

## ANALYTICAL REPORT

Eurofins Michigan  
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Laboratory Job ID: 190-28201-1

Client Project/Site: City of Dexter PFAS Biosolids

**For:**

City of Dexter, MI  
8140 Main Street  
Dexter, Michigan 48130

Attn: Andrea Dorney

*Sue Schafer*

Authorized for release by:  
3/23/2022 10:54:07 AM

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*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 Dexter, MI  
Project/Site: City of Dexter PFAS Biosolids

Job ID: 190-28201-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
190-28201-1	PFAS, % Moisture	Solid	03/08/22 13:25	03/09/22 12:56

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12

# Case Narrative

Client: City of Dexter, MI  
Project/Site: City of Dexter PFAS Biosolids

Job ID: 190-28201-1

**Job ID: 190-28201-1**

**Laboratory: Eurofins Michigan**

## Narrative

### Job Narrative 190-28201-1

#### Comments

No additional comments.

#### Receipt

The sample was received on 3/9/2022 12:56 PM. Unless otherwise noted below, the sample arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 4.0° C.

#### LCMS

Method 537 (modified): Isotope Dilution Analyte (IDA) recovery are above the method recommended limit for the following samples: PFAS, % Moisture (190-28201-1). Quantitation by isotope dilution generally precludes any adverse effect on data quality due to elevated IDA recoveries.

Method 537 (modified): The Isotope Dilution Analyte (IDA) recovery associated with the following samples are below the method recommended limit: PFAS, % Moisture (190-28201-1). 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 samples.

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 SHAKE: The following samples were yellow after adjusting to the final volume:  
PFAS, % Moisture (190-28201-1)

