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ANALYTICAL REPORT

Eurofins TestAmerica, Michigan
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Laboratory Job ID: 190-25619-1
Client Project/Site: Bronson WWTP/City of Bronson PFAS

For:
City of Bronson
141 S Matteson Street
Bronson, Michigan 49028

Attn: Brandon Mersman

Sue Schafer

Authorized for release by:
4/23/2021 11:45:37 AM

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Sample Summary

Client: City of Bronson
Project/Site: Bronson WWTP/City of Bronson PFAS

Job ID: 190-25619-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
190-25619-1	FINAL EFFLUENT	Water	04/05/21 01:30	04/07/21 08:00	
190-25619-2	STORAGE DIGESTOR BIOSOLIDS	Solid	04/05/21 01:45	04/07/21 08:00	

Case Narrative

Client: City of Bronson
Job ID: 190-25619-1
Project/Site: Bronson WWTP/City of Bronson PFAS

Job ID: 190-25619-1

Laboratory: Eurofins TestAmerica, Michigan

Narrative

Job Narrative
190-25619-1

Comments
No additional comments.

Receipt
The samples were received on 4/7/2021 8:00 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 2.1º C.

LCMS
Method 537 (modified): The laboratory control sample (LCS) for preparation batch 320-478860 recovered outside control limits for the following analytes: Perfluoropentanesulfonic acid (PFPeS), 8:2 FTS, Perfluorotridecanoic acid and Perfluoroundecanoic acid. These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data have been reported.

Method 537 (modified): The laboratory control sample duplicate (LCSD) for preparation batch 320-478077 and analytical batch 320-479651 recovered outside control limits for the following analytes: N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA) and Perfluorohexanesulfonic acid (PFHxS) These analytes were biased high in the LCSD and were not detected in the associated samples; therefore, the data have been reported.

Method 537 (modified): The RPD of the laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) for preparation batch 320-478077 and analytical batch 320-479651 recovered outside control limits for the following analyte: N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA).

Method 537 (modified): The Isotope Dilution Analyte (IDA) recovery associated with the following sample is below the method recommended limit for 13C2 PFTeDA: STORAGE DIGESTOR BIOSOLIDS (190-25619-2). Generally, data quality is not considered affected if the IDA signal-to-noise ratio is greater than 10:1, which is achieved for all IDA in the sample.

Method 537 (modified): The “I” qualifier means the transition mass ratio for the indicated analyte was outside of the established ratio limits. The qualitative identification of the analyte has some degree of uncertainty, and the reported value may have some high bias. However, analyst judgement was used to positively identify the analyte.
STORAGE DIGESTOR BIOSOLIDS (190-25619-2)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Organic Prep
Method 3535: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 320-478077.

320-478077
Method: 3535 PFC-W

Method 3535: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 320-481959.

3535 PFC
aqueous
320-481959

Method 3535: The following sample was cloudy prior to extraction:

Job ID: 190-25619-1 (Continued)

Laboratory: Eurofins TestAmerica, Michigan (Continued)

FINAL EFFLUENT (190-25619-1)

3535 PFC
aqueous
320-481959

Method 3535: The following samples was re-prepared outside of preparation holding time due to low IDA recoveries: FINAL EFFLUENT (190-25619-1).

3535 PFC
aqueous
320-481959

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Client Sample ID: FINAL EFFLUENT

Date Collected: 04/05/21 01:30
Date Received: 04/07/21 08:00

Lab Sample ID: 190-25619-1

Matrix: Water

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
4:2 FTS	<1.9		1.9		ng/L		04/09/21 04:50	04/14/21 20:02	1
6:2 FTS	<4.7		4.7		ng/L		04/09/21 04:50	04/14/21 20:02	1
8:2 FTS	<1.9		1.9		ng/L		04/09/21 04:50	04/14/21 20:02	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<4.7	*1	4.7		ng/L		04/09/21 04:50	04/14/21 20:02	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<4.7		4.7		ng/L		04/09/21 04:50	04/14/21 20:02	1
Perfluorobutanesulfonic acid (PFBS)	**2.2**		1.9		ng/L		04/09/21 04:50	04/14/21 20:02	1
Perfluorobutanoic acid (PFBA)	<4.7		4.7		ng/L		04/09/21 04:50	04/14/21 20:02	1
Perfluorodecanesulfonic acid (PFDS)	<1.9		1.9		ng/L		04/09/21 04:50	04/14/21 20:02	1
Perfluorodecanoic acid (PFDA)	<1.9		1.9		ng/L		04/09/21 04:50	04/14/21 20:02	1
Perfluorododecanoic acid (PFDoA)	<1.9		1.9		ng/L		04/09/21 04:50	04/14/21 20:02	1
Perfluoroheptanesulfonic Acid (PFHpS)	<1.9		1.9		ng/L		04/09/21 04:50	04/14/21 20:02	1
Perfluoroheptanoic acid (PFHpA)	**3.3**		1.9		ng/L		04/09/21 04:50	04/14/21 20:02	1
Perfluorohexanesulfonic acid (PFHxS)	<1.9	*+	1.9		ng/L		04/09/21 04:50	04/14/21 20:02	1
Perfluorohexanoic acid (PFHxA)	**4.6**		1.9		ng/L		04/09/21 04:50	04/14/21 20:02	1
Perfluorononanesulfonic acid (PFNS)	<1.9		1.9		ng/L		04/09/21 04:50	04/14/21 20:02	1
Perfluorononanoic acid (PFNA)	<1.9		1.9		ng/L		04/09/21 04:50	04/14/21 20:02	1
Perfluorooctanesulfonamide (FOSA)	<1.9		1.9		ng/L		04/09/21 04:50	04/14/21 20:02	1
Perfluorooctanesulfonic acid (PFOS)	<1.9		1.9		ng/L		04/09/21 04:50	04/14/21 20:02	1
Perfluorooctanoic acid (PFOA)	**6.4**		1.9		ng/L		04/09/21 04:50	04/14/21 20:02	1
Perfluoropentanesulfonic acid (PFPeS)	<1.9		1.9		ng/L		04/09/21 04:50	04/14/21 20:02	1
Perfluoropentanoic acid (PFPeA)	**7.0**		1.9		ng/L		04/09/21 04:50	04/14/21 20:02	1
Perfluorotetradecanoic acid (PFTeA)	<1.9		1.9		ng/L		04/09/21 04:50	04/14/21 20:02	1
Perfluorotridecanoic acid (PFTriA)	<1.9		1.9		ng/L		04/09/21 04:50	04/14/21 20:02	1
Perfluoroundecanoic acid (PFUnA)	<1.9		1.9		ng/L		04/09/21 04:50	04/14/21 20:02	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C8 FOSA	*77*		*25 - 150*	*04/09/21 04:50*	*04/14/21 20:02*	*1*
13C4 PFBA	*58*		*25 - 150*	*04/09/21 04:50*	*04/14/21 20:02*	*1*
13C3 PFBS	*70*		*25 - 150*	*04/09/21 04:50*	*04/14/21 20:02*	*1*
13C2 PFDA	*93*		*25 - 150*	*04/09/21 04:50*	*04/14/21 20:02*	*1*
13C2 PFDoA	*89*		*25 - 150*	*04/09/21 04:50*	*04/14/21 20:02*	*1*
13C4 PFHpA	*75*		*25 - 150*	*04/09/21 04:50*	*04/14/21 20:02*	*1*
13C2 PFHxA	*83*		*25 - 150*	*04/09/21 04:50*	*04/14/21 20:02*	*1*
13C5 PFNA	*90*		*25 - 150*	*04/09/21 04:50*	*04/14/21 20:02*	*1*
13C4 PFOA	*90*		*25 - 150*	*04/09/21 04:50*	*04/14/21 20:02*	*1*
13C4 PFOS	*67*		*25 - 150*	*04/09/21 04:50*	*04/14/21 20:02*	*1*
13C5 PFPeA	*67*		*25 - 150*	*04/09/21 04:50*	*04/14/21 20:02*	*1*
13C2 PFTeDA	*103*		*25 - 150*	*04/09/21 04:50*	*04/14/21 20:02*	*1*
13C2 PFUnA	*79*		*25 - 150*	*04/09/21 04:50*	*04/14/21 20:02*	*1*
d5-NEtFOSAA	*83*		*25 - 150*	*04/09/21 04:50*	*04/14/21 20:02*	*1*
d3-NMeFOSAA	*85*		*25 - 150*	*04/09/21 04:50*	*04/14/21 20:02*	*1*
M2-4:2 FTS	*133*		*25 - 150*	*04/09/21 04:50*	*04/14/21 20:02*	*1*
M2-6:2 FTS	*125*		*25 - 150*	*04/09/21 04:50*	*04/14/21 20:02*	*1*
M2-8:2 FTS	*113*		*25 - 150*	*04/09/21 04:50*	*04/14/21 20:02*	*1*
18O2 PFHxS	*74*		*25 - 150*	*04/09/21 04:50*	*04/14/21 20:02*	*1*

