA	2058-94-8	P270325038	ND	0.127	0.563			U
	PFDODA	307-55-1	P270325038	ND	0.229	0.563			U
	PFTrDA	72629-94-8	P270325038	ND	0.186	0.563			U
	PFTeDA	376-06-7	P270325038	ND	0.215	0.563			U
	PFFhxDA	67905-19-5	P270325038	ND	0.299	0.563			U
	Sulfonates	PFBS	375-73-5	P270325038	2.46	0.299	0.563		
PFPeS		2706-91-4	FR160425032	0.486	0.116	0.530			J
PFFhXS		355-46-4	P270325038	3.19	0.434	0.515			
PFFHpS		375-92-8	P270325038	0.172	0.273	0.536			L
PFOS		1763-23-1	P270325038	7.78	0.297	0.521			
PFNS		68259-12-1	P270325038	ND	0.175	0.542			U
PFDS		335-77-3	P270325038	ND	0.295	0.542			U
4:2 FTS		757124-72-4	P270325038	ND	0.0730	0.527			U
6:2 FTS		27619-97-2	P270325038	0.129	0.266	0.536			L
8:2 FTS		39108-34-4	P270325038	0.00237	0.126	0.539			L
10:2 FTS	120226-60-0	P270325038	ND	0.431	0.563			U	
Sulfonamidos	FBSA	30334-69-1	P270325038	0.170	0.267	0.563			L
	N-EiFOSA	4151-50-2	P270325038	ND	0.348	0.563			U
	N-EiFOSAA	2991-50-6	P270325038	ND	0.229	0.563			U
	N-EiFOSE	1691-99-2	P270325038	ND	0.862	2.53			U
	N-MeFOSA	31506-32-8	P270325038	ND	0.232	0.563			U
	N-MeFOSAA	2355-31-9	P270325038	ND	0.158	0.563			U
	N-MeFOSE	24448-09-7	P270325038	ND	0.535	2.53			U
	PFOSA	754-91-6	P270325038	ND	0.0790	0.563			U
	PFECAs	ADONA	919005-14-4	P270325038	ND	0.152	0.533		
EVE Acid		69087-46-3	P270325038	ND	0.179	1.27			U
HFPO-DA		13252-13-6	P270325038	1.73	0.0596	0.563			
Hydro-EVE Acid		773804-62-9	P270325038	0.0171	0.185	0.563			L
NFDHA		151772-58-6	P270325038	ND	0.118	0.563			U
PEPA		267239-61-2	P270325038	1.71	0.106	0.563			
PFECA-G		801212-59-9	P270325038	ND	0.0751	0.563			U
PFMOAA		674-13-5	P270325038	5.20	0.285	0.563			
PFMOBA		863090-89-5	P270325038	ND	0.944	1.27			U
PFMOPrA		377-73-1	P270325038	ND	0.200	0.563			U
PFO2HxA		39492-88-1	P270325038	1.08	0.181	0.563			
PFO3OA		39492-89-2	P270325038	0.375	0.259	0.563			J
PFO4DA		39492-90-5	P270325038	ND	0.445	2.81			U
PFO5DA		39492-91-6	P270325038	ND	0.450	2.81			U
PMPA		13140-29-9	P270325038	7.20	0.133	0.563			
R-EVE		2416366-22-6	P270325038	0.920	0.934	1.27			L
PFESAs		11CI-PF3OUdS	763051-92-9	P270325038	ND	0.266	0.530		
	9CI-PF3ONS	756426-58-1	P270325038	ND	0.361	0.524			U
	Hydrolyzed PSDA	2416366-19-1	P270325038	0.0807	0.375	0.563			L
	Nafion Byproduct 1 (PS Acid)	29311-67-9	P270325038	ND	0.301	0.563			U
	Nafion Byproduct 2 (Hydro-PS Acid)	749836-20-2	P270325038	0.116	0.466	0.563			L
	NVHOS	1132933-86-8	P270325038	ND	0.0867	0.563			U
	PFEESA	113507-82-7	P270325038	ND	0.169	0.563			U
	R-PSDA	2416366-18-0	P270325038	0.656	2.48	2.48			L
	R-PSDCA	2416366-21-5	P270325038	ND	0.237	0.563			U
ES	MPFBA		P270325038				20-150%	80.5%	
	M5PFPeA		P270325038				20-150%	299%	Q
	M3PFBS		P270325038				20-150%	93.3%	Ac
	M2-4:2 FTS		P270325038				20-150%	229%	Q
	M5PFFhxA		P270325038				20-150%	162%	Q
	M3HFPO-DA		P270325038				20-150%	153%	Q
	M4PFFHpA		P270325038				20-150%	70.9%	

Enthalpy Analytical

Job No.: 0325-870-1 PFAS by Isotope Dilution (non-potable water)
 Brunswick County Public Utilities - NC NORTHWEST WATER PLANT LELAND N.C.

