

Work Orders: 1J05044

Report Date: 1/24/2022

Project: PFAS

Received Date: 10/5/2021

Turnaround Time: Normal

Phones: (417) 864-1708

Fax:

Attn: Todd Cox

P.O. #:

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

Billing Code:

ELAP-CA #1132 • EPA-UCMR #CA00211 • Guam-EPA #17-008R • HW-DOH #4047 • LACSD #10143 • NELAP-OR #4047 • NJ-DEP #CA015 • NV-DEP #NAC 445A • SCAQMD #93LA1006

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 10/05/21 with the Chain-of-Custody document. The samples were received in good condition, at 3.3 °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

Reported:

01/24/2022 13:43

Project Manager: Todd Cox

Sample Summary

Sample Name	Sampled By	Lab ID	Matrix	Sampled	Qualifiers
SW Primary Influent (Raw)	Derek Gillis	1J05044-01	Water	10/04/21 06:15	
NW Primary Influent (Raw)	Derek Gillis	1J05044-02	Water	10/04/21 08:15	
SW Effluent 001	Derek Gillis	1J05044-03	Water	10/04/21 06:30	
NW Effluent 001	Derek Gillis	1J05044-04	Water	10/04/21 08:00	
Springfield Landfill Leachate	Derek Gillis	1J05044-05	Water	10/04/21 07:30	
SW Primary Influent (Raw) Field Blank	Derek Gillis	1J05044-06	Water	10/04/21 06:15	
NW Primary Influent (Raw) Field Blank	Derek Gillis	1J05044-07	Water	10/04/21 08:15	
SW Effluent 001 Field Blank	Derek Gillis	1J05044-08	Water	10/04/21 06:30	
NW Effluent 001 Field Blank	Derek Gillis	1J05044-09	Water	10/04/21 08:00	
Springfield Landfill Leachate Field Blank	Derek Gillis	1J05044-10	Water	10/04/21 07:30	
SW Biosolids Field Sample (BTSF)	Derek Gillis	1J05044-11	Solid	10/04/21 06:00	
SW Biosolids Field Sample (BTSF) Field Blank	Derek Gillis	1J05044-12	Water	10/04/21 06:00	

City of Springfield
218 E. Central
Springfield, MO 65802

Project Number: PFAS
Project Manager: Todd Cox

Reported:
01/24/2022 13:43

Sample Results

Sample: SW Primary Influent (Raw)
1J05044-01 (Water)

Sampled: 10/04/21 6:15 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: W1J1522	Preparation: EPA 537/SPE	Prepared: 10/22/21 11:05		Analyst: jna		
11CI-PF3OUdS	ND	1.8	ng/l	1	10/28/21	I-05, M-08
4:2 FTS	ND	0.89	ng/l	1	10/28/21	I, M-08
6:2 FTS	2.2	0.89	ng/l	1	10/28/21	A-01c, M-08
8:2 FTS	ND	0.89	ng/l	1	10/28/21	M-08
9CI-PF3ONS	ND	0.89	ng/l	1	10/28/21	I-05, M-08
ADONA	ND	0.89	ng/l	1	10/28/21	M-08
EtFOSA	ND	1.8	ng/l	1	10/28/21	I-05, M-08
EtFOSAA	ND	1.8	ng/l	1	10/28/21	I-05, M-08
EtFOSE	ND	0.89	ng/l	1	10/28/21	I-05, M-08
FOSA	ND	0.89	ng/l	1	10/28/21	I-05, M-08
HFPO-DA	ND	0.89	ng/l	1	10/28/21	M-08
MeFOSA	ND	1.8	ng/l	1	10/28/21	A-01f, M-08
MeFOSAA	ND	0.89	ng/l	1	10/28/21	I-05, M-08
MeFOSE	ND	1.8	ng/l	1	10/28/21	I-05, M-08
Perfluorooctanoic acid (PFOA)	2.7	0.89	ng/l	1	10/28/21	M-08
PFBA	25	0.89	ng/l	1	10/28/21	A-01j, BS-H, M-08
PFBS	5.8	0.89	ng/l	1	10/28/21	M-08
PFDA	ND	0.89	ng/l	1	10/28/21	I-05, M-08
PFDoA	ND	0.89	ng/l	1	10/28/21	I-05, M-08
PFDS	ND	8.9	ng/l	1	10/28/21	I-05, M-08, R-01
PFHpA	ND	3.6	ng/l	1	10/28/21	M-08
PFHpS	ND	0.89	ng/l	1	10/28/21	M-08
PFHxA	6.6	1.8	ng/l	1	10/28/21	M-08
PFHxS	4.0	0.89	ng/l	1	10/28/21	M-08
PFNA	ND	0.89	ng/l	1	10/28/21	M-08
PFNS	ND	0.89	ng/l	1	10/28/21	I-05, M-08
PFOS	11	1.8	ng/l	1	10/28/21	M-08
PFPeA	6.1	0.89	ng/l	1	10/28/21	I-05, M-08
PFPeS	ND	0.89	ng/l	1	10/28/21	M-08
PFTeDA	ND	1.8	ng/l	1	10/28/21	A-01f, M-08
PFTTrDA	ND	0.89	ng/l	1	10/28/21	I-05, M-08
PFUnA	ND	0.89	ng/l	1	10/28/21	I-05, M-08

City of Springfield
218 E. Central
Springfield, MO 65802

Project Number: PFAS
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Reported:
01/24/2022 13:43

Sample Results

(Continued)

Sample: NW Primary Influent (Raw)
1J05044-02 (Water)

Sampled: 10/04/21 8:15 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: W1J1522		Preparation: EPA 537/SPE			Prepared: 10/22/21 11:05	
		Analyst: jna				
11CI-PF3OUdS	ND	2.0	ng/l	1	10/28/21	I-05, M-08
4:2 FTS	ND	1.0	ng/l	1	10/28/21	M-08
6:2 FTS	ND	1.0	ng/l	1	10/28/21	A-01c, M-08
8:2 FTS	ND	1.0	ng/l	1	10/28/21	M-08
9CI-PF3ONS	ND	1.0	ng/l	1	10/28/21	M-08
ADONA	ND	1.0	ng/l	1	10/28/21	M-08
EtFOSA	ND	2.0	ng/l	1	10/28/21	I-05, M-08
EtFOSAA	ND	2.0	ng/l	1	10/28/21	I-05, M-08
EtFOSE	ND	1.0	ng/l	1	10/28/21	I-05, M-08
FOSA	ND	1.0	ng/l	1	10/28/21	I-05, M-08
HFPO-DA	ND	1.0	ng/l	1	10/28/21	M-08
MeFOSA	ND	2.0	ng/l	1	10/28/21	A-01f, M-08
MeFOSAA	4.0	1.0	ng/l	1	10/28/21	I-05, M-08
MeFOSE	ND	2.0	ng/l	1	10/28/21	I-05, M-08
Perfluorooctanoic acid (PFOA)	5.0	1.0	ng/l	1	10/28/21	M-08
PFBA	13	1.0	ng/l	1	10/28/21	A-01j, BS-H, M-08
PFBS	4.5	1.0	ng/l	1	10/28/21	M-08
PFDA	ND	1.0	ng/l	1	10/28/21	M-08
PFDoA	ND	1.0	ng/l	1	10/28/21	I-05, M-08
PFDS	ND	5.0	ng/l	1	10/28/21	I-05, M-08, R-01
PFHpA	ND	4.0	ng/l	1	10/28/21	M-08
PFHpS	ND	1.0	ng/l	1	10/28/21	M-08
PFHxA	17	2.0	ng/l	1	10/28/21	M-08
PFHxS	4.1	1.0	ng/l	1	10/28/21	M-08
PFNA	ND	1.0	ng/l	1	10/28/21	M-08
PFNS	ND	1.0	ng/l	1	10/28/21	M-08
PFOS	8.8	2.0	ng/l	1	10/28/21	M-08
PFPeA	6.5	1.0	ng/l	1	10/28/21	I-05, M-08
PFPeS	ND	1.0	ng/l	1	10/28/21	M-08
PFTeDA	ND	2.0	ng/l	1	10/28/21	A-01f, M-08
PFTTrDA	ND	1.0	ng/l	1	10/28/21	I-05, M-08
PFUnA	ND	1.0	ng/l	1	10/28/21	I-05, M-08

City of Springfield
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Reported:
01/24/2022 13:43

Sample Results

(Continued)

Sample: SW Effluent 001
1J05044-03 (Water)