PFC\_IDA

Solid

preparation batch 320-572499

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

# Client Sample Results

Client: City of Dexter, MI  
Project/Site: City of Dexter PFAS Biosolids

Job ID: 190-28201-1

Client Sample ID: PFAS, % Moisture

Lab Sample ID: 190-28201-1

Date Collected: 03/08/22 13:25

Matrix: Solid

Date Received: 03/09/22 12:56

Percent Solids: 1.8

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<9.9		9.9	ug/Kg	☆	03/13/22 20:49	03/15/22 00:18	1
F-53B Major	<9.9		9.9	ug/Kg	☆	03/13/22 20:49	03/15/22 00:18	1
F-53B Minor	<9.9		9.9	ug/Kg	☆	03/13/22 20:49	03/15/22 00:18	1
4:2 FTS	<9.9		9.9	ug/Kg	☆	03/13/22 20:49	03/15/22 00:18	1
6:2 FTS	<9.9		9.9	ug/Kg	☆	03/13/22 20:49	03/15/22 00:18	1
8:2 FTS	<9.9		9.9	ug/Kg	☆	03/13/22 20:49	03/15/22 00:18	1
HFPO-DA (GenX)	<9.9		9.9	ug/Kg	☆	03/13/22 20:49	03/15/22 00:18	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<9.9		9.9	ug/Kg	☆	03/13/22 20:49	03/15/22 00:18	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<9.9		9.9	ug/Kg	☆	03/13/22 20:49	03/15/22 00:18	1
Perfluorobutanesulfonic acid (PFBS)	<9.9		9.9	ug/Kg	☆	03/13/22 20:49	03/15/22 00:18	1
Perfluorobutanoic acid (PFBA)	<9.9		9.9	ug/Kg	☆	03/13/22 20:49	03/15/22 00:18	1
Perfluorodecanesulfonic acid (PFDS)	<9.9		9.9	ug/Kg	☆	03/13/22 20:49	03/15/22 00:18	1
Perfluorodecanoic acid (PFDA)	<9.9		9.9	ug/Kg	☆	03/13/22 20:49	03/15/22 00:18	1
Perfluorododecanoic acid (PFDoA)	<9.9		9.9	ug/Kg	☆	03/13/22 20:49	03/15/22 00:18	1
Perfluoroheptanesulfonic Acid (PFHpS)	<9.9		9.9	ug/Kg	☆	03/13/22 20:49	03/15/22 00:18	1
Perfluoroheptanoic acid (PFHpA)	<9.9		9.9	ug/Kg	☆	03/13/22 20:49	03/15/22 00:18	1
Perfluorohexanesulfonic acid (PFHxS)	<9.9		9.9	ug/Kg	☆	03/13/22 20:49	03/15/22 00:18	1
Perfluorohexanoic acid (PFHxA)	<9.9		9.9	ug/Kg	☆	03/13/22 20:49	03/15/22 00:18	1
Perfluorononanesulfonic acid (PFNS)	<9.9		9.9	ug/Kg	☆	03/13/22 20:49	03/15/22 00:18	1
Perfluorononanoic acid (PFNA)	<9.9		9.9	ug/Kg	☆	03/13/22 20:49	03/15/22 00:18	1
Perfluorooctanesulfonamide (FOSA)	<9.9		9.9	ug/Kg	☆	03/13/22 20:49	03/15/22 00:18	1
Perfluorooctanesulfonic acid (PFOS)	<9.9		9.9	ug/Kg	☆	03/13/22 20:49	03/15/22 00:18	1
Perfluorooctanoic acid (PFOA)	<9.9		9.9	ug/Kg	☆	03/13/22 20:49	03/15/22 00:18	1
Perfluoropentanesulfonic acid (PFPeS)	<9.9		9.9	ug/Kg	☆	03/13/22 20:49	03/15/22 00:18	1
Perfluoropentanoic acid (PFPeA)	<9.9		9.9	ug/Kg	☆	03/13/22 20:49	03/15/22 00:18	1
Perfluorotetradecanoic acid (PFTeA)	<9.9		9.9	ug/Kg	☆	03/13/22 20:49	03/15/22 00:18	1
Perfluorotridecanoic acid (PFTriA)	<9.9		9.9	ug/Kg	☆	03/13/22 20:49	03/15/22 00:18	1
Perfluoroundecanoic acid (PFUnA)	<9.9		9.9	ug/Kg	☆	03/13/22 20:49	03/15/22 00:18	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C8 FOSA	115		25 - 150	03/13/22 20:49	03/15/22 00:18	1
13C3 HFPO-DA	94		25 - 150	03/13/22 20:49	03/15/22 00:18	1
13C4 PFBA	16	*5-	25 - 150	03/13/22 20:49	03/15/22 00:18	1
13C3 PFBS	108		25 - 150	03/13/22 20:49	03/15/22 00:18	1
13C2 PFDA	115		25 - 150	03/13/22 20:49	03/15/22 00:18	1
13C2 PFDoA	83		25 - 150	03/13/22 20:49	03/15/22 00:18	1
13C4 PFHpA	107		25 - 150	03/13/22 20:49	03/15/22 00:18	1
13C2 PFHxA	98		25 - 150	03/13/22 20:49	03/15/22 00:18	1
13C5 PFNA	105		25 - 150	03/13/22 20:49	03/15/22 00:18	1
13C4 PFOA	112		25 - 150	03/13/22 20:49	03/15/22 00:18	1
13C4 PFOS	112		25 - 150	03/13/22 20:49	03/15/22 00:18	1
13C5 PFPeA	77		25 - 150	03/13/22 20:49	03/15/22 00:18	1
13C2 PFTeA	40		25 - 150	03/13/22 20:49	03/15/22 00:18	1
13C2 PFUnA	115		25 - 150	03/13/22 20:49	03/15/22 00:18	1
d5-NEtFOSAA	125		25 - 150	03/13/22 20:49	03/15/22 00:18	1
d3-NMeFOSAA	119		25 - 150	03/13/22 20:49	03/15/22 00:18	1

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# Client Sample Results

Client: City of Dexter, MI  
Project/Site: City of Dexter PFAS Biosolids

Job ID: 190-28201-1

**Client Sample ID: PFAS, % Moisture**

**Lab Sample ID: 190-28201-1**

**Date Collected: 03/08/22 13:25**

**Matrix: Solid**

**Date Received: 03/09/22 12:56**

**Percent Solids: 1.8**

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

<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
M2-4:2 FTS	138		25 - 150	03/13/22 20:49	03/15/22 00:18	1
M2-6:2 FTS	143		25 - 150	03/13/22 20:49	03/15/22 00:18	1
M2-8:2 FTS	175	*5+	25 - 150	03/13/22 20:49	03/15/22 00:18	1
18O2 PFHxS	100		25 - 150	03/13/22 20:49	03/15/22 00:18	1

## General Chemistry

<i>Analyte</i>	<i>Result</i>	<i>Qualifier</i>	<i>RL</i>	<i>Unit</i>	<i>D</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
Percent Moisture	98.2		0.1	%			03/16/22 15:22	1
Percent Solids	1.8		0.1	%			03/16/22 15:22	1

