Pender County

605 E. Fremont Street
Burgaw, NC 28425

Pender County WTP

Samples Received: 05/24/21

Analytical Report
0521-761

Isotope Dilution Method

PFAS

Enthalpy Analytical, LLC – Ultratrace

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Enthalpy Analytical

Job No.: 0521-761-1 PFAS by Isotope Dilution (non-potable water)

Pender County Site: Pender County WTP

Enthalpy ID	0521-761-001-1	Prep Batch	EU11865	Sample Vol (mL)	284.1
Sample Name	Combined Filter	Prep Date	2021-05-28 15:44	Extract Vol (mL)	0.4
Matrix	Aqueous	Analysis Date	2021-05-28 18:14	Dilution Factor	1
Sampling Date	20210524 00:00	Analyst	rappelle	Method Code	WM-026
Received Date	2021-05-24 10:00	Instrument	Kili	Sample Type	Sample

	Compound	CAS	Extract Concentration ng/L	Sample Concentration ng/L	Formatted Result ng/L	LOD ng/L	LOQ ng/L	Recovery Limits	Recovery	Flags
Acids	PFBA	375-22-4	3145.05	4.43	4.43	0.135	0.269			
	PFPeA	2706-90-3	5504.62	7.75	7.75	0.150	0.268			
	PFHxA	307-24-4	4604.79	6.48	6.48	0.170	0.268			
	PFHpA	375-85-9	2891.80	4.07	4.07	0.107	0.268			
	PFOA	335-67-1	5216.84	7.35	7.35	0.156	0.268			
	PFNA	375-95-1	638.78	0.899	0.899	0.0670	0.268			
	PFDA	335-76-2	378.15	0.532	0.532	0.0744	0.268			
	PFUnDA	2058-94-8	78.30	0.110	<LOD	0.163	0.268			U
	PFDoDA	307-55-1	14.42	0.0203	<LOD	0.178	0.268			U
	PFTrDA	72629-94-8	7.75	0.0109	<LOD	0.133	0.268			U
	PFTeDA	376-06-7	ND	ND	<LOD	0.192	0.268			U
Sulfonates	PFBS	375-73-5	2838.94	3.99	3.99	0.312	0.312			
	PFPeS	2706-91-4	613.22	0.863	0.863	0.181	0.252			
	PFHxS	355-46-4	2954.42	4.16	4.16	0.168	0.245			
	PFHpS	375-92-8	300.70	0.423	0.423	0.119	0.255			
	PFOS	1763-23-1	8495.64	12.0	12.0	0.141	0.249			
	PFNS	68259-12-1	ND	ND	<LOD	0.0760	0.258			U
	PFDS	335-77-3	ND	ND	<LOD	0.169	0.258			U
	4:2 FTS	757124-72-4	ND	ND	<LOD	0.104	0.251			U
	6:2 FTS	27619-97-2	96.26	0.136	0.136	0.102	0.255			J
	8:2 FTS	39108-34-4	ND	ND	<LOD	0.150	0.258			U
other	PFOSA	754-91-6	ND	ND	<LOD	0.114	0.268			U
	N-MeFOSAA	2355-31-9	27.22	0.0383	<LOD	0.127	0.268			U
	N-EtFOSAA	2991-50-6	ND	ND	<LOD	0.0959	0.268			U
