



Per- and Polyfluoroalkyl Substances (PFAS) Report

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I. PWS INFORMATION: Please refer to your MassDEP Water Quality Sampling Schedule (WQSS) to help complete this form

PWS ID #: **2177000** City / Town: **Medway**

PWS Name: **Medway Water Department** PWS Class: COM ☒ NTNC ☐ TNC ☐

MassDEP LOCATION (LOC) ID#	MassDEP Location Name	Sample Information		Date Collected	Collected By
2177000-02G	Well #2 – Oakland St.	☐ (M)ultiple ☒ (S)ingle	☒ (R)aw ☐ (F)inished	5/6/2020	Alysa Longo
Routine or Special Sample	Original, Resubmitted or Confirmation Report	If Resubmitted Report, list below:			
		(1) Reason for Resubmission		(2) Collection Date of Original Sample	
☐ RS ☒ SS	☒ Original ☐ Resubmitted ☐ Confirmation	☐ Resample ☐ Reanalysis ☐ Report Correction			
SAMPLE NOTES – Such as, if a Manifold/Multiple sample, list the source(s) that were on-line during sample collection.					
None					

II. ANALYTICAL LABORATORY INFORMATION:

Primary Lab Cert. #: **E87856** Primary Lab Name: **Battelle** Subcontracted? (Y/N) **N**

Analysis Lab Cert. #: Analysis Lab Name:

If Analysis Lab is not certified by MassDEP or U.S. EPA, list certification authority:

Lab Method	Date Extracted	Date Analyzed	Lab Sample ID#	LAB SAMPLE NOTES - Include information as to whether sample was diluted or additional contaminants detected.
537.1	5/7/2020	5/8/2020	H5327	Results are average of three replicates

CAS#	REGULATED AND UNREGULATED PFAS CONTAMINANTS	Report One of the Following			ORSG ¹ ng/L	MRL ² ng/L
		Results ³ ng/L	<MRL (Check ✓)	<1/3MRL (Check ✓)		
1763-23-1	Perfluorooctane Sulfonic Acid (PFOS)	2.21	☐	☐	20	1.83
335-67-1	Perfluorooctanoic Acid (PFOA)	3.21	☐	☐	20	1.83
355-46-4	Perfluorohexane Sulfonic Acid (PFHxS)		☒	☐	20	1.83
375-95-1	Perfluorononanoic Acid (PFNA)		☐	☒	20	1.83
375-85-9	Perfluoroheptanoic Acid (PFHpA)		☒	☐	20	1.83
335-76-2	Perfluorodecanoic acid (PFDA)		☐	☒	20	1.83
375-73-5	Perfluorobutane sulfonic acid (PFBS)		☒	☐	-	1.83
307-55-1	Perfluorododecanoic acid (PFDoA)		☐	☒	-	1.83
307-24-4	Perfluorohexanoic acid (PFHxA)	1.88	☐	☐	-	1.83
376-06-7	Perfluorotetradecanoic acid (PFTA)		☐	☒	-	1.83
72629-94-8	Perfluorotridecanoic acid (PFTDA)		☐	☒	-	1.83
2058-94-8	Perfluoroundecanoic acid (PFUnA)		☐	☒	-	1.83
2991-50-6	N-ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)		☐	☒	-	1.83
2355-31-9	N-methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)		☐	☒	-	1.83
763051-92-9	11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11CI-PF3OUdS)		☐	☒	-	1.83
756426-58-1	9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CI-PF3ONS)		☐	☒	-	1.83
919005-14-4	4,8-dioxa-3H-perfluorononanoic acid (ADONA)		☐	☒	-	1.83
13252-13-6	Hexafluoropropylene oxide dimer acid (HFPO-DA)		☐	☒	-	1.83

¹ The MassDEP ORSG is 20 ng/L calculated to 2 significant figures for PFOA, PFOS, PFHxS, PFNA, PFHpA and PFDA, individually or added together.² The minimum reporting level (MRL) is the lowest concentration of the substance tested that can be reported reliably under normal laboratory conditions.³ A field reagent blank (FRB) must be analyzed and reported on a separate PFAS form if any PFAS are detected above the MRL.