Details

Sample Name	032125-EO1		
Sampling Site			
Enthalpy ID	0325-870-002-1	Prep Batch	EU19156
Matrix	aqueous	Analyst	jogres
Sampling Date	2025-03-21 13:50	Instrument	Pippin
Received Date	2025-03-21	Sample Vol mL	284.31
Prep Date	2025-03-26 12:43	Extract Vol mL	0.4
AnalysisDate	2025-03-28 04:22	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		P270325038				20-150%	125%	
M2-6:2 FTS		P270325038				20-150%	150%	Q
M8PFOA		P270325038				20-150%	107%	
M9PFNA		P270325038				20-150%	88.3%	
M8PFOS		P270325038				20-150%	104%	
M2-8:2 FTS		P270325038				20-150%	112%	
M8FOSA-I		P270325038				20-150%	71.1%	
M6PFDA		P270325038				20-150%	108%	
d3-N-MeFOSAA		P270325038				20-150%	123%	
d5-N-EtFOSAA		P270325038				20-150%	122%	
M7PFUdA		P270325038				20-150%	106%	
MPFDoA		P270325038				20-150%	68.8%	
M2PFTeDA		P270325038				20-150%	19.7%	Q
d3-N-MeFOSA		P270325038				10-200%	3.07%	Q
d5-N-EtFOSA		P270325038				10-200%	3.30%	Q
d7-N-MeFOSE		P270325038				10-200%	40.7%	
d9-N-EtFOSE		P270325038				10-200%	26.9%	

Enthalpy Analytical

Job No.: 0325-870-1 PFAS by Isotope Dilution (non-potable water)
 Brunswick County Public Utilities - NC NORTHWEST WATER PLANT LELAND N.C.

Details

Sample Name	032125-EO1		
Sampling Site			
Enthalpy ID	0325-870-002-2	Prep Batch	EU19199
Matrix	aqueous	Analyst	zoeamdt
Sampling Date	2025-03-21 13:50	Instrument	Bumblebee
Received Date	2025-03-21	Sample Vol mL	0.1
Prep Date	2025-04-01 11:10	Extract Vol mL	0.2
AnalysisDate	2025-04-01 18:15	Split Factor	N/A
SampleType	Sample	Method Code	EU-047-NPW
Bottle ID	B		

	Compound	CAS	Injection File Name	Sample Concentration ng/L	LOD ng/L	LOQ ng/L	Recovery Limits	Recovery	Flags
Acids	PFPrA	422-64-0	B010425-04011815	511	700	1530			L
ES	13C3-PFPrA		B010425-04011815				20-150%	97.4%	

QC Data

Enthalpy Analytical

Job No.: 0325-870-1 PFAS by Isotope Dilution (non-potable water)
 Brunswick County Public Utilities - NC NORTHWEST WATER PLANT LELAND N.C.

