

# Brunswick County Public Utilities

PO Box 249  
Bolivia, NC 28422-0249

## LELAND, NC

Client Project# NORTHWEST WATER PLANT  
Samples Received: 7/19/2024

### Analytical Report 0724-853

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

Custom List

Report Issue Date: 8/21/2024

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 29 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:



Amanda Valois, QA Associate



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# Summary of Results

# Enthalpy Analytical

Job No.: 0724-853-1 PFAS by Isotope Dilution (non-potable water)  
 Brunswick County Public Utilities - NC NORTHWEST WATER PLANT LELAND N.C.

## Summary

	Compound	CAS	071924-S01 ng/L	071924-E01 ng/L	
Acids	PFBA	375-22-4	6.31	ND U	
	PFPeA	2706-90-3	10.3	12.2	
	PFHxA	307-24-4	8.44	9.37	
	PFHpA	375-85-9	3.39	3.59	
	PFOA	335-67-1	6.87	7.07	
	PFNA	375-95-1	0.879	0.791	
	PFDA	335-76-2	0.406 J	0.471 J	
	PFUnDA	2058-94-8	0.0151 L	0.0161 L	
	PFDoDA	307-55-1	ND U	ND U	
	PFTTrDA	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	7.01	6.80
		PFPeS	2706-91-4	0.857	0.800
PFHxS		355-46-4	4.16	4.67	
PFHpS		375-92-8	0.384 J	0.193 L	
PFOS		1763-23-1	13.9	12.8	
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	0.0546 L	0.0759 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	0.836	0.662	
	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	ND U	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	2.25	2.43	
	Hydro-EVE Acid	773804-62-9	ND U	ND U	
	NFDHA	151772-58-6	ND U	ND U	
	PEPA	267239-61-2	2.10	1.61	
	PFECA-G	801212-59-9	ND U	ND U	
	PFMOAA	674-13-5	11.2	7.51	
	PFMOBA	863090-89-5	ND U	ND U	
	PFMOPrA	377-73-1	ND U	ND U	
	PFO2HxA	39492-88-1	ND U	ND U	
	PFO3OA	39492-89-2	ND U	ND U	
	PFO4DA	39492-90-5	ND U	ND U	
	PFO5DA	39492-91-6	ND U	ND U	
	PMPA	13140-29-9	4.87	4.74	
	R-EVE	2416366-22-6	2.28	2.38	
	PFESAs	11Cl-PF3OUds	763051-92-9	ND U	ND U
9Cl-PF3ONS		756426-58-1	ND U	ND U	
Hydrolyzed PSDA		2416366-19-1	0.730	1.06	
Nafion Byproduct 1 (PS Acid)		29311-67-9	ND U	ND U	
Nafion Byproduct 2 (Hydro-PS Acid)		749836-20-2	ND U	0.222 L	
NVHOS		1132933-86-8	ND U	ND U	
PFEESA		113507-82-7	ND U	ND U	
R-PSDA		2416366-18-0	2.77	2.66	
R-PSDCA	2416366-21-5	ND U	ND U		

## Enthalpy Analytical

Job No.: 0724-853-2 PFAS by Isotope Dilution (non-potable water)

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

### Summary

	Compound	CAS	071924-S01 ng/L	071924-E01 ng/L
Acids	PFPrA	422-64-0	ND U	ND U

# Detailed Results

# Enthalpy Analytical

Job No.: 0724-853-1 PFAS by Isotope Dilution (non-potable water)  
 Brunswick County Public Utilities - NC NORTHWEST WATER PLANT LELAND N.C.