Per- and Polyfluoroalkyl Substances (PFAS) Report

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PWS ID#:

2177000

Lab Sample ID#:

H5327

CAS#	REGULATED AND UNREGULATED PFAS CONTAMINANTS	Report One of the Following			ORSG ¹ ng/L	MRL ² ng/L
		Results ³ ng/L	<MRL (Check ✓)	<1/3MRL (Check ✓)		
			☐	☐		
			☐	☐		
			☐	☐		
			☐	☐		
			☐	☐		
			☐	☐		
			☐	☐		
			☐	☐		
			☐	☐		
			☐	☐		
			☐	☐		
			☐	☐		

¹ The MassDEP ORSG is 20 ng/L calculated to 2 significant figures for PFOA, PFOS, PFHxS, PFNA, PFHpA and PFDA, individually or added together.

² The minimum reporting level (MRL) is the lowest concentration of the substance tested that can be reported reliably under normal laboratory conditions.

³ A field reagent blank (FRB) must be analyzed and reported on a separate PFAS form if any PFAS are detected above the MRL.

☐ Check this box if attaching lab report to show additional PFAS results/contaminants tested.

Surrogate Name	% Recovery (70 – 130%)
13C2-PFHxA	102
13C2-PFDA	84
d5-EtFOSAA	89
13C3-HFPO-DA	91

In addition to reporting the Surrogate Recoveries above you must attach the results of the ongoing quality control results for the extraction batch that includes this sample. These include LRB, LFB, LFSM and either a FD or LFSMD as specified in the method.

I certify under penalties of law that I am the person authorized to fill out this form and the information contained herein is true, accurate and complete to the best extent of my knowledge.

Primary Lab Director Signature: _____

Date: 6/3/2020

If not submitting these results electronically, mail TWO copies of this report to your MassDEP Regional Office no later than 10 days after the end of the month in which you received this report or no later than 10 days after the end of the reporting period, whichever is sooner.

MassDEP REVIEW STATUS (Initial & Date) ☐ Accepted _____ ☐ Disapproved _____	Review Comments	☐ WQTS Data Entered
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Project Client: Environmental Partners
 Project Name: PFAS in Drinking Water
 Project No.: 100105456-0055

Client ID: Oakland St. Well Sample

Battelle ID: H5327-FS
 Sample Type: SA
 Collection Date: 05/06/2020
 Extraction Date: 05/07/2020
 Analytical Instrument: Sciex 5500 LC/MS/MS
 % Moisture: NA
 Matrix: DW
 Sample Size: 0.270
 Size Unit-Basis: L

Analyte	CAS No.	Result (ng/L)	Extract ID	DF	Analysis Date	DL	LOD	LOQ
PFHxA	307-24-4	1.86	H5327-FS(0)	1.000	5/8/2020	0.21	0.46	1.85
PFHpA	375-85-9	1.32 J	H5327-FS(0)	1.000	5/8/2020	0.21	0.46	1.85
PFOA	335-67-1	3.08	H5327-FS(0)	1.000	5/8/2020	0.19	0.46	1.85
PFNA	375-95-1	0.13 J	H5327-FS(0)	1.000	5/8/2020	0.11	0.37	1.85
PFDA	335-76-2	0.37 U	H5327-FS(0)	1.000	5/8/2020	0.10	0.37	1.85
PFUnA	2058-94-8	0.37 U	H5327-FS(0)	1.000	5/8/2020	0.09	0.37	1.85
PFDoA	307-55-1	0.46 U	H5327-FS(0)	1.000	5/8/2020	0.13	0.46	1.85
PFTTrDA	72629-94-8	0.37 U	H5327-FS(0)	1.000	5/8/2020	0.09	0.37	1.85
PFTeDA	376-06-7	0.46 U	H5327-FS(0)	1.000	5/8/2020	0.20	0.46	1.85
NMeFOSAA	2355-31-9	0.46 U	H5327-FS(0)	1.000	5/8/2020	0.19	0.46	1.85
NEtFOSAA	2991-50-6	0.46 U	H5327-FS(0)	1.000	5/8/2020	0.16	0.46	1.85
PFBS	375-73-5	0.82 J	H5327-FS(0)	1.000	5/8/2020	0.11	0.37	1.85
PFHxS	355-46-4	0.69 J	H5327-FS(0)	1.000	5/8/2020	0.11	0.37	1.85
PFOS	1763-23-1	2.15	H5327-FS(0)	1.000	5/8/2020	0.14	0.46	1.85
HFPO-DA	13252-13-6	0.37 U	H5327-FS(0)	1.000	5/8/2020	0.08	0.37	1.85
Adona	919005-14-4	0.37 U	H5327-FS(0)	1.000	5/8/2020	0.11	0.37	1.85
11Cl-PF3OUdS	763051-92-9	0.37 U	H5327-FS(0)	1.000	5/8/2020	0.09	0.37	1.85
9Cl-PF3ONS	756426-58-1	0.37 U	H5327-FS(0)	1.000	5/8/2020	0.11	0.37	1.85

<i>Surrogate Recoveries (%)</i>		Recovery	Extract ID	Analysis Date
13C2-PFHxA		101	H5327-FS(0)	5/8/2020
13C2-PFDA		80	H5327-FS(0)	5/8/2020
d5-EtFOSAA		85	H5327-FS(0)	5/8/2020
13C3-HFPO-DA		87	H5327-FS(0)	5/8/2020

Analyzed by: Griffith, Lauren
 Printed: 6/2/2020



Project Client: Environmental Partners
 Project Name: PFAS in Drinking Water
 Project No.: 100105456-0055

Client ID: Oakland St. Well Duplicate

Battelle ID: H5328-FS
 Sample Type: SA
 Collection Date: 05/06/2020
 Extraction Date: 05/07/2020
 Analytical Instrument: Sciex 5500 LC/MS/MS
 % Moisture: NA
 Matrix: DW
 Sample Size: 0.270
 Size Unit-Basis: L

Analyte	CAS No.	Result (ng/L)	Extract ID	DF	Analysis Date	DL	LOD	LOQ
PFHxA	307-24-4	1.91	H5328-FS(0)	1.000	5/8/2020	0.21	0.46	1.85
PFHpA	375-85-9	1.19 J	H5328-FS(0)	1.000	5/8/2020	0.21	0.46	1.85
PFOA	335-67-1	3.20	H5328-FS(0)	1.000	5/8/2020	0.19	0.46	1.85
PFNA	375-95-1	0.13 J	H5328-FS(0)	1.000	5/8/2020	0.11	0.37	1.85
PFDA	335-76-2	0.37 U	H5328-FS(0)	1.000	5/8/2020	0.10	0.37	1.85
PFUnA	2058-94-8	0.37 U	H5328-FS(0)	1.000	5/8/2020	0.09	0.37	1.85
PFDoA	307-55-1	0.46 U	H5328-FS(0)	1.000	5/8/2020	0.13	0.46	1.85
PFTTrDA	72629-94-8	0.37 U	H5328-FS(0)	1.000	5/8/2020	0.09	0.37	1.85
PFTeDA	376-06-7	0.46 U	H5328-FS(0)	1.000	5/8/2020	0.20	0.46	1.85
NMeFOSAA	2355-31-9	0.46 U	H5328-FS(0)	1.000	5/8/2020	0.19	0.46	1.85
NEtFOSAA	2991-50-6	0.46 U	H5328-FS(0)	1.000	5/8/2020	0.16	0.46	1.85
PFBS	375-73-5	0.84 J	H5328-FS(0)	1.000	5/8/2020	0.11	0.37	1.85
PFHxS	355-46-4	0.72 J	H5328-FS(0)	1.000	5/8/2020	0.11	0.37	1.85
PFOS	1763-23-1	2.21	H5328-FS(0)	1.000	5/8/2020	0.14	0.46	1.85
HFPO-DA	13252-13-6	0.37 U	H5328-FS(0)	1.000	5/8/2020	0.08	0.37	1.85
Adona	919005-14-4	0.37 U	H5328-FS(0)	1.000	5/8/2020	0.11	0.37	1.85
11Cl-PF3OUdS	763051-92-9	0.37 U	H5328-FS(0)	1.000	5/8/2020	0.09	0.37	1.85
9Cl-PF3ONS	756426-58-1	0.37 U	H5328-FS(0)	1.000	5/8/2020	0.11	0.37	1.85

