

County of Brunswick

3954 Clearwell Dr NE
Leland, NC 28451

Northwest Plant

Leland, NC
Samples Received: 2-28-19

Analytical Report (0219-731)

Isotope Dilution PFAS



Enthalpy Analytical, LLC – Ultratrace

Phone: (910) 212-5858 / www.enthalpy.com
2714 Exchange Drive, Wilmington, NC 28405

I certify that to the best of my knowledge all analytical data presented in this report:

- Have been checked for completeness
- Are accurate, error-free, and legible
- Have 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 _____ pages.

Report Issued Date: _____



Summary of Results: PFAS
Enthalpy Ultratrace Batch #
10233
PFAS

Analyte	Method Blank ng/L	022819-S01 ng/L	022819-E01 ng/L
Acids			
PFBA	2.68	2.96 B	2.22 B
PFPeA	<0.898 U	2.07	2.16
PFHxA	<1.58 U	2.92	2.88
PFHpA	<0.695 U	1.69	1.60
PFOA	<0.795 U	2.68	3.02
PFNA	<0.509 U	<0.367 U	<0.365 U
PFDA	<1.25 U	<0.902 U	<0.895 U
PFUnA	<0.481 U	<0.347 U	<0.345 U
PFDoA	<0.475 U	<0.343 U	<0.340 U
PFTTrA	<0.745 U	<0.538 U	<0.534 U
PFTA	<0.830 U	<0.599 U	<0.595 U
Sulfonates			
L-PFBS	<0.830 U	<0.599 U	<0.595 U
PFPeS	<0.990 U	<0.714 U	<0.709 U
PFHxS	<0.827 U	2.52	<0.592 U
PFHpS	<0.779 U	<0.562 U	<0.558 U
PFOS	<0.471 U	7.81	7.00
PFNS	<0.654 U	<0.472 U	<0.468 U
PFDS	<1.35 U	<0.974 U	<0.967 U
4:2 FTS	<0.646 U	<0.466 U	<0.463 U
6:2 FTS	<0.723 U	<0.522 U	0.605 J
8:2 FTS	<0.569 U	<0.411 U	<0.408 U
Other			
PFOSA	<3.65 U	<2.63 U	<2.61 U
N-MeFOSAA	<0.544 U	<0.393 U	<0.390 U
N-EtFOSAA	<0.651 U	<0.470 U	<0.466 U
HFPO-DA (Gen-X)	<33.3 U	<24.0 U	<23.9 U
Lab Sample ID	MB_10233	0219-731_10233_001	0219-731_10233_002

022819-S01
Detailed Results - PFAS
Client Details
Client Sample ID: 022819-S01

Client Name: Brunswick County

Client Project ID: n/a

Sample Collection Date: 28-Feb-19

Lab/Sample Details

Lab Job #:	0219-731	Matrix:	Aqueous	Date Received:	28-Feb-19
Lab Sample ID:	0219-731_10233_001	Wt./Vol.	34.6	Date Extracted:	04-Mar-19
QC Batch #:	10233	Date Low Analyzed:	05-Mar-19	Date High Analyzed:	04-Mar-19
Final Volume (mL)	0.2	Time Low Analyzed:	1:17:09	Time High Analyzed:	22:33:23

Analyte	Conc. (ng/L)	MDL (ng/L)	RL (ng/L)	Qualifiers	Standard	ES Recoveries (%)	Qualifiers
Acids					M3PFBA	96.2	
PFBA	2.96	1.14	1.44	B	M5PFPeA	145	
PFPeA	2.07	0.648	1.44		M3PFBS	133	
PFHxA	2.92	1.14	1.44		M2-4:2 FTS	157	V
PFHpA	1.69	0.502	1.44		M5PFHxA	106	
PFOA	2.68	0.573	1.44		M3HFPO-DA	158	V
PFNA	ND	0.367	1.44	U	M4PFHpA	99.8	
PFDA	ND	0.902	1.44	U	M3PFHxS	120	
PFUnA	ND	0.347	1.44	U	M2-6:2 FTS	146	
PFDoDA	ND	0.343	1.44	U	M8PFOA	93.0	
PFTeDA	ND	0.538	1.44	U	M9PFNA	81.6	
PFTeDA	ND	0.599	1.44	U	M8PFOS	105	
					M2-8:2 FTS	105	
Sulfonates					M8FOSA	9.40	V
L-PFBS	ND	0.599	1.44	U	M6PFDA	87.9	
PFPeS	ND	0.714	1.44	U	d3-N-MeFOSAA	66.9	
PFHxS	2.52	0.597	1.44		d5-N-EtFOSAA	77.0	
PFHpS	ND	0.562	1.44	U	M7PFUdA	85.3	
PFOS	7.81	0.340	1.44		MPFDoA	69.7	
PFNS	ND	0.472	1.44	U	M2PFTeDA	49.3	V
PFDS	ND	0.974	1.44	U			
4:2 FTS	ND	0.466	1.44	U			
6:2 FTS	ND	0.522	1.44	U	JS Standard	JS Area	Qualifiers
8:2 FTS	ND	0.411	1.44	U	MPFBA	59957	
					M2PFOA	84907	
Other					MPFDA	184415	
PFOSA	ND	2.63	1.44	U	MPFOS	14336	
N-MeFOSAA	ND	0.393	1.44	U			
N-EtFOSAA	ND	0.470	1.44	U			
HFPO-DA (Gen-X)	ND	24.0	50.5	U			

022819-E01	Detailed Results - PFAS
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Client Details	
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Client Sample ID: 022819-E01	Client Name: Brunswick County
Client Project ID: n/a	Sample Collection Date: 28-Feb-19

Lab/Sample Details	
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Lab Job #:	0219-731	Matrix:	Aqueous	Date Received:	28-Feb-19	
Lab Sample ID:	0219-731_10233_002	Wt./Vol.	34.9	Date Extracted:	04-Mar-19	
QC Batch #:	10233	Date Low Analyzed:	05-Mar-19	Date High Analyzed:	04-Mar-19	
Final Volume (mL)	0.2	Time Low Analyzed:	1:25:47	Time High Analyzed:	22:42:00	

Analyte	Conc. (ng/L)		MDL (ng/L)	RL (ng/L)	Qualifiers	Standard	ES Recoveries (%)	Qualifiers
Acids								
PFBA	2.22		1.13	1.43	B	M3PFBA	96.1	
PFPeA	2.16		0.643	1.43		M5PFPeA	137	
PFHxA	2.88		1.13	1.43		M3PFBS	160	V
PFHpA	1.60		0.498	1.43		M2-4:2 FTS	174	V
PFOA	3.02		0.569	1.43		M5PFHxA	118	
PFNA	ND		0.365	1.43	U	M3HFPO-DA	168	V
PFDA	ND		0.895	1.43	U	M4PFHpA	116	
PFUnA	ND		0.345	1.43	U	M3PFHxS	137	
PFDODA	ND		0.340	1.43	U	M2-6:2 FTS	156	V
PFTrDA	ND		0.534	1.43	U	M8PFOA	104	
PFTeDA	ND		0.595	1.43	U	M9PFNA	91.5	
						M8PFOS	109	
						M2-8:2 FTS	108	
Sulfonates								
L-PFBS	ND		0.595	1.43	U	M8FOSA	15.6	V
PFPeS	ND		0.709	1.43	U	M6PFDA	99.5	
PFHxS	ND		0.592	1.43	U	d3-N-MeFOSAA	89.0	
PFHpS	ND		0.558	1.43	U	d5-N-EtFOSAA	96.1	
PFOS	7.00		0.337	1.43		M7PFUDa	97.7	
PFNS	ND		0.468	1.43	U	MPFDoA	85.1	
PFDS	ND		0.967	1.43	U	M2PFTeDA	57.3	
4:2 FTS	ND		0.463	1.43	U			
6:2 FTS	0.605		0.518	1.43	J	JS Standard	JS Area	Qualifiers
8:2 FTS	ND		0.408	1.43	U	MPFBA	66038	
						M2PFOA	77513	
Other								
PFOSA	ND		2.61	1.43	U	MPFDA	172159	
N-MeFOSAA	ND		0.390	1.43	U	MPFOS	12117	
N-EtFOSAA	ND		0.466	1.43	U			
HFPO-DA (Gen-X)	ND		23.9	50.1	U			

Continuing Calibration

PFAS

High Concentration (ng/L)	160				
Low Concentration (ng/L)	160				
High Standard ID	SID AF50				
High Acquisition Date	04-Mar-19				
High Acquisition Time	22:50:37				
Low Standard ID	SID AF59				
Low Acquisition Date	05-Mar-19				
Low Acquisition Time	1:34:24				
Analyte	Concentration (ng/L)	PD (v. ICAL)	Limit	Acceptable	
Acids					
PFBA	172	7.5	±30	Yes	
PFPeA	176	10.2	±30	Yes	
PFHxA	175	9.7	±30	Yes	
PFHpA	183	14.3	±30	Yes	
PFOA	175	9.7	±30	Yes	
PFNA	173	8.4	±30	Yes	
PFDA	174	9.1	±30	Yes	
PFUnA	178	11.5	±30	Yes	
PFDoDA	179	11.7	±30	Yes	
PFTTrDA	180	12.3	±30	Yes	
PFTeDA	194	21.3	±30	Yes	
Sulfonates					
L-PFBS	171	7.0	±30	Yes	
PFPeS	179	12.1	±30	Yes	
PFHxS	162	1.3	±30	Yes	
PFHpS	185	15.8	±30	Yes	
PFOS	186	16.2	±30	Yes	
PFNS	174	8.7	±30	Yes	
PFDS	172	7.5	±30	Yes	
4:2 FTS	173	8.0	±30	Yes	
6:2 FTS	185	15.4	±30	Yes	
8:2 FTS	182	13.7	±30	Yes	
Other					
PFOSA	171	7.0	±30	Yes	
N-MeFOSAA	171	6.9	±30	Yes	
N-EtFOSAA	181	13.3	±30	Yes	
HFPO-DA (Gen-X)	5850	4.4	±30	Yes	

Continuing Calibration

PFAS

High Concentration (ng/L)	160	
Low Concentration (ng/L)	160	
High Standard ID	SID AF50	
High Acquisition Date	04-Mar-19	
High Acquisition Time	22:50:37	
Low Standard ID	SID AF59	
Low Acquisition Date	05-Mar-19	
Low Acquisition Time	1:34:24	

Analyte	Concentration (ng/g)	Recovery (%)	Limit (%)	Acceptable	
MPFBA	10102	101	±50	Yes	
M5PFPeA	10066	101	±50	Yes	
M3PFBS	10244	102	±50	Yes	
M2-4:2 FTS	10246	103	±50	Yes	
M5PFHxA	9789	97.9	±50	Yes	
M3HFPO-DA	10289	103	±50	Yes	
M4PFHpA	10005	100	±50	Yes	
M3PFHxS	10418	104	±50	Yes	
M2-6:2 FTS	9065	90.6	±50	Yes	
M8PFOA	9790	97.9	±50	Yes	
M9PFNA	9727	97.3	±50	Yes	
M8PFOS	9676	96.8	±50	Yes	
M2-8:2 FTS	8691	86.9	±50	Yes	
M8FOSA	19284	96.4	±50	Yes	
M6PFDA	19283	96.4	±50	Yes	
d3-N-MeFOSAA	18784	93.9	±50	Yes	
d5-N-EtFOSAA	19192	96.0	±50	Yes	
M7PFUDa	19698	98.5	±50	Yes	
MPFDoA	18507	92.5	±50	Yes	
M2PFTeDA	17243	86.2	±50	Yes	
Injection Standards					
MPFBA	119000	3.0%			
M2PFOA	113000	4.0%			
MPFDA	166000	-4.0%			
MPFOS	20500	0.5%			

LCS					Detailed Results - PFAS			
Lab/Sample Details								
		Matrix:	Aqueous		Date Received:		N/A	
Lab Sample ID:	OPR_10233	Wt./Vol.	25		Date Extracted:		04-Mar-19	
QC Batch #:	10233	Date Low Analyzed:	05-Mar-19		Date High Analyzed:		04-Mar-19	
Final Volume (mL)	0.2	Time Low Analyzed:	0:42:40		Time High Analyzed:		21:58:56	
Analyte	Conc. (ng/L)		MDL (ng/L)	RL (ng/L)	Qualifiers	Standard	ES Recoveries (%)	Qualifiers
Acids						M3PFBA	106	
PFBA	492		1.57	2.00		M5PFPeA	110	
PFPeA	528		0.898	2.00		M3PFBS	135	
PFHxA	536		1.58	2.00		M2-4:2 FTS	129	
PFHpA	516		0.695	2.00		M5PFHxA	92.9	
PFOA	518		0.795	2.00		M3HFPO-DA	110	
PFNA	508		0.509	2.00		M4PFHpA	99.5	
PFDA	522		1.25	2.00		M3PFHxS	126	
PFUnA	521		0.481	2.00		M2-6:2 FTS	181	V
PFDoDA	523		0.475	2.00		M8PFOA	100	
PFTTrDA	614		0.745	2.00		M9PFNA	103	
PFTeDA	575		0.830	2.00		M8PFOS	112	
						M2-8:2 FTS	123	
Sulfonates						M8FOSA	12.9	V
L-PFBS	511		0.830	2.00		M6PFDA	105	
PFPeS	571		0.990	2.00		d3-N-MeFOSAA	88.8	
PFHxS	501		0.827	2.00		d5-N-EtFOSAA	86.1	
PFHpS	561		0.779	2.00		M7PFUdA	109	
PFOS	522		0.471	2.00		MPFDoA	105	
PFNS	536		0.654	2.00		M2PFTeDA	86.9	
PFDS	491		1.35	2.00				
4:2 FTS	548		0.646	2.00				
6:2 FTS	545		0.723	2.00		JS Standard	JS Area	Qualifiers
8:2 FTS	517		0.569	2.00		MPFBA	78310	
						M2PFOA	87882	
Other						MPFDA	170008	
PFOSA	538		3.65	3.65		MPFOS	14317	
N-MeFOSAA	514		0.544	2.00				
N-EtFOSAA	513		0.651	2.00				
HFPO-DA (Gen-X)	16500		33.3	70.0				

LCS Evaluation

Batch ID#: 10233

Analyte	Conc. (ng/g)	Recovery (%)	Lower Limit	Upper Limit	Acceptable?
Acids					
PFBA	492	102%	70	130	Y
PFPeA	528	110%	70	130	Y
PFHxA	536	112%	70	130	Y
PFHpA	516	108%	70	130	Y
PFOA	518	108%	70	130	Y
PFNA	508	106%	70	130	Y
PFDA	522	109%	70	130	Y
PFUnA	521	108%	70	130	Y
PFDODA	523	109%	70	130	Y
PFTTrDA	614	128%	70	130	Y
PFTeDA	575	120%	70	130	Y
Sulfonates					
L-PFBS	511	106%	70	130	Y
PFPeS	571	119%	70	130	Y
PFHxS	501	104%	70	130	Y
PFHpS	561	117%	70	130	Y
PFOS	522	109%	70	130	Y
PFNS	536	112%	70	130	Y
PFDS	491	102%	70	130	Y
4:2 FTS	548	114%	70	130	Y
6:2 FTS	545	114%	70	130	Y
8:2 FTS	517	108%	70	130	Y
Other					
PFOSA	538	112%	70	130	Y
N-MeFOSAA	514	107%	70	130	Y
N-EtFOSAA	513	107%	70	130	Y
HFPO-DA (Gen-X)	16500	97.9%	70	130	Y

Method Blank					Detailed Results - PFAS			
Lab/Sample Details								
Matrix:		Aqueous		Date Received:		N/A		
Lab Sample ID:	MB_10233	Wt./Vol.	25.0	Date Extracted:		04-Mar-19		
QC Batch #:	10233	Date Low Analyzed:	05-Mar-19	Date High Analyzed:		04-Mar-19		
Final Volume (mL)	0.2	Time Low Analyzed:	1:08:32	Time High Analyzed:		22:24:46		
Analyte	Conc. (ng/L)		MDL (ng/L)	RL (ng/L)	Qualifiers	Standard	ES Recoveries (%)	Qualifiers
Acids						M3PFBA	100	
PFBA	2.68		1.57	2.00		M5PFPeA	109	
PFPeA	ND		0.898	2.00	U	M3PFBS	138	
PFHxA	ND		1.58	2.00	U	M2-4:2 FTS	143	
PFHpA	ND		0.695	2.00	U	M5PFHxA	108	
PFOA	ND		0.795	2.00	U	M3HFPO-DA	110	
PFNA	ND		0.509	2.00	U	M4PFHpA	106	
PFDA	ND		1.25	2.00	U	M3PFHxS	124	
PFUnA	ND		0.481	2.00	U	M2-6:2 FTS	171	V
PFDoDA	ND		0.475	2.00	U	M8PFOA	106	
PFTeDA	ND		0.745	2.00	U	M9PFNA	100	
PFTeDA	ND		0.830	2.00	U	M8PFOS	106	
						M2-8:2 FTS	110	
Sulfonates						M8FOSA	10.4	V
L-PFBS	ND		0.830	2.00	U	M6PFDA	110	
PFPeS	ND		0.990	2.00	U	d3-N-MeFOSAA	89.0	
PFHxS	ND		0.827	2.00	U	d5-N-EtFOSAA	102	
PFHpS	ND		0.779	2.00	U	M7PFUdA	114	
PFOS	ND		0.471	2.00	U	MPFDoA	103	
PFNS	ND		0.654	2.00	U	M2PFTeDA	84.4	
PFDS	ND		1.35	2.00	U			
4:2 FTS	ND		0.646	2.00	U			
6:2 FTS	ND		0.723	2.00	U	JS Standard	JS Area	Qualifiers
8:2 FTS	ND		0.569	2.00	U	MPFBA	93382	
						M2PFOA	88841	
Other						MPFDA	182354	
PFOSA	ND		3.65	2.00	U	MPFOS	13737	
N-MeFOSAA	ND		0.544	2.00	U			
N-EtFOSAA	ND		0.651	2.00	U			
HFPO-DA (Gen-X)	ND		33.3	70.0	U			

Enthalpy Analytical Narrative Summary

Company	County of Brunswick
Job#	0219-731 PFAS
Client Project #	n/a

Custody	Hunter Allen of Enthalpy Analytical Wilmington received the samples (via client courier) on 02/28/19 on ice at 3.8°C in good condition. Prior to, during, and after analysis, the samples were stored in the laboratory with access only by authorized personnel of Enthalpy Analytical, LLC.
Analysis	The samples were analyzed by isotope dilution method for PFAS using Waters Acquity UPLC equipped with Xevo TQ MS (LC/MS/MS “Fili”). For each sample, 35mL aliquot (or less due to sample amount) was weighed and spiked with Extraction Standard (ES). The sample was then mixed well. Cleanup procedures were performed on the supernatant and then extracted via SPE. Each final sample extract was transferred to an autosampler vial and spiked with 200 µL of Injection Standard (IS), prior to analysis.
Calibration	The analytes and labeled standards in the initial calibration exhibited RSDs less than 50%. All analytes passed the R² coefficient correlation criteria. The continuing calibration met the ±30% criteria for native analytes, ±50% criteria for ES recoveries, and ±50% of IS peak area.
QC Notes	The LCS injection met the ±50% criteria for ES recoveries and IS Area with the following exceptions: M2-6:2 FTS fell outside the upper ES recovery limit; M8FOSA fell outside the lower ES recovery limit. PFBA was detected in the method blank greater than 1/10 the sample amount. This analyte detected in the samples is notated with a B qualifier. The samples were extracted within the 14-day from collection holding time. Extracts were analyzed within the 28-days from extraction to analysis holding time required by the method.
Reporting Notes	ES recoveries in sample 022819-S01 fell outside the lower limit for M8FOSA and M2PFTeDA. ES recoveries greater than the upper limit for M2-4:2 FTS and M3HFPO-DA were also observed. ES recoveries in sample 022819-E01 fell outside the lower limit for M8FOSA. ES recoveries greater than the upper limit for M3PFBS, M2-4:2 FTS, M2-6:2 FTS, and M3HFPO-DA were also observed.

Enthalpy Analytical Narrative Summary

(continued)

Reporting Notes (continued)

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.

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

The samples, calibrations and standards for the data presented in this report were analyzed at 2714 Exchange Drive, Wilmington, NC 28405.



General Reporting Notes – Data Qualifiers

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

General Data Qualifiers / Data Attributes

- B – The analyte was found in the method blank, at a concentration that was at least 10% of the concentration in the sample.
- C – 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 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).
- EMPC – Represents an estimated maximum possible concentration. EMPCs arise in cases where the signal/noise ratio is not sufficient for peak identification (the determined ion-abundance ratio is outside the allowed theoretical range), or where there is a co-eluting interference.
- J – Indicates that an analyte has a concentration below the reporting limit (lowest point of the calibration curve).
- ND – Indicates a non-detect.
- NR – Indicates a value that is not reportable.
- PR – Due to interference, the associated congener is poorly resolved.
- DI – Indicates the presence of a quantitative interference.
- 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. The Estimated Detection Limit (EDL) may be reported for this analyte.
- V – The labeled standard recovery was found to be outside of the method control limits.

DRBC/TMDL Specific Data Qualifiers / Data Attributes

- J – The reported result is an estimate. The value is less than the minimum calibration level but greater than the Estimated Detection Limit (EDL).
- U – The analyte was not detected in the sample at the Estimated Detection Limit (EDL).
- E – The reported concentration is an estimate. The value exceeds the upper calibration range (upper point of the calibration curve).

General Reporting Notes – Data Qualifiers

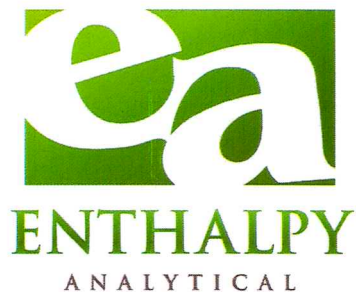
- D – Dilution Data. Result was obtained from the analysis of a dilution.
- B – Analyte found in the sample and associated method blank.
- Cxx – Co-elutes with the indicated congener, data is reported under the lowest IUPAC congener. ‘xx’ denotes the IUPAC number with the lowest numerical designated congener.
- NR – Analyte is not reportable because of problems in sample preparation or analysis.
- V – Labeled standard recovery is not within method control limits.
- X – Results from re-injection/repeat/second-column analysis.
- EMPC – Estimated Maximum Possible Concentration. Indicates that a peak is identified but did not meet the method specified ion-abundance ratio.

Lab Identifiers

- 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 – Indicates a dilution of the sample extract. 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.
- RJ – Indicates a reinjection of the sample extract.
- S – Indicates a sample split. The number that follows the “S” indicates the split factor.

