



NELAP Certification Number: CA00046
DoD-ELAP Certification Number: 4064.01
State Certification Number:

August 07, 2023

Jacob Sutherlund Fibertec Environmental Services 1914 Holloway Drive Holt, MI 48842

RE: PFAS Testing 23G0165

Enclosed are the results of analyses for samples received by our laboratory on 7/18/2023. If you have any questions concerning this report, please feel free to contact me.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. These test results meet all requirements of NELAC and DoD QSM. Release of the hard copy has been authorized by the Laboratory Manager or designee, as verified by the following signature.

Sincerely,

Chue Moua

Project Manager

cmoua@applinc.com

559-862-2155

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Fibertec Environmental Services Project: PFAS Testing
1914 Holloway Drive Project Number: A16177

Holt, MI 48842 Project Manager: Jacob Sutherlund Reported: 08/07/2023 10:44

Analysis Case Narrative

PFAS: Manual integrations were performed for this method in accordance with APPL's SOP. Chromatograms after manual integration are enclosed for specific samples and analytes. Abbreviated flags for technical justification are listed on the chromatogram.

Some extracted internal standards recovered outside of control limits in some samples; these samples were diluted and recovered in control, unless stated otherwise.

The extracted internal standards 13C2-8:2FTS recovered above the upper control limit in the BCG0557-BLK1.

The extracted internal standards 13C2-8:2FTS recovered above the upper control limit in the BCG0557-BS1.

The extracted internal standards 13C2-8:2FTS recovered above the upper control limit in the BCG0557-MRL1.

Samples in this Report

Lab ID	Sample	Matrix	Date Sampled	Date Received
23G0165-01	MW-7D	Water	07/13/2023 11:30	07/18/2023
23G0165-02	MW-3S	Water	07/13/2023 13:43	07/18/2023
23G0165-03	WT BLANK	Water	07/13/2023 16:16	07/18/2023
23G0165-04	PUMP BLANK	Water	07/13/2023 16:29	07/18/2023

Fibertec Environmental Services

Project: PFAS Testing

1914 Holloway Drive

Project Number: A16177

Holt, MI 48842 Project Manager: Jacob Sutherlund

Sample Results

Sample: MW-7D

23G0165-01 (Water)

Analyte	Result/Qual	PQL	MDL Units	Date Analyzed	DF	Method	Prep Batch
Per- and Polyfluoroalkyl Substances	i						
PFBA	ND	4.0	ng/L	07/28/23	1	537M	BCG0557
PFPeA	11	1.6	ng/L	07/28/23	1	537M	BCG0557
PFHxA	8.2	1.6	ng/L	07/28/23	1	537M	BCG0557
PFHpA	ND	1.6	ng/L	07/28/23	1	537M	BCG0557
PFOA	ND	1.6	ng/L	07/28/23	1	537M	BCG0557
PFNA	ND	1.6	ng/L	07/28/23	1	537M	BCG0557
PFDA	ND	1.6	ng/L	07/28/23	1	537M	BCG0557
PFUnA	ND	1.6	ng/L	07/28/23	1	537M	BCG0557
PFDoA	ND	1.6	ng/L	07/28/23	1	537M	BCG0557
PFTrDA	ND	1.6	ng/L	07/28/23	1	537M	BCG0557
PFTeDA	ND	1.6	ng/L	07/28/23	1	537M	BCG0557
PFBS	2.5	1.6	ng/L	07/28/23	1	537M	BCG0557
PFPeS	ND	1.6	ng/L	07/28/23	1	537M	BCG0557
PFHxS	ND	1.6	ng/L	07/28/23	1	537M	BCG0557
PFHpS	ND	1.6	ng/L	07/28/23	1	537M	BCG0557
PFOS	ND	1.6	ng/L	07/28/23	1	537M	BCG0557
PFNS	ND	1.6	ng/L	07/28/23	1	537M	BCG0557
PFDS	ND	1.6	ng/L	07/28/23	1	537M	BCG0557
4:2FTS	ND	2.8	ng/L	07/28/23	1	537M	BCG0557
6:2FTS	ND	4.0	ng/L	07/28/23	1	537M	BCG0557
8:2FTS	ND	2.8	ng/L	07/28/23	1	537M	BCG0557
PFOSA	ND	2.8	ng/L	07/28/23	1	537M	BCG0557
NMeFOSAA	ND ND	1.6	ng/L	07/28/23	1	537M	BCG0557
NEtFOSAA	ND	2.4	ng/L	07/28/23	1	537M	BCG0557
HFPO-DA	ND	1.4	ng/L	07/28/23	1	537M	BCG0557
ADONA	ND ND	1.4	ng/L	07/28/23	1	537M	BCG0557
9CI-PF3ONS	ND ND	1.4	ng/L	07/28/23	1	537M	BCG0557
	ND ND	1.4			1	537M	
11CI-PF3OUDS			ng/L	07/28/23			BCG0557
Surrogate: 13C4-PFBA	95.6%	50-150		07/28/23	1	537M	
Surrogate: 13C5-PFPEA	92.6%	50-150		07/28/23	1	537M	
Surrogate: 13C5-PFHXA	93.9%	<i>50-150</i>		07/28/23	1	537M 537M	
Surrogate: 13C4-PFHPA	77.8%	<i>50-150</i>		07/28/23	1	537M 537M	
Surrogate: 13C8-PFOA	96.6% 104%	<i>50-150</i>		07/28/23	1 1	537M	
Surrogate: 13C9-PFNA	104% 91.7%	50-150 50-150		07/28/23	1	537M	
Surrogate: 13C6-PFDA	91.7% 95.7%	50-150 50-150		07/28/23 07/28/23		537M	
Surrogate: 13C7-PFUnA Surrogate: 13C2-PFDOA	95.7% 87.5%	50-150 50-150		07/28/23 07/28/23	1 1	537M	
Surrogate: 13C2-PFTEDA	89.4%	50-150 50-150		07/28/23	1	537M	
Surrogate: 13C3-PFBS	101%	50-150 50-150		07/28/23	1	537M	
Surrogate: 13C3-PFHXS	96.4%	<i>50-150</i>		07/28/23	1	537M	
Surrogate: 13C8-PFOS	93.0%	50-150		07/28/23	1	537M	
Surrogate: 13C2-4:2FTS	95.6%	50-150		07/28/23	1	537M	
Surrogate: 13C2-6:2FTS	91.7%	50-150		07/28/23	1	537M	
Surrogate: 13C2-8:2FTS	<i>158%</i> S2	50-150		07/28/23	1	537M	
Surrogate: 13C2-8:2FTS	97.8%	50-150		07/28/23	10	537M	
Surrogate: 13C8-PFOSA	89.6%	50-150		07/28/23	1	537M	

Fibertec Environmental Services

Project: PFAS Testing

1914 Holloway Drive

Project Number: A16177

Holt, MI 48842 Project Manager: Jacob Sutherlund

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Sample Results (Continued)

Sample: MW-7D (Continued) 23G0165-01 (Water)

Analyte	Result/Qual	PQL	MDL	Units	Date Analyzed	DF	Method	Prep Batch			
Per- and Polyfluoroalkyl Substances (Continued)											
Surrogate: D3-NMEFOSAA	84.3%	50-150			07/28/23	1	537M				
Surrogate: D5-NETFOSAA	84.2%	50-150			07/28/23	1	537M				
Surrogate: 13C3-HFPO-DA	83.5%	<i>50-150</i>			07/28/23	1	537M				

Fibertec Environmental Services

Project: PFAS Testing

1914 Holloway Drive

Project Number: A16177

Holt, MI 48842 Project Manager: Jacob Sutherlund

Sample Results (Continued)

Sample: MW-3S

23G0165-02 (Water)

Analyte Result/Qual PQL MDL Units Analyzed DF Method	Batch
Per- and Polyfluoroalkyl Substances	
PFBA ND 4.0 ng/L 07/28/23 1 537M	BCG0557
PFPeA ND MI6, 1.6 ng/L 07/28/23 1 537M	BCG0557
PFHxA ND MI4, 1.6 ng/L 07/28/23 1 537M	BCG0557
PFHpA 3.8 MI4 1.6 ng/L 07/28/23 1 537M	BCG0557
PFOA 23 MI4 1.6 ng/L 07/28/23 1 537M	BCG0557
PFNA ND 1.6 ng/L 07/28/23 1 537M	BCG0557
PFDA ND 1.6 ng/L 07/28/23 1 537M	BCG0557
PFUnA ND 1.6 ng/L 07/28/23 1 537M	BCG0557
PFDoA ND 1.6 ng/L 07/28/23 1 537M	BCG0557
PFTrDA ND 1.6 ng/L 07/28/23 1 537M	BCG0557
PFTeDA ND 1.6 ng/L 07/28/23 1 537M	BCG0557
PFBS ND 1.6 ng/L 07/28/23 1 537M	BCG0557
PFPeS ND MI4, 1.6 ng/L 07/28/23 1 537M	BCG0557
PFHxS 1.9 MI4 1.6 ng/L 07/28/23 1 537M	BCG0557
PFHpS ND MI4, 1.6 ng/L 07/28/23 1 537M	BCG0557
PFOS ND 1.6 ng/L 07/28/23 1 537M	BCG0557
PFNS ND 1.6 ng/L 07/28/23 1 537M	BCG0557
PFDS ND 1.6 ng/L 07/28/23 1 537M	BCG0557
4:2FTS ND 2.8 ng/L 07/28/23 1 537M	BCG0557
6:2FTS ND 4.0 ng/L 07/28/23 1 537M	BCG0557
8:2FTS ND 2.8 ng/L 07/28/23 1 537M	BCG0557
PFOSA ND 2.8 ng/L 07/28/23 1 537M	BCG0557
NMeFOSAA ND 1.6 ng/L 07/28/23 1 537M	BCG0557
NEtFOSAA ND 2.4 ng/L 07/28/23 1 537M	BCG0557
HFPO-DA ND 1.4 ng/L 07/28/23 1 537M	BCG0557
ADONA ND 1.4 ng/L 07/28/23 1 537M	BCG0557
9CI-PF3ONS ND 1.4 ng/L 07/28/23 1 537M	BCG0557
11CI-PF3OUDS ND 1.4 ng/L 07/28/23 1 537M	BCG0557
Surrogate: 13C4-PFBA 97.4% 50-150 07/28/23 1 537M	
Surrogate: 13C5-PFPEA 94.5% 50-150 07/28/23 1 537M Surrogate: 13C5-PFHXA 98.2% 50-150 07/28/23 1 537M	
501.0guter 150.77.77.7	
Surrogate: 13C8-PF0A 97.7% 50-150 07/28/23 1 537M Surrogate: 13C9-PFNA 101% 50-150 07/28/23 1 537M	
Surrogate: 13C6-PFDA 96.6% 50-150 07/28/23 1 537M	
Surrogate: 13C7-PFUnA 102% 50-150 07/28/23 1 537M	
Surrogate: 13C2-PFDOA 93.6% 50-150 07/28/23 1 537M	
Surrogate: 13C2-PFTEDA 102% 50-150 07/28/23 1 537M	
Surrogate: 13C3-PFBS 100% 50-150 07/28/23 1 537M	
Surrogate: 13C3-PFHXS 102% 50-150 07/28/23 1 537M	
Surrogate: 13C8-PFOS 95.3% 50-150 07/28/23 1 537M	
Surrogate: 13C2-4:2FTS 121% 50-150 07/28/23 1 537M	
Surrogate: 13C2-6:2FTS 96.8% 50-150 07/28/23 1 537M	
Surrogate: 13C2-8:2FTS 130% 50-150 07/28/23 1 537M	
Surrogate: 13C8-PFOSA 87.7% 50-150 07/28/23 1 537M	
Surrogate: D3-NMEFOSAA 94.7% 50-150 07/28/23 1 537M	

Fibertec Environmental Services

Project: PFAS Testing

1914 Holloway Drive

Project Number: A16177

Holt, MI 48842

Project Manager: Jacob Sutherlund

Sample Results (Continued)

Sample: MW-3S (Continued) 23G0165-02 (Water)

Analyte	Result/Qual	PQL	MDL	Units	Date Analyzed	DF	Method	Prep Batch			
Per- and Polyfluoroalkyl Substances (Continued)											
Surrogate: D5-NETFOSAA Surrogate: 13C3-HFPO-DA	93.8% 84.1%	<i>50-150</i> <i>50-150</i>			07/28/23 07/28/23	1 1	537M 537M				