	HFPO-DA	13252-13-6	8918.47	12.6	12.6	0.201	0.268			
	PFMOAA	674-13-5	49336.37	69.5	69.5	1.30	1.27			
	PFMOPrA	377-73-1	19.52	0.0275	<LOD	0.211	0.268			U
	PFO2HxA	39492-88-1	10470.38	14.7	14.7	1.30	1.27			
	PFO3OA	39492-89-2	5558.09	7.83	7.83	1.30	1.27			
	PFO4DA	39492-90-5	ND	ND	<LOD	1.30	2.65			U
	Nafion Byproduct 1	29311-67-9	17.22	0.0242	<LOD	0.211	0.268			U
	ADONA	919005-14-4	ND	ND	<LOD	0.106	0.253			U
	9Cl-PF3ONS	756426-58-1	ND	ND	<LOD	0.106	0.249			U
	11Cl-PF3OUdS	763051-92-9	7.84	0.0110	<LOD	0.106	0.252			U
	10:2 FTS	120226-60-0	ND	ND	<LOD	0.211	0.268			U
	FBSA	30334-69-1	431.81	0.608	0.608	0.211	0.268			
	Nafion Byproduct 2	749836-20-2	266.85	0.376	<LOD	1.30	0.268			U
	N-EtFOSA	4151-50-2	ND	ND	<LOD	0.211	0.268			U
	N-EtFOSE	1691-99-2	ND	ND	<LOD	6.34	6.34			U
	NFDHA	151772-58-6	ND	ND	<LOD	0.211	0.268			U
	N-MeFOSA	31506-32-8	ND	ND	<LOD	0.211	0.268			U
	N-MeFOSE	24448-09-7	ND	ND	<LOD	6.34	6.34			U
	PEPA	267239-61-2	6171.02	8.69	8.69	1.30	1.27			
	PFECA-G	801212-59-9	ND	ND	<LOD	1.30	1.27			U
	PFEESA	113507-82-7	ND	ND	<LOD	0.211	0.268			U
	PFHxDA	67905-19-5	ND	ND	<LOD	1.30	1.27			U
	PFMOBA	863090-89-5	ND	ND	<LOD	1.30	1.27			U
	PFO5DA	39492-91-6	ND	ND	<LOD	2.65	2.65			U
	PMPA	13140-29-9	11879.53	16.4	16.4	1.30	1.27			
ES	MPFBA		4519.10	6.36				20-150%	90.4%	
	M5PFPeA		10381.19	14.6				20-150%	207.6%	Q
	M3PFBS		17334.45	24.4				20-150%	346.7%	Q
	M2-4:2 FTS		10539.79	14.8				20-150%	210.8%	Q
	M5PFHxA		4328.68	6.09				20-150%	86.6%	
	M3HFPO-DA		4140.16	5.83				20-150%	82.8%	
	M4PFHpA		4526.64	6.37				20-150%	90.5%	
	M3PFHxS		4760.31	6.70				20-150%	95.2%	
	M2-6:2 FTS		5702.76	8.03				20-150%	114.1%	
	M8PFOA		4465.26	6.29				20-150%	89.3%	
	M9PFNA		4604.15	6.48				20-150%	92.1%	
	M8PFOS		4497.53	6.33				20-150%	90.0%	
	M2-8:2 FTS		3860.90	6.44				20-150%	77.2%	
	M8FOSA-I		2578.15	3.63				20-150%	51.6%	
	M6PFDA		4939.06	6.95				20-150%	98.8%	
	d3-N-MeFOSAA		3483.95	4.91				20-150%	69.7%	
	d5-N-EtFOSAA		3736.69	5.26				20-150%	74.7%	
	M7PFUdA		4982.71	7.03				20-150%	99.9%	
	MPFDoA		3988.85	5.59				20-150%	79.3%	
	M2PFTeDA		3324.15	4.68				20-150%	66.5%	

Enthalpy Analytical

Job No.: 0521-781-1 PFAS by Isotope Dilution (non-potable water)
Pender County Site: Pender County WTP

Enthalpy ID	0521-781-002-1	Prep Batch	EU11885	Sample Vol (mL)	278.17
Sample Name	Pre-CW	Prep Date	2021-05-28 15:44	Extract Vol (mL)	0.4
Matrix	Aqueous	Analysis Date	2021-05-28 18:38	Dilution Factor	1
Sampling Date	20210524 00:00	Analyst	rappelle	Method Code	WM-028
Received Date	2021-05-24 10:00	Instrument	Kili	Sample Type	Sample

	Compound	CAS	Extract Concentration ng/L	Sample Concentration ng/L	Formatted Result ng/L	LOD ng/L	LOQ ng/L	Recovery Limits	Recovery	Flags
Acids	PFBA	375-22-4	3658.38	5.26	5.26	0.138	0.273			
	PFPeA	2706-90-3	5544.29	7.97	7.97	0.153	0.273			
	PFHxA	307-24-4	4716.40	6.78	6.78	0.173	0.273			
	PFHpA	375-85-9	2859.18	3.82	3.82	0.110	0.273			
	PFOA	335-67-1	2672.53	3.84	3.84	0.159	0.273			
	PFNA	375-95-1	216.86	0.312	0.312	0.0884	0.273			
	PFDA	335-76-2	52.42	0.0754	<LOD	0.0759	0.273			U
	PFUnDA	2058-94-8	ND	ND	<LOD	0.186	0.273			U
	PFDoDA	307-55-1	ND	ND	<LOD	0.182	0.273			U
	PFTrDA	72629-94-8	ND	ND	<LOD	0.136	0.273			U
	PFTeDA	376-06-7	ND	ND	<LOD	0.196	0.273			U
Sulfonates	PFBS	375-73-5	2950.87	4.24	4.24	0.319	0.319			
	PFPeS	2706-91-4	418.46	0.602	0.602	0.185	0.257			
	PFHxS	355-46-4	1441.41	2.07	2.07	0.172	0.250			
	PFHpS	375-92-8	ND	ND	<LOD	0.121	0.260			U
	PFOS	1763-23-1	1660.55	2.39	2.39	0.144	0.253			
	PFNS	68259-12-1	ND	ND	<LOD	0.0777	0.283			U
	PFDS	335-77-3	ND	ND	<LOD	0.173	0.263			U
	4:2 FTS	757124-72-4	ND	ND	<LOD	0.106	0.256			U
	6:2 FTS	27619-97-2	30.69	0.0441	<LOD	0.104	0.260			U
	8:2 FTS	39108-34-4	ND	ND	<LOD	0.154	0.282			U
other	PFOSA	754-91-6	ND	ND	<LOD	0.117	0.273			U
	N-MeFOSAA	2355-31-9	ND	ND	<LOD	0.129	0.273			U
	N-EtFOSAA	2991-50-6	ND	ND	<LOD	0.0980	0.273			U
	HFPO-DA	13252-13-6	6791.19	9.75	9.75	0.205	0.273			
	PFMOAA	674-13-5	43888.10	62.8	62.8	1.33	1.29			
	PFMOPrA	377-73-1	17.10	0.0246	<LOD	0.216	0.273			U
	PFO2HxA	39492-88-1	8707.57	12.5	12.5	1.33	1.29			
	PFO3OA	39492-89-2	3998.95	5.75	5.75	1.33	1.29			
	PFO4DA	39492-90-5	ND	ND	<LOD	1.33	2.70			U
	Nafion Byproduct 1	29311-67-9	ND	ND	<LOD	0.216	0.273			U
	ADONA	919005-14-4	ND	ND	<LOD	0.109	0.259			U
	9Cl-PF3ONS	756426-58-1	ND	ND	<LOD	0.108	0.255			U
	11Cl-PF3OUdS	763051-92-9	ND	ND	<LOD	0.108	0.257			U
	10:2 FTS	120226-60-0	ND	ND	<LOD	0.216	0.273			U
	FBSA	30334-69-1	91.03	0.131	<LOD	0.216	0.273			U
	Nafion Byproduct 2	749836-20-2	218.32	0.314	<LOD	1.33	0.273			U
	N-EtFOSA	4151-50-2	ND	ND	<LOD	0.216	0.273			U
	N-EtFOSE	1691-99-2	ND	ND	<LOD	6.47	6.47			U
	NFDHA	151772-58-6	ND	ND	<LOD	0.216	0.273			U
	N-MeFOSA	31506-32-8	ND	ND	<LOD	0.216	0.273			U
	N-MeFOSE	24448-09-7	ND	ND	<LOD	6.47	6.47			U
	PEPA	267239-61-2	3587.46	5.13	5.13	1.33	1.29			
	PFECA-G	801212-59-9	ND	ND	<LOD	1.33	1.29			U
	PFEESA	113507-82-7	ND	ND	<LOD	0.216	0.273			U
	PFHxDA	67905-19-5	ND	ND	<LOD	1.33	1.29			U
	PFMOBA	863090-89-5	ND	ND	<LOD	1.33	1.29			U
	PFO5DA	39492-91-6	ND	ND	<LOD	2.70	2.70			U
	PMPA	13140-29-9	8304.24	11.9	11.9	1.33	1.29			
ES	MPFBA		5009.89	7.20				20-150%	100.2%	
	M5PFPeA		9982.69	14.4				20-150%	199.7%	Q
	M3PFBS		18583.66	23.8				20-150%	331.7%	Q
	M2-4:2 FTS		9179.59	13.2				20-150%	183.6%	Q
	M5PFHxA		4852.15	6.69				20-150%	93.0%	
	M3HFPO-DA		5135.59	7.39				20-150%	102.7%	
	M4PFHpA		4748.03	6.83				20-150%	95.0%	
	M3PFHxS		5010.50	7.20				20-150%	100.2%	
	M2-6:2 FTS		6727.21	9.67				20-150%	134.5%	
	M8PFOA		5091.98	7.32				20-150%	101.8%	
	M9PFNA		5166.20	7.43				20-150%	103.3%	
	M8PFOS		4724.29	6.79				20-150%	94.5%	
	M2-8:2 FTS		6343.31	9.12				20-150%	126.9%	
	M8FOSA-I		3363.20	4.86				20-150%	67.7%	
	M6PFDA		4769.62	6.86				20-150%	95.4%	
	d3-N-MeFOSAA		4095.51	5.89				20-150%	81.9%	
	d5-N-EtFOSAA		4432.37	6.37				20-150%	88.6%	
	M7PFUdA		4684.75	6.74				20-150%	93.7%	
	MPFDoA		3809.54	5.48				20-150%	76.2%	
	M2PFTeDA		3301.07	4.75				20-150%	66.0%	

Enthalpy Analytical

Job No.: 0521-761-1 PFAS by Isotope Dilution (non-potable water)

Pender County Site: Pender County WTP

Enthalpy ID	0521-761-003-1	Prep Batch	EU11865	Sample Vol (mL)	274.23
Sample Name	Post-CW	Prep Date	2021-05-28 15:44	Extract Vol (mL)	0.4
Matrix	Aqueous	Analysis Date	2021-05-28 19:01	Dilution Factor	1
Sampling Date	20210524 00:00	Analyst	rappelle	Method Code	WM-026
Received Date	2021-05-24 10:00	Instrument	Kili	Sample Type	Sample

	Compound	CAS	Extract Concentration ng/L	Sample Concentration ng/L	Formatted Result ng/L	LOD ng/L	LOQ ng/L	Recovery Limits	Recovery	Flags
Acids	PFBA	375-22-4	3792.52	5.53	5.53	0.139	0.277			
	PFPeA	2706-90-3	5544.37	8.09	8.09	0.155	0.277			
	PFHxA	307-24-4	5030.93	7.34	7.34	0.178	0.277			
	PFHpA	375-85-9	2545.19	3.71	3.71	0.111	0.277			
	PFOA	335-67-1	2763.58	4.03	4.03	0.161	0.277			
	PFNA	375-95-1	269.15	0.393	0.393	0.0694	0.277			
	PFDA	335-76-2	85.25	0.124	0.124	0.0770	0.277			J
	PFUnDA	2058-94-8	13.02	0.0190	<LOD	0.169	0.277			U
	PFDoDA	307-55-1	ND	ND	<LOD	0.184	0.277			U
	PFTrDA	72629-94-8	ND	ND	<LOD	0.138	0.277			U
	PFTeDA	376-06-7	ND	ND	<LOD	0.199	0.277			U
Sulfonates	PFBS	375-73-5	3197.42	4.65	4.65	0.324	0.324			
	PFPeS	2706-91-4	353.17	0.515	0.515	0.188	0.261			
	PFHxS	355-46-4	1779.15	2.60	2.60	0.174	0.254			
	PFHpS	375-92-8	ND	ND	<LOD	0.123	0.264			U
	PFOS	1763-23-1	1758.32	2.58	2.58	0.146	0.257			
	PFNS	68259-12-1	ND	ND	<LOD	0.0788	0.287			U
	PFDS	335-77-3	ND	ND	<LOD	0.175	0.267			U
	4:2 FTS	757124-72-4	ND	ND	<LOD	0.108	0.260			U
	6:2 FTS	27619-97-2	34.90	0.0509	<LOD	0.106	0.264			U
	8:2 FTS	39108-34-4	ND	ND	<LOD	0.156	0.265			U
other	PFOSA	754-91-6	ND	ND	<LOD	0.119	0.277			U
	N-MeFOSAA	2355-31-9	ND	ND	<LOD	0.131	0.277			U
	N-EtFOSAA	2991-50-6	ND	ND	<LOD	0.0984	0.277			U
	HFPO-DA	13252-13-6	8588.51	12.5	12.5	0.208	0.277			
	PFMOAA	674-13-5	41160.95	60.0	60.0	1.35	1.31			
	PFMOPrA	377-73-1	17.20	0.0251	<LOD	0.219	0.277			U
