



04 April 2025

Matt Symington
ES Wastewater Management
2201 Portland Ave.
Tacoma, WA 98421

Subject: Central Treatment Plant Quarterly

Enclosed are the analytical results for samples collected 02/12/2025.

Quality Control Data are included with the sample results for your review.

If you have any questions concerning this report, call me at (253) 345-0312. Please note that remaining samples associated with this report will be discarded **3 months** from the date of this report unless we are notified otherwise.

Sincerely,

DocuSigned by:

Terri Torres

EBC808064E434A6...

For Tiffany Ryan

Assistant Division Manager
Environmental Services Laboratory

cc. Yahuwdah Abariy

326 East D Street | Tacoma, Washington 98421-1801 | (253) 591-5588

ES Wastewater Management

2201 Portland Ave.

Tacoma WA, 98421

Project: **Central Treatment Plant Quarterly**

Project Number: 80000154

Project Manager: Matt Symington

Reported:

04-Apr-25 18:40

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Sample Type	Date Sampled
CTP_Influent Influent (forebay)	2502011-01	Water	Composite	12-Feb-25 23:35
CTP_Effluent NEPS stilling well	2502011-02	Water	Composite	12-Feb-25 23:45
CTP_Influent Influent (forebay)	2502011-03	Water	Grab	12-Feb-25 06:15
CTP_Effluent NEPS stilling well	2502011-04	Water	Grab	12-Feb-25 06:18
CTP_Digester_3	2502011-06	Soil	Grab	12-Feb-25 06:15

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CHAIN OF CUSTODY, SAMPLE RECEIPT, PRESERVATION AND STORAGE

Samples were received under appropriate Chain of Custody procedures.
Containers were properly preserved and stored in accordance with the applicable method requirements.

HOLDING TIMES

All analyses were performed within the required holding times.

METHODS

The samples were analyzed by the following methods:

EPA Method 200.8 for Total Metals
EPA Methods 245.7, 1631E and 7471B for Total Mercury
EPA Method 335.4 for Total Cyanide
EPA Method 420.4 for Total Phenolics
EPA Method 1633 for Per- and Polyfluoroalkyl substances (PFAS)
EPA Method 1664B for Hexane Extractable Material (Oil and Grease)
EPA Method 6020B for Total Metals in Soil
Standard Methods 2540G for Total Solids
Standard Methods 5310B for Total Organic Carbon (TOC)

CONTRACT LABS

Mercury analysis by EPA Method 1631E was performed at Brooks Applied Laboratories (BAL). The contract laboratory results and Chain of Custody are included in this report.

MINIMUM REPORTING LIMITS

All analytes are reported to the Minimum Project Report Limit (PRL). Some analytes may be reported to the Method Detection Limit (MDL) to meet the Minimum Project Reporting Limit. In these cases, values are qualified as estimated (J) between the MDL and Practical Quantitation Limit (PQL) are not as accurate as values reported greater than the PQL (the low standard or 3 - 5 times the MDL).

CALIBRATION VERIFICATION CHECKS

PFAS target NFDHA recovered (60.1%) below lower method control limit (70%) in Low Level Calibration Verification standard S251405-LCV1. Therefore, affected sample 2502011-01RE3 NFDHA result was qualified as not detected at or above the associated estimated limit (UJ).

BLANKS

Blanks were analyzed at the required frequencies of the methods. The analytes were not detected in the Blanks, sample concentrations were greater than 10 times the blank values, or the analytes detected in the blanks were not detected in associated samples with the exception of Chromium. Chromium was detected above the MDL in BIB0100-BLK1, therefore Chromium detections above the MDL in associated samples 2502011-01 and 2502011-02 were qualified as not detected at or above the associated estimated limit (UJ).

LABORATORY CONTROL SAMPLES

Laboratory Control Samples (LCS) were analyzed with these samples to evaluate method performance. The LCS recoveries were within laboratory limits with the exception of Toxaphene. Toxaphene recovered (34.7%) below method 8270E Pesticide

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control limits (50-150%) in BIB0148-BS8. Therefore, the affected CTP digester #3 sample 2502011-06 Toxaphene result was qualified as not detected at or above the associated estimated limit (UJ).

DUPLICATE SAMPLE ANALYSIS

Duplicate analysis was performed with these samples to quantitate method precision. The relative percent differences (RPD) were within laboratory limits.

MATRIX SPIKE AND MATRIX SPIKE DUPLICATE ANALYSIS

Matrix Spike and/or Matrix Spike Duplicate (MS/MSD) analysis was performed with these samples to evaluate sample matrix effect on method performance. Spike recoveries were within the laboratory limits with the exception of Cyanide which had low recovery in BIB0111-MS1 and BIB0111-PS1. Therefore, associated source sample 2502011-06 result was qualified as not detected at or above associated estimated limit (UJ).

SURROGATE STANDARDS

Extracted Internal Standard (EIS) Surrogate compounds were added to samples for EPA method 1633 analysis to monitor system performance. Surrogate recoveries were in control and retention time criteria or recovered above control limits with associated targets not detected in affected samples with the exception of several PFAS EIS Surrogates. 13C5-PFPeA, 13C5-PFHxA, 13C4-PFHpA and 13C3-HFPO-DA had high recovery in sample 2502011-01RE1. Therefore associated analytes PFPeA, PFHxA and PFHpA were qualified as estimated (J), all other associated analytes were ND and not qualified. EIS Surrogate D5-NEtFOSA recovered low in sample 2502011-01RE1, therefore affected analyte NEtFOSA was qualified as not detected at or above associated estimated limit (UJ).

INTERNAL STANDARDS

Internal Standards (ISTDs) were added to these samples to monitor instrument performance related to calibration drift of matrix interference in the total metals analysis by EPA Method 200.8.

Internal Standards were also added to these samples for quantitation purposes in PFAS analysis by EPA Method 1633. The ISTD retention times in the samples must be within 0.4 minutes of the retention times for the ISTDs in the continuing calibration verification (CCV) standards and the area recoveries of the ISTDs in the samples must be within 50 to 200% of the area of the ISTDs in the CCVs.

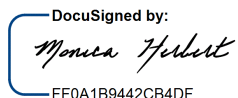
The Internal Standards associated with reported targets met the method criteria.

DATA AVAILABILITY

All data associated with the samples referenced in this report are archived at the Environmental Services Laboratory and are available upon request.

The results included in this report have been reviewed for compliance with the laboratory QA/QC plan and project QAPP.

DocuSigned by:



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Reviewed By Eric Bitten

ES Wastewater Management

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CTP_Effluent NEPS stilling well**2502011-02 (Water)****12-Feb-25 23:45**

Analyte	Result	PQL	MDL	Units
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Total Mercury and Mercury Speciation by CVAFS

EPA 1631 E

Prepared: 21-Feb-25

Analyzed: 24-Feb-25

Hg**2.55**

0.41

0.13

ng/L

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CTP_Influent Influent (forebay)**2502011-01 (Water)****12-Feb-25 23:35**

Analyte	Result	PQL	MDL	Units
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Metals

EPA 200.8 Rev.5.4 1994

Prepared: 19-Feb-25

Analyzed: 20-Feb-25

Antimony	1.56	1.00	0.928	ug/L
Arsenic	2.32	0.500	0.161	ug/L
Beryllium	0.145 U	0.500	0.145	ug/L
Cadmium	0.211 J	0.500	0.100	ug/L
Chromium	4.18 UJ	0.500	0.337	ug/L
Copper	38.3	0.800	0.800	ug/L
Lead	3.15	0.500	0.102	ug/L
Molybdenum	1.85	0.500	0.364	ug/L
Nickel	4.27	0.500	0.429	ug/L
Selenium	0.782	0.500	0.157	ug/L
Silver	0.609	0.500	0.252	ug/L
Thallium	0.120 U	0.500	0.120	ug/L
Zinc	151	5.00	0.64	ug/L

EPA 245.7 1999

Prepared: 24-Feb-25

Analyzed: 25-Feb-25

Mercury	34.6	25.0	8.0	ng/L
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Semi-VOA

EPA 1633

Prepared: 21-Feb-25

Analyzed: 26-Feb-25

6:2FTS	60.9 U	70.3	60.9	ng/L
8:2FTS	3.63 U	10.0	3.63	ng/L
PFBA	27.6	10.0	0.63	ng/L
PFBS	78.2	2.50	0.42	ng/L
PFHxS	3.22	2.50	0.61	ng/L
PFOA	13.1	2.50	0.64	ng/L
PFPeS	3.23	2.50	0.50	ng/L

Surrogate: 13C2-6:2FTS

195 %

40-200

Surrogate: 13C2-8:2FTS

64.0 %

40-300

Surrogate: 13C3-PFBS

98.8 %

40-135

Surrogate: 13C3-PFHxS

104 %

40-130

Surrogate: 13C4-PFBA

83.8 %

5-130

Surrogate: 13C8-PFOA

80.7 %

40-130

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CTP_Influent Influent (forebay)**2502011-01 (Water)****12-Feb-25 23:35**

Analyte	Result	PQL	MDL	Units
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GC/MS-Pesticides

EPA 625.1 OCP

Prepared: 19-Feb-25

Analyzed: 25-Mar-25

4,4-DDD	0.029 U	0.050	0.029	ug/L
4,4-DDE	0.019 U	0.050	0.019	ug/L
4,4-DDT	0.040 U	0.050	0.040	ug/L
Aldrin	0.017 U	0.050	0.017	ug/L
alpha-BHC	0.022 U	0.050	0.022	ug/L
alpha-Chlordane	0.017 U	0.050	0.017	ug/L
beta-BHC	0.029 U	0.050	0.029	ug/L
delta-BHC	0.022 U	0.050	0.022	ug/L
Dieldrin	0.018 U	0.050	0.018	ug/L
Endosulfan I	0.033 U	0.050	0.033	ug/L
Endosulfan II	0.034 U	0.050	0.034	ug/L
Endosulfan Sulfate	0.025 U	0.050	0.025	ug/L
Endrin	0.028 U	0.050	0.028	ug/L
Endrin Aldehyde	0.035 U	0.050	0.035	ug/L
Endrin Ketone	0.031 U	0.050	0.031	ug/L
gamma-BHC (Lindane)	0.034 U	0.050	0.034	ug/L
gamma-Chlordane	0.019 U	0.050	0.019	ug/L
Heptachlor	0.031 U	0.050	0.031	ug/L
Heptachlor Epoxide	0.019 U	0.050	0.019	ug/L
Methoxychlor	0.042 U	0.099	0.042	ug/L
Toxaphene	0.356 U	0.495	0.356	ug/L

Surrogate: Decachlorobiphenyl

20 %

17-128

Surrogate: Tetrachloro-meta-xylene

43 %

24-120

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CTP_Influent Influent (forebay)**2502011-01RE1 (Water)****12-Feb-25 23:35**

Analyte	Result	PQL	MDL	Units
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Semi-VOA

EPA 1633

Prepared: 21-Feb-25

Analyzed: 27-Feb-25

11CI-PF3OUdS	3.44 U	50.0	3.44	ng/L
3:3FTCA	8.36 U	62.5	8.36	ng/L
4:2FTS	13.0 U	50.0	13.0	ng/L
5:3FTCA	18.2 U	313	18.2	ng/L
7:3FTCA	18.2 U	313	18.2	ng/L
9CI-PF3ONS	2.03 U	50.0	2.03	ng/L
ADONA	6.64 U	50.0	6.64	ng/L
HFPO-DA	3.28 U	50.0	3.28	ng/L
NEtFOSA	1.33 UJ	12.5	1.33	ng/L
NEtFOSAA	3.28 U	12.5	3.28	ng/L
NEtFOSE	5.63 U	125	5.63	ng/L
NFDHA	4.30 U	25.0	4.30	ng/L
NMeFOSA	1.33 U	12.5	1.33	ng/L
NMeFOSAA	2.58 U	12.5	2.58	ng/L
NMeFOSE	4.69 U	125	4.69	ng/L
PFDA	7.66 U	12.5	7.66	ng/L
PFDaA	5.78 U	12.5	5.78	ng/L
PFDoS	2.89 U	12.5	2.89	ng/L
PFDS	1.64 U	12.5	1.64	ng/L
PFEESA	1.25 U	25.0	1.25	ng/L
PFHpA	4.36 J	12.5	3.91	ng/L
PFHpS	2.81 U	12.5	2.81	ng/L
PFHxA	23.0 J	12.5	3.13	ng/L
PFMBA	0.86 U	25.0	0.86	ng/L
PFMPA	1.25 U	25.0	1.25	ng/L
PFNA	4.37 J	12.5	3.98	ng/L
PFNS	3.13 U	12.5	3.13	ng/L
PFOS	6.63 J	12.5	6.33	ng/L
PFOSA	1.25 U	12.5	1.25	ng/L
PFPeA	19.7 J	25.0	16.2	ng/L
PFTeDA	2.97 U	12.5	2.97	ng/L
PFTTrDA	5.39 U	12.5	5.39	ng/L
PFUnA	6.48 U	12.5	6.48	ng/L

Surrogate: 13C2-4:2FTS

184 %

40-200

Surrogate: 13C2-PFDaA

47.4 %

10-130

Surrogate: 13C2-PFTeDA

32.8 %

10-130

Surrogate: 13C3-HFPO-DA

147 %

40-130

Surrogate: 13C4-PFHpA

157 %

40-130

Surrogate: 13C5-PFHxA

148 %

40-130

Surrogate: 13C5-PFPeA

165 %

40-130

Surrogate: 13C6-PFDA

83.8 %

40-130

Surrogate: 13C7-PFUnA

65.2 %

30-130

Surrogate: 13C8-PFOS

87.5 %

40-130

Surrogate: 13C8-PFOSA

57.8 %

40-130

Surrogate: 13C9-PFNA

86.4 %

40-130

Surrogate: D3-NMeFOSA

15.3 %

10-130

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CTP_Influent Influent (forebay)**2502011-01RE1 (Water)****12-Feb-25 23:35**

Analyte	Result	PQL	MDL	Units
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Semi-VOA

<i>Surrogate: D3-NMeFOSAA</i>	62.0 %	40-170
<i>Surrogate: D5-NEtFOSA</i>	8.96 %	10-130
<i>Surrogate: D5-NEtFOSAA</i>	50.5 %	25-135
<i>Surrogate: D7-NMeFOSE</i>	29.9 %	10-130
<i>Surrogate: D9-NEtFOSE</i>	28.6 %	10-130

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CTP_Effluent NEPS stilling well

2502011-02 (Water)

12-Feb-25 23:45

Analyte	Result	PQL	MDL	Units
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Conventional

SM 5310 B-2011 Prepared: 20-Feb-25 Analyzed: 22-Feb-25

Total Organic Carbon	16.0	5.00		mg/L
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Metals

EPA 200.8 Rev.5.4 1994 Prepared: 19-Feb-25 Analyzed: 20-Feb-25

Antimony	0.928 U	1.00	0.928	ug/L
Arsenic	1.94	0.500	0.161	ug/L
Beryllium	0.145 U	0.500	0.145	ug/L
Cadmium	0.100 U	0.500	0.100	ug/L
Chromium	1.81 UJ	0.500	0.337	ug/L
Copper	4.30	0.800	0.800	ug/L
Lead	0.209 J	0.500	0.102	ug/L
Molybdenum	1.00	0.500	0.364	ug/L
Nickel	3.00	0.500	0.429	ug/L
Selenium	0.226 J	0.500	0.157	ug/L
Silver	0.252 U	0.500	0.252	ug/L
Thallium	0.120 U	0.500	0.120	ug/L
Zinc	36.3	5.00	0.64	ug/L

EPA 245.7 1999 Prepared: 24-Feb-25 Analyzed: 25-Feb-25

Mercury	8.0 U	25.0	8.0	ng/L
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GC/MS-Pesticides

EPA 625.1 OCP Prepared: 19-Feb-25 Analyzed: 25-Mar-25

4,4-DDD	0.030 U	0.052	0.030	ug/L
4,4-DDE	0.020 U	0.052	0.020	ug/L
4,4-DDT	0.042 U	0.052	0.042	ug/L
Aldrin	0.018 U	0.052	0.018	ug/L
alpha-BHC	0.023 U	0.052	0.023	ug/L
alpha-Chlordane	0.018 U	0.052	0.018	ug/L
beta-BHC	0.030 U	0.052	0.030	ug/L
delta-BHC	0.023 U	0.052	0.023	ug/L
Dieldrin	0.019 U	0.052	0.019	ug/L
Endosulfan I	0.034 U	0.052	0.034	ug/L
Endosulfan II	0.035 U	0.052	0.035	ug/L
Endosulfan Sulfate	0.026 U	0.052	0.026	ug/L
Endrin	0.029 U	0.052	0.029	ug/L
Endrin Aldehyde	0.036 U	0.052	0.036	ug/L
Endrin Ketone	0.032 U	0.052	0.032	ug/L
gamma-BHC (Lindane)	0.035 U	0.052	0.035	ug/L
gamma-Chlordane	0.020 U	0.052	0.020	ug/L
Heptachlor	0.032 U	0.052	0.032	ug/L
Heptachlor Epoxide	0.020 U	0.052	0.020	ug/L
Methoxychlor	0.044 U	0.104	0.044	ug/L

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CTP_Effluent NEPS stilling well**2502011-02 (Water)****12-Feb-25 23:45**

Analyte	Result	PQL	MDL	Units
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GC/MS-Pesticides

Toxaphene	0.375 U	0.521	0.375	ug/L
Surrogate: Decachlorobiphenyl	37 %	17-128		
Surrogate: Tetrachloro-meta-xylene	38 %	24-120		

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CTP_Influent Influent (forebay)

2502011-03 (Water)

12-Feb-25 06:15

Analyte	Result	PQL	MDL	Units
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Conventional

EPA 1664B 2010	Prepared: 26-Feb-25	Analyzed: 26-Feb-25			
HEM		33.0	5.0	1.5	mg/L
EPA 335.4 Rev.1 1993	Prepared: 22-Feb-25	Analyzed: 22-Feb-25			
Cyanide, Total		0.005 U	0.010	0.005	mg/L
EPA 420.4 Rev.1 1993	Prepared: 04-Mar-25	Analyzed: 07-Mar-25			
Phenols, Total		0.035 J	0.050	0.030	mg/L

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CTP_Effluent NEPS stilling well**2502011-04 (Water)****12-Feb-25 06:18**

Analyte	Result	PQL	MDL	Units
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Conventional

EPA 1664B 2010	Prepared: 26-Feb-25	Analyzed: 26-Feb-25			
HEM		2.4 J	5.0	1.5	mg/L
EPA 335.4 Rev.1 1993	Prepared: 22-Feb-25	Analyzed: 22-Feb-25			
Cyanide, Total		0.015	0.010	0.005	mg/L
EPA 420.4 Rev.1 1993	Prepared: 04-Mar-25	Analyzed: 07-Mar-25			
Phenols, Total		0.030 U	0.050	0.030	mg/L

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CTP_Digester_3

2502011-06 (Soil)

12-Feb-25 06:15

Analyte	Result	PQL	MDL	Units
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Conventional

EPA 335.4 Rev.1 1993	Prepared: 20-Feb-25	Analyzed: 22-Feb-25			
Cyanide, Total		11.2 U	73.9	11.2	mg/Kg dry
EPA 420.4 Rev.1 1993	Prepared: 04-Mar-25	Analyzed: 07-Mar-25			
Phenols, Total		198	148	71.0	mg/Kg dry
SM 2540 B	Prepared: 18-Feb-25	Analyzed: 18-Feb-25			
Total Solids		1.4	0.1	0.1	mg/L

Metals

EPA 6020B_(7/14)	Prepared: 24-Feb-25	Analyzed: 25-Feb-25			
Antimony		3.41 J	3.68	2.18	mg/Kg dry
Arsenic		5.93	0.919	0.449	mg/Kg dry
Beryllium		0.577 U	0.919	0.577	mg/Kg dry
Cadmium		1.82	0.919	0.654	mg/Kg dry
Chromium		18.6	18.4	2.04	mg/Kg dry
Copper		233	9.19	3.40	mg/Kg dry
Lead		27.7	0.919	0.846	mg/Kg dry
Molybdenum		5.47 J	18.4	1.03	mg/Kg dry
Nickel		13.4	9.19	1.71	mg/Kg dry
Selenium		5.38	3.68	2.29	mg/Kg dry
Silver		4.49	1.84	1.08	mg/Kg dry
Thallium		0.294 U	0.919	0.294	mg/Kg dry
Zinc		778	36.8	8.27	mg/Kg dry
EPA 7471B_(1/98)	Prepared: 24-Feb-25	Analyzed: 24-Feb-25			
Mercury		0.351	0.163	0.163	mg/Kg dry