Fibertec Environmental Services

Project: PFAS Testing

1914 Holloway Drive

Project Number: A16177

Holt, MI 48842 Project Manager: Jacob Sutherlund

Sample Results (Continued)

Sample: WT BLANK

23G0165-03 (Water)

Analys	Describ (O.)	50:	MDI II II	Date	5.5	Makk	Prep
Analyte	Result/Qual	PQL	MDL Units	Analyzed	DF	Method	Batch
Per- and Polyfluoroalkyl Subst	tances						
PFBA	ND	4.0	ng/L	07/28/23	1	537M	BCG0557
PFPeA	ND	1.6	ng/L	07/28/23	1	537M	BCG0557
PFHxA	ND	1.6	ng/L	07/28/23	1	537M	BCG0557
PFHpA	ND	1.6	ng/L	07/28/23	1	537M	BCG0557
PFOA	ND	1.6	ng/L	07/28/23	1	537M	BCG0557
PFNA	ND	1.6	ng/L	07/28/23	1	537M	BCG0557
PFDA	ND	1.6	ng/L	07/28/23	1	537M	BCG0557
PFUnA	ND	1.6	ng/L	07/28/23	1	537M	BCG0557
PFDoA	ND	1.6	ng/L	07/28/23	1	537M	BCG0557
PFTrDA	ND	1.6	ng/L	07/28/23	1	537M	BCG0557
PFTeDA	ND	1.6	ng/L	07/28/23	1	537M	BCG0557
PFBS	ND	1.6	ng/L	07/28/23	1	537M	BCG0557
PFPeS	ND	1.6	ng/L	07/28/23	1	537M	BCG0557
PFHxS	ND	1.6	ng/L	07/28/23	1	537M	BCG0557
PFHpS	ND	1.6	ng/L	07/28/23	1	537M	BCG0557
PFOS	ND	1.6	ng/L	07/28/23	1	537M	BCG0557
PFNS	ND	1.6	ng/L	07/28/23	1	537M	BCG0557
PFDS	ND	1.6	ng/L	07/28/23	1	537M	BCG0557
4:2FTS	ND	2.7	ng/L	07/28/23	1	537M	BCG0557
6:2FTS	ND	4.0	ng/L	07/28/23	1	537M	BCG0557
8:2FTS	ND	2.7	_	07/28/23	1	537M	BCG0557
PFOSA	ND ND	2.7	ng/L	07/28/23	1	537M	BCG0557
NMeFOSAA	ND ND	1.6	ng/L ng/L	07/28/23	1	537M	BCG0557
NEtFOSAA	ND	2.4	ng/L	07/28/23	1	537M	BCG0557
						537M	
HFPO-DA ADONA	ND ND	1.4	ng/L	07/28/23	1 1	537M	BCG0557
		1.4	ng/L	07/28/23		537M	BCG0557
9CI-PF3ONS	ND ND	1.4	ng/L	07/28/23	1	537M	BCG0557
11Cl-PF3OUDS	ND	1.4	ng/L	07/28/23	1		BCG0557
Surrogate: 13C4-PFBA	98.1%	<i>50-150</i>		07/28/23	1	537M	
Surrogate: 13C5-PFPEA	93.1%	50-150		07/28/23	1	537M	
Surrogate: 13C5-PFHXA	100%	50-150		07/28/23	1	537M	
Surrogate: 13C4-PFHPA	87.0%	50-150		07/28/23	1	537M	
Surrogate: 13C8-PFOA	96.4%	50-150		07/28/23	1	537M 537M	
Surrogate: 13C9-PFNA	94.4%	<i>50-150</i>		07/28/23	1	537M	
Surrogate: 13C6-PFDA	92.1%	50-150		07/28/23	1	537M	
Surrogate: 13C7-PFUnA	102% 93.2%	50-150 50-150		07/28/23	1	537M	
Surrogate: 13C2-PFTDA	93.2% 94.0%	<i>50-150</i> <i>50-150</i>		07/28/23 07/28/23	1 1	537M	
Surrogate: 13C2-PFTEDA Surrogate: 13C3-PFBS	94.0% 96.8%	50-150 50-150		07/28/23 07/28/23	1	537M	
Surrogate: 13C3-PFHXS	101%	50-150 50-150		07/28/23	1	537M	
Surrogate: 13C8-PFOS	94.7%	<i>50-150</i>		07/28/23	1	537M	
Surrogate: 13C2-4:2FTS	107%	<i>50-150</i>		07/28/23	1	537M	
Surrogate: 13C2-6:2FTS	94.8%	<i>50-150</i>		07/28/23	1	537M	
Surrogate: 13C2-8:2FTS		52 <i>50-150</i>		07/28/23	1	537M	
Surrogate: 13C2-8:2FTS	109%	50-150		07/28/23	10	537M	
Surrogate: 13C8-PFOSA	82.5%	<i>50-150</i>		07/28/23	1	537M	
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Fibertec Environmental Services

Project: PFAS Testing

1914 Holloway Drive

Project Number: A16177

Holt, MI 48842

Project Manager: Jacob Sutherlund

Sample Results (Continued)

Sample: WT BLANK (Continued)

23G0165-03 (Water)

Analyte	Result/Qual	PQL	MDL	Units	Date Analyzed	DF	Method	Prep Batch			
Per- and Polyfluoroalkyl Substances (Continued)											
Surrogate: D3-NMEFOSAA	95.2%	50-150			07/28/23	1	537M				
Surrogate: D5-NETFOSAA	106%	50-150			07/28/23	1	537M				
Surrogate: 13C3-HFPO-DA	91.7%	50-150			07/28/23	1	537M				

Fibertec Environmental Services

Project: PFAS Testing

1914 Holloway Drive

Project Number: A16177

Holt, MI 48842 Project Manager: Jacob Sutherlund

Sample Results (Continued)

Sample: PUMP BLANK

23G0165-04 (Water)

Analyte	Result/Qual	PQL	MDL Units	Date Analyzed	DF	Method	Prep Batch
Per- and Polyfluoroalkyl Substances							
PFBA	ND	4.0	ng/L	07/28/23	1	537M	BCG0557
PFPeA	ND	1.6	ng/L	07/28/23	1	537M	BCG0557
PFHxA	ND	1.6	ng/L	07/28/23	1	537M	BCG0557
PFHpA	ND	1.6	ng/L	07/28/23	1	537M	BCG0557
PFOA	ND	1.6	ng/L	07/28/23	1	537M	BCG0557
PFNA	ND	1.6	ng/L	07/28/23	1	537M	BCG0557
PFDA	ND	1.6	ng/L	07/28/23	1	537M	BCG0557
PFUnA	ND	1.6	ng/L	07/28/23	1	537M	BCG0557
PFDoA	ND	1.6	ng/L	07/28/23	1	537M	BCG0557
PFTrDA	ND	1.6	ng/L	07/28/23	1	537M	BCG0557
PFTeDA	ND	1.6	ng/L	07/28/23	1	537M	BCG0557
PFBS	ND	1.6	ng/L	07/28/23	1	537M	BCG0557
PFPeS	ND	1.6	ng/L	07/28/23	1	537M	BCG0557
PFHxS	ND	1.6	ng/L	07/28/23	1	537M	BCG0557
PFHpS	ND	1.6	ng/L	07/28/23	1	537M	BCG0557
PFOS	ND	1.6	ng/L	07/28/23	1	537M	BCG0557
PFNS	ND	1.6	ng/L	07/28/23	1	537M	BCG0557
PFDS	ND	1.6	ng/L	07/28/23	1	537M	BCG0557
4:2FTS	ND	2.8	ng/L	07/28/23	1	537M	BCG0557
6:2FTS	ND	4.0	ng/L	07/28/23	1	537M	BCG0557
8:2FTS	ND	2.8	ng/L	07/28/23	1	537M	BCG0557
PFOSA	ND	2.8	ng/L	07/28/23	1	537M	BCG0557
NMeFOSAA	ND ND	1.6	ng/L	07/28/23	1	537M	BCG0557
NEtFOSAA	ND ND	2.4	ng/L	07/28/23	1	537M	BCG0557
HFPO-DA	ND ND	1.4	ng/L	07/28/23	1	537M	BCG0557 BCG0557
ADONA	ND ND	1.4	ng/L	07/28/23	1	537M	BCG0557
9CI-PF3ONS	ND ND	1.4	ng/L	07/28/23	1	537M	BCG0557
11CI-PF3OUDS	ND ND	1.4	ng/L	07/28/23	1	537M	BCG0557 BCG0557
			11g/L				DCGU33/
Surrogate: 13C4-PFBA	103%	<i>50-150</i>		07/28/23	1	537M 537M	
Surrogate: 13C5-PFPEA	98.3%	<i>50-150</i>		07/28/23	1	537M 537M	
Surrogate: 13C5-PFHXA	114%	50-150 50-150		07/28/23	1	537M 537M	
Surrogate: 13C4-PFHPA	90.4%	50-150		07/28/23	1	537M 537M	
Surrogate: 13C8-PFOA Surrogate: 13C9-PFNA	97.7% 98.3%	<i>50-150</i> <i>50-150</i>		07/28/23 07/28/23	1 1	537M	
Surrogate: 13C9-PFDA	98.3% 100%	50-150 50-150		07/28/23 07/28/23	1	537M	
Surrogate: 13C6-PFUnA Surrogate: 13C7-PFUnA	112%	50-150 50-150		07/28/23 07/28/23	1	537M	
Surrogate: 13C2-PFDOA	102%	50-150 50-150		07/28/23	1	537M	
Surrogate: 13C2-PFTEDA	110%	<i>50-150</i>		07/28/23	1	537M	
Surrogate: 13C3-PFBS	107%	50-150		07/28/23	1	537M	
Surrogate: 13C3-PFHXS	102%	<i>50-150</i>		07/28/23	1	537M	
Surrogate: 13C8-PFOS	97.9%	50-150		07/28/23	1	537M	
Surrogate: 13C2-4:2FTS	112%	50-150		07/28/23	1	537M	
Surrogate: 13C2-6:2FTS	104%	50-150		07/28/23	1	537M	
Surrogate: 13C2-8:2FTS	<i>161%</i> S2	50-150		07/28/23	1	537M	
Surrogate: 13C2-8:2FTS	109%	<i>50-150</i>		07/28/23	10	537M	
Surrogate: 13C8-PFOSA	83.5%	50-150		07/28/23	1	537M	

Fibertec Environmental Services

Project: PFAS Testing

1914 Holloway Drive

Project Number: A16177

Holt, MI 48842

Project Manager: Jacob Sutherlund

Sample Results (Continued)

Sample: PUMP BLANK (Continued)

23G0165-04 (Water)

Analyte	Result/Qual	PQL	MDL	Units	Date Analyzed	DF	Method	Prep Batch			
Per- and Polyfluoroalkyl Substances (Continued)											
Surrogate: D3-NMEFOSAA	98.6%	50-150			07/28/23	1	537M				
Surrogate: D5-NETFOSAA	105%	50-150			07/28/23	1	537M				
Surrogate: 13C3-HFPO-DA	91.4%	50-150			07/28/23	1	537M				

Fibertec Environmental Services

Project: PFAS Testing
Project Number: A16177

1914 Holloway Drive Project Number: A16177
Holt, MI 48842 Project Manager: Jacob Sutherlund

PREPARATION BATCH SUMMARY

537M

Laboratory: APPL, LLC

Client: Fibertec Environmental Services

Batch: BCG0557 Batch Matrix: Water Preparation: 537M

SAMPLE NAME	LAB SAMPLE ID DATE PREPARED		INITIAL VOL./WEIGHT mL	FINAL VOL. mL
MW-7D	23G0165-01	07/26/23 11:30	287.63	2.00
MW-7D	23G0165-01RE1	07/26/23 11:30	287.63	2.00
MW-3S	23G0165-02	07/26/23 11:30	285.71	2.00
WT BLANK	23G0165-03	07/26/23 11:30	293.37	2.00
WT BLANK	23G0165-03RE1	07/26/23 11:30	293.37	2.00
PUMP BLANK	23G0165-04	07/26/23 11:30	287.69	2.00
PUMP BLANK	23G0165-04RE1	07/26/23 11:30	287.69	2.00
Blank	BCG0557-BLK1	07/26/23 11:30	250.00	2.00
LCS	BCG0557-BS1	07/26/23 11:30	250.00	2.00
LCS Dup	BCG0557-BSD1	07/26/23 11:30	250.00	2.00
MRL Check	BCG0557-MRL1	07/26/23 11:30	250.00	2.00