# QC Sample Results

Client: City of Dexter, MI  
Project/Site: City of Dexter PFAS Biosolids

Job ID: 190-28201-1

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

Lab Sample ID: MB 320-572499/1-A

Matrix: Solid

Analysis Batch: 572885

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 572499

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.20		0.20	ug/Kg		03/13/22 20:49	03/14/22 23:48	1
F-53B Major	<0.20		0.20	ug/Kg		03/13/22 20:49	03/14/22 23:48	1
F-53B Minor	<0.20		0.20	ug/Kg		03/13/22 20:49	03/14/22 23:48	1
4:2 FTS	<0.20		0.20	ug/Kg		03/13/22 20:49	03/14/22 23:48	1
6:2 FTS	<0.20		0.20	ug/Kg		03/13/22 20:49	03/14/22 23:48	1
8:2 FTS	<0.20		0.20	ug/Kg		03/13/22 20:49	03/14/22 23:48	1
HFPO-DA (GenX)	<0.20		0.20	ug/Kg		03/13/22 20:49	03/14/22 23:48	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<0.20		0.20	ug/Kg		03/13/22 20:49	03/14/22 23:48	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<0.20		0.20	ug/Kg		03/13/22 20:49	03/14/22 23:48	1
Perfluorobutanesulfonic acid (PFBS)	<0.20		0.20	ug/Kg		03/13/22 20:49	03/14/22 23:48	1
Perfluorobutanoic acid (PFBA)	<0.20		0.20	ug/Kg		03/13/22 20:49	03/14/22 23:48	1
Perfluorodecanesulfonic acid (PFDS)	<0.20		0.20	ug/Kg		03/13/22 20:49	03/14/22 23:48	1
Perfluorodecanoic acid (PFDA)	<0.20		0.20	ug/Kg		03/13/22 20:49	03/14/22 23:48	1
Perfluorododecanoic acid (PFDoA)	<0.20		0.20	ug/Kg		03/13/22 20:49	03/14/22 23:48	1
Perfluoroheptanesulfonic Acid (PFHpS)	<0.20		0.20	ug/Kg		03/13/22 20:49	03/14/22 23:48	1
Perfluoroheptanoic acid (PFHpA)	<0.20		0.20	ug/Kg		03/13/22 20:49	03/14/22 23:48	1
Perfluorohexanesulfonic acid (PFHxS)	<0.20		0.20	ug/Kg		03/13/22 20:49	03/14/22 23:48	1
Perfluorohexanoic acid (PFHxA)	<0.20		0.20	ug/Kg		03/13/22 20:49	03/14/22 23:48	1
Perfluorononanesulfonic acid (PFNS)	<0.20		0.20	ug/Kg		03/13/22 20:49	03/14/22 23:48	1
Perfluorononanoic acid (PFNA)	<0.20		0.20	ug/Kg		03/13/22 20:49	03/14/22 23:48	1
Perfluorooctanesulfonamide (FOSA)	<0.20		0.20	ug/Kg		03/13/22 20:49	03/14/22 23:48	1
Perfluorooctanesulfonic acid (PFOS)	<0.20		0.20	ug/Kg		03/13/22 20:49	03/14/22 23:48	1
Perfluorooctanoic acid (PFOA)	<0.20		0.20	ug/Kg		03/13/22 20:49	03/14/22 23:48	1
Perfluoropentanesulfonic acid (PFPeS)	<0.20		0.20	ug/Kg		03/13/22 20:49	03/14/22 23:48	1
Perfluoropentanoic acid (PFPeA)	<0.20		0.20	ug/Kg		03/13/22 20:49	03/14/22 23:48	1
Perfluorotetradecanoic acid (PFTeA)	<0.20		0.20	ug/Kg		03/13/22 20:49	03/14/22 23:48	1
Perfluorotridecanoic acid (PFTriA)	<0.20		0.20	ug/Kg		03/13/22 20:49	03/14/22 23:48	1
Perfluoroundecanoic acid (PFUnA)	<0.20		0.20	ug/Kg		03/13/22 20:49	03/14/22 23:48	1