<i>Surrogate Recoveries (%)</i>		Recovery	Extract ID	Analysis Date
13C2-PFHxA		99	H5328-FS(0)	5/8/2020
13C2-PFDA		83	H5328-FS(0)	5/8/2020
d5-EtFOSAA		89	H5328-FS(0)	5/8/2020
13C3-HFPO-DA		90	H5328-FS(0)	5/8/2020

Analyzed by: Griffith, Lauren
 Printed: 6/2/2020



Project Client: Environmental Partners
 Project Name: PFAS in Drinking Water
 Project No.: 100105456-0055

Client ID: Oakland St. Well Triplicate

Battelle ID: H5329-FS
 Sample Type: SA
 Collection Date: 05/06/2020
 Extraction Date: 05/07/2020
 Analytical Instrument: Sciex 5500 LC/MS/MS
 % Moisture: NA
 Matrix: DW
 Sample Size: 0.280
 Size Unit-Basis: L

Analyte	CAS No.	Result (ng/L)	Extract ID	DF	Analysis Date	DL	LOD	LOQ
PFHxA	307-24-4	1.86	H5329-FS(0)	1.000	5/8/2020	0.21	0.45	1.79
PFHpA	375-85-9	1.32 J	H5329-FS(0)	1.000	5/8/2020	0.21	0.45	1.79
PFOA	335-67-1	3.35	H5329-FS(0)	1.000	5/8/2020	0.18	0.45	1.79
PFNA	375-95-1	0.14 J	H5329-FS(0)	1.000	5/8/2020	0.11	0.36	1.79
PFDA	335-76-2	0.36 U	H5329-FS(0)	1.000	5/8/2020	0.10	0.36	1.79
PFUnA	2058-94-8	0.36 U	H5329-FS(0)	1.000	5/8/2020	0.09	0.36	1.79
PFDoA	307-55-1	0.45 U	H5329-FS(0)	1.000	5/8/2020	0.13	0.45	1.79
PFTTrDA	72629-94-8	0.36 U	H5329-FS(0)	1.000	5/8/2020	0.09	0.36	1.79
PFTeDA	376-06-7	0.45 U	H5329-FS(0)	1.000	5/8/2020	0.20	0.45	1.79
NMeFOSAA	2355-31-9	0.45 U	H5329-FS(0)	1.000	5/8/2020	0.18	0.45	1.79
NEtFOSAA	2991-50-6	0.45 U	H5329-FS(0)	1.000	5/8/2020	0.15	0.45	1.79
PFBS	375-73-5	0.87 J	H5329-FS(0)	1.000	5/8/2020	0.11	0.36	1.79
PFHxS	355-46-4	0.75 J	H5329-FS(0)	1.000	5/8/2020	0.11	0.36	1.79
PFOS	1763-23-1	2.27	H5329-FS(0)	1.000	5/8/2020	0.13	0.45	1.79
HFPO-DA	13252-13-6	0.36 U	H5329-FS(0)	1.000	5/8/2020	0.08	0.36	1.79
Adona	919005-14-4	0.36 U	H5329-FS(0)	1.000	5/8/2020	0.11	0.36	1.79
11Cl-PF3OUdS	763051-92-9	0.36 U	H5329-FS(0)	1.000	5/8/2020	0.09	0.36	1.79
9Cl-PF3ONS	756426-58-1	0.36 U	H5329-FS(0)	1.000	5/8/2020	0.11	0.36	1.79