Fibertec Environmental Services

Project: PFAS Testing

1914 Holloway Drive

Project Number: A16177

Holt, MI 48842 Project Manager: Jacob Sutherlund

Reported: 08/07/2023 10:44

Quality Control

Per- and Polyfluoroalkyl Substances

Analyte	Result/ Qual	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	
Method: 537M											
Batch: BCG0557 - 537M											
Blank (BCG0557-BLK1)	Prepared: 07/26/23 11:30 Analyzed: 07/28/23 16:55										
PFBA	ND	4.0		ng/L							
PFPeA	ND	1.6		ng/L							
PFHxA	ND	1.6		ng/L							
PFHpA	ND	1.6		ng/L							
PFOA	ND	1.6		ng/L							
PFNA	ND	1.6		ng/L							
PFDA	ND	1.6		ng/L							
PFUnA	ND	1.6		ng/L							
PFDoA	ND	1.6		ng/L							
PFTrDA	ND	1.6		ng/L							
PFTeDA	ND	1.6		ng/L							
PFBS	ND	1.6		ng/L							
PFPeS	ND	1.6		ng/L							
PFHxS	ND	1.6		ng/L							
PFHpS	ND	1.6		ng/L							
PFOS	ND	1.6		ng/L							
PFNS	ND	1.6		ng/L							
PFDS	ND	1.6		ng/L							
4:2FTS	ND	3.2		ng/L							
6:2FTS	ND	4.0		ng/L							
8:2FTS	ND	3.2		ng/L							
PFOSA	ND	3.2		ng/L							
NMeFOSAA	ND	1.6		ng/L							
NEtFOSAA	ND	2.4		ng/L							
HFPO-DA	ND	1.6		ng/L							
ADONA	ND	1.6		ng/L							
9CI-PF3ONS	ND	1.6		ng/L							
11CI-PF3OUDS	ND	1.6		ng/L							
Surrogate: 13C4-PFBA	64.9			ng/L	64.0		101	<i>50-150</i>			
Surrogate: 13C5-PFPEA	31.8			ng/L	32.0		99.3	50-150			
Surrogate: 13C5-PFHXA	16.4			ng/L	16.0		103	50-150			
Surrogate: 13C4-PFHPA	14.7			ng/L	16.0		91.8	50-150			
Surrogate: 13C8-PFOA	15.9			ng/L	16.0		99.2	50-150			
Surrogate: 13C9-PFNA	7.72			ng/L	8.00		96.5	50-150			
Surrogate: 13C6-PFDA	7.81			ng/L	8.00		97.6	50-150			
Surrogate: 13C7-PFUnA	8.83			ng/L	8.00		110	50-150			
Surrogate: 13C2-PFDOA	8.07			ng/L	8.00		101	50-150			
Surrogate: 13C2-PFTEDA	9.02			ng/L	8.00		113	50-150			
Surrogate: 13C3-PFBS	15.7			ng/L	16.0		98.4	50-150			
Surrogate: 13C3-PFHXS	15.7			ng/L	16.0		98.2	50-150			
Surrogate: 13C8-PFOS	15.4			ng/L	16.0		96.0	<i>50-150</i>			
Surrogate: 13C2-4:2FTS	35.0			ng/L	32.0		109	<i>50-150</i>			
Surrogate: 13C2-6:2FTS	30.1			ng/L	32.0		93.9	<i>50-150</i>			
Surrogate: 13C2-8:2FTS	50.7 S2			ng/L	32.0		158	<i>50-150</i>			
Surrogate: 13C8-PFOSA	11.5			ng/L	16.0		72.0	<i>50-150</i>			
Surrogate: D3-NMEFOSAA	30.4			ng/L	32.0		95.1	<i>50-150</i>			
Surrogate: D5-NFTFOSAA	30.4 29.2			ng/L	32.0		93.1 91.4	<i>50-150</i>			
Sanogate. DS NETI OSAA	29.2			rig/L	52.0		J1.T	50 150			

Fibertec Environmental Services

Project: PFAS Testing

1914 Holloway Drive

Project Number: A16177

Holt, MI 48842 Project Manager: Jacob Sutherlund

Quality Control (Continued)