Details

Sample Name	MB_19156_PFA5	Prep Batch	EU19156
Sampling Site		Analyst	jogres
Enthalpy ID	MB_19156_PFA5	Instrument	Pippin
Matrix	aqueous	Sample Vol mL	250
Sampling Date		Extract Vol mL	0.4
Received Date		Split Factor	N/A
Prep Date	2025-03-26 12:43	Method Code	EU-047-NPW
AnalysisDate	2025-03-27 23:50		
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	P270325026	ND	0.254	0.640			U	
	PFPeA	2706-90-3	P270325026	ND	0.183	0.640			U	
	PFFhxA	307-24-4	P270325026	ND	0.214	0.640			U	
	PFFHpA	375-85-9	P270325026	ND	0.224	0.640			U	
	PFOA	335-67-1	P270325026	ND	0.146	0.640			U	
	PFNA	375-95-1	P270325026	ND	0.145	0.640			U	
	PFDA	335-76-2	P270325026	ND	0.183	0.640			U	
	PFUnDA	2058-94-8	P270325026	ND	0.145	0.640			U	
	PFDODA	307-55-1	P270325026	ND	0.260	0.640			U	
	PFTrDA	72629-94-8	P270325026	ND	0.212	0.640			U	
	PFTeDA	376-06-7	P270325026	ND	0.244	0.640			U	
	PFFhxDA	67905-19-5	P270325026	ND	0.340	0.640			U	
	Sulfonates	PFBS	375-73-5	P270325026	ND	0.340	0.640			U
		PFPeS	2706-91-4	FR160425019	ND	0.131	0.603			U
PFFhXS		355-46-4	P270325026	ND	0.494	0.586			U	
PFFHpS		375-92-8	P270325026	ND	0.310	0.610			U	
PFOS		1763-23-1	P270325026	ND	0.338	0.593			U	
PFNS		68259-12-1	P270325026	ND	0.199	0.616			U	
PFDS		335-77-3	P270325026	ND	0.336	0.616			U	
4:2 FTS		757124-72-4	P270325026	ND	0.0830	0.600			U	
6:2 FTS		27619-97-2	P270325026	0.0124	0.302	0.610			L	
8:2 FTS		39108-34-4	P270325026	0.00210	0.143	0.613			L	
10:2 FTS	120226-60-0	P270325026	ND	0.490	0.640			U		
Sulfonamidos	FBSA	30334-69-1	P270325026	ND	0.304	0.640			U	
	N-EiFOSA	4151-50-2	P270325026	ND	0.396	0.640			U	
	N-EiFOSAA	2991-50-6	P270325026	ND	0.260	0.640			U	
	N-EiFOSE	1691-99-2	P270325026	ND	0.980	2.88			U	
	N-MeFOSA	31506-32-8	P270325026	ND	0.264	0.640			U	
	N-MeFOSAA	2355-31-9	P270325026	ND	0.180	0.640			U	
	N-MeFOSE	24448-09-7	P270325026	ND	0.608	2.88			U	
	PFOSA	754-91-6	P270325026	ND	0.0898	0.640			U	
PFECAs	ADONA	919005-14-4	P270325026	ND	0.173	0.606			U	
	EVE Acid	69087-46-3	P270325026	ND	0.204	1.44			U	
	HFPO-DA	13252-13-6	P270325026	ND	0.0678	0.640			U	
	Hydro-EVE Acid	773804-62-9	P270325026	ND	0.210	0.640			U	
	NFDHA	151772-58-6	P270325026	ND	0.135	0.640			U	
	PEPA	267239-61-2	P270325026	ND	0.120	0.640			U	
	PFECA-G	801212-59-9	P270325026	ND	0.0854	0.640			U	
	PFMOAA	674-13-5	P270325026	ND	0.324	0.640			U	
	PFMOBA	863090-89-5	P270325026	ND	1.07	1.44			U	
	PFMOPrA	377-73-1	P270325026	ND	0.228	0.640			U	
	PFO2HxA	39492-88-1	P270325026	ND	0.206	0.640			U	
	PFO3OA	39492-89-2	P270325026	ND	0.294	0.640			U	
	PFO4DA	39492-90-5	P270325026	ND	0.506	3.20			U	
	PFO5DA	39492-91-6	P270325026	ND	0.512	3.20			U	
	PMPA	13140-29-9	P270325026	ND	0.151	0.640			U	
	R-EVE	2416366-22-6	P270325026	ND	1.06	1.44			U	
	PFESAs	11Cl-PF3OUdS	763051-92-9	P270325026	ND	0.302	0.603			U
9Cl-PF3ONS		756426-58-1	P270325026	ND	0.410	0.596			U	
Hydrolyzed PSDA		2416366-19-1	P270325026	ND	0.426	0.640			U	
Nafion Byproduct 1 (PS Acid)		29311-67-9	P270325026	ND	0.342	0.640			U	
Nafion Byproduct 2 (Hydro-PS Acid)		749836-20-2	P270325026	ND	0.530	0.640			U	
NVHOS		1132933-86-8	P270325026	ND	0.0986	0.640			U	
PFEESA		113507-82-7	P270325026	ND	0.192	0.640			U	
R-PSDA		2416366-18-0	P270325026	ND	2.82	2.82			U	
ES	R-PSDCA	2416366-21-5	P270325026	ND	0.270	0.640			U	
	MPFBA		P270325026				20-150%	92.8%		
	M5PFPeA		P270325026				20-150%	122%		
	M3PFBS		P270325026				20-150%	117%		
	M2-4:2 FTS		P270325026				20-150%	116%		
	M5PFFhxA		P270325026				20-150%	108%		
	M3HFPO-DA		P270325026				20-150%	106%		
M4PFFHpA		P270325026				20-150%	80.8%			

