

Work Orders: 1A07072

Report Date: 4/01/2021

Project: PFAS Project

Received Date: 1/7/2021

Turnaround Time: Normal

Phones: (417) 864-1708

Attn: Todd Cox

Fax:

Client: City of Springfield
218 E. Central
Springfield, MO 65802

P.O. #:

Billing Code:

DoD-ISO ANAB # • ELAP-CA #1132 • EPA-UCMR #CA00211 • ISO17025 ANAB #L2457.01 • LACSD #10143 • NJ-DEP #CA015

This is a complete final report. The information in this report applies to the samples analyzed in accordance with the chain-of-custody document. Weck Laboratories certifies that the test results meet all requirements of TNI unless noted by qualifiers or written in the Case Narrative. This analytical report must be reproduced in its entirety.

Dear Todd Cox,

Enclosed are the results of analyses for samples received 1/07/21 with the Chain-of-Custody document. The samples were received in good condition, at 4.2 °C and on ice. All analyses met the method criteria except as noted in the case narrative or in the report with data qualifiers.

Reviewed by:



Chris Samatmanakit
Project Manager



City of Springfield
218 E. Central
Springfield, MO 65802

Project Number: PFAS Project

Project Manager: Todd Cox

Reported:
04/01/2021 15:34

Sample Summary

Sample Name	Sampled By	Lab ID	Matrix	Sampled	Qualifiers
SW PI (Raw)	Derek Gillis	1A07072-01	Water	01/05/21 07:00	
NW PI (Raw)	Derek Gillis	1A07072-02	Water	01/05/21 08:45	
SW Eff 001	Derek Gillis	1A07072-03	Water	01/05/21 07:00	
NW Eff 001	Derek Gillis	1A07072-04	Water	01/05/21 08:30	
Landfill Leachate	Derek Gillis	1A07072-05	Water	01/05/21 07:45	
SW PI (Raw) Field Blank	Derek Gillis	1A07072-06	Water	01/05/21 07:00	
NW PI (Raw) Field Blank	Derek Gillis	1A07072-07	Water	01/05/21 08:45	
SW Eff 001 Field Blank	Derek Gillis	1A07072-08	Water	01/05/21 07:00	
NW Eff 001 Field Blank	Derek Gillis	1A07072-09	Water	01/05/21 08:30	
Landfill Leachate Field Blank	Derek Gillis	1A07072-10	Water	01/05/21 07:45	
Biosolids Sample (BSTF)	Derek Gillis	1A07072-11	Solid	01/05/21 06:30	
Biosolids Field Blank	Derek Gillis	1A07072-12	Water	01/05/21 06:30	

Analyses Accreditation Summary

Analyte	CAS #	Not By NELAP	ANAB ISO 17025
EPA 537M in Water			
PFBA	375-22-4	✓	
PFBA	375-22-4	✓	
PFPeA	2706-90-3	✓	
PFPeA	2706-90-3	✓	
PFBS	375-73-5	✓	
PFBS	375-73-5	✓	
4:2 FTS		✓	
PFHxA	307-24-4	✓	
PFHxA	307-24-4	✓	
PFPeS	2706-91-4	✓	
PFPeS	2706-91-4	✓	
HFPO-DA	13252-13-6	✓	
HFPO-DA	13252-13-6	✓	
PFHpA	375-85-9	✓	
PFHpA	375-85-9	✓	
PFHxS	355-46-4	✓	
PFHxS	355-46-4	✓	
ADONA	958445-44-8	✓	
ADONA	958445-44-8	✓	
6:2 FTS		✓	
6:2 FTS		✓	
Perfluorooctanoic acid (PFOA)	335-67-1	✓	
Perfluorooctanoic acid (PFOA)	335-67-1	✓	
PFHpS	375-92-8	✓	
PFHpS	375-92-8	✓	
PFNA	375-95-1	✓	
PFNA	375-95-1	✓	
PFOS	1763-23-1	✓	
PFOS	1763-23-1	✓	



Certificate of Analysis

FINAL REPORT

City of Springfield
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 Springfield, MO 65802

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Analyses Accreditation Summary

(Continued)

Analyte	CAS #	Not By NELAP	ANAB ISO 17025
EPA 537M in Water (Continued)			
9CI-PF3ONS	756426-58-1	✓	
FOSA	754-91-6	✓	
FOSA	754-91-6	✓	
8:2 FTS	39108-34-4	✓	
8:2 FTS	39108-34-4	✓	
PFDA	335-76-2	✓	
PFNS	98789-57-2	✓	
MeFOSAA	2355-31-9	✓	
MeFOSAA	2355-31-9	✓	
PFDS	335-77-3	✓	
PFDS	335-77-3	✓	
EtFOSAA	2991-50-6	✓	
EtFOSAA	2991-50-6	✓	
PfUnA	2058-94-8	✓	
PfUnA	2058-94-8	✓	
MeFOSE	24448-09-7	✓	
MeFOSE	24448-09-7	✓	
MeFOSA	31506-32-8	✓	
MeFOSA	31506-32-8	✓	
11CI-PF3OUdS	763051-92-9	✓	
11CI-PF3OUdS	763051-92-9	✓	
EtFOSE	1691-99-2	✓	
EtFOSE	1691-99-2	✓	
EtFOSA	4151-50-2	✓	
EtFOSA	4151-50-2	✓	
PFDoA	307-55-1	✓	
PFDoA	307-55-1	✓	
PfTrDA	72629-94-8	✓	
PfTrDA	72629-94-8	✓	
PfTeDA	376-06-7	✓	
PfTeDA	376-06-7	✓	



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City of Springfield
218 E. Central
Springfield, MO 65802

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Reported:

04/01/2021 15:34

Project Manager: Todd Cox

Sample Results

Sample: SW PI (Raw)

Sampled: 01/05/21 7:00 by Derek Gillis

1A07072-01 (Water)

Analyte	Result	MRL	Units	Dil	Analyzed	Qualifier
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Per- and Polyfluorinated Alkyl Substances (PFAS) by Dir.Inj/LCMSMS

Method: EPA 537M

Instr: LCMS06

Batch ID: W1A0774

Preparation: _NONE (LC)

Prepared: 01/15/21 12:50

Analyst: jna

11CI-PF3OUdS	ND	1000	ng/l	1	01/16/21	
6:2 FTS	ND	1000	ng/l	1	01/16/21	
EtFOSA	ND	1000	ng/l	1	01/16/21	
EtFOSAA	ND	1000	ng/l	1	01/16/21	
EtFOSE	ND	1000	ng/l	1	01/16/21	
FOSA	ND	1000	ng/l	1	01/16/21	
MeFOSA	ND	1000	ng/l	1	01/16/21	
MeFOSAA	ND	1000	ng/l	1	01/16/21	
MeFOSE	ND	1000	ng/l	1	01/16/21	
PFBA	ND	1000	ng/l	1	01/16/21	
PFDaA	ND	1000	ng/l	1	01/16/21	
PFDS	ND	1000	ng/l	1	01/16/21	
PFPeA	ND	1000	ng/l	1	01/16/21	
PFTeDA	ND	1000	ng/l	1	01/16/21	
PFTrDA	ND	1000	ng/l	1	01/16/21	
PFUnA	ND	1000	ng/l	1	01/16/21	



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Project Number: PFAS Project

Reported:

04/01/2021 15:34

Project Manager: Todd Cox

Sample Results

(Continued)

Sample: SW PI (Raw)

Sampled: 01/05/21 7:00 by Derek Gillis

1A07072-01RE1 (Water)

Analyte	Result	MRL	Units	Dil	Analyzed	Qualifier
Per- and Polyfluorinated Alkyl Substances (PFAS) by SPE/LCMSMS						
Method: EPA 537M		Instr: LCMS06				
Batch ID: W1B0015	Preparation: EPA 537/SPE	Prepared: 02/01/21 09:51			Analyst: jna	
4:2 FTS	ND	1.0	ng/l	1	02/02/21	
8:2 FTS	ND	1.0	ng/l	1	02/02/21	
9CI-PF3ONS	ND	1.0	ng/l	1	02/02/21	
ADONA	ND	1.0	ng/l	1	02/02/21	
HFPO-DA	ND	1.0	ng/l	1	02/02/21	
Perfluorooctanoic acid (PFOA)	4.3	1.0	ng/l	1	02/02/21	
PFBS	9.1	1.0	ng/l	1	02/02/21	
PFDA	ND	1.0	ng/l	1	02/02/21	
PFHpA	ND	4.0	ng/l	1	02/02/21	
PFHpS	ND	1.0	ng/l	1	02/02/21	
PFHxA	9.3	2.0	ng/l	1	02/02/21	
PFHxS	7.6	1.0	ng/l	1	02/02/21	
PFNA	ND	1.0	ng/l	1	02/02/21	
PFNS	ND	1.0	ng/l	1	02/02/21	
PFOS	17	2.0	ng/l	1	02/02/21	
PFPeS	ND	1.0	ng/l	1	02/02/21	



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Sample Results

(Continued)

Sample: NW PI (Raw)

Sampled: 01/05/21 8:45 by Derek Gillis

1A07072-02 (Water)

Analyte	Result	MRL	Units	Dil	Analyzed	Qualifier
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Per- and Polyfluorinated Alkyl Substances (PFAS) by Dir.Inj/LCMSMS

Method: EPA 537M

Instr: LCMS06

Batch ID: W1A0774

Preparation: _NONE (LC)

Prepared: 01/15/21 12:50

Analyst: jna

EtFOSA	ND	1000	ng/l	1	01/16/21	
EtFOSE	ND	1000	ng/l	1	01/16/21	
MeFOSA	ND	1000	ng/l	1	01/16/21	
MeFOSE	ND	1000	ng/l	1	01/16/21	
PFBA	ND	1000	ng/l	1	01/16/21	
PFHpA	ND	1000	ng/l	1	01/16/21	
PFTeDA	ND	1000	ng/l	1	01/16/21	

Per- and Polyfluorinated Alkyl Substances (PFAS) by SPE/LCMSMS

Method: EPA 537M

Instr: LCMS06

Batch ID: W1A0475

Preparation: EPA 537/SPE

Prepared: 01/11/21 12:25

Analyst: jna

11CI-PF3OUdS	ND	1.0	ng/l	1	01/16/21	
4:2 FTS	ND	1.0	ng/l	1	01/16/21	
6:2 FTS	1.6	1.0	ng/l	1	01/16/21	
8:2 FTS	ND	1.0	ng/l	1	01/16/21	
9CI-PF3ONS	ND	1.0	ng/l	1	01/16/21	
ADONA	ND	1.0	ng/l	1	01/16/21	
EtFOSAA	ND	1.0	ng/l	1	01/16/21	
FOSA	ND	1.0	ng/l	1	01/16/21	
HFPO-DA	ND	1.0	ng/l	1	01/16/21	
MeFOSAA	ND	1.0	ng/l	1	01/16/21	
Perfluorooctanoic acid (PFOA)	2.1	1.0	ng/l	1	01/16/21	
PFBS	2.8	1.0	ng/l	1	01/16/21	
PFDA	ND	1.0	ng/l	1	01/16/21	
PFDoA	ND	1.0	ng/l	1	01/16/21	
PFDS	ND	5.0	ng/l	1	01/16/21	R-01
PFHpS	ND	1.0	ng/l	1	01/16/21	
PFHxA	5.5	1.0	ng/l	1	01/16/21	
PFHxS	2.8	1.0	ng/l	1	01/16/21	
PFNA	ND	1.0	ng/l	1	01/16/21	
PFNS	ND	1.0	ng/l	1	01/16/21	
PFOS	4.2	1.0	ng/l	1	01/16/21	
PFPeA	4.9	1.0	ng/l	1	01/16/21	
PFPeS	ND	1.0	ng/l	1	01/16/21	
PFTTrDA	ND	1.0	ng/l	1	01/16/21	
PFUnA	ND	1.0	ng/l	1	01/16/21	