GC/MS-Pesticides

EPA 8270E_6_(6/18) SIM OCP	Prepared: 26-Feb-25	Analyzed: 25-Mar-25			
4,4-DDD		11 U	30	11	ug/Kg dry
4,4-DDE		12 U	30	12	ug/Kg dry
4,4-DDT		14 U	30	14	ug/Kg dry
Aldrin		12 U	30	12	ug/Kg dry
alpha-BHC		18 U	30	18	ug/Kg dry
alpha-Chlordane		8.5 U	30	8.5	ug/Kg dry
beta-BHC		11 U	30	11	ug/Kg dry
delta-BHC		9.7 U	30	9.7	ug/Kg dry
Dieldrin		10 U	30	10	ug/Kg dry
Endosulfan I		11 U	30	11	ug/Kg dry
Endosulfan II		9.1 U	30	9.1	ug/Kg dry
Endosulfan Sulfate		15 U	30	15	ug/Kg dry
Endrin		8.8 U	30	8.8	ug/Kg dry

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CTP_Digester_3**2502011-06 (Soil)****12-Feb-25 06:15**

Analyte	Result	PQL	MDL	Units
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GC/MS-Pesticides

Endrin Aldehyde	21 U	30	21	ug/Kg dry
Endrin Ketone	15 U	30	15	ug/Kg dry
gamma-BHC (Lindane)	13 U	30	13	ug/Kg dry
gamma-Chlordane	10 U	30	10	ug/Kg dry
Heptachlor	14 U	30	14	ug/Kg dry
Heptachlor Epoxide	25 U	30	25	ug/Kg dry
Methoxychlor	18 U	30	18	ug/Kg dry
Toxaphene	47 UJ	300	47	ug/Kg dry

Surrogate: Decachlorobiphenyl

60.5 %

30-150

Surrogate: Tetrachloro-meta-xylene

63.5 %

30-150

ES Wastewater Management2201 Portland Ave.
Tacoma WA, 98421Project: **Central Treatment Plant Quarterly**

Project Number: 80000154

Project Manager: Matt Symington

Reported:

04-Apr-25 18:40

CTP_Digester_3**2502011-06RE3 (Soil)****12-Feb-25 06:15**

Analyte	Result	PQL	MDL	Units
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Semi-VOA

EPA 1633

Prepared: 27-Mar-25

Analyzed: 01-Apr-25

11CI-PF3OUdS	0.01 U	0.40	0.01	ng/g
3:3FTCA	0.45 J	0.80	0.09	ng/g
4:2FTS	0.03 U	0.16	0.03	ng/g
5:3FTCA	0.89 J	3.99	0.12	ng/g
6:2FTS	0.03 U	0.16	0.03	ng/g
7:3FTCA	0.12 U	3.99	0.12	ng/g
8:2FTS	0.05 U	0.16	0.05	ng/g
9CI-PF3ONS	0.02 U	0.40	0.02	ng/g
ADONA	0.04 U	0.16	0.04	ng/g
HFPO-DA	0.01 U	0.40	0.01	ng/g
NEtFOSA	0.006 U	0.10	0.006	ng/g
NEtFOSAA	0.06 U	0.10	0.06	ng/g
NEtFOSE	0.08 J	1.00	0.04	ng/g
NFDHA	0.02 UJ	0.20	0.02	ng/g
NMeFOSA	0.01 U	0.10	0.01	ng/g
NMeFOSAA	0.06 U	0.10	0.06	ng/g
NMeFOSE	0.17 J	1.00	0.06	ng/g
PFBA	0.07 U	0.32	0.07	ng/g
PFBS	0.07 J	0.08	0.01	ng/g
PFDA	0.02 J	0.08	0.02	ng/g
PFDoA	0.01 U	0.08	0.01	ng/g
PFDoS	0.02 U	0.08	0.02	ng/g
PFDS	0.05 U	0.08	0.05	ng/g
PFEESA	0.06 J	0.20	0.02	ng/g
PFHpA	0.01 U	0.08	0.01	ng/g
PFHpS	0.03 U	0.08	0.03	ng/g
PFHxA	0.09	0.08	0.01	ng/g
PFHxS	0.22	0.10	0.09	ng/g
PFMBA	0.009 U	0.10	0.009	ng/g
PFMPA	0.01 U	0.20	0.01	ng/g
PFNA	0.01 U	0.08	0.01	ng/g
PFNS	0.01 U	0.08	0.01	ng/g
PFOA	0.07 J	0.08	0.01	ng/g
PFOS	0.15 U	0.20	0.15	ng/g
PFOSA	0.01 U	0.10	0.01	ng/g
PFPeA	0.49 U	0.80	0.49	ng/g
PFPeS	0.36	0.10	0.08	ng/g
PFTeDA	0.008 U	0.08	0.008	ng/g
PFTTrDA	0.006 U	0.08	0.006	ng/g
PFUnA	0.01 U	0.08	0.01	ng/g

Surrogate: 13C2-4:2FTS

171 %

40-165

Surrogate: 13C2-6:2FTS

167 %

40-215

Surrogate: 13C2-8:2FTS

141 %

40-275

Surrogate: 13C2-PFDoA

73.2 %

40-130

Surrogate: 13C2-PFTeDA

46.7 %

20-130

ES Wastewater Management

2201 Portland Ave.

Tacoma WA, 98421

Project: **Central Treatment Plant Quarterly**

Project Number: 80000154

Project Manager: Matt Symington

Reported:

04-Apr-25 18:40

CTP_Digester_3**2502011-06RE3 (Soil)****12-Feb-25 06:15**

Analyte	Result	PQL	MDL	Units
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Semi-VOA

Surrogate: 13C3-HFPO-DA	93.8 %	40-130
Surrogate: 13C3-PFBS	106 %	40-135
Surrogate: 13C3-PFHxS	99.2 %	40-130
Surrogate: 13C4-PFBA	93.9 %	8-130
Surrogate: 13C4-PFHpA	110 %	40-130
Surrogate: 13C5-PFHxA	108 %	40-130
Surrogate: 13C5-PFPeA	103 %	35-130
Surrogate: 13C6-PFDA	91.3 %	40-130
Surrogate: 13C7-PFUnA	60.2 %	40-130
Surrogate: 13C8-PFOA	80.7 %	40-130
Surrogate: 13C8-PFOS	122 %	40-130
Surrogate: 13C8-PFOSA	109 %	40-130
Surrogate: 13C9-PFNA	103 %	40-130
Surrogate: D3-NMeFOSA	43.4 %	10-130
Surrogate: D3-NMeFOSAA	63.6 %	40-135
Surrogate: D5-NEtFOSA	43.8 %	10-130
Surrogate: D5-NEtFOSAA	45.8 %	40-150
Surrogate: D7-NMeFOSE	31.8 %	20-130
Surrogate: D9-NEtFOSE	48.6 %	15-130

ES Wastewater Management
2201 Portland Ave.
Tacoma WA, 98421

Project: **Central Treatment Plant Quarterly**
Project Number: 80000154
Project Manager: Matt Symington

Reported:
04-Apr-25 18:40

Conventional - Quality Control
Environmental Services Laboratory

Sample ID Analyte	Result	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
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Batch BIB0059 - SM 2540 B

Duplicate (BIB0059-DUP1) Source: 2502011-06 Prepared & Analyzed: 18-Feb-25

BIB0059-DUP1

Total Solids	1.4	0.1	mg/L		1.4			0.2	20
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Batch BIB0110 - EPA 335.4 Rev.1 1993

Blank (BIB0110-BLK1) Prepared & Analyzed: 22-Feb-25

BIB0110-BLK1

Cyanide, Total	0.005 U	0.005	mg/L						
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LCS (BIB0110-BS1) Prepared & Analyzed: 22-Feb-25

BIB0110-BS1

Cyanide, Total	0.213	0.005	mg/L	0.226		94	80-120		
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Matrix Spike (BIB0110-MS1) Source: 2502011-04 Prepared & Analyzed: 22-Feb-25

BIB0110-MS1

Cyanide, Total	0.212	0.005	mg/L	0.200	0.015	98	75-125		
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Matrix Spike Dup (BIB0110-MSD1) Source: 2502011-04 Prepared & Analyzed: 22-Feb-25

BIB0110-MSD1

Cyanide, Total	0.167	0.005	mg/L	0.200	0.015	76	75-125	24	20
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Batch BIB0111 - EPA 335.4 Rev.1 1993

Blank (BIB0111-BLK1) Prepared: 20-Feb-25 Analyzed: 22-Feb-25

BIB0111-BLK1

Cyanide, Total	0.015 U	0.015	mg/Kg wet						
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LCS (BIB0111-BS1) Prepared: 20-Feb-25 Analyzed: 22-Feb-25

BIB0111-BS1

Cyanide, Total	0.212	0.015	mg/Kg wet	0.226		94	80-120		
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Matrix Spike (BIB0111-MS1) Source: 2502011-06 Prepared: 20-Feb-25 Analyzed: 22-Feb-25

BIB0111-MS1

Cyanide, Total	109	11.2	mg/Kg dry	148	ND	73	75-125		
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Matrix Spike Dup (BIB0111-MSD1) Source: 2502011-06 Prepared: 20-Feb-25 Analyzed: 22-Feb-25

BIB0111-MSD1

Cyanide, Total	113	11.2	mg/Kg dry	148	ND	77	75-125	4	20
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Post Spike (BIB0111-PS1) Source: 2502011-06 Prepared: 20-Feb-25 Analyzed: 22-Feb-25

BIB0111-PS1

Cyanide, Total	12.0	1.12	mg/Kg dry	14.8	1.40	72	75-125		
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Batch BIB0115 - SM 5310 B-2011

Blank (BIB0115-BLK1) Prepared: 20-Feb-25 Analyzed: 22-Feb-25

ES Wastewater Management
2201 Portland Ave.
Tacoma WA, 98421

Project: **Central Treatment Plant Quarterly**
Project Number: 80000154
Project Manager: Matt Symington

Reported:
04-Apr-25 18:40

Conventional - Quality Control
Environmental Services Laboratory

Sample ID Analyte	Result	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
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Batch BIB0115 - SM 5310 B-2011

BIB0115-BLK1

Total Organic Carbon 0.32 U 0.32 mg/L

LCS (BIB0115-BS1)

Prepared: 20-Feb-25 Analyzed: 22-Feb-25

BIB0115-BS1

Total Organic Carbon 20.1 0.32 mg/L 20.0 101 85-115

BIB0115-BS2

Total Organic Carbon 20.0 0.32 mg/L 20.0 100 85-115

BIB0115-BS3

Total Organic Carbon 20.0 0.32 mg/L 20.0 100 85-115

BIB0115-BS4

Total Organic Carbon 20.1 0.32 mg/L 20.0 101 85-115

Batch BIB0145 - EPA 1664B 2010

Blank (BIB0145-BLK1)

Prepared & Analyzed: 26-Feb-25

BIB0145-BLK1

HEM 1.5 U 1.5 mg/L

LCS (BIB0145-BS1)

Prepared & Analyzed: 26-Feb-25

BIB0145-BS1

HEM 33.3 1.5 mg/L 40.0 83 78-114

Batch BIC0019 - EPA 420.4 Rev.1 1993

Blank (BIC0019-BLK1)

Prepared: 04-Mar-25 Analyzed: 07-Mar-25

BIC0019-BLK1

Phenols, Total 0.030 U 0.030 mg/L

Matrix Spike (BIC0019-MS1)

Source: 2502011-04

Prepared: 04-Mar-25 Analyzed: 07-Mar-25

BIC0019-MS1

Phenols, Total 0.935 0.030 mg/L 1.00 ND 94 90-110

Matrix Spike Dup (BIC0019-MSD1)

Source: 2502011-04

Prepared: 04-Mar-25 Analyzed: 07-Mar-25

BIC0019-MSD1

Phenols, Total 0.969 0.030 mg/L 1.00 ND 97 90-110 4 20

Reference (BIC0019-SRM1)

Prepared: 04-Mar-25 Analyzed: 07-Mar-25

BIC0019-SRM1

Phenols, Total 0.254 0.030 mg/L 0.286 89 75-125

Batch BIC0020 - EPA 420.4 Rev.1 1993

Blank (BIC0020-BLK1)

Prepared: 04-Mar-25 Analyzed: 07-Mar-25

BIC0020-BLK1

Phenols, Total 0.240 U 0.240 mg/Kg wet

Matrix Spike (BIC0020-MS1)

Source: 2502011-06

Prepared: 04-Mar-25 Analyzed: 07-Mar-25

ES Wastewater Management

2201 Portland Ave.

Tacoma WA, 98421

Project: **Central Treatment Plant Quarterly**

Project Number: 80000154

Project Manager: Matt Symington

Reported:

04-Apr-25 18:40

Conventional - Quality Control
Environmental Services Laboratory

Sample ID	Result	MDL	Units	Spike	Source	%REC	%REC	RPD	RPD
Analyte				Level	Result		Limits		Limit

Batch BIC0020 - EPA 420.4 Rev.1 1993**BIC0020-MS1**

Phenols, Total

478

71.0 mg/Kg dry

296

198

95

90-110

Matrix Spike Dup (BIC0020-MSD1)**Source: 2502011-06**

Prepared: 04-Mar-25 Analyzed: 07-Mar-25

BIC0020-MSD1

Phenols, Total

486

71.0 mg/Kg dry

296

198

97

90-110

2

20

Reference (BIC0020-SRM1)

Prepared: 04-Mar-25 Analyzed: 07-Mar-25

BIC0020-SRM1

Phenols, Total

0.255 J

0.240 mg/Kg wet

0.286

89

75-125

ES Wastewater Management
2201 Portland Ave.
Tacoma WA, 98421

Project: **Central Treatment Plant Quarterly**
Project Number: 80000154
Project Manager: Matt Symington

Reported:
04-Apr-25 18:40

Metals - Quality Control
Environmental Services Laboratory

Sample ID Analyte	Result	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
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Batch BIB0100 - EPA 200.8 Rev.5.4 1994

Blank (BIB0100-BLK1)

Prepared: 19-Feb-25 Analyzed: 20-Feb-25

BIB0100-BLK1

Antimony	0.928 U	0.928	ug/L
Arsenic	0.161 U	0.161	ug/L
Beryllium	0.145 U	0.145	ug/L
Cadmium	0.100 U	0.100	ug/L
Chromium	0.533	0.337	ug/L
Copper	0.800 U	0.800	ug/L
Lead	0.102 U	0.102	ug/L
Molybdenum	0.364 U	0.364	ug/L
Nickel	0.429 U	0.429	ug/L
Selenium	0.157 U	0.157	ug/L
Silver	0.252 U	0.252	ug/L
Thallium	0.120 U	0.120	ug/L
Zinc	1.37	0.64	ug/L

Duplicate (BIB0100-DUP1)

Source: 2502011-02

Prepared: 19-Feb-25 Analyzed: 20-Feb-25

BIB0100-DUP1

Antimony	0.928 U	0.928	ug/L	ND		20
Arsenic	1.91	0.161	ug/L	1.94	1	20
Beryllium	0.145 U	0.145	ug/L	ND		20
Cadmium	0.100 U	0.100	ug/L	ND		20
Chromium	1.81	0.337	ug/L	1.81	0.4	20
Copper	4.45	0.800	ug/L	4.30	3	20
Lead	0.210 J	0.102	ug/L	0.209	0.7	20
Molybdenum	1.03	0.364	ug/L	1.00	3	20
Nickel	3.03	0.429	ug/L	3.00	0.8	20
Selenium	0.253 J	0.157	ug/L	0.226	11	20
Silver	0.252 U	0.252	ug/L	ND		20
Thallium	0.120 U	0.120	ug/L	ND		20
Zinc	37.2	0.64	ug/L	36.3	2	20

LCS (BIB0100-BS1)

Prepared: 19-Feb-25 Analyzed: 20-Feb-25

BIB0100-BS1

Antimony	98.4	0.928	ug/L	100	98	85-115
Arsenic	98.5	0.161	ug/L	100	98	85-115
Beryllium	20.4	0.145	ug/L	20.0	102	85-115
Cadmium	40.5	0.100	ug/L	40.0	101	85-115
Chromium	101	0.337	ug/L	100	101	85-115
Copper	100	0.800	ug/L	100	100	85-115
Lead	102	0.102	ug/L	100	102	85-115
Molybdenum	41.2	0.364	ug/L	40.0	103	85-115

ES Wastewater Management
2201 Portland Ave.
Tacoma WA, 98421

Project: **Central Treatment Plant Quarterly**
Project Number: 80000154
Project Manager: Matt Symington

Reported:
04-Apr-25 18:40

Metals - Quality Control
Environmental Services Laboratory

Sample ID Analyte	Result	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
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Batch BIB0100 - EPA 200.8 Rev.5.4 1994

Nickel	103	0.429	ug/L	100		103	85-115		
Selenium	99.6	0.157	ug/L	100		100	85-115		
Silver	10.2	0.252	ug/L	10.0		102	85-115		
Thallium	97.7	0.120	ug/L	100		98	85-115		
Zinc	103	0.64	ug/L	100		103	85-115		

Matrix Spike (BIB0100-MS1)

Source: 2502011-02

Prepared: 19-Feb-25 Analyzed: 20-Feb-25

BIB0100-MS1

Antimony	454	0.928	ug/L	400	ND	113	70-130		
Arsenic	411	0.161	ug/L	400	1.94	102	70-130		
Beryllium	471	0.145	ug/L	400	ND	118	70-130		
Cadmium	444	0.100	ug/L	400	ND	111	70-130		
Chromium	428	0.337	ug/L	400	1.81	106	70-130		
Copper	403	0.800	ug/L	400	4.30	100	70-130		
Lead	447	0.102	ug/L	400	0.209	112	70-130		
Molybdenum	446	0.364	ug/L	400	1.00	111	70-130		
Nickel	409	0.429	ug/L	400	3.00	102	70-130		
Selenium	390	0.157	ug/L	400	0.226	97	70-130		
Silver	442	0.252	ug/L	400	ND	111	70-130		
Thallium	466	0.120	ug/L	400	ND	117	70-130		
Zinc	444	0.64	ug/L	400	36.3	102	70-130		

Batch BIB0123 - EPA 7471B (1/98)

Blank (BIB0123-BLK1)

Prepared & Analyzed: 24-Feb-25

BIB0123-BLK1

Mercury	0.0040 U	0.0040 mg/Kg wet							
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Matrix Spike (BIB0123-MS1)

Source: 2502011-06

Prepared & Analyzed: 24-Feb-25

BIB0123-MS1

Mercury	23.8	0.398 mg/Kg dry	24.9	ND	96	75-125			
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Matrix Spike Dup (BIB0123-MSD1)

Source: 2502011-06

Prepared & Analyzed: 24-Feb-25

BIB0123-MSD1

Mercury	23.7	0.395 mg/Kg dry	24.7	ND	96	75-125	0.6	20	
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Reference (BIB0123-SRM1)

Prepared & Analyzed: 24-Feb-25

BIB0123-SRM1

Mercury	6.64	0.0956 mg/Kg wet	7.98		83	51.9-121			
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ES Wastewater Management
2201 Portland Ave.
Tacoma WA, 98421

Project: **Central Treatment Plant Quarterly**
Project Number: 80000154
Project Manager: Matt Symington

Reported:
04-Apr-25 18:40

Metals - Quality Control
Environmental Services Laboratory

Sample ID Analyte	Result	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
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Batch BIB0127 - EPA 6020B (7/14)

Blank (BIB0127-BLK1)

Prepared: 24-Feb-25 Analyzed: 25-Feb-25

BIB0127-BLK1

Antimony	0.237 U	0.237	mg/Kg wet
Arsenic	0.0488 U	0.0488	mg/Kg wet
Cadmium	0.0712 U	0.0712	mg/Kg wet
Chromium	0.222 U	0.222	mg/Kg wet
Copper	0.370 U	0.370	mg/Kg wet
Lead	0.0920 U	0.0920	mg/Kg wet
Molybdenum	0.112 U	0.112	mg/Kg wet
Nickel	0.186 U	0.186	mg/Kg wet
Selenium	0.250 U	0.250	mg/Kg wet
Silver	0.117 U	0.117	mg/Kg wet
Thallium	0.0320 U	0.0320	mg/Kg wet
Zinc	0.900 U	0.900	mg/Kg wet
Beryllium	0.0628 U	0.0628	mg/Kg wet

Duplicate (BIB0127-DUP1)

Source: 2502011-06

Prepared: 24-Feb-25 Analyzed: 25-Feb-25

BIB0127-DUP1

Antimony	3.27 J	2.18	mg/Kg dry	3.41	4	20
Arsenic	5.68	0.448	mg/Kg dry	5.93	4	20
Cadmium	1.78	0.654	mg/Kg dry	1.82	2	20
Chromium	20.3	2.04	mg/Kg dry	18.6	9	20
Copper	229	3.40	mg/Kg dry	233	2	20
Lead	27.3	0.845	mg/Kg dry	27.7	1	20
Molybdenum	5.49 J	1.03	mg/Kg dry	5.47	0.3	20
Nickel	14.3	1.71	mg/Kg dry	13.4	7	20
Selenium	5.39	2.29	mg/Kg dry	5.38	0.2	20
Silver	4.97	1.07	mg/Kg dry	4.49	10	20
Thallium	0.294 U	0.294	mg/Kg dry	ND		20
Zinc	756	8.27	mg/Kg dry	778	3	20
Beryllium	0.577 U	0.577	mg/Kg dry	ND		20