Client Sample ID: STORAGE DIGESTOR BIOSOLIDS
Lab Sample ID: 190-25619-2
Date Collected: 04/05/21 01:45
Matrix: Solid
Date Received: 04/07/21 08:00
Percent Solids: 3.4

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
4:2 FTS	<56		56		ug/Kg	☼	04/13/21 04:28	04/20/21 10:38	1
6:2 FTS	<56		56		ug/Kg	☼	04/13/21 04:28	04/20/21 10:38	1
8:2 FTS	<56	*+	56		ug/Kg	☼	04/13/21 04:28	04/20/21 10:38	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<56		56		ug/Kg	☼	04/13/21 04:28	04/20/21 10:38	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<56		56		ug/Kg	☼	04/13/21 04:28	04/20/21 10:38	1
Perfluorobutanesulfonic acid (PFBS)	<5.6		5.6		ug/Kg	☼	04/13/21 04:28	04/20/21 10:38	1
Perfluorobutanoic acid (PFBA)	<5.6		5.6		ug/Kg	☼	04/13/21 04:28	04/20/21 10:38	1
Perfluorodecanesulfonic acid (PFDS)	<5.6		5.6		ug/Kg	☼	04/13/21 04:28	04/20/21 10:38	1
Perfluorodecanoic acid (PFDA)	**9.4**		5.6		ug/Kg	☼	04/13/21 04:28	04/20/21 10:38	1
Perfluorododecanoic acid (PFDoA)	<5.6		5.6		ug/Kg	☼	04/13/21 04:28	04/20/21 10:38	1
Perfluoroheptanesulfonic Acid (PFHpS)	<5.6		5.6		ug/Kg	☼	04/13/21 04:28	04/20/21 10:38	1
Perfluoroheptanoic acid (PFHpA)	<5.6		5.6		ug/Kg	☼	04/13/21 04:28	04/20/21 10:38	1
Perfluorohexanesulfonic acid (PFHxS)	<5.6		5.6		ug/Kg	☼	04/13/21 04:28	04/20/21 10:38	1
Perfluorohexanoic acid (PFHxA)	<5.6		5.6		ug/Kg	☼	04/13/21 04:28	04/20/21 10:38	1
Perfluorononanesulfonic acid (PFNS)	<5.6		5.6		ug/Kg	☼	04/13/21 04:28	04/20/21 10:38	1
Perfluorononanoic acid (PFNA)	<5.6		5.6		ug/Kg	☼	04/13/21 04:28	04/20/21 10:38	1
Perfluorooctanesulfonamide (FOSA)	<5.6		5.6		ug/Kg	☼	04/13/21 04:28	04/20/21 10:38	1
Perfluorooctanesulfonic acid (PFOS)	**35**	I	14		ug/Kg	☼	04/13/21 04:28	04/20/21 10:38	1
Perfluorooctanoic acid (PFOA)	<5.6		5.6		ug/Kg	☼	04/13/21 04:28	04/20/21 10:38	1
Perfluoropentanesulfonic acid (PFPeS)	<5.6	*+	5.6		ug/Kg	☼	04/13/21 04:28	04/20/21 10:38	1
Perfluoropentanoic acid (PFPeA)	<5.6		5.6		ug/Kg	☼	04/13/21 04:28	04/20/21 10:38	1
Perfluorotetradecanoic acid (PFTeA)	<5.6		5.6		ug/Kg	☼	04/13/21 04:28	04/20/21 10:38	1
Perfluorotridecanoic acid (PFTriA)	<5.6	*+	5.6		ug/Kg	☼	04/13/21 04:28	04/20/21 10:38	1
Perfluoroundecanoic acid (PFUnA)	<5.6	*+	5.6		ug/Kg	☼	04/13/21 04:28	04/20/21 10:38	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C8 FOSA	*78*		*25 - 150*	*04/13/21 04:28*	*04/20/21 10:38*	*1*
13C4 PFBA	*51*		*25 - 150*	*04/13/21 04:28*	*04/20/21 10:38*	*1*
13C3 PFBS	*80*		*25 - 150*	*04/13/21 04:28*	*04/20/21 10:38*	*1*
13C2 PFDA	*89*		*25 - 150*	*04/13/21 04:28*	*04/20/21 10:38*	*1*
13C2 PFDoA	*61*		*25 - 150*	*04/13/21 04:28*	*04/20/21 10:38*	*1*
13C4 PFHpA	*89*		*25 - 150*	*04/13/21 04:28*	*04/20/21 10:38*	*1*
13C2 PFHxA	*82*		*25 - 150*	*04/13/21 04:28*	*04/20/21 10:38*	*1*
13C5 PFNA	*95*		*25 - 150*	*04/13/21 04:28*	*04/20/21 10:38*	*1*
13C4 PFOA	*90*		*25 - 150*	*04/13/21 04:28*	*04/20/21 10:38*	*1*
13C4 PFOS	*95*		*25 - 150*	*04/13/21 04:28*	*04/20/21 10:38*	*1*
13C5 PFPeA	*70*		*25 - 150*	*04/13/21 04:28*	*04/20/21 10:38*	*1*
13C2 PFTeDA	*18*	*5-	*25 - 150*	*04/13/21 04:28*	*04/20/21 10:38*	*1*
13C2 PFUnA	*92*		*25 - 150*	*04/13/21 04:28*	*04/20/21 10:38*	*1*
d5-NEtFOSAA	*75*		*25 - 150*	*04/13/21 04:28*	*04/20/21 10:38*	*1*
d3-NMeFOSAA	*86*		*25 - 150*	*04/13/21 04:28*	*04/20/21 10:38*	*1*
M2-4:2 FTS	*82*		*25 - 150*	*04/13/21 04:28*	*04/20/21 10:38*	*1*
M2-6:2 FTS	*111*		*25 - 150*	*04/13/21 04:28*	*04/20/21 10:38*	*1*
M2-8:2 FTS	*137*		*25 - 150*	*04/13/21 04:28*	*04/20/21 10:38*	*1*
18O2 PFHxS	*98*		*25 - 150*	*04/13/21 04:28*	*04/20/21 10:38*	*1*