	PFO2HxA	39492-88-1	8944.42	13.0	13.0	1.35	1.31			
	PFO3OA	39492-89-2	3721.87	5.43	5.43	1.35	1.31			
	PFO4DA	39492-90-5	ND	ND	<LOD	1.35	2.74			U
	Nafion Byproduct 1	29311-67-9	ND	ND	<LOD	0.219	0.277			U
	ADONA	919005-14-4	ND	ND	<LOD	0.109	0.263			U
	9Cl-PF3ONS	756426-58-1	ND	ND	<LOD	0.109	0.258			U
	11Cl-PF3OUdS	763051-92-9	ND	ND	<LOD	0.109	0.261			U
	10:2 FTS	120226-60-0	ND	ND	<LOD	0.219	0.277			U
	FBSA	30334-69-1	99.81	0.146	<LOD	0.219	0.277			U
	Nafion Byproduct 2	749836-20-2	248.28	0.362	<LOD	1.35	0.277			U
	N-EtFOSA	4151-50-2	ND	ND	<LOD	0.219	0.277			U
	N-EtFOSE	1691-99-2	ND	ND	<LOD	6.56	6.56			U
	NFDHA	151772-58-6	ND	ND	<LOD	0.219	0.277			U
	N-MeFOSA	31506-32-8	ND	ND	<LOD	0.219	0.277			U
	N-MeFOSE	24448-09-7	ND	ND	<LOD	6.56	6.56			U
	PEPA	267239-61-2	6165.34	8.99	8.99	1.35	1.31			
	PFECA-G	801212-59-9	ND	ND	<LOD	1.35	1.31			U
	PFEESA	113507-82-7	ND	ND	<LOD	0.219	0.277			U
	PFHxDA	67905-19-5	ND	ND	<LOD	1.35	1.31			U
	PFMOBA	863090-89-5	ND	ND	<LOD	1.35	1.31			U
	PFO5DA	39492-91-6	ND	ND	<LOD	2.74	2.74			U
	PMPA	13140-29-9	7642.61	11.1	11.1	1.35	1.31			
ES	MPFBA		4981.51	7.27				20-150%	99.6%	
	M5PFPeA		10488.15	15.3				20-150%	209.7%	Q
	M3PFBS		18714.40	27.3				20-150%	374.3%	Q
	M2-4:2 FTS		10024.69	14.6				20-150%	200.5%	Q
	M5PFHxA		3991.24	5.82				20-150%	79.8%	
	M3HFPO-DA		3670.57	5.35				20-150%	73.4%	
	M4PFHpA		4464.06	6.51				20-150%	89.3%	
	M3PFHxS		4344.41	6.34				20-150%	86.9%	
	M2-6:2 FTS		7714.62	11.3				20-150%	154.3%	Q
	M8PFOA		4746.68	6.92				20-150%	94.9%	
	M9PFNA		4729.75	6.90				20-150%	94.6%	
	M8PFOS		4694.00	6.85				20-150%	93.9%	
	M2-8:2 FTS		7137.84	10.4				20-150%	142.8%	
	M8FOSA-I		2182.54	3.18				20-150%	43.7%	
	M6PFDA		4970.63	7.25				20-150%	99.4%	
	d3-N-MeFOSAA		3778.67	5.51				20-150%	75.6%	
	d5-N-EtFOSAA		4063.18	5.93				20-150%	81.3%	
	M7PFUdA		5074.03	7.40				20-150%	101.5%	
	MPFDoA		4335.19	6.32				20-150%	86.7%	
	M2PFTeDA		3615.50	5.27				20-150%	72.3%	