Matrix Spike (BIB0127-MS1)

Source: 2502011-06

Prepared: 24-Feb-25 Analyzed: 25-Feb-25

BIB0127-MS1

Antimony	150	2.13	mg/Kg dry	180	3.41	81	75-125
Arsenic	162	0.439	mg/Kg dry	180	5.93	87	75-125
Cadmium	169	0.640	mg/Kg dry	180	1.82	93	75-125
Chromium	183	2.00	mg/Kg dry	180	18.6	92	75-125
Copper	380	3.33	mg/Kg dry	180	233	81	75-125
Lead	190	0.827	mg/Kg dry	180	27.7	90	75-125
Molybdenum	166	1.01	mg/Kg dry	180	5.47	89	75-125
Nickel	173	1.67	mg/Kg dry	180	13.4	89	75-125

ES Wastewater Management
2201 Portland Ave.
Tacoma WA, 98421

Project: **Central Treatment Plant Quarterly**
Project Number: 80000154
Project Manager: Matt Symington

Reported:
04-Apr-25 18:40

Metals - Quality Control
Environmental Services Laboratory

Sample ID Analyte	Result	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
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Batch BIB0127 - EPA 6020B (7/14)

Selenium	164	2.24	mg/Kg dry	180	5.38	88	75-125		
Silver	174	1.05	mg/Kg dry	180	4.49	94	75-125		
Thallium	165	0.288	mg/Kg dry	180	ND	92	75-125		
Zinc	908	8.09	mg/Kg dry	180	778	72	75-125		
Beryllium	160	0.565	mg/Kg dry	180	ND	89	75-125		

Reference (BIB0127-SRM1)

Prepared: 24-Feb-25 Analyzed: 25-Feb-25

BIB0127-SRM1

Antimony	72.1	5.85	mg/Kg wet	89.9		80	71.3-129		
Arsenic	251	1.20	mg/Kg wet	257		98	69.9-130		
Cadmium	56.0	1.76	mg/Kg wet	55.3		101	75-125		
Chromium	138	5.47	mg/Kg wet	115		120	33.5-166		
Copper	523	9.12	mg/Kg wet	523		100	75.1-125		
Lead	127	2.27	mg/Kg wet	119		107	71.7-128		
Molybdenum	99.9	2.76	mg/Kg wet	97.1		103	70.7-130		
Nickel	112	4.59	mg/Kg wet	108		103	70.2-130		
Selenium	180	6.15	mg/Kg wet	167		108	68.3-132		
Silver	30.4	2.88	mg/Kg wet	28.9		105	68.3-131		
Thallium	39.3	0.789	mg/Kg wet	36.8		107	69.8-130		
Zinc	988	22.2	mg/Kg wet	953		104	70-130		
Beryllium	37.3	1.55	mg/Kg wet	39.5		94	74.9-125		

Batch BIB0138 - EPA 245.7 1999

Blank (BIB0138-BLK1)

Prepared: 24-Feb-25 Analyzed: 25-Feb-25

BIB0138-BLK1

Mercury	1.6 U	1.6	ng/L						
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LCS (BIB0138-BS1)

Prepared: 24-Feb-25 Analyzed: 25-Feb-25

BIB0138-BS1

Mercury	47.6	1.6	ng/L	50.0		95	80-120		
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Batch S250913 - EPA 6020B (7/14)

Serial Dilution (S250913-SRD1)

Source: 2502011-06

Prepared: 24-Feb-25 Analyzed: 25-Feb-25

S250913-SRD1

Antimony	10.9 U	10.9	mg/Kg dry		ND				20
Arsenic	6.00	2.24	mg/Kg dry		5.93			1	20
Cadmium	3.27 U	3.27	mg/Kg dry		ND				20
Chromium	18.8 J	10.2	mg/Kg dry		18.6			1	20
Copper	240	17.0	mg/Kg dry		233			3	20
Lead	29.6	4.23	mg/Kg dry		27.7			7	20
Molybdenum	5.89 J	5.15	mg/Kg dry		5.47			7	20
Nickel	14.1 J	8.55	mg/Kg dry		13.4			6	20

ES Wastewater Management

2201 Portland Ave.

Tacoma WA, 98421

Project: **Central Treatment Plant Quarterly**

Project Number: 80000154

Project Manager: Matt Symington

Reported:

04-Apr-25 18:40

Metals - Quality Control**Environmental Services Laboratory**

Sample ID Analyte	Result	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch S250913 - EPA 6020B (7/14)									
Selenium	11.5 U	11.5	mg/Kg dry		ND				20
Silver	5.38 U	5.38	mg/Kg dry		ND				20
Thallium	1.47 U	1.47	mg/Kg dry		ND				20
Zinc	806	41.4	mg/Kg dry		778			3	20
Beryllium	2.89 U	2.89	mg/Kg dry		ND				20

ES Wastewater Management

2201 Portland Ave.

Tacoma WA, 98421

Project: **Central Treatment Plant Quarterly**

Project Number: 80000154

Project Manager: Matt Symington

Reported:

04-Apr-25 18:40

**Semi-VOA - Quality Control
Environmental Services Laboratory**

Sample ID									
Analyte	Result	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit

Batch BIB0119 - EPA 1633

Blank (BIB0119-BLK1)

Prepared: 21-Feb-25 Analyzed: 26-Feb-25

BIB0119-BLK1

PFBA	0.40 U	0.40	ng/L
PFPeA	2.07 U	2.07	ng/L
PFHxA	0.40 U	0.40	ng/L
PFHpA	0.50 U	0.50	ng/L
PFOA	0.41 U	0.41	ng/L
PFNA	0.51 U	0.51	ng/L
PFDA	0.98 U	0.98	ng/L
PFUnA	0.83 U	0.83	ng/L
PFDaA	0.74 U	0.74	ng/L
PFTTrDA	0.69 U	0.69	ng/L
PFTeDA	0.38 U	0.38	ng/L
PFBS	0.27 U	0.27	ng/L
PFPeS	0.32 U	0.32	ng/L
PFHxS	0.39 U	0.39	ng/L
PFHpS	0.36 U	0.36	ng/L
PFOS	0.81 U	0.81	ng/L
PFNS	0.40 U	0.40	ng/L
PFDS	0.21 U	0.21	ng/L
PFDoS	0.37 U	0.37	ng/L
4:2FTS	1.66 U	1.66	ng/L
6:2FTS	39.0 U	39.0	ng/L
8:2FTS	2.32 U	2.32	ng/L
PFOSA	0.16 U	0.16	ng/L
NMeFOSA	0.17 U	0.17	ng/L
NEtFOSA	0.17 U	0.17	ng/L
NMeFOSAA	0.33 U	0.33	ng/L
NEtFOSAA	0.42 U	0.42	ng/L
NMeFOSE	0.60 U	0.60	ng/L
NEtFOSE	0.72 U	0.72	ng/L
HFPO-DA	0.42 U	0.42	ng/L
ADONA	0.85 U	0.85	ng/L
PFMPA	0.16 U	0.16	ng/L
PFMBA	0.11 U	0.11	ng/L
NFDHA	0.55 U	0.55	ng/L
9Cl-PF3ONS	0.26 U	0.26	ng/L
11Cl-PF3OUdS	0.44 U	0.44	ng/L
PFEESA	0.16 U	0.16	ng/L
3:3FTCA	1.07 U	1.07	ng/L
5:3FTCA	2.33 U	2.33	ng/L

ES Wastewater Management

2201 Portland Ave.

Tacoma WA, 98421

Project: **Central Treatment Plant Quarterly**

Project Number: 80000154

Project Manager: Matt Symington

Reported:

04-Apr-25 18:40

Semi-VOA - Quality Control
Environmental Services Laboratory

Sample ID Analyte	Result	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
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Batch BIB0119 - EPA 1633

7:3FTCA	2.33 U	2.33	ng/L						
Surrogate: 13C4-PFBA	74.8		ng/L	80.0		93.5	5-130		
Surrogate: 13C5-PFPeA	36.3		ng/L	40.0		90.8	40-130		
Surrogate: 13C5-PFHxA	18.2		ng/L	20.0		91.1	40-130		
Surrogate: 13C4-PFHpA	17.6		ng/L	20.0		88.2	40-130		
Surrogate: 13C8-PFOA	18.8		ng/L	20.0		94.2	40-130		
Surrogate: 13C9-PFNA	9.09		ng/L	10.0		90.9	40-130		
Surrogate: 13C6-PFDA	7.87		ng/L	10.0		78.7	40-130		
Surrogate: 13C7-PFUnA	7.92		ng/L	10.0		79.2	30-130		
Surrogate: 13C2-PFDoA	7.26		ng/L	10.0		72.6	10-130		
Surrogate: 13C2-PFTeDA	5.97		ng/L	10.0		59.7	10-130		
Surrogate: 13C3-PFBS	18.5		ng/L	20.0		92.4	40-135		
Surrogate: 13C3-PFHxS	17.0		ng/L	20.0		85.2	40-130		
Surrogate: 13C8-PFOS	17.3		ng/L	20.0		86.6	40-130		
Surrogate: 13C8-PFOSA	12.8		ng/L	20.0		64.1	40-130		
Surrogate: D3-NMeFOSAA	31.9		ng/L	40.0		79.9	40-170		
Surrogate: D5-NEtFOSAA	31.5		ng/L	40.0		78.7	25-135		
Surrogate: 13C2-4:2FTS	34.9		ng/L	40.0		87.3	40-200		
Surrogate: 13C2-6:2FTS	30.1		ng/L	40.0		75.3	40-200		
Surrogate: 13C2-8:2FTS	31.3		ng/L	40.0		78.2	40-300		
Surrogate: 13C3-HFPO-DA	74.3		ng/L	80.0		92.9	40-130		
Surrogate: D7-NMeFOSE	124		ng/L	200		61.8	10-130		
Surrogate: D9-NEtFOSE	75.8		ng/L	200		37.9	10-130		
Surrogate: D5-NEtFOSA	1.76		ng/L	20.0		8.80	10-130		
Surrogate: D3-NMeFOSA	2.16		ng/L	20.0		10.8	10-130		

LCS (BIB0119-BS1)

Prepared: 21-Feb-25 Analyzed: 26-Feb-25

BIB0119-BS1

PFBA	154	0.40	ng/L	160		96.0	70-140		
PFPeA	77.5	2.07	ng/L	80.0		96.9	65-135		
PFHxA	39.7	0.40	ng/L	40.0		99.3	70-145		
PFHpA	37.6	0.50	ng/L	40.0		93.9	70-150		
PFOA	39.5	0.41	ng/L	40.0		98.7	70-150		
PFNA	40.3	0.51	ng/L	40.0		101	70-150		
PFDA	37.9	0.98	ng/L	40.0		94.7	70-140		
PFUnA	40.5	0.83	ng/L	40.0		101	70-145		
PFDoA	39.3	0.74	ng/L	40.0		98.2	70-140		
PFTTrDA	39.7	0.69	ng/L	40.0		99.3	65-140		
PFTTeDA	39.0	0.38	ng/L	40.0		97.6	60-140		
PFBS	39.8	0.27	ng/L	40.0		99.4	60-145		

ES Wastewater Management

2201 Portland Ave.

Tacoma WA, 98421

Project: **Central Treatment Plant Quarterly**

Project Number: 80000154

Project Manager: Matt Symington

Reported:

04-Apr-25 18:40

**Semi-VOA - Quality Control
Environmental Services Laboratory**

Sample ID Analyte	Result	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BIB0119 - EPA 1633									
PFPeS	40.0	0.32	ng/L	40.0		100	65-140		
PFHxS	38.6	0.39	ng/L	40.0		96.4	65-145		
PFHpS	39.3	0.36	ng/L	40.0		98.3	70-150		
PFOS	39.5	0.81	ng/L	40.0		98.7	55-150		
PFNS	40.6	0.40	ng/L	40.0		102	65-145		
PFDS	37.1	0.21	ng/L	40.0		92.9	60-145		
PFDoS	33.0	0.37	ng/L	40.0		82.6	50-145		
4:2FTS	164	1.66	ng/L	160		103	70-145		
6:2FTS	166	39.0	ng/L	160		104	65-155		
8:2FTS	164	2.32	ng/L	160		102	60-150		
PFOSA	41.6	0.16	ng/L	40.0		104	70-145		
NMeFOSA	45.1	0.17	ng/L	40.0		113	60-150		
NEtFOSA	35.0	0.17	ng/L	40.0		87.6	65-145		
NMeFOSAA	40.0	0.33	ng/L	40.0		100	50-140		
NEtFOSAA	42.8	0.42	ng/L	40.0		107	70-145		
NMeFOSE	321	0.60	ng/L	400		80.3	70-145		
NEtFOSE	433	0.72	ng/L	400		108	70-135		
HFPO-DA	159	0.42	ng/L	160		99.5	70-140		
ADONA	139	0.85	ng/L	160		86.7	65-145		
PFMPA	75.5	0.16	ng/L	80.0		94.4	55-140		
PFMBA	79.0	0.11	ng/L	80.0		98.8	60-150		
NFDHA	114	0.55	ng/L	80.0		142	50-150		
9Cl-PF3ONS	142	0.26	ng/L	160		89.0	70-155		
11Cl-PF3OUdS	134	0.44	ng/L	160		84.0	55-160		
PFEESA	86.2	0.16	ng/L	80.0		108	70-140		
3:3FTCA	191	1.07	ng/L	200		95.3	65-130		
5:3FTCA	839	2.33	ng/L	1000		83.9	70-135		
7:3FTCA	690	2.33	ng/L	1000		69.0	50-145		
Surrogate: 13C4-PFBA	74.3		ng/L	80.0		92.9	5-130		
Surrogate: 13C5-PFPeA	34.3		ng/L	40.0		85.8	40-130		
Surrogate: 13C5-PFHxA	17.3		ng/L	20.0		86.7	40-130		
Surrogate: 13C4-PFHpA	17.6		ng/L	20.0		88.0	40-130		
Surrogate: 13C8-PFOA	16.4		ng/L	20.0		81.8	40-130		
Surrogate: 13C9-PFNA	9.42		ng/L	10.0		94.2	40-130		
Surrogate: 13C6-PFDA	9.47		ng/L	10.0		94.7	40-130		
Surrogate: 13C7-PFUnA	9.37		ng/L	10.0		93.7	30-130		
Surrogate: 13C2-PFDoA	8.50		ng/L	10.0		85.0	10-130		
Surrogate: 13C2-PFTeDA	7.20		ng/L	10.0		72.0	10-130		
Surrogate: 13C3-PFBS	19.7		ng/L	20.0		98.7	40-135		
Surrogate: 13C3-PFHxS	18.3		ng/L	20.0		91.3	40-130		

ES Wastewater Management

2201 Portland Ave.

Tacoma WA, 98421

Project: **Central Treatment Plant Quarterly**

Project Number: 80000154

Project Manager: Matt Symington

Reported:

04-Apr-25 18:40

**Semi-VOA - Quality Control
Environmental Services Laboratory**

Sample ID Analyte	Result	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
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Batch BIB0119 - EPA 1633

Surrogate: 13C8-PFOS	18.0		ng/L	20.0		89.8	40-130		
Surrogate: 13C8-PFOA	13.1		ng/L	20.0		65.6	40-130		
Surrogate: D3-NMeFOSAA	34.5		ng/L	40.0		86.1	40-170		
Surrogate: D5-NEtFOSAA	32.0		ng/L	40.0		80.1	25-135		
Surrogate: 13C2-4:2FTS	37.4		ng/L	40.0		93.5	40-200		
Surrogate: 13C2-6:2FTS	33.8		ng/L	40.0		84.6	40-200		
Surrogate: 13C2-8:2FTS	37.0		ng/L	40.0		92.6	40-300		
Surrogate: 13C3-HFPO-DA	82.0		ng/L	80.0		103	40-130		
Surrogate: D7-NMeFOSE	125		ng/L	200		62.3	10-130		
Surrogate: D9-NEtFOSE	79.9		ng/L	200		39.9	10-130		
Surrogate: D5-NEtFOSA	2.01		ng/L	20.0		10.1	10-130		
Surrogate: D3-NMeFOSA	2.26		ng/L	20.0		11.3	10-130		

Batch BIC0141 - EPA 1633**Blank (BIC0141-BLK1)**

Prepared: 27-Mar-25 Analyzed: 01-Apr-25

BIC0141-BLK1

PFBA	0.18 U	0.18	ng/g
PFPeA	1.23 U	1.23	ng/g
PFHxA	0.03 U	0.03	ng/g
PFHpA	0.03 U	0.03	ng/g
PFOA	0.04 U	0.04	ng/g
PFNA	0.04 U	0.04	ng/g
PFDA	0.05 U	0.05	ng/g
PFUnA	0.04 U	0.04	ng/g
PFDoA	0.03 U	0.03	ng/g
PFTTrDA	0.02 U	0.02	ng/g
PFTeDA	0.02 U	0.02	ng/g
PFBS	0.03 U	0.03	ng/g
PFPeS	0.20 U	0.20	ng/g
PFHxS	0.22 U	0.22	ng/g
PFHpS	0.07 U	0.07	ng/g
PFOS	0.37 U	0.37	ng/g
PFNS	0.03 U	0.03	ng/g
PFDS	0.12 U	0.12	ng/g
PFDoS	0.05 U	0.05	ng/g
4:2FTS	0.08 U	0.08	ng/g
6:2FTS	0.08 U	0.08	ng/g
8:2FTS	0.12 U	0.12	ng/g
PFOSA	0.03 U	0.03	ng/g
NMeFOSA	0.04 U	0.04	ng/g

ES Wastewater Management

2201 Portland Ave.

Tacoma WA, 98421

Project: **Central Treatment Plant Quarterly**

Project Number: 80000154

Project Manager: Matt Symington

Reported:

04-Apr-25 18:40

**Semi-VOA - Quality Control
Environmental Services Laboratory**

Sample ID Analyte	Result	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BIC0141 - EPA 1633									
NEtFOSA	0.02 U	0.02	ng/g						
NMeFOSAA	0.16 U	0.16	ng/g						
NEtFOSAA	0.15 U	0.15	ng/g						
NMeFOSE	0.15 U	0.15	ng/g						
NEtFOSE	0.09 U	0.09	ng/g						
HFPO-DA	0.03 U	0.03	ng/g						
ADONA	0.11 U	0.11	ng/g						
PFMPA	0.03 U	0.03	ng/g						
PFMBA	0.05 U	0.05	ng/g						
NFDHA	0.05 U	0.05	ng/g						
9Cl-PF3ONS	0.05 U	0.05	ng/g						
11Cl-PF3OUdS	0.03 U	0.03	ng/g						
PFEESA	0.05 U	0.05	ng/g						
3:3FTCA	0.22 U	0.22	ng/g						
5:3FTCA	0.30 U	0.30	ng/g						
7:3FTCA	0.31 U	0.31	ng/g						
Surrogate: 13C4-PFBA	4.78		ng/g	4.00		120	8-130		
Surrogate: 13C5-PFPeA	2.50		ng/g	2.00		125	35-130		
Surrogate: 13C5-PFHxA	1.30		ng/g	1.00		130	40-130		
Surrogate: 13C4-PFHpA	1.29		ng/g	1.00		129	40-130		
Surrogate: 13C8-PFOA	1.21		ng/g	1.00		121	40-130		
Surrogate: 13C9-PFNA	0.605		ng/g	0.500		121	40-130		
Surrogate: 13C6-PFDA	0.635		ng/g	0.500		127	40-130		
Surrogate: 13C7-PFUnA	0.621		ng/g	0.500		124	40-130		
Surrogate: 13C2-PFDoA	0.606		ng/g	0.500		121	40-130		
Surrogate: 13C2-PFTeDA	0.474		ng/g	0.500		94.8	20-130		
Surrogate: 13C3-PFBS	1.16		ng/g	1.00		116	40-135		
Surrogate: 13C3-PFHxS	1.13		ng/g	1.00		113	40-130		
Surrogate: 13C8-PFOS	1.15		ng/g	1.00		115	40-130		
Surrogate: 13C8-PFOA	1.10		ng/g	1.00		110	40-130		
Surrogate: D3-NMeFOSAA	2.56		ng/g	2.00		128	40-135		
Surrogate: D5-NEtFOSAA	2.16		ng/g	2.00		108	40-150		
Surrogate: 13C2-4:2FTS	2.11		ng/g	2.00		105	40-165		
Surrogate: 13C2-6:2FTS	1.93		ng/g	2.00		96.3	40-215		
Surrogate: 13C2-8:2FTS	1.82		ng/g	2.00		91.2	40-275		
Surrogate: 13C3-HFPO-DA	5.05		ng/g	4.00		126	40-130		
Surrogate: D7-NMeFOSE	8.14		ng/g	10.0		81.4	20-130		
Surrogate: D9-NEtFOSE	7.28		ng/g	10.0		72.8	15-130		
Surrogate: D5-NEtFOSA	0.418		ng/g	1.00		41.8	10-130		