Client Sample Results

Client: City of Bronson
Job ID: 190-25619-1
Project/Site: Bronson WWTP/City of Bronson PFAS

Client Sample ID: STORAGE DIGESTOR BIOSOLIDS
Lab Sample ID: 190-25619-2
Date Collected: 04/05/21 01:45
Matrix: Solid
Date Received: 04/07/21 08:00
Percent Solids: 3.4

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	96.6		0.1		%			04/14/21 14:58	1
Percent Solids	3.4		0.1		%			04/14/21 14:58	1

Isotope Dilution Summary

Client: City of Bronson
Job ID: 190-25619-1
Project/Site: Bronson WWTP/City of Bronson PFAS

Method: 537 (modified) - Fluorinated Alkyl Substances

Matrix: Solid

Prep Type: Total/NA

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFOSA (25-150)	PFBA (25-150)	C3PFBS (25-150)	PFDA (25-150)	PFDoA (25-150)	C4PFHA (25-150)	PFHxA (25-150)	PFNA (25-150)
190-25619-2	STORAGE DIGESTOR BIOSOL	78	51	80	89	61	89	82	95
LCS 320-478860/2-A	Lab Control Sample	91	72	80	95	105	99	86	92
MB 320-478860/1-A	Method Blank	80	55	69	92	87	80	66	85

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFOA (25-150)	PFOS (25-150)	PFPeA (25-150)	PFTDA (25-150)	PFUnA (25-150)	d5NEFOS (25-150)	d3NMFOS (25-150)	M242FTS (25-150)
190-25619-2	STORAGE DIGESTOR BIOSOL	90	95	70	18 *5-	92	75	86	82
LCS 320-478860/2-A	Lab Control Sample	85	83	84	98	94	92	94	69
MB 320-478860/1-A	Method Blank	69	67	63	91	83	80	85	68

		Percent Isotope Dilution Recovery (Acceptance Limits)		
Lab Sample ID	Client Sample ID	M262FTS (25-150)	M282FTS (25-150)	PFHxS (25-150)
190-25619-2	STORAGE DIGESTOR BIOSOL	111	137	98
LCS 320-478860/2-A	Lab Control Sample	67	59	86
MB 320-478860/1-A	Method Blank	61	65	70

Surrogate Legend

PFOSA = 13C8 FOSA
PFBA = 13C4 PFBA
C3PFBS = 13C3 PFBS
PFDA = 13C2 PFDA
PFDoA = 13C2 PFDoA
C4PFHA = 13C4 PFHpA
PFHxA = 13C2 PFHxA
PFNA = 13C5 PFNA
PFOA = 13C4 PFOA
PFOS = 13C4 PFOS
PFPeA = 13C5 PFPeA
PFTDA = 13C2 PFTeDA
PFUnA = 13C2 PFUnA
d5NEFOS = d5-NEtFOSAA
d3NMFOS = d3-NMeFOSAA
M242FTS = M2-4:2 FTS
M262FTS = M2-6:2 FTS
M282FTS = M2-8:2 FTS
PFHxS = 18O2 PFHxS

Method: 537 (modified) - Fluorinated Alkyl Substances

Matrix: Water

Prep Type: Total/NA

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFOSA (25-150)	PFBA (25-150)	C3PFBS (25-150)	PFDA (25-150)	PFDoA (25-150)	C4PFHA (25-150)	PFHxA (25-150)	PFNA (25-150)
190-25619-1	FINAL EFFLUENT	77	58	70	93	89	75	83	90
LCS 320-478077/2-A	Lab Control Sample	78	73	79	105	119	96	84	99
LCSD 320-478077/3-A	Lab Control Sample Dup	3 *5-	1 *5-	4 *5-	2 *5-	3 *5-	1 *5-	1 *5-	1 *5-
MB 320-478077/1-A	Method Blank	79	77	73	96	117	104	86	98

Isotope Dilution Summary

Client: City of Bronson
Job ID: 190-25619-1
Project/Site: Bronson WWTP/City of Bronson PFAS

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Matrix: Water
Prep Type: Total/NA

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFOA (25-150)	PFOS (25-150)	PFPeA (25-150)	PFTDA (25-150)	PFUnA (25-150)	d5NEFOS (25-150)	d3NMFOS (25-150)	M242FTS (25-150)
190-25619-1	FINAL EFFLUENT	90	67	67	103	79	83	85	133
LCS 320-478077/2-A	Lab Control Sample	93	80	76	109	104	95	91	78
LCSD 320-478077/3-A	Lab Control Sample Dup	1 *5-	4 *5-	1 *5-	4 *5-	3 *5-	4 *5-	3 *5-	2 *5-
MB 320-478077/1-A	Method Blank	95	66	72	105	103	93	89	74

		Percent Isotope Dilution Recovery (Acceptance Limits)		
Lab Sample ID	Client Sample ID	M262FTS (25-150)	M282FTS (25-150)	PFHxS (25-150)
190-25619-1	FINAL EFFLUENT	125	113	74
LCS 320-478077/2-A	Lab Control Sample	86	99	84
LCSD 320-478077/3-A	Lab Control Sample Dup	2 *5-	3 *5-	4 *5-
MB 320-478077/1-A	Method Blank	79	112	82

Surrogate Legend

PFOSA = 13C8 FOSA
PFBA = 13C4 PFBA
C3PFBS = 13C3 PFBS
PFDA = 13C2 PFDA
PFDoA = 13C2 PFDoA
C4PFHA = 13C4 PFHpA
PFHxA = 13C2 PFHxA
PFNA = 13C5 PFNA
PFOA = 13C4 PFOA
PFOS = 13C4 PFOS
PFPeA = 13C5 PFPeA
PFTDA = 13C2 PFTeDA
PFUnA = 13C2 PFUnA
d5NEFOS = d5-NEtFOSAA
d3NMFOS = d3-NMeFOSAA
M242FTS = M2-4:2 FTS
M262FTS = M2-6:2 FTS
M282FTS = M2-8:2 FTS
PFHxS = 18O2 PFHxS