Sampled: 10/04/21 6:30 by Derek Gillis

Analyte	Result	MRL	Units	Dil	Analyzed	Qualifier
Per- and Polyfluorinated Alkyl Substances (PFAS) by SPE/LCMSMS						
Method: EPA 537M						
Batch ID: W1J1522	Preparation: EPA 537/SPE					Analyst: jna
		Instr: LCMS06				
		Prepared: 10/22/21 11:05				
11CI-PF3OUdS	ND	2.0	ng/l	1	10/28/21	
4:2 FTS	ND	1.0	ng/l	1	10/28/21	I
6:2 FTS	1.9	1.0	ng/l	1	10/28/21	A-01c
8:2 FTS	ND	1.0	ng/l	1	10/28/21	
9CI-PF3ONS	ND	1.0	ng/l	1	10/28/21	
ADONA	ND	1.0	ng/l	1	10/28/21	
EtFOSA	ND	2.0	ng/l	1	10/28/21	I-05
EtFOSAA	ND	2.0	ng/l	1	10/28/21	
EtFOSE	ND	1.0	ng/l	1	10/28/21	I-05
FOSA	ND	1.0	ng/l	1	10/28/21	
HFPO-DA	ND	1.0	ng/l	1	10/28/21	
MeFOSA	ND	2.0	ng/l	1	10/28/21	A-01f
MeFOSAA	ND	1.0	ng/l	1	10/28/21	
MeFOSE	ND	2.0	ng/l	1	10/28/21	I-05
Perfluorooctanoic acid (PFOA)	6.2	1.0	ng/l	1	10/28/21	
PFBA	20	1.0	ng/l	1	10/28/21	A-01j, BS-H
PFBS	15	1.0	ng/l	1	10/28/21	
PFDA	ND	1.0	ng/l	1	10/28/21	
PFDoA	ND	1.0	ng/l	1	10/28/21	
PFDS	ND	1.0	ng/l	1	10/28/21	
PFHpA	ND	4.0	ng/l	1	10/28/21	
PFHpS	ND	1.0	ng/l	1	10/28/21	
PFHxA	15	2.0	ng/l	1	10/28/21	
PFHxS	4.0	1.0	ng/l	1	10/28/21	
PFNA	ND	1.0	ng/l	1	10/28/21	
PFNS	ND	1.0	ng/l	1	10/28/21	
PFOS	7.4	2.0	ng/l	1	10/28/21	
PFPeA	17	1.0	ng/l	1	10/28/21	
PFPeS	ND	1.0	ng/l	1	10/28/21	
PFTeDA	ND	2.0	ng/l	1	10/28/21	
PFTTrDA	ND	1.0	ng/l	1	10/28/21	
PFUnA	ND	1.0	ng/l	1	10/28/21	

City of Springfield
218 E. Central
Springfield, MO 65802

Project Number: PFAS
Project Manager: Todd Cox

Reported:
01/24/2022 13:43

Sample Results

(Continued)

Sample: NW Effluent 001
1J05044-04 (Water) Sampled: 10/04/21 8:00 by Derek Gillis

Analyte	Result	MRL	Units	Dil	Analyzed	Qualifier
Per- and Polyfluorinated Alkyl Substances (PFAS) by SPE/LCMSMS						
Method: EPA 537M						
Batch ID: W1J1522	Preparation: EPA 537/SPE					Analyst: jna
		Instr: LCMS06				
		Prepared: 10/22/21 11:05				
11CI-PF3OUdS	ND	2.0	ng/l	1	10/28/21	
4:2 FTS	ND	1.0	ng/l	1	10/28/21	I
6:2 FTS	ND	1.0	ng/l	1	10/28/21	A-01c
8:2 FTS	ND	1.0	ng/l	1	10/28/21	I
9CI-PF3ONS	ND	1.0	ng/l	1	10/28/21	
ADONA	ND	1.0	ng/l	1	10/28/21	
EtFOSA	ND	2.0	ng/l	1	10/28/21	A-01f
EtFOSAA	ND	2.0	ng/l	1	10/28/21	
EtFOSE	ND	1.0	ng/l	1	10/28/21	A-01f
FOSA	ND	1.0	ng/l	1	10/28/21	
HFPO-DA	ND	1.0	ng/l	1	10/28/21	
MeFOSA	ND	2.0	ng/l	1	10/28/21	A-01f
MeFOSAA	ND	1.0	ng/l	1	10/28/21	
MeFOSE	ND	2.0	ng/l	1	10/28/21	A-01f
Perfluorooctanoic acid (PFOA)	13	1.0	ng/l	1	10/28/21	
PFBA	280	1.0	ng/l	1	10/28/21	A-01j, BS-H, E-01
PFBS	15	1.0	ng/l	1	10/28/21	
PFDA	ND	1.0	ng/l	1	10/28/21	
PFDoA	ND	1.0	ng/l	1	10/28/21	
PFDS	ND	1.0	ng/l	1	10/28/21	
PFHpA	5.6	4.0	ng/l	1	10/28/21	
PFHpS	ND	1.0	ng/l	1	10/28/21	
PFHxA	31	2.0	ng/l	1	10/28/21	
PFHxS	8.0	1.0	ng/l	1	10/28/21	
PFNA	ND	1.0	ng/l	1	10/28/21	
PFNS	ND	1.0	ng/l	1	10/28/21	
PFOS	5.3	2.0	ng/l	1	10/28/21	
PFPeA	33	1.0	ng/l	1	10/28/21	I-05
PFPeS	ND	1.0	ng/l	1	10/28/21	
PFTeDA	ND	2.0	ng/l	1	10/28/21	A-01f
PFTrDA	ND	1.0	ng/l	1	10/28/21	
PFUnA	ND	1.0	ng/l	1	10/28/21	

City of Springfield
218 E. Central
Springfield, MO 65802

Project Number: PFAS
Project Manager: Todd Cox

Reported:
01/24/2022 13:43

Sample Results

(Continued)

Sample: Springfield Landfill Leachate
1J05044-05 (Water)

Sampled: 10/04/21 7:30 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: W1J1522	Preparation: EPA 537/SPE	Prepared: 10/22/21 11:05		Analyst: jna		
11CI-PF3OUdS	ND	2.0	ng/l	1	10/28/21	I-05
4:2 FTS	2.1	1.0	ng/l	1	10/28/21	
6:2 FTS	130	1.0	ng/l	1	10/28/21	E-01
8:2 FTS	21	1.0	ng/l	1	10/28/21	I
9CI-PF3ONS	ND	1.0	ng/l	1	10/28/21	I-05
ADONA	ND	1.0	ng/l	1	10/28/21	I-05
EtFOSA	ND	2.0	ng/l	1	10/28/21	A-01f
EtFOSAA	79	2.0	ng/l	1	10/28/21	E-01
EtFOSE	3.9	1.0	ng/l	1	10/28/21	A-01j
FOSA	4.6	1.0	ng/l	1	10/28/21	I-05
HFPO-DA	1.4	1.0	ng/l	1	10/28/21	I-05
MeFOSA	ND	2.0	ng/l	1	10/28/21	A-01f
MeFOSAA	200	1.0	ng/l	1	10/28/21	E-01, I-05
MeFOSE	7.9	2.0	ng/l	1	10/28/21	A-01j
Perfluorooctanoic acid (PFOA)	620	1.0	ng/l	1	10/28/21	E-01, I-05
PFBA	ND	5.0	ng/l	1	10/28/21	A-01j, R-01
PFBS	840	1.0	ng/l	1	10/28/21	I-05, E-01
PFDA	20	1.0	ng/l	1	10/28/21	I-05
PFDoA	1.8	1.0	ng/l	1	10/28/21	I-05
PFDS	1.5	1.0	ng/l	1	10/28/21	I-05
PFHpA	260	4.0	ng/l	1	10/28/21	E-01, I-05
PFHpS	15	1.0	ng/l	1	10/28/21	I-05
PFHxA	1000	2.0	ng/l	1	10/28/21	E-01, I-05
PFHxS	460	1.0	ng/l	1	10/28/21	E-01, I-05
PFNA	37	1.0	ng/l	1	10/28/21	I-05
PFNS	ND	1.0	ng/l	1	10/28/21	I-05
PFOS	180	2.0	ng/l	1	10/28/21	E-01
PFPeA	320	1.0	ng/l	1	10/28/21	E-01, I-05
PFPeS	17	1.0	ng/l	1	10/28/21	I-05
PFTeDA	ND	2.0	ng/l	1	10/28/21	A-01j
PFTTrDA	ND	1.0	ng/l	1	10/28/21	I-05
PFUnA	2.0	1.0	ng/l	1	10/28/21	I-05

City of Springfield
218 E. Central
Springfield, MO 65802

Project Number: PFAS
Project Manager: Todd Cox

Reported:
01/24/2022 13:43

Sample Results

(Continued)

Sample: SW Primary Influent (Raw) Field Blank
1J05044-06 (Water)

Sampled: 10/04/21 6:15 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: W1J1597	Preparation: EPA 537/SPE			Prepared: 10/25/21 08:12		Analyst: jna
11CI-PF3OUdS	ND	2.0	ng/l	1	10/28/21	
4:2 FTS	ND	1.0	ng/l	1	10/28/21	
6:2 FTS	ND	1.0	ng/l	1	10/28/21	
8:2 FTS	ND	1.0	ng/l	1	10/28/21	
9CI-PF3ONS	ND	1.0	ng/l	1	10/28/21	
ADONA	ND	1.0	ng/l	1	10/28/21	
EtFOSA	ND	2.0	ng/l	1	10/28/21	I-05
EtFOSAA	ND	2.0	ng/l	1	10/28/21	
EtFOSE	ND	1.0	ng/l	1	10/28/21	A-01f, BS-04
FOSA	ND	1.0	ng/l	1	10/28/21	A-01f
HFPO-DA	ND	1.0	ng/l	1	10/28/21	
MeFOSA	ND	2.0	ng/l	1	10/28/21	I-05
MeFOSAA	ND	1.0	ng/l	1	10/28/21	
MeFOSE	ND	2.0	ng/l	1	10/28/21	A-01f
Perfluorooctanoic acid (PFOA)	ND	1.0	ng/l	1	10/28/21	
PFBA	ND	1.0	ng/l	1	10/28/21	
PFBS	ND	1.0	ng/l	1	10/28/21	
PFDA	ND	1.0	ng/l	1	10/28/21	
PFDoA	ND	1.0	ng/l	1	10/28/21	
PFDS	ND	1.0	ng/l	1	10/28/21	
PFHpA	ND	4.0	ng/l	1	10/28/21	
PFHpS	ND	1.0	ng/l	1	10/28/21	
PFHxA	ND	2.0	ng/l	1	10/28/21	
PFHxS	ND	1.0	ng/l	1	10/28/21	
PFNA	ND	1.0	ng/l	1	10/28/21	
PFNS	ND	1.0	ng/l	1	10/28/21	
PFOS	ND	2.0	ng/l	1	10/28/21	
PFPeA	ND	1.0	ng/l	1	10/28/21	
PFPeS	ND	1.0	ng/l	1	10/28/21	
PFTeDA	ND	2.0	ng/l	1	10/28/21	
PFTTrDA	ND	1.0	ng/l	1	10/28/21	
PFUnA	ND	1.0	ng/l	1	10/28/21	