## Details

Sample Name	071924-S01	Prep Batch	EU17824
Sampling Site		Analyst	jacksullivan
Enthalpy ID	0724-853-001-1A	Instrument	Sauron
Matrix	aqueous	Sample Vol mL	273.01
Sampling Date	2024-07-19 08:00	Extract Vol mL	0.4
Received Date	2024-07-19	Split Factor	N/A
Prep Date	2024-07-24 13:30	Method Code	EU-047-NPW
AnalysisDate	2024-07-25 23:51		
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	S250724023	6.31	0.233	0.586				
	PFPeA	2706-90-3	S250724023	10.3	0.168	0.586				
	PFFhxA	307-24-4	S290724005	8.44	0.196	0.586				
	PFFHpA	375-85-9	S250724023	3.39	0.205	0.586				
	PFOA	335-67-1	S250724023	6.87	0.134	0.586				
	PFNA	375-95-1	S250724023	0.879	0.132	0.586				
	PFDA	335-76-2	S250724023	0.406	0.168	0.586			J	
	PFUnDA	2058-94-8	S250724023	0.0151	0.132	0.586			L	
	PFDODA	307-55-1	S250724023	ND	0.238	0.586			U	
	PFTrDA	72629-94-8	S250724023	ND	0.194	0.586			U	
	PFTeDA	376-06-7	S250724023	ND	0.223	0.586			U	
	PFFhxDA	67905-19-5	S250724023	ND	0.311	0.586			U	
	Sulfonates	PFBS	375-73-5	S250724023	7.01	0.311	0.586			
PFPeS		2706-91-4	S250724023	0.857	0.120	0.552				
PFFhXS		355-46-4	S250724023	4.16	0.452	0.537				
PFFHpS		375-92-8	S250724023	0.384	0.284	0.558			J	
PFOS		1763-23-1	S250724023	13.9	0.310	0.543				
PFNS		68259-12-1	S250724023	ND	0.182	0.564			U	
PFDS		335-77-3	S250724023	ND	0.308	0.564			U	
4:2 FTS		757124-72-4	S250724023	ND	0.0760	0.549			U	
6:2 FTS		27619-97-2	S250724023	0.0546	0.277	0.558			L	
8:2 FTS		39108-34-4	S250724023	ND	0.131	0.561			U	
10:2 FTS	120226-60-0	S250724023	ND	0.449	0.586			U		
Sulfonamidos	FBSA	30334-69-1	S250724023	0.836	0.278	0.586				
	N-EiFOSA	4151-50-2	S250724023	ND	0.363	0.586			U	
	N-EiFOSAA	2991-50-6	S250724023	ND	0.238	0.586			U	
	N-EiFOSE	1691-99-2	S250724023	ND	0.897	2.64			U	
	N-MeFOSA	31506-32-8	S250724023	ND	0.242	0.586			U	
	N-MeFOSAA	2355-31-9	S250724023	ND	0.165	0.586			U	
	N-MeFOSE	24448-09-7	S250724023	ND	0.557	2.64			U	
	PFOSA	754-91-6	S250724023	ND	0.0822	0.586			U	
	ADONA	919005-14-4	S250724023	ND	0.159	0.555			U	
	EVE Acid	69087-46-3	S250724023	ND	0.187	1.32			U	
PFECAs	HFPO-DA	13252-13-6	S250724023	2.25	0.0621	0.586				
	Hydro-EVE Acid	773804-62-9	S250724023	ND	0.192	0.586			U	
	NFDHA	151772-58-6	S250724023	ND	0.123	0.586			U	
	PEPA	267239-61-2	S250724023	2.10	0.110	0.586				
	PFECA-G	801212-59-9	S250724023	ND	0.0782	0.586			U	
	PFMOAA	674-13-5	S290724005	11.2	0.297	0.586				
	PFMOBA	863090-89-5	S250724023	ND	0.983	1.32			U	
	PFMOPrA	377-73-1	S250724023	ND	0.209	0.586			U	
	PFO2HxA	39492-88-1	S250724023	ND	0.189	0.586			U	
	PFO3OA	39492-89-2	S250724023	ND	0.269	0.586			U	
	PFO4DA	39492-90-5	S250724023	ND	0.463	2.93			U	
	PFO5DA	39492-91-6	S250724023	ND	0.469	2.93			U	
	PMPA	13140-29-9	S250724023	4.87	0.138	0.586				
	R-EVE	2416366-22-6	S250724023	2.28	0.972	1.32				
	PFESAs	11Cl-PF3OUdS	763051-92-9	S250724023	ND	0.277	0.552			U
		9Cl-PF3ONS	756426-58-1	S250724023	ND	0.375	0.546			U
		Hydrolyzed PSDA	2416366-19-1	S250724023	0.730	0.390	0.586			
Nafion Byproduct 1 (PS Acid)		29311-67-9	S250724023	ND	0.313	0.586			U	
Nafion Byproduct 2 (Hydro-PS Acid)		749836-20-2	S250724023	ND	0.485	0.586			U	
NVHOS		1132933-86-8	S250724023	ND	0.0903	0.586			U	
PFEESA		113507-82-7	S250724023	ND	0.176	0.586			U	
R-PSDA		2416366-18-0	S250724023	2.77	2.58	2.58				
R-PSDCA		2416366-21-5	S250724023	ND	0.247	0.586			U	
ES	MPFBA		S250724023				20-150%	104.9%		
	M5PFPeA		S250724023				20-150%	203.5%	Q	
	M3PFBS		S250724023				20-150%	244.4%	Q	
	M2-4:2 FTS		S250724023				20-150%	148.1%		
	M5PFFhxA		S250724023				20-150%	104.2%		
	M3HFPO-DA		S250724023				20-150%	95.6%		
	M4PFFHpA		S250724023				20-150%	97.6%		

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Job No.: 0724-853-1 PFAS by Isotope Dilution (non-potable water)  
 Brunswick County Public Utilities - NC NORTHWEST WATER PLANT LELAND N.C.