Method: 537 (modified) - Fluorinated Alkyl Substances

Lab Sample ID: MB 320-478077/1-A
Matrix: Water
Analysis Batch: 479651

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 478077

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
4:2 FTS	<2.0		2.0		ng/L		04/09/21 04:50	04/14/21 19:34	1
6:2 FTS	<5.0		5.0		ng/L		04/09/21 04:50	04/14/21 19:34	1
8:2 FTS	<2.0		2.0		ng/L		04/09/21 04:50	04/14/21 19:34	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<5.0		5.0		ng/L		04/09/21 04:50	04/14/21 19:34	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<5.0		5.0		ng/L		04/09/21 04:50	04/14/21 19:34	1
Perfluorobutanesulfonic acid (PFBS)	<2.0		2.0		ng/L		04/09/21 04:50	04/14/21 19:34	1
Perfluorobutanoic acid (PFBA)	<5.0		5.0		ng/L		04/09/21 04:50	04/14/21 19:34	1
Perfluorodecanesulfonic acid (PFDS)	<2.0		2.0		ng/L		04/09/21 04:50	04/14/21 19:34	1
Perfluorodecanoic acid (PFDA)	<2.0		2.0		ng/L		04/09/21 04:50	04/14/21 19:34	1
Perfluorododecanoic acid (PFDoA)	<2.0		2.0		ng/L		04/09/21 04:50	04/14/21 19:34	1
Perfluoroheptanesulfonic Acid (PFHpS)	<2.0		2.0		ng/L		04/09/21 04:50	04/14/21 19:34	1
Perfluoroheptanoic acid (PFHpA)	<2.0		2.0		ng/L		04/09/21 04:50	04/14/21 19:34	1
Perfluorohexanesulfonic acid (PFHxS)	<2.0		2.0		ng/L		04/09/21 04:50	04/14/21 19:34	1
Perfluorohexanoic acid (PFHxA)	<2.0		2.0		ng/L		04/09/21 04:50	04/14/21 19:34	1
Perfluorononanesulfonic acid (PFNS)	<2.0		2.0		ng/L		04/09/21 04:50	04/14/21 19:34	1
Perfluorononanoic acid (PFNA)	<2.0		2.0		ng/L		04/09/21 04:50	04/14/21 19:34	1
Perfluorooctanesulfonamide (FOSA)	<2.0		2.0		ng/L		04/09/21 04:50	04/14/21 19:34	1
Perfluorooctanesulfonic acid (PFOS)	<2.0		2.0		ng/L		04/09/21 04:50	04/14/21 19:34	1
Perfluorooctanoic acid (PFOA)	<2.0		2.0		ng/L		04/09/21 04:50	04/14/21 19:34	1
Perfluoropentanesulfonic acid (PFPeS)	<2.0		2.0		ng/L		04/09/21 04:50	04/14/21 19:34	1
Perfluoropentanoic acid (PFPeA)	<2.0		2.0		ng/L		04/09/21 04:50	04/14/21 19:34	1
Perfluorotetradecanoic acid (PFTeA)	<2.0		2.0		ng/L		04/09/21 04:50	04/14/21 19:34	1
Perfluorotridecanoic acid (PFTriA)	<2.0		2.0		ng/L		04/09/21 04:50	04/14/21 19:34	1
Perfluoroundecanoic acid (PFUnA)	<2.0		2.0		ng/L		04/09/21 04:50	04/14/21 19:34	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C8 FOSA	*79*		*25 - 150*	*04/09/21 04:50*	*04/14/21 19:34*	*1*
13C4 PFBA	*77*		*25 - 150*	*04/09/21 04:50*	*04/14/21 19:34*	*1*
13C3 PFBS	*73*		*25 - 150*	*04/09/21 04:50*	*04/14/21 19:34*	*1*
13C2 PFDA	*96*		*25 - 150*	*04/09/21 04:50*	*04/14/21 19:34*	*1*
13C2 PFDoA	*117*		*25 - 150*	*04/09/21 04:50*	*04/14/21 19:34*	*1*
13C4 PFHpA	*104*		*25 - 150*	*04/09/21 04:50*	*04/14/21 19:34*	*1*
13C2 PFHxA	*86*		*25 - 150*	*04/09/21 04:50*	*04/14/21 19:34*	*1*
13C5 PFNA	*98*		*25 - 150*	*04/09/21 04:50*	*04/14/21 19:34*	*1*
13C4 PFOA	*95*		*25 - 150*	*04/09/21 04:50*	*04/14/21 19:34*	*1*
13C4 PFOS	*66*		*25 - 150*	*04/09/21 04:50*	*04/14/21 19:34*	*1*
13C5 PFPeA	*72*		*25 - 150*	*04/09/21 04:50*	*04/14/21 19:34*	*1*
13C2 PFTeDA	*105*		*25 - 150*	*04/09/21 04:50*	*04/14/21 19:34*	*1*
13C2 PFUnA	*103*		*25 - 150*	*04/09/21 04:50*	*04/14/21 19:34*	*1*
d5-NEtFOSAA	*93*		*25 - 150*	*04/09/21 04:50*	*04/14/21 19:34*	*1*
d3-NMeFOSAA	*89*		*25 - 150*	*04/09/21 04:50*	*04/14/21 19:34*	*1*
M2-4:2 FTS	*74*		*25 - 150*	*04/09/21 04:50*	*04/14/21 19:34*	*1*
M2-6:2 FTS	*79*		*25 - 150*	*04/09/21 04:50*	*04/14/21 19:34*	*1*
M2-8:2 FTS	*112*		*25 - 150*	*04/09/21 04:50*	*04/14/21 19:34*	*1*
18O2 PFHxS	*82*		*25 - 150*	*04/09/21 04:50*	*04/14/21 19:34*	*1*

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: LCS 320-478077/2-A
Matrix: Water
Analysis Batch: 479651

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 478077

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
4:2 FTS	37.4	40.9		ng/L		109	79 - 139
6:2 FTS	37.9	42.6		ng/L		112	59 - 175
8:2 FTS	38.3	42.2		ng/L		110	75 - 135
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	40.0	42.4		ng/L		106	76 - 136
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	40.0	47.2		ng/L		118	76 - 136
Perfluorobutanesulfonic acid (PFBS)	35.4	38.3		ng/L		108	67 - 127
Perfluorobutanoic acid (PFBA)	40.0	47.0		ng/L		117	76 - 136
Perfluorodecanesulfonic acid (PFDS)	38.6	47.9		ng/L		124	71 - 131
Perfluorodecanoic acid (PFDA)	40.0	44.1		ng/L		110	76 - 136
Perfluorododecanoic acid (PFDoA)	40.0	48.0		ng/L		120	71 - 131
Perfluoroheptanesulfonic Acid (PFHpS)	38.1	45.0		ng/L		118	76 - 136
Perfluoroheptanoic acid (PFHpA)	40.0	46.0		ng/L		115	72 - 132
Perfluorohexanesulfonic acid (PFHxS)	36.4	43.1		ng/L		118	59 - 119
Perfluorohexanoic acid (PFHxA)	40.0	44.7		ng/L		112	73 - 133
Perfluorononanesulfonic acid (PFNS)	38.4	46.5		ng/L		121	75 - 135
Perfluorononanoic acid (PFNA)	40.0	44.0		ng/L		110	75 - 135
Perfluorooctanesulfonamide (FOSA)	40.0	52.1		ng/L		130	73 - 133
Perfluorooctanesulfonic acid (PFOS)	37.1	41.5		ng/L		112	70 - 130
Perfluorooctanoic acid (PFOA)	40.0	45.3		ng/L		113	70 - 130
Perfluoropentanesulfonic acid (PFPeS)	37.5	41.5		ng/L		110	66 - 126
Perfluoropentanoic acid (PFPeA)	40.0	45.6		ng/L		114	71 - 131
Perfluorotetradecanoic acid (PFTeA)	40.0	43.5		ng/L		109	70 - 130
Perfluorotridecanoic acid (PFTriA)	40.0	46.6		ng/L		116	71 - 131
Perfluoroundecanoic acid (PFUnA)	40.0	50.6		ng/L		127	68 - 128

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C8 FOSA	*78*		*25 - 150*
13C4 PFBA	*73*		*25 - 150*
13C3 PFBS	*79*		*25 - 150*
13C2 PFDA	*105*		*25 - 150*
13C2 PFDoA	*119*		*25 - 150*
13C4 PFHpA	*96*		*25 - 150*
13C2 PFHxA	*84*		*25 - 150*
13C5 PFNA	*99*		*25 - 150*
13C4 PFOA	*93*		*25 - 150*
13C4 PFOS	*80*		*25 - 150*
13C5 PFPeA	*76*		*25 - 150*
13C2 PFTeDA	*109*		*25 - 150*

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: LCS 320-478077/2-A
Matrix: Water
Analysis Batch: 479651

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 478077

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C2 PFUnA	104		25 - 150
d5-NEtFOSAA	95		25 - 150
d3-NMeFOSAA	91		25 - 150
M2-4:2 FTS	78		25 - 150
M2-6:2 FTS	86		25 - 150
M2-8:2 FTS	99		25 - 150
18O2 PFHxS	84		25 - 150

Lab Sample ID: LCSD 320-478077/3-A
Matrix: Water
Analysis Batch: 479917

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 478077

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
4:2 FTS			37.4	41.0		ng/L		110	79 - 139	0	30
6:2 FTS			37.9	40.6		ng/L		107	59 - 175	5	30
8:2 FTS			38.3	34.9		ng/L		91	75 - 135	19	30
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)			40.0	30.4	*1	ng/L		76	76 - 136	33	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)			40.0	39.0		ng/L		97	76 - 136	19	30
Perfluorobutanesulfonic acid (PFBS)			35.4	40.0		ng/L		113	67 - 127	4	30
Perfluorobutanoic acid (PFBA)			40.0	41.6		ng/L		104	76 - 136	12	30
Perfluorodecanesulfonic acid (PFDS)			38.6	49.0		ng/L		127	71 - 131	2	30
Perfluorodecanoic acid (PFDA)			40.0	38.0		ng/L		95	76 - 136	15	30
Perfluorododecanoic acid (PFDoA)			40.0	46.7		ng/L		117	71 - 131	3	30
Perfluoroheptanesulfonic Acid (PFHpS)			38.1	40.8		ng/L		107	76 - 136	10	30
Perfluoroheptanoic acid (PFHpA)			40.0	43.4		ng/L		108	72 - 132	6	30
Perfluorohexanesulfonic acid (PFHxS)			36.4	44.0	*+	ng/L		121	59 - 119	2	30
Perfluorohexanoic acid (PFHxA)			40.0	38.3		ng/L		96	73 - 133	15	30
Perfluorononanesulfonic acid (PFNS)			38.4	46.6		ng/L		121	75 - 135	0	30
Perfluorononanoic acid (PFNA)			40.0	48.2		ng/L		121	75 - 135	9	30
Perfluorooctanesulfonamide (FOSA)			40.0	49.8		ng/L		125	73 - 133	4	30
Perfluorooctanesulfonic acid (PFOS)			37.1	37.2		ng/L		100	70 - 130	11	30
Perfluorooctanoic acid (PFOA)			40.0	37.5		ng/L		94	70 - 130	19	30
Perfluoropentanesulfonic acid (PFPeS)			37.5	45.2		ng/L		121	66 - 126	9	30
Perfluoropentanoic acid (PFPeA)			40.0	45.3		ng/L		113	71 - 131	1	30
Perfluorotetradecanoic acid (PFTeA)			40.0	45.2		ng/L		113	70 - 130	4	30
Perfluorotridecanoic acid (PFTriA)			40.0	44.4		ng/L		111	71 - 131	5	30
Perfluoroundecanoic acid (PFUnA)			40.0	38.0		ng/L		95	68 - 128	29	30

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Isotope Dilution	LCSD %Recovery	LCSD Qualifier	Limits
13C8 FOSA	3	*5-	25 - 150
13C4 PFBA	1	*5-	25 - 150
13C3 PFBS	4	*5-	25 - 150
13C2 PFDA	2	*5-	25 - 150
13C2 PFDoA	3	*5-	25 - 150
13C4 PFHpA	1	*5-	25 - 150
13C2 PFHxA	1	*5-	25 - 150
13C5 PFNA	1	*5-	25 - 150
13C4 PFOA	1	*5-	25 - 150
13C4 PFOS	4	*5-	25 - 150
13C5 PFPeA	1	*5-	25 - 150
13C2 PFTeDA	4	*5-	25 - 150
13C2 PFUnA	3	*5-	25 - 150
d5-NEtFOSAA	4	*5-	25 - 150
d3-NMeFOSAA	3	*5-	25 - 150
M2-4:2 FTS	2	*5-	25 - 150
M2-6:2 FTS	2	*5-	25 - 150
M2-8:2 FTS	3	*5-	25 - 150
18O2 PFHxS	4	*5-	25 - 150

Lab Sample ID: MB 320-478860/1-A
Matrix: Solid
Analysis Batch: 479658

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 478860

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
4:2 FTS	<2.0		2.0		ug/Kg		04/13/21 04:28	04/14/21 20:57	1
6:2 FTS	<2.0		2.0		ug/Kg		04/13/21 04:28	04/14/21 20:57	1
8:2 FTS	<2.0		2.0		ug/Kg		04/13/21 04:28	04/14/21 20:57	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<2.0		2.0		ug/Kg		04/13/21 04:28	04/14/21 20:57	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<2.0		2.0		ug/Kg		04/13/21 04:28	04/14/21 20:57	1
Perfluorobutanesulfonic acid (PFBS)	<0.20		0.20		ug/Kg		04/13/21 04:28	04/14/21 20:57	1
Perfluorobutanoic acid (PFBA)	<0.20		0.20		ug/Kg		04/13/21 04:28	04/14/21 20:57	1
Perfluorodecanesulfonic acid (PFDS)	<0.20		0.20		ug/Kg		04/13/21 04:28	04/14/21 20:57	1
Perfluorodecanoic acid (PFDA)	<0.20		0.20		ug/Kg		04/13/21 04:28	04/14/21 20:57	1
Perfluorododecanoic acid (PFDoA)	<0.20		0.20		ug/Kg		04/13/21 04:28	04/14/21 20:57	1
Perfluoroheptanesulfonic Acid (PFHpS)	<0.20		0.20		ug/Kg		04/13/21 04:28	04/14/21 20:57	1
Perfluoroheptanoic acid (PFHpA)	<0.20		0.20		ug/Kg		04/13/21 04:28	04/14/21 20:57	1
Perfluorohexanesulfonic acid (PFHxS)	<0.20		0.20		ug/Kg		04/13/21 04:28	04/14/21 20:57	1
Perfluorohexanoic acid (PFHxA)	<0.20		0.20		ug/Kg		04/13/21 04:28	04/14/21 20:57	1
Perfluorononanesulfonic acid (PFNS)	<0.20		0.20		ug/Kg		04/13/21 04:28	04/14/21 20:57	1
Perfluorononanoic acid (PFNA)	<0.20		0.20		ug/Kg		04/13/21 04:28	04/14/21 20:57	1
Perfluorooctanesulfonamide (FOSA)	<0.20		0.20		ug/Kg		04/13/21 04:28	04/14/21 20:57	1
Perfluorooctanesulfonic acid (PFOS)	<0.50		0.50		ug/Kg		04/13/21 04:28	04/14/21 20:57	1
Perfluorooctanoic acid (PFOA)	<0.20		0.20		ug/Kg		04/13/21 04:28	04/14/21 20:57	1
Perfluoropentanesulfonic acid (PFPeS)	<0.20		0.20		ug/Kg		04/13/21 04:28	04/14/21 20:57	1
Perfluoropentanoic acid (PFPeA)	<0.20		0.20		ug/Kg		04/13/21 04:28	04/14/21 20:57	1
Perfluorotetradecanoic acid (PFTeA)	<0.20		0.20		ug/Kg		04/13/21 04:28	04/14/21 20:57	1
Perfluorotridecanoic acid (PFTriA)	<0.20		0.20		ug/Kg		04/13/21 04:28	04/14/21 20:57	1
Perfluoroundecanoic acid (PFUnA)	<0.20		0.20		ug/Kg		04/13/21 04:28	04/14/21 20:57	1

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C8 FOSA	80		25 - 150	04/13/21 04:28	04/14/21 20:57	1
13C4 PFBA	55		25 - 150	04/13/21 04:28	04/14/21 20:57	1
13C3 PFBS	69		25 - 150	04/13/21 04:28	04/14/21 20:57	1
13C2 PFDA	92		25 - 150	04/13/21 04:28	04/14/21 20:57	1
13C2 PFDoA	87		25 - 150	04/13/21 04:28	04/14/21 20:57	1
13C4 PFHpA	80		25 - 150	04/13/21 04:28	04/14/21 20:57	1
13C2 PFHxA	66		25 - 150	04/13/21 04:28	04/14/21 20:57	1
13C5 PFNA	85		25 - 150	04/13/21 04:28	04/14/21 20:57	1
13C4 PFOA	69		25 - 150	04/13/21 04:28	04/14/21 20:57	1
13C4 PFOS	67		25 - 150	04/13/21 04:28	04/14/21 20:57	1
13C5 PFPeA	63		25 - 150	04/13/21 04:28	04/14/21 20:57	1
13C2 PFTeDA	91		25 - 150	04/13/21 04:28	04/14/21 20:57	1
13C2 PFUnA	83		25 - 150	04/13/21 04:28	04/14/21 20:57	1
d5-NEtFOSAA	80		25 - 150	04/13/21 04:28	04/14/21 20:57	1
d3-NMeFOSAA	85		25 - 150	04/13/21 04:28	04/14/21 20:57	1
M2-4:2 FTS	68		25 - 150	04/13/21 04:28	04/14/21 20:57	1
M2-6:2 FTS	61		25 - 150	04/13/21 04:28	04/14/21 20:57	1
M2-8:2 FTS	65		25 - 150	04/13/21 04:28	04/14/21 20:57	1
18O2 PFHxS	70		25 - 150	04/13/21 04:28	04/14/21 20:57	1

Lab Sample ID: LCS 320-478860/2-A
Matrix: Solid
Analysis Batch: 479658

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 478860

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
4:2 FTS	1.87	2.39		ug/Kg		128	68 - 143
6:2 FTS	1.90	2.62		ug/Kg		138	73 - 139
8:2 FTS	1.92	3.46	*+	ug/Kg		180	75 - 135
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.00	2.08		ug/Kg		104	72 - 132
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2.00	1.98	J	ug/Kg		99	72 - 132
Perfluorobutanesulfonic acid (PFBS)	1.77	1.99		ug/Kg		113	69 - 129
Perfluorobutanoic acid (PFBA)	2.00	2.59		ug/Kg		130	76 - 136
Perfluorodecanesulfonic acid (PFDS)	1.93	2.27		ug/Kg		118	71 - 131
Perfluorodecanoic acid (PFDA)	2.00	2.51		ug/Kg		126	72 - 132
Perfluorododecanoic acid (PFDoA)	2.00	2.51		ug/Kg		126	71 - 131
Perfluoroheptanesulfonic Acid (PFHpS)	1.90	2.09		ug/Kg		110	76 - 136
Perfluoroheptanoic acid (PFHpA)	2.00	2.30		ug/Kg		115	71 - 131
Perfluorohexanesulfonic acid (PFHxS)	1.82	2.12		ug/Kg		116	62 - 122
Perfluorohexanoic acid (PFHxA)	2.00	2.05		ug/Kg		103	71 - 131
Perfluorononanesulfonic acid (PFNS)	1.92	2.25		ug/Kg		117	72 - 132
Perfluorononanoic acid (PFNA)	2.00	2.49		ug/Kg		124	73 - 133
Perfluorooctanesulfonamide (FOSA)	2.00	2.41		ug/Kg		121	77 - 137
Perfluorooctanesulfonic acid (PFOS)	1.86	2.15		ug/Kg		116	68 - 141
Perfluorooctanoic acid (PFOA)	2.00	2.59		ug/Kg		129	72 - 132

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: LCS 320-478860/2-A
Matrix: Solid
Analysis Batch: 479658

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 478860

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluoropentanesulfonic acid (PFPeS)	1.88	2.47	*+	ug/Kg		132	66 - 126
Perfluoropentanoic acid (PFPeA)	2.00	2.48		ug/Kg		124	69 - 129
Perfluorotetradecanoic acid (PFTeA)	2.00	2.37		ug/Kg		119	67 - 127
Perfluorotridecanoic acid (PFTriA)	2.00	2.65	*+	ug/Kg		132	71 - 131
Perfluoroundecanoic acid (PFUnA)	2.00	2.71	*+	ug/Kg		135	66 - 126