Mark (ROGOSS7-BLX1)						Spike	Source		%REC		RPD
LCS (BGG0557-RS1) Preparate: 07/26/23 11:30 Analyzed: 07/26/23 11:3	Analyte	Result/ Qual	PQL	MDL	Units			%REC		RPD	
Pepared: 07/26/23 11:30 Analyzed: 07/28/23 17:08	Blank (BCG0557-BLK1)					Prepared: 07	7/26/23 11:30	Analyzed: 0)7/28/23 16:5	5	
PPRA	Surrogate: 13C3-HFPO-DA	58.4			ng/L	64.0		91.2	50-150		
PFPNA	LCS (BCG0557-BS1)					Prepared: 07	7/26/23 11:30	Analyzed: 0	07/28/23 17:0	8	
PFINA 8.6.2 ng/L 8.00 128 7-129 PFPNA 9.83 ng/L 8.00 127 7-123 PFPNA 8.57 ng/L 8.00 107 7-133 PFNA 8.54 ng/L 8.00 107 7-133 PFNA 8.54 ng/L 8.00 107 7-133 PFNA 8.73 ng/L 8.00 109 69-133 PFPNA 8.85 ng/L 8.00 107 7-2134 PFPNA 8.45 ng/L 8.00 106 7-1122 PFPNS 7-53 ng/L 7-52 109 7-1127 PFNSS 7-67 ng/L 7-52 109 7-1127 PFNSS 7-93 ng/L 7-54 109 7-127 PFNSS 7-93 ng/L 7-64 104 69-134 PFNSS 7-96 ng/L 7-72 105 68-131 PFNSS 7-96 109/L 7-72 100 53-142 PFNSS 7-96 109/L 7-72 100 53-142 PFNSS 7-96 109/L 7-72 100 53-142 PFNSS 7-96 109/L 7-72 100 53-143 100 100 100 100 100 100 100	PFBA	34.6			ng/L	32.0		108	73-129		
PPPOA 9.83	PFPeA	17.5			ng/L	16.0		109	72-129		
PFDA	PFHxA	8.62			ng/L	8.00		108	72-129		
PFNA	PFHpA	9.83			ng/L	8.00		123	72-130		
PFDA 9,09 ng/L 8,00 114 71-129 PFDA 8.73 ng/L 8,00 109 69-133 PFDOA 8.75 ng/L 8,00 107 72-134 PFTDA 9,34 ng/L 8,00 117 65-144 PFTDA 9,34 ng/L 8,00 117 65-144 PFTDA 9,34 ng/L 8,00 116 71-132 PFBS 7,53 ng/L 7,08 106 72-130 PFBS 7,53 ng/L 7,08 106 72-130 PFBS 7,53 ng/L 7,08 106 72-130 PFBS 7,57 ng/L 7,52 109 71-127 PFHS 7,67 ng/L 7,32 105 68-131 PFBS 7,57 ng/L 7,32 105 68-131 PFBS 7,58 ng/L 8,10 ng/L 7,44 105 65-140 PFBS 7,81 ng/L 7,44 105 65-140 PFBS 7,86 ng/L 7,68 104 66-127 PFBS 7,86 ng/L 7,68 104 66-127 PFBS 7,86 ng/L 7,72 110 53-142 R2FFS 32,4 ng/L 7,72 110 53-142 R2FFS 32,4 ng/L 3,00 108 63-143 R2FFS 37,1 ng/L 7,72 110 53-142 R2FFS 37,1 ng/L 8,00 108 63-143 R2FFS 37,1 ng/L 8,00 106 65-136 RNefOSAA 8,83 ng/L 8,00 106 65-136 RNEFOSAA 8,83 ng/L 8,00 107 61-135 RHFO-DA 8,29 ng/L 8,00 106 65-136 RHFO-DA 8,29 ng/L 8,00 107 61-135 RHFO-DA 8,29 ng/L 7,56 109 61-169 RDOPAN 8,27 ng/L 7,56 109 61-169 RDOPAN 8,27 ng/L 7,56 109 61-169 RDOPAN 8,26 ng/L 7,48 110 62-140 RDOPAN 8,27 ng/L 8,00 107 61-135 RHFO-DA 8,29 ng/L 8,00 107 61-135 RHFO-DA 8,20 ng/L 7,56 109 50-150 RME-POSA 8,20 ng/L 8,00 9,4 50-150 RME-POSA 9,20 ng/L 8,00 9,4 50-150	PFOA	8.57			ng/L	8.00		107	71-133		
PFUDA 8.73 ng/L 8.00 199 69-133 PFUDA 8.55 ng/L 8.00 107 72-134 PFTDA 8.55 ng/L 8.00 107 72-134 PFTDA 9.34 ng/L 8.00 106 71-132 PFTBA 8.45 ng/L 8.00 106 71-132 PFTBA 8.45 ng/L 8.00 106 71-132 PFTBA 8.45 ng/L 7.08 106 71-132 PFTBA 9.10 106 71-132 PFTBA 9.10 106 71-132 PFTBA 9.10 107 72-130 PFTBA 9.10 107 72-130 PFTBA 9.10 107 72-130 PFTBA 9.10 106 71-137 PFTBA 9.10 107 72-130 PFTBA 9.10 PFTBA 9.10 107 72-130 PFTBA 9.10 PTTBA 9.10 108 63-143 PTTBA 9.10 PTTBA 9.10 PTTBA 9.10 108 63-143 PTTBA 9.10 PTTBA	PFNA	8.54			ng/L	8.00		107	69-130		
PPDA 8.55 ng/L 8.00 107 72-134 PPTEDA 9.34 ng/L 8.00 117 65-144 PPTEDA 9.34 ng/L 8.00 116 71-132 PPES 7.53 ng/L 7.08 106 71-132 PPES 7.53 ng/L 7.52 109 71-127 PPES 8.8.19 ng/L 7.52 109 71-127 PPES 7.67 ng/L 7.52 105 68-131 PPES 7.67 ng/L 7.44 105 68-131 PPOS 7.81 ng/L 7.44 105 65-140 PPSS 7.95 ng/L 7.44 105 65-140 PPSS 7.96 ng/L 7.48 104 69-127 PPDS 8.47 ng/L 7.72 110 53-142 PPDS 8.47 ng/L 7.72 110 53-142 PPDS 9.42 ng/L 7.72 110 53-142 PPDS 9.51 37.1 ng/L 7.72 110 53-143 PPOSA 8.83 ng/L 8.00 108 63-143 PPOSA 8.83 ng/L 8.00 106 67-137 PPOSA 8.83 ng/L 8.00 106 65-136 PPOSA 8.85 ng/L 8.00 107 67-137 PPOSA 8.85 ng/L 8.00 107 67-137 PPOSA 8.57 ng/L 7.75 109 61-169 POSA 8.58 ng/L 8.00 107 61-135 PPOSA 8.59 ng/L 8.00 107 61-135 PPOSA 8.5	PFDA	9.09			ng/L	8.00		114	71-129		
PFTIOA	PFUnA	8.73			ng/L	8.00		109	69-133		
PFEBA	PFDoA	8.55			ng/L	8.00		107	72-134		
PFBS 7,53 ng/L 7,08 106 72-130 PFPPPS 8,19 ng/L 7,52 109 71-127 PFPPS 8,19 ng/L 7,52 105 68-131 PFPPS 7,67 ng/L 7,52 105 68-131 PFPPS 7,93 ng/L 7,64 104 69-134 PFPOS 7,93 ng/L 7,64 105 69-140 PFPOS 7,96 ng/L 7,68 104 69-127 PFDS 7,96 ng/L 7,68 104 69-127 PFDS 8,47 ng/L 7,72 110 53-142 42-ETS 32,4 ng/L 30,0 108 63-143 62-ETS 34,2 ng/L 8,00 106 63-136 NNEFOSAA 8,83 ng/L 8,00 110 67-137 NNEFOSAA 8,845 M14 ng/L 8,00 106 65-136 NNEFOSAA 8,845 M14 ng/L 8,00 107 61-135 HFPO-DA 8,29 ng/L 8,00 107 61-135 HFPO-DA 8,29 ng/L 8,00 104 44-175 ADONA 8,27 ng/L 7,56 109 61-169 9CPP3ONS 8,26 ng/L 7,56 109 61-169 9CPP3ONS 9,20 ng/L 7,56 109 7,50 7,50 7,50 7,50 7,50 7,50 7,50 7,50	PFTrDA	9.34			ng/L	8.00		117	65-144		
PFPES	PFTeDA	8.45			ng/L	8.00		106	71-132		
PFHAS 7,67 ng/L 7,32 105 68-131 PPHpS 7,93 ng/L 7.64 104 69-134 PPNS 7,81 ng/L 7.68 104 69-127 PPNS 7,96 ng/L 7.68 104 69-127 #2PTS 32,4 ng/L 30.0 108 63-143 6.2PTS 32,4 ng/L 30.4 113 64-143 6.2PTS 34,2 ng/L 30.4 113 64-140 6.2PTS 37,1 ng/L 30.0 10 67-138 PFOSA 8.83 ng/L 8.00 10 67-137 NNEFOSAA 8.58 ng/L 8.00 10 66-136 NEFOSAA 8.58 ng/L 8.00 10 66-135 HEPO-DA 8.29 ng/L 8.00 10 41-175 HEPO-DA 8.29 ng/L 7.56 19 61-169 9CP-PSONS 8.2	PFBS	7.53			ng/L	7.08		106	72-130		
PFHpS 7.93 7.93 7.96 7.81 7.96 7.86 7.96 7.86 7.96 7.86 7.96 7.86 7.96 7.86 7.96 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.8	PFPeS	8.19			ng/L	7.52		109	71-127		
PFOS 7.81 ng/L 7.44 105 65-140 PFNS 7.96 ng/L 7.68 104 69-127 PFDS 8.47 ng/L 7.72 110 53-142 4:2FTS 32.4 ng/L 30.0 108 63-143 6:2FTS 34.2 ng/L 30.0 108 63-143 6:2FTS 37.1 ng/L 30.0 110 67-138 PFOSA 8.83 ng/L 80.0 110 67-138 PFOSA 8.83 ng/L 80.0 110 67-137 NNEFOSAA 8.58 ng/L 80.0 110 67-137 NNEFOSAA 8.58 ng/L 80.0 106 65-166 NEIFOSAA 8.58 ng/L 80.0 106 65-166 NEIFOSAA 8.58 ng/L 80.0 107 61-135 HFPO-DA 8.29 ng/L 80.0 107 61-135 HFPO-DA 8.27 ng/L 7.48 110 62-140 SUPPEIONS 8.26 ng/L 7.48 110 50-150 SUPPEIONS 8.27 ng/L 7.48 110 50-150 SUPPEIONS 8.28 ng/L 80.0 100 50-150 SUPPEIONS 8.29 ng/L 80.0 100 50-150 SUPPEIONS 8.20 ng/L 80.0 100 50-150 SUPPEIONS 8.20 ng/L 80.0 101 50-150 SUPPEIONS 8.20 ng/L 80.0 98.5 50-150 SUPPEIONS 8.20 ng/L 80.0 98.5 50-150 SUPPEIONS 8.20 ng/L 80.0 98.7 50-150 SUPPEIONS 8.20 ng/L 80.0 99.8 50-150 SUPP	PFHxS	7.67			ng/L	7.32		105	68-131		
PFNS 7.96 ng/L 7.68 104 69-127 PFDS 8.47 ng/L 7.72 110 53-142 4:2FTS 32.4 ng/L 30.0 108 63-143 6:2FTS 34.2 ng/L 30.4 113 64-140 8:2FTS 37.1 ng/L 30.7 121 67-138 PFDSA 8.83 ng/L 8.00 106 67-137 NMerOSAA 8.45 M14 ng/L 8.00 107 61-135 HEPO-DA 8.29 ng/L 8.00 104 44-175 ADONA 8.27 ng/L 7.56 109 61-169 9CI-PF3ONS 8.26 ng/L 7.56 122 54-138 11CH-PF3OUDS 9.20 ng/L 7.56 122 54-138 Surrogate: 13C4-PFBA 64.3 ng/L 64.0 100 50-150 Surrogate: 13C5-PFP6A 32.1 ng/L 32.0 100 50-150	PFHpS	7.93			ng/L	7.64		104	69-134		
PFDS 8.47 ng/L 7.72 110 53-142 4:2FTS 32.4 ng/L 30.0 108 63-143 6:2FTS 34.2 ng/L 30.4 113 64-140 8:2FTS 37.1 ng/L 30.7 121 67-138 PFOSA 8.83 ng/L 8.00 110 67-137 NNeFOSAA 8.45 MH4 ng/L 8.00 106 65-136 NEIFOSAA 8.58 ng/L 8.00 107 61-335 HEPO-DA 8.29 ng/L 8.00 104 44-175 ADONA 8.27 ng/L 7.56 102 54-140 11CI-PEJOUDS 9.20 ng/L 7.56 122 54-138 Surrogate: 13C4-PFBA 8.26 ng/L 7.56 122 54-138 Surrogate: 13C5-PFBA 32.1 ng/L 6.0 100 50-150 Surrogate: 13C4-PFBA 32.1 ng/L 16.0 98.5 50-150	PFOS	7.81			ng/L	7.44		105	65-140		
4:2FTS 32.4 ng/L 30.0 108 63-143 6:2FTS 34.2 ng/L 30.7 121 67-138 PFOSA 8.83 ng/L 8.00 110 67-137 NNEFOSAA 8.83 ng/L 8.00 106 65-136 NEFOSAA 8.58 ng/L 8.00 106 65-136 NEFOSAA 8.58 ng/L 8.00 107 61-135 HFPO-DA 8.29 ng/L 8.00 104 44-175 ADONA 8.27 ng/L 8.00 104 44-175 ADONA 8.27 ng/L 7.56 109 61-169 SUPPSIONS 8.26 ng/L 7.48 110 62-140 11C1-PF3OUDS 9.20 ng/L 7.56 122 54-138 Surrogate: 13C4-PFBA 64.3 ng/L 7.56 122 54-138 Surrogate: 13C5-PFPAA 16.9 ng/L 16.0 106 50-150 Surrogate: 13C5-PFPAA 14.3 ng/L 16.0 89.5 50-150 Surrogate: 13C5-PFPAA 16.0 ng/L 16.0 99.8 50-150 Surrogate: 13C5-PFDA 7.71 ng/L 8.00 98.7 50-150 Surrogate: 13C5-PFDA 7.71 ng/L 8.00 99.8 50-150 Surrogate: 13C5-PFDA 7.71 ng/L 8.00 99.	PFNS	7.96			ng/L	7.68		104	69-127		
6:2FTS 34.2 ng/L 30.4 113 64-140 8:2FTS 37.1 ng/L 30.7 121 67-138 PPOSA 8.83 ng/L 8.00 110 67-137 NMEFOSAA 8.45 MI4 ng/L 8.00 106 65-136 NEFOSAA 8.58 ng/L 8.00 107 61-135 HPPO-DA 8.29 ng/L 8.00 107 61-135 ADONA 8.27 ng/L 7.56 109 61-169 9CIP-F3ONS 8.26 ng/L 7.48 110 62-140 11CI-PF3ONDS 9.20 ng/L 7.56 122 54-138 Surrogate: 13C4-PF8A 64.3 ng/L 64.0 100 50-150 Surrogate: 13C4-PF8A 16.9 ng/L 16.0 106 50-150 Surrogate: 13C4-PFPAA 14.3 ng/L 16.0 89.5 50-150 Surrogate: 13C4-PFPAA 16.0 ng/L 8.00 96.4 50-150 Surrogate: 13C3-PFNA 8.0 ng/L 8.00 <t< td=""><td>PFDS</td><td>8.47</td><td></td><td></td><td>ng/L</td><td>7.72</td><td></td><td>110</td><td>53-142</td><td></td><td></td></t<>	PFDS	8.47			ng/L	7.72		110	53-142		
8:2FTS 37.1 ng/L 30.7 121 67-138 PFOSA 8.83 ng/L 8.00 110 67-137 NMEFOSAA 8.45 M14 ng/L 8.00 106 65-136 NEFOSAA 8.58 ng/L 8.00 107 61-135 NEFOSAA 8.58 ng/L 8.00 107 61-135 NEFOSAA 8.58 ng/L 8.00 104 44-175 ADONA 8.29 ng/L 8.00 104 44-175 ADONA 8.27 ng/L 7.56 109 61-169 9CLPF3ONS 8.26 ng/L 7.48 110 62-140 11CLPF3OUDS 9.20 ng/L 7.56 122 54-138 Surrogate: 13C4-PFEA 64.3 ng/L 64.0 100 50-150 Surrogate: 13C4-PFEA 32.1 ng/L 32.0 100 50-150 Surrogate: 13C5-PFFEA 32.1 ng/L 16.0 106 50-150 Surrogate: 13C3-PFHAA 14.3 ng/L 16.0 89.5 50-150 Surrogate: 13C3-PFNA 16.0 ng/L 16.0 99.8 50-150 Surrogate: 13C3-PFNA 1.00 99.8 50-150 Surrogate: 13C3-PFNA 7.71 ng/L 8.00 98.7 50-150 Surrogate: 13C3-PFNA 7.89 ng/L 8.00 98.7 50-150 Surrogate: 13C3-PFDA 7.71 ng/L 8.00 99.8 50-150 Surrogate: 13C3-PFDA 7.67 ng/L 8.00 99.8 50-150 Surrogate: 13C3-PFDA 8.16 ng/L 8.00 99.8 50-150 Surrogate: 13C3-PFDA 7.67 ng/L 8.00 99.8 50-150 Surrogate: 13C3-PFDA 8.16 ng/L 8.00 99.8 50-150 Surrogate: 13C3-PFDA 7.67 ng/L 8.00 99.8 50-150 Surrogate: 13C3-PFDA 7.67 ng/L 8.00 99.8 50-150 Surrogate: 13C3-PFDA 7.67 ng/L 8.00 99.8 50-150 Surrogate: 13C3-PFBS 15.1 ng/L 16.0 86.3 50-150	4:2FTS	32.4			ng/L	30.0		108	63-143		
PFOSA 8.83 ng/L 8.00 110 67-137 NNeFOSAA 8.45 MI4 ng/L 8.00 106 65-136 NEFOSAA 8.58 ng/L 8.00 107 61-135 HFPO-DA 8.29 ng/L 8.00 104 44-175 ADONA 8.27 ng/L 7.56 109 61-169 PCI-PF3ONS 8.26 ng/L 7.48 110 62-140 11CI-PF3OUDS 9.20 ng/L 7.56 122 54-138 Surrogate: 13C4-PFBA 64.3 ng/L 64.0 100 50-150 Surrogate: 13C5-PFPEA 32.1 ng/L 16.0 106 50-150 Surrogate: 13C4-PFBA 16.9 ng/L 16.0 89.5 50-150 Surrogate: 13C3-PFNA 16.0 ng/L 16.0 89.5 50-150 Surrogate: 13C3-PFNA 8.08 ng/L 8.00 101 50-150 Surrogate: 13C3-PFNA 8.16 ng/L 8.00	6:2FTS	34.2			ng/L	30.4		113	64-140		
NMEFOSAA 8.45 MI4 ng/L 8.00 106 65-136 NEFOSAA 8.58 ng/L 8.00 107 61-135 HFPO-DA 8.29 ng/L 8.00 104 44-175 ADONA 8.27 ng/L 7.56 109 61-169 9CI-PF3ONS 8.26 ng/L 7.48 110 62-140 1ICI-PF3OUDS 9.20 ng/L 7.56 122 54-138 Surrogate: 13C4-PFBA 64.3 ng/L 64.0 100 50-150 Surrogate: 13C5-PFPKA 16.9 ng/L 16.0 106 50-150 Surrogate: 13C5-PFHXA 16.9 ng/L 16.0 106 50-150 Surrogate: 13C4-PFHA 14.3 ng/L 16.0 89.5 50-150 Surrogate: 13C3-PFDA 16.0 ng/L 16.0 99.8 50-150 Surrogate: 13C3-PFDA 16.0 ng/L 8.00 96.4 50-150 Surrogate: 13C3-PFDA 16.0 ng/L 8.00 96.4 50-150 Surrogate: 13C3-PFDA 16.0 ng/L 8.00 96.4 50-150 Surrogate: 13C3-PFDA 16.0 ng/L 8.00 96.5 50-150 Surrogate: 13C3-PFDA 16.0 ng/L 8.00 96.4 50-150 Surrogate: 13C3-PFDA 16.0 ng/L 8.00 96.4 50-150 Surrogate: 13C3-PFDA 16.0 ng/L 8.00 96.5 50-150 Surrogate: 13C3-PFDS 16.0 ng/L 8.00 96.8 50-150	8:2FTS	37.1			ng/L	30.7		121	67-138		
NEIFOSAA 8.58 ng/L 8.00 107 61-135 HFPO-DA 8.29 ng/L 8.00 104 44-175 ADONA 8.27 ng/L 7.56 109 61-169 9CI-PF3ONS 8.26 ng/L 7.48 110 62-140 1ICI-PF3OUDS 9.20 ng/L 7.56 122 54-138 Surrogate: 13C4-PFBA 64.3 ng/L 64.0 100 50-150 Surrogate: 13C5-PPPKA 16.9 ng/L 16.0 106 50-150 Surrogate: 13C4-PFHAA 14.3 ng/L 16.0 106 50-150 Surrogate: 13C4-PFHAA 16.9 ng/L 16.0 106 50-150 Surrogate: 13C3-PPNA 16.0 ng/L 16.0 99.8 50-150 Surrogate: 13C3-PPNA 16.0 ng/L 8.00 101 50-150 Surrogate: 13C3-PFDA 7.71 ng/L 8.00 96.4 50-150 Surrogate: 13C3-PFDA 7.71 ng/L 8.00 96.4 50-150 Surrogate: 13C3-PFDA 7.89 ng/L 8.00 96.4 50-150 Surrogate: 13C3-PFDA 7.89 ng/L 8.00 96.4 50-150 Surrogate: 13C3-PFDA 7.89 ng/L 8.00 99.8 50-150 Surrogate: 13C3-PFDA 8.16 ng/L 8.00 99.8 50-150 Surrogate: 13C3-PFBS 15.1 ng/L 16.0 99.8 50-150 Surrogate: 13C3-PFBS 15.1 ng/L 16.0 99.8 50-150 Surrogate: 13C3-PFBS 15.1 ng/L 16.0 99.8 50-150 Surrogate: 13C3-PFBS 16.0 ng/L 16.0 99.8 50-150 Surrogate: 13C3-PFBS 16.0 ng/L 16.0 99.8 50-150 Surrogate: 13C3-PFBS 16.0 ng/L 16.0 99.8 50-150 Surrogate: 13C3-PFBS 16.2 ng/L 32.0 94.8 50-150 Surrogate: 13C3-PFDS 16.0 86.3 50-150	PFOSA	8.83			ng/L	8.00		110	67-137		
HFPO-DA 8.29 ng/L 8.00 104 44-175 ADONA 8.27 ng/L 7.56 109 61-169 9CI-PF3ONS 8.26 ng/L 7.48 110 62-140 11CI-PF3OUDS 9.20 ng/L 7.56 122 54-138 Surrogate: 13C4-PFBA 64.3 ng/L 64.0 100 50-150 Surrogate: 13C5-PFPEA 32.1 ng/L 16.0 106 50-150 Surrogate: 13C5-PFPEA 32.1 ng/L 16.0 89.5 50-150 Surrogate: 13C5-PFPWA 16.9 ng/L 16.0 89.5 50-150 Surrogate: 13C3-PFNA 16.0 ng/L 16.0 89.5 50-150 Surrogate: 13C3-PFNA 8.08 ng/L 8.00 96.4 50-150 Surrogate: 13C5-PFNA 7.89 ng/L 8.00 96.4 50-150 Surrogate: 13C3-PFDA 7.67 ng/L 8.00 98.7 50-150 Surrogate: 13C3-PFDS 15.1 </td <td>NMeFOSAA</td> <td>8.45 MI4</td> <td></td> <td></td> <td>ng/L</td> <td>8.00</td> <td></td> <td>106</td> <td>65-136</td> <td></td> <td></td>	NMeFOSAA	8.45 MI4			ng/L	8.00		106	65-136		
ADONA 8.27 ng/L 7.56 109 61-169 9CI-PESONS 8.26 ng/L 7.48 110 62-140 11CI-PESOUDS 9.20 ng/L 7.56 122 54-138 Surrogate: 13C4-PFBA 64.3 ng/L 64.0 100 50-150 Surrogate: 13C5-PFPEA 32.1 ng/L 32.0 100 50-150 Surrogate: 13C5-PFPEA 14.3 ng/L 16.0 106 50-150 Surrogate: 13C5-PFHAA 16.9 ng/L 16.0 89.5 50-150 Surrogate: 13C4-PFHPA 14.3 ng/L 16.0 89.5 50-150 Surrogate: 13C3-PFOA 16.0 ng/L 16.0 99.8 50-150 Surrogate: 13C3-PFNA 8.08 ng/L 8.00 101 50-150 Surrogate: 13C3-PFUA 7.71 ng/L 8.00 96.4 50-150 Surrogate: 13C2-PFEDA 7.67 ng/L 8.00 99.7 50-150 Surrogate: 13C2-PFEDA 8.16 ng/L 8.00 95.9 50-150 Surrogate: 13C2-PFEDA 8.16 ng/L 8.00 95.9 50-150 Surrogate: 13C3-PFBS 15.1 ng/L 8.00 99.8 50-150 Surrogate: 13C3-PFBS 15.1 ng/L 8.00 99.8 50-150 Surrogate: 13C3-PFHXS 16.0 ng/L 16.0 99.8 50-150 Surrogate: 13C3-PFHXS 16.0 ng/L 16.0 99.8 50-150 Surrogate: 13C3-PFHXS 35.4 ng/L 32.0 99.8 50-150 Surrogate: 13C3-PFTS 30.3 ng/L 32.0 94.8 50-150 Surrogate: 13C3-PFOSA 13.8 ng/L 16.0 86.3 50-150 Surrogate: 13C3-PFOSA 29.9 ng/L 32.0 93.5 50-150 Surrogate: 13C3-PFOSA 13.8 ng/L 16.0 86.3 50-150 Surrogate: 13C3-PFOSA 13.8 ng/L 16.0 86.3 50-150 Surrogate: 13C3-PFOSA 29.9 ng/L 32.0 93.5 50-150 Surrogate: 13C3	NEtFOSAA	8.58			ng/L	8.00		107	61-135		
9CL-PF3ONS 8.26 ng/L 7.48 110 62-140 11CL-PF3OUDS 9.20 ng/L 7.56 122 54-138 Surrogate: 13C4-PFBA 64.3 ng/L 64.0 100 50-150 Surrogate: 13C5-PFPEA 32.1 ng/L 32.0 100 50-150 Surrogate: 13C5-PFHEA 32.1 ng/L 16.0 106 50-150 Surrogate: 13C4-PFHA 14.3 ng/L 16.0 106 50-150 Surrogate: 13C4-PFHA 14.3 ng/L 16.0 89.5 50-150 Surrogate: 13C4-PFHA 16.0 ng/L 16.0 99.8 50-150 Surrogate: 13C4-PFHA 8.00 101 50-150 Surrogate: 13C3-PFNA 8.00 101 50-150 Surrogate: 13C3-PFNA 8.00 98.4 50-150 Surrogate: 13C3-PFUA 7.71 ng/L 8.00 98.7 50-150 Surrogate: 13C3-PFUA 8.00 98.7 50-150 Surrogate: 13C3-PFDOA 7.67 ng/L 8.00 95.9 50-150 Surrogate: 13C3-PFEDA 8.16 ng/L 8.00 95.9 50-150 Surrogate: 13C3-PFEDA 8.16 ng/L 8.00 95.9 50-150 Surrogate: 13C3-PFEDA 8.16 ng/L 8.00 99.8 50-150 Surrogate: 13C3-PFEDA 8.16 ng/L 8.00 99.8 50-150 Surrogate: 13C3-PFEDA 9.15 ng/L 16.0 99.8 50-150 Surrogate: 13C3-PFEDA 9.15 ng/L 16.0 99.8 50-150 Surrogate: 13C3-PFEDS 16.0 ng/L 16.0 99.8 50-150 Surrogate: 13C3-PFOS 16.0 ng/L 16.0 99.8 50-150 Surrogate: 13C3-PFOS 16.0 ng/L 32.0 111 50-150 Surrogate: 13C3-PFOS 16.0 ng/L 32.0 99.8 50-150 Surrogate: 13C3-PFOSA 13.8 ng/L 32.0 99.8 50-150 Surrogate: 13C3-PFOSA 13.8 ng/L 32.0 93.5 50-150 Surrogate: 13C3-PFOSA 13.8 ng/L 32.0 93.5 50-150	HFPO-DA	8.29			ng/L	8.00		104	44-175		
11Cl-PF30UDS 9.20 ng/L 7.56 122 54-138 Surrogate: 13C4-PFBA 64.3 ng/L 64.0 100 50-150 Surrogate: 13C5-PFPEA 32.1 ng/L 32.0 100 50-150 Surrogate: 13C5-PFHAR 16.9 ng/L 16.0 106 50-150 Surrogate: 13C4-PFHPA 14.3 ng/L 16.0 89.5 50-150 Surrogate: 13C8-PFOA 16.0 ng/L 8.00 99.8 50-150 Surrogate: 13C9-PFNA 8.08 ng/L 8.00 96.4 50-150 Surrogate: 13C3-PFDA 7.71 ng/L 8.00 98.7 50-150 Surrogate: 13C2-PFDAA 7.67 ng/L 8.00 98.7 50-150 Surrogate: 13C2-PFDAA 8.16 ng/L 8.00 95.9 50-150 Surrogate: 13C3-PFBS 15.1 ng/L 16.0 94.1 50-150 Surrogate: 13C3-PFHXS 16.0 ng/L 16.0 99.8 50-150 Surrogate: 13C3-PFHXS 35.4 ng/L 32.0 111 50-150	ADONA	8.27			ng/L	7.56		109	61-169		
Surrogate: 13C4-PFBA 64.3 ng/L 64.0 100 50-150 Surrogate: 13C5-PFPEA 32.1 ng/L 32.0 100 50-150 Surrogate: 13C5-PFHXA 16.9 ng/L 16.0 106 50-150 Surrogate: 13C4-PFHPA 14.3 ng/L 16.0 89.5 50-150 Surrogate: 13C8-PFOA 16.0 ng/L 16.0 99.8 50-150 Surrogate: 13C9-PFNA 8.08 ng/L 8.00 101 50-150 Surrogate: 13C7-PFUA 7.71 ng/L 8.00 96.4 50-150 Surrogate: 13C2-PFDA 7.67 ng/L 8.00 95.9 50-150 Surrogate: 13C2-PFTEDA 8.16 ng/L 8.00 95.9 50-150 Surrogate: 13C3-PFHS 15.1 ng/L 8.00 95.9 50-150 Surrogate: 13C3-PFHXS 16.0 ng/L 16.0 99.8 50-150 Surrogate: 13C3-PFDS 16.0 ng/L 16.0 99.8 50-150 Surrogate: 13C2-4:2FTS 35.4 ng/L 32.0 111 50-150	9CI-PF3ONS	8.26			ng/L	7.48		110	62-140		