City of Springfield
218 E. Central
Springfield, MO 65802

Project Number: PFAS
Project Manager: Todd Cox

Reported:
01/24/2022 13:43

Sample Results

(Continued)

Sample: NW Primary Influent (Raw) Field Blank
1J05044-07 (Water)

Sampled: 10/04/21 8:15 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: W1J1522		Preparation: EPA 537/SPE			Prepared: 10/22/21 11:05	
		Analyst: jna				
11CI-PF3OUdS	ND	2.0	ng/l	1	10/28/21	
4:2 FTS	ND	1.0	ng/l	1	10/28/21	I-05
6:2 FTS	ND	1.0	ng/l	1	10/28/21	A-01c
8:2 FTS	ND	1.0	ng/l	1	10/28/21	
9CI-PF3ONS	ND	1.0	ng/l	1	10/28/21	
ADONA	ND	1.0	ng/l	1	10/28/21	
EtFOSA	ND	2.0	ng/l	1	10/28/21	I-05
EtFOSAA	ND	2.0	ng/l	1	10/28/21	
EtFOSE	ND	1.0	ng/l	1	10/28/21	I-05
FOSA	ND	1.0	ng/l	1	10/28/21	
HFPO-DA	ND	1.0	ng/l	1	10/28/21	I-05
MeFOSA	ND	2.0	ng/l	1	10/28/21	A-01f
MeFOSAA	ND	1.0	ng/l	1	10/28/21	
MeFOSE	ND	2.0	ng/l	1	10/28/21	A-01f
Perfluorooctanoic acid (PFOA)	ND	1.0	ng/l	1	10/28/21	
PFBA	110	1.0	ng/l	1	10/28/21	A-01j, BS-H, E-01 I-05
PFBS	4.0	1.0	ng/l	1	10/28/21	
PFDA	ND	1.0	ng/l	1	10/28/21	
PFDoA	ND	1.0	ng/l	1	10/28/21	
PFDS	ND	1.0	ng/l	1	10/28/21	
PFHpA	ND	4.0	ng/l	1	10/28/21	
PFHpS	ND	1.0	ng/l	1	10/28/21	
PFHxA	3.5	2.0	ng/l	1	10/28/21	I-05
PFHxS	ND	1.0	ng/l	1	10/28/21	
PFNA	ND	1.0	ng/l	1	10/28/21	
PFNS	ND	1.0	ng/l	1	10/28/21	
PFOS	ND	2.0	ng/l	1	10/28/21	
PFPeA	7.8	1.0	ng/l	1	10/28/21	I-05
PFPeS	ND	1.0	ng/l	1	10/28/21	
PFTeDA	ND	2.0	ng/l	1	10/28/21	
PFTTrDA	ND	1.0	ng/l	1	10/28/21	
PFUnA	ND	1.0	ng/l	1	10/28/21	

City of Springfield
218 E. Central
Springfield, MO 65802

Project Number: PFAS
Project Manager: Todd Cox

Reported:
01/24/2022 13:43

Sample Results

(Continued)

Sample: SW Effluent 001 Field Blank
1J05044-08 (Water)

Sampled: 10/04/21 6:30 by Derek Gillis

Analyte	Result	MRL	Units	Dil	Analyzed	Qualifier
Per- and Polyfluorinated Alkyl Substances (PFAS) by SPE/LCMSMS						
Method: EPA 537M						
Batch ID: W1J1522	Preparation: EPA 537/SPE	Instr: LCMS06	Prepared: 10/22/21 11:05			Analyst: jna
11CI-PF3OUdS	ND	2.0	ng/l	1	10/28/21	
4:2 FTS	ND	1.0	ng/l	1	10/28/21	I-05
6:2 FTS	ND	1.0	ng/l	1	10/28/21	
8:2 FTS	ND	1.0	ng/l	1	10/28/21	
9CI-PF3ONS	ND	1.0	ng/l	1	10/28/21	
ADONA	ND	1.0	ng/l	1	10/28/21	
EtFOSA	ND	2.0	ng/l	1	10/28/21	A-01f
EtFOSAA	ND	2.0	ng/l	1	10/28/21	
EtFOSE	ND	1.0	ng/l	1	10/28/21	A-01f
FOSA	ND	1.0	ng/l	1	10/28/21	
HFPO-DA	ND	1.0	ng/l	1	10/28/21	I-05
MeFOSA	ND	2.0	ng/l	1	10/28/21	A-01f
MeFOSAA	ND	1.0	ng/l	1	10/28/21	
MeFOSE	ND	2.0	ng/l	1	10/28/21	
Perfluorooctanoic acid (PFOA)	ND	1.0	ng/l	1	10/28/21	
PFBA	52	1.0	ng/l	1	10/28/21	A-01j, BS-H, E-01 I-05
PFBS	ND	1.0	ng/l	1	10/28/21	
PFDA	ND	1.0	ng/l	1	10/28/21	
PFDoA	ND	1.0	ng/l	1	10/28/21	
PFDS	ND	1.0	ng/l	1	10/28/21	
PFHpA	ND	4.0	ng/l	1	10/28/21	
PFHpS	ND	1.0	ng/l	1	10/28/21	
PFHxA	ND	2.0	ng/l	1	10/28/21	I-05
PFHxS	ND	1.0	ng/l	1	10/28/21	
PFNA	ND	1.0	ng/l	1	10/28/21	
PFNS	ND	1.0	ng/l	1	10/28/21	
PFOS	ND	2.0	ng/l	1	10/28/21	
PFPeA	ND	1.0	ng/l	1	10/28/21	I-05
PFPeS	ND	1.0	ng/l	1	10/28/21	
PFTeDA	ND	2.0	ng/l	1	10/28/21	
PFTTrDA	ND	1.0	ng/l	1	10/28/21	
PFUnA	ND	1.0	ng/l	1	10/28/21	

City of Springfield
218 E. Central
Springfield, MO 65802

Project Number: PFAS
Project Manager: Todd Cox

Reported:
01/24/2022 13:43

Sample Results

(Continued)

Sample: NW Effluent 001 Field Blank
1J05044-09 (Water)

Sampled: 10/04/21 8:00 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: W1J1522	Preparation: EPA 537/SPE	Prepared: 10/22/21 11:05		Analyst: jna		
11CI-PF3OUdS	ND	2.0	ng/l	1	10/28/21	
4:2 FTS	ND	1.0	ng/l	1	10/28/21	I-05
6:2 FTS	ND	1.0	ng/l	1	10/28/21	
8:2 FTS	ND	1.0	ng/l	1	10/28/21	
9CI-PF3ONS	ND	1.0	ng/l	1	10/28/21	
ADONA	ND	1.0	ng/l	1	10/28/21	
EtFOSA	ND	2.0	ng/l	1	10/28/21	I-05
EtFOSAA	ND	2.0	ng/l	1	10/28/21	
EtFOSE	ND	1.0	ng/l	1	10/28/21	I-05
FOSA	ND	1.0	ng/l	1	10/28/21	I-05
HFPO-DA	ND	1.0	ng/l	1	10/28/21	I-05
MeFOSA	ND	2.0	ng/l	1	10/28/21	A-01f
MeFOSAA	ND	1.0	ng/l	1	10/28/21	
MeFOSE	ND	2.0	ng/l	1	10/28/21	A-01f
Perfluorooctanoic acid (PFOA)	ND	1.0	ng/l	1	10/28/21	
PFBA	54	1.0	ng/l	1	10/28/21	A-01j, BS-H, E-01 I-05
PFBS	ND	1.0	ng/l	1	10/28/21	I-05
PFDA	ND	1.0	ng/l	1	10/28/21	
PFDoA	ND	1.0	ng/l	1	10/28/21	
PFDS	ND	1.0	ng/l	1	10/28/21	
PFHpA	ND	4.0	ng/l	1	10/28/21	
PFHpS	ND	1.0	ng/l	1	10/28/21	
PFHxA	ND	2.0	ng/l	1	10/28/21	I-05
PFHxS	ND	1.0	ng/l	1	10/28/21	
PFNA	ND	1.0	ng/l	1	10/28/21	
PFNS	ND	1.0	ng/l	1	10/28/21	
PFOS	ND	2.0	ng/l	1	10/28/21	
PFPeA	ND	1.0	ng/l	1	10/28/21	I-05
PFPeS	ND	1.0	ng/l	1	10/28/21	
PFTeDA	ND	2.0	ng/l	1	10/28/21	
PFTTrDA	ND	1.0	ng/l	1	10/28/21	
PFUnA	ND	1.0	ng/l	1	10/28/21	