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C8 FOSA	*91*		*25 - 150*
13C4 PFBA	*72*		*25 - 150*
13C3 PFBS	*80*		*25 - 150*
13C2 PFDA	*95*		*25 - 150*
13C2 PFDoA	*105*		*25 - 150*
13C4 PFHpA	*99*		*25 - 150*
13C2 PFHxA	*86*		*25 - 150*
13C5 PFNA	*92*		*25 - 150*
13C4 PFOA	*85*		*25 - 150*
13C4 PFOS	*83*		*25 - 150*
13C5 PFPeA	*84*		*25 - 150*
13C2 PFTeDA	*98*		*25 - 150*
13C2 PFUnA	*94*		*25 - 150*
d5-NEtFOSAA	*92*		*25 - 150*
d3-NMeFOSAA	*94*		*25 - 150*
M2-4:2 FTS	*69*		*25 - 150*
M2-6:2 FTS	*67*		*25 - 150*
M2-8:2 FTS	*59*		*25 - 150*
18O2 PFHxS	*86*		*25 - 150*

QC Association Summary

Client: City of Bronson
Project/Site: Bronson WWTP/City of Bronson PFAS

Job ID: 190-25619-1

LCMS

Prep Batch: 478077

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
190-25619-1	FINAL EFFLUENT	Total/NA	Water	3535	
MB 320-478077/1-A	Method Blank	Total/NA	Water	3535	
LCS 320-478077/2-A	Lab Control Sample	Total/NA	Water	3535	
LCSD 320-478077/3-A	Lab Control Sample Dup	Total/NA	Water	3535	

Prep Batch: 478860

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
190-25619-2	STORAGE DIGESTOR BIOSOLIDS	Total/NA	Solid	SHAKE	
MB 320-478860/1-A	Method Blank	Total/NA	Solid	SHAKE	
LCS 320-478860/2-A	Lab Control Sample	Total/NA	Solid	SHAKE	

Analysis Batch: 479651

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
190-25619-1	FINAL EFFLUENT	Total/NA	Water	537 (modified)	478077
MB 320-478077/1-A	Method Blank	Total/NA	Water	537 (modified)	478077
LCS 320-478077/2-A	Lab Control Sample	Total/NA	Water	537 (modified)	478077

Analysis Batch: 479658

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 320-478860/1-A	Method Blank	Total/NA	Solid	537 (modified)	478860
LCS 320-478860/2-A	Lab Control Sample	Total/NA	Solid	537 (modified)	478860

Analysis Batch: 479917

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCSD 320-478077/3-A	Lab Control Sample Dup	Total/NA	Water	537 (modified)	478077

Analysis Batch: 481347

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
190-25619-2	STORAGE DIGESTOR BIOSOLIDS	Total/NA	Solid	537 (modified)	478860

General Chemistry

Analysis Batch: 479505

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
190-25619-2	STORAGE DIGESTOR BIOSOLIDS	Total/NA	Solid	D 2216	

Lab Chronicle

Client: City of Bronson
Job ID: 190-25619-1
Project/Site: Bronson WWTP/City of Bronson PFAS

Client Sample ID: FINAL EFFLUENT
Lab Sample ID: 190-25619-1
Date Collected: 04/05/21 01:30
Matrix: Water
Date Received: 04/07/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			478077	04/09/21 04:50	EG	TAL SAC
Total/NA	Analysis	537 (modified)		1	479651	04/14/21 20:02	SK	TAL SAC

Client Sample ID: STORAGE DIGESTOR BIOSOLIDS
Lab Sample ID: 190-25619-2
Date Collected: 04/05/21 01:45
Matrix: Solid
Date Received: 04/07/21 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	479505	04/14/21 14:58	KDB	TAL SAC

Client Sample ID: STORAGE DIGESTOR BIOSOLIDS
Lab Sample ID: 190-25619-2
Date Collected: 04/05/21 01:45
Matrix: Solid
Date Received: 04/07/21 08:00
Percent Solids: 3.4

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			478860	04/13/21 04:28	HK	TAL SAC
Total/NA	Analysis	537 (modified)		1	481347	04/20/21 10:38	AAR	TAL SAC

Laboratory References:

TAL SAC = Eurofins TestAmerica, Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Analyst References:

Lab: TAL SAC

Batch Type: Prep

EG = Eric Gomez

HK = Harmandeep Kaur

Batch Type: Analysis

AAR = Amani Royce

KDB = Kristen Burrick

SK = Shamiran Kouchari

Definitions/Glossary

Client: City of Bronson
Job ID: 190-25619-1
Project/Site: Bronson WWTP/City of Bronson PFAS

Qualifiers

LCMS

Qualifier	Qualifier Description
*+	LCS and/or LCSD is outside acceptance limits, high biased.
*1	LCS/LCSD RPD exceeds control limits.
*5-	Isotope dilution analyte is outside acceptance limits, low biased.
I	Value is EMPC (estimated maximum possible concentration).
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Accreditation/Certification Summary

Client: City of Bronson
Job ID: 190-25619-1
Project/Site: Bronson WWTP/City of Bronson PFAS

Laboratory: Eurofins TestAmerica, Sacramento

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	17-020	02-20-24
ANAB	Dept. of Defense ELAP	L2468	01-20-24
ANAB	Dept. of Energy	L2468.01	01-20-24
ANAB	ISO/IEC 17025	L2468	01-20-24
Arizona	State	AZ0708	08-11-21
Arkansas DEQ	State	88-0691	06-17-21
California	State	2897	01-31-22
Colorado	State	CA0004	08-31-21
Connecticut	State	PH-0691	06-30-21
Florida	NELAP	E87570	06-30-21
Georgia	State	4040	01-29-22
Hawaii	State	<cert No.>	01-29-22
Illinois	NELAP	200060	03-18-22
Kansas	NELAP	E-10375	10-31-21
Louisiana	NELAP	01944	06-30-21
Maine	State	CA00004	04-14-22
Michigan	State	9947	01-29-22
Nevada	State	CA000442021-2	07-31-21
New Jersey	NELAP	CA005	06-30-21
New York	NELAP	11666	04-01-22
Ohio	State	41252	01-29-22
Oregon	NELAP	4040	01-30-23
Texas	NELAP	T104704399-19-13	06-01-21
US Fish & Wildlife	US Federal Programs	58448	07-31-21
USDA	US Federal Programs	P330-18-00239	07-31-21
Utah	NELAP	CA000442021-12	02-28-21 *
Virginia	NELAP	460278	03-14-22
Washington	State	C581	05-05-21
West Virginia (DW)	State	9930C	12-31-21
Wisconsin	State	998204680	08-31-21
Wyoming	State Program	8TMS-L	01-28-19 *

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Detection Summary

Client: City of Bronson
Job ID: 190-25619-1
Project/Site: Bronson WWTP/City of Bronson PFAS

Client Sample ID: FINAL EFFLUENT — Lab Sample ID: 190-25619-1

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanesulfonic acid (PFBS)	2.2		1.9		ng/L	1		537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	3.3		1.9		ng/L	1		537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	4.6		1.9		ng/L	1		537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	6.4		1.9		ng/L	1		537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	7.0		1.9		ng/L	1		537 (modified)	Total/NA