Enthalpy Analytical

Job No.: 0325-870-1 PFAS by Isotope Dilution (non-potable water)
 Brunswick County Public Utilities - NC NORTHWEST WATER PLANT LELAND N.C.

Details

Sample Name	MB_19156_PFA5	Prep Batch	EU19156
Sampling Site		Analyst	jogres
Enthalpy ID	MB_19156_PFA5	Instrument	Pippin
Matrix	aqueous	Sample Vol mL	250
Sampling Date		Extract Vol mL	0.4
Received Date		Split Factor	N/A
Prep Date	2025-03-26 12:43	Method Code	EU-047-NPW
AnalysisDate	2025-03-27 23:50		
SampleType	Blank		
Bottle ID	-		

Compound	CAS	Injection File Name	Sample Concentration ng/L	LOD ng/L	LOQ ng/L	Recovery Limits	Recovery	Flags
M3PFHxS		P270325026				20-150%	97.5%	
M2-6:2 FTS		P270325026				20-150%	118%	
M8PFOA		P270325026				20-150%	96.5%	
M9PFNA		P270325026				20-150%	85.0%	
M8PFOS		P270325026				20-150%	90.7%	
M2-8:2 FTS		P270325026				20-150%	109%	
M8FOSA-I		P270325026				20-150%	58.7%	
M6PFDA		P270325026				20-150%	97.3%	
d3-N-MeFOSAA		P270325026				20-150%	87.0%	
d5-N-EtFOSAA		P270325026				20-150%	84.4%	
M7PFUdA		P270325026				20-150%	87.5%	
MPFDoA		P270325026				20-150%	70.4%	
M2PFTeDA		P270325026				20-150%	30.1%	
d3-N-MeFOSA		P270325026				10-200%	0.598%	Q
d5-N-EtFOSA		P270325026				10-200%	0.680%	Q
d7-N-MeFOSE		P270325026				10-200%	34.4%	
d9-N-EtFOSE		P270325026				10-200%	27.8%	

Enthalpy Analytical

Job No.: 0325-870-1 PFAS by Isotope Dilution (non-potable water)
 Brunswick County Public Utilities - NC NORTHWEST WATER PLANT LELAND N.C.

Details

Sample Name	MB_19199_PFAS		
Sampling Site			
Enthalpy ID	MB_19199_PFAS	Prep Batch	EU19199
Matrix	aqueous	Analyst	zoeamdt
Sampling Date		Instrument	Bumblebee
Received Date		Sample Vol mL	0.1
Prep Date	2025-04-01 11:10	Extract Vol mL	0.2
AnalysisDate	2025-04-01 17:28	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	B010425-04011728	522	700	1530			L
ES	13C3-PFPrA		B010425-04011728				20-150%	97.7%	

Enthalpy Analytical

Job No.: 0325-870-1 PFAS by Isotope Dilution (non-potable water)