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04/01/2021 15:34

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Sample Results

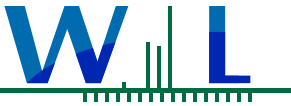
(Continued)

Sample: SW Eff 001

Sampled: 01/05/21 7:00 by Derek Gillis

1A07072-03 (Water)

Analyte	Result	MRL	Units	Dil	Analyzed	Qualifier
Per- and Polyflourinated Alkyl Substances (PFAS) by Dir.Inj/LCMSMS						
Method: EPA 537M			Instr: LCMS06			
Batch ID: W1A0774		Preparation: _NONE (LC)		Prepared: 01/15/21 12:50		Analyst: jna
PFBA	ND	1000	ng/l	1	01/16/21	
PFPeA	ND	1000	ng/l	1	01/16/21	
PFTeDA	ND	1000	ng/l	1	01/16/21	



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FINAL REPORT

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Project Number: PFAS Project

Reported:

04/01/2021 15:34

Project Manager: Todd Cox

Sample Results

(Continued)

Sample: SW Eff 001

Sampled: 01/05/21 7:00 by Derek Gillis

1A07072-03RE1 (Water)

Analyte	Result	MRL	Units	Dil	Analyzed	Qualifier
Per- and Polyfluorinated Alkyl Substances (PFAS) by SPE/LCMSMS						
Method: EPA 537M		Instr: LCMS06				
Batch ID: W1B0015		Preparation: EPA 537/SPE			Prepared: 02/01/21 09:51	
Analyst: jna						
11CI-PF3OUdS	ND	2.0	ng/l	1	02/02/21	
4:2 FTS	ND	1.0	ng/l	1	02/02/21	
6:2 FTS	6.7	1.0	ng/l	1	02/02/21	
8:2 FTS	ND	1.0	ng/l	1	02/02/21	
9CI-PF3ONS	ND	1.0	ng/l	1	02/02/21	
ADONA	ND	1.0	ng/l	1	02/02/21	
EtFOSA	ND	2.0	ng/l	1	02/02/21	
EtFOSAA	ND	2.0	ng/l	1	02/02/21	
EtFOSE	ND	1.0	ng/l	1	02/02/21	
FOSA	ND	1.0	ng/l	1	02/02/21	
HFPO-DA	ND	1.0	ng/l	1	02/02/21	
MeFOSA	ND	2.0	ng/l	1	02/02/21	
MeFOSAA	ND	1.0	ng/l	1	02/02/21	
MeFOSE	ND	2.0	ng/l	1	02/02/21	
Perfluorooctanoic acid (PFOA)	9.1	1.0	ng/l	1	02/02/21	
PFBS	13	1.0	ng/l	1	02/02/21	
PFDA	ND	1.0	ng/l	1	02/02/21	
PFDoA	ND	1.0	ng/l	1	02/02/21	
PFDS	ND	1.0	ng/l	1	02/02/21	
PFHpA	ND	4.0	ng/l	1	02/02/21	
PFHpS	ND	1.0	ng/l	1	02/02/21	
PFHxA	25	2.0	ng/l	1	02/02/21	
PFHxS	7.8	1.0	ng/l	1	02/02/21	
PFNA	ND	1.0	ng/l	1	02/02/21	
PFNS	ND	1.0	ng/l	1	02/02/21	
PFOS	12	2.0	ng/l	1	02/02/21	
PFPeS	ND	1.0	ng/l	1	02/02/21	
PFTTrDA	ND	1.0	ng/l	1	02/02/21	
PFUnA	ND	1.0	ng/l	1	02/02/21	



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City of Springfield
218 E. Central
Springfield, MO 65802

Project Number: PFAS Project

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04/01/2021 15:34

Project Manager: Todd Cox

Sample Results

(Continued)

Sample: NW Eff 001

Sampled: 01/05/21 8:30 by Derek Gillis

1A07072-04 (Water)

Analyte	Result	MRL	Units	Dil	Analyzed	Qualifier
Per- and Polyfluorinated Alkyl Substances (PFAS) by Dir.Inj/LCMSMS						
Method: EPA 537M			Instr: LCMS06			
Batch ID: W1A0774		Preparation: _NONE (LC)		Prepared: 01/15/21 12:50		Analyst: jna
EtFOSA	ND	1000	ng/l	1	01/16/21	
EtFOSE	ND	1000	ng/l	1	01/16/21	
MeFOSA	ND	1000	ng/l	1	01/16/21	
MeFOSE	ND	1000	ng/l	1	01/16/21	
PFBA	ND	1000	ng/l	1	01/16/21	
PFTeDA	ND	1000	ng/l	1	01/16/21	

City of Springfield
218 E. Central
Springfield, MO 65802

Project Number: PFAS Project

Reported:

04/01/2021 15:34

Project Manager: Todd Cox

Sample Results

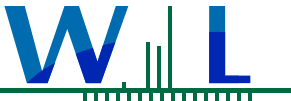
(Continued)

Sample: NW Eff 001

Sampled: 01/05/21 8:30 by Derek Gillis

1A07072-04RE1 (Water)

Analyte	Result	MRL	Units	Dil	Analyzed	Qualifier
Per- and Polyfluorinated Alkyl Substances (PFAS) by SPE/LCMSMS						
Method: EPA 537M			Instr: LCMS06			
Batch ID: W1B0015		Preparation: EPA 537/SPE		Prepared: 02/01/21 09:51		Analyst: jna
11CI-PF3OUdS	ND	2.0	ng/l	1	02/02/21	
4:2 FTS	ND	1.0	ng/l	1	02/02/21	
6:2 FTS	ND	1.0	ng/l	1	02/02/21	
8:2 FTS	ND	1.0	ng/l	1	02/02/21	
9CI-PF3ONS	ND	1.0	ng/l	1	02/02/21	
ADONA	ND	1.0	ng/l	1	02/02/21	
EtFOSAA	ND	2.0	ng/l	1	02/02/21	
FOSA	ND	1.0	ng/l	1	02/02/21	
HFPO-DA	ND	1.0	ng/l	1	02/02/21	
MeFOSAA	1.1	1.0	ng/l	1	02/02/21	
Perfluorooctanoic acid (PFOA)	10	1.0	ng/l	1	02/02/21	
PFBS	6.8	1.0	ng/l	1	02/02/21	
PFDA	ND	1.0	ng/l	1	02/02/21	
PFDoA	ND	1.0	ng/l	1	02/02/21	
PFDS	ND	1.0	ng/l	1	02/02/21	
PFHpA	ND	4.0	ng/l	1	02/02/21	
PFHpS	ND	1.0	ng/l	1	02/02/21	
PFHxA	30	2.0	ng/l	1	02/02/21	
PFHxS	5.7	1.0	ng/l	1	02/02/21	
PFNA	ND	1.0	ng/l	1	02/02/21	
PFNS	ND	1.0	ng/l	1	02/02/21	
PFOS	6.8	2.0	ng/l	1	02/02/21	
PFPeA	18	1.0	ng/l	1	02/02/21	
PFPeS	ND	1.0	ng/l	1	02/02/21	
PFTTrDA	ND	1.0	ng/l	1	02/02/21	
PFUnA	ND	1.0	ng/l	1	02/02/21	



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Project Manager: Todd Cox

Reported:
04/01/2021 15:34

Sample Results

(Continued)

Sample: Landfill Leachate
1A07072-05 (Water)

Sampled: 01/05/21 7:45 by Derek Gillis

Analyte	Result	MRL	Units	Dil	Analyzed	Qualifier
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Per- and Polyfluorinated Alkyl Substances (PFAS) by Dir.Inj/LCMSMS

Method: EPA 537M

Instr: LCMS06

Batch ID: W1A0774

Preparation: _NONE (LC)

Prepared: 01/15/21 12:50

Analyst: jna

6:2 FTS	ND	1000	ng/l	1	01/16/21	
8:2 FTS	ND	1000	ng/l	1	01/16/21	
ADONA	ND	1000	ng/l	1	01/16/21	
EtFOSA	ND	1000	ng/l	1	01/16/21	
EtFOSE	ND	1000	ng/l	1	01/16/21	
FOSA	ND	1000	ng/l	1	01/16/21	
HFPO-DA	ND	1000	ng/l	1	01/16/21	
MeFOSA	ND	1000	ng/l	1	01/16/21	
MeFOSAA	ND	1000	ng/l	1	01/16/21	
MeFOSE	ND	1000	ng/l	1	01/16/21	
Perfluorooctanoic acid (PFOA)	ND	1000	ng/l	1	01/16/21	
PFBA	ND	1000	ng/l	1	01/16/21	
PFBS	ND	1000	ng/l	1	01/16/21	
PFHpA	ND	1000	ng/l	1	01/16/21	
PFHpS	ND	1000	ng/l	1	01/16/21	
PFHxA	ND	1000	ng/l	1	01/16/21	
PFHxS	ND	1000	ng/l	1	01/16/21	
PFNA	ND	1000	ng/l	1	01/16/21	
PFOS	ND	1000	ng/l	1	01/16/21	
PFPeA	ND	1000	ng/l	1	01/16/21	
PFPeS	ND	1000	ng/l	1	01/16/21	
PFTeDA	ND	1000	ng/l	1	01/16/21	

Per- and Polyfluorinated Alkyl Substances (PFAS) by SPE/LCMSMS

Method: EPA 537M

Instr: LCMS06

Batch ID: W1A0610

Preparation: EPA 537/SPE

Prepared: 01/13/21 09:50

Analyst: jna

11CI-PF3OUdS	ND	1.0	ng/l	1	01/16/21	
4:2 FTS	1.6	1.0	ng/l	1	01/16/21	
9CI-PF3ONS	ND	1.0	ng/l	1	01/16/21	
EtFOSAA	52	1.0	ng/l	1	01/16/21	
PFDA	11	1.0	ng/l	1	01/16/21	
PFDoA	ND	1.0	ng/l	1	01/16/21	
PFDS	ND	1.0	ng/l	1	01/16/21	
PFNS	ND	1.0	ng/l	1	01/16/21	
PFTTrDA	ND	1.0	ng/l	1	01/16/21	
PFOuA	1.3	1.0	ng/l	1	01/16/21	



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Project Number: PFAS Project

Reported:
04/01/2021 15:34

Project Manager: Todd Cox

Sample Results

(Continued)

Sample: SW PI (Raw) Field Blank
1A07072-06 (Water)

Sampled: 01/05/21 7:00 by Derek Gillis

Analyte	Result	MRL	Units	Dil	Analyzed	Qualifier
Per- and Polyfluorinated Alkyl Substances (PFAS) by SPE/LCMSMS						
Method: EPA 537M		Instr: LCMS06				
Batch ID: W1A0610	Preparation: EPA 537/SPE	Prepared: 01/13/21 09:50			Analyst: jna	
11CI-PF3OUdS	ND	1.0	ng/l	1	01/16/21	
4:2 FTS	ND	1.0	ng/l	1	01/16/21	
6:2 FTS	ND	1.0	ng/l	1	01/16/21	
8:2 FTS	ND	1.0	ng/l	1	01/16/21	
9CI-PF3ONS	ND	1.0	ng/l	1	01/16/21	
ADONA	ND	1.0	ng/l	1	01/16/21	
EtFOSAA	ND	1.0	ng/l	1	01/16/21	
FOSA	ND	1.0	ng/l	1	01/16/21	
HFPO-DA	ND	1.0	ng/l	1	01/16/21	
MeFOSAA	ND	1.0	ng/l	1	01/16/21	
Perfluorooctanoic acid (PFOA)	ND	1.0	ng/l	1	01/16/21	
PFBA	ND	1.0	ng/l	1	01/16/21	
PFBS	ND	1.0	ng/l	1	01/16/21	
PFDA	ND	1.0	ng/l	1	01/16/21	
PFDoA	ND	1.0	ng/l	1	01/16/21	
PFDS	ND	1.0	ng/l	1	01/16/21	
PFHpA	ND	1.0	ng/l	1	01/16/21	
PFHpS	ND	1.0	ng/l	1	01/16/21	
PFHxA	ND	1.0	ng/l	1	01/16/21	
PFHxS	ND	1.0	ng/l	1	01/16/21	
PFNA	ND	1.0	ng/l	1	01/16/21	
PFNS	ND	1.0	ng/l	1	01/16/21	
PFOS	ND	1.0	ng/l	1	01/16/21	
PFPeA	ND	1.0	ng/l	1	01/16/21	
PFPeS	ND	1.0	ng/l	1	01/16/21	
PFTeDA	ND	1.0	ng/l	1	01/16/21	
PFTTrDA	ND	1.0	ng/l	1	01/16/21	
PFUnA	ND	1.0	ng/l	1	01/16/21	