Client Sample ID: STORAGE DIGESTOR BIOSOLIDS — Lab Sample ID: 190-25619-2

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Perfluorodecanoic acid (PFDA)	9.4		5.6		ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	35	I	14		ug/Kg	1	☼	537 (modified)	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Michigan
10448 Citation Drive Suite 200
Brighton, MI 48116
Phone: 810-229-2763 Fax: 810-229-0000

20/21

Chain of Custody Record

MICHIGAN 190

eurofins | Environment Testing America

Client Information	Sampler: Chuck B	Lab PM: Schafer, Sue	Carrier Tracking No(s):	COC No: 190-27253-1467.1
Client Contact: Chuck Buckley	Phone: 517-462-8380	E-Mail: Sue.Schafer@Eurofinset.com	State of Origin:	Page: Page 1 of 1
Company: City of Bronson	PWSID:			Job #:
Address: 141 S Matteson Street	Due Date Requested: ASAP			
City: Bronson	TAT Requested (days):			
State, Zip: MI, 49028	Compliance Project: (Yes) No			
Phone: 517-462-8380	PO #: Purchase Order not required			
Email: bronsonh2o@hotmail.com	WO #:			
Project Name: City of Bronson - PFAS	Project #: 19001688			
Site: BRONSON WWTP	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	PFC_IDA - PFAS, Standard List (24 Analytes)	PFC_IDA - (MOD) PFAS, Standard List (24 Analytes)	Total Number of containers	Special Instructions/Note:
Preservation Code:							N	N		
				Water						
FINAL EFFLUENT	4/5/21	1:30	G	Water						
				Solid						
STORAGE Digestor Biosolids	4/5/21	1:45	G	Solid						

Project-19001688
AG-Water-PFAS 24(WSAC)
AG-Solid-PFAS 24(WSAC)

190-25619 Chain of Custody

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify)	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by	Date/Time	Company	Received by	Date/Time	Company
1	CHUCK BUCKLEY	4/5/21 2:30	BRONSON	YBS	4/5/21 2:55	
2				Amanda Battrell	4/6/21 9:38	ETA
3	Amanda Battrell	4/6/21 9:38	ETA	Adam Comer	4/6/21 0840	ETA

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.:

Cooler Temperature(s) °C and Other Remarks:

Ver: 11/01/2020

Eurofins TestAmerica Canton Sample Receipt Form/Narrative
Canton Facility

Login # : 190-25619

Client City of Bronson Site Name _____

Cooler Received on 4-7-21 Opened on 4-7-21

Cooler unpacked by: Adam Jones

FedEx: 1st Grd Exp UPS FAS (Clipper) Client Drop Off TestAmerica Courier Other _____

Receipt After-hours: Drop-off Date/Time _____ Storage Location _____

TestAmerica Cooler # TA Foam Box Client Cooler Box Other _____

Packing material used: (Bubble Wrap) Foam Plastic Bag None Other _____

COOLANT: (Wet Ice) Blue Ice Dry Ice Water None

1. Cooler temperature upon receipt ☐ See Multiple Cooler Form

IR GUN# IR-11 (CF +0.1 °C) Observed Cooler Temp. 2.0 °C Corrected Cooler Temp. 2.1 °C

IR GUN #IR-12 (CF +0.2°C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °C

2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity 1	(Yes)	No
-Were the seals on the outside of the cooler(s) signed & dated?	(Yes)	No NA
-Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)?	Yes	(No)
-Were tamper/custody seals intact and uncompromised?	(Yes)	No NA
3. Shippers' packing slip attached to the cooler(s)?	Yes	(No)
4. Did custody papers accompany the sample(s)?	(Yes)	No
5. Were the custody papers relinquished & signed in the appropriate place?	(Yes)	No
6. Was/were the person(s) who collected the samples clearly identified on the COC?	(Yes)	No
7. Did all bottles arrive in good condition (Unbroken)?	(Yes)	No
8. Could all bottle labels (ID/Date/Time) be reconciled with the COC?	(Yes)	No
9. For each sample, does the COC specify preservatives (Y/N), # of containers (Y/N), and sample type of grab/comp(Y/N)?		
10. Were correct bottle(s) used for the test(s) indicated?	(Yes)	No
11. Sufficient quantity received to perform indicated analyses?	(Yes)	No
12. Are these work share samples and all listed on the COC?	Yes	No
If yes, Questions 13-17 have been checked at the originating laboratory.		
13. Were all preserved sample(s) at the correct pH upon receipt?	Yes	No (NA) pH Strip Lot# HC022887
14. Were VOAs on the COC?	Yes	(No)
15. Were air bubbles >6 mm in any VOA vials? ● ← Larger than this.	Yes	No (NA)
16. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # _____	Yes	(No)
17. Was a LL Hg or Me Hg trip blank present? _____	Yes	(No)

Tests that are not checked for pH by Receiving:
VOAs
Oil and Grease
TOC

Contacted PM _____ Date _____ by _____ via Verbal Voice Mail Other

Concerning _____

18. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES ☐ additional next page

Samples processed by:

19. SAMPLE CONDITION

Sample(s) _____ were received after the recommended holding time had expired.

Sample(s) _____ were received in a broken container.

Sample(s) _____ were received with bubble >6 mm in diameter. (Notify PM)

20. SAMPLE PRESERVATION

Sample(s) _____ were further preserved in the laboratory.

Time preserved: _____ Preservative(s) added/Lot number(s): _____

VOA Sample Preservation - Date/Time VOAs Frozen: _____

WI-NC-099

Eurofins TestAmerica, Canton
4101 Shuffel Street NW
North Canton, OH 44720
Phone: 330-497-9396 Fax: 330-497-0772

Chain of Custody Record

eurofins Environment Testing America

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Schafer, Sue	Carrier Tracking No(s):	COC No: 240-134535.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Sue.Schafer@Eurofinset.com	State of Origin: Michigan	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note):		Job #: 190-25619-1
Address: 880 Riverside Parkway, ,	Due Date Requested: 4/27/2021			
City: West Sacramento	TAT Requested (days):			
State, Zip: CA, 95605				
Phone: 916-373-5600(Tel) 916-372-1059(Fax)	PO #:			
Email:	WO #:			
Project Name: City of Bronson - PFAS	Project #: 19001688			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	PFC_IDA/3535_PFC (MOD) PFAS, Standard List (24 Analytes)	Moisture	PFC_IDA/Shake_Bath_14D (MOD) PFAS, Standard List (24 Analytes)	Total Number of containers	Special Instructions/Note:
			Preservation Code:								
FINAL EFFLUENT (190-25619-1)	4/5/21	01:30 Eastern		Water			X			2	
STORAGE DIGESTOR BIOSOLIDS (190-25619-2)	4/5/21	01:45 Eastern		Solid				X	X	1	

Note: Since laboratory accreditations are subject to change, Eurofins TestAmerica places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins TestAmerica attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to Eurofins TestAmerica.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1	[signature]	4-7-21 1646	EA	[signature]	4-8-21 0950	ETASAC
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:
		1.7°C

Ver: 11/01/2020