Surrogate: 13C5-PFPEA 32.1 ng/L 32.0 100 50-150 Surrogate: 13C5-PFHXA 16.9 ng/L 16.0 106 50-150 Surrogate: 13C4-PFHPA 14.3 ng/L 16.0 89.5 50-150 Surrogate: 13C8-PFOA 16.0 ng/L 8.00 101 50-150 Surrogate: 13C9-PFNA 8.08 ng/L 8.00 96.4 50-150 Surrogate: 13C6-PFDA 7.71 ng/L 8.00 96.4 50-150 Surrogate: 13C7-PFUnA 7.89 ng/L 8.00 98.7 50-150 Surrogate: 13C2-PFDOA 7.67 ng/L 8.00 95.9 50-150 Surrogate: 13C2-PFEDA 8.16 ng/L 8.00 95.9 50-150 Surrogate: 13C3-PFBS 15.1 ng/L 16.0 94.1 50-150 Surrogate: 13C3-PFHXS 16.0 ng/L 16.0 99.8 50-150 Surrogate: 13C2-4:2FTS 35.4 ng/L 32.0 111 50-150 Surrogate: 13C2-6:2FTS 30.3 ng/L 32.0 94.8 50-150 </td <td>11CI-PF3OUDS</td> <td>9.20</td> <td></td> <td></td> <td>ng/L</td> <td>7.56</td> <td></td> <td>122</td> <td>54-138</td> <td></td> <td></td>	11CI-PF3OUDS	9.20			ng/L	7.56		122	54-138		
Surrogate: 13C5-PFHXA 16.9 ng/L 16.0 106 50-150 Surrogate: 13C4-PFHPA 14.3 ng/L 16.0 89.5 50-150 Surrogate: 13C8-PFOA 16.0 ng/L 8.00 99.8 50-150 Surrogate: 13C9-PFNA 8.08 ng/L 8.00 96.4 50-150 Surrogate: 13C6-PFDA 7.71 ng/L 8.00 98.7 50-150 Surrogate: 13C7-PFUnA 7.89 ng/L 8.00 98.7 50-150 Surrogate: 13C2-PFDOA 7.67 ng/L 8.00 95.9 50-150 Surrogate: 13C2-PFEDA 8.16 ng/L 8.00 95.9 50-150 Surrogate: 13C3-PFBS 15.1 ng/L 8.00 99.8 50-150 Surrogate: 13C3-PFHXS 16.0 ng/L 16.0 99.8 50-150 Surrogate: 13C3-PFLS 35.4 ng/L 32.0 111 50-150 Surrogate: 13C2-4:2FTS 30.3 ng/L 32.0 94.8 50-150 Surrogate: 13C2-8:2FTS 61.2 S2 ng/L 32.0 94.8 50-1	Surrogate: 13C4-PFBA	64.3			ng/L	64.0		100	50-150		
Surrogate: 13C4-PFHPA 14.3 ng/L 16.0 89.5 50-150 Surrogate: 13C8-PFOA 16.0 ng/L 16.0 99.8 50-150 Surrogate: 13C9-PFNA 8.08 ng/L 8.00 101 50-150 Surrogate: 13C6-PFDA 7.71 ng/L 8.00 96.4 50-150 Surrogate: 13C7-PFUNA 7.89 ng/L 8.00 98.7 50-150 Surrogate: 13C2-PFDOA 7.67 ng/L 8.00 95.9 50-150 Surrogate: 13C3-PFEDA 8.16 ng/L 8.00 102 50-150 Surrogate: 13C3-PFEDA 8.16 ng/L 16.0 94.1 50-150 Surrogate: 13C3-PFBS 15.1 ng/L 16.0 99.8 50-150 Surrogate: 13C3-PFBS 16.0 ng/L 16.0 99.8 50-150 Surrogate: 13C4-Y2FTS 35.4 ng/L 32.0 91.1 50-150 Surrogate: 13C2-8:2FTS 30.3 ng/L 32.0 191 50-150 Surrogate: 13C2-8:2FTS 61.2 52 ng/L 32.0 191	Surrogate: 13C5-PFPEA	32.1			ng/L	32.0		100	<i>50-150</i>		
Surrogate: 13C8-PFOA 16.0 ng/L 16.0 99.8 50-150 Surrogate: 13C9-PFNA 8.08 ng/L 8.00 101 50-150 Surrogate: 13C6-PFDA 7.71 ng/L 8.00 98.7 50-150 Surrogate: 13C7-PFUNA 7.89 ng/L 8.00 95.9 50-150 Surrogate: 13C2-PFDOA 7.67 ng/L 8.00 95.9 50-150 Surrogate: 13C2-PFTEDA 8.16 ng/L 8.00 102 50-150 Surrogate: 13C3-PFBS 15.1 ng/L 16.0 94.1 50-150 Surrogate: 13C3-PFHXS 16.0 ng/L 16.0 99.8 50-150 Surrogate: 13C8-PFOS 16.0 ng/L 32.0 111 50-150 Surrogate: 13C2-6:2FTS 30.3 ng/L 32.0 191 50-150 Surrogate: 13C2-8:2FTS 61.2 S2 ng/L 32.0 191 50-150 Surrogate: 13C8-PFOSA 13.8 ng/L 16.0 86.3 50-150 Surrogate: D3-NMEFOSAA 29.9 ng/L 32.0 93.5 50-15	Surrogate: 13C5-PFHXA	16.9			ng/L	16.0		106	<i>50-150</i>		
Surrogate: 13C9-PFNA 8.08 ng/L 8.00 101 50-150 Surrogate: 13C6-PFDA 7.71 ng/L 8.00 96.4 50-150 Surrogate: 13C7-PFUNA 7.89 ng/L 8.00 98.7 50-150 Surrogate: 13C2-PFDOA 7.67 ng/L 8.00 95.9 50-150 Surrogate: 13C2-PFTEDA 8.16 ng/L 8.00 102 50-150 Surrogate: 13C3-PFBS 15.1 ng/L 16.0 94.1 50-150 Surrogate: 13C3-PFHXS 16.0 ng/L 16.0 99.8 50-150 Surrogate: 13C8-PFOS 16.0 ng/L 32.0 111 50-150 Surrogate: 13C2-4:2FTS 30.3 ng/L 32.0 191 50-150 Surrogate: 13C2-8:2FTS 61.2 S2 ng/L 32.0 191 50-150 Surrogate: 13C8-PFOSA 13.8 ng/L 16.0 86.3 50-150 Surrogate: D3-NMEFOSAA 29.9 ng/L 32.0 33.5 50-150	Surrogate: 13C4-PFHPA	14.3			ng/L	16.0		89.5	<i>50-150</i>		
Surrogate: 13C6-PFDA 7,71 ng/L 8.00 96.4 50-150 Surrogate: 13C7-PFUNA 7,89 ng/L 8.00 98.7 50-150 Surrogate: 13C2-PFDOA 7,67 ng/L 8.00 95.9 50-150 Surrogate: 13C2-PFTEDA 8.16 ng/L 8.00 102 50-150 Surrogate: 13C3-PFBS 15.1 ng/L 16.0 94.1 50-150 Surrogate: 13C3-PFHXS 16.0 ng/L 16.0 99.8 50-150 Surrogate: 13C8-PFOS 16.0 ng/L 16.0 99.8 50-150 Surrogate: 13C2-4:2FTS 35.4 ng/L 32.0 111 50-150 Surrogate: 13C2-6:2FTS 30.3 ng/L 32.0 94.8 50-150 Surrogate: 13C8-PFOSA 13.8 ng/L 16.0 86.3 50-150 Surrogate: D3-NMEFOSAA 29.9 ng/L 32.0 93.5 50-150	Surrogate: 13C8-PFOA	16.0			ng/L	16.0		99.8	<i>50-150</i>		
Surrogate: 13C7-PFUNA 7,89 ng/L 8.00 98.7 50-150 Surrogate: 13C2-PFDOA 7,67 ng/L 8.00 95.9 50-150 Surrogate: 13C2-PFTEDA 8.16 ng/L 8.00 102 50-150 Surrogate: 13C3-PFBS 15.1 ng/L 16.0 94.1 50-150 Surrogate: 13C3-PFHXS 16.0 ng/L 16.0 99.8 50-150 Surrogate: 13C8-PFOS 16.0 ng/L 16.0 99.8 50-150 Surrogate: 13C2-4:2FTS 35.4 ng/L 32.0 111 50-150 Surrogate: 13C2-6:2FTS 30.3 ng/L 32.0 94.8 50-150 Surrogate: 13C2-8:2FTS 61.2 S2 ng/L 32.0 191 50-150 Surrogate: 13C8-PFOSA 13.8 ng/L 16.0 86.3 50-150 Surrogate: D3-NMEFOSAA 29.9 ng/L 32.0 93.5 50-150	Surrogate: 13C9-PFNA	8.08			ng/L	8.00		101	<i>50-150</i>		
Surrogate: 13C2-PFDOA 7.67 ng/L 8.00 95.9 50-150 Surrogate: 13C2-PFTEDA 8.16 ng/L 8.00 102 50-150 Surrogate: 13C3-PFBS 15.1 ng/L 16.0 94.1 50-150 Surrogate: 13C3-PFHXS 16.0 ng/L 16.0 99.8 50-150 Surrogate: 13C8-PFOS 16.0 ng/L 32.0 111 50-150 Surrogate: 13C2-4:2FTS 30.3 ng/L 32.0 94.8 50-150 Surrogate: 13C2-8:2FTS 61.2 S2 ng/L 32.0 191 50-150 Surrogate: 13C8-PFOSA 13.8 ng/L 16.0 86.3 50-150 Surrogate: D3-NMEFOSAA 29.9 ng/L 32.0 93.5 50-150	2	7.71			-			96.4			
Surrogate: 13C2-PFTEDA 8.16 ng/L 8.00 102 50-150 Surrogate: 13C3-PFBS 15.1 ng/L 16.0 94.1 50-150 Surrogate: 13C3-PFHXS 16.0 ng/L 16.0 99.8 50-150 Surrogate: 13C8-PFOS 16.0 ng/L 32.0 111 50-150 Surrogate: 13C2-4:2FTS 30.3 ng/L 32.0 94.8 50-150 Surrogate: 13C2-8:2FTS 61.2 S2 ng/L 32.0 191 50-150 Surrogate: 13C8-PFOSA 13.8 ng/L 16.0 86.3 50-150 Surrogate: D3-NMEFOSAA 29.9 ng/L 32.0 93.5 50-150	Surrogate: 13C7-PFUnA	7.89			ng/L	8.00		98.7	<i>50-150</i>		
Surrogate: 13C3-PFBS 15.1 ng/L 16.0 94.1 50-150 Surrogate: 13C3-PFHXS 16.0 ng/L 16.0 99.8 50-150 Surrogate: 13C8-PFOS 16.0 ng/L 16.0 99.8 50-150 Surrogate: 13C2-4:2FTS 35.4 ng/L 32.0 111 50-150 Surrogate: 13C2-6:2FTS 30.3 ng/L 32.0 94.8 50-150 Surrogate: 13C2-8:2FTS 61.2 S2 ng/L 32.0 191 50-150 Surrogate: 13C8-PFOSA 13.8 ng/L 16.0 86.3 50-150 Surrogate: D3-NMEFOSAA 29.9 ng/L 32.0 93.5 50-150	Surrogate: 13C2-PFDOA	7.67			ng/L	8.00		95.9	<i>50-150</i>		
Surrogate: 13C3-PFHXS 16.0 ng/L 16.0 99.8 50-150 Surrogate: 13C8-PFOS 16.0 ng/L 16.0 99.8 50-150 Surrogate: 13C2-4:2FTS 35.4 ng/L 32.0 111 50-150 Surrogate: 13C2-6:2FTS 30.3 ng/L 32.0 94.8 50-150 Surrogate: 13C2-8:2FTS 61.2 S2 ng/L 32.0 191 50-150 Surrogate: 13C8-PFOSA 13.8 ng/L 16.0 86.3 50-150 Surrogate: D3-NMEFOSAA 29.9 ng/L 32.0 93.5 50-150	Surrogate: 13C2-PFTEDA	8.16			ng/L	8.00		102	<i>50-150</i>		
Surrogate: 13C8-PFOS 16.0 ng/L 16.0 99.8 50-150 Surrogate: 13C2-4:2FTS 35.4 ng/L 32.0 111 50-150 Surrogate: 13C2-6:2FTS 30.3 ng/L 32.0 94.8 50-150 Surrogate: 13C2-8:2FTS 61.2 S2 ng/L 32.0 191 50-150 Surrogate: 13C8-PFOSA 13.8 ng/L 16.0 86.3 50-150 Surrogate: D3-NMEFOSAA 29.9 ng/L 32.0 93.5 50-150	Surrogate: 13C3-PFBS	15.1			ng/L	16.0		94.1			
Surrogate: 13C2-4:2FTS 35.4 ng/L 32.0 111 50-150 Surrogate: 13C2-6:2FTS 30.3 ng/L 32.0 94.8 50-150 Surrogate: 13C2-8:2FTS 61.2 S2 ng/L 32.0 191 50-150 Surrogate: 13C8-PFOSA 13.8 ng/L 16.0 86.3 50-150 Surrogate: D3-NMEFOSAA 29.9 ng/L 32.0 93.5 50-150	_	16.0									
Surrogate: 13C2-6:2FTS 30.3 ng/L 32.0 94.8 50-150 Surrogate: 13C2-8:2FTS 61.2 S2 ng/L 32.0 191 50-150 Surrogate: 13C8-PFOSA 13.8 ng/L 16.0 86.3 50-150 Surrogate: D3-NMEFOSAA 29.9 ng/L 32.0 93.5 50-150	Surrogate: 13C8-PFOS	16.0						99.8			
Surrogate: 13C2-8:2FTS 61.2 S2 ng/L 32.0 191 50-150 Surrogate: 13C8-PFOSA 13.8 ng/L 16.0 86.3 50-150 Surrogate: D3-NMEFOSAA 29.9 ng/L 32.0 93.5 50-150	Surrogate: 13C2-4:2FTS	35.4			ng/L			111	<i>50-150</i>		
Surrogate: 13C8-PFOSA 13.8 ng/L 16.0 86.3 50-150 Surrogate: D3-NMEFOSAA 29.9 ng/L 32.0 93.5 50-150	Surrogate: 13C2-6:2FTS	30.3			ng/L	32.0		94.8	<i>50-150</i>		
Surrogate: D3-NMEFOSAA 29.9 ng/L 32.0 93.5 50-150	Surrogate: 13C2-8:2FTS	61.2 S2			ng/L	32.0		191	<i>50-150</i>		
	Surrogate: 13C8-PFOSA	13.8			ng/L	16.0		86.3	<i>50-150</i>		
Surrogate: D5-NETFOSAA 29.4 ng/L 32.0 91.9 50-150	Surrogate: D3-NMEFOSAA	29.9			ng/L	32.0		93.5	<i>50-150</i>		
	Surrogate: D5-NETFOSAA	29.4			ng/L	32.0		91.9	<i>50-150</i>		

Fibertec Environmental Services

Project: PFAS Testing

1914 Holloway Drive

Project Number: A16177

Holt, MI 48842 Project Manager: Jacob Sutherlund

Quality Control (Continued)

Analyte	Result/ Qual	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
LCS (BCG0557-BS1)					Prepared: 07	7/26/23 11:30	Analyzed: 0)7/28/23 17:	08	
Surrogate: 13C3-HFPO-DA	60.6			ng/L	64.0		94.7	50-150		
LCS Dup (BCG0557-BSD1)					Prepared: 07	7/26/23 11:30	Analyzed: 0)7/28/23 17:	20	
PFBA	34.5			ng/L	32.0		108	73-129	0.337	30
PFPeA	17.5			ng/L	16.0		109	72-129	0.0739	30
PFHxA	9.44			ng/L	8.00		118	72-129	9.03	30
PFHpA	10.0			ng/L	8.00		125	72-130	2.04	30
PFOA	9.09			ng/L	8.00		114	71-133	5.91	30
PFNA	8.60			ng/L	8.00		108	69-130	0.781	30
PFDA	9.07			ng/L	8.00		113	71-129	0.233	30
PFUnA	8.91			ng/L	8.00		111	69-133	2.00	30
PFDoA	9.01			ng/L	8.00		113	72-134	5.24	30
PFTrDA	9.67			ng/L	8.00		121	65-144	3.44	30
PFTeDA	8.54			ng/L	8.00		107	71-132	1.04	30
PFBS	7.94			ng/L	7.08		112	72-130	5.29	30
PFPeS	8.36			ng/L	7.52		111	71-127	2.00	30
PFHxS	7.87			ng/L	7.32		108	68-131	2.61	30
PFHpS	8.33			ng/L	7.64		109	69-134	4.87	30
PFOS	7.69			ng/L	7.44		103	65-140	1.55	30
PFNS	8.09			ng/L	7.68		105	69-127	1.55	30
PFDS	7.98			ng/L	7.72		103	53-142	5.94	30
4:2FTS	34.8			ng/L	30.0		116	63-143	7.31	30
6:2FTS	34.1			ng/L	30.4		112	64-140	0.446	30
8:2FTS	34.7			ng/L	30.7		113	67-138	6.54	30
PFOSA	8.45			ng/L	8.00		106	67-137	4.42	30
NMeFOSAA	8.21 MI4			ng/L	8.00		103	65-136	2.85	30
NEtFOSAA	8.67			ng/L	8.00		108	61-135	1.01	30
HFPO-DA	8.28			ng/L	8.00		103	44-175	0.0957	30
ADONA	8.67			ng/L	7.56		115	61-169	4.73	30
9CI-PF3ONS	8.36			ng/L	7.48		112	62-140	1.20	30
11CI-PF3OUDS	9.32			ng/L	7.56		123	54-138	1.27	30
Surrogate: 13C4-PFBA	66.3			ng/L	64.0		104	50-150		
Surrogate: 13C5-PFPEA	30.6			ng/L	32.0		95.6	<i>50-150</i>		
Surrogate: 13C5-PFHXA	15.7			ng/L	16.0		98.3	<i>50-150</i>		
Surrogate: 13C4-PFHPA	13.8			ng/L	16.0		86.2	<i>50-150</i>		
Surrogate: 13C8-PFOA	16.0			ng/L	16.0		99.9	<i>50-150</i>		
Surrogate: 13C9-PFNA	8.45			ng/L	8.00		106	<i>50-150</i>		
Surrogate: 13C6-PFDA	7.97			ng/L	8.00		99.6	<i>50-150</i>		
Surrogate: 13C7-PFUnA	7.79			ng/L	8.00		97.3	<i>50-150</i>		
Surrogate: 13C2-PFDOA	7.82			ng/L	8.00		97.8	<i>50-150</i>		
Surrogate: 13C2-PFTEDA	8.74			ng/L	8.00		109	<i>50-150</i>		
Surrogate: 13C3-PFBS	16.2			ng/L	16.0		101	<i>50-150</i>		
Surrogate: 13C3-PFHXS	16.3			ng/L	16.0		102	<i>50-150</i>		
Surrogate: 13C8-PFOS	15.7			ng/L	16.0		98.0	<i>50-150</i>		
Surrogate: 13C2-4:2FTS	36.8			ng/L	32.0		115	<i>50-150</i>		
Surrogate: 13C2-6:2FTS	31.8			ng/L	32.0		99.4	<i>50-150</i>		
Surrogate: 13C2-8:2FTS	47.7			ng/L	32.0		149	<i>50-150</i>		
Surrogate: 13C8-PFOSA	13.1			ng/L	16.0		81.8	<i>50-150</i>		
Surrogate: D3-NMEFOSAA	27.7			ng/L	32.0		86.4	<i>50-150</i>		
Surrogate: D5-NETFOSAA	26.7			ng/L	32.0		<i>83.3</i>	<i>50-150</i>		

Fibertec Environmental Services

Project: PFAS Testing

1914 Holloway Drive

Project Number: A16177

Holt, MI 48842

Project Manager: Jacob Sutherlund

Quality Control (Continued)