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C8 FOSA	116		25 - 150	03/13/22 20:49	03/14/22 23:48	1
13C3 HFPO-DA	96		25 - 150	03/13/22 20:49	03/14/22 23:48	1
13C4 PFBA	67		25 - 150	03/13/22 20:49	03/14/22 23:48	1
13C3 PFBS	108		25 - 150	03/13/22 20:49	03/14/22 23:48	1
13C2 PFDA	112		25 - 150	03/13/22 20:49	03/14/22 23:48	1
13C2 PFDoA	113		25 - 150	03/13/22 20:49	03/14/22 23:48	1
13C4 PFHpA	104		25 - 150	03/13/22 20:49	03/14/22 23:48	1
13C2 PFHxA	99		25 - 150	03/13/22 20:49	03/14/22 23:48	1
13C5 PFNA	106		25 - 150	03/13/22 20:49	03/14/22 23:48	1
13C4 PFOA	112		25 - 150	03/13/22 20:49	03/14/22 23:48	1
13C4 PFOS	112		25 - 150	03/13/22 20:49	03/14/22 23:48	1
13C5 PFPeA	98		25 - 150	03/13/22 20:49	03/14/22 23:48	1
13C2 PFTeA	115		25 - 150	03/13/22 20:49	03/14/22 23:48	1
13C2 PFUnA	117		25 - 150	03/13/22 20:49	03/14/22 23:48	1
d5-NEtFOSAA	129		25 - 150	03/13/22 20:49	03/14/22 23:48	1

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# QC Sample Results

Client: City of Dexter, MI  
Project/Site: City of Dexter PFAS Biosolids

Job ID: 190-28201-1

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

Lab Sample ID: MB 320-572499/1-A

Matrix: Solid

Analysis Batch: 572885

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 572499

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
d3-NMeFOSAA	120		25 - 150	03/13/22 20:49	03/14/22 23:48	1
M2-4:2 FTS	111		25 - 150	03/13/22 20:49	03/14/22 23:48	1
M2-6:2 FTS	105		25 - 150	03/13/22 20:49	03/14/22 23:48	1
M2-8:2 FTS	128		25 - 150	03/13/22 20:49	03/14/22 23:48	1
18O2 PFHxS	103		25 - 150	03/13/22 20:49	03/14/22 23:48	1

Lab Sample ID: LCS 320-572499/2-A

Matrix: Solid

Analysis Batch: 572885

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 572499

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	1.88	1.64		ug/Kg		87	79 - 139
F-53B Major	1.86	1.66		ug/Kg		89	74 - 134
F-53B Minor	1.88	1.75		ug/Kg		93	66 - 136
4:2 FTS	1.87	1.87		ug/Kg		100	68 - 143
6:2 FTS	1.90	2.00		ug/Kg		106	73 - 139
8:2 FTS	1.92	1.82		ug/Kg		95	75 - 135
HFPO-DA (GenX)	2.00	2.02		ug/Kg		101	53 - 158
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.00	1.87		ug/Kg		93	72 - 132
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2.00	2.02		ug/Kg		101	72 - 132
Perfluorobutanesulfonic acid (PFBS)	1.77	1.78		ug/Kg		100	69 - 129
Perfluorobutanoic acid (PFBA)	2.00	1.94		ug/Kg		97	76 - 136
Perfluorodecanesulfonic acid (PFDS)	1.93	1.99		ug/Kg		103	71 - 131
Perfluorodecanoic acid (PFDA)	2.00	1.90		ug/Kg		95	72 - 132
Perfluorododecanoic acid (PFDoA)	2.00	1.98		ug/Kg		99	71 - 131
Perfluoroheptanesulfonic Acid (PFHpS)	1.90	1.77		ug/Kg		93	76 - 136
Perfluoroheptanoic acid (PFHpA)	2.00	2.01		ug/Kg		100	71 - 131
Perfluorohexanesulfonic acid (PFHxS)	1.82	1.69		ug/Kg		93	62 - 122
Perfluorohexanoic acid (PFHxA)	2.00	1.90		ug/Kg		95	71 - 131
Perfluorononanesulfonic acid (PFNS)	1.92	1.89		ug/Kg		98	72 - 132
Perfluorononanoic acid (PFNA)	2.00	1.77		ug/Kg		89	73 - 133
Perfluorooctanesulfonamide (FOSA)	2.00	1.99		ug/Kg		99	77 - 137
Perfluorooctanesulfonic acid (PFOS)	1.86	1.84		ug/Kg		99	68 - 141
Perfluorooctanoic acid (PFOA)	2.00	1.87		ug/Kg		94	72 - 132
Perfluoropentanesulfonic acid (PFPeS)	1.88	1.76		ug/Kg		94	66 - 126
Perfluoropentanoic acid (PFPeA)	2.00	1.84		ug/Kg		92	69 - 129
Perfluorotetradecanoic acid (PFTeA)	2.00	1.86		ug/Kg		93	67 - 127
Perfluorotridecanoic acid (PFTriA)	2.00	2.02		ug/Kg		101	71 - 131