## Details

Sample Name	071924-S01		
Sampling Site			
Enthalpy ID	0724-853-001-1A	Prep Batch	EU17824
Matrix	aqueous	Analyst	jacksullivan
Sampling Date	2024-07-19 08:00	Instrument	Sauron
Received Date	2024-07-19	Sample Vol mL	273.01
Prep Date	2024-07-24 13:30	Extract Vol mL	0.4
AnalysisDate	2024-07-25 23:51	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		S250724023				20-150%	104.8%	
M2-6:2 FTS		S250724023				20-150%	94.7%	
M8PFOA		S250724023				20-150%	79.8%	
M9PFNA		S250724023				20-150%	61.2%	
M8PFOS		S250724023				20-150%	64.5%	
M2-8:2 FTS		S250724023				20-150%	59.4%	
M8FOSA-I		S250724023				20-150%	40.4%	
M6PFDA		S250724023				20-150%	59.1%	
d3-N-MeFOSAA		S250724023				20-150%	66.3%	
d5-N-EtFOSAA		S250724023				20-150%	60.3%	
M7PFUdA		S250724023				20-150%	42.7%	
MPFDoA		S250724023				20-150%	20.2%	
M2PFTeDA		S250724023				20-150%	2.2%	Q
d3-N-MeFOSA		S250724023				10-200%	0.2%	Q
d5-N-EtFOSA		S250724023				10-200%	0.1%	Q
d7-N-MeFOSE		S250724023				10-200%	18.1%	
d9-N-EtFOSE		S250724023				10-200%	11.8%	

# Enthalpy Analytical

Job No.: 0724-853-1 PFAS by Isotope Dilution (non-potable water)  
 Brunswick County Public Utilities - NC NORTHWEST WATER PLANT LELAND N.C.

## Details

Sample Name 071924-E01  
 Sampling Site  
 Enthalpy ID 0724-853-002-1A Prep Batch EU17824  
 Matrix aqueous Analyst jacksullivan  
 Sampling Date 2024-07-19 08:00 Instrument Sauron  
 Received Date 2024-07-19 Sample Vol mL 275.91  
 Prep Date 2024-07-24 13:30 Extract Vol mL 0.4  
 AnalysisDate 2024-07-26 00:14 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	S250724024	ND	0.230	0.580			U	
	PFPeA	2706-90-3	S250724024	12.2	0.166	0.580				
	PFFhxA	307-24-4	S290724006	9.37	0.194	0.580				
	PFFHpA	375-85-9	S250724024	3.59	0.203	0.580				
	PFOA	335-67-1	S250724024	7.07	0.133	0.580				
	PFNA	375-95-1	S250724024	0.791	0.131	0.580				
	PFDA	335-76-2	S250724024	0.471	0.166	0.580			J	
	PFUnDA	2058-94-8	S250724024	0.0161	0.131	0.580			L	
	PFFDoDA	307-55-1	S250724024	ND	0.236	0.580			U	
	PFFTrDA	72629-94-8	S250724024	ND	0.192	0.580			U	
	PFFTeDA	376-06-7	S250724024	ND	0.221	0.580			U	
	PFFhxDA	67905-19-5	S250724024	ND	0.308	0.580			U	
	Sulfonates	PFBS	375-73-5	S250724024	6.80	0.308	0.580			
		PFPeS	2706-91-4	S250724024	0.800	0.119	0.546			
PFFhXS		355-46-4	S250724024	4.67	0.448	0.531				
PFFHpS		375-92-8	S250724024	0.193	0.281	0.552			L	
PFOs		1763-23-1	S250724024	12.8	0.306	0.537				
PFNS		68259-12-1	S250724024	ND	0.180	0.559			U	
PFDs		335-77-3	S250724024	ND	0.304	0.559			U	
4:2 FTS		757124-72-4	S250724024	ND	0.0752	0.543			U	
6:2 FTS		27619-97-2	S250724024	0.0759	0.274	0.552			L	
8:2 FTS		39108-34-4	S250724024	ND	0.130	0.555			U	
10:2 FTS	120226-60-0	S250724024	ND	0.444	0.580			U		
Sulfonamidos	FBSA	30334-69-1	S250724024	0.662	0.275	0.580				
	N-EiFOSA	4151-50-2	S250724024	ND	0.359	0.580			U	
	N-EiFOSAA	2991-50-6	S250724024	ND	0.236	0.580			U	
	N-EiFOSE	1691-99-2	S250724024	ND	0.888	2.61			U	
	N-MeFOSA	31506-32-8	S250724024	ND	0.239	0.580			U	
	N-MeFOSAA	2355-31-9	S250724024	ND	0.163	0.580			U	
	N-MeFOSE	24448-09-7	S250724024	ND	0.551	2.61			U	
	PFOsA	754-91-6	S250724024	ND	0.0814	0.580			U	
	PFECAs	ADONA	919005-14-4	S250724024	ND	0.157	0.549			
EVE Acid		69087-46-3	S250724024	ND	0.185	1.30			U	
HFPO-DA		13252-13-6	S250724024	2.43	0.0614	0.580				
Hydro-EVE Acid		773804-62-9	S250724024	ND	0.190	0.580			U	
NFDHA		151772-58-6	S250724024	ND	0.122	0.580			U	
PEPA		267239-61-2	S250724024	1.61	0.109	0.580				
PFECA-G		801212-59-9	S250724024	ND	0.0774	0.580			U	
PfMOAA		674-13-5	S290724006	7.51	0.294	0.580				
PfMOBA		863090-89-5	S250724024	ND	0.973	1.30			U	
PfMOPrA		377-73-1	S250724024	ND	0.207	0.580			U	
PFO2HxA		39492-88-1	S250724024	ND	0.187	0.580			U	
PFO3OA		39492-89-2	S250724024	ND	0.266	0.580			U	
PFO4DA		39492-90-5	S250724024	ND	0.458	2.90			U	
PFO5DA		39492-91-6	S250724024	ND	0.464	2.90			U	
PMPA		13140-29-9	S250724024	4.74	0.137	0.580				
R-EVE		2416366-22-6	S250724024	2.38	0.962	1.30				
PFESAs		11Cl-PF3OUdS	763051-92-9	S250724024	ND	0.274	0.546			U
		9Cl-PF3ONS	756426-58-1	S250724024	ND	0.371	0.540			U
	Hydrolyzed PSDA	2416366-19-1	S250724024	1.06	0.386	0.580				
	Nafion Byproduct 1 (PS Acid)	29311-67-9	S250724024	ND	0.310	0.580			U	
	Nafion Byproduct 2 (Hydro-PS Acid)	749836-20-2	S250724024	0.222	0.480	0.580			L	
	NVHOS	1132933-86-8	S250724024	ND	0.0893	0.580			U	
	PFEESA	113507-82-7	S250724024	ND	0.174	0.580			U	
	R-PSDA	2416366-18-0	S250724024	2.66	2.56	2.56				
ES	R-PSDCA	2416366-21-5	S250724024	ND	0.245	0.580			U	
	MPFBA		S250724024				20-150%	96.0%		
	M5PFPeA		S250724024				20-150%	153.9%	Q	
	M3PFBS		S250724024				20-150%	196.0%	Q	
	M2-4:2 FTS		S250724024				20-150%	121.6%		
	M5PFFhxA		S250724024				20-150%	92.7%		
	M3HFPO-DA		S250724024				20-150%	98.3%		
M4PFFHpA		S250724024				20-150%	94.9%			