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FINAL REPORT

City of Springfield
218 E. Central
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Project Number: PFAS Project

Reported:

04/01/2021 15:34

Project Manager: Todd Cox

Sample Results

(Continued)

Sample: NW PI (Raw) Field Blank
1A07072-07 (Water)

Sampled: 01/05/21 8:45 by Derek Gillis

Analyte	Result	MRL	Units	Dil	Analyzed	Qualifier
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Per- and Polyfluorinated Alkyl Substances (PFAS) by SPE/LCMSMS

Method: EPA 537M

Instr: LCMS06

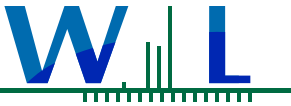
Batch ID: W1A0610

Preparation: EPA 537/SPE

Prepared: 01/13/21 09:50

Analyst: jna

11CI-PF3OUdS	ND	1.0	ng/l	1	01/16/21	
4:2 FTS	ND	1.0	ng/l	1	01/16/21	
6:2 FTS	ND	1.0	ng/l	1	01/16/21	
8:2 FTS	ND	1.0	ng/l	1	01/16/21	
9CI-PF3ONS	ND	1.0	ng/l	1	01/16/21	
ADONA	ND	1.0	ng/l	1	01/16/21	
EtFOSAA	ND	1.0	ng/l	1	01/16/21	
FOSA	ND	1.0	ng/l	1	01/16/21	
HFPO-DA	ND	1.0	ng/l	1	01/16/21	
MeFOSAA	ND	1.0	ng/l	1	01/16/21	
Perfluorooctanoic acid (PFOA)	ND	1.0	ng/l	1	01/16/21	
PFBA	ND	1.0	ng/l	1	01/16/21	
PFBS	ND	1.0	ng/l	1	01/16/21	
PFDA	ND	1.0	ng/l	1	01/16/21	
PFDoA	ND	1.0	ng/l	1	01/16/21	
PFDS	ND	1.0	ng/l	1	01/16/21	
PFHpA	ND	1.0	ng/l	1	01/16/21	
PFHpS	ND	1.0	ng/l	1	01/16/21	
PFHxA	ND	1.0	ng/l	1	01/16/21	
PFHxS	ND	1.0	ng/l	1	01/16/21	
PFNA	ND	1.0	ng/l	1	01/16/21	
PFNS	ND	1.0	ng/l	1	01/16/21	
PFOS	ND	1.0	ng/l	1	01/16/21	
PFPeA	ND	1.0	ng/l	1	01/16/21	
PFPeS	ND	1.0	ng/l	1	01/16/21	
PFTeDA	ND	1.0	ng/l	1	01/16/21	
PFTTrDA	ND	1.0	ng/l	1	01/16/21	
PFUnA	ND	1.0	ng/l	1	01/16/21	



WECK LABORATORIES, INC.

City of Springfield
218 E. Central
Springfield, MO 65802

Project Number: PFAS Project

Project Manager: Todd Cox

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Reported:
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Sample Results

(Continued)

Sample: SW Eff 001 Field Blank
1A07072-08 (Water)

Sampled: 01/05/21 7:00 by Derek Gillis

Analyte	Result	MRL	Units	Dil	Analyzed	Qualifier
Per- and Polyfluorinated Alkyl Substances (PFAS) by SPE/LCMSMS						
Method: EPA 537M			Instr: LCMS06			
Batch ID: W1A0610		Preparation: EPA 537/SPE		Prepared: 01/13/21 09:50		Analyst: jna
11CI-PF3OUdS	ND	1.0	ng/l	1	01/16/21	
4:2 FTS	ND	1.0	ng/l	1	01/16/21	
6:2 FTS	ND	1.0	ng/l	1	01/16/21	
8:2 FTS	ND	1.0	ng/l	1	01/16/21	
9CI-PF3ONS	ND	1.0	ng/l	1	01/16/21	
ADONA	ND	1.0	ng/l	1	01/16/21	
EtFOSAA	ND	1.0	ng/l	1	01/16/21	
FOSA	ND	1.0	ng/l	1	01/16/21	
HFPO-DA	ND	1.0	ng/l	1	01/16/21	
MeFOSAA	ND	1.0	ng/l	1	01/16/21	
Perfluorooctanoic acid (PFOA)	ND	1.0	ng/l	1	01/16/21	
PFBA	ND	1.0	ng/l	1	01/16/21	
PFBS	ND	1.0	ng/l	1	01/16/21	
PFDA	ND	1.0	ng/l	1	01/16/21	
PFDoA	ND	1.0	ng/l	1	01/16/21	
PFDS	ND	1.0	ng/l	1	01/16/21	
PFHpA	ND	1.0	ng/l	1	01/16/21	
PFHpS	ND	1.0	ng/l	1	01/16/21	
PFHxA	ND	1.0	ng/l	1	01/16/21	
PFHxS	ND	1.0	ng/l	1	01/16/21	
PFNA	ND	1.0	ng/l	1	01/16/21	
PFNS	ND	1.0	ng/l	1	01/16/21	
PFOS	ND	1.0	ng/l	1	01/16/21	
PFPeA	ND	1.0	ng/l	1	01/16/21	
PFPeS	ND	1.0	ng/l	1	01/16/21	
PFTeDA	ND	1.0	ng/l	1	01/16/21	
PFTTrDA	ND	1.0	ng/l	1	01/16/21	
PFUnA	ND	1.0	ng/l	1	01/16/21	



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City of Springfield
218 E. Central
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Project Number: PFAS Project

Reported:

04/01/2021 15:34

Project Manager: Todd Cox

Sample Results

(Continued)

Sample: NW Eff 001 Field Blank
1A07072-09 (Water)

Sampled: 01/05/21 8:30 by Derek Gillis

Analyte	Result	MRL	Units	Dil	Analyzed	Qualifier
Per- and Polyfluorinated Alkyl Substances (PFAS) by SPE/LCMSMS						
Method: EPA 537M		Instr: LCMS06				
Batch ID: W1A0610	Preparation: EPA 537/SPE	Prepared: 01/13/21 09:50			Analyst: jna	
11CI-PF3OUdS	ND	1.0	ng/l	1	01/16/21	
4:2 FTS	ND	1.0	ng/l	1	01/16/21	
6:2 FTS	ND	1.0	ng/l	1	01/16/21	
8:2 FTS	ND	1.0	ng/l	1	01/16/21	
9CI-PF3ONS	ND	1.0	ng/l	1	01/16/21	
ADONA	ND	1.0	ng/l	1	01/16/21	
EtFOSAA	ND	1.0	ng/l	1	01/16/21	
FOSA	ND	1.0	ng/l	1	01/16/21	
HFPO-DA	ND	1.0	ng/l	1	01/16/21	
MeFOSAA	ND	1.0	ng/l	1	01/16/21	
Perfluorooctanoic acid (PFOA)	ND	1.0	ng/l	1	01/16/21	
PFBA	ND	1.0	ng/l	1	01/16/21	
PFBS	ND	1.0	ng/l	1	01/16/21	
PFDA	ND	1.0	ng/l	1	01/16/21	
PFDoA	ND	1.0	ng/l	1	01/16/21	
PFDS	ND	1.0	ng/l	1	01/16/21	
PFHpA	ND	1.0	ng/l	1	01/16/21	
PFHpS	ND	1.0	ng/l	1	01/16/21	
PFHxA	ND	1.0	ng/l	1	01/16/21	
PFHxS	ND	1.0	ng/l	1	01/16/21	
PFNA	ND	1.0	ng/l	1	01/16/21	
PFNS	ND	1.0	ng/l	1	01/16/21	
PFOS	ND	1.0	ng/l	1	01/16/21	
PFPeA	ND	1.0	ng/l	1	01/16/21	
PFPeS	ND	1.0	ng/l	1	01/16/21	
PFTeDA	ND	1.0	ng/l	1	01/16/21	
PFTTrDA	ND	1.0	ng/l	1	01/16/21	
PFUnA	ND	1.0	ng/l	1	01/16/21	



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Project Number: PFAS Project

Reported:

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Project Manager: Todd Cox

Sample Results

(Continued)

Sample: Landfill Leachate Field Blank
1A07072-10 (Water)

Sampled: 01/05/21 7:45 by Derek Gillis

Analyte	Result	MRL	Units	Dil	Analyzed	Qualifier
Per- and Polyfluorinated Alkyl Substances (PFAS) by SPE/LCMSMS						
Method: EPA 537M		Instr: LCMS06				
Batch ID: W1A0610	Preparation: EPA 537/SPE	Prepared: 01/13/21 09:50			Analyst: jna	
11CI-PF3OUdS	ND	1.0	ng/l	1	01/16/21	
4:2 FTS	ND	1.0	ng/l	1	01/16/21	
6:2 FTS	ND	1.0	ng/l	1	01/16/21	
8:2 FTS	ND	1.0	ng/l	1	01/16/21	
9CI-PF3ONS	ND	1.0	ng/l	1	01/16/21	
ADONA	ND	1.0	ng/l	1	01/16/21	
EtFOSAA	ND	1.0	ng/l	1	01/16/21	
FOSA	ND	1.0	ng/l	1	01/16/21	
HFPO-DA	ND	1.0	ng/l	1	01/16/21	
MeFOSAA	ND	1.0	ng/l	1	01/16/21	
Perfluorooctanoic acid (PFOA)	ND	1.0	ng/l	1	01/16/21	
PFBA	ND	1.0	ng/l	1	01/16/21	
PFBS	ND	1.0	ng/l	1	01/16/21	
PFDA	ND	1.0	ng/l	1	01/16/21	
PFDoA	ND	1.0	ng/l	1	01/16/21	
PFDS	ND	1.0	ng/l	1	01/16/21	
PFHpA	ND	1.0	ng/l	1	01/16/21	
PFHpS	ND	1.0	ng/l	1	01/16/21	
PFHxA	ND	1.0	ng/l	1	01/16/21	
PFHxS	ND	1.0	ng/l	1	01/16/21	
PFNA	ND	1.0	ng/l	1	01/16/21	
PFNS	ND	1.0	ng/l	1	01/16/21	
PFOS	ND	1.0	ng/l	1	01/16/21	
PFPeA	ND	1.0	ng/l	1	01/16/21	
PFPeS	ND	1.0	ng/l	1	01/16/21	
PFTeDA	ND	1.0	ng/l	1	01/16/21	
PFTrDA	ND	1.0	ng/l	1	01/16/21	
PFUnA	ND	1.0	ng/l	1	01/16/21	

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Project Manager: Todd Cox

Sample Results

(Continued)

Sample: Biosolids Field Blank
1A07072-12 (Water)

Sampled: 01/05/21 6:30 by Derek Gillis

Analyte	Result	MRL	Units	Dil	Analyzed	Qualifier
Per- and Polyfluorinated Alkyl Substances (PFAS) by SPE/LCMSMS						
Method: EPA 537M		Instr: LCMS06				
Batch ID: W1A0610	Preparation: EPA 537/SPE	Prepared: 01/13/21 09:50			Analyst: jna	
11CI-PF3OUdS	ND	0.90	ng/l	1	01/16/21	
4:2 FTS	ND	0.90	ng/l	1	01/16/21	
6:2 FTS	ND	0.90	ng/l	1	01/16/21	
8:2 FTS	ND	0.90	ng/l	1	01/16/21	
9CI-PF3ONS	ND	0.90	ng/l	1	01/16/21	
ADONA	ND	0.90	ng/l	1	01/16/21	
EtFOSAA	ND	0.90	ng/l	1	01/16/21	
FOSA	ND	0.90	ng/l	1	01/16/21	
HFPO-DA	ND	0.90	ng/l	1	01/16/21	
MeFOSAA	ND	0.90	ng/l	1	01/16/21	
Perfluorooctanoic acid (PFOA)	ND	0.90	ng/l	1	01/16/21	
PFBA	ND	0.90	ng/l	1	01/16/21	
PFBS	ND	0.90	ng/l	1	01/16/21	
PFDA	ND	0.90	ng/l	1	01/16/21	
PFDoA	ND	0.90	ng/l	1	01/16/21	
PFDS	ND	0.90	ng/l	1	01/16/21	
PFHpA	ND	0.90	ng/l	1	01/16/21	
PFHpS	ND	0.90	ng/l	1	01/16/21	
PFHxA	ND	0.90	ng/l	1	01/16/21	
PFHxS	ND	0.90	ng/l	1	01/16/21	
PFNA	ND	0.90	ng/l	1	01/16/21	
PFNS	ND	0.90	ng/l	1	01/16/21	
PFOS	ND	0.90	ng/l	1	01/16/21	
PFPeA	ND	0.90	ng/l	1	01/16/21	
PFPeS	ND	0.90	ng/l	1	01/16/21	
PFTeDA	ND	0.90	ng/l	1	01/16/21	
PFTTrDA	ND	0.90	ng/l	1	01/16/21	
PFUnA	ND	0.90	ng/l	1	01/16/21	



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Project Manager: Todd Cox

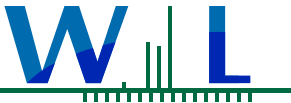
Sample Results APPL, Inc., Clovis, CA SUB_APPL

Sample: Biosolids Sample (BSTF) Sampled: 01/05/21 6:30 by Derek Gillis
1A07072-11 (Solid)

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
160.3-MOD							
Method: Moisture	Batch ID: 260329		Prepared: 01/14/21 14:25			Analyst: WET	
Moisture	79.3	2.0	2.0	%	1	01/15/21	

B-15BS							
Method: PFAS IN BIO-SOLIDS	Batch ID: 260507		Prepared: 01/14/21 08:00			Analyst: HHE	
PFBA	ND	2000.0	10000	ng/kg dry	1	01/21/21	U
PFPEA	ND	3000.0	10000	ng/kg dry	1	01/21/21	U
PFHXA	ND	4000.0	10000	ng/kg dry	1	01/21/21	U
PFHPA	ND	2000.0	10000	ng/kg dry	1	01/21/21	U
PFOA	ND	3000.0	10000	ng/kg dry	1	01/21/21	U
PFNA	ND	2000.0	10000	ng/kg dry	1	01/21/21	U
PFDA	4100	3000.0	10000	ng/kg dry	1	01/21/21	J
PFUDA	ND	2000.0	10000	ng/kg dry	1	01/21/21	U
PFDOA	ND	3000.0	10000	ng/kg dry	1	01/21/21	U
PFTRDA	ND	2000.0	10000	ng/kg dry	1	01/21/21	U
PFTEDA	ND	8000.0	20000	ng/kg dry	1	01/21/21	U
PFBS	ND	2000.0	10000	ng/kg dry	1	01/21/21	U
PFPEs	ND	4000.0	20000	ng/kg dry	1	01/21/21	U
PFHXS	ND	6000.0	20000	ng/kg dry	1	01/21/21	U
PFHPS	ND	6000.0	20000	ng/kg dry	1	01/21/21	U
PFOS	21000	4000.0	20000	ng/kg dry	1	01/21/21	
PFNS	ND	10000.0	50000	ng/kg dry	1	01/21/21	U
PFDS	ND	8000.0	20000	ng/kg dry	1	01/21/21	U
PFOSA	ND	2000.0	10000	ng/kg dry	1	01/21/21	U
N-MEFOSA	ND	8000.0	20000	ng/kg dry	1	01/21/21	U
N-ETFOSA	ND	8000.0	20000	ng/kg dry	1	01/21/21	U
N-MEFOSAA	12000	8000.0	20000	ng/kg dry	1	01/21/21	J
N-ETFOSAA	ND	8000.0	20000	ng/kg dry	1	01/21/21	U
N-MEFOSE	8100	8000.0	20000	ng/kg dry	1	01/21/21	J
N-ETFOSE	ND	8000.0	20000	ng/kg dry	1	01/21/21	U
FTS 4:2	ND	8000.0	20000	ng/kg dry	1	01/21/21	U
FTS 6:2	ND	8000.0	20000	ng/kg dry	1	01/21/21	U
FTS 8:2	ND	6000.0	20000	ng/kg dry	1	01/21/21	U
HFPO-DA	ND	20000.0	50000	ng/kg dry	1	01/21/21	U
ADONA	ND	20000.0	50000	ng/kg dry	1	01/21/21	U
9-CL-PF3ONS	ND	20000.0	50000	ng/kg dry	1	01/21/21	U
11-CL-PF3OUDS	ND	20000.0	50000	ng/kg dry	1	01/21/21	U

Surrogate(s)							
13C4-PFBA	62.7%		50-150			01/21/21	
13C5-PFPEA	65.7%		50-150			01/21/21	



WECK LABORATORIES, INC.

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Project Manager: Todd Cox

Sample Results APPL, Inc., Clovis, CA SUB_APPL

(Continued)

Sample: Biosolids Sample (BSTF)
1A07072-11 (Solid)

Sampled: 01/05/21 6:30 by Derek Gillis
(Continued)

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
B-15BS (Continued)							
13C5-PFHXA	67.8%		50-150			01/21/21	
13C4-PFHXA	57.9%		50-150			01/21/21	
13C8-PFOA	78.6%		50-150			01/21/21	
13C9-PFNA	77.0%		50-150			01/21/21	
13C6-PFDA	75.4%		50-150			01/21/21	
13C7-PFUDA	71.8%		50-150			01/21/21	
13C2-PFDOA	49.9%		50-150			01/21/21	
13C2-PFTEDA	48.6%		50-150			01/21/21	*
13C3-PFBS	122%		50-150			01/21/21	
13C3-PFHXS	57.7%		50-150			01/21/21	
13C8-PFOS	91.1%		50-150			01/21/21	
13C3-HFPO-DA	82.6%		50-150			01/21/21	
13C8-PFOSA	76.6%		50-150			01/21/21	
D3-NMEFOSA	89.7%		50-150			01/21/21	
D5-NETFOSA	83.0%		50-150			01/21/21	
13C2-4:2FTS	185%		50-150			01/21/21	*
13C2-6:2FTS	112%		50-150			01/21/21	
13C2-8:2FTS	116%		50-150			01/21/21	
D3-NMEFOSAA	108%		50-150			01/21/21	
D5-NETFOSAA	71.6%		50-150			01/21/21	
D7-NMEFOSE	83.7%		50-150			01/21/21	
D9-NETFOSSE	101%		50-150			01/21/21	
13C2D4-6:2FTS	134%		50-150			01/21/21	

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Project Number: PFAS Project

Reported:

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Project Manager: Todd Cox

Quality Control Results

B-15BS

Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	Limits	RPD	Limit	Qualifier
Batch: 260507 - PFAS IN BIO-SOLIDS											
BLK (BA24798-BLK-1)						Prepared: 01/14/21 Analyzed: 01/21/21					
11-CL-PF3OUDS	ND	20000.0	50000	ng/kg							U
9-CL-PF3ONS	ND	20000.0	50000	ng/kg							U
ADONA	ND	20000.0	50000	ng/kg							U
FTS 4:2	ND	8000.0	20000	ng/kg							U
FTS 6:2	ND	8000.0	20000	ng/kg							U
FTS 8:2	ND	6000.0	20000	ng/kg							U
HFPO-DA	ND	20000.0	50000	ng/kg							U
N-ETFOSA	ND	8000.0	20000	ng/kg							U
N-ETFOSAA	ND	8000.0	20000	ng/kg							U
N-ETFOSE	ND	8000.0	20000	ng/kg							U
N-MEFOSA	ND	8000.0	20000	ng/kg							U
N-MEFOSAA	ND	8000.0	20000	ng/kg							U
N-MEFOSE	ND	8000.0	20000	ng/kg							U
PFBA	ND	2000.0	10000	ng/kg							U
PFBS	ND	2000.0	10000	ng/kg							U
PFDA	ND	3000.0	10000	ng/kg							U
PFDOA	ND	3000.0	10000	ng/kg							U
PFDS	ND	8000.0	20000	ng/kg							U
PFHPA	ND	2000.0	10000	ng/kg							U
PFHPS	ND	6000.0	20000	ng/kg							U
PFHXA	ND	4000.0	10000	ng/kg							U
PFHXS	ND	6000.0	20000	ng/kg							U
PFNA	ND	2000.0	10000	ng/kg							U
PFNS	ND	10000.0	50000	ng/kg							U
PFOA	ND	3000.0	10000	ng/kg							U
PFOS	ND	4000.0	20000	ng/kg							U
PFOSA	ND	2000.0	10000	ng/kg							U
PFPEA	ND	3000.0	10000	ng/kg							U
PFPEB	ND	4000.0	20000	ng/kg							U
PFTEDA	ND	8000.0	20000	ng/kg							U
PFTRDA	ND	2000.0	10000	ng/kg							U
PFUDA	ND	2000.0	10000	ng/kg							U
<i>Surrogate(s)</i>											
13C2-4:2FTS	108.0			ng/kg	100		108	50-150			
13C2-6:2FTS	89.9			ng/kg	100		89.9	50-150			
13C2-8:2FTS	92.8			ng/kg	100		92.8	50-150			
13C2D4-6:2FTS	108			ng/kg	100		108	50-150			
13C2-PFDOA	97.2			ng/kg	100		97.2	50-150			
13C2-PFTEDA	98.4			ng/kg	100		98.4	50-150			

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Quality Control Results

(Continued)

B-15BS (Continued)

Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	Limits	RPD	RPD Limit	Qualifier
Batch: 260507 - PFAS IN BIO-SOLIDS (Continued)											
BLK (BA24798-BLK-1)											
						Prepared: 01/14/21 Analyzed: 01/21/21					
<i>Surrogate(s)</i>											
13C3-HFPO-DA	101.0			ng/kg	100		101	50-150			
13C3-PFBS	93.3			ng/kg	100		93.3	50-150			
13C3-PFHXS	71.7			ng/kg	100		71.7	50-150			
13C4-PFBA	79.3			ng/kg	100		79.3	50-150			
13C4-PFHFA	64.0			ng/kg	100		64.0	50-150			
13C5-PFHXA	82.7			ng/kg	100		82.7	50-150			
13C5-PFPEA	79.3			ng/kg	100		79.3	50-150			
13C6-PFDA	92.1			ng/kg	100		92.1	50-150			
13C7-PFUDA	95.4			ng/kg	100		95.4	50-150			
13C8-PFOA	82.1			ng/kg	100		82.1	50-150			
13C8-PFOS	90.8			ng/kg	100		90.8	50-150			
13C8-PFOSA	85.0			ng/kg	100		85.0	50-150			
13C9-PFNA	91.4			ng/kg	100		91.4	50-150			
D3-NMEFOSA	96.2			ng/kg	100		96.2	50-150			
D3-NMEFOSAA	85.5			ng/kg	100		85.5	50-150			
D5-NETFOSA	98.1			ng/kg	100		98.1	50-150			
D5-NETFOSAA	94.9			ng/kg	100		94.9	50-150			
D7-NMEFOSE	95.3			ng/kg	100		95.3	50-150			
D9-NETFOSSE	108.0			ng/kg	100		108	50-150			
LCS (BA24798-LCS-2)											
						Prepared: 01/14/21 Analyzed: 01/21/21					
11-CL-PF3OUDS	18700	20000.0	50000	ng/kg	18900	0.0	99.1	73-132		30	
9-CL-PF3ONS	17600	20000.0	50000	ng/kg	18700	0.0	94.3	68-139		30	
ADONA	14000	20000.0	50000	ng/kg	18900	0.0	74.1	59-153		30	
FTS 4:2	19900	8000.0	20000	ng/kg	18700	0.0	106	63-143		30	
FTS 6:2	19400	8000.0	20000	ng/kg	19000	0.0	102	64-140		30	
FTS 8:2	18500	6000.0	20000	ng/kg	19200	0.0	96.5	67-138		30	
HFPO-DA	19400	20000.0	50000	ng/kg	20000	0.0	97.0	52-151		30	
N-ETFOSA	18400	8000.0	20000	ng/kg	20000	0.0	92.0	59-147		30	
N-ETFOSAA	20500	8000.0	20000	ng/kg	20000	0.0	103	61-135		30	
N-ETFOSE	17500	8000.0	20000	ng/kg	20000	0.0	87.5	27-163		30	
N-MEFOSA	18300	8000.0	20000	ng/kg	20000	0.0	91.5	35-157		30	
N-MEFOSAA	20700	8000.0	20000	ng/kg	20000	0.0	104	65-136		30	
N-MEFOSE	18000	8000.0	20000	ng/kg	20000	0.0	90.0	56-151		30	
PFBA	20400	2000.0	10000	ng/kg	20000	0.0	102	73-129		30	
PFBS	18300	2000.0	10000	ng/kg	17700	0.0	103	68-141		30	
PFDA	19400	3000.0	10000	ng/kg	20000	0.0	97.0	71-129		30	
PFDOA	21100	3000.0	10000	ng/kg	20000	0.0	106	72-134		30	
PFDS	18900	8000.0	20000	ng/kg	19300	0.0	98.1	53-142		30	

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Quality Control Results

(Continued)

B-15BS (Continued)

Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	Limits	RPD	RPD Limit	Qualifier
Batch: 260507 - PFAS IN BIO-SOLIDS (Continued)											
LCS (BA24798-LCS-2)						Prepared: 01/14/21 Analyzed: 01/21/21					
PFHPA	21200	2000.0	10000	ng/kg	20000	0.0	106	72-130		30	
PFHPS	21800	6000.0	20000	ng/kg	19000	0.0	115	69-134		30	
PFHXA	19900	4000.0	10000	ng/kg	20000	0.0	99.5	72-129		30	
PFHXS	18300	6000.0	20000	ng/kg	18200	0.0	100	68-131		30	
PFNA	20700	2000.0	10000	ng/kg	20000	0.0	104	69-130		30	
PFNS	19300	10000.0	50000	ng/kg	19200	0.0	101	69-127		30	
PFOA	19700	3000.0	10000	ng/kg	20000	0.0	98.5	71-133		30	
PFOS	18200	4000.0	20000	ng/kg	18500	0.0	98.1	65-140		30	
PFOSA	20800	2000.0	10000	ng/kg	20000	0.0	104	67-137		30	
PFPEA	19900	3000.0	10000	ng/kg	20000	0.0	99.5	72-129		30	
PFPEA	19000	4000.0	20000	ng/kg	18800	0.0	101	71-127		30	
PFTEDA	20600	8000.0	20000	ng/kg	20000	0.0	103	71-132		30	
PFTRDA	20500	2000.0	10000	ng/kg	20000	0.0	103	65-144		30	
PFUDA	20300	2000.0	10000	ng/kg	20000	0.0	102	69-133		30	
<i>Surrogate(s)</i>											
13C2-4:2FTS	88.1			ng/kg	100	0.0	88.1	50-150			
13C2-6:2FTS	86.5			ng/kg	100	0.0	86.5	50-150			
13C2-8:2FTS	90.2			ng/kg	100	0.0	90.2	50-150			
13C2D4-6:2FTS	102			ng/kg	100	0.0	102	50-150			
13C2-PFDOA	90.3			ng/kg	100	0.0	90.3	50-150			
13C2-PFTEDA	95.1			ng/kg	100	0.0	95.1	50-150			
13C3-HFPO-DA	86.9			ng/kg	100	0.0	86.9	50-150			
13C3-PFBS	85.4			ng/kg	100	0.0	85.4	50-150			
13C3-PFHXS	75.0			ng/kg	100	0.0	75.0	50-150			
13C4-PFBA	70.7			ng/kg	100	0.0	70.7	50-150			
13C4-PFHPA	57.9			ng/kg	100	0.0	57.9	50-150			
13C5-PFHXA	68.9			ng/kg	100	0.0	68.9	50-150			
13C5-PFPEA	69.5			ng/kg	100	0.0	69.5	50-150			
13C6-PFDA	84.1			ng/kg	100	0.0	84.1	50-150			
13C7-PFUDA	88.8			ng/kg	100	0.0	88.8	50-150			
13C8-PFOA	75.2			ng/kg	100	0.0	75.2	50-150			
13C8-PFOS	85.9			ng/kg	100	0.0	85.9	50-150			
13C8-PFOSA	72.7			ng/kg	100	0.0	72.7	50-150			
13C9-PFNA	79.0			ng/kg	100	0.0	79.0	50-150			
D3-NMEFOSA	86.0			ng/kg	100	0.0	86.0	50-150			
D3-NMEFOSAA	86.6			ng/kg	100	0.0	86.6	50-150			
D5-NETFOSA	93.1			ng/kg	100	0.0	93.1	50-150			
D5-NETFOSAA	87.0			ng/kg	100	0.0	87.0	50-150			
D7-NMEFOSE	88.9			ng/kg	100	0.0	88.9	50-150			



WECK LABORATORIES, INC.

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Project Manager: Todd Cox

Quality Control Results

(Continued)

B-15BS (Continued)

Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	Limits	RPD	RPD Limit	Qualifier
Batch: 260507 - PFAS IN BIO-SOLIDS (Continued)											
LCS (BA24798-LCS-2)											
						Prepared: 01/14/21 Analyzed: 01/21/21					
<i>Surrogate(s)</i>											
D9-NETFOSE	98.2			ng/kg	100	0.0	98.2	50-150			
LCS Dup (BA24798-LCSD-1)											
						Prepared: 01/14/21 Analyzed: 01/21/21					
11-CL-PF3OUDS	19400	20000.0	50000	ng/kg	18900	0.0	103	73-132	3.7	30	
9-CL-PF3ONS	17600	20000.0	50000	ng/kg	18700	0.0	94.3	68-139	0.0	30	
ADONA	13500	20000.0	50000	ng/kg	18900	0.0	71.4	59-153	3.6	30	
FTS 4:2	19000	8000.0	20000	ng/kg	18700	0.0	102	63-143	4.6	30	
FTS 6:2	18800	8000.0	20000	ng/kg	19000	0.0	99.0	64-140	3.1	30	
FTS 8:2	18500	6000.0	20000	ng/kg	19200	0.0	96.5	67-138	0.0	30	
HFPO-DA	19300	20000.0	50000	ng/kg	20000	0.0	96.5	52-151	0.52	30	
N-ETFOSA	18100	8000.0	20000	ng/kg	20000	0.0	90.5	59-147	1.6	30	
N-ETFOSAA	19700	8000.0	20000	ng/kg	20000	0.0	98.5	61-135	4.0	30	
N-ETFOSE	17400	8000.0	20000	ng/kg	20000	0.0	87.0	27-163	0.57	30	
N-MEFOSA	19000	8000.0	20000	ng/kg	20000	0.0	95.0	35-157	3.8	30	
N-MEFOSAA	20500	8000.0	20000	ng/kg	20000	0.0	103	65-136	0.97	30	
N-MEFOSE	18200	8000.0	20000	ng/kg	20000	0.0	91.0	56-151	1.1	30	
PFBA	20600	2000.0	10000	ng/kg	20000	0.0	103	73-129	0.98	30	
PFBS	17800	2000.0	10000	ng/kg	17700	0.0	101	68-141	2.8	30	
PFDA	19100	3000.0	10000	ng/kg	20000	0.0	95.5	71-129	1.6	30	
PFDOA	19000	3000.0	10000	ng/kg	20000	0.0	95.0	72-134	10.5	30	
PFDS	18300	8000.0	20000	ng/kg	19300	0.0	95.0	53-142	3.2	30	
PFHPA	19900	2000.0	10000	ng/kg	20000	0.0	99.5	72-130	6.3	30	
PFHPS	21600	6000.0	20000	ng/kg	19000	0.0	114	69-134	0.92	30	
PFHXA	20100	4000.0	10000	ng/kg	20000	0.0	101	72-129	1.0	30	
PFHXS	17800	6000.0	20000	ng/kg	18200	0.0	97.7	68-131	2.8	30	
PFNA	18700	2000.0	10000	ng/kg	20000	0.0	93.5	69-130	10.2	30	
PFNS	19000	10000.0	50000	ng/kg	19200	0.0	99.0	69-127	1.6	30	
PFOA	20100	3000.0	10000	ng/kg	20000	0.0	101	71-133	2.0	30	
PFOS	17700	4000.0	20000	ng/kg	18500	0.0	95.4	65-140	2.8	30	
PFOSA	20800	2000.0	10000	ng/kg	20000	0.0	104	67-137	0.0	30	
PFPEA	19400	3000.0	10000	ng/kg	20000	0.0	97.0	72-129	2.5	30	
PFPEs	19400	4000.0	20000	ng/kg	18800	0.0	103	71-127	2.1	30	
PFTEDA	20000	8000.0	20000	ng/kg	20000	0.0	100	71-132	3.0	30	
PFTRDA	19200	2000.0	10000	ng/kg	20000	0.0	96.0	65-144	6.5	30	
PFUDA	19700	2000.0	10000	ng/kg	20000	0.0	98.5	69-133	3.0	30	
<i>Surrogate(s)</i>											
13C2-4:2FTS	93.2			ng/kg	100	0.0	93.2	50-150			
13C2-6:2FTS	86.4			ng/kg	100	0.0	86.4	50-150			
13C2-8:2FTS	95.9			ng/kg	100	0.0	95.9	50-150			



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Quality Control Results

(Continued)

B-15BS (Continued)

Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	Limits	RPD	RPD Limit	Qualifier
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Batch: 260507 - PFAS IN BIO-SOLIDS (Continued)

LCS Dup (BA24798-LCSD-1)