ES Wastewater Management
2201 Portland Ave.
Tacoma WA, 98421

Project: **Central Treatment Plant Quarterly**
Project Number: 80000154
Project Manager: Matt Symington

Reported:
04-Apr-25 18:40

Semi-VOA - Quality Control
Environmental Services Laboratory

Sample ID Analyte	Result	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
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Batch BIC0141 - EPA 1633

Surrogate: D3-NMeFOSA 0.494 ng/g 1.00 49.4 10-130

LCS (BIC0141-BS1)

Prepared: 27-Mar-25 Analyzed: 01-Apr-25

BIC0141-BS1

PFBA	3.29	0.18	ng/g	4.00		82.4	70-140
PFPeA	1.65 J	1.23	ng/g	2.00		82.4	60-150
PFHxA	0.87	0.03	ng/g	1.00		87.1	65-140
PFHpA	0.83	0.03	ng/g	1.00		83.1	65-145
PFOA	0.86	0.04	ng/g	1.00		86.0	70-150
PFNA	0.80	0.04	ng/g	1.00		79.6	70-155
PFDA	0.84	0.05	ng/g	1.00		84.4	70-155
PFUnA	0.83	0.04	ng/g	1.00		82.6	70-155
PFDaA	0.80	0.03	ng/g	1.00		79.9	70-150
PFTTrDA	0.85	0.02	ng/g	1.00		85.5	65-150
PFTeDA	0.81	0.02	ng/g	1.00		80.5	65-150
PFBS	0.87	0.03	ng/g	1.00		86.9	65-145
PFPeS	0.81	0.20	ng/g	1.00		81.4	55-160
PFHxS	0.83	0.22	ng/g	1.00		83.2	60-150
PFHpS	0.85	0.07	ng/g	1.00		84.8	65-155
PFOS	0.85	0.37	ng/g	1.00		84.8	65-160
PFNS	0.85	0.03	ng/g	1.00		85.1	55-140
PFDS	0.80	0.12	ng/g	1.00		79.9	40-155
PFDoS	0.73	0.05	ng/g	1.00		72.7	25-160
4:2FTS	3.80	0.08	ng/g	4.00		95.0	60-150
6:2FTS	3.90	0.08	ng/g	4.00		97.6	55-200
8:2FTS	3.99	0.12	ng/g	4.00		99.6	70-150
PFOSA	0.83	0.03	ng/g	1.00		83.4	70-140
NMeFOSA	0.80	0.04	ng/g	1.00		80.3	70-155
NEtFOSA	0.76	0.02	ng/g	1.00		75.9	70-140
NMeFOSAA	0.79	0.16	ng/g	1.00		79.0	65-155
NEtFOSAA	0.81	0.15	ng/g	1.00		81.1	65-165
NMeFOSE	8.25	0.15	ng/g	10.0		82.5	70-140
NEtFOSE	8.72	0.09	ng/g	10.0		87.2	70-135
HFPO-DA	3.47	0.03	ng/g	4.00		86.8	70-145
ADONA	3.42	0.11	ng/g	4.00		85.6	70-160
PFMPA	1.64	0.03	ng/g	2.00		82.1	30-140
PFMBA	1.67	0.05	ng/g	2.00		83.4	60-150
NFDHA	1.94	0.05	ng/g	2.00		96.9	60-155
9Cl-PF3ONS	3.55	0.05	ng/g	4.00		88.8	70-150
11Cl-PF3OUdS	3.39	0.03	ng/g	4.00		84.8	45-160
PFEESA	1.73	0.05	ng/g	2.00		86.4	70-140

ES Wastewater Management

2201 Portland Ave.

Tacoma WA, 98421

Project: **Central Treatment Plant Quarterly**

Project Number: 80000154

Project Manager: Matt Symington

Reported:

04-Apr-25 18:40

**Semi-VOA - Quality Control
Environmental Services Laboratory**

Sample ID Analyte	Result	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
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Batch BIC0141 - EPA 1633

3:3FTCA	3.94	0.22	ng/g	5.00		78.7	45-130		
5:3FTCA	20.3	0.30	ng/g	25.0		81.2	60-130		
7:3FTCA	19.7	0.31	ng/g	25.0		78.8	60-150		
Surrogate: 13C4-PFBA	4.57		ng/g	4.00		114	8-130		
Surrogate: 13C5-PFPeA	1.82		ng/g	2.00		90.9	35-130		
Surrogate: 13C5-PFHxA	0.875		ng/g	1.00		87.5	40-130		
Surrogate: 13C4-PFHpA	0.884		ng/g	1.00		88.4	40-130		
Surrogate: 13C8-PFOA	0.984		ng/g	1.00		98.4	40-130		
Surrogate: 13C9-PFNA	0.555		ng/g	0.500		111	40-130		
Surrogate: 13C6-PFDA	0.609		ng/g	0.500		122	40-130		
Surrogate: 13C7-PFUnA	0.587		ng/g	0.500		117	40-130		
Surrogate: 13C2-PFDoA	0.563		ng/g	0.500		113	40-130		
Surrogate: 13C2-PFTeDA	0.488		ng/g	0.500		97.6	20-130		
Surrogate: 13C3-PFBS	1.17		ng/g	1.00		117	40-135		
Surrogate: 13C3-PFHxS	1.19		ng/g	1.00		119	40-130		
Surrogate: 13C8-PFOS	1.17		ng/g	1.00		117	40-130		
Surrogate: 13C8-PFOSA	1.13		ng/g	1.00		113	40-130		
Surrogate: D3-NMeFOSAA	2.65		ng/g	2.00		133	40-135		
Surrogate: D5-NEtFOSAA	2.35		ng/g	2.00		117	40-150		
Surrogate: 13C2-4:2FTS	2.20		ng/g	2.00		110	40-165		
Surrogate: 13C2-6:2FTS	2.28		ng/g	2.00		114	40-215		
Surrogate: 13C2-8:2FTS	2.18		ng/g	2.00		109	40-275		
Surrogate: 13C3-HFPO-DA	3.50		ng/g	4.00		87.6	40-130		
Surrogate: D7-NMeFOSE	8.41		ng/g	10.0		84.1	20-130		
Surrogate: D9-NEtFOSE	7.70		ng/g	10.0		77.0	15-130		
Surrogate: D5-NEtFOSA	0.350		ng/g	1.00		35.0	10-130		
Surrogate: D3-NMeFOSA	0.433		ng/g	1.00		43.3	10-130		

Batch S250912 - EPA 1633**Instrument Blank (S250912-IBL1)**

Prepared & Analyzed: 26-Feb-25

S250912-IBL1

PFBA	0.40 U	0.40	ng/mL
PFPeA	2.07 U	2.07	ng/mL
PFHxA	0.40 U	0.40	ng/mL
PFHpA	0.50 U	0.50	ng/mL
PFOA	0.41 U	0.41	ng/mL
PFNA	0.51 U	0.51	ng/mL
PFDA	0.98 U	0.98	ng/mL
PFUnA	0.83 U	0.83	ng/mL

ES Wastewater Management

2201 Portland Ave.

Tacoma WA, 98421

Project: **Central Treatment Plant Quarterly**

Project Number: 80000154

Project Manager: Matt Symington

Reported:

04-Apr-25 18:40

**Semi-VOA - Quality Control
Environmental Services Laboratory**

Sample ID Analyte	Result	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
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Batch S250912 - EPA 1633

PFD _o A	0.74 U	0.74	ng/mL						
PFT _r DA	0.69 U	0.69	ng/mL						
PFT _e DA	0.38 U	0.38	ng/mL						
PFBS	0.27 U	0.27	ng/mL						
PFPeS	0.32 U	0.32	ng/mL						
PFH _x S	0.39 U	0.39	ng/mL						
PFHpS	0.36 U	0.36	ng/mL						
PFOS	0.81 U	0.81	ng/mL						
PFNS	0.40 U	0.40	ng/mL						
PFDS	0.21 U	0.21	ng/mL						
PFD _o S	0.37 U	0.37	ng/mL						
4:2FTS	1.66 U	1.66	ng/mL						
6:2FTS	39.0 U	39.0	ng/mL						
8:2FTS	2.32 U	2.32	ng/mL						
PFOSA	0.16 U	0.16	ng/mL						
NMeFOSA	0.17 U	0.17	ng/mL						
NEtFOSA	0.17 U	0.17	ng/mL						
NMeFOSAA	0.33 U	0.33	ng/mL						
NEtFOSAA	0.42 U	0.42	ng/mL						
NMeFOSE	0.60 U	0.60	ng/mL						
NEtFOSE	0.72 U	0.72	ng/mL						
HFPO-DA	0.42 U	0.42	ng/mL						
ADONA	0.85 U	0.85	ng/mL						
PFMPA	0.16 U	0.16	ng/mL						
PFMBA	0.11 U	0.11	ng/mL						
NFDHA	0.55 U	0.55	ng/mL						
9Cl-PF3ONS	0.26 U	0.26	ng/mL						
11Cl-PF3OUdS	0.44 U	0.44	ng/mL						
PFEESA	0.16 U	0.16	ng/mL						
3:3FTCA	1.07 U	1.07	ng/mL						
5:3FTCA	2.33 U	2.33	ng/mL						
7:3FTCA	2.33 U	2.33	ng/mL						
Surrogate: 13C4-PFBA	20.3		ng/mL	20.0		102	5-130		
Surrogate: 13C5-PFPeA	10.3		ng/mL	10.0		103	40-130		
Surrogate: 13C5-PFHxA	5.19		ng/mL	5.00		104	40-130		
Surrogate: 13C4-PFHpA	5.19		ng/mL	5.00		104	40-130		
Surrogate: 13C8-PFOA	5.33		ng/mL	5.00		107	40-130		
Surrogate: 13C9-PFNA	2.53		ng/mL	2.50		101	40-130		
Surrogate: 13C6-PFDA	2.59		ng/mL	2.50		104	40-130		
Surrogate: 13C7-PFUnA	2.63		ng/mL	2.50		105	30-130		

ES Wastewater Management2201 Portland Ave.
Tacoma WA, 98421Project: **Central Treatment Plant Quarterly**Project Number: 80000154
Project Manager: Matt Symington**Reported:**
04-Apr-25 18:40**Semi-VOA - Quality Control**
Environmental Services Laboratory

Sample ID Analyte	Result	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
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Batch S250912 - EPA 1633

Surrogate: 13C2-PFDoA	2.51		ng/mL	2.50		100	10-130		
Surrogate: 13C2-PFTeDA	2.57		ng/mL	2.50		103	10-130		
Surrogate: 13C3-PFBS	5.40		ng/mL	5.00		108	40-135		
Surrogate: 13C3-PFHxS	5.29		ng/mL	5.00		106	40-130		
Surrogate: 13C8-PFOS	5.09		ng/mL	5.00		102	40-130		
Surrogate: 13C8-PFOSA	4.55		ng/mL	5.00		91.0	40-130		
Surrogate: D3-NMeFOSAA	10.0		ng/mL	10.0		100	40-170		
Surrogate: D5-NEtFOSAA	9.75		ng/mL	10.0		97.5	25-135		
Surrogate: 13C2-4:2FTS	10.5		ng/mL	10.0		105	40-200		
Surrogate: 13C2-6:2FTS	10.1		ng/mL	10.0		101	40-200		
Surrogate: 13C2-8:2FTS	9.63		ng/mL	10.0		96.3	40-300		
Surrogate: 13C3-HFPO-DA	22.2		ng/mL	20.0		111	40-130		
Surrogate: D7-NMeFOSE	41.4		ng/mL	50.0		82.8	10-130		
Surrogate: D9-NEtFOSE	40.3		ng/mL	50.0		80.5	10-130		
Surrogate: D5-NEtFOSA	4.60		ng/mL	5.00		92.1	10-130		
Surrogate: D3-NMeFOSA	4.52		ng/mL	5.00		90.5	10-130		

Batch S250918 - EPA 1633**Instrument Blank (S250918-IBL1)**

Prepared & Analyzed: 27-Feb-25

S250918-IBL1

PFBA	0.40 U	0.40	ng/mL
PFPeA	2.07 U	2.07	ng/mL
PFHxA	0.40 U	0.40	ng/mL
PFHpA	0.50 U	0.50	ng/mL
PFOA	0.41 U	0.41	ng/mL
PFNA	0.51 U	0.51	ng/mL
PFDA	0.98 U	0.98	ng/mL
PFUnA	0.83 U	0.83	ng/mL
PFDoA	0.74 U	0.74	ng/mL
PFTTrDA	0.69 U	0.69	ng/mL
PFTeDA	0.38 U	0.38	ng/mL
PFBS	0.27 U	0.27	ng/mL
PFPeS	0.32 U	0.32	ng/mL
PFHxS	0.39 U	0.39	ng/mL
PFHpS	0.36 U	0.36	ng/mL
PFOS	0.81 U	0.81	ng/mL
PFNS	0.40 U	0.40	ng/mL
PFDS	0.21 U	0.21	ng/mL
PFDoS	0.37 U	0.37	ng/mL
4:2FTS	1.66 U	1.66	ng/mL

ES Wastewater Management

2201 Portland Ave.

Tacoma WA, 98421

Project: **Central Treatment Plant Quarterly**

Project Number: 80000154

Project Manager: Matt Symington

Reported:

04-Apr-25 18:40

**Semi-VOA - Quality Control
Environmental Services Laboratory**

Sample ID Analyte	Result	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch S250918 - EPA 1633									
6:2FTS	39.0 U	39.0	ng/mL						
8:2FTS	2.32 U	2.32	ng/mL						
PFOSA	0.16 U	0.16	ng/mL						
NMeFOSA	0.17 U	0.17	ng/mL						
NEtFOSA	0.17 U	0.17	ng/mL						
NMeFOSAA	0.33 U	0.33	ng/mL						
NEtFOSAA	0.42 U	0.42	ng/mL						
NMeFOSE	0.60 U	0.60	ng/mL						
NEtFOSE	0.72 U	0.72	ng/mL						
HFPO-DA	0.42 U	0.42	ng/mL						
ADONA	0.85 U	0.85	ng/mL						
PFMPA	0.16 U	0.16	ng/mL						
PFMBA	0.11 U	0.11	ng/mL						
NFDHA	0.55 U	0.55	ng/mL						
9CI-PF3ONS	0.26 U	0.26	ng/mL						
11CI-PF3OUdS	0.44 U	0.44	ng/mL						
PFEESA	0.16 U	0.16	ng/mL						
3:3FTCA	1.07 U	1.07	ng/mL						
5:3FTCA	2.33 U	2.33	ng/mL						
7:3FTCA	2.33 U	2.33	ng/mL						
Surrogate: 13C4-PFBA	20.5		ng/mL	20.0		103	5-130		
Surrogate: 13C5-PFPeA	9.20		ng/mL	10.0		92.0	40-130		
Surrogate: 13C5-PFHxA	4.46		ng/mL	5.00		89.1	40-130		
Surrogate: 13C4-PFHpA	4.61		ng/mL	5.00		92.3	40-130		
Surrogate: 13C8-PFOA	4.82		ng/mL	5.00		96.4	40-130		
Surrogate: 13C9-PFNA	2.62		ng/mL	2.50		105	40-130		
Surrogate: 13C6-PFDA	2.69		ng/mL	2.50		107	40-130		
Surrogate: 13C7-PFUnA	2.72		ng/mL	2.50		109	30-130		
Surrogate: 13C2-PFDoA	2.71		ng/mL	2.50		109	10-130		
Surrogate: 13C2-PFTeDA	2.58		ng/mL	2.50		103	10-130		
Surrogate: 13C3-PFBS	5.28		ng/mL	5.00		106	40-135		
Surrogate: 13C3-PFHxS	5.38		ng/mL	5.00		108	40-130		
Surrogate: 13C8-PFOS	4.88		ng/mL	5.00		97.6	40-130		
Surrogate: 13C8-PFOSA	4.54		ng/mL	5.00		90.8	40-130		
Surrogate: D3-NMeFOSAA	9.70		ng/mL	10.0		97.0	40-170		
Surrogate: D5-NEtFOSAA	10.0		ng/mL	10.0		100	25-135		
Surrogate: 13C2-4:2FTS	10.7		ng/mL	10.0		107	40-200		
Surrogate: 13C2-6:2FTS	10.3		ng/mL	10.0		103	40-200		
Surrogate: 13C2-8:2FTS	9.58		ng/mL	10.0		95.8	40-300		
Surrogate: 13C3-HFPO-DA	19.1		ng/mL	20.0		95.7	40-130		

ES Wastewater Management

2201 Portland Ave.

Tacoma WA, 98421

Project: **Central Treatment Plant Quarterly**

Project Number: 80000154

Project Manager: Matt Symington

Reported:

04-Apr-25 18:40

**Semi-VOA - Quality Control
Environmental Services Laboratory**

Sample ID Analyte	Result	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch S250918 - EPA 1633									
Surrogate: D7-NMeFOSE	40.8		ng/mL	50.0		81.6	10-130		
Surrogate: D9-NEtFOSE	40.1		ng/mL	50.0		80.2	10-130		
Surrogate: D5-NEtFOSA	4.51		ng/mL	5.00		90.2	10-130		
Surrogate: D3-NMeFOSA	4.37		ng/mL	5.00		87.4	10-130		
S250918-IBL2									
PFBA	0.40 U	0.40	ng/mL						
PFPeA	2.07 U	2.07	ng/mL						
PFHxA	0.40 U	0.40	ng/mL						
PFHpA	0.50 U	0.50	ng/mL						
PFOA	0.41 U	0.41	ng/mL						
PFNA	0.51 U	0.51	ng/mL						
PFDA	0.98 U	0.98	ng/mL						
PFUnA	0.83 U	0.83	ng/mL						
PFDoA	0.74 U	0.74	ng/mL						
PFTTrDA	0.69 U	0.69	ng/mL						
PFTeDA	0.38 U	0.38	ng/mL						
PFBS	0.27 U	0.27	ng/mL						
PFPeS	0.32 U	0.32	ng/mL						
PFHxS	0.39 U	0.39	ng/mL						
PFHpS	0.36 U	0.36	ng/mL						
PFOS	0.81 U	0.81	ng/mL						
PFNS	0.40 U	0.40	ng/mL						
PFDS	0.21 U	0.21	ng/mL						
PFDoS	0.37 U	0.37	ng/mL						
4:2FTS	1.66 U	1.66	ng/mL						
6:2FTS	39.0 U	39.0	ng/mL						
8:2FTS	2.32 U	2.32	ng/mL						
PFOSA	0.16 U	0.16	ng/mL						
NMeFOSA	0.17 U	0.17	ng/mL						
NEtFOSA	0.17 U	0.17	ng/mL						
NMeFOSAA	0.33 U	0.33	ng/mL						
NEtFOSAA	0.42 U	0.42	ng/mL						
NMeFOSE	0.60 U	0.60	ng/mL						
NEtFOSE	0.72 U	0.72	ng/mL						
HFPO-DA	0.42 U	0.42	ng/mL						
ADONA	0.85 U	0.85	ng/mL						
PFMPA	0.16 U	0.16	ng/mL						
PFMBA	0.11 U	0.11	ng/mL						
NFDHA	0.55 U	0.55	ng/mL						
9Cl-PF3ONS	0.26 U	0.26	ng/mL						
11Cl-PF3OUdS	0.44 U	0.44	ng/mL						

ES Wastewater Management

2201 Portland Ave.

Tacoma WA, 98421

Project: **Central Treatment Plant Quarterly**

Project Number: 80000154

Project Manager: Matt Symington

Reported:

04-Apr-25 18:40

**Semi-VOA - Quality Control
Environmental Services Laboratory**

Sample ID Analyte	Result	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch S250918 - EPA 1633									
PFEESA	0.16 U	0.16	ng/mL						
3:3FTCA	1.07 U	1.07	ng/mL						
5:3FTCA	2.33 U	2.33	ng/mL						
7:3FTCA	2.33 U	2.33	ng/mL						
Surrogate: 13C4-PFBA	20.7		ng/mL	20.0		104	5-130		
Surrogate: 13C5-PFPeA	8.90		ng/mL	10.0		89.0	40-130		
Surrogate: 13C5-PFHxA	4.41		ng/mL	5.00		88.2	40-130		
Surrogate: 13C4-PFHpA	4.38		ng/mL	5.00		87.6	40-130		
Surrogate: 13C8-PFOA	5.11		ng/mL	5.00		102	40-130		
Surrogate: 13C9-PFNA	2.59		ng/mL	2.50		103	40-130		
Surrogate: 13C6-PFDA	2.73		ng/mL	2.50		109	40-130		
Surrogate: 13C7-PFUnA	2.69		ng/mL	2.50		108	30-130		
Surrogate: 13C2-PFDoA	2.68		ng/mL	2.50		107	10-130		
Surrogate: 13C2-PFTeDA	2.52		ng/mL	2.50		101	10-130		
Surrogate: 13C3-PFBS	5.27		ng/mL	5.00		105	40-135		
Surrogate: 13C3-PFHxS	5.29		ng/mL	5.00		106	40-130		
Surrogate: 13C8-PFOS	5.27		ng/mL	5.00		105	40-130		
Surrogate: 13C8-PFOA	4.40		ng/mL	5.00		87.9	40-130		
Surrogate: D3-NMeFOSAA	9.22		ng/mL	10.0		92.2	40-170		
Surrogate: D5-NEtFOSAA	9.42		ng/mL	10.0		94.2	25-135		
Surrogate: 13C2-4:2FTS	9.77		ng/mL	10.0		97.7	40-200		
Surrogate: 13C2-6:2FTS	8.69		ng/mL	10.0		86.9	40-200		
Surrogate: 13C2-8:2FTS	8.92		ng/mL	10.0		89.2	40-300		
Surrogate: 13C3-HFPO-DA	18.5		ng/mL	20.0		92.3	40-130		
Surrogate: D7-NMeFOSE	43.0		ng/mL	50.0		86.0	10-130		
Surrogate: D9-NEtFOSE	42.5		ng/mL	50.0		85.0	10-130		
Surrogate: D5-NEtFOSA	4.62		ng/mL	5.00		92.4	10-130		
Surrogate: D3-NMeFOSA	4.46		ng/mL	5.00		89.1	10-130		

ES Wastewater Management
2201 Portland Ave.
Tacoma WA, 98421

Project: **Central Treatment Plant Quarterly**
Project Number: 80000154
Project Manager: Matt Symington

Reported:
04-Apr-25 18:40

Semi-VOA - Quality Control
Environmental Services Laboratory

Sample ID Analyte	Result	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
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Batch S251309 - EPA 1633

Instrument Blank (S251309-IBL1)

Prepared & Analyzed: 26-Mar-25

S251309-IBL1

PFBA	0.35 U	0.35	ng/mL
PFPeA	2.46 U	2.46	ng/mL
PFHxA	0.05 U	0.05	ng/mL
PFHpA	0.05 U	0.05	ng/mL
PFOA	0.07 U	0.07	ng/mL
PFNA	0.07 U	0.07	ng/mL
PFDA	0.10 U	0.10	ng/mL
PFUnA	0.07 U	0.07	ng/mL
PFDoA	0.05 U	0.05	ng/mL
PFTTrDA	0.03 U	0.03	ng/mL
PFTeDA	0.04 U	0.04	ng/mL
PFBS	0.06 U	0.06	ng/mL
PFPeS	0.39 U	0.39	ng/mL
PFHxS	0.44 U	0.44	ng/mL
PFHpS	0.13 U	0.13	ng/mL
PFOS	0.74 U	0.74	ng/mL
PFNS	0.06 U	0.06	ng/mL
PFDS	0.23 U	0.23	ng/mL
PFDoS	0.10 U	0.10	ng/mL
4:2FTS	0.15 U	0.15	ng/mL
6:2FTS	0.15 U	0.15	ng/mL
8:2FTS	0.24 U	0.24	ng/mL
PFOSA	0.06 U	0.06	ng/mL
NMeFOSA	0.07 U	0.07	ng/mL
NEtFOSA	0.03 U	0.03	ng/mL
NMeFOSAA	0.31 U	0.31	ng/mL
NEtFOSAA	0.30 U	0.30	ng/mL
NMeFOSE	0.29 U	0.29	ng/mL
NEtFOSE	0.18 U	0.18	ng/mL
HFPO-DA	0.06 U	0.06	ng/mL
ADONA	0.22 U	0.22	ng/mL
PFMPA	0.05 U	0.05	ng/mL
PFMBA	0.09 U	0.09	ng/mL
NFDHA	0.10 U	0.10	ng/mL
9Cl-PF3ONS	0.10 U	0.10	ng/mL
11Cl-PF3OUdS	0.06 U	0.06	ng/mL
PFEESA	0.09 U	0.09	ng/mL
3:3FTCA	0.44 U	0.44	ng/mL
5:3FTCA	0.60 U	0.60	ng/mL

ES Wastewater Management

2201 Portland Ave.

Tacoma WA, 98421

Project: **Central Treatment Plant Quarterly**

Project Number: 80000154

Project Manager: Matt Symington

Reported:

04-Apr-25 18:40

Semi-VOA - Quality Control
Environmental Services Laboratory

Sample ID Analyte	Result	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch S251309 - EPA 1633									
7:3FTCA	0.62 U	0.62	ng/mL						
Surrogate: 13C4-PFBA	23.9		ng/mL	20.0		120	8-130		
Surrogate: 13C5-PFPeA	9.41		ng/mL	10.0		94.1	35-130		
Surrogate: 13C5-PFHxA	4.52		ng/mL	5.00		90.3	40-130		
Surrogate: 13C4-PFHpA	4.70		ng/mL	5.00		93.9	40-130		
Surrogate: 13C8-PFOA	6.84		ng/mL	5.00		137	40-130		
Surrogate: 13C9-PFNA	3.05		ng/mL	2.50		122	40-130		
Surrogate: 13C6-PFDA	3.23		ng/mL	2.50		129	40-130		
Surrogate: 13C7-PFUnA	3.14		ng/mL	2.50		126	40-130		
Surrogate: 13C2-PFDoA	3.08		ng/mL	2.50		123	40-130		
Surrogate: 13C2-PFTeDA	3.24		ng/mL	2.50		130	20-130		
Surrogate: 13C3-PFBS	6.27		ng/mL	5.00		125	40-135		
Surrogate: 13C3-PFHxS	5.75		ng/mL	5.00		115	40-130		
Surrogate: 13C8-PFOS	5.96		ng/mL	5.00		119	40-130		
Surrogate: 13C8-PFOSA	5.86		ng/mL	5.00		117	40-130		
Surrogate: D3-NMeFOSAA	11.1		ng/mL	10.0		111	40-135		
Surrogate: D5-NEtFOSAA	13.9		ng/mL	10.0		139	40-150		
Surrogate: 13C2-4:2FTS	12.8		ng/mL	10.0		128	40-165		
Surrogate: 13C2-6:2FTS	9.83		ng/mL	10.0		98.3	40-215		
Surrogate: 13C2-8:2FTS	11.8		ng/mL	10.0		118	40-275		
Surrogate: 13C3-HFPO-DA	19.0		ng/mL	20.0		95.2	40-130		
Surrogate: D7-NMeFOSE	58.4		ng/mL	50.0		117	20-130		
Surrogate: D9-NEtFOSE	62.4		ng/mL	50.0		125	15-130		
Surrogate: D5-NEtFOSA	6.50		ng/mL	5.00		130	10-130		
Surrogate: D3-NMeFOSA	6.34		ng/mL	5.00		127	10-130		
S251309-IBL2									
PFBA	0.35 U	0.35	ng/mL						
PFPeA	2.46 U	2.46	ng/mL						
PFHxA	0.05 U	0.05	ng/mL						
PFHpA	0.05 U	0.05	ng/mL						
PFOA	0.07 U	0.07	ng/mL						
PFNA	0.07 U	0.07	ng/mL						
PFDA	0.10 U	0.10	ng/mL						
PFUnA	0.07 U	0.07	ng/mL						
PFDoA	0.05 U	0.05	ng/mL						
PFTTrDA	0.03 U	0.03	ng/mL						
PFTeDA	0.04 U	0.04	ng/mL						
PFBS	0.06 U	0.06	ng/mL						
PFPeS	0.39 U	0.39	ng/mL						

ES Wastewater Management2201 Portland Ave.
Tacoma WA, 98421Project: **Central Treatment Plant Quarterly**

Project Number: 80000154

Project Manager: Matt Symington

Reported:

04-Apr-25 18:40

Semi-VOA - Quality Control
Environmental Services Laboratory

Sample ID Analyte	Result	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
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Batch S251309 - EPA 1633

PFHxS	0.44 U	0.44	ng/mL						
PFHpS	0.13 U	0.13	ng/mL						
PFOS	0.74 U	0.74	ng/mL						
PFNS	0.06 U	0.06	ng/mL						
PFDS	0.23 U	0.23	ng/mL						
PFDoS	0.10 U	0.10	ng/mL						
4:2FTS	0.15 U	0.15	ng/mL						
6:2FTS	0.15 U	0.15	ng/mL						
8:2FTS	0.24 U	0.24	ng/mL						
PFOSA	0.06 U	0.06	ng/mL						
NMeFOSA	0.07 U	0.07	ng/mL						
NEtFOSA	0.03 U	0.03	ng/mL						
NMeFOSAA	0.31 U	0.31	ng/mL						
NEtFOSAA	0.30 U	0.30	ng/mL						
NMeFOSE	0.29 U	0.29	ng/mL						
NEtFOSE	0.18 U	0.18	ng/mL						
HFPO-DA	0.06 U	0.06	ng/mL						
ADONA	0.22 U	0.22	ng/mL						
PFMPA	0.05 U	0.05	ng/mL						
PFMBA	0.09 U	0.09	ng/mL						
NFDHA	0.10 U	0.10	ng/mL						
9Cl-PF3ONS	0.10 U	0.10	ng/mL						
11Cl-PF3OUdS	0.06 U	0.06	ng/mL						
PFEESA	0.09 U	0.09	ng/mL						
3:3FTCA	0.44 U	0.44	ng/mL						
5:3FTCA	0.60 U	0.60	ng/mL						
7:3FTCA	0.62 U	0.62	ng/mL						
Surrogate: 13C4-PFBA	24.1		ng/mL	20.0		121	8-130		
Surrogate: 13C5-PFPeA	14.0		ng/mL	10.0		140	35-130		
Surrogate: 13C5-PFHxA	6.60		ng/mL	5.00		132	40-130		
Surrogate: 13C4-PFHpA	6.82		ng/mL	5.00		136	40-130		
Surrogate: 13C8-PFOA	5.52		ng/mL	5.00		110	40-130		
Surrogate: 13C9-PFNA	3.01		ng/mL	2.50		120	40-130		
Surrogate: 13C6-PFDA	3.05		ng/mL	2.50		122	40-130		
Surrogate: 13C7-PFUnA	2.94		ng/mL	2.50		117	40-130		
Surrogate: 13C2-PFDoA	3.06		ng/mL	2.50		122	40-130		
Surrogate: 13C2-PFTeDA	3.03		ng/mL	2.50		121	20-130		
Surrogate: 13C3-PFBS	6.27		ng/mL	5.00		125	40-135		
Surrogate: 13C3-PFHxS	5.80		ng/mL	5.00		116	40-130		
Surrogate: 13C8-PFOS	6.06		ng/mL	5.00		121	40-130		

ES Wastewater Management

2201 Portland Ave.

Tacoma WA, 98421

Project: **Central Treatment Plant Quarterly**

Project Number: 80000154

Project Manager: Matt Symington

Reported:

04-Apr-25 18:40

**Semi-VOA - Quality Control
Environmental Services Laboratory**

Sample ID Analyte	Result	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
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Batch S251309 - EPA 1633

Surrogate: 13C8-PFOSA	5.90		ng/mL	5.00		118	40-130		
Surrogate: D3-NMeFOSAA	11.6		ng/mL	10.0		116	40-135		
Surrogate: D5-NEtFOSAA	14.0		ng/mL	10.0		140	40-150		
Surrogate: 13C2-4:2FTS	11.0		ng/mL	10.0		110	40-165		
Surrogate: 13C2-6:2FTS	9.51		ng/mL	10.0		95.1	40-215		
Surrogate: 13C2-8:2FTS	10.6		ng/mL	10.0		106	40-275		
Surrogate: 13C3-HFPO-DA	25.7		ng/mL	20.0		128	40-130		
Surrogate: D7-NMeFOSE	57.1		ng/mL	50.0		114	20-130		
Surrogate: D9-NEtFOSE	59.3		ng/mL	50.0		119	15-130		
Surrogate: D5-NEtFOSA	5.98		ng/mL	5.00		120	10-130		
Surrogate: D3-NMeFOSA	5.92		ng/mL	5.00		118	10-130		

S251309-IBL4

PFBA	0.35 U	0.35	ng/mL
PFPeA	2.46 U	2.46	ng/mL
PFHxA	0.05 U	0.05	ng/mL
PFHpA	0.05 U	0.05	ng/mL
PFOA	0.07 U	0.07	ng/mL
PFNA	0.07 U	0.07	ng/mL
PFDA	0.10 U	0.10	ng/mL
PFUnA	0.07 U	0.07	ng/mL
PFDaA	0.05 U	0.05	ng/mL
PFTTrDA	0.03 U	0.03	ng/mL
PFTeDA	0.04 U	0.04	ng/mL
PFBS	0.06 U	0.06	ng/mL
PFPeS	0.39 U	0.39	ng/mL
PFHxS	0.44 U	0.44	ng/mL
PFHpS	0.13 U	0.13	ng/mL
PFOS	0.74 U	0.74	ng/mL
PFNS	0.06 U	0.06	ng/mL
PFDS	0.23 U	0.23	ng/mL
PFDoS	0.10 U	0.10	ng/mL
4:2FTS	0.15 U	0.15	ng/mL
6:2FTS	0.15 U	0.15	ng/mL
8:2FTS	0.24 U	0.24	ng/mL
PFOSA	0.06 U	0.06	ng/mL
NMeFOSA	0.07 U	0.07	ng/mL
NEtFOSA	0.03 U	0.03	ng/mL
NMeFOSAA	0.31 U	0.31	ng/mL
NEtFOSAA	0.30 U	0.30	ng/mL
NMeFOSE	0.29 U	0.29	ng/mL

ES Wastewater Management

2201 Portland Ave.

Tacoma WA, 98421

Project: **Central Treatment Plant Quarterly**

Project Number: 80000154

Project Manager: Matt Symington

Reported:

04-Apr-25 18:40

**Semi-VOA - Quality Control
Environmental Services Laboratory**

Sample ID Analyte	Result	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch S251309 - EPA 1633									
NEtFOSE	0.18 U	0.18	ng/mL						
HFPO-DA	0.06 U	0.06	ng/mL						
ADONA	0.22 U	0.22	ng/mL						
PFMPA	0.05 U	0.05	ng/mL						
PFMBA	0.09 U	0.09	ng/mL						
NFDHA	0.10 U	0.10	ng/mL						
9Cl-PF3ONS	0.10 U	0.10	ng/mL						
11Cl-PF3OUdS	0.06 U	0.06	ng/mL						
PFEESA	0.09 U	0.09	ng/mL						
3:3FTCA	0.44 U	0.44	ng/mL						
5:3FTCA	0.60 U	0.60	ng/mL						
7:3FTCA	0.62 U	0.62	ng/mL						
Surrogate: 13C4-PFBA	23.8		ng/mL	20.0		119	8-130		
Surrogate: 13C5-PFPeA	13.0		ng/mL	10.0		130	35-130		
Surrogate: 13C5-PFHxA	6.47		ng/mL	5.00		129	40-130		
Surrogate: 13C4-PFHpA	6.47		ng/mL	5.00		129	40-130		
Surrogate: 13C8-PFOA	6.05		ng/mL	5.00		121	40-130		
Surrogate: 13C9-PFNA	2.84		ng/mL	2.50		113	40-130		
Surrogate: 13C6-PFDA	2.80		ng/mL	2.50		112	40-130		
Surrogate: 13C7-PFUnA	3.00		ng/mL	2.50		120	40-130		
Surrogate: 13C2-PFDoA	2.86		ng/mL	2.50		114	40-130		
Surrogate: 13C2-PFTeDA	2.86		ng/mL	2.50		115	20-130		
Surrogate: 13C3-PFBS	5.74		ng/mL	5.00		115	40-135		
Surrogate: 13C3-PFHxS	5.71		ng/mL	5.00		114	40-130		
Surrogate: 13C8-PFOS	5.53		ng/mL	5.00		111	40-130		
Surrogate: 13C8-PFOSA	5.23		ng/mL	5.00		105	40-130		
Surrogate: D3-NMeFOSAA	10.6		ng/mL	10.0		106	40-135		
Surrogate: D5-NEtFOSAA	12.4		ng/mL	10.0		124	40-150		
Surrogate: 13C2-4:2FTS	10.2		ng/mL	10.0		102	40-165		
Surrogate: 13C2-6:2FTS	9.01		ng/mL	10.0		90.1	40-215		
Surrogate: 13C2-8:2FTS	9.37		ng/mL	10.0		93.7	40-275		
Surrogate: 13C3-HFPO-DA	25.7		ng/mL	20.0		129	40-130		
Surrogate: D7-NMeFOSE	53.2		ng/mL	50.0		106	20-130		
Surrogate: D9-NEtFOSE	55.1		ng/mL	50.0		110	15-130		
Surrogate: D5-NEtFOSA	5.53		ng/mL	5.00		111	10-130		
Surrogate: D3-NMeFOSA	5.50		ng/mL	5.00		110	10-130		
S251309-IBL5									
PFBA	0.35 U	0.35	ng/mL						
PFPeA	2.46 U	2.46	ng/mL						

ES Wastewater Management

2201 Portland Ave.

Tacoma WA, 98421

Project: **Central Treatment Plant Quarterly**

Project Number: 80000154

Project Manager: Matt Symington

Reported:

04-Apr-25 18:40

**Semi-VOA - Quality Control
Environmental Services Laboratory**

Sample ID Analyte	Result	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch S251309 - EPA 1633									
PFHxA	0.05 U	0.05	ng/mL						
PFHpA	0.05 U	0.05	ng/mL						
PFOA	0.07 U	0.07	ng/mL						
PFNA	0.07 U	0.07	ng/mL						
PFDA	0.10 U	0.10	ng/mL						
PFUnA	0.07 U	0.07	ng/mL						
PFDaA	0.05 U	0.05	ng/mL						
PFTTrDA	0.03 U	0.03	ng/mL						
PFTeDA	0.04 U	0.04	ng/mL						
PFBS	0.06 U	0.06	ng/mL						
PFPeS	0.39 U	0.39	ng/mL						
PFHxS	0.44 U	0.44	ng/mL						
PFHpS	0.13 U	0.13	ng/mL						
PFOS	0.74 U	0.74	ng/mL						
PFNS	0.06 U	0.06	ng/mL						
PFDS	0.23 U	0.23	ng/mL						
PFDoS	0.10 U	0.10	ng/mL						
4:2FTS	0.15 U	0.15	ng/mL						
6:2FTS	0.15 U	0.15	ng/mL						
8:2FTS	0.24 U	0.24	ng/mL						
PFOSA	0.06 U	0.06	ng/mL						
NMeFOSA	0.07 U	0.07	ng/mL						
NEtFOSA	0.03 U	0.03	ng/mL						
NMeFOSAA	0.31 U	0.31	ng/mL						
NEtFOSAA	0.30 U	0.30	ng/mL						
NMeFOSE	0.29 U	0.29	ng/mL						
NEtFOSE	0.18 U	0.18	ng/mL						
HFPO-DA	0.06 U	0.06	ng/mL						
ADONA	0.22 U	0.22	ng/mL						
PFMPA	0.05 U	0.05	ng/mL						
PFMBA	0.09 U	0.09	ng/mL						
NFDHA	0.10 U	0.10	ng/mL						
9Cl-PF3ONS	0.10 U	0.10	ng/mL						
11Cl-PF3OUdS	0.06 U	0.06	ng/mL						
PFEESA	0.09 U	0.09	ng/mL						
3:3FTCA	0.44 U	0.44	ng/mL						
5:3FTCA	0.60 U	0.60	ng/mL						
7:3FTCA	0.62 U	0.62	ng/mL						
Surrogate: 13C4-PFBA	23.9		ng/mL	20.0		120	8-130		
Surrogate: 13C5-PFPeA	16.2		ng/mL	10.0		162	35-130		
Surrogate: 13C5-PFHxA	7.69		ng/mL	5.00		154	40-130		

ES Wastewater Management

2201 Portland Ave.

Tacoma WA, 98421

Project: **Central Treatment Plant Quarterly**

Project Number: 80000154

Project Manager: Matt Symington

Reported:

04-Apr-25 18:40

**Semi-VOA - Quality Control
Environmental Services Laboratory**

Sample ID Analyte	Result	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
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Batch S251309 - EPA 1633

Surrogate: 13C4-PFHpA	7.87		ng/mL	5.00		157	40-130		
Surrogate: 13C8-PFOA	5.71		ng/mL	5.00		114	40-130		
Surrogate: 13C9-PFNA	2.95		ng/mL	2.50		118	40-130		
Surrogate: 13C6-PFDA	3.09		ng/mL	2.50		124	40-130		
Surrogate: 13C7-PFUnA	3.03		ng/mL	2.50		121	40-130		
Surrogate: 13C2-PFDoA	3.17		ng/mL	2.50		127	40-130		
Surrogate: 13C2-PFTeDA	2.94		ng/mL	2.50		118	20-130		
Surrogate: 13C3-PFBS	6.50		ng/mL	5.00		130	40-135		
Surrogate: 13C3-PFHxS	6.44		ng/mL	5.00		129	40-130		
Surrogate: 13C8-PFOS	5.73		ng/mL	5.00		115	40-130		
Surrogate: 13C8-PFOA	5.56		ng/mL	5.00		111	40-130		
Surrogate: D3-NMeFOSAA	11.1		ng/mL	10.0		111	40-135		
Surrogate: D5-NEtFOSAA	11.9		ng/mL	10.0		119	40-150		
Surrogate: 13C2-4:2FTS	10.9		ng/mL	10.0		109	40-165		
Surrogate: 13C2-6:2FTS	10.0		ng/mL	10.0		100	40-215		
Surrogate: 13C2-8:2FTS	10.7		ng/mL	10.0		107	40-275		
Surrogate: 13C3-HFPO-DA	32.7		ng/mL	20.0		164	40-130		
Surrogate: D7-NMeFOSE	56.3		ng/mL	50.0		113	20-130		
Surrogate: D9-NEtFOSE	57.8		ng/mL	50.0		116	15-130		
Surrogate: D5-NEtFOSA	6.20		ng/mL	5.00		124	10-130		
Surrogate: D3-NMeFOSA	5.80		ng/mL	5.00		116	10-130		

Batch S251405 - EPA 1633**Instrument Blank (S251405-IBL1)**

Prepared & Analyzed: 01-Apr-25

S251405-IBL1

PFBA	0.40 U	0.40	ng/mL
PFPeA	2.07 U	2.07	ng/mL
PFHxA	0.40 U	0.40	ng/mL
PFHpA	0.50 U	0.50	ng/mL
PFOA	0.41 U	0.41	ng/mL
PFNA	0.51 U	0.51	ng/mL
PFDA	0.98 U	0.98	ng/mL
PFUnA	0.83 U	0.83	ng/mL
PFDoA	0.74 U	0.74	ng/mL
PFTTrDA	0.69 U	0.69	ng/mL
PFTeDA	0.38 U	0.38	ng/mL
PFBS	0.27 U	0.27	ng/mL
PFPeS	0.32 U	0.32	ng/mL
PFHxS	0.39 U	0.39	ng/mL
PFHpS	0.36 U	0.36	ng/mL

ES Wastewater Management

2201 Portland Ave.

Tacoma WA, 98421

Project: **Central Treatment Plant Quarterly**

Project Number: 80000154

Project Manager: Matt Symington

Reported:

04-Apr-25 18:40

**Semi-VOA - Quality Control
Environmental Services Laboratory**

Sample ID Analyte	Result	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch S251405 - EPA 1633									
PFOS	0.81 U	0.81	ng/mL						
PFNS	0.40 U	0.40	ng/mL						
PFDS	0.21 U	0.21	ng/mL						
PFDoS	0.37 U	0.37	ng/mL						
4:2FTS	1.66 U	1.66	ng/mL						
6:2FTS	39.0 U	39.0	ng/mL						
8:2FTS	2.32 U	2.32	ng/mL						
PFOSA	0.16 U	0.16	ng/mL						
NMeFOSA	0.17 U	0.17	ng/mL						
NEtFOSA	0.17 U	0.17	ng/mL						
NMeFOSAA	0.33 U	0.33	ng/mL						
NEtFOSAA	0.42 U	0.42	ng/mL						
NMeFOSE	0.60 U	0.60	ng/mL						
NEtFOSE	0.72 U	0.72	ng/mL						
HFPO-DA	0.42 U	0.42	ng/mL						
ADONA	0.85 U	0.85	ng/mL						
PFMPA	0.16 U	0.16	ng/mL						
PFMBA	0.11 U	0.11	ng/mL						
NFDHA	0.55 U	0.55	ng/mL						
9Cl-PF3ONS	0.26 U	0.26	ng/mL						
11Cl-PF3OUdS	0.44 U	0.44	ng/mL						
PFEESA	0.16 U	0.16	ng/mL						
3:3FTCA	1.07 U	1.07	ng/mL						
5:3FTCA	2.33 U	2.33	ng/mL						
7:3FTCA	2.33 U	2.33	ng/mL						
Surrogate: 13C4-PFBA	22.0		ng/mL	20.0		110	5-130		
Surrogate: 13C5-PFPeA	10.3		ng/mL	10.0		103	40-130		
Surrogate: 13C5-PFHxA	5.31		ng/mL	5.00		106	40-130		
Surrogate: 13C4-PFHpA	5.22		ng/mL	5.00		104	40-130		
Surrogate: 13C8-PFOA	5.23		ng/mL	5.00		105	40-130		
Surrogate: 13C9-PFNA	2.67		ng/mL	2.50		107	40-130		
Surrogate: 13C6-PFDA	2.79		ng/mL	2.50		112	40-130		
Surrogate: 13C7-PFUnA	2.65		ng/mL	2.50		106	30-130		
Surrogate: 13C2-PFDoA	2.85		ng/mL	2.50		114	10-130		
Surrogate: 13C2-PFTeDA	2.73		ng/mL	2.50		109	10-130		
Surrogate: 13C3-PFBS	5.21		ng/mL	5.00		104	40-135		
Surrogate: 13C3-PFHxS	5.35		ng/mL	5.00		107	40-130		
Surrogate: 13C8-PFOS	5.15		ng/mL	5.00		103	40-130		
Surrogate: 13C8-PFOSA	5.34		ng/mL	5.00		107	40-130		
Surrogate: D3-NMeFOSAA	10.4		ng/mL	10.0		104	40-170		

ES Wastewater Management
2201 Portland Ave.
Tacoma WA, 98421

Project: **Central Treatment Plant Quarterly**
Project Number: 80000154
Project Manager: Matt Symington

Reported:
04-Apr-25 18:40

Semi-VOA - Quality Control
Environmental Services Laboratory

Sample ID Analyte	Result	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch S251405 - EPA 1633									
Surrogate: D5-NEtFOSAA	10.8		ng/mL	10.0		108	25-135		
Surrogate: 13C2-4:2FTS	10.5		ng/mL	10.0		105	40-200		
Surrogate: 13C2-6:2FTS	9.15		ng/mL	10.0		91.5	40-200		
Surrogate: 13C2-8:2FTS	9.88		ng/mL	10.0		98.8	40-300		
Surrogate: 13C3-HFPO-DA	20.8		ng/mL	20.0		104	40-130		
Surrogate: D7-NMeFOSE	54.6		ng/mL	50.0		109	10-130		
Surrogate: D9-NEtFOSE	58.1		ng/mL	50.0		116	10-130		
Surrogate: D5-NEtFOSA	5.02		ng/mL	5.00		100	10-130		
Surrogate: D3-NMeFOSA	5.11		ng/mL	5.00		102	10-130		
S251405-IBL2									
PFBA	0.40 U	0.40	ng/mL						
PFPeA	2.07 U	2.07	ng/mL						
PFHxA	0.40 U	0.40	ng/mL						
PFHpA	0.50 U	0.50	ng/mL						
PFOA	0.41 U	0.41	ng/mL						
PFNA	0.51 U	0.51	ng/mL						
PFDA	0.98 U	0.98	ng/mL						
PFUnA	0.83 U	0.83	ng/mL						
PFDoA	0.74 U	0.74	ng/mL						
PFTTrDA	0.69 U	0.69	ng/mL						
PFTeDA	0.38 U	0.38	ng/mL						
PFBS	0.27 U	0.27	ng/mL						
PFPeS	0.32 U	0.32	ng/mL						
PFHxS	0.39 U	0.39	ng/mL						
PFHpS	0.36 U	0.36	ng/mL						
PFOS	0.81 U	0.81	ng/mL						
PFNS	0.40 U	0.40	ng/mL						
PFDS	0.21 U	0.21	ng/mL						
PFDoS	0.37 U	0.37	ng/mL						
4:2FTS	1.66 U	1.66	ng/mL						
6:2FTS	39.0 U	39.0	ng/mL						
8:2FTS	2.32 U	2.32	ng/mL						
PFOSA	0.16 U	0.16	ng/mL						
NMeFOSA	0.17 U	0.17	ng/mL						
NEtFOSA	0.17 U	0.17	ng/mL						
NMeFOSAA	0.33 U	0.33	ng/mL						
NEtFOSAA	0.42 U	0.42	ng/mL						
NMeFOSE	0.60 U	0.60	ng/mL						
NEtFOSE	0.72 U	0.72	ng/mL						
HFPO-DA	0.42 U	0.42	ng/mL						

ES Wastewater Management

2201 Portland Ave.

Tacoma WA, 98421

Project: **Central Treatment Plant Quarterly**

Project Number: 80000154

Project Manager: Matt Symington

Reported:

04-Apr-25 18:40

Semi-VOA - Quality Control
Environmental Services Laboratory

Sample ID Analyte	Result	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch S251405 - EPA 1633									
ADONA	0.85 U	0.85	ng/mL						
PFMPA	0.16 U	0.16	ng/mL						
PFMBA	0.11 U	0.11	ng/mL						
NFDHA	0.55 U	0.55	ng/mL						
9CI-PF3ONS	0.26 U	0.26	ng/mL						
11CI-PF3OUdS	0.44 U	0.44	ng/mL						
PFEESA	0.16 U	0.16	ng/mL						
3:3FTCA	1.07 U	1.07	ng/mL						
5:3FTCA	2.33 U	2.33	ng/mL						
7:3FTCA	2.33 U	2.33	ng/mL						
Surrogate: 13C4-PFBA	22.1		ng/mL	20.0		111	5-130		
Surrogate: 13C5-PFPeA	12.8		ng/mL	10.0		128	40-130		
Surrogate: 13C5-PFHxA	6.25		ng/mL	5.00		125	40-130		
Surrogate: 13C4-PFHpA	6.40		ng/mL	5.00		128	40-130		
Surrogate: 13C8-PFOA	5.64		ng/mL	5.00		113	40-130		
Surrogate: 13C9-PFNA	2.73		ng/mL	2.50		109	40-130		
Surrogate: 13C6-PFDA	2.71		ng/mL	2.50		108	40-130		
Surrogate: 13C7-PFUnA	2.70		ng/mL	2.50		108	30-130		
Surrogate: 13C2-PFDoA	2.71		ng/mL	2.50		108	10-130		
Surrogate: 13C2-PFTeDA	2.68		ng/mL	2.50		107	10-130		
Surrogate: 13C3-PFBS	5.66		ng/mL	5.00		113	40-135		
Surrogate: 13C3-PFHxS	5.80		ng/mL	5.00		116	40-130		
Surrogate: 13C8-PFOS	5.96		ng/mL	5.00		119	40-130		
Surrogate: 13C8-PFOA	5.63		ng/mL	5.00		113	40-130		
Surrogate: D3-NMeFOSAA	11.9		ng/mL	10.0		119	40-170		
Surrogate: D5-NEtFOSAA	12.1		ng/mL	10.0		121	25-135		
Surrogate: 13C2-4:2FTS	11.0		ng/mL	10.0		110	40-200		
Surrogate: 13C2-6:2FTS	8.63		ng/mL	10.0		86.3	40-200		
Surrogate: 13C2-8:2FTS	10.7		ng/mL	10.0		107	40-300		
Surrogate: 13C3-HFPO-DA	25.3		ng/mL	20.0		126	40-130		
Surrogate: D7-NMeFOSE	57.7		ng/mL	50.0		115	10-130		
Surrogate: D9-NEtFOSE	56.4		ng/mL	50.0		113	10-130		
Surrogate: D5-NEtFOA	5.44		ng/mL	5.00		109	10-130		
Surrogate: D3-NMeFOA	5.36		ng/mL	5.00		107	10-130		
S251405-IBL3									
PFBA	0.40 U	0.40	ng/mL						
PFPeA	2.07 U	2.07	ng/mL						
PFHxA	0.40 U	0.40	ng/mL						
PFHpA	0.50 U	0.50	ng/mL						

ES Wastewater Management

2201 Portland Ave.

Tacoma WA, 98421

Project: **Central Treatment Plant Quarterly**

Project Number: 80000154

Project Manager: Matt Symington

Reported:

04-Apr-25 18:40

**Semi-VOA - Quality Control
Environmental Services Laboratory**

Sample ID Analyte	Result	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch S251405 - EPA 1633									
PFOA	0.41 U	0.41	ng/mL						
PFNA	0.51 U	0.51	ng/mL						
PFDA	0.98 U	0.98	ng/mL						
PFUnA	0.83 U	0.83	ng/mL						
PFDaA	0.74 U	0.74	ng/mL						
PFTTrDA	0.69 U	0.69	ng/mL						
PFTeDA	0.38 U	0.38	ng/mL						
PFBS	0.27 U	0.27	ng/mL						
PFPeS	0.32 U	0.32	ng/mL						
PFHxS	0.39 U	0.39	ng/mL						
PFHpS	0.36 U	0.36	ng/mL						
PFOS	0.81 U	0.81	ng/mL						
PFNS	0.40 U	0.40	ng/mL						
PFDS	0.21 U	0.21	ng/mL						
PFDoS	0.37 U	0.37	ng/mL						
4:2FTS	1.66 U	1.66	ng/mL						
6:2FTS	39.0 U	39.0	ng/mL						
8:2FTS	2.32 U	2.32	ng/mL						
PFOSA	0.16 U	0.16	ng/mL						
NMeFOSA	0.17 U	0.17	ng/mL						
NEtFOSA	0.17 U	0.17	ng/mL						
NMeFOSAA	0.33 U	0.33	ng/mL						
NEtFOSAA	0.42 U	0.42	ng/mL						
NMeFOSE	0.60 U	0.60	ng/mL						
NEtFOSE	0.72 U	0.72	ng/mL						
HFPO-DA	0.42 U	0.42	ng/mL						
ADONA	0.85 U	0.85	ng/mL						
PFMPA	0.16 U	0.16	ng/mL						
PFMBA	0.11 U	0.11	ng/mL						
NFDHA	0.55 U	0.55	ng/mL						
9Cl-PF3ONS	0.26 U	0.26	ng/mL						
11Cl-PF3OUdS	0.44 U	0.44	ng/mL						
PFEESA	0.16 U	0.16	ng/mL						
3:3FTCA	1.07 U	1.07	ng/mL						
5:3FTCA	2.33 U	2.33	ng/mL						
7:3FTCA	2.33 U	2.33	ng/mL						
Surrogate: 13C4-PFBA	22.2		ng/mL	20.0		111	5-130		
Surrogate: 13C5-PFPeA	11.3		ng/mL	10.0		113	40-130		
Surrogate: 13C5-PFHxA	5.60		ng/mL	5.00		112	40-130		
Surrogate: 13C4-PFHpA	5.37		ng/mL	5.00		107	40-130		
Surrogate: 13C8-PFOA	6.34		ng/mL	5.00		127	40-130		

ES Wastewater Management

2201 Portland Ave.

Tacoma WA, 98421

Project: **Central Treatment Plant Quarterly**

Project Number: 80000154

Project Manager: Matt Symington

Reported:

04-Apr-25 18:40

**Semi-VOA - Quality Control
Environmental Services Laboratory**

Sample ID Analyte	Result	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch S251405 - EPA 1633									
Surrogate: 13C9-PFNA	2.72		ng/mL	2.50		109	40-130		
Surrogate: 13C6-PFDA	2.73		ng/mL	2.50		109	40-130		
Surrogate: 13C7-PFUnA	2.63		ng/mL	2.50		105	30-130		
Surrogate: 13C2-PFDoA	2.63		ng/mL	2.50		105	10-130		
Surrogate: 13C2-PFTeDA	2.66		ng/mL	2.50		107	10-130		
Surrogate: 13C3-PFBS	5.43		ng/mL	5.00		109	40-135		
Surrogate: 13C3-PFHxS	5.73		ng/mL	5.00		115	40-130		
Surrogate: 13C8-PFOS	5.29		ng/mL	5.00		106	40-130		
Surrogate: 13C8-PFOSA	5.81		ng/mL	5.00		116	40-130		
Surrogate: D3-NMeFOSAA	11.1		ng/mL	10.0		111	40-170		
Surrogate: D5-NEtFOSAA	8.73		ng/mL	10.0		87.3	25-135		
Surrogate: 13C2-4:2FTS	10.1		ng/mL	10.0		101	40-200		
Surrogate: 13C2-6:2FTS	7.15		ng/mL	10.0		71.5	40-200		
Surrogate: 13C2-8:2FTS	7.01		ng/mL	10.0		70.1	40-300		
Surrogate: 13C3-HFPO-DA	22.2		ng/mL	20.0		111	40-130		
Surrogate: D7-NMeFOSE	59.7		ng/mL	50.0		119	10-130		
Surrogate: D9-NEtFOSE	57.9		ng/mL	50.0		116	10-130		
Surrogate: D5-NEtFOSA	5.84		ng/mL	5.00		117	10-130		
Surrogate: D3-NMeFOSA	5.87		ng/mL	5.00		117	10-130		
S251405-IBL4									
PFBA	0.40 U	0.40	ng/mL						
PFPeA	2.07 U	2.07	ng/mL						
PFHxA	0.40 U	0.40	ng/mL						
PFHpA	0.50 U	0.50	ng/mL						
PFOA	0.41 U	0.41	ng/mL						
PFNA	0.51 U	0.51	ng/mL						
PFDA	0.98 U	0.98	ng/mL						
PFUnA	0.83 U	0.83	ng/mL						
PFDoA	0.74 U	0.74	ng/mL						
PFTTrDA	0.69 U	0.69	ng/mL						
PFTTeDA	0.38 U	0.38	ng/mL						
PFBS	0.27 U	0.27	ng/mL						
PFPeS	0.32 U	0.32	ng/mL						
PFHxS	0.39 U	0.39	ng/mL						
PFHpS	0.36 U	0.36	ng/mL						
PFOS	0.81 U	0.81	ng/mL						
PFNS	0.40 U	0.40	ng/mL						
PFDS	0.21 U	0.21	ng/mL						
PFDoS	0.37 U	0.37	ng/mL						
4:2FTS	1.66 U	1.66	ng/mL						

ES Wastewater Management

2201 Portland Ave.

Tacoma WA, 98421

Project: **Central Treatment Plant Quarterly**

Project Number: 80000154

Project Manager: Matt Symington

Reported:

04-Apr-25 18:40

**Semi-VOA - Quality Control
Environmental Services Laboratory**

Sample ID Analyte	Result	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch S251405 - EPA 1633									
6:2FTS	39.0 U	39.0	ng/mL						
8:2FTS	2.32 U	2.32	ng/mL						
PFOSA	0.16 U	0.16	ng/mL						
NMeFOSA	0.17 U	0.17	ng/mL						
NEtFOSA	0.17 U	0.17	ng/mL						
NMeFOSAA	0.33 U	0.33	ng/mL						
NEtFOSAA	0.42 U	0.42	ng/mL						
NMeFOSE	0.60 U	0.60	ng/mL						
NEtFOSE	0.72 U	0.72	ng/mL						
HFPO-DA	0.42 U	0.42	ng/mL						
ADONA	0.85 U	0.85	ng/mL						
PFMPA	0.16 U	0.16	ng/mL						
PFMBA	0.11 U	0.11	ng/mL						
NFDHA	0.55 U	0.55	ng/mL						
9CI-PF3ONS	0.26 U	0.26	ng/mL						
11CI-PF3OUdS	0.44 U	0.44	ng/mL						
PFEESA	0.16 U	0.16	ng/mL						
3:3FTCA	1.07 U	1.07	ng/mL						
5:3FTCA	2.33 U	2.33	ng/mL						
7:3FTCA	2.33 U	2.33	ng/mL						
Surrogate: 13C4-PFBA	22.0		ng/mL	20.0		110	5-130		
Surrogate: 13C5-PFPeA	13.0		ng/mL	10.0		130	40-130		
Surrogate: 13C5-PFHxA	6.39		ng/mL	5.00		128	40-130		
Surrogate: 13C4-PFHpA	6.38		ng/mL	5.00		128	40-130		
Surrogate: 13C8-PFOA	5.57		ng/mL	5.00		111	40-130		
Surrogate: 13C9-PFNA	2.66		ng/mL	2.50		106	40-130		
Surrogate: 13C6-PFDA	2.82		ng/mL	2.50		113	40-130		
Surrogate: 13C7-PFUnA	2.77		ng/mL	2.50		111	30-130		
Surrogate: 13C2-PFDoA	2.86		ng/mL	2.50		114	10-130		
Surrogate: 13C2-PFTeDA	2.85		ng/mL	2.50		114	10-130		
Surrogate: 13C3-PFBS	5.64		ng/mL	5.00		113	40-135		
Surrogate: 13C3-PFHxS	5.84		ng/mL	5.00		117	40-130		
Surrogate: 13C8-PFOS	6.18		ng/mL	5.00		124	40-130		
Surrogate: 13C8-PFOSA	5.83		ng/mL	5.00		117	40-130		
Surrogate: D3-NMeFOSAA	12.1		ng/mL	10.0		121	40-170		
Surrogate: D5-NEtFOSAA	10.1		ng/mL	10.0		101	25-135		
Surrogate: 13C2-4:2FTS	9.90		ng/mL	10.0		99.0	40-200		
Surrogate: 13C2-6:2FTS	7.63		ng/mL	10.0		76.3	40-200		
Surrogate: 13C2-8:2FTS	7.64		ng/mL	10.0		76.4	40-300		
Surrogate: 13C3-HFPO-DA	25.4		ng/mL	20.0		127	40-130		

ES Wastewater Management
2201 Portland Ave.
Tacoma WA, 98421

Project: **Central Treatment Plant Quarterly**
Project Number: 80000154
Project Manager: Matt Symington

Reported:
04-Apr-25 18:40

Semi-VOA - Quality Control
Environmental Services Laboratory

Sample ID Analyte	Result	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
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Batch S251405 - EPA 1633

Surrogate: D7-NMeFOSE	61.4		ng/mL	50.0		123	10-130		
Surrogate: D9-NEtFOSE	62.3		ng/mL	50.0		125	10-130		
Surrogate: D5-NEtFOSA	5.99		ng/mL	5.00		120	10-130		
Surrogate: D3-NMeFOSA	5.51		ng/mL	5.00		110	10-130		

Low Cal Check (S251405-LCV1)

Prepared & Analyzed: 01-Apr-25

S251405-LCV1

PFBA	2.04		ng/mL	2.00		102	70-130		
PFPeA	1.04		ng/mL	1.00		104	70-130		
PFHxA	0.46		ng/mL	0.500		92.6	70-130		
PFHpA	0.45		ng/mL	0.500		89.0	70-130		
PFOA	0.39		ng/mL	0.500		77.8	70-130		
PFNA	0.47		ng/mL	0.500		94.0	70-130		
PFDA	0.48		ng/mL	0.500		96.4	70-130		
PFUnA	0.44		ng/mL	0.500		88.0	70-130		
PFDaA	0.49		ng/mL	0.500		97.2	70-130		
PFTTrDA	0.47		ng/mL	0.500		93.4	70-130		
PFTeDA	0.46		ng/mL	0.500		92.0	70-130		
PFBS	0.51		ng/mL	0.500		102	70-130		
PFPeS	0.51		ng/mL	0.500		102	70-130		
PFHxS	0.49		ng/mL	0.500		98.8	70-130		
PFHpS	0.37		ng/mL	0.500		74.8	70-130		
PFOS	0.38		ng/mL	0.500		76.8	70-130		
PFNS	0.44		ng/mL	0.500		88.8	70-130		
PFDS	0.52		ng/mL	0.500		105	70-130		
PFDoS	0.49		ng/mL	0.500		98.8	70-130		
4:2FTS	2.19		ng/mL	2.00		109	70-130		
6:2FTS	1.85		ng/mL	2.00		92.7	70-130		
8:2FTS	2.33		ng/mL	2.00		116	70-130		
PFOSA	0.49		ng/mL	0.500		97.8	70-130		
NMeFOSA	0.54		ng/mL	0.500		108	70-130		
NEtFOSA	0.51		ng/mL	0.500		102	70-130		
NMeFOSAA	0.51		ng/mL	0.500		101	70-130		
NEtFOSAA	0.53		ng/mL	0.500		106	70-130		
NMeFOSE	4.69		ng/mL	5.00		93.8	70-130		
NEtFOSE	4.78		ng/mL	5.00		95.5	70-130		
HFPO-DA	1.70		ng/mL	2.00		84.8	70-130		
ADONA	1.85		ng/mL	2.00		92.5	70-130		
PFMPA	0.96		ng/mL	1.00		96.2	70-130		
PFMBA	0.94		ng/mL	1.00		94.4	70-130		
NFDHA	0.60		ng/mL	1.00		60.1	70-130		

ES Wastewater Management

2201 Portland Ave.

Tacoma WA, 98421

Project: **Central Treatment Plant Quarterly**

Project Number: 80000154

Project Manager: Matt Symington

Reported:

04-Apr-25 18:40

**Semi-VOA - Quality Control
Environmental Services Laboratory**

Sample ID Analyte	Result	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch S251405 - EPA 1633									
9CI-PF3ONS	1.79		ng/mL	2.00		89.3	70-130		
11CI-PF3OUdS	1.93		ng/mL	2.00		96.6	70-130		
PFEESA	0.98		ng/mL	1.00		98.3	70-130		
3:3FTCA	2.68		ng/mL	2.50		107	70-130		
5:3FTCA	11.7		ng/mL	12.5		93.3	70-130		
7:3FTCA	11.8		ng/mL	12.5		94.5	70-130		
Surrogate: 13C4-PFBA	20.0		ng/mL	20.0		100	70-130		
Surrogate: 13C5-PFPeA	10.2		ng/mL	10.0		102	70-130		
Surrogate: 13C5-PFHxA	5.00		ng/mL	5.00		100	70-130		
Surrogate: 13C4-PFHpA	5.18		ng/mL	5.00		104	70-130		
Surrogate: 13C8-PFOA	5.02		ng/mL	5.00		100	70-130		
Surrogate: 13C9-PFNA	2.56		ng/mL	2.50		102	70-130		
Surrogate: 13C6-PFDA	2.53		ng/mL	2.50		101	70-130		
Surrogate: 13C7-PFUnA	2.57		ng/mL	2.50		103	70-130		
Surrogate: 13C2-PFDoA	2.51		ng/mL	2.50		100	70-130		
Surrogate: 13C2-PFTeDA	2.45		ng/mL	2.50		97.9	70-130		
Surrogate: 13C3-PFBS	4.85		ng/mL	5.00		96.9	70-130		
Surrogate: 13C3-PFHxS	4.73		ng/mL	5.00		94.6	70-130		
Surrogate: 13C8-PFOS	4.85		ng/mL	5.00		97.0	70-130		
Surrogate: 13C8-PFOA	4.52		ng/mL	5.00		90.4	70-130		
Surrogate: D3-NMeFOSAA	9.90		ng/mL	10.0		99.0	70-130		
Surrogate: D5-NEtFOSAA	9.44		ng/mL	10.0		94.4	70-130		
Surrogate: 13C2-4:2FTS	9.59		ng/mL	10.0		95.9	70-130		
Surrogate: 13C2-6:2FTS	9.67		ng/mL	10.0		96.7	70-130		
Surrogate: 13C2-8:2FTS	8.67		ng/mL	10.0		86.7	70-130		
Surrogate: 13C3-HFPO-DA	20.8		ng/mL	20.0		104	70-130		
Surrogate: D7-NMeFOSE	47.5		ng/mL	50.0		94.9	70-130		
Surrogate: D9-NEtFOSE	46.4		ng/mL	50.0		92.9	70-130		
Surrogate: D5-NEtFOSA	4.51		ng/mL	5.00		90.1	70-130		
Surrogate: D3-NMeFOSA	4.52		ng/mL	5.00		90.3	70-130		

ES Wastewater Management
2201 Portland Ave.
Tacoma WA, 98421

Project: **Central Treatment Plant Quarterly**
Project Number: 80000154
Project Manager: Matt Symington

Reported:
04-Apr-25 18:40

GC/MS-Pesticides - Quality Control
Environmental Services Laboratory

Sample ID Analyte	Result	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
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Batch BIB0098 - EPA 625.1 OCP

Blank (BIB0098-BLK1)

Prepared: 19-Feb-25 Analyzed: 24-Mar-25

BIB0098-BLK1

alpha-BHC	0.044 U	0.044	ug/L						
beta-BHC	0.058 U	0.058	ug/L						
gamma-BHC (Lindane)	0.068 U	0.068	ug/L						
delta-BHC	0.044 U	0.044	ug/L						
Heptachlor	0.062 U	0.062	ug/L						
Aldrin	0.034 U	0.034	ug/L						
Heptachlor Epoxide	0.038 U	0.038	ug/L						
gamma-Chlordane	0.038 U	0.038	ug/L						
Endosulfan I	0.066 U	0.066	ug/L						
alpha-Chlordane	0.034 U	0.034	ug/L						
4,4-DDE	0.038 U	0.038	ug/L						
Dieldrin	0.036 U	0.036	ug/L						
Endrin	0.056 U	0.056	ug/L						
4,4-DDD	0.058 U	0.058	ug/L						
Endosulfan II	0.068 U	0.068	ug/L						
Endrin Aldehyde	0.070 U	0.070	ug/L						
4,4-DDT	0.080 U	0.080	ug/L						
Endosulfan Sulfate	0.050 U	0.050	ug/L						
Methoxychlor	0.084 U	0.084	ug/L						
Endrin Ketone	0.062 U	0.062	ug/L						
Toxaphene	0.720 U	0.720	ug/L						
Surrogate: Tetrachloro-meta-xylene	0.686		ug/L	1.00		69	24-120		
Surrogate: Decachlorobiphenyl	1.20		ug/L	1.00		120	17-128		

LCS (BIB0098-BS1)

Prepared: 19-Feb-25 Analyzed: 24-Mar-25

BIB0098-BS1

alpha-BHC	2.00	0.044	ug/L	2.00		100	38-134		
beta-BHC	1.74	0.058	ug/L	2.00		87	52-120		
gamma-BHC (Lindane)	2.07	0.068	ug/L	2.00		104	49-120		
delta-BHC	1.78	0.044	ug/L	2.00		89	67-120		
Heptachlor	1.76	0.062	ug/L	2.00		88	43-120		
Aldrin	1.74	0.034	ug/L	2.00		87	36-120		
Heptachlor Epoxide	1.82	0.038	ug/L	2.00		91	58-120		
gamma-Chlordane	1.82	0.038	ug/L	2.00		91	53-120		
Endosulfan I	1.74	0.066	ug/L	2.00		87	20-129		
alpha-Chlordane	1.83	0.034	ug/L	2.00		92	56-120		
4,4-DDE	1.86	0.038	ug/L	2.00		93	60-120		
Dieldrin	1.75	0.036	ug/L	2.00		88	61-120		
Endrin	1.45	0.056	ug/L	2.00		72	10-150		

ES Wastewater Management
2201 Portland Ave.
Tacoma WA, 98421

Project: **Central Treatment Plant Quarterly**
Project Number: 80000154
Project Manager: Matt Symington

Reported:
04-Apr-25 18:40

GC/MS-Pesticides - Quality Control
Environmental Services Laboratory

Sample ID Analyte	Result	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
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Batch BIB0098 - EPA 625.1 OCP

4,4-DDD	1.87	0.058	ug/L	2.00		93	64-120		
Endosulfan II	1.67	0.068	ug/L	2.00		83	10-150		
Endrin Aldehyde	1.79	0.070	ug/L	2.00		90	32-130		
4,4-DDT	2.09	0.080	ug/L	2.00		105	60-120		
Endosulfan Sulfate	1.77	0.050	ug/L	2.00		89	68-120		
Methoxychlor	1.55	0.084	ug/L	2.00		78	60-124		
Endrin Ketone	1.83	0.062	ug/L	2.00		91	34-149		
Surrogate: Tetrachloro-meta-xylene	0.784		ug/L	1.00		78	24-120		
Surrogate: Decachlorobiphenyl	1.04		ug/L	1.00		104	17-128		
BIB0098-BS2									
Toxaphene	2.83	0.720	ug/L	4.00		71	60-122		
Surrogate: Tetrachloro-meta-xylene	0.852		ug/L	1.00		85	24-120		
Surrogate: Decachlorobiphenyl	1.10		ug/L	1.00		110	17-128		

Batch BIB0148 - EPA 8270E 6 (6/18) SIM OCP

Blank (BIB0148-BLK2)

Prepared: 26-Feb-25 Analyzed: 03-Mar-25

BIB0148-BLK2

alpha-BHC	0.2 U	0.2	ug/Kg wet						
beta-BHC	0.1 U	0.1	ug/Kg wet						
gamma-BHC (Lindane)	0.2 U	0.2	ug/Kg wet						
delta-BHC	0.1 U	0.1	ug/Kg wet						
Heptachlor	0.2 U	0.2	ug/Kg wet						
Aldrin	0.2 U	0.2	ug/Kg wet						
Heptachlor Epoxide	0.3 U	0.3	ug/Kg wet						
gamma-Chlordane	0.1 U	0.1	ug/Kg wet						
Endosulfan I	0.1 U	0.1	ug/Kg wet						
alpha-Chlordane	0.1 U	0.1	ug/Kg wet						
4,4-DDE	0.2 U	0.2	ug/Kg wet						
Dieldrin	0.1 U	0.1	ug/Kg wet						
Endrin	0.1 U	0.1	ug/Kg wet						
4,4-DDD	0.1 U	0.1	ug/Kg wet						
Endosulfan II	0.1 U	0.1	ug/Kg wet						
Endrin Aldehyde	0.3 U	0.3	ug/Kg wet						
4,4-DDT	0.2 U	0.2	ug/Kg wet						
Endosulfan Sulfate	0.2 U	0.2	ug/Kg wet						
Methoxychlor	0.2 U	0.2	ug/Kg wet						
Endrin Ketone	0.2 U	0.2	ug/Kg wet						
Toxaphene	0.6 U	0.6	ug/Kg wet						
Surrogate: Tetrachloro-meta-xylene	160		ug/Kg wet	200		78.2	30-150		
Surrogate: Decachlorobiphenyl	210		ug/Kg wet	200		107	30-150		

BIB0148-BLK3

ES Wastewater Management
2201 Portland Ave.
Tacoma WA, 98421

Project: **Central Treatment Plant Quarterly**
Project Number: 80000154
Project Manager: Matt Symington

Reported:
04-Apr-25 18:40

GC/MS-Pesticides - Quality Control
Environmental Services Laboratory

Sample ID Analyte	Result	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
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Batch BIB0148 - EPA 8270E 6 (6/18) SIM OCP

Toxaphene	0.6 U	0.6	ug/Kg wet						
Surrogate: Tetrachloro-meta-xylene	170		ug/Kg wet	200		86.2	30-150		
Surrogate: Decachlorobiphenyl	250		ug/Kg wet	200		126	30-150		
BIB0148-BLK5									
alpha-BHC	0.2 U	0.2	ug/Kg wet						
beta-BHC	0.1 U	0.1	ug/Kg wet						
gamma-BHC (Lindane)	0.2 U	0.2	ug/Kg wet						
delta-BHC	0.1 U	0.1	ug/Kg wet						
Heptachlor	0.2 U	0.2	ug/Kg wet						
Aldrin	0.2 U	0.2	ug/Kg wet						
Heptachlor Epoxide	0.3 U	0.3	ug/Kg wet						
gamma-Chlordane	0.2 J	0.1	ug/Kg wet						
Endosulfan I	0.1 U	0.1	ug/Kg wet						
alpha-Chlordane	0.2 J	0.1	ug/Kg wet						
4,4-DDE	0.2 U	0.2	ug/Kg wet						
Dieldrin	0.1 U	0.1	ug/Kg wet						
Endrin	0.1 U	0.1	ug/Kg wet						
4,4-DDD	0.1 U	0.1	ug/Kg wet						
Endosulfan II	0.1 U	0.1	ug/Kg wet						
Endrin Aldehyde	0.3 U	0.3	ug/Kg wet						
4,4-DDT	0.2 U	0.2	ug/Kg wet						
Endosulfan Sulfate	0.2 U	0.2	ug/Kg wet						
Methoxychlor	0.2 U	0.2	ug/Kg wet						
Endrin Ketone	0.2 U	0.2	ug/Kg wet						
Toxaphene	0.6 U	0.6	ug/Kg wet						
Surrogate: Tetrachloro-meta-xylene	110		ug/Kg wet	200		53.4	30-150		
Surrogate: Decachlorobiphenyl	120		ug/Kg wet	200		60.3	30-150		

LCS (BIB0148-BS4)

Prepared: 26-Feb-25 Analyzed: 04-Mar-25

BIB0148-BS4

alpha-BHC	4.4	0.2	ug/Kg wet	5.00		88.0	50-150		
beta-BHC	4.6	0.1	ug/Kg wet	5.00		92.0	50-150		
gamma-BHC (Lindane)	4.6	0.2	ug/Kg wet	5.00		92.0	50-150		
delta-BHC	4.8	0.1	ug/Kg wet	5.00		96.0	50-150		
Heptachlor	4.4	0.2	ug/Kg wet	5.00		88.0	50-150		
Aldrin	4.6	0.2	ug/Kg wet	5.00		92.0	50-150		
Heptachlor Epoxide	4.8	0.3	ug/Kg wet	5.00		96.0	50-150		
gamma-Chlordane	5.4	0.1	ug/Kg wet	5.00		108	50-150		
Endosulfan I	5.2	0.1	ug/Kg wet	5.00		104	50-150		
alpha-Chlordane	5.0	0.1	ug/Kg wet	5.00		100	50-150		
4,4-DDE	4.6	0.2	ug/Kg wet	5.00		92.0	50-150		

ES Wastewater Management
2201 Portland Ave.
Tacoma WA, 98421

Project: **Central Treatment Plant Quarterly**
Project Number: 80000154
Project Manager: Matt Symington

Reported:
04-Apr-25 18:40

GC/MS-Pesticides - Quality Control
Environmental Services Laboratory

Sample ID Analyte	Result	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BIB0148 - EPA 8270E 6 (6/18) SIM OCP									
Dieldrin	4.6	0.1	ug/Kg wet	5.00		92.0	50-150		
Endrin	5.7	0.1	ug/Kg wet	5.00		114	50-150		
4,4-DDD	4.7	0.1	ug/Kg wet	5.00		94.0	50-150		
Endosulfan II	4.4	0.1	ug/Kg wet	5.00		88.0	50-150		
Endrin Aldehyde	4.9	0.3	ug/Kg wet	5.00		98.0	50-150		
4,4-DDT	4.6	0.2	ug/Kg wet	5.00		92.0	50-150		
Endosulfan Sulfate	4.5	0.2	ug/Kg wet	5.00		90.0	50-150		
Methoxychlor	6.1	0.2	ug/Kg wet	5.00		122	50-150		
Endrin Ketone	4.7	0.2	ug/Kg wet	5.00		94.0	50-150		
Surrogate: Tetrachloro-meta-xylene	160		ug/Kg wet	200		79.2	30-150		
Surrogate: Decachlorobiphenyl	220		ug/Kg wet	200		111	30-150		
BIB0148-BS5									
Toxaphene	5000	6.2	ug/Kg wet	4000		125	50-150		
Surrogate: Tetrachloro-meta-xylene	160		ug/Kg wet	200		78.5	30-150		
Surrogate: Decachlorobiphenyl	300		ug/Kg wet	200		149	30-150		
BIB0148-BS7									
alpha-BHC	2900	2.3	ug/Kg wet	4000		72.8	50-150		
beta-BHC	3000	1.5	ug/Kg wet	4000		76.2	50-150		
gamma-BHC (Lindane)	3000	1.8	ug/Kg wet	4000		74.6	50-150		
delta-BHC	3100	1.3	ug/Kg wet	4000		77.5	50-150		
Heptachlor	2900	1.8	ug/Kg wet	4000		72.3	50-150		
Aldrin	3000	1.6	ug/Kg wet	4000		75.7	50-150		
Heptachlor Epoxide	3300	3.3	ug/Kg wet	4000		82.3	50-150		
gamma-Chlordane	3300	1.3	ug/Kg wet	4000		81.3	50-150		
Endosulfan I	3300	1.4	ug/Kg wet	4000		82.7	50-150		
alpha-Chlordane	3200	1.1	ug/Kg wet	4000		80.9	50-150		
4,4-DDE	2600	1.6	ug/Kg wet	4000		65.6	50-150		
Dieldrin	2600	1.4	ug/Kg wet	4000		65.0	50-150		
Endrin	3000	1.2	ug/Kg wet	4000		75.8	50-150		
4,4-DDD	2700	1.5	ug/Kg wet	4000		67.8	50-150		
Endosulfan II	2700	1.2	ug/Kg wet	4000		66.6	50-150		
Endrin Aldehyde	2500	2.8	ug/Kg wet	4000		63.2	50-150		
4,4-DDT	2800	1.8	ug/Kg wet	4000		69.3	50-150		
Endosulfan Sulfate	2800	2.0	ug/Kg wet	4000		69.2	50-150		
Methoxychlor	2900	2.4	ug/Kg wet	4000		71.8	50-150		
Endrin Ketone	2600	1.9	ug/Kg wet	4000		65.4	50-150		
Surrogate: Tetrachloro-meta-xylene	120		ug/Kg wet	200		61.5	30-150		
Surrogate: Decachlorobiphenyl	170		ug/Kg wet	200		83.0	30-150		
BIB0148-BS8									
Toxaphene	1400	6.2	ug/Kg wet	4000		34.7	50-150		
Surrogate: Tetrachloro-meta-xylene	92		ug/Kg wet	200		46.0	30-150		

ES Wastewater Management

2201 Portland Ave.

Tacoma WA, 98421

Project: **Central Treatment Plant Quarterly**

Project Number: 80000154

Project Manager: Matt Symington

Reported:

04-Apr-25 18:40

GC/MS-Pesticides - Quality Control
Environmental Services Laboratory

Sample ID									
Analyte	Result	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit

Batch BIB0148 - EPA 8270E 6 (6/18) SIM OCP

Surrogate: Decachlorobiphenyl	150		ug/Kg wet	200		76.0	30-150		
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ES Wastewater Management
2201 Portland Ave.
Tacoma WA, 98421

Project: **Central Treatment Plant Quarterly**
Project Number: 80000154
Project Manager: Matt Symington

Reported:
04-Apr-25 18:40

Total Mercury and Mercury Speciation by CVAFS - Quality Control
Brooks Applied Labs

Sample ID	Result	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Analyte									

Batch B250359 - EPA 1631 E

Blank (B250359-BLK1)

Prepared: 21-Feb-25 Analyzed: 24-Feb-25

B250359-BLK1

Hg 0.16 J 0.13 ng/L

B250359-BLK2

Hg 0.15 J 0.13 ng/L

B250359-BLK3

Hg 0.16 J 0.13 ng/L

B250359-BLK4

Hg 0.15 J 0.13 ng/L

LCS (B250359-BS1)

Prepared: 21-Feb-25 Analyzed: 24-Feb-25

B250359-BS1

Hg 16.09 0.13 ng/L 16.00 101 80-120

Matrix Spike (B250359-MS2)

Source: 2502304-03

Prepared: 21-Feb-25 Analyzed: 24-Feb-25

B250359-MS2

Hg 25.24 0.14 ng/L 21.05 5.32 95 71-125

Matrix Spike Dup (B250359-MSD2)

Source: 2502304-03

Prepared: 21-Feb-25 Analyzed: 24-Feb-25

B250359-MSD2

Hg 24.51 0.14 ng/L 21.05 5.32 91 71-125 3 24

ES Wastewater Management

2201 Portland Ave.

Tacoma WA, 98421

Project: **Central Treatment Plant Quarterly**

Project Number: 80000154

Project Manager: Matt Symington

Reported:

04-Apr-25 18:40

Notes and Definitions

U	Analyte Not Detected at or above the associated value
UJ	Analyte Not Detected at or above the associated estimated value
J	The analyte was positively identified. The associated value is an estimate. For BOD Analysis: The sample dilutions set-up for the BOD analysis did not meet the oxygen depletion criteria of at least 2 mg/l dissolved oxygen depletion. Therefore the reported BOD result is estimated biased high
ND	Analyte NOT DETECTED at or above the reporting limit
E	Analyte was determined above the upper quantitation range of the method. The associated value is an estimate.
NJ	There is evidence the analyte is present. The associated value is an estimate.
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference



13751 Lake City Way NE, Ste 108, Seattle, WA 98125 • USA • T:206-632-6206 • info@brooksapplied.com

February 27, 2025

City of Tacoma
ATTN: Eric Bitten
Center for Urban Waters, 326 East D St.
Tacoma, WA 98421
ebitten@cityoftacoma.org

RE: Project TAC-TA1901

Client Project: CTP & NETP Quarterlies

Dear Eric Bitten,

On February 17, 2025, Brooks Applied Labs (BAL) received two (2) wastewater samples. The samples were logged-in for the analyses of total mercury (Hg) according to the chain-of-custody form. All samples were received and stored according to BAL SOPs and EPA methodology.

Total Mercury using MERX

Water samples were preserved with bromine monochloride in their initial container and analyzed in accordance with EPA Method 1631.

The results were method blank corrected, as described in the calculations section of the relevant BAL SOP(s), and were evaluated using reporting limits adjusted to account for sample aliquot size. Please refer to the *Sample Results* page for sample-specific MDLs, MRLs, and other details.

All data was reported without further qualification and all other associated quality control sample results met the acceptance criteria.

BAL verifies that the reported results of all analyses for which the laboratory is accredited meet the requirements of the accrediting body, unless otherwise noted in the report narrative. For more information regarding accreditations please see the *Report Information* and *Batch Summary* pages. This report must be used in its entirety for interpretation of results. Please feel free to contact us if you have any questions regarding this report.

Sincerely,

A handwritten signature in black ink that reads 'Amy Goodall'.

Amy Goodall
Project Manager
Brooks Applied Labs
amy@brooksapplied.com



Report Information

General Disclaimers

Test results are based solely upon the sample submitted to Brooks Applied Labs in the condition it was received. This report shall not be reproduced or copied, except in full, without written approval of the laboratory. Brooks Applied Labs is not responsible for the consequences arising from the use of a partial report.

Laboratory Accreditation

BAL maintains accreditation with various state and national agencies for select test methods. For a current list of BAL accreditations, please visit our website at <http://www.brooksapplied.com/resources/certificates-permits/>. The reported analyte/matrix/method combination shall be considered outside BAL's scopes of accreditation unless otherwise identified as ISO, TNI, or ISO,TNI in the tables. It is the responsibility of the client to verify whether a specific accreditation is required for the intended data use.

ISO: ISO/IEC 17025:2017 accredited test method. Issued by ANSI National Accreditation Board (ANAB), #ADE-1447.02

TNI: NELAP accredited test method. Issued by the State of Florida Department of Health, #E87982.

ISO,TNI: Test method is accredited under both the ISO/IEC 17025:2017 and NELAP accreditations referenced above.

Field Quality Control Samples

Please be notified that certain EPA methods require the collection of field quality control samples of an appropriate type and frequency; failure to do so is considered a deviation from some methods and for compliance purposes should only be done with the approval of regulatory authorities. Please see the specific EPA methods for details regarding required field quality control samples.

Common Abbreviations

AR	as received	MS	matrix spike
BAL	Brooks Applied Labs	MSD	matrix spike duplicate
BLK	method blank	ND	non-detect
BS	blank spike	NR	non-reportable
CAL	calibration standard	N/C	not calculated
CCB	continuing calibration blank	PS	post preparation spike
CCV	continuing calibration verification	REC	percent recovery
COC	chain of custody record	RPD	relative percent difference
D	dissolved fraction	SCV	secondary calibration verification
DUP	duplicate	SOP	standard operating procedure
IBL	instrument blank	SRM	reference material
ICV	initial calibration verification	T	total fraction
MDL	method detection limit	TR	total recoverable fraction
MRL	method reporting limit		

Definition of Data Qualifiers

E	An estimated value due to the presence of interferences. A full explanation is presented in the narrative.
H	Holding time and/or preservation requirements not met. Please see narrative for explanation.
J	Detected by the instrument, the result is > the MDL but ≤ the MRL. Result is reported and considered an estimate.
J-1	Estimated value. A full explanation is presented in the narrative.
M	Duplicate precision (RPD) was not within acceptance criteria. Please see narrative for explanation.
N	Spike recovery was not within acceptance criteria. Please see narrative for explanation.
R	Rejected, unusable value. A full explanation is presented in the narrative.
U	Result is ≤ the MDL or client requested reporting limit (CRRL). Result reported as the MDL or CRRL.
X	Result is not BLK-corrected and is within 10x the absolute value of the highest detectable BLK in the batch. Result is estimated.
Z	Holding time and/or preservation requirements not established for this method; however, BAL recommendations for holding time were not followed. Please see narrative for explanation.

Project ID: TAC-TA1901
PM: Amy Goodall



BAL Report 2502217
Client PM: Eric Bitten
Client Project: CTP & NETP Quarterlies

Sample Information

Sample	Lab ID	Report Matrix	Type	Sampled	Received
2502011-02 CTP Eff Comp	2502217-01	Wastewater	Sample	02/12/2025	02/17/2025
2502012-02 NETP Eff Comp	2502217-02	Wastewater	Sample	02/12/2025	02/17/2025

Batch Summary

Analyte	Lab Matrix	Method	Accred.	Prepared	Analyzed	Batch	Sequence
Hg	Water	EPA 1631 E	ISO,TNI	02/21/25	02/24/25	B250359	S250181

Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
2502011-02 CTP Eff Comp										
2502217-01	Hg	Wastewater	TR	2.55		0.13	0.41	ng/L	B250359	S250181
2502012-02 NETP Eff Comp										
2502217-02	Hg	Wastewater	TR	1.81		0.13	0.41	ng/L	B250359	S250181



Accuracy & Precision Summary

Batch: B250359
Lab Matrix: Water
Method: EPA 1631 E

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B250359-BS1	Blank Spike, (2506009) Hg		16.00	16.09	ng/L	101% 80-120	
B250359-MS2	Matrix Spike (2502304-03) Hg	5.32	21.05	25.24	ng/L	95% 71-125	
B250359-MSD2	Matrix Spike Duplicate (2502304-03) Hg	5.32	21.05	24.51	ng/L	91% 71-125	3% 24

Method Blanks & Reporting Limits

Batch: B250359
Matrix: Water
Method: EPA 1631 E
Analyte: Hg

Sample	Result	Units	
B250359-BLK1	0.16	ng/L	
B250359-BLK2	0.15	ng/L	
B250359-BLK3	0.16	ng/L	
B250359-BLK4	0.15	ng/L	
Average: 0.16		Standard Deviation: 0.01	MDL: 0.13
Limit: 0.50		Limit: 0.13	MRL: 0.40

Project ID: TAC-TA1901
PM: Amy Goodall



BAL Report 2502217
Client PM: Eric Bitten
Client Project: CTP & NETP Quarterlies

Sample Containers

Lab ID: 2502217-01			Report Matrix: Wastewater			Collected: 02/12/2025	
Sample: 2502011-02 CTP Eff Comp			Sample Type: Sample			Received: 02/17/2025	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle FLPE Hg	125mL	22-0026	none	n/a	n/a	Cardboard Box - 2502217
Lab ID: 2502217-02			Report Matrix: Wastewater			Collected: 02/12/2025	
Sample: 2502012-02 NETP Eff Comp			Sample Type: Sample			Received: 02/17/2025	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Bottle FLPE Hg	125mL	23-0112	none	n/a	n/a	Cardboard Box - 2502217

Shipping Containers

Cardboard Box - 2502217

Received: February 17, 2025 10:13
Tracking No: 7720 9143 5226 via FedEx
Coolant Type: None
Temperature: Ambient

Description: Cardboard Box
Damaged in transit? No
Returned to client? No

Custody seals present? No
Custody seals intact? No
COC present? Yes



**BROOKS
APPLIED
LABS**

Chain-of-Custody Form

Ship samples to:
13751 Lake City Way NE, Suite 108
Seattle, WA 98125

BAL Report 2502217

For BAL use only

Received by: E0 Date: 2/17/25
Work Order ID: _____ Time: 1013
Project ID: _____

Client: City of Tacoma ES Laboratory

Contact: Eric R Bitten

Client Project ID: CTP&NETP Quarterlies

Samples Collected By: TP1 and TP3 Operations

PO Number:

Phone: (253)254-9763

Email: ebitten@cityoftacoma.org

Mailing Address: Center for Urban Waters, ES Laboratory
326 East D Street
Tacoma, WA 98421

Email Receipt Confirmation? Yes ☒

BAL PM:

Requested TAT (business days)		Collection		Client Sample Info				BAL Analyses Required								Comments
		Date	Time	Matrix Type	Number of Containers	Field Filtered?	Preservation Type	Total Hg, EPA 1631	Methyl Hg, EPA 1630	ICP-MS Metals (specify)	As Species (specify)	Se Species (specify)	Filtration	Other (specify here)	Other (specify here)	Specify Here
<input checked="" type="checkbox"/> 20 (standard)																
<input type="checkbox"/> 15*																
<input type="checkbox"/> 10*																
<input type="checkbox"/> 5*																
<input type="checkbox"/> Other _____																
*Surcharges may apply to expedited TATs																
Sample ID																
1	2502011-02 CTP Eff Comp	2/12/25	2345	Wastewater <input type="checkbox"/>	1	No <input type="checkbox"/>	Non <input type="checkbox"/>	✓								
2	2502012-02 NETP Eff Comp	2/12/25	0900	Wastewater <input type="checkbox"/>	1	No <input type="checkbox"/>	Non <input type="checkbox"/>	✓								
3				<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>									
4				<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>									
5				<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>									
6				<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>									
7				<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>									
8				<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>									
9				<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>									
10				<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>									
Trip Blank (specify)				<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>									
Relinquished By: <u>E. R. Bitten</u>		Date: <u>2.14.25</u>		Time: <u>1121</u>		Relinquished By:				Date:		Time:				
Received By:		Date:		Time:		Total Number of Packages:										

Page 1 of 3

List Hazardous Contaminants: _____

samples@brooksupplied.com | brooksupplied.com

Analytical Services Request CHAIN OF CUSTODY

SENDING LABORATORY:

Environmental Services Laboratory
326 East D Street
Tacoma, WA 98421
Phone: (253) 591-5588
Fax: (253) 502-2107
City Contact: Eric Bitten

RECEIVING LABORATORY:

Brooks Applied Labs
13751 Lake City Way NE, Suite 108
Seattle, WA 98125
Phone: (206) 632-6206
Fax: (206) 632-6017

Samplers (Printed):**Samplers Signatures:****Environmental Services Work Order Number: 2502011**

Analysis			Composite Sample Date/Time	Comments
Sample ID: 2502011-02	Location ID: CTP_Effluent (Qtrly Comp)	Matrix: Water	2/11/25 23:35 → 2/12/25 23:45	
Mercury, Total 1631E			Split 2/13/25 @ 12:00	
Sample ID: 2502011-03	Location ID: CTP Blank (Low Hg)	Matrix: Water		
Mercury, Total 1631E				

Please provide a Tier II or Tier IV data package, as noted below. Perform batch quality control (matrix spike, duplicate or matrix spike duplicate) as required by the methods. Send the final report and a standard Excel file, which includes the sample and batch QC data, to **CUWLab@CityofTacoma.org**. If your laboratory uses Promium's Element LIMS system, please call the City Contact listed above.

 2.14.25

Released By

Date

Received By

Report type: ☒ Tier II ☐ Tier IVDetection Limit: ☒ MDL ☐ MRL/
LLOQ

Released By

Date

Received By

C:\Element\Print\sc0_COT_PreSub_v2.rpt

Analytical Services Request CHAIN OF CUSTODY

SENDING LABORATORY:

Environmental Services Laboratory
326 East D Street
Tacoma, WA 98421
Phone: (253) 591-5588
Fax: (253) 502-2107
City Contact: Eric Bitten

RECEIVING LABORATORY:

Brooks Applied Labs
13751 Lake City Way NE, Suite 108
Seattle, WA 98125
Phone: (206) 632-6206
Fax: (206) 632-6017

Samplers (Printed):**Samplers Signatures:**

Environmental Services Work Order Number: 2502012

Analysis	Sample Date/Time	Comments
Sample ID: 2502012-02 Location ID: NETP Effluent (qtrly) Matrix: Water Mercury, Total 1631E	2/12/25 6:35 → 2/13/25 6:35 Split 2/13/25 @ 12:15	
Sample ID: 2502012-06 Location ID: NETP Blank (LowHg) Matrix: Water Mercury, Total 1631E		

Please provide a Tier II or Tier IV data package, as noted below. Perform batch quality control (matrix spike, duplicate or matrix spike duplicate) as required by the methods. Send the final report and a standard Excel file, which includes the sample and batch QC data, to **CUWLab@CityofTacoma.org**. If your laboratory uses Promium's Element LIMS system, please call the City Contact listed above.

Released By

Date

Received By

Report type: ☒ Tier II ☐ Tier IVDetection Limit: ☒ MDL ☐ MRL/
LLOQ

Released By

Date

Received By

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CHAIN OF CUSTODY



City of Tacoma Environmental Services
326 East D Street phone (253) 502-2130
Tacoma fax (253) 502-2170
WA, 98421-1801

Page 2 of 2

Lab Work Order Number **2502011**

Client Name PW Wastewater Management		Project Name Central Treatment Plant Quarterly		Requested Analyses								Requested Turn Around								
Client Contact Scott Long		Project Number 80000154		Total Metals 6020B (Sb, As, Be, Cd, Cr, Cu, Pb, Mo, Ni, Se, Ag, Ti, Zn); Cyanide, Total 335.4; Mercury, Total 7471; Phenolics, Total 420.4; Solids, Total SM2540	Phenolics, Total 420.4	Cyanide, Total 335.4	HEM 1664A	PFAS 1633*				Sample Number	Rush requests subject to additional charge. Rush requests subject to lab approval.							
Address 2201 Portland Ave.		Project Description CTP NPDES Monitoring																		
City Tacoma		PO Number 61000043763																		
State/Zip WA, 98421		Sampler Signatures																		
Phone (253) 404-6983	Fax (253) 591-2170																			
Samplers																				

Sample Name or Field ID #	Sampled Date	Sampled Time	Sample Type Code	Matrix Code	Container Count												Sample Comments
CTP Influent	2-12-25	6:15	Grab	W	5		1	1	3								-03
CTP Effluent	2-12-25	6:18	Grab	W	5		1	1	3								QC Source
CTP Digester 3			Grab	S	1	1				12							-06
CTP Digester 2			Grab	S	0	0				0							-07
CTP Digester 1			Grab	S	0	0				0							-08

Relinquished By <i>Sharon Montano</i>	Received By <i>Fridge</i>	Date/Time 2-12-25 6:20	Comments: Grab sample containers are filled directly from the sample point during the 24hr composite. *PFAS 1633 sample is for investigative purposes only, not NPDES or 503 Monitoring.
Relinquished By <i>Fridge</i>	Received By <i>Chelsea Nelson</i>	Date/Time 2/13/25 11:15	
Relinquished By	Received By	Date/Time	
Cooler Numbers and Temperatures			

Matrix Codes: S=Soil, W=Water Preserv. Codes:

Login Reviewed By: Eric R Bitten Date: 021425erb1020

CHAIN OF CUSTODY



City of Tacoma Environmental Services

326 East D Street

Tacoma

WA, 98421-1801

phone (253) 502-2130

fax (253) 502-2170

Page 1 of 2

Lab Work Order Number 2502011

Client Name PW Wastewater Management		Project Name Central Treatment Plant Quarterly		Requested Analyses										Requested Turn Around	
Client Contact Matt Symington		Project Number 80000154		Total Metals 200.8: Sb, As, Be, Cd, Cr, Cu, Pb, Mo, Ni, Se, Ag, Th, Zn	Mercury, Total LR 245.7	BA_Mercury, Total 1631E	Organic Carbon, Total SM5310B	S1633_PFAS	S625.1_PEST				Sample Number	Rush requests subject to additional charge.	
Address 2201 Portland Ave.		Project Description CTP NPDES Monitoring												Rush requests subject to lab approval.	
City Tacoma		PO Number 61000043763												Standard (days)	
State/Zip WA, 98421		Sampler Signatures 												Expedited (days)	
Phone (253) 404-6983	Fax (253) 591-2170													Due Date	
Samplers (Print Name) ROBERT RHODES															

Sample Name or Field ID	#	Sampled Date	Sampled Time	Sample Type Code	Matrix Code	Container Count											Sample	Comments
CTP Influent		2-12-25	2335	COMP	W	9	1	1			4	3					-01	RCVD in Glass Carboy
CTP Effluent		2-12-25	2345	COMP	W	11	1	1	12	1		6					-02	RCVD in Glass Carboy
CTP Blank				Grab	W	0		0	0								-05	

Relinquished By ROBERT RHODES	Received By STAINLESS FRIDGE	Date/Time 2-12-25 2353	Comments: Composite samples are split into the above listed containers at CUW by _____.
Relinquished By Fridge	Received By Chelsea Nelson	Date/Time 2/13/25 11:15	
Relinquished By	Received By	Date/Time	
Cooler Numbers and Temperatures			11.9°C Corrected S/N 122026693

Matrix Codes: S=Soil, W=Water

Preserv. Codes:

Login Reviewed By: Eric R Bitten Date: 021425erb1020