# Enthalpy Analytical

Job No.: 0724-853-1 PFAS by Isotope Dilution (non-potable water)  
 Brunswick County Public Utilities - NC NORTHWEST WATER PLANT LELAND N.C.

## Details

Sample Name	071924-E01		
Sampling Site			
Enthalpy ID	0724-853-002-1A	Prep Batch	EU17824
Matrix	aqueous	Analyst	jacksullivan
Sampling Date	2024-07-19 08:00	Instrument	Sauron
Received Date	2024-07-19	Sample Vol mL	275.91
Prep Date	2024-07-24 13:30	Extract Vol mL	0.4
AnalysisDate	2024-07-26 00:14	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		S250724024				20-150%	92.4%	
M2-6:2 FTS		S250724024				20-150%	91.6%	
M8PFOA		S250724024				20-150%	94.7%	
M9PFNA		S250724024				20-150%	91.7%	
M8PFOS		S250724024				20-150%	90.7%	
M2-8:2 FTS		S250724024				20-150%	91.1%	
M8FOSA-I		S250724024				20-150%	58.3%	
M6PFDA		S250724024				20-150%	86.2%	
d3-N-MeFOSAA		S250724024				20-150%	96.4%	
d5-N-EtFOSAA		S250724024				20-150%	108.9%	
M7PFUdA		S250724024				20-150%	79.1%	
MPFDoA		S250724024				20-150%	53.9%	
M2PFTeDA		S250724024				20-150%	28.6%	
d3-N-MeFOSA		S250724024				10-200%	3.7%	Q
d5-N-EtFOSA		S250724024				10-200%	3.3%	Q
d7-N-MeFOSE		S250724024				10-200%	31.5%	
d9-N-EtFOSE		S250724024				10-200%	22.7%	

# Enthalpy Analytical

Job No.: 0724-853-2 PFAS by Isotope Dilution (non-potable water)  
Brunswick County Public Utilities - NC NORTHWEST WATER PLANT LELAND N.C.

## Details

Sample Name 071924-S01  
Sampling Site  
Enthalpy ID 0724-853-001-1 Prep Batch EU17826  
Matrix aqueous Analyst ext-magennaef  
Sampling Date 2024-07-19 08:00 Instrument Samwise  
Received Date 2024-07-19 Sample Vol mL 0.1  
Prep Date 2024-07-22 12:02 Extract Vol mL 0.2  
AnalysisDate 2024-07-23 16:56 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	SW230724-07231656	ND	700	1530			U
ES	13C3-PFPrA		SW230724-07231656				20-150%	115.7%	

# Enthalpy Analytical

Job No.: 0724-853-2 PFAS by Isotope Dilution (non-potable water)  
 Brunswick County Public Utilities - NC NORTHWEST WATER PLANT LELAND N.C.