City of Springfield
218 E. Central
Springfield, MO 65802

Project Number: PFAS
Project Manager: Todd Cox

Reported:
01/24/2022 13:43

Sample Results

(Continued)

Sample: Springfield Landfill Leachate Field Blank
1J05044-10 (Water)

Sampled: 10/04/21 7:30 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: W1J1522		Preparation: EPA 537/SPE			Prepared: 10/22/21 11:05	
		Analyst: jna				
11CI-PF3OUdS	ND	2.0	ng/l	1	10/28/21	
4:2 FTS	ND	1.0	ng/l	1	10/28/21	I-05
6:2 FTS	ND	1.0	ng/l	1	10/28/21	
8:2 FTS	ND	1.0	ng/l	1	10/28/21	
9CI-PF3ONS	ND	1.0	ng/l	1	10/28/21	
ADONA	ND	1.0	ng/l	1	10/28/21	
EtFOSA	ND	2.0	ng/l	1	10/28/21	A-01f
EtFOSAA	ND	2.0	ng/l	1	10/28/21	
EtFOSE	ND	1.0	ng/l	1	10/28/21	A-01f
FOSA	ND	1.0	ng/l	1	10/28/21	
HFPO-DA	ND	1.0	ng/l	1	10/28/21	I-05
MeFOSA	ND	2.0	ng/l	1	10/28/21	A-01f
MeFOSAA	ND	1.0	ng/l	1	10/28/21	
MeFOSE	ND	2.0	ng/l	1	10/28/21	
Perfluorooctanoic acid (PFOA)	ND	1.0	ng/l	1	10/28/21	
PFBA	45	1.0	ng/l	1	10/28/21	A-01j, BS-H
PFBS	ND	1.0	ng/l	1	10/28/21	I-05
PFDA	ND	1.0	ng/l	1	10/28/21	
PFDoA	ND	1.0	ng/l	1	10/28/21	
PFDS	ND	1.0	ng/l	1	10/28/21	
PFHpA	ND	4.0	ng/l	1	10/28/21	I-05
PFHpS	ND	1.0	ng/l	1	10/28/21	
PFHxA	ND	2.0	ng/l	1	10/28/21	I-05
PFHxS	ND	1.0	ng/l	1	10/28/21	
PFNA	ND	1.0	ng/l	1	10/28/21	
PFNS	ND	1.0	ng/l	1	10/28/21	
PFOS	ND	2.0	ng/l	1	10/28/21	
PFPeA	ND	1.0	ng/l	1	10/28/21	I-05
PFPeS	ND	1.0	ng/l	1	10/28/21	
PFTeDA	ND	2.0	ng/l	1	10/28/21	A-01f
PFTTrDA	ND	1.0	ng/l	1	10/28/21	
PFUnA	ND	1.0	ng/l	1	10/28/21	

City of Springfield
218 E. Central
Springfield, MO 65802

Project Number: PFAS
Project Manager: Todd Cox

Reported:
01/24/2022 13:43

Sample Results

(Continued)

Sample: SW Biosolids Field Sample (BTSF) Field Blank
1J05044-12 (Water)

Sampled: 10/04/21 6:00 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: W1J1047	Preparation: EPA 537/SPE	Prepared: 10/18/21 09:18			Analyst: jna	
11CI-PF3OUdS	ND	2.0	ng/l	1	10/28/21	
4:2 FTS	ND	1.0	ng/l	1	10/28/21	
6:2 FTS	ND	1.0	ng/l	1	10/28/21	
8:2 FTS	ND	1.0	ng/l	1	10/28/21	
9CI-PF3ONS	ND	1.0	ng/l	1	10/28/21	
ADONA	ND	1.0	ng/l	1	10/28/21	
EtFOSA	ND	2.0	ng/l	1	10/28/21	I-05
EtFOSAA	ND	2.0	ng/l	1	10/28/21	
EtFOSE	ND	1.0	ng/l	1	10/28/21	I-05
FOSA	ND	1.0	ng/l	1	10/28/21	I-05
HFPO-DA	ND	1.0	ng/l	1	10/28/21	I-05
MeFOSA	ND	2.0	ng/l	1	10/28/21	I-05
MeFOSAA	ND	1.0	ng/l	1	10/28/21	BS-04
MeFOSE	ND	2.0	ng/l	1	10/28/21	I-05
Perfluorooctanoic acid (PFOA)	ND	1.0	ng/l	1	10/28/21	
PFBA	ND	1.0	ng/l	1	10/28/21	I-05
PFBS	ND	1.0	ng/l	1	10/28/21	
PFDA	ND	1.0	ng/l	1	10/28/21	
PFDoA	ND	1.0	ng/l	1	10/28/21	
PFDS	ND	1.0	ng/l	1	10/28/21	
PFHpA	ND	4.0	ng/l	1	10/28/21	
PFHpS	ND	1.0	ng/l	1	10/28/21	
PFHxA	ND	2.0	ng/l	1	10/28/21	
PFHxS	ND	1.0	ng/l	1	10/28/21	
PFNA	ND	1.0	ng/l	1	10/28/21	
PFNS	ND	1.0	ng/l	1	10/28/21	
PFOS	ND	2.0	ng/l	1	10/28/21	
PFPeA	ND	1.0	ng/l	1	10/28/21	
PFPeS	ND	1.0	ng/l	1	10/28/21	
PFTeDA	ND	2.0	ng/l	1	10/28/21	
PFTTrDA	ND	1.0	ng/l	1	10/28/21	
PFUnA	ND	1.0	ng/l	1	10/28/21	

City of Springfield
218 E. Central
Springfield, MO 65802

Project Number: PFAS
Project Manager: Todd Cox

Reported:
01/24/2022 13:43

Sample Results APPL, Inc., Clovis, CA SUB_APPL

Sample: SW Biosolids Field Sample (BTSF) Sampled: 10/04/21 6:00 by Derek Gillis
1J05044-11 (Solid)

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
160.3-MOD							
Method: Moisture	Batch ID: 268779		Prepared: 10/11/21 13:34			Analyst: WET	
Moisture	86.1	2.0	2.0	%	1	10/12/21	

B-15BS							
Method: PFAS IN BIO-SOLIDS	Batch ID: 269774C		Prepared: 10/12/21 08:00			Analyst: DG	
PFBA	ND	2000.0	10000	ng/kg dry	1	10/28/21	U
PFPEA	ND	3000.0	10000	ng/kg dry	1	10/28/21	U
PFHXA	ND	4000.0	10000	ng/kg dry	1	10/28/21	U
PFHPA	ND	2000.0	10000	ng/kg dry	1	10/28/21	U
PFOA	ND	3000.0	10000	ng/kg dry	1	10/28/21	U
PFNA	ND	2000.0	10000	ng/kg dry	1	10/28/21	U
PFDA	4700	3000.0	10000	ng/kg dry	1	10/28/21	J
PFUDA	ND	2000.0	10000	ng/kg dry	1	10/28/21	U
PFDOA	ND	3000.0	10000	ng/kg dry	1	10/28/21	U
PFTRDA	ND	2000.0	10000	ng/kg dry	1	10/28/21	U
PFTEDA	ND	8000.0	20000	ng/kg dry	1	10/28/21	U
PFBS	ND	2000.0	10000	ng/kg dry	1	10/28/21	U
PFPEA	ND	4000.0	20000	ng/kg dry	1	10/28/21	U
PFHXS	ND	6000.0	20000	ng/kg dry	1	10/28/21	U
PFHPS	ND	6000.0	20000	ng/kg dry	1	10/28/21	U
PFOS	15000	4000.0	20000	ng/kg dry	1	10/28/21	J
PFNS	ND	10000.0	50000	ng/kg dry	1	10/28/21	U
PFDS	ND	8000.0	20000	ng/kg dry	1	10/28/21	U
PFOSA	2100	2000.0	10000	ng/kg dry	1	10/28/21	J
N-MEFOSA	ND	8000.0	20000	ng/kg dry	1	10/28/21	U
N-ETFOSA	ND	8000.0	20000	ng/kg dry	1	10/28/21	U
N-MEFOSAA	14000	8000.0	20000	ng/kg dry	1	10/28/21	J
N-ETFOSAA	8500	8000.0	20000	ng/kg dry	1	10/28/21	J
N-MEFOSE	ND	8000.0	20000	ng/kg dry	1	10/28/21	U
N-ETFOSE	ND	8000.0	20000	ng/kg dry	1	10/28/21	U
FTS 4:2	ND	8000.0	20000	ng/kg dry	1	10/28/21	U
FTS 6:2	ND	8000.0	20000	ng/kg dry	1	10/28/21	U
FTS 8:2	ND	6000.0	20000	ng/kg dry	1	10/28/21	U
HFPO-DA	ND	20000.0	50000	ng/kg dry	1	10/28/21	U
ADONA	ND	20000.0	50000	ng/kg dry	1	10/28/21	U
9-CL-PF3ONS	ND	20000.0	50000	ng/kg dry	1	10/28/21	U
11-CL-PF3OUDS	ND	20000.0	50000	ng/kg dry	1	10/28/21	U

Surrogate(s)							
13C4-PFBA	46.7%		50-150			10/28/21	*
13C5-PFPEA	70.7%		50-150			10/28/21	

City of Springfield
218 E. Central
Springfield, MO 65802

Project Number: PFAS

Reported:

01/24/2022 13:43

Project Manager: Todd Cox

Sample Results APPL, Inc., Clovis, CA SUB_APPL

(Continued)

Sample: SW Biosolids Field Sample (BTSF)
1J05044-11 (Solid)

Sampled: 10/04/21 6:00 by Derek Gillis
(Continued)

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
B-15BS (Continued)							
13C5-PFHXA	75.7%		50-150			10/28/21	
13C4-PFHFA	56.9%		50-150			10/28/21	
13C8-PFOA	40.7%		50-150			10/28/21	*
13C9-PFNA	47.6%		50-150			10/28/21	*
13C6-PFDA	59.8%		50-150			10/28/21	
13C7-PFUDA	51.3%		50-150			10/28/21	
13C2-PFDOA	27.4%		50-150			10/28/21	*
13C2-PFTEDA	34.5%		50-150			10/28/21	*
13C3-PFBS	86.1%		50-150			10/28/21	
13C3-PFHXS	63.1%		50-150			10/28/21	
13C8-PFOS	77.1%		50-150			10/28/21	
13C3-HFPO-DA	67.2%		50-150			10/28/21	
13C8-PFOSA	58.6%		50-150			10/28/21	
D3-NMEFOSA	38.5%		50-150			10/28/21	*
D5-NETFOSA	30.8%		50-150			10/28/21	*
13C2-4:2FTS	154%		50-150			10/28/21	*
13C2-6:2FTS	77.5%		50-150			10/28/21	
13C2-8:2FTS	90.8%		50-150			10/28/21	
D3-NMEFOSAA	60.1%		50-150			10/28/21	
D5-NETFOSAA	43.6%		50-150			10/28/21	*
D7-NMEFOSE	50.2%		50-150			10/28/21	
D9-NETFOSSE	36.7%		50-150			10/28/21	*
13C2D4-6:2FTS	68.5%		50-150			10/28/21	

City of Springfield
218 E. Central
Springfield, MO 65802

Project Number: PFAS

Reported:

01/24/2022 13:43

Project Manager: Todd Cox

Quality Control Results

B-15BS

Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	Limits	RPD	RPD Limit	Qualifier
Batch: 269774C - PFAS IN BIO-SOLIDS											
Blank (BA42603-BLK-1)						Prepared: 10/12/21 Analyzed: 10/28/21					
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	111			ng/kg	100		111	50-150			
13C2-6:2FTS	99			ng/kg	100		99.2	50-150			
13C2-8:2FTS	101			ng/kg	100		101	50-150			
13C2D4-6:2FTS	99.1			ng/kg	100		99.1	50-150			
13C2-PFDOA	95			ng/kg	100		94.8	50-150			
13C2-PFTEDA	106			ng/kg	100		106	50-150			

City of Springfield
218 E. Central
Springfield, MO 65802

Project Number: PFAS
Project Manager: Todd Cox

Reported:
01/24/2022 13:43

Quality Control Results

(Continued)

B-15BS (Continued)

Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	Limits	RPD	RPD Limit	Qualifier
Batch: 269774C - PFAS IN BIO-SOLIDS (Continued)											
Blank (BA42603-BLK-1)											
						Prepared: 10/12/21 Analyzed: 10/28/21					
<i>Surrogate(s)</i>											
13C3-HFPO-DA	113			ng/kg	100		113	50-150			
13C3-PFBS	113			ng/kg	100		113	50-150			
13C3-PFHXS	110			ng/kg	100		110	50-150			
13C4-PFBA	113			ng/kg	100		113	50-150			
13C4-PFHFA	111			ng/kg	100		111	50-150			
13C5-PFHXA	111			ng/kg	100		111	50-150			
13C5-PFPEA	118			ng/kg	100		118	50-150			
13C6-PFDA	99.2			ng/kg	100		99.2	50-150			
13C7-PFUODA	109			ng/kg	100		109	50-150			
13C8-PFOA	105			ng/kg	100		105	50-150			
13C8-PFOS	114			ng/kg	100		114	50-150			
13C8-PFOSA	109			ng/kg	100		109	50-150			
13C9-PFNA	105.0			ng/kg	100		105	50-150			
D3-NMEFOSA	106			ng/kg	100		106	50-150			
D3-NMEFOSAA	120			ng/kg	100		120	50-150			
D5-NETFOSA	103			ng/kg	100		103	50-150			
D5-NETFOSAA	117			ng/kg	100		117	50-150			
D7-NMEFOSE	99			ng/kg	100		98.8	50-150			
D9-NETFOSSE	117			ng/kg	100		117	50-150			
LCS (BA42603-LCS-2)											
						Prepared: 10/12/21 Analyzed: 10/28/21					
11-CL-PF3OUDS	12200	20000.0	50000	ng/kg	9430	0.0	129	73-132		30	
9-CL-PF3ONS	12500	20000.0	50000	ng/kg	9330	0.0	134	68-139		30	
ADONA	12200	20000.0	50000	ng/kg	9450	0.0	129	59-153		30	
FTS 4:2	12200	8000.0	20000	ng/kg	9350	0.0	131	63-143		30	
FTS 6:2	11800	8000.0	20000	ng/kg	9490	0.0	124	64-140		30	
FTS 8:2	12500	6000.0	20000	ng/kg	9580	0.0	130	67-138		30	
HFPO-DA	13000	20000.0	50000	ng/kg	10000	0.0	130	52-151		30	
N-ETFOSA	13200	8000.0	20000	ng/kg	10000	0.0	132	59-147		30	
N-ETFOSAA	12100	8000.0	20000	ng/kg	10000	0.0	121	61-135		30	
N-ETFOSE	6800	8000.0	20000	ng/kg	10000	0.0	68.0	27-163		30	
N-MEFOSA	11400	8000.0	20000	ng/kg	10000	0.0	114	35-157		30	
N-MEFOSAA	13800	8000.0	20000	ng/kg	10000	0.0	138	65-136		30	*
N-MEFOSE	12400	8000.0	20000	ng/kg	10000	0.0	124	56-151		30	
PFBA	12500	2000.0	10000	ng/kg	10000	0.0	125	73-129		30	
PFBS	11000	2000.0	10000	ng/kg	8850	0.0	124	68-141		30	
PFDA	12600	3000.0	10000	ng/kg	10000	0.0	126	71-129		30	
PFDOA	11600	3000.0	10000	ng/kg	10000	0.0	116	72-134		30	
PFDS	11800	8000.0	20000	ng/kg	9630	0.0	123	53-142		30	

City of Springfield
218 E. Central
Springfield, MO 65802

Project Number: PFAS

Reported:

01/24/2022 13:43

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: 269774C - PFAS IN BIO-SOLIDS (Continued)											
LCS (BA42603-LCS-2)						Prepared: 10/12/21 Analyzed: 10/28/21					
PFHPA	13100	2000.0	10000	ng/kg	10000	0.0	131	72-130	30		*
PFHPS	11400	6000.0	20000	ng/kg	9510	0.0	120	69-134	30		
PFHXA	11900	4000.0	10000	ng/kg	10000	0.0	119	72-129	30		
PFHXS	11300	6000.0	20000	ng/kg	9110	0.0	124	68-131	30		
PFNA	13300	2000.0	10000	ng/kg	10000	0.0	133	69-130	30		*
PFNS	11500	10000.0	50000	ng/kg	9600	0.0	120	69-127	30		
PFOA	12400	3000.0	10000	ng/kg	10000	0.0	124	71-133	30		
PFOS	10000	4000.0	20000	ng/kg	9270	0.0	108	65-140	30		
PFOSA	13000	2000.0	10000	ng/kg	10000	0.0	130	67-137	30		
PFPEA	11900	3000.0	10000	ng/kg	10000	0.0	119	72-129	30		
PFPEA	12500	4000.0	20000	ng/kg	9380	0.0	133	71-127	30		*
PFTEDA	12200	8000.0	20000	ng/kg	10000	0.0	122	71-132	30		
PFTRDA	12300	2000.0	10000	ng/kg	10000	0.0	123	65-144	30		
PFUDA	12100	2000.0	10000	ng/kg	10000	0.0	121	69-133	30		
<i>Surrogate(s)</i>											
13C2-4:2FTS	101			ng/kg	100	0.0	101	50-150			
13C2-6:2FTS	105			ng/kg	100	0.0	105	50-150			
13C2-8:2FTS	106			ng/kg	100	0.0	106	50-150			
13C2D4-6:2FTS	98.0			ng/kg	100	0.0	98.0	50-150			
13C2-PFDOA	106			ng/kg	100	0.0	106	50-150			
13C2-PFTEDA	109			ng/kg	100	0.0	109	50-150			
13C3-HFPO-DA	111			ng/kg	100	0.0	111	50-150			
13C3-PFBS	115			ng/kg	100	0.0	115	50-150			
13C3-PFHXS	106			ng/kg	100	0.0	106	50-150			
13C4-PFBA	110			ng/kg	100	0.0	110	50-150			
13C4-PFHPA	101			ng/kg	100	0.0	101	50-150			
13C5-PFHXA	113			ng/kg	100	0.0	113	50-150			
13C5-PFPEA	116			ng/kg	100	0.0	116	50-150			
13C6-PFDA	97.1			ng/kg	100	0.0	97.1	50-150			
13C7-PFUDA	107			ng/kg	100	0.0	107	50-150			
13C8-PFOA	106			ng/kg	100	0.0	106	50-150			
13C8-PFOS	117			ng/kg	100	0.0	117	50-150			
13C8-PFOSA	107			ng/kg	100	0.0	107	50-150			
13C9-PFNA	96.1			ng/kg	100	0.0	96.1	50-150			
D3-NMEFOSA	106			ng/kg	100	0.0	106	50-150			
D3-NMEFOSAA	115			ng/kg	100	0.0	115	50-150			
D5-NETFOSA	106			ng/kg	100	0.0	106	50-150			
D5-NETFOSAA	105			ng/kg	100	0.0	105	50-150			
D7-NMEFOSE	104			ng/kg	100	0.0	104	50-150			