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# QC Sample Results

Client: City of Dexter, MI  
Project/Site: City of Dexter PFAS Biosolids

Job ID: 190-28201-1

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

Lab Sample ID: LCS 320-572499/2-A

Matrix: Solid

Analysis Batch: 572885

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 572499

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluoroundecanoic acid (PFUnA)	2.00	1.92		ug/Kg		96	66 - 126

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C8 FOSA	109		25 - 150
13C3 HFPO-DA	92		25 - 150
13C4 PFBA	60		25 - 150
13C3 PFBS	100		25 - 150
13C2 PFDA	114		25 - 150
13C2 PFDaA	113		25 - 150
13C4 PFHpA	100		25 - 150
13C2 PFHxA	94		25 - 150
13C5 PFNA	108		25 - 150
13C4 PFOA	104		25 - 150
13C4 PFOS	109		25 - 150
13C5 PFPeA	98		25 - 150
13C2 PFTeDA	106		25 - 150
13C2 PFUnA	117		25 - 150
d5-NEtFOSAA	128		25 - 150
d3-NMeFOSAA	112		25 - 150
M2-4:2 FTS	108		25 - 150
M2-6:2 FTS	110		25 - 150
M2-8:2 FTS	127		25 - 150
18O2 PFHxS	104		25 - 150

## Definitions/Glossary

Client: City of Dexter, MI  
Project/Site: City of Dexter PFAS Biosolids

Job ID: 190-28201-1

### Qualifiers

#### LCMS

Qualifier	Qualifier Description
*5-	Isotope dilution analyte is outside acceptance limits, low biased.
*5+	Isotope dilution analyte is outside acceptance limits, high biased.

### Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	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

# Isotope Dilution Summary

Client: City of Dexter, MI  
Project/Site: City of Dexter PFAS Biosolids

Job ID: 190-28201-1

## 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)	HFPODA (25-150)	PFBA (25-150)	C3PFBS (25-150)	PFDA (25-150)	PFDoA (25-150)	C4PFHA (25-150)	PFHxA (25-150)
190-28201-1	PFAS, % Moisture	115	94	16 *5-	108	115	83	107	98
LCS 320-572499/2-A	Lab Control Sample	109	92	60	100	114	113	100	94
MB 320-572499/1-A	Method Blank	116	96	67	108	112	113	104	99

### Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	PFNA (25-150)	PFOA (25-150)	PFOS (25-150)	PFPeA (25-150)	PFTDA (25-150)	PFUnA (25-150)	d5NEFOS (25-150)	d3NMFOS (25-150)
190-28201-1	PFAS, % Moisture	105	112	112	77	40	115	125	119
LCS 320-572499/2-A	Lab Control Sample	108	104	109	98	106	117	128	112
MB 320-572499/1-A	Method Blank	106	112	112	98	115	117	129	120

### Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	M242FTS (25-150)	M262FTS (25-150)	M282FTS (25-150)	PFHxS (25-150)
190-28201-1	PFAS, % Moisture	138	143	175 *5+	100
LCS 320-572499/2-A	Lab Control Sample	108	110	127	104
MB 320-572499/1-A	Method Blank	111	105	128	103

### Surrogate Legend

PFOSA = 13C8 FOSA  
HFPODA = 13C3 HFPO-DA  
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

# QC Association Summary

Client: City of Dexter, MI  
Project/Site: City of Dexter PFAS Biosolids

Job ID: 190-28201-1

## LCMS

### Prep Batch: 572499

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
190-28201-1	PFAS, % Moisture	Total/NA	Solid	SHAKE	
MB 320-572499/1-A	Method Blank	Total/NA	Solid	SHAKE	
LCS 320-572499/2-A	Lab Control Sample	Total/NA	Solid	SHAKE	

### Analysis Batch: 572885

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
190-28201-1	PFAS, % Moisture	Total/NA	Solid	537 (modified)	572499
MB 320-572499/1-A	Method Blank	Total/NA	Solid	537 (modified)	572499
LCS 320-572499/2-A	Lab Control Sample	Total/NA	Solid	537 (modified)	572499

## General Chemistry

### Analysis Batch: 573462

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
190-28201-1	PFAS, % Moisture	Total/NA	Solid	D 2216	

# Lab Chronicle

Client: City of Dexter, MI  
Project/Site: City of Dexter PFAS Biosolids

Job ID: 190-28201-1

**Client Sample ID: PFAS, % Moisture**

**Date Collected: 03/08/22 13:25**

**Date Received: 03/09/22 12:56**

**Lab Sample ID: 190-28201-1**

**Matrix: Solid**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	573462	03/16/22 15:22	KMW	TAL SAC

**Client Sample ID: PFAS, % Moisture**

**Date Collected: 03/08/22 13:25**

**Date Received: 03/09/22 12:56**

**Lab Sample ID: 190-28201-1**

**Matrix: Solid**

**Percent Solids: 1.8**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			572499	03/13/22 20:49	AM	TAL SAC
Total/NA	Analysis	537 (modified)		1	572885	03/15/22 00:18	VPM	TAL SAC

## Laboratory References:

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

## Analyst References:

Lab: TAL SAC

Batch Type: Prep

AM = Andrew Martin

Batch Type: Analysis

KMW = Kelly White

VPM = Veronika Melnik

# Accreditation/Certification Summary

Client: City of Dexter, MI  
Project/Site: City of Dexter PFAS Biosolids

Job ID: 190-28201-1

## Laboratory: Eurofins 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	08-11-22
Arkansas DEQ	State	88-0691	06-17-22
California	State	2897	01-31-23
Colorado	State	CA0004	08-31-22
Florida	NELAP	E87570	06-30-22
Georgia	State	4040	01-30-23
Hawaii	State	<cert No.>	01-29-23
Illinois	NELAP	200060	03-18-22
Louisiana	NELAP	01944	06-30-22
Maine	State	CA00004	04-14-22
Michigan	State	9947	01-29-22 *
Nevada	State	CA00044	08-31-22
New Hampshire	NELAP	2997	04-18-22
New Jersey	NELAP	CA005	06-30-22
New York	NELAP	11666	04-01-22
Ohio	State	41252	01-29-23
Oregon	NELAP	4040	01-29-23
Texas	NELAP	T104704399-19-13	05-31-22
US Fish & Wildlife	US Federal Programs	58448	07-31-22
USDA	US Federal Programs	P330-18-00239	01-23-23
Utah	NELAP	CA000442021-12	03-01-22 *
Virginia	NELAP	460278	03-14-23
Washington	State	C581	05-05-22
West Virginia (DW)	State	9930C	12-31-22
Wisconsin	State	998204680	08-31-22
Wyoming	State Program	8TMS-L	01-28-19 *

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

Eurofins Michigan

## Chain of Custody Record

<b>Client Information</b> Client Contact: Andrea Dorney Company: City of Dexter, MI Address: 8140 Main Street City: Dexter State, Zip: MI, 48130 Phone: 734-426-4572(Tel) Email: adorney@dextermi.gov Project Name: City of Dexter PFAS Biosolids Site:		Sampler: Eric Hardman Lab PM: Schaefer, Sue Phone: Sue.Schaefer@Eurofinset.com E-Mail:		Carrier Tracking No(s): 190-33901-2339.1 State of Origin: MI Page 1 of 1 Job #:	
Due Date Requested: TAT Requested (days): Compliance Project: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No PO #: 734-426-4572(Tel) Purchase Order not required WO #: 19001704 Project #: 19001704 SSOW #:		<b>Analysis Requested</b> 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 Other: M - Hexane N - None O - AsNaO2 P - Na2O4S Q - Na2SO3 R - Na2SO4 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4-5 Z - other (specify)			
<b>Sample Identification</b> PFAS, % Moisture		Sample Date: 3-8-2022 125pm Sample Time: 125pm Sample Type (C=Comp, G=grab): G Matrix (W=water, S=solid, O=soil, A=air): Solid		Field Filtered Sample (Yes or No): <input checked="" type="checkbox"/> Perform MS/MSD (Yes or No): <input checked="" type="checkbox"/> PFC IDA - PFAS 28: <input checked="" type="checkbox"/> Moisture - Percent Moisture: <input checked="" type="checkbox"/> Total Number of Containers:	
Special Instructions/Note: 190-28201 Chain of Custody		Special Instructions/Note: 190-28201 Chain of Custody			
<b>Possible Hazard Identification</b> <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological Deliverable Requested: I, II, III, IV, Other (specify)		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For Months			
Empty Kit Relinquished by:		Method of Shipment:			
Relinquished by:		Date/Time: 3-8-2022 2:18pm Company: COO			
Relinquished by:		Date/Time: 3/8/22 Company: CAA			
Relinquished by:		Date/Time: 3-7-22 1255 Company: CAA			
Custody Seals Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks:			