Prepared: 07/26/23 11:30 Analyzed: 07/28/23 17:50 Surrogate: 13C3-HFPO-DA 57.5 ng/L 64.0 89.9 50-150 50-150 57.5		
MRL Check (BCG0557-MRL1) PFBA 6.97 ng/L 6.40 109 73-129 PFPeA 3.36 ng/L 3.20 105 72-129 PFHxA 1.80 ng/L 1.60 112 72-129 PFHpA 1.81 ng/L 1.60 113 72-130 PFOA 1.69 ng/L 1.60 106 71-133 PFNA 1.58 ng/L 1.60 98.7 69-130 PFDA 1.51 ng/L 1.60 94.6 71-129 PFUNA 1.57 ng/L 1.60 98.2 69-133 PFDA 1.57 ng/L 1.60 98.2 69-133 PFDA 1.59 ng/L 1.60 98.2 69-133 PFDA 1.52 ng/L 1.60 98.2 69-133 PFDA 1.59 ng/L 1.60 96.1 71-129 PFTCDA 1.79 ng/L 1.60 96.1 71-	33	
PFBA 6.97 ng/L 6.40 109 73-129 PFPEA 3.36 ng/L 3.20 105 72-129 PFHXA 1.80 ng/L 1.60 112 72-129 PFHDA 1.81 ng/L 1.60 113 72-130 PFOA 1.69 ng/L 1.60 106 71-133 PFNA 1.58 ng/L 1.60 98.7 69-130 PFDA 1.51 ng/L 1.60 94.6 71-129 PFUNA 1.57 ng/L 1.60 98.2 69-133 PFDOA 1.62 ng/L 1.60 98.2 69-133 PFTrDA 1.79 ng/L 1.60 112 65-144 PFTeDA 1.54 ng/L 1.60 96.1 71-132 PFBS 1.63 ng/L 1.42 95.9 72-130 PFHxS 1.63 ng/L 1.46 104 68-131 PFHpS 1.60 <td>33</td> <td></td>	33	
PFPEA 3.36 ng/L 3.20 105 72-129 PFHXA 1.80 ng/L 1.60 112 72-129 PFHDA 1.81 ng/L 1.60 113 72-130 PFOA 1.69 ng/L 1.60 98.7 69-130 PFDA 1.51 ng/L 1.60 98.7 69-130 PFUNA 1.57 ng/L 1.60 98.2 69-133 PFDOA 1.62 ng/L 1.60 98.2 69-133 PFTrDA 1.79 ng/L 1.60 112 65-144 PFTeDA 1.54 ng/L 1.60 96.1 71-132 PFBS 1.36 ng/L 1.42 95.9 72-130 PFPES 1.63 ng/L 1.50 109 71-127 PFHXS 1.53 ng/L 1.46 104 68-131 PFHDS 1.60 ng/L 1.53 104 69-134 PFOS 1.60 <td></td> <td></td>		
PFHXA 1.80 ng/L 1.60 112 72-129 PFHDA 1.81 ng/L 1.60 113 72-130 PFOA 1.69 ng/L 1.60 106 71-133 PFNA 1.58 ng/L 1.60 98.7 69-130 PFDA 1.51 ng/L 1.60 94.6 71-129 PFUNA 1.57 ng/L 1.60 98.2 69-133 PFDOA 1.62 ng/L 1.60 101 72-134 PFTrDA 1.79 ng/L 1.60 96.1 71-132 PFBS 1.36 ng/L 1.42 95.9 72-130 PFPeS 1.63 ng/L 1.50 109 71-127 PFHXS 1.53 ng/L 1.46 104 68-131 PFHDS 1.60 ng/L 1.53 104 69-134 PFOS 1.60 ng/L 1.49 109 65-140		
PFHpA 1.81 ng/L 1.60 113 72-130 PFOA 1.69 ng/L 1.60 106 71-133 PFNA 1.58 ng/L 1.60 98.7 69-130 PFDA 1.51 ng/L 1.60 94.6 71-129 PFUNA 1.57 ng/L 1.60 98.2 69-133 PFDOA 1.62 ng/L 1.60 101 72-134 PFTrDA 1.79 ng/L 1.60 96.1 71-132 PFBS 1.36 ng/L 1.42 95.9 72-130 PFPES 1.63 ng/L 1.50 109 71-127 PFHxS 1.53 ng/L 1.46 104 68-131 PFHpS 1.60 ng/L 1.53 104 69-134 PFOS 1.62 ng/L 1.49 109 65-140		
PFOA 1.69 ng/L 1.60 106 71-133 PFNA 1.58 ng/L 1.60 98.7 69-130 PFDA 1.51 ng/L 1.60 94.6 71-129 PFUnA 1.57 ng/L 1.60 98.2 69-133 PFDoA 1.62 ng/L 1.60 101 72-134 PFTrDA 1.79 ng/L 1.60 96.1 71-132 PFBS 1.36 ng/L 1.60 96.1 71-132 PFPeS 1.63 ng/L 1.50 109 71-127 PFHxS 1.53 ng/L 1.46 104 68-131 PFHpS 1.60 ng/L 1.53 104 69-134 PFOS 1.62 ng/L 1.49 109 65-140		
PFNA 1.58 ng/L 1.60 98.7 69-130 PFDA 1.51 ng/L 1.60 94.6 71-129 PFUnA 1.57 ng/L 1.60 98.2 69-133 PFDoA 1.62 ng/L 1.60 101 72-134 PFTrDA 1.79 ng/L 1.60 91.2 65-144 PFTeDA 1.54 ng/L 1.60 96.1 71-132 PFBS 1.36 ng/L 1.42 95.9 72-130 PFPeS 1.63 ng/L 1.50 109 71-127 PFHxS 1.53 ng/L 1.46 104 68-131 PFHpS 1.60 ng/L 1.53 104 69-134 PFOS 1.62 ng/L 1.49 109 65-140		
PFDA 1.51 ng/L 1.60 94.6 71-129 PFUNA 1.57 ng/L 1.60 98.2 69-133 PFDOA 1.62 ng/L 1.60 101 72-134 PFTrDA 1.79 ng/L 1.60 96.1 71-132 PFBS 1.36 ng/L 1.42 95.9 72-130 PFPeS 1.63 ng/L 1.50 109 71-127 PFHxS 1.53 ng/L 1.46 104 68-131 PFHpS 1.60 ng/L 1.53 104 69-134 PFOS 1.62 ng/L 1.49 109 65-140		
PFUNA 1.57 ng/L 1.60 98.2 69-133 PFDOA 1.62 ng/L 1.60 101 72-134 PFTrDA 1.79 ng/L 1.60 91.2 65-144 PFTeDA 1.54 ng/L 1.60 96.1 71-132 PFBS 1.36 ng/L 1.42 95.9 72-130 PFPeS 1.63 ng/L 1.50 109 71-127 PFHxS 1.53 ng/L 1.46 104 68-131 PFHpS 1.60 ng/L 1.53 104 69-134 PFOS 1.62 ng/L 1.49 109 65-140		
PFDOA 1.62 ng/L 1.60 101 72-134 PFTrDA 1.79 ng/L 1.60 112 65-144 PFTeDA 1.54 ng/L 1.60 96.1 71-132 PFBS 1.36 ng/L 1.42 95.9 72-130 PFPeS 1.63 ng/L 1.50 109 71-127 PFHxS 1.53 ng/L 1.46 104 68-131 PFHpS 1.60 ng/L 1.53 104 69-134 PFOS 1.62 ng/L 1.49 109 65-140		
PFTrDA 1.79 ng/L 1.60 112 65-144 PFTeDA 1.54 ng/L 1.60 96.1 71-132 PFBS 1.36 ng/L 1.42 95.9 72-130 PFPeS 1.63 ng/L 1.50 109 71-127 PFHxS 1.53 ng/L 1.46 104 68-131 PFHpS 1.60 ng/L 1.53 104 69-134 PFOS 1.62 ng/L 1.49 109 65-140		
PFTEDA 1.54 ng/L 1.60 96.1 71-132 PFBS 1.36 ng/L 1.42 95.9 72-130 PFPeS 1.63 ng/L 1.50 109 71-127 PFHxS 1.53 ng/L 1.46 104 68-131 PFHpS 1.60 ng/L 1.53 104 69-134 PFOS 1.62 ng/L 1.49 109 65-140		
PFBS 1.36 ng/L 1.42 95.9 72-130 PFPeS 1.63 ng/L 1.50 109 71-127 PFHxS 1.53 ng/L 1.46 104 68-131 PFHpS 1.60 ng/L 1.53 104 69-134 PFOS 1.62 ng/L 1.49 109 65-140		
PFPES 1.63 ng/L 1.50 109 71-127 PFHxS 1.53 ng/L 1.46 104 68-131 PFHpS 1.60 ng/L 1.53 104 69-134 PFOS 1.62 ng/L 1.49 109 65-140		
PFHxS 1.53 ng/L 1.46 104 68-131 PFHpS 1.60 ng/L 1.53 104 69-134 PFOS 1.62 ng/L 1.49 109 65-140		
PFHpS 1.60 ng/L 1.53 104 69-134 PFOS 1.62 ng/L 1.49 109 65-140		
PFOS 1.62 ng/L 1.49 109 65-140		
PFNS 1.53 ng/L 1.54 99.9 69-127		
PFDS 1.52 ng/L 1.54 98.5 53-142		
4:2FTS 6.60 ng/L 6.00 110 63-143		
6:2FTS 6.39 ng/L 6.08 105 64-140		
8:2FTS 5.69 ng/L 6.14 92.5 67-138		
PFOSA 1.48 , J ng/L 1.60 92.3 67-137		
NMeFOSAA 1.70 MI4 ng/L 1.60 106 65-136		
NEtFOSAA 1.62 MI4 ng/L 1.60 102 61-135		
HFPO-DA 1.41 , J ng/L 1.60 88.0 44-175		
ADONA 1.53 , J ng/L 1.51 101 61-169		
9CI-PF3ONS 1.36 , J ng/L 1.50 91.1 62-140		
11CI-PF3OUDS 1.66 ng/L 1.51 110 54-138		
Surrogate: 13C4-PFBA 63.0 ng/L 64.0 98.4 50-150		
Surrogate: 13C5-PFPEA 31.7 ng/L 32.0 99.0 50-150		
Surrogate: 13C5-PFHXA 16.9 ng/L 16.0 106 50-150		
Surrogate: 13C4-PFHPA 15.0 ng/L 16.0 93.6 50-150		
Surrogate: 13C8-PFOA 15.4 ng/L 16.0 96.3 50-150		
Surrogate: 13C9-PFNA 8.01 ng/L 8.00 100 50-150		
Surrogate: 13C6-PFDA 7.67 ng/L 8.00 95.8 50-150		
Surrogate: 13C7-PFUnA 8.64 ng/L 8.00 108 50-150		
Surrogate: 13C2-PFDOA 7.91 ng/L 8.00 98.8 50-150		
Surrogate: 13C2-PFTEDA 8.78 ng/L 8.00 110 50-150		
Surrogate: 13C3-PFBS 15.6 ng/L 16.0 97.3 50-150		
Surrogate: 13C3-PFHXS 15.2 ng/L 16.0 94.9 50-150		
Surrogate: 13C8-PFOS 14.7 ng/L 16.0 91.7 50-150		
Surrogate: 13C2-4:2FTS 31.2 ng/L 32.0 97.5 50-150		
Surrogate: 13C2-6:2FTS 31.3 ng/L 32.0 97.8 50-150		
Surrogate: 13C2-8:2FTS 50.4 S2 ng/L 32.0 157 50-150		
Surrogate: 13C8-PFOSA 11.5 ng/L 16.0 71.9 50-150		
Surrogate: D3-NMEFOSAA 27.6 ng/L 32.0 86.4 50-150		
Surrogate: D5-NETFOSAA 26.6 ng/L 32.0 83.2 50-150		

Fibertec Environmental Services

Project: PFAS Testing

1914 Holloway Drive

Project Number: A16177

Holt, MI 48842 Project Manager: Jacob Sutherlund

Quality Control

(Continued)

Analyte	Result/ Qual	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
MRL Check (BCG0557-MRL1) Prepared: 07/26/23 11:30 Analyzed: 07/28/23 17:33										
Surrogate: 13C3-HFPO-DA	60.9			na/L	64.0		95.1	50-150		

Fibertec Environmental Services

Project: PFAS Testing

1914 Holloway Drive

Project Number: A16177

Holt, MI 48842 Project Manager: Jacob Sutherlund

Notes and Definitions

Item	Definition
J	Estimated value
MI4	Manual integration, peak unsplit
MI6	Manual integration, wrong peak integrated
S2	Surrogate recovered above the upper control limit
U	Not detected
Dry	Sample results reported on a dry weight basis.
MDL	Method Detection Limit (only displays if reported to the MDL)
ND	Analyte NOT DETECTED at or above the reporting limit.
DF	Dilution Factor
DL	Detection Limit
RPD	Relative Percent Difference
%REC	Percent Recovery
Source	Sample that was matrix spiked or duplicated.
PQL, Practical Q	Quantitation Limit = Method Reporting Limit (MRL).

Fibertec Environmental Services

1914 Holloway Drive Holt, MI 48842 Project: PFAS Testing
Project Number: A16177

Project Manager: Jacob Sutherlund Reported: 08/07/2023 10:44



WORK ORDER

23G0165

Printed: 08/07/2023 10:44 am

Project: PFAS Testing
Project Number: A16177
Project Manager: Chue Moua

PO Number: NA

Report To:

Fibertec Environmental Services Jacob Sutherlund

1914 Holloway Drive Holt, MI 48842 Phone: (517) 699-0345

Fax: (517) 699-0388

Date Received: 07/18/2023 09:40 AM
Date Due: 08/01/2023 (10.00 day TAT)

Invoice To:

Fibertec Environmental Services

Kathy Jones 1914 Holloway Drive

Holt, MI 48842 Phone: (517) 699-0345 Fax: (517) 699-0388

Logged In By: Sophia Herrera Received By: Sophia Herrera

Comments

Analysis

23G0165-01 MW-7D [Water] Sampled 7/13/2023 11:30:00AM

B-15 DOD 28-compound list

23G0165-02 MW-3S [Water] Sampled 7/13/2023 1:43:00PM

B-15 DOD 28-compound list

23G0165-03 WT BLANK [Water] Sampled 7/13/2023 4:16:00PM

Sample Comments: DI WATER

B-15 DOD 28-compound list

23G0165-04 PUMP BLANK [Water] Sampled 7/13/2023 4:29:00PM

Sample Comments: DI WATER

B-15 DOD 28-compound list

23G0165 Sample Receipt Log

Default Cooler

Samples Received at: 1.3°C

Custody Seals	No	Were all containers sealed in separate bags?	Yes
Containers Intact	Yes	Did all containers arrive in good condition?	Yes
COC/Labels Agree	Yes	Correct containers/preserv. for tests indicated?	Yes
Preservation Confirmed	Yes	Sufficient volume sent for tests requested?	No
Received On Ice	Yes	Were bubbles absent in volatile samples?	No
Was a chain of custody received?	Yes	Sufficient remaining holding time for analyses?	No
COCs complete/signed in the appropriate places?	Yes	pH of non-VOA preserved containers documented?	No
Sample labels complete? Sample ID, date/time, etc.	Yes	Unpreserved vials received for VOA analysis?	No
Did all container labels agree with COCs?	Yes	If "yes", are unpreserved VOA vials noted on Work	No



Analytical Laboratory

1914 Holloway Drive Holt, MI 48842

Cadillac, MI 49601 Phone: 231 775 8368 Phone: 517 699 0345 Fax: 517 699 0388 Fax: 231 775 8584

8660 S. Mackinaw Trail

email: lab@fibertec.us

Industrial Hygiene Services, Inc.

1914 Holloway Drive Holf, MI 48842

Phone: 517 699 0345 Fax: 517 699 0382

email: asbestos@fibertecihs.com

Geoprobe

11766 E. Grand River Rd.

Brighton, MI 48116 Phone: 810 220 3300 Fax: 810 220 3311

221198-S
PAGE 1 of 1

Chain of Custody #

Client Nam	client Name: Fibertec								i	PARAM	ARAMETERS					Matrix Code	Deliverables			
Contact Pe	erson:Jacol	o Suthe	erlund				g								5	S Soil GW Ground Water	Level 2			
Project Nai	me/ Number:	A16177	7	CODE)			(537.1 Modified)									A Air SW Surface Water D Oil WW Waste Water	Level 3			
Email distribution list: lab@fibertec.us					VERS		37.1 N								HOLD SAMPLE	P Wipe X Other: Specify EDD				
Quote#					# OF CONTAINERS		3 (5								포					
Purchase (Order#			MATRIX (see right corner for code)	FCC		PFAS													
Date	Time	Sample #	Client Sample Descriptor	MA			Б								R	emarks:				
7/13/23	1130		MW-7D	GW	3		~													
7/13/23	1343		MW-3S	GW	3		~													
7/13/23	1616		WT Blank	W	3		V]	Ol Water				
7/13/23	1629		Pump Blank	W	3		~								[Ol Water				
																	-			
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Comment	s:																			
Sampled/I	Relinquished B	y:		Date	Date/ Time Red						Received By:									
Relinquish	ed By:	***************************************		Date	Date/ Time						Received By:									
Relinquished By:					Date/ Time Recei					y vnko kodnývel 7-18-23 9.40 am LAB USE ONLY										
Turnaround Time ALL RESULTS WILL BE SENT BY THE END OF THE							AY		,	,			LAB USE ONLY							
1 bus. day2 bus. days3 bus. days						4 bus. days							Fibe	ertec	proje	ect number:				
Sta5-7 bus. days (standard) Other (specify time/date requirement):					andard								Temperature upon receipt at Lab:							
			Pleas	se se	e bo	ack	for	te	rms and	d co	ndit	ions	5	***********	Control of the Control					
-																				