<i>Surrogate Recoveries (%)</i>		Recovery	Extract ID	Analysis Date
13C2-PFHxA		106	H5329-FS(0)	5/8/2020
13C2-PFDA		89	H5329-FS(0)	5/8/2020
d5-EtFOSAA		94	H5329-FS(0)	5/8/2020
13C3-HFPO-DA		97	H5329-FS(0)	5/8/2020

Analyzed by: Griffith, Lauren
 Printed: 6/2/2020



Project Client: Environmental Partners
 Project Name: PFAS in Drinking Water
 Project No.: 100105456-0055

Client ID Procedural Blank

Battelle ID CY859PB-FS
 Sample Type PB
 Collection Date 05/07/2020
 Extraction Date 05/07/2020
 Analytical Instrument Sciex 5500 LC/MS/MS
 % Moisture NA
 Matrix WATER
 Sample Size 0.250
 Size Unit-Basis L

Analyte	CAS No.	Result (ng/L)	Extract ID	DF	Analysis Date	DL	LOD	LOQ
PFHxA	307-24-4	0.50 U	CY859PB-FS(0)	1.000	5/8/2020	0.23	0.50	2.00
PFHpA	375-85-9	0.50 U	CY859PB-FS(0)	1.000	5/8/2020	0.23	0.50	2.00
PFOA	335-67-1	0.50 U	CY859PB-FS(0)	1.000	5/8/2020	0.20	0.50	2.00
PFNA	375-95-1	0.40 U	CY859PB-FS(0)	1.000	5/8/2020	0.12	0.40	2.00
PFDA	335-76-2	0.40 U	CY859PB-FS(0)	1.000	5/8/2020	0.11	0.40	2.00
PFUnA	2058-94-8	0.40 U	CY859PB-FS(0)	1.000	5/8/2020	0.10	0.40	2.00
PFDoA	307-55-1	0.50 U	CY859PB-FS(0)	1.000	5/8/2020	0.14	0.50	2.00
PFTTrDA	72629-94-8	0.40 U	CY859PB-FS(0)	1.000	5/8/2020	0.10	0.40	2.00
PFTeDA	376-06-7	0.50 U	CY859PB-FS(0)	1.000	5/8/2020	0.22	0.50	2.00
NMeFOSAA	2355-31-9	0.50 U	CY859PB-FS(0)	1.000	5/8/2020	0.20	0.50	2.00
NEtFOSAA	2991-50-6	0.50 U	CY859PB-FS(0)	1.000	5/8/2020	0.17	0.50	2.00
PFBS	375-73-5	0.40 U	CY859PB-FS(0)	1.000	5/8/2020	0.12	0.40	2.00
PFHxS	355-46-4	0.40 U	CY859PB-FS(0)	1.000	5/8/2020	0.12	0.40	2.00
PFOS	1763-23-1	0.50 U	CY859PB-FS(0)	1.000	5/8/2020	0.15	0.50	2.00
HFPO-DA	13252-13-6	0.40 U	CY859PB-FS(0)	1.000	5/8/2020	0.09	0.40	2.00
Adona	919005-14-4	0.40 U	CY859PB-FS(0)	1.000	5/8/2020	0.12	0.40	2.00
11CI-PF3OUdS	763051-92-9	0.40 U	CY859PB-FS(0)	1.000	5/8/2020	0.10	0.40	2.00
9CI-PF3ONS	756426-58-1	0.40 U	CY859PB-FS(0)	1.000	5/8/2020	0.12	0.40	2.00

<i>Surrogate Recoveries (%)</i>		Analysis	
	Recovery	Extract ID	Date
13C2-PFHxA	108	CY859PB-FS(0)	5/8/2020
13C2-PFDA	99	CY859PB-FS(0)	5/8/2020
d5-EtFOSAA	97	CY859PB-FS(0)	5/8/2020
13C3-HFPO-DA	100	CY859PB-FS(0)	5/8/2020

Analyzed by: Griffith, Lauren
 Printed: 6/2/2020



Project Client: Environmental Partners
 Project Name: PFAS in Drinking Water
 Project No.: 100105456-0055