## Details

Sample Name	071924-E01		
Sampling Site			
Enthalpy ID	0724-853-002-1	Prep Batch	EU17826
Matrix	aqueous	Analyst	ext-magennaef
Sampling Date	2024-07-19 08:00	Instrument	Samwise
Received Date	2024-07-19	Sample Vol mL	0.1
Prep Date	2024-07-22 12:02	Extract Vol mL	0.2
AnalysisDate	2024-07-23 17:08	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	SW230724-07231708	ND	700	1530			U
ES	13C3-PFPrA		SW230724-07231708				20-150%	116.2%	

# QC Data

# Enthalpy Analytical

Job No.: 0724-853-1 PFAS by Isotope Dilution (non-potable water)  
 Brunswick County Public Utilities - NC NORTHWEST WATER PLANT LELAND N.C.

## Details

Sample Name	MB_17824_PFAS	Prep Batch	EU17824
Sampling Site		Analyst	jacksullivan
Enthalpy ID	MB_17824_PFAS	Instrument	Sauron
Matrix	aqueous	Sample Vol mL	250
Sampling Date		Extract Vol mL	0.4
Received Date		Split Factor	N/A
Prep Date	2024-07-24 13:30	Method Code	EU-047-NPW
AnalysisDate	2024-07-25 20:27		
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	S250724014	ND	0.254	0.640			U	
	PFPeA	2706-90-3	S250724014	ND	0.183	0.640			U	
	PFHxA	307-24-4	S290724003	ND	0.214	0.640			U	
	PFFHpA	375-85-9	S250724014	ND	0.224	0.640			U	
	PFOA	335-67-1	S250724014	ND	0.146	0.640			U	
	PFNA	375-95-1	S250724014	ND	0.145	0.640			U	
	PFDA	335-76-2	S250724014	ND	0.183	0.640			U	
	PFUnDA	2058-94-8	S250724014	ND	0.145	0.640			U	
	PFDODA	307-55-1	S250724014	ND	0.260	0.640			U	
	PFTrDA	72629-94-8	S250724014	ND	0.212	0.640			U	
	PFTeDA	376-06-7	S250724014	ND	0.244	0.640			U	
	PFFHxDA	67905-19-5	S250724014	ND	0.340	0.640			U	
	Sulfonates	PFBS	375-73-5	S250724014	ND	0.340	0.640			U
		PFPeS	2706-91-4	S250724014	ND	0.131	0.603			U
		PFFHxS	355-46-4	S250724014	ND	0.494	0.586			U
PFFHpS		375-92-8	S250724014	ND	0.310	0.610			U	
PFOS		1763-23-1	S250724014	ND	0.338	0.593			U	
PFNS		68259-12-1	S250724014	ND	0.199	0.616			U	
PFDS		335-77-3	S250724014	ND	0.336	0.616			U	
4:2 FTS		757124-72-4	S250724014	ND	0.0830	0.600			U	
6:2 FTS		27619-97-2	S250724014	ND	0.302	0.610			U	
8:2 FTS		39108-34-4	S250724014	ND	0.143	0.613			U	
10:2 FTS	120226-60-0	S250724014	ND	0.490	0.640			U		
Sulfonamidos	FBSA	30334-69-1	S250724014	ND	0.304	0.640			U	
	N-EiFOSA	4151-50-2	S250724014	ND	0.396	0.640			U	
	N-EiFOSAA	2991-50-6	S250724014	ND	0.260	0.640			U	
	N-EiFOSE	1691-99-2	S250724014	ND	0.980	2.88			U	
	N-MeFOSA	31506-32-8	S250724014	ND	0.264	0.640			U	
	N-MeFOSAA	2355-31-9	S250724014	ND	0.180	0.640			U	
	N-MeFOSE	24448-09-7	S250724014	ND	0.608	2.88			U	
	PFOSA	754-91-6	S250724014	ND	0.0898	0.640			U	
	PFECAs	ADONA	919005-14-4	S250724014	ND	0.173	0.606			U
EVE Acid		69087-46-3	S250724014	ND	0.204	1.44			U	
HFPO-DA		13252-13-6	S250724014	ND	0.0678	0.640			U	
Hydro-EVE Acid		773804-62-9	S250724014	ND	0.210	0.640			U	
NFDHA		151772-58-6	S250724014	ND	0.135	0.640			U	
PEPA		267239-61-2	S250724014	ND	0.120	0.640			U	
PFECA-G		801212-59-9	S250724014	ND	0.0854	0.640			U	
PFMOAA		674-13-5	S290724003	ND	0.324	0.640			U	
PFMOBA		863090-89-5	S250724014	ND	1.07	1.44			U	
PFMOPrA		377-73-1	S250724014	ND	0.228	0.640			U	
PFO2HxA		39492-88-1	S250724014	ND	0.206	0.640			U	
PFO3OA		39492-89-2	S250724014	ND	0.294	0.640			U	
PFO4DA		39492-90-5	S250724014	ND	0.506	3.20			U	
PFO5DA		39492-91-6	S250724014	ND	0.512	3.20			U	
PMPA		13140-29-9	S250724014	ND	0.151	0.640			U	
R-EVE		2416366-22-6	S250724014	ND	1.06	1.44			U	
PFESAs		11CI-PF3OUdS	763051-92-9	S250724014	ND	0.302	0.603			U
		9CI-PF3ONS	756426-58-1	S250724014	ND	0.410	0.596			U
		Hydrolyzed PSDA	2416366-19-1	S250724014	ND	0.426	0.640			U
		Nafion Byproduct 1 (PS Acid)	29311-67-9	S250724014	ND	0.342	0.640			U
	Nafion Byproduct 2 (Hydro-PS Acid)	749836-20-2	S250724014	ND	0.530	0.640			U	
	NVHOS	1132933-86-8	S250724014	ND	0.0986	0.640			U	
	PFEESA	113507-82-7	S250724014	ND	0.192	0.640			U	
	R-PSDA	2416366-18-0	S250724014	ND	2.82	2.82			U	
	R-PSDCA	2416366-21-5	S250724014	ND	0.270	0.640			U	
ES	MPFBA		S250724014				20-150%	99.7%		
	M5PFPeA		S250724014				20-150%	107.4%		
	M3PFBS		S250724014				20-150%	99.6%		
	M2-4:2 FTS		S250724014				20-150%	109.6%		
	M5PFFHxA		S250724014				20-150%	89.5%		
	M3HFPO-DA		S250724014				20-150%	95.1%		
	M4PFFHpA		S250724014				20-150%	92.1%		

# Enthalpy Analytical

Job No.: 0724-853-1 PFAS by Isotope Dilution (non-potable water)  
 Brunswick County Public Utilities - NC NORTHWEST WATER PLANT LELAND N.C.

## Details

Sample Name	MB_17824_PFAS		
Sampling Site			
Enthalpy ID	MB_17824_PFAS	Prep Batch	EU17824
Matrix	aqueous	Analyst	jacksullivan
Sampling Date		Instrument	Sauron
Received Date		Sample Vol mL	250
Prep Date	2024-07-24 13:30	Extract Vol mL	0.4
AnalysisDate	2024-07-25 20:27	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		S250724014				20-150%	90.8%	
M2-6:2 FTS		S250724014				20-150%	96.9%	
M8PFOA		S250724014				20-150%	89.5%	
M9PFNA		S250724014				20-150%	89.8%	
M8PFOS		S250724014				20-150%	86.3%	
M2-8:2 FTS		S250724014				20-150%	92.0%	
M8FOSA-I		S250724014				20-150%	55.3%	
M6PFDA		S250724014				20-150%	84.5%	
d3-N-MeFOSAA		S250724014				20-150%	106.4%	
d5-N-EtFOSAA		S250724014				20-150%	101.4%	
M7PFUdA		S250724014				20-150%	80.2%	
MPFDoA		S250724014				20-150%	64.8%	
M2PFTeDA		S250724014				20-150%	41.2%	
d3-N-MeFOSA		S250724014				10-200%	0.1%	Q
d5-N-EtFOSA		S250724014				10-200%	0.3%	Q
d7-N-MeFOSE		S250724014				10-200%	35.3%	
d9-N-EtFOSE		S250724014				10-200%	34.4%	

# Enthalpy Analytical

Job No.: 0724-853-1 PFAS by Isotope Dilution (non-potable water)

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

Enthalpy ID	OPR_17824_PFAS	Prep Batch	EU17824	Sample Vol (mL)	250
Sample Name	OPR_17824_PFAS	Prep Date	2024-07-24 13:30	Extract Vol (mL)	0.4
Matrix	aqueous	Analysis Date	2024-07-25 20:50	Split Factor	N/A
Sampling Date		Analyst	jacksullivan	Method Code	EU-047-NPW
Received Date		Instrument	Sauron	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	S250724015	22.5	0.254	0.640	69.1-122%	112.3%	
	PFPeA	2706-90-3	S250724015	23.0	0.183	0.640	68.5-121%	114.9%	
	PFHxA	307-24-4	S290724004	21.6	0.214	0.640	68.3-121%	108.1%	
	PFHpA	375-85-9	S250724015	21.7	0.224	0.640	62.4-128%	108.6%	
	PFOA	335-67-1	S250724015	22.6	0.146	0.640	66.3-124%	112.8%	
	PFNA	375-95-1	S250724015	22.0	0.145	0.640	70.5-120%	110.0%	
	PFDA	335-76-2	S250724015	22.5	0.183	0.640	68.9-117%	112.7%	
	PFUnDA	2058-94-8	S250724015	22.9	0.145	0.640	58.1-132%	114.6%	
	PFDoDA	307-55-1	S250724015	24.0	0.260	0.640	52.1-140%	120.0%	
	PFTrDA	72629-94-8	S250724015	72.9	0.212	0.640	65-144%	364.7%	Q
	PFTeDA	376-06-7	S250724015	23.4	0.244	0.640	36.1-161%	117.0%	
Sulfonates	PFBS	375-73-5	S250724015	21.0	0.340	0.640	67.5-111.6%	118.3%	Q
	PFPeS	2706-91-4	S250724015	18.1	0.131	0.603	51.8-142%	96.2%	
	PFHxS	355-46-4	S250724015	20.3	0.494	0.586	59.6-128%	111.2%	
	PFHpS	375-92-8	S250724015	24.3	0.310	0.610	46.9-157%	127.4%	
	PFOS	1763-23-1	S250724015	21.9	0.338	0.593	59.2-132%	118.2%	
	PFNS	68259-12-1	S250724015	20.5	0.199	0.616	53.9-133%	106.7%	
	PFDS	335-77-3	S250724015	14.6	0.336	0.616	38.1-142%	75.8%	
	4:2 FTS	757124-72-4	S250724015	22.2	0.0830	0.600	61.9-131%	118.5%	
	6:2 FTS	27619-97-2	S250724015	21.9	0.302	0.610	62.3-129%	115.2%	
	8:2 FTS	39108-34-4	S250724015	21.9	0.143	0.613	37.5-159%	114.0%	
Sulfonamidos	N-EtFOSAA	2991-50-6	S250724015	21.1	0.260	0.640	61.5-133%	105.6%	
	N-MeFOSAA	2355-31-9	S250724015	20.2	0.180	0.640	57.3-138%	101.2%	
	PFOSA	754-91-6	S250724015	19.1	0.0898	0.640	49.1-143%	95.5%	
PFECAs	HFPO-DA	13252-13-6	S250724015	22.7	0.0678	0.640	57.2-130%	113.3%	
ES	MPFBA		S250724015				20-150%	91.9%	
	M5PFPeA		S250724015				20-150%	94.2%	
	M3PFBS		S250724015				20-150%	86.8%	
	M2-4:2 FTS		S250724015				20-150%	108.6%	
	M5PFHxA		S250724015				20-150%	88.4%	
	M3HFPO-DA		S250724015				20-150%	90.3%	
	M4PFHpA		S250724015				20-150%	80.0%	
	M3PFHxS		S250724015				20-150%	62.9%	
	M2-6:2 FTS		S250724015				20-150%	66.8%	
	M8PFOA		S250724015				20-150%	61.5%	
	M9PFNA		S250724015				20-150%	54.0%	
	M8PFOS		S250724015				20-150%	46.3%	
	M2-8:2 FTS		S250724015				20-150%	53.8%	
	M8FOSA-I		S250724015				20-150%	31.0%	
	M6PFDA		S250724015				20-150%	48.7%	
	d3-N-MeFOSAA		S250724015				20-150%	57.7%	
	d5-N-EtFOSAA		S250724015				20-150%	54.2%	
	M7PFUDa		S250724015				20-150%	36.5%	
	MPFDoA		S250724015				20-150%	22.5%	
	M2PFTeDA		S250724015				20-150%	4.9%	Q

# Enthalpy Analytical

Job No.: 0724-853-2 PFAS by Isotope Dilution (non-potable water)  
 Brunswick County Public Utilities - NC NORTHWEST WATER PLANT LELAND N.C.

## Details

Sample Name	MB_17826_PFAS		
Sampling Site			
Enthalpy ID	MB_17826_PFAS	Prep Batch	EU17826
Matrix	aqueous	Analyst	ext-magennaef
Sampling Date		Instrument	Samwise
Received Date		Sample Vol mL	0.1
Prep Date	2024-07-22 12:02	Extract Vol mL	0.2
AnalysisDate	2024-07-23 16:31	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	PFPfA	422-64-0	SW230724-07231631	ND	700	1530			U
ES	13C3-PFPfA		SW230724-07231631				20-150%	112.7%	

# Enthalpy Analytical

Job No.: 0724-853-2 PFAS by Isotope Dilution (non-potable water)  
 Brunswick County Public Utilities - NC NORTHWEST WATER PLANT LELAND N.C.