PFAS Compound Acronym List	
Acronym	Compound Name
Target Analytes	
PFBA	Perfluorobutanoic Acid
PFPeA	Perfluoropentanoic Acid
PFHxA	Perfluorohexanoic Acid
PFHpA	Perfluoroheptanoic Acid
PFOA	Perfluorooctanoic Acid
PFNA	Perfluorononanoic Acid
PFDA	Perfluorodecanoic acid
PFUnDA	Perfluoroundecanoic acid
PFDoDA (PFTDoA)	Perfluorododecanoic acid
PFTTrDA (PFTTrA)	Perfluorotridecanoic acid
PFTeDA (PFTA)	Perfluorotetradecanoic acid
PFBS	Perfluorobutane sulfonate
PFPeS	Perfluoropentane sulfonate
PFHxS	Perfluorohexane sulfonate
PFHpS	Perfluoroheptane sulfonate
PFOS	Perfluorooctane sulfonate
PFNS	Perfluorononane sulfonate
PFDS	Perfluorodecane sulfonate
4:2 FTS	4:2 fluorotelomer sulfonic acid
6:2 FTS	6:2 fluorotelomer sulfonic acid
8:2 FTS	8:2 fluorotelomer sulfonic acid
PFOSA	Perfluorooctane sulfonamide
N-MeFOSAA	N-methyl perfluorooctane sulfonamido acetic acid
N-EtFOSAA	N-ethyl perfluorooctane sulfonamido acetic acid
HFPO-DA	2,3,3,3-Tetrafluoro-2-(1,1,2,2,3,3,3-heptafluoropropoxy)-propanoic acid (Gen-X)
Extraction Standards	
M3PFBA	Perfluoro-n-[2,3,4-13C3]butanoic acid
M5PFPeA	Perfluoro-n-[13C5]pentanoic acid
M3PFBS	Sodium perfluoro-1-[2,3,4-13C3]-butanesulfonate
M2-4:2 FTS	Sodium 1H,1H,2H,2H-perfluoro-1-[1,2-13C2]-hexane sulfonate
M5PFHxA	Perfluoro-n-[1,2,3,4,6-13C5]hexanoic acid
M3HFPO-DA	2,3,3,3-Tetrafluoro-2-(1,1,2,2,3,3,3-heptafluoropropoxy)-13C3-propanoic acid
M4PFHpA	Perfluoro-n-[1,2,3,4-13C4]heptanoic acid
M3PFHxS	Sodium perfluoro-1-[1,2,3-13C3]-hexanesulfonate
M2-6:2 FTS	Sodium 1H,1H,2H,2H-perfluoro-1-[1,2-13C2]-octane sulfonate
M8PFOA	Perfluoro-n-[13C8]octanoic acid
M9PFNA	Perfluoro-n-[13C9]nonanoic acid
M8PFOS	Sodium perfluoro-1-[13C8]-octanesulfonate
M2-8:2 FTS	Sodium 1H,1H,2H,2H-perfluoro-1-[1,2-13C2]-decane sulfonate
M8FOSA	Perfluoro-1-[13C8]octanesulfonamide
M6PFDA	Perfluoro-n-[1,2,3,4,5,6-13C6]decanoic acid
d3-N-MeFOSAA	N-methyl-d3-perfluoro-1-octanesulfonamide
d5-N-EtFOSAA	N-ethyl-d5-perfluoro-1-octanesulfonamide
M7PFUnDA (M7PFUdA)	Perfluoro-n-[1,2,3,4,5,6,7-13C7]undecanoic acid
MPFDoA	Perfluoro-n-[1,2-13C2]dodecanoic acid
M2PFTeDA	Perfluoro-n-[1,2-13C2]tetradecanoic acid

Injection Standards	
MPFBA	Perfluoro-n-[13C4]butanoic acid
M2PFOA	Perfluoro-n-[1,2-13C2]octanoic acid
MPFDA	Perfluoro-n-[1,2-13C2]decanoic acid
MPFOS	Sodium perfluoro-1-[1,2,3,4-13C4]-octanesulfonate



Job 0219-731 report due Thursday Mar 14 2019

To	Glenn Walker	From	Lindsay Boone
Company	County of Brunswick	Customer PO	
Site	N. W. Plant Leland	Sales Order	SO1035552
Customer Phone	910-612-5618	Date Due QA	Tuesday, March 12, 2019
Customer Email	glenn.walker@brunswickcountync.gov	Results Due	Thursday, March 14, 2019
Customer Project		Report Due	Thursday, March 14, 2019

Line	Method	Analytes	Quant	Dept	Objective	Status
1	WM-026 PFAS by Isotope Dilution (non-potable water) report:	Legacy 24 plus Gen X	2	Wilmington	Level 1 Report	Sampled 02-28-19 11:30 (local time) Received 02-28-19 13:05 ReceivedTemp 3.8 StorageTemp 4 StorageLocation R1



Enthalpy Ultratrace Job#: _____ COC Page _____ of _____

☒ 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.

Project Number: _____

Site Name: N.W. PLANT LAB

Location: LELAND

PO#:

Telephone#: 910-371-3490

Email:

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

Client Special Instructions:

Sample Containers

Analyses:

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

Relinquished By:

Date: _____

Received By:

Date:

Time:

Sample Temperature Upon Receipt:

Relinquished By: * Thaddeus Hill

2/28/19

Heck

2/28/19

120

☒ Iced ☐ Ambient °C 3.8°C T₁

☐ Iced ☐ Ambient °C☐ Iced ☐ Ambient °C

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