Prepared: 01/14/21 Analyzed: 01/21/21

Surrogate(s)	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	Limits	RPD	RPD Limit	Qualifier
13C2D4-6:2FTS	101			ng/kg	100	0.0	101	50-150			
13C2-PFDOA	101			ng/kg	100	0.0	101	50-150			
13C2-PFTEDA	103			ng/kg	100	0.0	103	50-150			
13C3-HFPO-DA	97.7			ng/kg	100	0.0	97.7	50-150			
13C3-PFBS	87.8			ng/kg	100	0.0	87.8	50-150			
13C3-PFHXS	75.0			ng/kg	100	0.0	75.0	50-150			
13C4-PFBA	79.6			ng/kg	100	0.0	79.6	50-150			
13C4-PFHFA	68.2			ng/kg	100	0.0	68.2	50-150			
13C5-PFHXA	81.0			ng/kg	100	0.0	81.0	50-150			
13C5-PFPEA	77.9			ng/kg	100	0.0	77.9	50-150			
13C6-PFDA	88.4			ng/kg	100	0.0	88.4	50-150			
13C7-PFUDA	94.6			ng/kg	100	0.0	94.6	50-150			
13C8-PFOA	78.9			ng/kg	100	0.0	78.9	50-150			
13C8-PFOS	88.7			ng/kg	100	0.0	88.7	50-150			
13C8-PFOSA	84.5			ng/kg	100	0.0	84.5	50-150			
13C9-PFNA	88.6			ng/kg	100	0.0	88.6	50-150			
D3-NMEFOSA	95.3			ng/kg	100	0.0	95.3	50-150			
D3-NMEFOSAA	90.1			ng/kg	100	0.0	90.1	50-150			
D5-NETFOSA	103			ng/kg	100	0.0	103	50-150			
D5-NETFOSAA	93.4			ng/kg	100	0.0	93.4	50-150			
D7-NMEFOSE	99.0			ng/kg	100	0.0	99.0	50-150			
D9-NETFOSSE	112			ng/kg	100	0.0	112	50-150			



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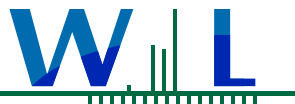
Project Manager: Todd Cox

Quality Control Results

(Continued)

Per- and Polyfluorinated Alkyl Substances (PFAS) by Dir.Inj/LCMSMS

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	Limits	RPD	RPD Limit	Qualifier
Batch: W1A0774 - EPA 537M										
Blank (W1A0774-BLK1)				Prepared: 01/15/21 Analyzed: 01/16/21						
11CI-PF3OUdS	ND	1000	ng/l							
4:2 FTS	ND	1000	ng/l							
6:2 FTS	ND	1000	ng/l							
8:2 FTS	ND	1000	ng/l							
9CI-PF3ONS	ND	1000	ng/l							
ADONA	ND	1000	ng/l							
EtFOSA	ND	1000	ng/l							
EtFOSAA	ND	1000	ng/l							
EtFOSE	ND	1000	ng/l							
FOSA	ND	1000	ng/l							
HFPO-DA	ND	1000	ng/l							
MeFOSA	ND	1000	ng/l							
MeFOSAA	ND	1000	ng/l							
MeFOSE	ND	1000	ng/l							
Perfluorooctanoic acid (PFOA)	ND	1000	ng/l							
PFBA	ND	1000	ng/l							
PFBS	ND	1000	ng/l							
PFDA	ND	1000	ng/l							
PFDoA	ND	1000	ng/l							
PFDS	ND	1000	ng/l							
PFHpA	ND	1000	ng/l							
PFHpS	ND	1000	ng/l							
PFHxA	ND	1000	ng/l							
PFHxS	ND	1000	ng/l							
PFNA	ND	1000	ng/l							
PFNS	ND	1000	ng/l							
PFOS	ND	1000	ng/l							
PFPeA	ND	1000	ng/l							
PFPeS	ND	1000	ng/l							
PFTeDA	ND	1000	ng/l							
PFTrDA	ND	1000	ng/l							
PFOUnA	ND	1000	ng/l							
LCS (W1A0774-BS1)				Prepared: 01/15/21 Analyzed: 01/16/21						
11CI-PF3OUdS	1840	1000	ng/l	2500		74	70-130			
4:2 FTS	2300	1000	ng/l	2500		92	63-143			
6:2 FTS	2270	1000	ng/l	2500		91	64-140			
8:2 FTS	2170	1000	ng/l	2500		87	67-138			
9CI-PF3ONS	1850	1000	ng/l	2500		74	70-130			
ADONA	2270	1000	ng/l	2500		91	70-130			



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Quality Control Results

(Continued)

Per- and Polyfluorinated Alkyl Substances (PFAS) by Dir.Inj/LCMSMS (Continued)

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	Limit	RPD	Limit	Qualifier
Batch: W1A0774 - EPA 537M (Continued)										
LCS (W1A0774-BS1)										
				Prepared: 01/15/21 Analyzed: 01/16/21						
EtFOSA	2150	1000	ng/l	2500		86	70-130			
EtFOSAA	2000	1000	ng/l	2500		80	61-135			
EtFOSE	2410	1000	ng/l	2500		96	70-130			
FOSA	2410	1000	ng/l	2500		96	67-137			
HFPO-DA	2010	1000	ng/l	2500		80	70-130			
MeFOSA	2140	1000	ng/l	2500		86	68-141			
MeFOSAA	2140	1000	ng/l	2500		85	65-136			
MeFOSE	2270	1000	ng/l	2500		91	70-130			
Perfluorooctanoic acid (PFOA)	2270	1000	ng/l	2500		91	71-133			
PFBA	2260	1000	ng/l	2500		90	73-129			
PFBS	2310	1000	ng/l	2500		92	72-130			
PFDA	1940	1000	ng/l	2500		78	71-129			
PFDoA	2340	1000	ng/l	2500		94	72-134			
PFDS	2470	1000	ng/l	2500		99	53-142			
PFHpA	2470	1000	ng/l	2500		99	72-130			
PFHpS	2130	1000	ng/l	2500		85	69-134			
PFHxA	2320	1000	ng/l	2500		93	72-129			
PFHxS	2250	1000	ng/l	2500		90	68-131			
PFNA	2540	1000	ng/l	2500		102	69-130			
PFNS	2060	1000	ng/l	2500		82	69-127			
PFOS	2500	1000	ng/l	2500		100	65-140			
PFPeA	2240	1000	ng/l	2500		90	72-129			
PFPeS	2140	1000	ng/l	2500		86	71-127			
PFTeDA	2250	1000	ng/l	2500		90	71-132			
PFTTrDA	1770	1000	ng/l	2500		71	65-144			
PFUnA	2110	1000	ng/l	2500		84	69-133			
LCS Dup (W1A0774-BSD1)										
				Prepared: 01/15/21 Analyzed: 01/16/21						
11Cl-PF3OUdS	1750	1000	ng/l	2500		70	70-130	5	30	
4:2 FTS	2250	1000	ng/l	2500		90	63-143	2	30	
6:2 FTS	2370	1000	ng/l	2500		95	64-140	4	30	
8:2 FTS	2280	1000	ng/l	2500		91	67-138	5	30	
9Cl-PF3ONS	1890	1000	ng/l	2500		75	70-130	2	30	
ADONA	2380	1000	ng/l	2500		95	70-130	5	30	
EtFOSA	1890	1000	ng/l	2500		76	70-130	13	30	
EtFOSAA	2260	1000	ng/l	2500		91	61-135	12	30	
EtFOSE	2180	1000	ng/l	2500		87	70-130	10	30	
FOSA	2740	1000	ng/l	2500		109	67-137	13	30	
HFPO-DA	2410	1000	ng/l	2500		96	70-130	18	30	
MeFOSA	2710	1000	ng/l	2500		108	68-141	24	30	



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Quality Control Results

(Continued)

Per- and Polyfluorinated Alkyl Substances (PFAS) by Dir.Inj/LCMSMS (Continued)

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	Limit	RPD	Limit	Qualifier
Batch: W1A0774 - EPA 537M (Continued)										
LCS Dup (W1A0774-BSD1)										
Prepared: 01/15/21 Analyzed: 01/16/21										
MeFOSAA	2070	1000	ng/l	2500		83	65-136	3	30	
MeFOSE	1920	1000	ng/l	2500		77	70-130	17	30	
Perfluorooctanoic acid (PFOA)	2320	1000	ng/l	2500		93	71-133	2	30	
PFBA	2260	1000	ng/l	2500		90	73-129	0.06	30	
PFBS	2270	1000	ng/l	2500		91	72-130	2	30	
PFDA	1870	1000	ng/l	2500		75	71-129	4	30	
PFDoA	2030	1000	ng/l	2500		81	72-134	14	30	
PFDS	2410	1000	ng/l	2500		97	53-142	2	30	
PFHpA	2480	1000	ng/l	2500		99	72-130	0.2	30	
PFHpS	2060	1000	ng/l	2500		83	69-134	3	30	
PFHxA	2290	1000	ng/l	2500		92	72-129	1	30	
PFHxS	2270	1000	ng/l	2500		91	68-131	1	30	
PFNA	2610	1000	ng/l	2500		104	69-130	3	30	
PFNS	2010	1000	ng/l	2500		80	69-127	3	30	
PFOS	2130	1000	ng/l	2500		85	65-140	16	30	
PFPeA	2360	1000	ng/l	2500		94	72-129	5	30	
PFPeS	2160	1000	ng/l	2500		86	71-127	0.6	30	
PFTeDA	2330	1000	ng/l	2500		93	71-132	4	30	
PFTrDA	1780	1000	ng/l	2500		71	65-144	0.3	30	
PFUnA	2210	1000	ng/l	2500		88	69-133	5	30	



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FINAL REPORT

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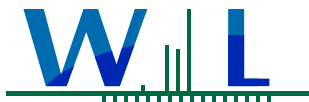
Project Manager: Todd Cox

Quality Control Results

(Continued)

Per- and Polyfluorinated Alkyl Substances (PFAS) by SPE/LCMSMS

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	Limits	RPD	RPD Limit	Qualifier
Batch: W1A0475 - EPA 537M										
Blank (W1A0475-BLK1)				Prepared: 01/11/21 Analyzed: 01/15/21						
11CI-PF3OUdS	ND	1.0	ng/l							
4:2 FTS	ND	1.0	ng/l							
6:2 FTS	ND	1.0	ng/l							
8:2 FTS	ND	1.0	ng/l							
9CI-PF3ONS	ND	1.0	ng/l							
ADONA	ND	1.0	ng/l							
EtFOSA	ND	1.0	ng/l							
EtFOSAA	ND	1.0	ng/l							
EtFOSE	ND	1.0	ng/l							
FOSA	ND	1.0	ng/l							
HFPO-DA	ND	1.0	ng/l							
MeFOSA	ND	1.0	ng/l							
MeFOSAA	ND	1.0	ng/l							
MeFOSE	ND	1.0	ng/l							
Perfluorooctanoic acid (PFOA)	ND	1.0	ng/l							
PFBA	ND	1.0	ng/l							
PFBS	ND	1.0	ng/l							
PFDA	ND	1.0	ng/l							
PFDoA	ND	1.0	ng/l							
PFDS	ND	1.0	ng/l							
PFHpA	1.64	1.0	ng/l							B-06
PFHpS	ND	1.0	ng/l							
PFHxA	ND	1.0	ng/l							
PFHxS	ND	1.0	ng/l							
PFNA	ND	1.0	ng/l							
PFNS	ND	1.0	ng/l							
PFOS	ND	1.0	ng/l							
PFPeA	ND	1.0	ng/l							
PFPeS	ND	1.0	ng/l							
PFTeDA	ND	1.0	ng/l							
PFTTrDA	ND	1.0	ng/l							
PFOUnA	ND	1.0	ng/l							
LCS (W1A0475-BS1)				Prepared: 01/11/21 Analyzed: 01/15/21						
11CI-PF3OUdS	0.974	1.0	ng/l	1.00		97	50-150			
4:2 FTS	0.942	1.0	ng/l	1.00		94	50-150			
6:2 FTS	0.892	1.0	ng/l	1.00		89	50-150			
8:2 FTS	1.12	1.0	ng/l	1.00		112	50-150			
9CI-PF3ONS	1.18	1.0	ng/l	1.00		118	50-150			
ADONA	0.916	1.0	ng/l	1.00		92	50-150			



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Project Manager: Todd Cox

Quality Control Results

(Continued)

Per- and Polyfluorinated Alkyl Substances (PFAS) by SPE/LCMSMS (Continued)

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	Limits	RPD	RPD Limit	Qualifier
Batch: W1A0475 - EPA 537M (Continued)										
LCS (W1A0475-BS1)										
				Prepared: 01/11/21 Analyzed: 01/15/21						
EtFOSA	0.887	1.0	ng/l	1.00		89	50-150			
EtFOSAA	0.963	1.0	ng/l	1.00		96	50-150			
EtFOSE	1.04	1.0	ng/l	1.00		104	50-150			
FOSA	0.839	1.0	ng/l	1.00		84	50-150			
HFPO-DA	0.860	1.0	ng/l	1.00		86	50-150			
MeFOSA	0.809	1.0	ng/l	1.00		81	50-150			
MeFOSAA	1.02	1.0	ng/l	1.00		102	50-150			
MeFOSE	0.931	1.0	ng/l	1.00		93	50-150			
Perfluorooctanoic acid (PFOA)	0.844	1.0	ng/l	1.00		84	50-150			
PFBA	1.01	1.0	ng/l	1.00		101	50-150			
PFBS	0.869	1.0	ng/l	1.00		87	50-150			
PFDA	1.11	1.0	ng/l	1.00		111	50-150			
PFDoA	0.879	1.0	ng/l	1.00		88	50-150			
PFDS	0.807	1.0	ng/l	1.00		81	50-150			
PFHpA	1.21	1.0	ng/l	1.00		121	50-150			
PFHpS	0.859	1.0	ng/l	1.00		86	50-150			
PFHxA	0.993	1.0	ng/l	1.00		99	50-150			
PFHxS	0.935	1.0	ng/l	1.00		94	50-150			
PFNA	0.891	1.0	ng/l	1.00		89	50-150			
PFNS	1.11	1.0	ng/l	1.00		111	50-150			
PFOS	0.866	1.0	ng/l	1.00		87	50-150			
PFPeA	0.856	1.0	ng/l	1.00		86	50-150			
PFPeS	1.01	1.0	ng/l	1.00		101	50-150			
PFTeDA	0.768	1.0	ng/l	1.00		77	50-150			
PFTTrDA	0.633	1.0	ng/l	1.00		63	50-150			
PFUnA	0.807	1.0	ng/l	1.00		81	50-150			
LCS Dup (W1A0475-BSD1)										
				Prepared: 01/11/21 Analyzed: 01/15/21						
11Cl-PF3OUdS	0.856	1.0	ng/l	1.00		86	50-150	13	30	
4:2 FTS	1.00	1.0	ng/l	1.00		100	50-150	6	30	
6:2 FTS	0.934	1.0	ng/l	1.00		93	50-150	5	30	
8:2 FTS	0.916	1.0	ng/l	1.00		92	50-150	20	30	
9Cl-PF3ONS	1.15	1.0	ng/l	1.00		115	50-150	2	30	
ADONA	0.987	1.0	ng/l	1.00		99	50-150	7	30	
EtFOSA	0.926	1.0	ng/l	1.00		93	50-150	4	30	
EtFOSAA	0.904	1.0	ng/l	1.00		90	50-150	6	30	
EtFOSE	1.41	1.0	ng/l	1.00		141	50-150	31	30	Q-12
FOSA	0.862	1.0	ng/l	1.00		86	50-150	3	30	
HFPO-DA	0.756	1.0	ng/l	1.00		76	50-150	13	30	
MeFOSA	0.633	1.0	ng/l	1.00		63	50-150	24	30	



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Quality Control Results

(Continued)

Per- and Polyfluorinated Alkyl Substances (PFAS) by SPE/LCMSMS (Continued)

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	Limits	RPD	RPD Limit	Qualifier
Batch: W1A0475 - EPA 537M (Continued)										
LCS Dup (W1A0475-BSD1)				Prepared: 01/11/21 Analyzed: 01/15/21						
MeFOSAA	0.851	1.0	ng/l	1.00		85	50-150	18	30	
MeFOSE	1.53	1.0	ng/l	1.00		153	50-150	49	30	BS-04
Perfluorooctanoic acid (PFOA)	0.949	1.0	ng/l	1.00		95	50-150	12	30	
PFBA	1.03	1.0	ng/l	1.00		103	50-150	2	30	
PFBS	0.920	1.0	ng/l	1.00		92	50-150	6	30	
PFDA	0.971	1.0	ng/l	1.00		97	50-150	13	30	
PFDoA	0.917	1.0	ng/l	1.00		92	50-150	4	30	
PFDS	0.835	1.0	ng/l	1.00		84	50-150	3	30	
PFHpA	1.20	1.0	ng/l	1.00		120	50-150	0.3	30	
PFHpS	1.01	1.0	ng/l	1.00		101	50-150	16	30	
PFHxA	0.914	1.0	ng/l	1.00		91	50-150	8	30	
PFHxS	1.13	1.0	ng/l	1.00		113	50-150	19	30	
PFNA	0.904	1.0	ng/l	1.00		90	50-150	1	30	
PFNS	1.24	1.0	ng/l	1.00		124	50-150	11	30	
PFOS	1.06	1.0	ng/l	1.00		106	50-150	20	30	
PFPeA	0.909	1.0	ng/l	1.00		91	50-150	6	30	
PFPeS	0.967	1.0	ng/l	1.00		97	50-150	5	30	
PFTeDA	0.718	1.0	ng/l	1.00		72	50-150	7	30	
PFTrDA	0.849	1.0	ng/l	1.00		85	50-150	29	30	
PFUnA	0.841	1.0	ng/l	1.00		84	50-150	4	30	

Batch: W1A0610 - EPA 537M

Blank (W1A0610-BLK1)				Prepared: 01/13/21 Analyzed: 01/16/21						
11CI-PF3OUdS	ND	2.0	ng/l							
4:2 FTS	ND	1.0	ng/l							
6:2 FTS	ND	1.0	ng/l							
8:2 FTS	ND	1.0	ng/l							
9CI-PF3ONS	ND	1.0	ng/l							
ADONA	ND	1.0	ng/l							
EtFOSA	ND	2.0	ng/l							
EtFOSAA	ND	2.0	ng/l							
EtFOSE	ND	1.0	ng/l							
FOSA	ND	1.0	ng/l							
HFPO-DA	ND	1.0	ng/l							
MeFOSA	ND	1.0	ng/l							
MeFOSAA	ND	1.0	ng/l							
MeFOSE	ND	2.0	ng/l							
Perfluorooctanoic acid (PFOA)	ND	1.0	ng/l							
PFBA	ND	1.0	ng/l							
PFBS	ND	1.0	ng/l							



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Per- and Polyfluorinated Alkyl Substances (PFAS) by SPE/LCMSMS (Continued)

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	Limits	RPD	RPD Limit	Qualifier
Batch: W1A0610 - EPA 537M (Continued)										
Blank (W1A0610-BLK1)				Prepared: 01/13/21 Analyzed: 01/16/21						
PFDA	ND	1.0	ng/l							
PFDoA	ND	1.0	ng/l							
PFDS	ND	1.0	ng/l							
PFHpA	ND	4.0	ng/l							
PFHpS	ND	1.0	ng/l							
PFHxA	ND	2.0	ng/l							
PFHxS	ND	1.0	ng/l							
PFNA	ND	1.0	ng/l							
PFNS	ND	1.0	ng/l							
PFOS	ND	2.0	ng/l							
PFPeA	ND	1.0	ng/l							
PFPeS	ND	1.0	ng/l							
PFTeDA	ND	2.0	ng/l							
PFTrDA	ND	1.0	ng/l							
PFUnA	ND	1.0	ng/l							
LCS (W1A0610-BS1)				Prepared: 01/13/21 Analyzed: 01/16/21						
11CI-PF3OUdS	0.554	2.0	ng/l	1.00		55	70-130			BS-04
4:2 FTS	0.928	1.0	ng/l	1.00		93	63-143			
6:2 FTS	1.06	1.0	ng/l	1.00		106	64-140			
8:2 FTS	0.953	1.0	ng/l	1.00		95	67-138			
9CI-PF3ONS	0.812	1.0	ng/l	1.00		81	70-130			
ADONA	0.873	1.0	ng/l	1.00		87	70-130			
EtFOSA	0.619	2.0	ng/l	1.00		62	70-130			BS-04
EtFOSAA	0.588	2.0	ng/l	1.00		59	61-135			BS-L
EtFOSE	0.688	1.0	ng/l	1.00		69	70-130			BS-L
FOSA	0.883	1.0	ng/l	1.00		88	67-137			
HFPO-DA	0.709	1.0	ng/l	1.00		71	70-130			
MeFOSA	0.720	1.0	ng/l	1.00		72	68-141			
MeFOSAA	0.908	1.0	ng/l	1.00		91	65-136			
MeFOSE	0.672	2.0	ng/l	1.00		67	70-130			BS-L
Perfluorooctanoic acid (PFOA)	0.906	1.0	ng/l	1.00		91	71-133			
PFBA	0.964	1.0	ng/l	1.00		96	73-129			
PFBS	1.02	1.0	ng/l	1.00		102	72-130			
PFDA	0.677	1.0	ng/l	1.00		68	71-129			BS-04
PFDoA	0.931	1.0	ng/l	1.00		93	72-134			
PFDS	0.733	1.0	ng/l	1.00		73	53-142			
PFHpA	1.03	4.0	ng/l	1.00		103	72-130			
PFHpS	0.759	1.0	ng/l	1.00		76	69-134			
PFHxA	0.866	2.0	ng/l	1.00		87	72-129			



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Quality Control Results

(Continued)

Per- and Polyfluorinated Alkyl Substances (PFAS) by SPE/LCMSMS (Continued)

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Qualifier
Batch: W1A0610 - EPA 537M (Continued)									
LCS (W1A0610-BS1)				Prepared: 01/13/21 Analyzed: 01/16/21					
PFHxS	0.922	1.0	ng/l	1.00	92	68-131			
PFNA	0.995	1.0	ng/l	1.00	100	69-130			
PFNS	0.690	1.0	ng/l	1.00	69	69-127			
PFOS	0.846	2.0	ng/l	1.00	85	65-140			
PFPeA	0.883	1.0	ng/l	1.00	88	72-129			
PFPeS	0.842	1.0	ng/l	1.00	84	71-127			
PFTeDA	0.827	2.0	ng/l	1.00	83	71-132			
PFTrDA	0.665	1.0	ng/l	1.00	66	65-144			
PFUnA	0.719	1.0	ng/l	1.00	72	69-133			
LCS Dup (W1A0610-BSD1)				Prepared: 01/13/21 Analyzed: 01/16/21					
11CI-PF3OUdS	0.727	2.0	ng/l	1.00	73	70-130	27	30	
4:2 FTS	1.03	1.0	ng/l	1.00	103	63-143	10	30	
6:2 FTS	1.06	1.0	ng/l	1.00	106	64-140	0.5	30	
8:2 FTS	1.06	1.0	ng/l	1.00	106	67-138	11	30	
9CI-PF3ONS	0.869	1.0	ng/l	1.00	87	70-130	7	30	
ADONA	1.01	1.0	ng/l	1.00	101	70-130	15	30	
EtFOSA	0.748	2.0	ng/l	1.00	75	70-130	19	30	
EtFOSAA	0.564	2.0	ng/l	1.00	56	61-135	4	30	BS-L
EtFOSE	1.83	1.0	ng/l	1.00	183	70-130	91	30	BS-H
FOSA	1.07	1.0	ng/l	1.00	107	67-137	19	30	
HFPO-DA	0.861	1.0	ng/l	1.00	86	70-130	19	30	
MeFOSA	0.951	1.0	ng/l	1.00	95	68-141	28	30	
MeFOSAA	1.04	1.0	ng/l	1.00	104	65-136	14	30	
MeFOSE	1.68	2.0	ng/l	1.00	168	70-130	86	30	BS-H
Perfluorooctanoic acid (PFOA)	0.907	1.0	ng/l	1.00	91	71-133	0.1	30	
PFBA	1.04	1.0	ng/l	1.00	104	73-129	8	30	
PFBS	1.05	1.0	ng/l	1.00	105	72-130	2	30	
PFDA	0.810	1.0	ng/l	1.00	81	71-129	18	30	
PFDoA	0.807	1.0	ng/l	1.00	81	72-134	14	30	
PFDS	0.893	1.0	ng/l	1.00	89	53-142	20	30	
PFHpA	1.11	4.0	ng/l	1.00	111	72-130	7	30	
PFHpS	0.830	1.0	ng/l	1.00	83	69-134	9	30	
PFHxA	0.973	2.0	ng/l	1.00	97	72-129	12	30	
PFHxS	1.06	1.0	ng/l	1.00	106	68-131	14	30	
PFNA	1.15	1.0	ng/l	1.00	115	69-130	14	30	
PFNS	0.869	1.0	ng/l	1.00	87	69-127	23	30	
PFOS	1.09	2.0	ng/l	1.00	109	65-140	26	30	
PFPeA	0.976	1.0	ng/l	1.00	98	72-129	10	30	
PFPeS	0.875	1.0	ng/l	1.00	88	71-127	4	30	



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Quality Control Results

(Continued)

Per- and Polyfluorinated Alkyl Substances (PFAS) by SPE/LCMSMS (Continued)

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	Limits	RPD	RPD Limit	Qualifier
Batch: W1A0610 - EPA 537M (Continued)										
LCS Dup (W1A0610-BSD1)				Prepared: 01/13/21 Analyzed: 01/16/21						
PFTeDA	1.04	2.0	ng/l	1.00		104	71-132	22	30	
PFTrDA	0.827	1.0	ng/l	1.00		83	65-144	22	30	
PFUnA	0.895	1.0	ng/l	1.00		90	69-133	22	30	
Batch: W1B0015 - EPA 537M										
Blank (W1B0015-BLK1)				Prepared: 02/01/21 Analyzed: 02/02/21						
11CI-PF3OUdS	ND	2.0	ng/l							
4:2 FTS	ND	1.0	ng/l							
6:2 FTS	ND	1.0	ng/l							
8:2 FTS	ND	1.0	ng/l							
9CI-PF3ONS	ND	1.0	ng/l							
ADONA	ND	1.0	ng/l							
EtFOSA	ND	2.0	ng/l							
EtFOSAA	ND	2.0	ng/l							
EtFOSE	ND	1.0	ng/l							
FOSA	ND	1.0	ng/l							
HFPO-DA	ND	1.0	ng/l							
MeFOSA	ND	2.0	ng/l							
MeFOSAA	ND	1.0	ng/l							
MeFOSE	ND	2.0	ng/l							
Perfluorooctanoic acid (PFOA)	ND	1.0	ng/l							
PFBA	ND	1.0	ng/l							
PFBS	ND	1.0	ng/l							
PFDA	ND	1.0	ng/l							
PFDoA	ND	1.0	ng/l							
PFDS	ND	1.0	ng/l							
PFHpA	ND	4.0	ng/l							
PFHpS	ND	1.0	ng/l							
PFHxA	ND	2.0	ng/l							
PFHxS	ND	1.0	ng/l							
PFNA	ND	1.0	ng/l							
PFNS	ND	1.0	ng/l							
PFOS	ND	2.0	ng/l							
PFPeA	ND	1.0	ng/l							
PFPeS	ND	1.0	ng/l							
PFTeDA	ND	2.0	ng/l							
PFTrDA	ND	1.0	ng/l							
PFUnA	ND	1.0	ng/l							
LCS (W1B0015-BS1)				Prepared: 02/01/21 Analyzed: 02/02/21						
11CI-PF3OUdS	1.05	2.0	ng/l	1.00		105	70-130			

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Quality Control Results

(Continued)

Per- and Polyfluorinated Alkyl Substances (PFAS) by SPE/LCMSMS (Continued)

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	Limits	RPD	RPD Limit	Qualifier
Batch: W1B0015 - EPA 537M (Continued)										
LCS (W1B0015-BS1)										
					Prepared: 02/01/21 Analyzed: 02/02/21					
4:2 FTS	1.12	1.0	ng/l	1.00		112	63-143			
6:2 FTS	1.03	1.0	ng/l	1.00		103	64-140			
8:2 FTS	0.802	1.0	ng/l	1.00		80	67-138			
9CI-PF3ONS	1.11	1.0	ng/l	1.00		111	70-130			
ADONA	1.17	1.0	ng/l	1.00		117	70-130			
EtFOSA	1.27	2.0	ng/l	1.00		127	70-130			
EtFOSAA	1.07	2.0	ng/l	1.00		107	61-135			
EtFOSE	0.792	1.0	ng/l	1.00		79	70-130			
FOSA	1.15	1.0	ng/l	1.00		115	67-137			
HFPO-DA	1.14	1.0	ng/l	1.00		114	70-130			
MeFOSA	0.827	2.0	ng/l	1.00		83	68-141			
MeFOSAA	1.03	1.0	ng/l	1.00		103	65-136			
MeFOSE	1.25	2.0	ng/l	1.00		125	70-130			
Perfluorooctanoic acid (PFOA)	1.24	1.0	ng/l	1.00		124	71-133			
PFBA	1.40	1.0	ng/l	1.00		140	73-129			Q-08
PFBS	1.16	1.0	ng/l	1.00		116	72-130			
PFDA	1.13	1.0	ng/l	1.00		113	71-129			
PFDoA	0.925	1.0	ng/l	1.00		92	72-134			
PFDS	1.03	1.0	ng/l	1.00		103	53-142			
PFHpA	1.49	4.0	ng/l	1.00		149	72-130			Q-08
PFHpS	1.19	1.0	ng/l	1.00		119	69-134			
PFHxA	1.26	2.0	ng/l	1.00		126	72-129			
PFHxS	1.26	1.0	ng/l	1.00		126	68-131			
PFNA	1.23	1.0	ng/l	1.00		123	69-130			
PFNS	1.22	1.0	ng/l	1.00		122	69-127			
PFOS	1.05	2.0	ng/l	1.00		105	65-140			
PFPeA	1.20	1.0	ng/l	1.00		120	72-129			
PFPeS	1.24	1.0	ng/l	1.00		124	71-127			
PFTeDA	1.02	2.0	ng/l	1.00		102	71-132			
PFTrDA	0.960	1.0	ng/l	1.00		96	65-144			
PFUnA	1.20	1.0	ng/l	1.00		120	69-133			
LCS Dup (W1B0015-BS1)										
					Prepared: 02/01/21 Analyzed: 02/02/21					
11CI-PF3OUdS	1.07	2.0	ng/l	1.00		107	70-130	2	30	
4:2 FTS	1.10	1.0	ng/l	1.00		110	63-143	1	30	
6:2 FTS	1.29	1.0	ng/l	1.00		129	64-140	22	30	
8:2 FTS	1.50	1.0	ng/l	1.00		150	67-138	61	30	BS-04
9CI-PF3ONS	1.00	1.0	ng/l	1.00		100	70-130	10	30	
ADONA	1.23	1.0	ng/l	1.00		123	70-130	5	30	
EtFOSA	0.875	2.0	ng/l	1.00		88	70-130	37	30	Q-12



Certificate of Analysis

FINAL REPORT

City of Springfield
218 E. Central
Springfield, MO 65802

Project Number: PFAS Project

Reported:
04/01/2021 15:34

Project Manager: Todd Cox

Quality Control Results

(Continued)

Per- and Polyfluorinated Alkyl Substances (PFAS) by SPE/LCMSMS (Continued)

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	Limits	RPD	Limit	Qualifier
Batch: W1B0015 - EPA 537M (Continued)										
LCS Dup (W1B0015-BSD1)										
				Prepared: 02/01/21 Analyzed: 02/02/21						
EtFOSAA	0.966	2.0	ng/l	1.00	97	61-135	10	30		
EtFOSE	0.918	1.0	ng/l	1.00	92	70-130	15	30		
FOSA	1.10	1.0	ng/l	1.00	110	67-137	5	30		
HFPO-DA	1.18	1.0	ng/l	1.00	118	70-130	4	30		
MeFOSA	0.839	2.0	ng/l	1.00	84	68-141	1	30		
MeFOSAA	1.11	1.0	ng/l	1.00	111	65-136	8	30		
MeFOSE	1.05	2.0	ng/l	1.00	105	70-130	17	30		
Perfluorooctanoic acid (PFOA)	1.24	1.0	ng/l	1.00	124	71-133	0.5	30		
PFBA	1.40	1.0	ng/l	1.00	140	73-129	0.1	30		Q-08
PFBS	1.20	1.0	ng/l	1.00	120	72-130	3	30		
PFDA	1.21	1.0	ng/l	1.00	121	71-129	7	30		
PFDoA	1.17	1.0	ng/l	1.00	117	72-134	23	30		
PFDS	1.02	1.0	ng/l	1.00	102	53-142	0.5	30		
PFHpA	1.49	4.0	ng/l	1.00	149	72-130	0.5	30		Q-08
PFHpS	1.17	1.0	ng/l	1.00	117	69-134	2	30		
PFHxA	1.27	2.0	ng/l	1.00	127	72-129	0.9	30		
PFHxS	1.17	1.0	ng/l	1.00	117	68-131	8	30		
PFNA	1.08	1.0	ng/l	1.00	108	69-130	13	30		
PFNS	1.24	1.0	ng/l	1.00	124	69-127	2	30		
PFOS	1.37	2.0	ng/l	1.00	137	65-140	26	30		
PFPeA	1.20	1.0	ng/l	1.00	120	72-129	0.1	30		
PFPeS	1.21	1.0	ng/l	1.00	121	71-127	2	30		
PFTeDA	0.927	2.0	ng/l	1.00	93	71-132	10	30		
PFTrDA	0.837	1.0	ng/l	1.00	84	65-144	14	30		
PFUnA	1.08	1.0	ng/l	1.00	108	69-133	10	30		

City of Springfield
218 E. Central
Springfield, MO 65802

Project Number: PFAS Project

Reported:
04/01/2021 15:34

Project Manager: Todd Cox

Notes and Definitions

Item	Definition
*	Recovery or RPD outside control limits
B-06	This analyte was found in the method blank, which was possibly contaminated during sample preparation. The batch was accepted since this analyte was either not detected or more than 10 times of the blank value for all the samples in the batch.
BS-04	The recovery of this analyte in LCS or LCSD was outside control limit. Sample was accepted based on the remaining LCS, LCSD or LCS-LL.
BS-H	The recovery of this analyte in the BS/LCS was over the control limit. Sample result is suspect.
BS-L	The recovery of this analyte in the BS/LCS was below the control limit. Sample result is suspect.
J	Estimated value
Q-08	High bias in the QC sample does not affect sample result since analyte was not detected or below the reporting limit.
Q-12	The RPD result exceeded the QC control limits; however, both percent recoveries were acceptable. Sample results for the QC batch were accepted based on the percent recoveries and/or other acceptable QC data.
R-01	The Reporting Limit for this analyte has been raised to account for matrix interference.
U	Not detected
%REC	Percent Recovery
Dil	Dilution
dry	Sample results reported on a dry weight basis
MDL	Method Detection Limit
MRL	The minimum levels, concentrations, or quantities of a target variable (e.g., target analyte) that can be reported with a specified degree of confidence. The MRL is also known as Limit of Quantitation (LOQ)
ND	NOT DETECTED at or above the Method Reporting Limit (MRL). If Method Detection Limit (MDL) is reported, then ND means not detected at or above the MDL.
RPD	Relative Percent Difference

Any remaining sample(s) will be disposed of one month from the final report date unless other arrangements are made in advance.

All results are expressed on wet weight basis unless otherwise specified.

All samples collected by Weck Laboratories have been sampled in accordance to laboratory SOP Number MIS002.