## Details

Sample Name	OPR_17826_PFAS		
Sampling Site			
Enthalpy ID	OPR_17826_PFAS	Prep Batch	EU17826
Matrix	aqueous	Analyst	ext-magennaef
Sampling Date		Instrument	Samwise
Received Date		Sample Vol mL	0.08
Prep Date	2024-07-22 12:02	Extract Vol mL	0.2
AnalysisDate	2024-07-23 16:43	Split Factor	N/A
SampleType	Control	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	SW230724-07231643	15500	875	1910	40-150%	62.0%	
ES	13C3-PFPrA		SW230724-07231643				20-150%	102.3%	

# Narrative Summary

# Enthalpy Analytical Narrative Summary

Company	Brunswick County Public Utilities - NC
Job No.	0724-853
Client ID.	NORTHWEST WATER PLANT Site: LELAND N.C.

## 1. Custody

Cherith McCullagh received the samples at 4.3 °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
0724-853-001-1	071924-S01	aqueous	2024-07-19
0724-853-001-1A	071924-S01	aqueous	2024-07-19
0724-853-002-1	071924-E01	aqueous	2024-07-19
0724-853-002-1A	071924-E01	aqueous	2024-07-19

## 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
EU-047	Custom List	ENVI-Carb

## 3. Analysis

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

The samples were analyzed using more than one extraction batch and analytical sequence to meet method acceptance criteria.

## 4. Calibration

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

# Enthalpy Analytical Narrative Summary

Company	Brunswick County Public Utilities - NC
Job No.	0724-853
Client ID.	NORTHWEST WATER PLANT Site: LELAND N.C.

## 5. QC Notes

Ongoing Precision Recovery (OPR) control limits have not been established for some analytes of interest.

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

PFTDA exceeded method recovery criteria in OPR\_17824\_PFAS but was not detected >LOQ in the samples. Data is reported without adverse impact.

PFBS exceeded method control limits in OPR\_17824\_PFAS but met DOD QSM 5.4 criteria; therefore, the data is reportable without adverse impact.

Select extraction standards (ES) fell outside method recovery criteria in the QC samples. Target analytes are quantified based on their ratio to their labeled standard analogs. 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.

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 in the sample analyses fell outside the 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. The data have been accepted and reported with no further actions.

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 2009 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>		
~ PFPrA	422-64-0	2,2,3,3,3-Pentafluoropropionic acid
*, ^ 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
*, # PFTrDA (PFTriA)	72629-94-8	Perfluorotridecanoic acid
*, #, ^ PFTeDA (PFTA)	376-06-7	Perfluorotetradecanoic acid
~ PFPrS (PFPS)	423-41-6	Perfluoropropanesulfonic 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-EtFOSAA	2991-50-6	N-ethyl perfluorooctane sulfonamido acetic acid
*, #, ^ 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-oxaundecane-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-dioxaheptanoic acid
*, ^ PFMOPrA (PFMPA)	377-73-1	Perfluoro-3-methoxypropanoic acid
~ PFMOAA	674-13-5	Perfluoro-2-methoxyacetic acid
~ PFO2HxA	39492-88-1	Perfluoro (3,5-dioxaheptanoic) 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
*, N-EtFOSA	4151-50-2	N-ethylperfluoro-1-octanesulfonamide
*, N-EtFOSE	1691-99-2	2-(N-methylperfluoro-1-octanesulfonamido)-ethanol
*, N-MeFOSA	31506-32-8	N-methylperfluoro-1-octanesulfonamide
*, N-MeFOSE	24448-09-7	2-(N-methylperfluoro-1-octanesulfonamido)-ethanol

PFAS Compound Acronym List		
Acronym	CAS #	Compound Name
<b>* accredited for SOP EU047 / EPA method 1633 # Method 537.1 Accredited ^ Method 533 Accredited ~EPA 1633 extended list</b>		
~ 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

# Sample Custody

0724-853



# 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 Cindy.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 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 PCB	PFAS by LC/MS/MS	PAHs by HRGC/HRMS	Sample on Hold	Method 23		ALL PFAS		
071924-SO1	7/19/2024	0800AM	250 ml	G	NW	2												X	Please Add PFPrA and	
071924-EO1	7/19/2024	0800AM	250 ml	G	DW	2													X	PFHpA To The Testing.
																				Mark Hager Knows About
																				This If you Have Questions

Relinquished By:	Date:	Received By:	Date:	Time:	Sample Temperature Upon Receipt:
PHIL MCCULLOCH	7/19/2024	<i>C. McLaughlin</i>	7-19-24	332	<input checked="" type="checkbox"/> Iced <input type="checkbox"/> Ambient °C <u>4.3</u>
					<input type="checkbox"/> Iced <input type="checkbox"/> Ambient °C _____
					<input type="checkbox"/> Iced <input type="checkbox"/> Ambient °C _____

JOB ID: 0724-853

Date / Time: 7/19/24 13:32

Initials: CAM

OR

Client: Brunswick County Utilities

Cooler 1 of 1

Temp °C: 4.3

Thermometer ID: T15

- 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

Temp °C:

Thermometer ID:

Cooler of

- 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

Temp °C:

Thermometer ID:

Cooler of

- 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

**This Is The Last Page  
Of This Report.**