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

Enthalpy ID	OPR_19156_PFAS	Prep Batch	EU19156	Sample Vol (mL)	250
Sample Name	OPR_19156_PFAS	Prep Date	2025-03-26 12:43	Extract Vol (mL)	0.4
Matrix	aqueous	Analysis Date	2025-03-28 00:12	Split Factor	N/A
Sampling Date		Analyst	jogres	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	P270325027	19.2	0.254	0.640	47.9-144%	96.0%		
	PFPeA	2706-90-3	P270325027	18.1	0.183	0.640	41.7-159%	90.4%		
	PFHxA	307-24-4	P270325027	18.6	0.214	0.640	43.2-154%	93.0%		
	PFHpA	375-85-9	P270325027	17.8	0.224	0.640	42.1-155%	89.1%		
	PFOA	335-67-1	P270325027	17.9	0.146	0.640	51.1-148%	89.4%		
	PFNA	375-95-1	P270325027	18.5	0.145	0.640	51.6-153%	92.4%		
	PFDA	335-76-2	P270325027	17.6	0.183	0.640	44.5-156%	88.1%		
	PFUnDA	2058-94-8	P270325027	18.0	0.145	0.640	40.3-156%	90.2%		
	PFDoDA	307-55-1	P270325027	19.3	0.260	0.640	40.4-158%	96.3%		
	PFTTrDA	72629-94-8	P270325027	38.1	0.212	0.640	42.2-201%	191%		
	PFTeDA	376-06-7	P270325027	16.7	0.244	0.640	43-162%	83.4%		
	Sulfonates	PFBS	375-73-5	P270325027	16.0	0.340	0.640	42.7-155%	90.3%	
		PFPeS	2706-91-4	FR160425020	17.8	0.131	0.603	40.3-152%	94.8%	
		PFHs	355-46-4	P270325027	14.6	0.494	0.586	45-148%	79.8%	
PFHpS		375-92-8	P270325027	19.2	0.310	0.610	39.8-166%	101%		
PFOS		1763-23-1	P270325027	16.3	0.338	0.593	59.2-132%	87.9%		
PFNS		68259-12-1	P270325027	16.9	0.199	0.616	38.1-153%	88.0%		
PFDS		335-77-3	P270325027	14.3	0.336	0.616	28.6-148%	74.1%		
4:2 FTS		757124-72-4	P270325027	18.4	0.0830	0.600	41.5-157%	98.3%		
6:2 FTS		27619-97-2	P270325027	17.4	0.302	0.610	44.5-160%	91.7%		
8:2 FTS		39108-34-4	P270325027	16.1	0.143	0.613	39.4-166%	83.9%		
Sulfonamidos	N-EtFOSA	4151-50-2	P270325027	26.9	0.396	0.640	26.7-172%	134%		
	N-EtFOSAA	2991-50-6	P270325027	18.0	0.260	0.640	42.8-156%	89.9%		
	N-EtFOSE	1691-99-2	P270325027	96.0	0.980	2.88	38.9-161%	107%		
	N-MeFOSA	31506-32-8	P270325027	25.1	0.264	0.640	26.4-183%	125%		
	N-MeFOSAA	2355-31-9	P270325027	19.2	0.180	0.640	42-155%	95.9%		
	N-MeFOSE	24448-09-7	P270325027	88.1	0.608	2.88	37.6-155%	97.9%		
	PFOSA	754-91-6	P270325027	14.9	0.0898	0.640	39.1-158%	74.4%		
PFECAs	ADONA	919005-14-4	P270325027	16.3	0.173	0.606	32.2-151%	81.3%		
	HFPO-DA	13252-13-6	P270325027	19.2	0.0678	0.640	61.8-131%	96.1%		
PFESAs	11Cl-PF3OUdS	763051-92-9	P270325027	13.2	0.302	0.603	21.8-141%	66.0%		
	9Cl-PF3ONS	756426-58-1	P270325027	17.6	0.410	0.596	37.6-146%	88.0%		
ES	MPFBA		P270325027				20-150%	94.5%		
	M5PFPeA		P270325027				20-150%	130%		
	M3PFBS		P270325027				20-150%	134%		
	M2-4:2 FTS		P270325027				20-150%	116%		
	M5PFHxA		P270325027				20-150%	108%		
	M3HFPO-DA		P270325027				20-150%	109%		
	M4PFHpA		P270325027				20-150%	84.1%		
	M3PFHxS		P270325027				20-150%	113%		
	M2-6:2 FTS		P270325027				20-150%	116%		
	M8PFOA		P270325027				20-150%	94.8%		
	M9PFNA		P270325027				20-150%	80.7%		
	M8PFOS		P270325027				20-150%	90.4%		
	M2-8:2 FTS		P270325027				20-150%	98.3%		
	M8FOSA-I		P270325027				20-150%	57.6%		
	M6PFDA		P270325027				20-150%	92.8%		
	d3-N-MeFOSAA		P270325027				20-150%	85.8%		
	d5-N-EtFOSAA		P270325027				20-150%	84.1%		
	M7PFUdA		P270325027				20-150%	79.9%		
	MPFDaA		P270325027				20-150%	58.7%		
	M2PFTeDA		P270325027				20-150%	20.7%		
	d3-N-MeFOSA		P270325027				10-200%	0.557%	Q	
d5-N-EtFOSA		P270325027				10-200%	0.463%	Q		
d7-N-MeFOSE		P270325027				10-200%	43.3%			
d9-N-EtFOSE		P270325027				10-200%	33.7%			

Enthalpy Analytical

Job No.: 0325-870-1 PFAS by Isotope Dilution (non-potable water)

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

Enthalpy ID	OPR_19199_PFAS	Prep Batch	EU19199	Sample Vol (mL)	0.08
Sample Name	OPR_19199_PFAS	Prep Date	2025-04-01 11:10	Extract Vol (mL)	0.2
Matrix	aqueous	Analysis Date	2025-04-01 17:40	Split Factor	N/A
Sampling Date		Analyst	zoeardt	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	B010425-04011740	24300	875	1910	40-150%	97.2%	
ES	13C3-PFPrA		B010425-04011740				20-150%	89.2%	

Sample Custody



0325-870

Chain of Custody Record

Enthalpy Ultratrace Job#: _____ COC Page 1 of 1

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 Cndy.James@enthalpy.com.

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	# of Bottles	# of Jars	# of Bags	# Other	Method 1613	Method 8290	Method 1668A/B/C PCE	PFAS by LC/MS/MS	PAHs by HRC/HRMS	Sample on Hold	Method 23	ALL PFAS	Notes:	
032125-SO1	3/21/2025	1350PM	250 ml	G	NW	2												X	Please Add PFPrA and
032125-EO1	3/21/2025	1350PM	250 ml	G	DW	2												X	PFHpA To The Testing.
																			Mark Hager Knows About
																			This If you Have Questions

Relinquished By:	Date: <u>3/21/2025</u>	Received By:	Date: <u>3/21/25</u>	Time: <u>14:54</u>	Sample Temperature Upon Receipt:
BILLY BENTON					<input checked="" type="checkbox"/> Iced <input type="checkbox"/> Ambient °C <u>5.9</u>
					<input type="checkbox"/> Iced <input type="checkbox"/> Ambient °C _____
					<input type="checkbox"/> Iced <input type="checkbox"/> Ambient °C _____

JOB ID: Date/Time: Initials:
 OR
 Client:

Cooler of

Temp °C: Thermometer ID:

Received via
 FedEx
 UPS
 DHL
 USPS
 Courier
 Other

<i>Check one</i>	On ice: <input checked="" type="checkbox"/>	<i>Check one</i>	in a Box: <input type="checkbox"/>	Yes	No
	Melted ice: <input type="checkbox"/>		in a Cooler: <input checked="" type="checkbox"/>	Cooler seals: <input type="checkbox"/>	<input checked="" type="checkbox"/>
	Ambient: <input type="checkbox"/>		Cooler in Box: <input type="checkbox"/>	Sample seals: <input type="checkbox"/>	<input checked="" type="checkbox"/>
				Good condition: <input checked="" type="checkbox"/>	<input type="checkbox"/>

Comment:

Temp °C: Thermometer ID:

Cooler of

Received via
 FedEx
 UPS
 DHL
 USPS
 Courier
 Other

<i>Check one</i>	On ice: <input type="checkbox"/>	<i>Check one</i>	in a Box: <input type="checkbox"/>	Yes	No
	Melted ice: <input type="checkbox"/>		in a Cooler: <input type="checkbox"/>	Cooler seals: <input type="checkbox"/>	<input type="checkbox"/>
	Ambient: <input type="checkbox"/>		Cooler in Box: <input type="checkbox"/>	Sample seals: <input type="checkbox"/>	<input type="checkbox"/>
				Good condition: <input type="checkbox"/>	<input type="checkbox"/>

Comment:

Temp °C: Thermometer ID:

Cooler of

Received via
 FedEx
 UPS
 DHL
 USPS
 Courier
 Other

<i>Check one</i>	On ice: <input type="checkbox"/>	<i>Check one</i>	in a Box: <input type="checkbox"/>	Yes	No
	Melted ice: <input type="checkbox"/>		in a Cooler: <input type="checkbox"/>	Cooler seals: <input type="checkbox"/>	<input type="checkbox"/>
	Ambient: <input type="checkbox"/>		Cooler in Box: <input type="checkbox"/>	Sample seals: <input type="checkbox"/>	<input type="checkbox"/>
				Good condition: <input type="checkbox"/>	<input type="checkbox"/>

Comment: