



15-Jun-2021

Bob Zboril
GRSD Sewer Authority
10831 Kruger Rd
New Buffalo, MI 49117

Re: **Biosolids PFOS/PFOA**

Work Order: **21060481**

Dear Bob,

ALS Environmental received 1 sample on 04-Jun-2021 10:00 AM for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental - Holland and for only the analyses requested.

Sample results are compliant with industry accepted practices and Quality Control results achieved laboratory specifications. Any exceptions are noted in the Case Narrative, or noted with qualifiers in the report or QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained from ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 21.

If you have any questions regarding this report, please feel free to contact me:

ADDRESS: 3352 128th Avenue, Holland, MI, USA
PHONE: +1 (616) 399-6070 FAX: +1 (616) 399-6185

Sincerely,

A handwritten signature in black ink, appearing to read "Bill Carey".

Electronically approved by: Bill Carey

Bill Carey
Project Manager

Report of Laboratory Analysis

Certificate No: MN 026-999-449

ALS GROUP USA, CORP Part of the ALS Laboratory Group A Campbell Brothers Limited Company

Environmental 

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RIGHT SOLUTIONS RIGHT PARTNER

Client: GRSD Sewer Authority
Project: Biosolids PFOS/PFOA
Work Order: 21060481

Work Order Sample Summary

<u>Lab Samp ID</u>	<u>Client Sample ID</u>	<u>Matrix</u>	<u>Tag Number</u>	<u>Collection Date</u>	<u>Date Received</u>	<u>Hold</u>
21060481-01	Sludge (New Storage)	Sludge		6/2/2021 15:00	6/4/2021 10:00	<input type="checkbox"/>

Client: GRSD Sewer Authority
Project: Biosolids PFOS/PFOA
WorkOrder: 21060481

QUALIFIERS, ACRONYMS, UNITS

<u>Qualifier</u>	<u>Description</u>
*	Value exceeds Regulatory Limit
**	Estimated Value
a	Analyte is non-accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
Hr	BOD/CBOD - Sample was reset outside Hold Time, value should be considered estimated.
J	Analyte is present at an estimated concentration between the MDL and Report Limit
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL
X	Analyte was detected in the Method Blank between the MDL and Reporting Limit, sample results may exhibit background or reagent contamination at the observed level.

<u>Acronym</u>	<u>Description</u>
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
LOD	Limit of Detection (see MDL)
LOQ	Limit of Quantitation (see PQL)
MBLK	Method Blank
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PQL	Practical Quantitation Limit
RPD	Relative Percent Difference
TDL	Target Detection Limit
TNTC	Too Numerous To Count
A	APHA Standard Methods
D	ASTM
E	EPA
SW	SW-846 Update III

<u>Units Reported</u>	<u>Description</u>
% of sample	Percent of Sample
ng/Kg	Nanograms per Kilogram

Client: GRSD Sewer Authority
Project: Biosolids PFOS/PFOA
Work Order: 21060481

Case Narrative

Batch 178178, Method D7968-17a, Sample Sludge (New Storage) (21060481-01A): One or more surrogate recoveries were below the lower control limits. The sample results may be biased low, 13C8-FOSA, 13C2-PFTeA, 13C2-PFDoA

Batch 178178, Method D7968-17a, Sample Sludge (New Storage) (21060481-01A): One or more surrogate recoveries were above the upper control limits. The sample was non-detect, therefore, no qualification is needed. 13C2-FtS 4:2, 13C2-FtS 6:2 13C2-FtS 8:2

Batch 178178, Method D7968-17a, Sample LCS1-178178: The LCS recovery was above the upper control limit. All sample results in the batch were non-detect. No qualification is necessary for this analyte: PFDS, PFPeS

ALS Group, USA

Date: 15-Jun-21

Client: GRSD Sewer Authority
Project: Biosolids PFOS/PFOA

Work Order: 21060481

Lab ID: 21060481-01A
Client Sample ID: Sludge (New Storage)

Collection Date: 6/2/2021 3:00:00 PM
Matrix: SLUDGE

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
PFAS BY LC-MS-MS						
			D7968-17A		Prep: D7968-17a 6/8/21 13:41	Analyst: SK
Perfluorobutanoic Acid (PFBA)	ND		4,800	ng/Kg-dry	1	6/8/2021 04:29 PM
Perfluoropentanoic Acid (PFPeA)	ND		4,800	ng/Kg-dry	1	6/8/2021 04:29 PM
Perfluorohexanoic Acid (PFHxA)	ND		4,800	ng/Kg-dry	1	6/8/2021 04:29 PM
Perfluoroheptanoic Acid (PFHpA)	ND		4,800	ng/Kg-dry	1	6/8/2021 04:29 PM
Perfluorooctanoic Acid (PFOA)	1,100		960	ng/Kg-dry	1	6/8/2021 04:29 PM
Perfluorononanoic Acid (PFNA)	1,100		960	ng/Kg-dry	1	6/8/2021 04:29 PM
Perfluorodecanoic Acid (PFDA)	ND		4,800	ng/Kg-dry	1	6/8/2021 04:29 PM
Perfluoroundecanoic Acid (PFUnA)	ND		4,800	ng/Kg-dry	1	6/8/2021 04:29 PM
Perfluorododecanoic Acid (PFDoA)	ND		4,800	ng/Kg-dry	1	6/8/2021 04:29 PM
Perfluorotridecanoic Acid (PFTriA)	ND		4,800	ng/Kg-dry	1	6/8/2021 04:29 PM
Perfluorotetradecanoic Acid (PFTeA)	ND		4,800	ng/Kg-dry	1	6/8/2021 04:29 PM
Perfluorobutanesulfonic Acid (PFBS)	ND		960	ng/Kg-dry	1	6/8/2021 04:29 PM
Perfluoropentanesulfonic Acid (PFPeS)	ND		960	ng/Kg-dry	1	6/8/2021 04:29 PM
Perfluorohexanesulfonic Acid (PFHxS)	ND		4,800	ng/Kg-dry	1	6/8/2021 04:29 PM
Perfluoroheptanesulfonic Acid (PFHpS)	ND		4,800	ng/Kg-dry	1	6/8/2021 04:29 PM
Perfluorooctanesulfonic Acid (PFOS)	16,000		960	ng/Kg-dry	1	6/8/2021 04:29 PM
Perfluorononanesulfonic Acid (PFNS)	ND		4,800	ng/Kg-dry	1	6/8/2021 04:29 PM
Perfluorodecanesulfonic Acid (PFDS)	ND		960	ng/Kg-dry	1	6/8/2021 04:29 PM
Fluorotelomer Sulphonic Acid 4:2 (FtS 4:2)	ND		4,800	ng/Kg-dry	1	6/8/2021 04:29 PM
Fluorotelomer Sulphonic Acid 6:2 (FtS 6:2)	ND		4,800	ng/Kg-dry	1	6/8/2021 04:29 PM
Fluorotelomer Sulphonic Acid 8:2 (FtS 8:2)	ND		4,800	ng/Kg-dry	1	6/8/2021 04:29 PM
Perfluorooctanesulfonamide (PFOSA)	ND		960	ng/Kg-dry	1	6/8/2021 04:29 PM
N-Ethylperfluorooctanesulfonamidoacetic Acid	8,400		4,800	ng/Kg-dry	1	6/8/2021 04:29 PM
N-Methylperfluorooctanesulfonamidoacetic Acid	12,000		4,800	ng/Kg-dry	1	6/8/2021 04:29 PM
11Cl-Pf3OUdS	ND		960	ng/Kg-dry	1	6/8/2021 04:29 PM
4,8-Dioxa-3H-perfluorononanoic Acid (DONA)	ND		960	ng/Kg-dry	1	6/8/2021 04:29 PM
9Cl-PF3ONS	ND		960	ng/Kg-dry	1	6/8/2021 04:29 PM
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND		4,800	ng/Kg-dry	1	6/8/2021 04:29 PM
MOISTURE						
			SW3550C			Analyst: KTP
Moisture	97		0.10	% of sample	1	6/9/2021 04:40 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

Client: GRSD Sewer Authority
Work Order: 21060481
Project: Biosolids PFOS/PFOA

QC BATCH REPORT

Batch ID: **178178** Instrument ID **LCMS1** Method: **D7968-17a**

MBLK1 Sample ID: MBLK1-178178-178178				Units: ng/Kg		Analysis Date: 6/8/2021 02:34 PM				
Client ID:		Run ID: LCMS1_210608B		SeqNo: 7470083		Prep Date: 6/8/2021		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Perfluorobutanoic Acid (PFBA)	ND	120	0	0	0		0			
Perfluoropentanoic Acid (PFPeA)	ND	120	0	0	0		0			
Perfluorohexanoic Acid (PFHxA)	ND	120	0	0	0		0			
Perfluoroheptanoic Acid (PFHpA)	ND	120	0	0	0		0			
Perfluorooctanoic Acid (PFOA)	ND	25	0	0	0		0			
Perfluorononanoic Acid (PFNA)	ND	25	0	0	0		0			
Perfluorodecanoic Acid (PFDA)	ND	120	0	0	0		0			
Perfluoroundecanoic Acid (PFUnA)	ND	120	0	0	0		0			
Perfluorododecanoic Acid (PFDoA)	ND	120	0	0	0		0			
Perfluorotridecanoic Acid (PFTriA)	ND	120	0	0	0		0			
Perfluorotetradecanoic Acid (PFTeA)	ND	120	0	0	0		0			
Perfluorobutanesulfonic Acid (PFBS)	ND	25	0	0	0		0			
Perfluoropentanesulfonic Acid (PFPeS)	ND	25	0	0	0		0			
Perfluorohexanesulfonic Acid (PFHxS)	ND	120	0	0	0		0			
Perfluoroheptanesulfonic Acid (PFHpS)	ND	120	0	0	0		0			
Perfluorooctanesulfonic Acid (PFOS)	ND	25	0	0	0		0			
Perfluorononanesulfonic Acid (PFNS)	ND	120	0	0	0		0			
Perfluorodecanesulfonic Acid (PFDS)	ND	25	0	0	0		0			
Fluorotelomer Sulphonic Acid 4:2 (FtS	ND	120	0	0	0		0			
Fluorotelomer Sulphonic Acid 6:2 (FtS	ND	120	0	0	0		0			
Fluorotelomer Sulphonic Acid 8:2 (FtS	ND	120	0	0	0		0			
Perfluorooctanesulfonamide (PFOSA)	ND	25	0	0	0		0			
N-Ethylperfluorooctanesulfonamidoace	ND	120	0	0	0		0			
N-Methylperfluorooctanesulfonamidoa	ND	120	0	0	0		0			
11Cl-Pf3OUdS	ND	25	0	0	0		0			
4,8-Dioxa-3H-perfluorononanoic Acid (	ND	25	0	0	0		0			
9Cl-PF3ONS	ND	25	0	0	0		0			
Hexafluoropropylene oxide dimer acid	ND	120	0	0	0		0			
Surr: 13C4-PFBA	401.4	0	400	0	100	50-130	0			
Surr: 13C5-PFPeA	418.4	0	400	0	105	50-130	0			
Surr: 13C2-PFHxA	437.6	0	400	0	109	50-130	0			
Surr: 13C4-PFHpA	392.1	0	400	0	98	50-130	0			
Surr: 13C4-PFOA	455.4	0	400	0	114	70-130	0			
Surr: 13C5-PFNA	393.6	0	400	0	98.4	70-130	0			
Surr: 13C2-PFDA	411.8	0	400	0	103	70-130	0			
Surr: 13C2-PFUnA	394.5	0	400	0	98.6	70-130	0			
Surr: 13C2-PFDoA	478.8	0	400	0	120	70-130	0			
Surr: 13C2-PFTeA	430	0	400	0	108	50-130	0			
Surr: 13C3-PFBS	365.1	0	400	0	91.3	50-130	0			
Surr: 18O2-PFHxS	383.3	0	378	0	101	70-130	0			
Surr: 13C4-PFOS	364.6	0	383	0	95.2	70-130	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: GRSD Sewer Authority
Work Order: 21060481
Project: Biosolids PFOS/PFOA

QC BATCH REPORT

Batch ID: 178178		Instrument ID LCMS1		Method: D7968-17a				
<i>Surr: 13C2-FtS 4:2</i>	<i>272.2</i>	<i>0</i>	<i>373</i>	<i>0</i>	<i>73</i>	<i>50-130</i>	<i>0</i>	
<i>Surr: 13C2-FtS 6:2</i>	<i>362</i>	<i>0</i>	<i>380</i>	<i>0</i>	<i>95.3</i>	<i>50-130</i>	<i>0</i>	
<i>Surr: 13C2-FtS 8:2</i>	<i>348.6</i>	<i>0</i>	<i>383</i>	<i>0</i>	<i>91</i>	<i>50-130</i>	<i>0</i>	
<i>Surr: 13C8-FOSA</i>	<i>398.2</i>	<i>0</i>	<i>400</i>	<i>0</i>	<i>99.5</i>	<i>50-130</i>	<i>0</i>	
<i>Surr: d3-N-MeFOSAA</i>	<i>400.1</i>	<i>0</i>	<i>400</i>	<i>0</i>	<i>100</i>	<i>50-130</i>	<i>0</i>	
<i>Surr: d5-N-EtFOSAA</i>	<i>432.1</i>	<i>0</i>	<i>400</i>	<i>0</i>	<i>108</i>	<i>50-130</i>	<i>0</i>	
<i>Surr: 13C3-HFPO-DA</i>	<i>418.4</i>	<i>0</i>	<i>400</i>	<i>0</i>	<i>105</i>	<i>50-130</i>	<i>0</i>	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: GRSD Sewer Authority
 Work Order: 21060481
 Project: Biosolids PFOS/PFOA

QC BATCH REPORT

Batch ID: 178178 Instrument ID LCMS1 Method: D7968-17a

MBLK2 Sample ID: MBLK2-178178-178178				Units: ng/Kg		Analysis Date: 6/8/2021 03:16 PM				
Client ID:		Run ID: LCMS1_210608B		SeqNo: 7470087		Prep Date: 6/8/2021		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Perfluorobutanoic Acid (PFBA)	ND	120	0	0	0		0			
Perfluoropentanoic Acid (PFPeA)	ND	120	0	0	0		0			
Perfluorohexanoic Acid (PFHxA)	ND	120	0	0	0		0			
Perfluoroheptanoic Acid (PFHpA)	ND	120	0	0	0		0			
Perfluorooctanoic Acid (PFOA)	ND	25	0	0	0		0			
Perfluorononanoic Acid (PFNA)	ND	25	0	0	0		0			
Perfluorodecanoic Acid (PFDA)	19.88	120	0	0	0		0			J
Perfluoroundecanoic Acid (PFUnA)	ND	120	0	0	0		0			
Perfluorododecanoic Acid (PFDoA)	ND	120	0	0	0		0			
Perfluorotridecanoic Acid (PFTriA)	ND	120	0	0	0		0			
Perfluorotetradecanoic Acid (PFTeA)	ND	120	0	0	0		0			
Perfluorobutanesulfonic Acid (PFBS)	ND	25	0	0	0		0			
Perfluoropentanesulfonic Acid (PFPeS)	ND	25	0	0	0		0			
Perfluorohexanesulfonic Acid (PFHxS)	ND	120	0	0	0		0			
Perfluoroheptanesulfonic Acid (PFHpS)	ND	120	0	0	0		0			
Perfluorooctanesulfonic Acid (PFOS)	ND	25	0	0	0		0			
Perfluorononanesulfonic Acid (PFNS)	ND	120	0	0	0		0			
Perfluorodecanesulfonic Acid (PFDS)	ND	25	0	0	0		0			
Fluorotelomer Sulphonic Acid 4:2 (FtS)	ND	120	0	0	0		0			
Fluorotelomer Sulphonic Acid 6:2 (FtS)	ND	120	0	0	0		0			
Fluorotelomer Sulphonic Acid 8:2 (FtS)	ND	120	0	0	0		0			
Perfluorooctanesulfonamide (PFOSA)	ND	25	0	0	0		0			
N-Ethylperfluorooctanesulfonamidoac	ND	120	0	0	0		0			
N-Methylperfluorooctanesulfonamidoa	ND	120	0	0	0		0			
11Cl-Pf3OUdS	ND	25	0	0	0		0			
4,8-Dioxa-3H-perfluorononanoic Acid (	ND	25	0	0	0		0			
9Cl-PF3ONS	ND	25	0	0	0		0			
Hexafluoropropylene oxide dimer acid	ND	120	0	0	0		0			
Surr: 13C4-PFBA	387.5	0	400	0	96.9	50-130	0			
Surr: 13C5-PFPeA	410.4	0	400	0	103	50-130	0			
Surr: 13C2-PFHxA	423.6	0	400	0	106	50-130	0			
Surr: 13C4-PFHpA	397.4	0	400	0	99.3	50-130	0			
Surr: 13C4-PFOA	433.4	0	400	0	108	70-130	0			
Surr: 13C5-PFNA	392.2	0	400	0	98.1	70-130	0			
Surr: 13C2-PFDA	396.2	0	400	0	99.1	70-130	0			
Surr: 13C2-PFUnA	396.7	0	400	0	99.2	70-130	0			
Surr: 13C2-PFDoA	435.5	0	400	0	109	70-130	0			
Surr: 13C2-PFTeA	398	0	400	0	99.5	50-130	0			
Surr: 13C3-PFBS	372.3	0	400	0	93.1	50-130	0			
Surr: 18O2-PFHxS	362	0	378	0	95.8	70-130	0			
Surr: 13C4-PFOS	358.7	0	383	0	93.7	70-130	0			
Surr: 13C2-FtS 4:2	274.6	0	373	0	73.6	50-130	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: GRSD Sewer Authority
Work Order: 21060481
Project: Biosolids PFOS/PFOA

QC BATCH REPORT

Batch ID: 178178		Instrument ID LCMS1		Method: D7968-17a				
<i>Surr: 13C2-FtS 6:2</i>	265.3	0	380	0	69.8	50-130	0	
<i>Surr: 13C2-FtS 8:2</i>	309.7	0	383	0	80.9	50-130	0	
<i>Surr: 13C8-FOSA</i>	395.3	0	400	0	98.8	50-130	0	
<i>Surr: d3-N-MeFOSAA</i>	411.2	0	400	0	103	50-130	0	
<i>Surr: d5-N-EtFOSAA</i>	428.8	0	400	0	107	50-130	0	
<i>Surr: 13C3-HFPO-DA</i>	383.6	0	400	0	95.9	50-130	0	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

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Work Order: 21060481
Project: Biosolids PFOS/PFOA

QC BATCH REPORT

Batch ID: **178178** Instrument ID **LCMS1** Method: **D7968-17a**

MS				Sample ID: 21060641-02A MS		Units: ng/Kg		Analysis Date: 6/8/2021 03:26 PM		
Client ID:			Run ID: LCMS1_210608B			SeqNo: 7470088		Prep Date: 6/8/2021		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Perfluorobutanoic Acid (PFBA)	536.5	120	500	175.9	72.1	50-130	0			
Perfluoropentanoic Acid (PFPeA)	496.7	120	500	31.76	93	70-130	0			
Perfluorohexanoic Acid (PFHxA)	516.5	120	500	0	103	50-130	0			
Perfluoroheptanoic Acid (PFHpA)	494.3	120	500	12.18	96.4	50-130	0			
Perfluorooctanoic Acid (PFOA)	537.6	25	500	30.29	101	70-130	0			
Perfluorononanoic Acid (PFNA)	500.2	25	500	16.87	96.7	70-130	0			
Perfluorodecanoic Acid (PFDA)	522.3	120	500	25.05	99.4	70-130	0			
Perfluoroundecanoic Acid (PFUnA)	489.6	120	500	2.666	97.4	70-130	0			
Perfluorododecanoic Acid (PFDoA)	509.6	120	500	15.12	98.9	70-130	0			
Perfluorotridecanoic Acid (PFTriA)	245.6	120	500	12.33	46.6	70-130	0			S
Perfluorotetradecanoic Acid (PFTeA)	195.6	120	500	0	39.1	70-130	0			S
Perfluorobutanesulfonic Acid (PFBS)	426.7	25	442	31.11	89.5	70-130	0			
Perfluoropentanesulfonic Acid (PFPeS)	394.3	25	469	0	84.1	70-130	0			
Perfluorohexanesulfonic Acid (PFHxS)	436.4	120	455	0	95.9	70-130	0			
Perfluoroheptanesulfonic Acid (PFHpS)	430	120	476	0	90.3	70-130	0			
Perfluorooctanesulfonic Acid (PFOS)	597.7	25	464	196.8	86.4	70-130	0			
Perfluorononanesulfonic Acid (PFNS)	461.2	120	480	0	96.1	70-130	0			
Perfluorodecanesulfonic Acid (PFDS)	391.2	25	482	0	81.2	70-130	0			
Fluorotelomer Sulphonic Acid 4:2 (FtS)	1590	120	467	0	340	70-130	0			S
Fluorotelomer Sulphonic Acid 6:2 (FtS)	1991	120	474	0	420	70-130	0			S
Fluorotelomer Sulphonic Acid 8:2 (FtS)	1938	120	479	0	405	70-130	0			S
Perfluorooctanesulfonamide (PFOSA)	418.6	25	500	12.79	81.2	70-130	0			
N-Ethylperfluorooctanesulfonamidoac	977.6	120	500	347.7	126	70-130	0			
N-Methylperfluorooctanesulfonamidoa	889.7	120	500	297.3	118	70-130	0			
11Cl-Pf3OUdS	333.1	25	471	0	70.7	70-130	0			
4,8-Dioxa-3H-perfluorononanoic Acid (	409.7	25	471	0	87	70-130	0			
9Cl-PF3ONS	376.2	25	466	0	80.7	70-130	0			
Hexafluoropropylene oxide dimer acid	617.5	120	500	86.72	106	50-130	0			
Surr: 13C4-PFBA	367.4	0	400	0	91.8	50-130	0			
Surr: 13C5-PFPeA	406	0	400	0	101	50-130	0			
Surr: 13C2-PFHxA	423.9	0	400	0	106	50-130	0			
Surr: 13C4-PFHpA	389.6	0	400	0	97.4	50-130	0			
Surr: 13C4-PFOA	448.6	0	400	0	112	70-130	0			
Surr: 13C5-PFNA	405.8	0	400	0	101	70-130	0			
Surr: 13C2-PFDA	441.9	0	400	0	110	70-130	0			
Surr: 13C2-PFUnA	403.9	0	400	0	101	70-130	0			
Surr: 13C2-PFDoA	407.1	0	400	0	102	70-130	0			
Surr: 13C2-PFTeA	134.9	0	400	0	33.7	50-130	0			S
Surr: 13C3-PFBS	467	0	400	0	117	50-130	0			
Surr: 18O2-PFHxS	348.5	0	378	0	92.2	70-130	0			
Surr: 13C4-PFOS	347.1	0	383	0	90.6	70-130	0			
Surr: 13C2-FtS 4:2	1151	0	373	0	308	50-130	0			S

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: GRSD Sewer Authority
Work Order: 21060481
Project: Biosolids PFOS/PFOA

QC BATCH REPORT

Batch ID: 178178		Instrument ID LCMS1		Method: D7968-17a					
<i>Surr: 13C2-FtS 6:2</i>	<i>1334</i>	<i>0</i>	<i>380</i>	<i>0</i>	<i>351</i>	<i>50-130</i>	<i>0</i>	<i>S</i>	
<i>Surr: 13C2-FtS 8:2</i>	<i>1425</i>	<i>0</i>	<i>383</i>	<i>0</i>	<i>372</i>	<i>50-130</i>	<i>0</i>	<i>S</i>	
<i>Surr: 13C8-FOSA</i>	<i>349.3</i>	<i>0</i>	<i>400</i>	<i>0</i>	<i>87.3</i>	<i>50-130</i>	<i>0</i>		
<i>Surr: d3-N-MeFOSAA</i>	<i>524.3</i>	<i>0</i>	<i>400</i>	<i>0</i>	<i>131</i>	<i>50-130</i>	<i>0</i>	<i>S</i>	
<i>Surr: d5-N-EtFOSAA</i>	<i>588.4</i>	<i>0</i>	<i>400</i>	<i>0</i>	<i>147</i>	<i>50-130</i>	<i>0</i>	<i>S</i>	
<i>Surr: 13C3-HFPO-DA</i>	<i>355.7</i>	<i>0</i>	<i>400</i>	<i>0</i>	<i>88.9</i>	<i>50-130</i>	<i>0</i>		

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: GRSD Sewer Authority
 Work Order: 21060481
 Project: Biosolids PFOS/PFOA

QC BATCH REPORT

Batch ID: 178178 Instrument ID LCMS1 Method: D7968-17a

MSD				Sample ID: 21060641-02A MSD			Units: ng/Kg		Analysis Date: 6/8/2021 03:37 PM		
Client ID:			Run ID: LCMS1_210608B			SeqNo: 7470089		Prep Date: 6/8/2021		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Perfluorobutanoic Acid (PFBA)	538.2	120	500	175.9	72.5	50-130	536.5	0.324	30		
Perfluoropentanoic Acid (PFPeA)	497.6	120	500	31.76	93.2	70-130	496.7	0.185	30		
Perfluorohexanoic Acid (PFHxA)	524.3	120	500	0	105	50-130	516.5	1.5	30		
Perfluoroheptanoic Acid (PFHpA)	491.7	120	500	12.18	95.9	50-130	494.3	0.518	30		
Perfluorooctanoic Acid (PFOA)	527.7	25	500	30.29	99.5	70-130	537.6	1.85	30		
Perfluorononanoic Acid (PFNA)	510.8	25	500	16.87	98.8	70-130	500.2	2.11	30		
Perfluorodecanoic Acid (PFDA)	528.1	120	500	25.05	101	70-130	522.3	1.12	30		
Perfluoroundecanoic Acid (PFUnA)	479.9	120	500	2.666	95.5	70-130	489.6	1.99	30		
Perfluorododecanoic Acid (PFDoA)	479.3	120	500	15.12	92.8	70-130	509.6	6.12	30		
Perfluorotridecanoic Acid (PFTriA)	216.9	120	500	12.33	40.9	70-130	245.6	12.4	30	S	
Perfluorotetradecanoic Acid (PFTeA)	169.4	120	500	0	33.9	70-130	195.6	14.4	30	S	
Perfluorobutanesulfonic Acid (PFBS)	431.6	25	442	31.11	90.6	70-130	426.7	1.15	30		
Perfluoropentanesulfonic Acid (PFPeS)	420.6	25	469	0	89.7	70-130	394.3	6.46	30		
Perfluorohexanesulfonic Acid (PFHxS)	428.4	120	455	0	94.2	70-130	436.4	1.85	30		
Perfluoroheptanesulfonic Acid (PFHpS)	379.8	120	476	0	79.8	70-130	430	12.4	30		
Perfluorooctanesulfonic Acid (PFOS)	613.4	25	464	196.8	89.8	70-130	597.7	2.58	30		
Perfluorononanesulfonic Acid (PFNS)	414	120	480	0	86.3	70-130	461.2	10.8	30		
Perfluorodecanesulfonic Acid (PFDS)	408.7	25	482	0	84.8	70-130	391.2	4.36	30		
Fluorotelomer Sulphonic Acid 4:2 (FtS)	1572	120	467	0	337	70-130	1590	1.12	30	S	
Fluorotelomer Sulphonic Acid 6:2 (FtS)	1866	120	474	0	394	70-130	1991	6.5	30	S	
Fluorotelomer Sulphonic Acid 8:2 (FtS)	2112	120	479	0	441	70-130	1938	8.6	30	S	
Perfluorooctanesulfonamide (PFOSA)	406.6	25	500	12.79	78.8	70-130	418.6	2.91	30		
N-Ethylperfluorooctanesulfonamidoac	868	120	500	347.7	104	70-130	977.6	11.9	30		
N-Methylperfluorooctanesulfonamidoa	915.3	120	500	297.3	124	70-130	889.7	2.84	30		
11Cl-Pf3OUdS	325.3	25	471	0	69.1	70-130	333.1	2.36	30	S	
4,8-Dioxa-3H-perfluorononanoic Acid (	409	25	471	0	86.8	70-130	409.7	0.165	30	
9Cl-PF3ONS	369.6	25	466	0	79.3	70-130	376.2	1.78	30		
Hexafluoropropylene oxide dimer acid	599.5	120	500	86.72	103	50-130	617.5	2.96	30		
Surr: 13C4-PFBA	369.2	0	400	0	92.3	50-130	367.4	0.499	30		
Surr: 13C5-PFPeA	401.2	0	400	0	100	50-130	406	1.18	30		
Surr: 13C2-PFHxA	406.5	0	400	0	102	50-130	423.9	4.21	30		
Surr: 13C4-PFHpA	384.4	0	400	0	96.1	50-130	389.6	1.36	30		
Surr: 13C4-PFOA	430.9	0	400	0	108	70-130	448.6	4.02	30		
Surr: 13C5-PFNA	394.3	0	400	0	98.6	70-130	405.8	2.86	30		
Surr: 13C2-PFDA	424.2	0	400	0	106	70-130	441.9	4.09	30		
Surr: 13C2-PFUnA	406.3	0	400	0	102	70-130	403.9	0.593	30		
Surr: 13C2-PFDoA	381.9	0	400	0	95.5	70-130	407.1	6.37	30		
Surr: 13C2-PFTeA	113	0	400	0	28.3	50-130	134.9	17.6	30	S	
Surr: 13C3-PFBS	478.6	0	400	0	120	50-130	467	2.44	30		
Surr: 18O2-PFHxS	337.5	0	378	0	89.3	70-130	348.5	3.21	30		
Surr: 13C4-PFOS	339.9	0	383	0	88.8	70-130	347.1	2.09	30		
Surr: 13C2-FtS 4:2	1096	0	373	0	294	50-130	1151	4.84	30	S	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: GRSD Sewer Authority
 Work Order: 21060481
 Project: Biosolids PFOS/PFOA

QC BATCH REPORT

Batch ID: 178178	Instrument ID LCMS1	Method: D7968-17a									
<i>Surr: 13C2-FtS 6:2</i>	<i>1279</i>	<i>0</i>	<i>380</i>	<i>0</i>	<i>337</i>	<i>50-130</i>	<i>1334</i>	<i>4.18</i>	<i>30</i>	<i>S</i>	
<i>Surr: 13C2-FtS 8:2</i>	<i>1437</i>	<i>0</i>	<i>383</i>	<i>0</i>	<i>375</i>	<i>50-130</i>	<i>1425</i>	<i>0.834</i>	<i>30</i>	<i>S</i>	
<i>Surr: 13C8-FOSA</i>	<i>344.9</i>	<i>0</i>	<i>400</i>	<i>0</i>	<i>86.2</i>	<i>50-130</i>	<i>349.3</i>	<i>1.28</i>	<i>30</i>		
<i>Surr: d3-N-MeFOSAA</i>	<i>494.5</i>	<i>0</i>	<i>400</i>	<i>0</i>	<i>124</i>	<i>50-130</i>	<i>524.3</i>	<i>5.87</i>	<i>30</i>		
<i>Surr: d5-N-EtFOSAA</i>	<i>597.3</i>	<i>0</i>	<i>400</i>	<i>0</i>	<i>149</i>	<i>50-130</i>	<i>588.4</i>	<i>1.5</i>	<i>30</i>	<i>S</i>	
<i>Surr: 13C3-HFPO-DA</i>	<i>352.2</i>	<i>0</i>	<i>400</i>	<i>0</i>	<i>88</i>	<i>50-130</i>	<i>355.7</i>	<i>1</i>	<i>30</i>		

LCS1				Sample ID: LCS1-178178-178178		Units: ng/Kg		Analysis Date: 6/8/2021 02:44 PM			
Client ID:		Run ID: LCMS1_210608B			SeqNo: 7470084		Prep Date: 6/8/2021		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Perfluorooctanoic Acid (PFOA)	32.67	25	25	0	131	35-150	0				
Perfluorononanoic Acid (PFNA)	34.12	25	25	0	136	35-150	0				
Perfluorobutanesulfonic Acid (PFBS)	29.49	25	22	0	134	35-150	0				
Perfluoropentanesulfonic Acid (PFPeS)	35.61	25	23.5	0	152	35-150	0			S	
Perfluorooctanesulfonic Acid (PFOS)	26.78	25	23	0	116	35-150	0				
Perfluorodecanesulfonic Acid (PFDS)	42.89	25	24	0	179	35-150	0			S	
Perfluorooctanesulfonamide (PFOSA)	25.88	25	25	0	104	35-150	0				
11Cl-Pf3OUdS	27.76	25	23.5	0	118	35-150	0				
4,8-Dioxa-3H-perfluorononanoic Acid (	27.61	25	23.5	0	117	35-150	0			
9Cl-PF3ONS	24.84	25	23	0	108	35-150	0			J	
Surr: 13C4-PFBA	374.9	0	400	0	93.7	50-130	0				
Surr: 13C5-PFPeA	405.4	0	400	0	101	50-130	0				
Surr: 13C2-PFHxA	428.2	0	400	0	107	50-130	0				
Surr: 13C4-PFHpA	394.3	0	400	0	98.6	50-130	0				
Surr: 13C4-PFOA	435.1	0	400	0	109	70-130	0				
Surr: 13C5-PFNA	381.2	0	400	0	95.3	70-130	0				
Surr: 13C2-PFDA	395.7	0	400	0	98.9	70-130	0				
Surr: 13C2-PFUnA	387.8	0	400	0	97	70-130	0				
Surr: 13C2-PFDoA	455.8	0	400	0	114	70-130	0				
Surr: 13C2-PFTeA	432.9	0	400	0	108	50-130	0				
Surr: 13C3-PFBS	369.8	0	400	0	92.5	50-130	0				
Surr: 18O2-PFHxS	333	0	378	0	88.1	70-130	0				
Surr: 13C4-PFOS	357.1	0	383	0	93.2	70-130	0				
Surr: 13C2-FtS 4:2	253.9	0	373	0	68.1	50-130	0				
Surr: 13C2-FtS 6:2	316	0	380	0	83.2	50-130	0				
Surr: 13C2-FtS 8:2	357.3	0	383	0	93.3	50-130	0				
Surr: 13C8-FOSA	393.7	0	400	0	98.4	50-130	0				
Surr: d3-N-MeFOSAA	419.4	0	400	0	105	50-130	0				
Surr: d5-N-EtFOSAA	469.3	0	400	0	117	50-130	0				
Surr: 13C3-HFPO-DA	388.5	0	400	0	97.1	50-130	0				

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: GRSD Sewer Authority
Work Order: 21060481
Project: Biosolids PFOS/PFOA

QC BATCH REPORT

Batch ID: **178178** Instrument ID **LCMS1** Method: **D7968-17a**

LCS2 Sample ID: LCS2-178178-178178				Units: ng/Kg		Analysis Date: 6/8/2021 03:05 PM				
Client ID:		Run ID: LCMS1_210608B		SeqNo: 7470086		Prep Date: 6/8/2021		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Perfluorobutanoic Acid (PFBA)	475.5	120	500	0	95.1	50-130	0			
Perfluoropentanoic Acid (PFPeA)	515	120	500	0	103	70-130	0			
Perfluorohexanoic Acid (PFHxA)	527.6	120	500	0	106	50-130	0			
Perfluoroheptanoic Acid (PFHpA)	499.6	120	500	0	99.9	50-130	0			
Perfluorooctanoic Acid (PFOA)	496.4	25	500	0	99.3	70-130	0			
Perfluorononanoic Acid (PFNA)	477.6	25	500	0	95.5	70-130	0			
Perfluorodecanoic Acid (PFDA)	490.6	120	500	0	98.1	70-130	0			
Perfluoroundecanoic Acid (PFUnA)	456.1	120	500	0	91.2	70-130	0			
Perfluorododecanoic Acid (PFDoA)	571.5	120	500	0	114	70-130	0			
Perfluorotridecanoic Acid (PFTriA)	472.5	120	500	0	94.5	70-130	0			
Perfluorotetradecanoic Acid (PFTeA)	611	120	500	0	122	70-130	0			
Perfluorobutanesulfonic Acid (PFBS)	456.3	25	442	0	103	70-130	0			
Perfluoropentanesulfonic Acid (PFPeS)	441.4	25	469	0	94.1	70-130	0			
Perfluorohexanesulfonic Acid (PFHxS)	427.9	120	455	0	94	70-130	0			
Perfluoroheptanesulfonic Acid (PFHpS)	478.2	120	476	0	100	70-130	0			
Perfluorooctanesulfonic Acid (PFOS)	443.7	25	464	0	95.6	70-130	0			
Perfluorononanesulfonic Acid (PFNS)	473.4	120	480	0	98.6	70-130	0			
Perfluorodecanesulfonic Acid (PFDS)	519.9	25	482	0	108	70-130	0			
Fluorotelomer Sulphonic Acid 4:2 (FtS)	436.8	120	467	0	93.5	70-130	0			
Fluorotelomer Sulphonic Acid 6:2 (FtS)	506.2	120	474	0	107	70-130	0			
Fluorotelomer Sulphonic Acid 8:2 (FtS)	480	120	479	0	100	70-130	0			
Perfluorooctanesulfonamide (PFOSA)	470.1	25	500	0	94	70-130	0			
N-Ethylperfluorooctanesulfonamidoac	426.3	120	500	0	85.3	70-130	0			
N-Methylperfluorooctanesulfonamidoa	442.2	120	500	0	88.4	70-130	0			
11Cl-Pf3OUdS	438.7	25	471	0	93.1	70-130	0			
4,8-Dioxa-3H-perfluorononanoic Acid (	423.2	25	471	0	89.8	70-130	0			
9Cl-PF3ONS	409.3	25	466	0	87.8	70-130	0			
Hexafluoropropylene oxide dimer acid	533.6	120	500	0	107	50-130	0			
Surr: 13C4-PFBA	383.6	0	400	0	95.9	50-130	0			
Surr: 13C5-PFPeA	401.4	0	400	0	100	50-130	0			
Surr: 13C2-PFHxA	409.9	0	400	0	102	50-130	0			
Surr: 13C4-PFHpA	381.6	0	400	0	95.4	50-130	0			
Surr: 13C4-PFOA	426.9	0	400	0	107	70-130	0			
Surr: 13C5-PFNA	381.6	0	400	0	95.4	70-130	0			
Surr: 13C2-PFDA	398.3	0	400	0	99.6	70-130	0			
Surr: 13C2-PFUnA	384.4	0	400	0	96.1	70-130	0			
Surr: 13C2-PFDoA	449	0	400	0	112	70-130	0			
Surr: 13C2-PFTeA	405.3	0	400	0	101	50-130	0			
Surr: 13C3-PFBS	366.6	0	400	0	91.6	50-130	0			
Surr: 18O2-PFHxS	365.9	0	378	0	96.8	70-130	0			
Surr: 13C4-PFOS	374.5	0	383	0	97.8	70-130	0			
Surr: 13C2-FtS 4:2	270.4	0	373	0	72.5	50-130	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: GRSD Sewer Authority
Work Order: 21060481
Project: Biosolids PFOS/PFOA

QC BATCH REPORT

Batch ID: 178178		Instrument ID LCMS1		Method: D7968-17a				
<i>Surr: 13C2-FtS 6:2</i>	<i>306.9</i>	<i>0</i>	<i>380</i>	<i>0</i>	<i>80.8</i>	<i>50-130</i>	<i>0</i>	
<i>Surr: 13C2-FtS 8:2</i>	<i>335.4</i>	<i>0</i>	<i>383</i>	<i>0</i>	<i>87.6</i>	<i>50-130</i>	<i>0</i>	
<i>Surr: 13C8-FOSA</i>	<i>397.8</i>	<i>0</i>	<i>400</i>	<i>0</i>	<i>99.5</i>	<i>50-130</i>	<i>0</i>	
<i>Surr: d3-N-MeFOSAA</i>	<i>394.1</i>	<i>0</i>	<i>400</i>	<i>0</i>	<i>98.5</i>	<i>50-130</i>	<i>0</i>	
<i>Surr: d5-N-EtFOSAA</i>	<i>431.4</i>	<i>0</i>	<i>400</i>	<i>0</i>	<i>108</i>	<i>50-130</i>	<i>0</i>	
<i>Surr: 13C3-HFPO-DA</i>	<i>389</i>	<i>0</i>	<i>400</i>	<i>0</i>	<i>97.3</i>	<i>50-130</i>	<i>0</i>	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: GRSD Sewer Authority
 Work Order: 21060481
 Project: Biosolids PFOS/PFOA

QC BATCH REPORT

Batch ID: 178178 Instrument ID LCMS1 Method: D7968-17a

LCS3 Sample ID: LCS3-178178-178178				Units: ng/Kg		Analysis Date: 6/8/2021 02:55 PM				
Client ID:		Run ID: LCMS1_210608B		SeqNo: 7470085		Prep Date: 6/8/2021		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Perfluorobutanoic Acid (PFBA)	123.4	120	125	0	98.7	35-150	0			
Perfluoropentanoic Acid (PFPeA)	147.8	120	125	0	118	35-150	0			
Perfluorohexanoic Acid (PFHxA)	124.1	120	125	0	99.3	35-150	0			
Perfluoroheptanoic Acid (PFHpA)	127	120	125	0	102	35-150	0			
Perfluorooctanoic Acid (PFOA)	133.7	25	125	0	107	35-150	0			
Perfluorononanoic Acid (PFNA)	122.9	25	125	0	98.3	35-150	0			
Perfluorodecanoic Acid (PFDA)	126.8	120	125	0	101	35-150	0			
Perfluoroundecanoic Acid (PFUnA)	123.1	120	125	0	98.4	35-150	0			
Perfluorododecanoic Acid (PFDoA)	136	120	125	0	109	35-150	0			
Perfluorotridecanoic Acid (PFTriA)	124.3	120	125	0	99.4	35-150	0			
Perfluorotetradecanoic Acid (PFTeA)	154.1	120	125	0	123	35-150	0			
Perfluorobutanesulfonic Acid (PFBS)	103.1	25	110	0	93.8	35-150	0			
Perfluoropentanesulfonic Acid (PFPeS)	117.8	25	118	0	99.8	35-150	0			
Perfluorohexanesulfonic Acid (PFHxS)	99.65	120	115	0	86.7	35-150	0			J
Perfluoroheptanesulfonic Acid (PFHpS)	110.8	120	120	0	92.3	35-150	0			J
Perfluorooctanesulfonic Acid (PFOS)	99.76	25	115	0	86.7	35-150	0			
Perfluorononanesulfonic Acid (PFNS)	94.01	120	120	0	78.3	35-150	0			J
Perfluorodecanesulfonic Acid (PFDS)	121.9	25	120	0	102	35-150	0			
Fluorotelomer Sulphonic Acid 4:2 (FtS)	122.6	120	118	0	104	35-150	0			
Fluorotelomer Sulphonic Acid 6:2 (FtS)	136	120	118	0	115	35-150	0			
Fluorotelomer Sulphonic Acid 8:2 (FtS)	121.3	120	120	0	101	35-150	0			
Perfluorooctanesulfonamide (PFOSA)	133.5	25	125	0	107	35-150	0			
N-Ethylperfluorooctanesulfonamidoac	136.3	120	125	0	109	35-150	0			
N-Methylperfluorooctanesulfonamidoa	117.8	120	125	0	94.3	35-150	0			J
11Cl-Pf3OUdS	110.3	25	118	0	93.4	35-150	0			
4,8-Dioxa-3H-perfluorononanoic Acid (	110.8	25	118	0	93.9	35-150	0			
9Cl-PF3ONS	110	25	118	0	93.2	35-150	0			
Hexafluoropropylene oxide dimer acid	136.7	120	125	0	109	35-150	0			
Surr: 13C4-PFBA	395.1	0	400	0	98.8	50-130	0			
Surr: 13C5-PFPeA	410.5	0	400	0	103	50-130	0			
Surr: 13C2-PFHxA	435.8	0	400	0	109	50-130	0			
Surr: 13C4-PFHpA	398.4	0	400	0	99.6	50-130	0			
Surr: 13C4-PFOA	444.7	0	400	0	111	70-130	0			
Surr: 13C5-PFNA	406.9	0	400	0	102	70-130	0			
Surr: 13C2-PFDA	421.9	0	400	0	105	70-130	0			
Surr: 13C2-PFUnA	409.5	0	400	0	102	70-130	0			
Surr: 13C2-PFDoA	451.9	0	400	0	113	70-130	0			
Surr: 13C2-PFTeA	415.8	0	400	0	104	50-130	0			
Surr: 13C3-PFBS	382	0	400	0	95.5	50-130	0			
Surr: 18O2-PFHxS	374.7	0	378	0	99.1	70-130	0			
Surr: 13C4-PFOS	381.6	0	383	0	99.6	70-130	0			
Surr: 13C2-FtS 4:2	278.1	0	373	0	74.6	50-130	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: GRSD Sewer Authority
Work Order: 21060481
Project: Biosolids PFOS/PFOA

QC BATCH REPORT

Batch ID: 178178		Instrument ID LCMS1		Method: D7968-17a				
<i>Surr: 13C2-FtS 6:2</i>	<i>337.8</i>	<i>0</i>	<i>380</i>	<i>0</i>	<i>88.9</i>	<i>50-130</i>	<i>0</i>	
<i>Surr: 13C2-FtS 8:2</i>	<i>349.1</i>	<i>0</i>	<i>383</i>	<i>0</i>	<i>91.1</i>	<i>50-130</i>	<i>0</i>	
<i>Surr: 13C8-FOSA</i>	<i>406.9</i>	<i>0</i>	<i>400</i>	<i>0</i>	<i>102</i>	<i>50-130</i>	<i>0</i>	
<i>Surr: d3-N-MeFOSAA</i>	<i>424.8</i>	<i>0</i>	<i>400</i>	<i>0</i>	<i>106</i>	<i>50-130</i>	<i>0</i>	
<i>Surr: d5-N-EtFOSAA</i>	<i>465</i>	<i>0</i>	<i>400</i>	<i>0</i>	<i>116</i>	<i>50-130</i>	<i>0</i>	
<i>Surr: 13C3-HFPO-DA</i>	<i>381.6</i>	<i>0</i>	<i>400</i>	<i>0</i>	<i>95.4</i>	<i>50-130</i>	<i>0</i>	