Client ID Laboratory Control Sample

Battelle ID CY860LCS-FS
 Sample Type LCS
 Collection Date 05/07/2020
 Extraction Date 05/07/2020
 Analytical Instrument Sciex 5500 LC/MS/MS
 % Moisture NA
 Matrix WATER
 Sample Size 0.250
 Size Unit-Basis L

Analyte	CAS No.	Result (ng/L)	Extract ID	DF	Analysis Date	Target	Recovery	Qual	Control Limits Lower	Upper
PFHxA	307-24-4	16.66	CY860LCS-FS(0)	1.000	5/8/2020	20.00	83		70	130
PFHpA	375-85-9	17.07	CY860LCS-FS(0)	1.000	5/8/2020	20.00	85		70	130
PFOA	335-67-1	16.26	CY860LCS-FS(0)	1.000	5/8/2020	20.00	81		70	130
PFNA	375-95-1	16.41	CY860LCS-FS(0)	1.000	5/8/2020	20.00	82		70	130
PFDA	335-76-2	15.99	CY860LCS-FS(0)	1.000	5/8/2020	20.00	80		70	130
PFUnA	2058-94-8	15.93	CY860LCS-FS(0)	1.000	5/8/2020	20.00	80		70	130
PFDoA	307-55-1	16.19	CY860LCS-FS(0)	1.000	5/8/2020	20.00	81		70	130
PFTTrDA	72629-94-8	15.93	CY860LCS-FS(0)	1.000	5/8/2020	20.00	80		70	130
PFTeDA	376-06-7	18.26	CY860LCS-FS(0)	1.000	5/8/2020	20.00	91		70	130
NMeFOSAA	2355-31-9	18.68	CY860LCS-FS(0)	1.000	5/8/2020	20.00	93		70	130
NEtFOSAA	2991-50-6	18.62	CY860LCS-FS(0)	1.000	5/8/2020	20.00	93		70	130
PFBS	375-73-5	14.67	CY860LCS-FS(0)	1.000	5/8/2020	17.70	83		70	130
PFHxS	355-46-4	16.61	CY860LCS-FS(0)	1.000	5/8/2020	18.90	88		70	130
PFOS	1763-23-1	14.12	CY860LCS-FS(0)	1.000	5/8/2020	19.10	74		70	130
HFPO-DA	13252-13-6	15.52	CY860LCS-FS(0)	1.000	5/8/2020	20.00	78		70	130
Adona	919005-14-4	16.07	CY860LCS-FS(0)	1.000	5/8/2020	18.90	85		70	130
11Cl-PF3OUdS	763051-92-9	15.96	CY860LCS-FS(0)	1.000	5/8/2020	18.80	85		70	130
9Cl-PF3ONS	756426-58-1	15.33	CY860LCS-FS(0)	1.000	5/8/2020	18.60	82		70	130

<i>Surrogate Recoveries (%)</i>		Analysis	
	Recovery	Extract ID	Date
13C2-PFHxA	89	CY860LCS-FS(0)	5/8/2020
13C2-PFDA	83	CY860LCS-FS(0)	5/8/2020
d5-EtFOSAA	84	CY860LCS-FS(0)	5/8/2020
13C3-HFPO-DA	81	CY860LCS-FS(0)	5/8/2020

Analyzed by: Griffith, Lauren
 Printed: 6/2/2020



Glossary of Data Qualifiers

Flag: Application:

B	Analyte found in the sample at a concentration <10x the level found in the procedural blank
D	Dilution Run. Initial run outside the initial calibration range of the instrument
E	Estimate, result is greater than the highest concentration level in the calibration
J	Analyte detected below the Limit of Quantitation (LOQ)
MI	Significant Matrix Interference - value could not be determined.
N	Quality Control (QC) value is outside the accuracy or precision Data Quality Objective (DQO)
NA	Not Applicable
T	Holding Time (HT) exceeded
U	Analyte not detected or detected below the Detection Limit (DL) value, Limit of Detection (LOD) reported