Environment Testing  
TestAmerica

☐ SDS or Known Hazard Information Supplied by Client

☐ Discrepancies

☐ Short Hold

☐ Rush ☐ 24 Hr ☐ 2-Day ☐ 3-Day ☐ 5-Day ☐ Other:

Receipt Evaluation Performed by: Initials: Text Date: 3-9-22 Time: 1256

Client ID: City of Dexter

Work Order #: 190-24201

## Cooler / Sample Receipt

After hours receipt: complete gray areas. Place cooler in walk-in, place form in Receiving box. Date: \_\_\_\_\_ Time: \_\_\_\_\_

### Method of Shipment:

Walk-In Client Eurofins TA Field/Courier

Other Client / 3<sup>rd</sup> Party Courier: \_\_\_\_\_

Fed Ex Tracking #: \_\_\_\_\_

UPS Tracking #: \_\_\_\_\_

Other: \_\_\_\_\_

### Shipping Container Type:

☒ Cooler ☐ Box  
☐ None ☐ Other: \_\_\_\_\_

### Packing Materials:

☒ Plastic Bags ☐ Foam  
☐ Bubble Wrap ☐ Paper  
☐ Packing Peanuts ☐ None  
☐ Other: \_\_\_\_\_

### Custody Seals Intact:

☐ Yes ☐ No  
☒ NA (not used or required)

### Cooling Materials:

☒ Ice (Solid) ☐ Ice (Melted)  
☐ Blue Ice ☐ None  
☐ Other: \_\_\_\_\_

Bacteriological Samples	Temp Corrected (°C)	Frozen?		Rec'd Within 2 Hrs?		Sample Flagged?	
		Yes	No	Yes	No	Yes	No

Received on same day sampled? Yes No

Additional Sheets Required? Yes No

### Receipt Temperatures

Thermometer ID	Observed (°C)	Corrected (°C)	Temp Blank	Sample Temp	Acceptable	Cooler ID	Affected Samples
<u>CP313207</u>	<u>4.0</u>	<u>4.0</u>		<u>X</u>	<u>X</u> Y <u>N</u>		
					<u>Y</u> <u>N</u>		
					<u>Y</u> <u>N</u>		

Receipt Questions**	Y	N	NA	"No" answers require additional comment
CoC present and ETA receipt signature, date, and time properly documented?	<u>X</u>			
Containers and Labels in good condition? (unbroken, not leaking, appropriately filled, labels legible & attached)	<u>X</u>			
Appropriate containers used and adequate volume provided?	<u>X</u>			Preserved bottles checked for pH? Yes No pH strip lot # _____
Number of sample containers match CoC?	<u>X</u>			
Samples received within hold?	<u>X</u>			
Samples submitted for GRO and Volatiles analysis (8260, 624, 524) received without headspace?			<u>X</u>	
Was a Trip Blank received with VOA samples?			<u>X</u>	
Were the samples free of any questionable physical conformities? (i.e.: field duplicates or multiple bottles of the same sample do not significantly vary in appearance - color, solid proportions, etc.)	<u>X</u>			
Were the CoC bottle labels and all other items free of all other discrepancies or issues that would need to be addressed with the Project Manager and/or Client?	<u>X</u>			
**May not be applicable if samples are not for compliance testing				*Excludes FOG, VOAs, TOC Vials, HEM

### Client Contact Record

Contact Via: ☐ Phone ☐ Email ☐ Other: \_\_\_\_\_ Person Contacted: \_\_\_\_\_ Date/Time: \_\_\_\_\_

☐ Discrepancy allowance agreement is on record in the client project file

### Discussion / Resolution

Any additional documentation and clarification from the client must be noted in the narrative and/or scanned into the CoC directory.

Reviewed by Jeff He Date: 3/9/22

WI-MI-010\_020720