City of Springfield
218 E. Central
Springfield, MO 65802

Project Number: PFAS
Project Manager: Todd Cox

Reported:
01/24/2022 13:43

Quality Control Results

(Continued)

B-15BS (Continued)

Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	Limits	RPD	RPD Limit	Qualifier
Batch: 269774C - PFAS IN BIO-SOLIDS (Continued)											
LCS (BA42603-LCS-2)						Prepared: 10/12/21 Analyzed: 10/28/21					
<i>Surrogate(s)</i>											
D9-NETFOSE	115			ng/kg	100	0.0	115	50-150			
LCS Dup (BA42603-LCSD-1)						Prepared: 10/12/21 Analyzed: 10/28/21					
11-CL-PF3OUDS	12400	20000.0	50000	ng/kg	9430	0.0	131	73-132	1.6	30	
9-CL-PF3ONS	12000	20000.0	50000	ng/kg	9330	0.0	129	68-139	4.1	30	
ADONA	12800	20000.0	50000	ng/kg	9450	0.0	135	59-153	4.8	30	
FTS 4:2	11700	8000.0	20000	ng/kg	9350	0.0	125	63-143	4.2	30	
FTS 6:2	10900	8000.0	20000	ng/kg	9490	0.0	115	64-140	7.9	30	
FTS 8:2	12300	6000.0	20000	ng/kg	9580	0.0	128	67-138	1.6	30	
HFPO-DA	12600	20000.0	50000	ng/kg	10000	0.0	126	52-151	3.1	30	
N-ETFOSA	12900	8000.0	20000	ng/kg	10000	0.0	129	59-147	2.3	30	
N-ETFOSAA	11900	8000.0	20000	ng/kg	10000	0.0	119	61-135	1.7	30	
N-ETFOSE	6700	8000.0	20000	ng/kg	10000	0.0	67.0	27-163	1.5	30	
N-MEFOSA	10400	8000.0	20000	ng/kg	10000	0.0	104	35-157	9.2	30	
N-MEFOSAA	13400	8000.0	20000	ng/kg	10000	0.0	134	65-136	2.9	30	
N-MEFOSE	11900	8000.0	20000	ng/kg	10000	0.0	119	56-151	4.1	30	
PFBA	11800	2000.0	10000	ng/kg	10000	0.0	118	73-129	5.8	30	
PFBS	10700	2000.0	10000	ng/kg	8850	0.0	121	68-141	2.8	30	
PFDA	12500	3000.0	10000	ng/kg	10000	0.0	125	71-129	0.80	30	
PFDOA	11700	3000.0	10000	ng/kg	10000	0.0	117	72-134	0.86	30	
PFDS	12100	8000.0	20000	ng/kg	9630	0.0	126	53-142	2.5	30	
PFHPA	11700	2000.0	10000	ng/kg	10000	0.0	117	72-130	11.3	30	
PFHPS	11900	6000.0	20000	ng/kg	9510	0.0	125	69-134	4.3	30	
PFHXA	12600	4000.0	10000	ng/kg	10000	0.0	126	72-129	5.7	30	
PFHXS	11800	6000.0	20000	ng/kg	9110	0.0	130	68-131	4.3	30	
PFNA	12300	2000.0	10000	ng/kg	10000	0.0	123	69-130	7.8	30	
PFNS	11600	10000.0	50000	ng/kg	9600	0.0	121	69-127	0.87	30	
PFOA	12900	3000.0	10000	ng/kg	10000	0.0	129	71-133	4.0	30	
PFOS	10300	4000.0	20000	ng/kg	9270	0.0	111	65-140	3.0	30	
PFOSA	12100	2000.0	10000	ng/kg	10000	0.0	121	67-137	7.2	30	
PFPEA	12500	3000.0	10000	ng/kg	10000	0.0	125	72-129	4.9	30	
PFPEs	11700	4000.0	20000	ng/kg	9380	0.0	125	71-127	6.6	30	
PFTEDA	13200	8000.0	20000	ng/kg	10000	0.0	132	71-132	7.9	30	
PFTRDA	11500	2000.0	10000	ng/kg	10000	0.0	115	65-144	6.7	30	
PFUDA	12100	2000.0	10000	ng/kg	10000	0.0	121	69-133	0.0	30	
<i>Surrogate(s)</i>											
13C2-4:2FTS	104			ng/kg	100	0.0	104	50-150			
13C2-6:2FTS	110			ng/kg	100	0.0	110	50-150			
13C2-8:2FTS	119			ng/kg	100	0.0	119	50-150			

City of Springfield
218 E. Central
Springfield, MO 65802

Project Number: PFAS

Project Manager: Todd Cox

Reported:
01/24/2022 13:43

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: 269774C - PFAS IN BIO-SOLIDS (Continued)

LCS Dup (BA42603-LCSD-1)

Prepared: 10/12/21 Analyzed: 10/28/21

Surrogate(s)	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	Limits	RPD	RPD Limit	Qualifier
13C2D4-6:2FTS	102			ng/kg	100	0.0	102	50-150			
13C2-PFDOA	112			ng/kg	100	0.0	112	50-150			
13C2-PFTEDA	111			ng/kg	100	0.0	111	50-150			
13C3-HFPO-DA	112			ng/kg	100	0.0	112	50-150			
13C3-PFBS	120			ng/kg	100	0.0	120	50-150			
13C3-PFHXS	111			ng/kg	100	0.0	111	50-150			
13C4-PFBA	117			ng/kg	100	0.0	117	50-150			
13C4-PFHFA	120			ng/kg	100	0.0	120	50-150			
13C5-PFHXA	110			ng/kg	100	0.0	110	50-150			
13C5-PFPEA	121			ng/kg	100	0.0	121	50-150			
13C6-PFDA	101			ng/kg	100	0.0	101	50-150			
13C7-PFUDA	111			ng/kg	100	0.0	111	50-150			
13C8-PFOA	103			ng/kg	100	0.0	103	50-150			
13C8-PFOS	120			ng/kg	100	0.0	120	50-150			
13C8-PFOSA	120			ng/kg	100	0.0	120	50-150			
13C9-PFNA	103			ng/kg	100	0.0	103	50-150			
D3-NMEFOSA	111			ng/kg	100	0.0	111	50-150			
D3-NMEFOSAA	115			ng/kg	100	0.0	115	50-150			
D5-NETFOSA	110			ng/kg	100	0.0	110	50-150			
D5-NETFOSAA	116			ng/kg	100	0.0	116	50-150			
D7-NMEFOSE	107			ng/kg	100	0.0	107	50-150			
D9-NETFOSSE	111			ng/kg	100	0.0	111	50-150			

City of Springfield
218 E. Central
Springfield, MO 65802

Project Number: PFAS

Project Manager: Todd Cox

Reported:
01/24/2022 13:43

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: W1J1047 - EPA 537M										
Blank (W1J1047-BLK1)										
Prepared: 10/18/21 Analyzed: 10/27/21										
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							A-01f
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							A-01f
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							
PFOUnA	ND	1.0	ng/l							
LCS (W1J1047-BS1)										
Prepared: 10/18/21 Analyzed: 10/27/21										
11CI-PF3OUdS	1.89	2.0	ng/l	2.00		94	70-130			
4:2 FTS	2.00	1.0	ng/l	2.00		100	63-143			
6:2 FTS	1.91	1.0	ng/l	2.00		95	64-140			A-01b
8:2 FTS	1.96	1.0	ng/l	2.00		98	67-138			
9CI-PF3ONS	1.77	1.0	ng/l	2.00		88	70-130			
ADONA	1.79	1.0	ng/l	2.00		89	70-130			

City of Springfield
218 E. Central
Springfield, MO 65802

Project Number: PFAS
Project Manager: Todd Cox

Reported:
01/24/2022 13:43

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: W1J1047 - EPA 537M (Continued)										
LCS (W1J1047-BS1)										
				Prepared: 10/18/21 Analyzed: 10/27/21						
EtFOSA	4.20	2.0	ng/l	4.00		105	70-130			A-01g
EtFOSAA	1.93	2.0	ng/l	2.00		96	61-135			
EtFOSE	3.64	1.0	ng/l	4.00		91	70-130			
FOSA	1.95	1.0	ng/l	2.00		97	67-137			
HFPO-DA	1.80	1.0	ng/l	2.00		90	70-130			
MeFOSA	3.52	2.0	ng/l	4.00		88	68-141			A-01g
MeFOSAA	1.42	1.0	ng/l	2.00		71	65-136			
MeFOSE	4.05	2.0	ng/l	4.00		101	70-130			
Perfluorooctanoic acid (PFOA)	1.83	1.0	ng/l	2.00		91	71-133			
PFBA	2.03	1.0	ng/l	2.00		101	73-129			
PFBS	1.92	1.0	ng/l	2.00		96	72-130			
PFDA	1.85	1.0	ng/l	2.00		92	71-129			
PFDoA	1.89	1.0	ng/l	2.00		94	72-134			
PFDS	1.75	1.0	ng/l	2.00		87	53-142			
PFHpA	1.99	4.0	ng/l	2.00		99	72-130			
PFHpS	1.74	1.0	ng/l	2.00		87	69-134			
PFHxA	1.89	2.0	ng/l	2.00		95	72-129			
PFHxS	1.95	1.0	ng/l	2.00		97	68-131			
PFNA	1.91	1.0	ng/l	2.00		95	69-130			
PFNS	1.81	1.0	ng/l	2.00		91	69-127			
PFOS	1.67	2.0	ng/l	2.00		83	65-140			
PFPeA	1.86	1.0	ng/l	2.00		93	72-129			
PFPeS	1.78	1.0	ng/l	2.00		89	71-127			
PFTeDA	2.00	2.0	ng/l	2.00		100	71-132			
PFTTrDA	1.94	1.0	ng/l	2.00		97	65-144			
PFUnA	1.97	1.0	ng/l	2.00		98	69-133			
LCS Dup (W1J1047-BSD1)										
				Prepared: 10/18/21 Analyzed: 10/27/21						
11Cl-PF3OUdS	1.93	2.0	ng/l	2.00		96	70-130	2	30	
4:2 FTS	2.05	1.0	ng/l	2.00		102	63-143	3	30	
6:2 FTS	1.91	1.0	ng/l	2.00		95	64-140	0.2	30	A-01b
8:2 FTS	2.04	1.0	ng/l	2.00		102	67-138	4	30	
9Cl-PF3ONS	1.98	1.0	ng/l	2.00		99	70-130	11	30	
ADONA	1.82	1.0	ng/l	2.00		91	70-130	2	30	
EtFOSA	3.53	2.0	ng/l	4.00		88	70-130	17	30	A-01g
EtFOSAA	1.92	2.0	ng/l	2.00		96	61-135	0.2	30	
EtFOSE	3.87	1.0	ng/l	4.00		97	70-130	6	30	
FOSA	2.06	1.0	ng/l	2.00		103	67-137	5	30	
HFPO-DA	1.77	1.0	ng/l	2.00		88	70-130	2	30	
MeFOSA	3.73	2.0	ng/l	4.00		93	68-141	6	30	

City of Springfield
218 E. Central
Springfield, MO 65802

Project Number: PFAS

Project Manager: Todd Cox

Reported:
01/24/2022 13:43

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: W1J1047 - EPA 537M (Continued)										
LCS Dup (W1J1047-BSD1)										
				Prepared: 10/18/21 Analyzed: 10/27/21						
MeFOSAA	0.896	1.0	ng/l	2.00		45	65-136	45	30	A-01c, BS-04
MeFOSE	3.39	2.0	ng/l	4.00		85	70-130	18	30	
Perfluorooctanoic acid (PFOA)	1.94	1.0	ng/l	2.00		97	71-133	6	30	
PFBA	2.12	1.0	ng/l	2.00		106	73-129	4	30	
PFBS	1.97	1.0	ng/l	2.00		98	72-130	3	30	
PFDA	1.99	1.0	ng/l	2.00		99	71-129	7	30	
PFDoA	1.93	1.0	ng/l	2.00		96	72-134	2	30	
PFDS	1.80	1.0	ng/l	2.00		90	53-142	3	30	
PFHpA	2.07	4.0	ng/l	2.00		103	72-130	4	30	
PFHpS	1.91	1.0	ng/l	2.00		95	69-134	9	30	
PFHxA	2.00	2.0	ng/l	2.00		100	72-129	5	30	
PFHxS	1.98	1.0	ng/l	2.00		99	68-131	2	30	
PFNA	1.93	1.0	ng/l	2.00		97	69-130	1	30	
PFNS	2.03	1.0	ng/l	2.00		101	69-127	11	30	
PFOS	1.73	2.0	ng/l	2.00		86	65-140	4	30	
PFPeA	1.94	1.0	ng/l	2.00		97	72-129	4	30	
PFPeS	1.96	1.0	ng/l	2.00		98	71-127	9	30	
PFTeDA	2.08	2.0	ng/l	2.00		104	71-132	4	30	
PFTrDA	1.93	1.0	ng/l	2.00		96	65-144	0.5	30	
PFUnA	2.00	1.0	ng/l	2.00		100	69-133	1	30	
Batch: W1J1522 - EPA 537M										
Blank (W1J1522-BLK1)										
				Prepared: 10/22/21 Analyzed: 10/28/21						
11CI-PF3OUdS	ND	2.0	ng/l							
4:2 FTS	ND	1.0	ng/l							
6:2 FTS	ND	1.0	ng/l							A-01a
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							A-01f
EtFOSAA	ND	2.0	ng/l							
EtFOSE	ND	1.0	ng/l							A-01f
FOSA	ND	1.0	ng/l							
HFPO-DA	ND	1.0	ng/l							
MeFOSA	ND	2.0	ng/l							A-01f
MeFOSAA	ND	1.0	ng/l							
MeFOSE	ND	2.0	ng/l							A-01f
Perfluorooctanoic acid (PFOA)	ND	1.0	ng/l							
PFBA	ND	1.0	ng/l							A-01j

City of Springfield
218 E. Central
Springfield, MO 65802

Project Number: PFAS
Project Manager: Todd Cox

Reported:
01/24/2022 13:43

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: W1J1522 - EPA 537M (Continued)										
Blank (W1J1522-BLK1)										
				Prepared: 10/22/21 Analyzed: 10/28/21						
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							A-01f
PFTrDA	ND	1.0	ng/l							
PFUnA	ND	1.0	ng/l							
LCS (W1J1522-BS1)										
				Prepared: 10/22/21 Analyzed: 10/28/21						
11CI-PF3OUdS	1.96	2.0	ng/l	2.00		98	70-130			
4:2 FTS	2.11	1.0	ng/l	2.00		105	63-143			
6:2 FTS	1.99	1.0	ng/l	2.00		99	64-140			A-01
8:2 FTS	1.81	1.0	ng/l	2.00		90	67-138			
9CI-PF3ONS	1.78	1.0	ng/l	2.00		89	70-130			
ADONA	1.83	1.0	ng/l	2.00		91	70-130			
EtFOSA	3.81	2.0	ng/l	4.00		95	70-130			A-01d
EtFOSAA	1.49	2.0	ng/l	2.00		75	61-135			
EtFOSE	3.92	1.0	ng/l	4.00		98	70-130			
FOSA	2.03	1.0	ng/l	2.00		101	67-137			
HFPO-DA	1.99	1.0	ng/l	2.00		99	70-130			
MeFOSA	3.49	2.0	ng/l	4.00		87	68-141			A-01e
MeFOSAA	2.25	1.0	ng/l	2.00		112	65-136			
MeFOSE	4.05	2.0	ng/l	4.00		101	70-130			
Perfluorooctanoic acid (PFOA)	1.98	1.0	ng/l	2.00		99	71-133			
PFBA	3.09	1.0	ng/l	2.00		154	73-129			A-01j, BS-H
PFBS	1.98	1.0	ng/l	2.00		99	72-130			
PFDA	1.89	1.0	ng/l	2.00		94	71-129			
PFDoA	1.97	1.0	ng/l	2.00		98	72-134			
PFDS	1.87	1.0	ng/l	2.00		93	53-142			
PFHpA	2.05	4.0	ng/l	2.00		102	72-130			

City of Springfield
218 E. Central
Springfield, MO 65802

Project Number: PFAS

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Reported:
01/24/2022 13:43

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: W1J1522 - EPA 537M (Continued)									
LCS (W1J1522-BS1)				Prepared: 10/22/21 Analyzed: 10/28/21					
PFHpS	1.80	1.0	ng/l	2.00	90	69-134			
PFHxA	1.94	2.0	ng/l	2.00	97	72-129			
PFHxS	1.93	1.0	ng/l	2.00	96	68-131			
PFNA	1.87	1.0	ng/l	2.00	93	69-130			
PFNS	1.92	1.0	ng/l	2.00	96	69-127			
PFOS	1.97	2.0	ng/l	2.00	98	65-140			
PFPeA	1.89	1.0	ng/l	2.00	94	72-129			
PFPeS	1.84	1.0	ng/l	2.00	92	71-127			
PFTeDA	2.30	2.0	ng/l	2.00	115	71-132			
PFTrDA	1.83	1.0	ng/l	2.00	91	65-144			
PFUnA	1.95	1.0	ng/l	2.00	98	69-133			
LCS (W1J1522-BS2)				Prepared: 10/22/21 Analyzed: 10/28/21					
11CI-PF3OUdS	0.998	2.0	ng/l	1.00	100	70-130			
4:2 FTS	1.05	1.0	ng/l	1.00	105	63-143			
6:2 FTS	1.01	1.0	ng/l	1.00	101	64-140			A-01
8:2 FTS	1.15	1.0	ng/l	1.00	115	67-138			
9CI-PF3ONS	0.961	1.0	ng/l	1.00	96	70-130			
ADONA	0.956	1.0	ng/l	1.00	95	70-130			
EtFOSA	2.00	2.0	ng/l	2.00	100	70-130			A-01d
EtFOSAA	0.808	2.0	ng/l	1.00	81	61-135			
EtFOSE	1.61	1.0	ng/l	2.00	81	70-130			A-01d
FOSA	0.980	1.0	ng/l	1.00	98	67-137			
HFPO-DA	1.02	1.0	ng/l	1.00	102	70-130			
MeFOSA	1.96	2.0	ng/l	2.00	98	68-141			A-01e
MeFOSAA	1.11	1.0	ng/l	1.00	111	65-136			
MeFOSE	2.12	2.0	ng/l	2.00	106	70-130			A-01d
Perfluorooctanoic acid (PFOA)	1.03	1.0	ng/l	1.00	102	71-133			
PFBA	1.92	1.0	ng/l	1.00	192	73-129			A-01j, BS-H
PFBS	1.05	1.0	ng/l	1.00	105	72-130			
PFDA	1.03	1.0	ng/l	1.00	103	71-129			
PFDoA	1.01	1.0	ng/l	1.00	101	72-134			
PFDS	1.00	1.0	ng/l	1.00	100	53-142			
PFHpA	1.13	4.0	ng/l	1.00	113	72-130			
PFHpS	0.966	1.0	ng/l	1.00	96	69-134			
PFHxA	1.00	2.0	ng/l	1.00	100	72-129			
PFHxS	1.00	1.0	ng/l	1.00	100	68-131			
PFNA	1.00	1.0	ng/l	1.00	100	69-130			
PFNS	0.919	1.0	ng/l	1.00	92	69-127			

City of Springfield
218 E. Central
Springfield, MO 65802

Project Number: PFAS

Reported:

01/24/2022 13:43

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: W1J1522 - EPA 537M (Continued)										
LCS (W1J1522-BS2)				Prepared: 10/22/21 Analyzed: 10/28/21						
PFOS	1.08	2.0	ng/l	1.00		107	65-140			
PFPeA	0.976	1.0	ng/l	1.00		97	72-129			
PFPeS	0.983	1.0	ng/l	1.00		98	71-127			
PFTeDA	1.12	2.0	ng/l	1.00		112	71-132			
PFTrDA	0.937	1.0	ng/l	1.00		94	65-144			
PFUnA	1.02	1.0	ng/l	1.00		102	69-133			
Batch: W1J1597 - EPA 537M										
Blank (W1J1597-BLK1)				Prepared: 10/25/21 Analyzed: 10/28/21						
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							A-01f
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							A-01f
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							

City of Springfield
218 E. Central
Springfield, MO 65802

Project Number: PFAS
Project Manager: Todd Cox

Reported:
01/24/2022 13:43

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: W1J1597 - EPA 537M (Continued)										
Blank (W1J1597-BLK1)										
PFUnA	ND	1.0	ng/l							
LCS (W1J1597-BS1)										
Prepared: 10/25/21 Analyzed: 10/28/21										
11Cl-PF3OUdS	1.76	2.0	ng/l	2.00		88	70-130			
4:2 FTS	1.86	1.0	ng/l	2.00		93	63-143			
6:2 FTS	1.87	1.0	ng/l	2.00		93	64-140			
8:2 FTS	1.81	1.0	ng/l	2.00		91	67-138			
9Cl-PF3ONS	1.80	1.0	ng/l	2.00		90	70-130			
ADONA	1.69	1.0	ng/l	2.00		84	70-130			
EtFOSA	3.83	2.0	ng/l	4.00		96	70-130			A-01i
EtFOSAA	1.87	2.0	ng/l	2.00		93	61-135			
EtFOSE	3.63	1.0	ng/l	4.00		91	70-130			
FOSA	1.87	1.0	ng/l	2.00		93	67-137			
HFPO-DA	1.70	1.0	ng/l	2.00		85	70-130			
MeFOSA	4.01	2.0	ng/l	4.00		100	68-141			A-01h
MeFOSAA	1.84	1.0	ng/l	2.00		92	65-136			
MeFOSE	3.40	2.0	ng/l	4.00		85	70-130			
Perfluorooctanoic acid (PFOA)	1.84	1.0	ng/l	2.00		92	71-133			
PFBA	2.07	1.0	ng/l	2.00		103	73-129			
PFBS	1.86	1.0	ng/l	2.00		93	72-130			
PFDA	1.85	1.0	ng/l	2.00		92	71-129			
PFDoA	1.88	1.0	ng/l	2.00		94	72-134			
PFDS	1.77	1.0	ng/l	2.00		88	53-142			
PFHpA	1.92	4.0	ng/l	2.00		96	72-130			
PFHpS	1.79	1.0	ng/l	2.00		89	69-134			
PFHxA	1.81	2.0	ng/l	2.00		90	72-129			
PFHxS	1.82	1.0	ng/l	2.00		91	68-131			
PFNA	1.83	1.0	ng/l	2.00		91	69-130			
PFNS	1.99	1.0	ng/l	2.00		99	69-127			
PFOS	2.03	2.0	ng/l	2.00		101	65-140			
PFPeA	1.81	1.0	ng/l	2.00		90	72-129			
PFPeS	1.83	1.0	ng/l	2.00		91	71-127			
PFTeDA	1.93	2.0	ng/l	2.00		96	71-132			
PFTrDA	1.86	1.0	ng/l	2.00		93	65-144			
PFUnA	1.90	1.0	ng/l	2.00		95	69-133			
LCS Dup (W1J1597-BS1)										
Prepared: 10/25/21 Analyzed: 10/28/21										
11Cl-PF3OUdS	1.65	2.0	ng/l	2.00		82	70-130	7	30	
4:2 FTS	2.06	1.0	ng/l	2.00		103	63-143	10	30	
6:2 FTS	1.82	1.0	ng/l	2.00		91	64-140	3	30	
8:2 FTS	1.84	1.0	ng/l	2.00		92	67-138	1	30	

City of Springfield
218 E. Central
Springfield, MO 65802

Project Number: PFAS

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Reported:
01/24/2022 13:43

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: W1J1597 - EPA 537M (Continued)										
LCS Dup (W1J1597-BSD1)										
				Prepared: 10/25/21 Analyzed: 10/28/21						
9CI-PF3ONS	1.68	1.0	ng/l	2.00		84	70-130	7	30	
ADONA	1.72	1.0	ng/l	2.00		86	70-130	2	30	
EtFOSA	4.57	2.0	ng/l	4.00		114	70-130	18	30	A-01i
EtFOSAA	1.80	2.0	ng/l	2.00		90	61-135	4	30	
EtFOSE	2.52	1.0	ng/l	4.00		63	70-130	36	30	A-01j, BS-04
FOSA	1.77	1.0	ng/l	2.00		88	67-137	6	30	A-01h
HFPO-DA	1.75	1.0	ng/l	2.00		87	70-130	3	30	
MeFOSA	2.83	2.0	ng/l	4.00		71	68-141	35	30	A-01h, Q-12
MeFOSAA	1.93	1.0	ng/l	2.00		96	65-136	5	30	
MeFOSE	3.93	2.0	ng/l	4.00		98	70-130	14	30	A-01h
Perfluorooctanoic acid (PFOA)	1.81	1.0	ng/l	2.00		91	71-133	1	30	
PFBA	2.07	1.0	ng/l	2.00		103	73-129	0	30	
PFBS	1.90	1.0	ng/l	2.00		95	72-130	2	30	
PFDA	1.82	1.0	ng/l	2.00		91	71-129	2	30	
PFDoA	1.74	1.0	ng/l	2.00		87	72-134	7	30	
PFDS	1.73	1.0	ng/l	2.00		86	53-142	2	30	
PFHpA	1.93	4.0	ng/l	2.00		96	72-130	0.6	30	
PFHpS	1.72	1.0	ng/l	2.00		86	69-134	4	30	
PFHxA	1.83	2.0	ng/l	2.00		91	72-129	1	30	
PFHxS	1.93	1.0	ng/l	2.00		96	68-131	6	30	
PFNA	1.78	1.0	ng/l	2.00		89	69-130	2	30	
PFNS	1.63	1.0	ng/l	2.00		81	69-127	20	30	
PFOS	2.05	2.0	ng/l	2.00		102	65-140	1	30	
PFPeA	1.81	1.0	ng/l	2.00		90	72-129	0	30	
PFPeS	1.89	1.0	ng/l	2.00		94	71-127	3	30	
PFTeDA	1.89	2.0	ng/l	2.00		94	71-132	2	30	
PFTTrDA	1.76	1.0	ng/l	2.00		88	65-144	5	30	
PFUnA	1.88	1.0	ng/l	2.00		94	69-133	0.9	30	

City of Springfield
218 E. Central
Springfield, MO 65802

Project Number: PFAS
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Reported:
01/24/2022 13:43

Notes and Definitions

Item	Definition
*	Recovery or RPD outside control limits
A-01	IS has high recovery, analytes passes recovery.
A-01a	IS has high recovery, sample is ND.
A-01b	IS has high recovery, target is passing.
A-01c	IS has high recovery.
A-01d	IS has low recovery, analyte passes recovery.
A-01e	IS has low recovery, analytes passes recovery.
A-01f	IS has low recovery, sample is ND.
A-01g	IS has low recovery, target is passing.
A-01h	IS has low recovery, target passes criteria.
A-01i	IS has low recovery, target passes recovery.
A-01j	IS has low recovery.
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.
E-01	The concentration indicated for this analyte is an estimated value above the calibration range.
I	Internal Standard outside of acceptance limit due to possible matrix effects
I-05	Low internal standard recovery possibly due to matrix interference. The result is suspect.
J	Estimated value
M-08	Incomplete sample loading during extraction due to sample matrix
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 MDL and/or MRL 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.