The following samples were analyzed in this batch:

21060481-01A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: GRSD Sewer Authority
 Work Order: 21060481
 Project: Biosolids PFOS/PFOA

QC BATCH REPORT

Batch ID: **R319440** Instrument ID **MOIST** Method: **SW3550C**

MBLK		Sample ID: WBLKS-R319440				Units: % of sample		Analysis Date: 6/9/2021 04:40 PM		
Client ID:		Run ID: MOIST_210609D				SeqNo: 7474223		Prep Date:		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Moisture ND 0.10

LCS		Sample ID: LCS-R319440				Units: % of sample		Analysis Date: 6/9/2021 04:40 PM		
Client ID:		Run ID: MOIST_210609D				SeqNo: 7474222		Prep Date:		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Moisture 99.99 0.10 100 0 100 98-102 0

DUP		Sample ID: 21060443-01B DUP				Units: % of sample		Analysis Date: 6/9/2021 04:40 PM		
Client ID:		Run ID: MOIST_210609D				SeqNo: 7474201		Prep Date:		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Moisture 4.31 0.10 0 0 0 0-0 4.12 4.51 10

DUP		Sample ID: 21060672-01A DUP				Units: % of sample		Analysis Date: 6/9/2021 04:40 PM		
Client ID:		Run ID: MOIST_210609D				SeqNo: 7474220		Prep Date:		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Moisture 11.87 0.10 0 0 0 0-0 10.92 8.34 10

The following samples were analyzed in this batch:

21060481-01A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.


Environmental

 Cincinnati, OH
+1 513 733 5336

 Fort Collins, CO
+1 970 490 1511

 Everett, WA
+1 425 356 2600

 Holland, MI
+1 616 399 6070

Chain of Custody Form

Page ____ of ____

COC ID:

40372

 Houston, TX
+1 281 530 5656

 Spring City, PA
+1 610 948 4903

 South Charleston, WV
+1 304 356 3168

 Middletown, PA
+1 717 944 5541

 Salt Lake City, UT
+1 801 266 7700

 York, PA
+1 717 505 5280

ALS Project Manager:

ALS Work Order #:

21060481

Customer Information
Project Information
Parameter/Method Request for Analysis

Purchase Order	10706	Project Name	Biosolids PFOS/PFOA	A	PFOS/PFOA
Work Order		Project Number		B	
Company Name	GRSD Sewer Authority	Bill To Company	GRSD Sewer Authority	C	
Send Report To	Bob Zboril	Invoice Attn	Accounts Payable	D	
Address	10831 Kruger Rd	Address	10831 Kruger Rd	E	
				F	
City/State/Zip	New Buffalo, MI 49117	City/State/Zip	New Buffalo, MI 49117	G	
Phone	(269) 469-3434	Phone	(269) 469-3434	H	
Fax	(269) 469-0058	Fax	(269) 469-0058	I	
e-Mail Address		e-Mail Address		J	

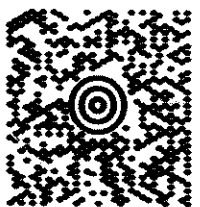
No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	Sludge (New Storage)	6-2-21	3pm	Sludge	NO	1	✓										
2																	
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	

Sampler(s) Please Print & Sign <i>Josh Teeter</i>		Shipment Method		Turnaround Time in Business Days (BD) <input type="checkbox"/> Other _____				Results Due Date:	
				<input type="checkbox"/> 10 BD <input type="checkbox"/> 5 BD <input type="checkbox"/> 3 BD <input type="checkbox"/> 2 BD <input type="checkbox"/> 1 BD					
Relinquished by <i>[Signature]</i>	Date:	Time:	Received by: <i>UPS</i>		Notes:				
Relinquished by <i>[Signature]</i>	Date:	Time:	Received by (Laboratory): <i>[Signature]</i>		Cooler ID	Cooler Temp	QC Package: (Check One Box Below)		
Logged by (Laboratory): <i>Kew</i>	Date: 6/3/21	Time: 1000	Checked by (Laboratory): <i>[Signature]</i>		123	3.8°C	<input type="checkbox"/> Level II Std QC <input type="checkbox"/> TRRP Checklist <input type="checkbox"/> Level III Std QC/Raw Date <input type="checkbox"/> TRRP Level IV <input type="checkbox"/> Level IV SW846/CLP <input type="checkbox"/> Other _____		
Preservative Key: 1-HCl 2-HNO ₃ 3-H ₂ SO ₄ 4-NaOH 5-Na ₂ S ₂ O ₃ 6-NaHSO ₄ 7-Other 8-4°C 9-5035									

GSRD SENER AUTHORITY
(269) 469-3434
10801 KRUGER RD
NEW BUFFALO MI 49117

SHIP ALS ENVIRONMENTAL
TO: 3352 128TH AVE

HOLLAND MI 49424-926



MI 4



UPS GROUND

TRACKING #: 1Z A91 3E3 03 02E



body Seal

BILLING: P/P

alsglobal.com

Company: GSRD
33 Name: Bob Zbori
Date: 6-3-21

Not a controlled item
No exportation
allowed

Sample Receipt Checklist

Client Name: **GALIEN**

Date/Time Received: **04-Jun-21 10:00**

Work Order: **21060481**

Received by: **KRW**

Checklist completed by Keith Wurenga
eSignature

04-Jun-21
Date

Reviewed by: Bill Carey
eSignature

07-Jun-21
Date

Matrices: **Solid**

Carrier name: **UPS**

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on shipping container/cooler?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Container/Temp Blank temperature in compliance?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample(s) received on ice?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Temperature(s)/Thermometer(s):	<u>3.8/4.8 C</u>		<u>IR3</u>
Cooler(s)/Kit(s):	<u></u>		
Date/Time sample(s) sent to storage:	<u>6/4/2021 12:50:30 PM</u>		
Water - VOA vials have zero headspace?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>
Water - pH acceptable upon receipt?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
pH adjusted?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
pH adjusted by:	<u>-</u>		

Login Notes:

Client Contacted:

Date Contacted:

Person Contacted:

Contacted By:

Regarding:

Comments:

CorrectiveAction: