

Chemical Analysis Report

SW-DIST-2022-12-07-01

Florida DEP Laboratory
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Tallahassee, FL 32399-2400
DOH Accreditation E31780

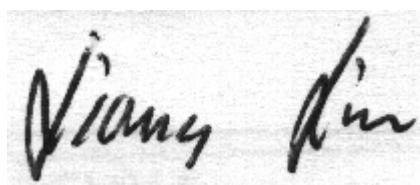
Event Description: **SMP: Run 19 Nutrients**
Request ID: **RQ-2022-10-17-02**
Customer: **SW-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
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13051 N. Telecom Parkway
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Certified by: Liang Lin, Environmental Administrator

Date Certified: 12-JAN-2023 12:12

A handwritten signature in black ink, appearing to read "Liang Lin", on a light-colored background.

Case Narrative

Unless otherwise noted, all samples included in this report were received in accordance with protocols referenced in Chapter 62-160, Florida Administrative Code (F.A.C.). Results published in this report pertain only to the samples as submitted to, and received by the laboratory. All times in this report are adjusted to the applicable Eastern Time Zone (EST or EDT).

Results for the following analytical groups are included in this report: Metals and Nutrients.

Scientific notation may be used in reporting very large or small values. Values reported using scientific notation will take the form of the following example: 1.3E+03, which is equivalent to 1.3×10^3 or 1300.

Unless otherwise noted, analytical values for soil and sediment samples are reported on a dry weight basis, and analytical values for waste and tissue samples are reported on a wet weight basis.

Results for TNI accredited tests met requirements established by The NELAC Institute. A double asterisk (**) is used to indicate an analyte/matrix/method for which the laboratory is not TNI accredited by the Florida Department of Health Environmental Laboratory Certification Program or where accreditation for that field of testing is not applicable.

Any significant anomalies or deviations from established protocols are documented in Non-Conformance Reports, which, where appropriate, are included within this analytical report. Additional comments related to specific analytical tests may be included as remarks following the analytical results for each sample. Such comments and remarks are for informational purposes only and are not intended to convey judgement about the usability of the reported data.

A quality control report on the performance of the test method for the submitted samples is included. Uncertainty associated with the analytical results contained in this report can be estimated from the reported quality assurance results and from published quality control acceptance limits for each analytical test. Matrix quality control results (matrix spike recoveries and matrix sample precision) pertain only to the matrix sample tested and do not necessarily reflect test method performance for other samples.

Typical matrix quality control (QC) measurements may include matrix spike recovery, matrix spike duplicate recovery, matrix spike precision and matrix sample precision. Not all matrix QC results may be available or reportable; where they are not an explanation is provided. Typical reasons for unavailable QC results include, but are not limited to, a) insufficient matrix sample to perform some or all QC measurements; b) analyte concentration in the sample replicated was too low for a meaningful measurement of precision and c) analyte concentration in the matrix sample spiked was too high (relative to the amount of analyte spiked) for a meaningful measurement of recovery. Where matrix QC results are unavailable, other method performance metrics (e.g., LCS recovery, LCS precision, surrogate recovery) may be used to assess performance of the method. Comments explaining any missing QC measurements are not intended to convey any adverse conclusions about the quality of the reported data.

Precision is reported as relative percent difference unless otherwise noted.

Quality Control codes as defined below may be used in this report to indicate results that are associated with one or more quality control elements which did not fall within established test method criteria. Such results may be qualified as estimates using a J qualifier as required by 62-160 F.A.C. Explanations are included in the report for any results that were reported as estimates for other reasons.

QC Codes used in this report may include:

- LCS – Recovery for the batch Laboratory Control Sample (LCS) was outside existing control limits;
- MS – Recovery for the batch matrix spike (MS) was outside existing control limits;
- CCV – Recovery for a continuing calibration verification (CCV) standard was outside existing control limits;
- SUR – Recovery of a surrogate (SUR) for associated analytes was outside existing control limits;
- RPD – The precision, measured as relative percent difference (RPD), of batch replicate measurements was outside existing control limits;
- RSD – The precision, measured as relative standard deviation (RSD), of batch replicate measurements was outside existing control limits;
- SMP – Sample - used precision derived from replicate analyses of a sample;

The following data qualifiers are used, where applicable, in this report as specified in 62-160 F.A.C.

- A - Value reported is the mean of two or more determinations.
- B - Results based on colony counts outside the acceptable range.
- I - The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
- J - Estimated value and/or the analysis did not meet established quality control criteria.
- K - Actual value is known to be less than value given.
- L - Actual value is known to be greater than value given.
- N - Presumptive evidence of presence of material.
- O - Sampled, but analysis lost or not performed.
- Q - Sample held beyond normal holding time.
- T - Value reported is less than the criterion of detection.
- U - Material was analyzed for but not detected. The reported value is the method detection limit for the sample analyzed.
- V - Analyte was detected in both sample and method blank.
- X - Too few individuals to calculate SCI value.
- Y - The laboratory analysis was from an unpreserved or improperly preserved sample. The data may not be accurate.
- Z - Colonies were too numerous to count (TNTC).

Quality control information from overflow laboratories may not be included in this report. Please refer to the associated report from the overflow laboratory for additional information.

Sample Location: Clark Lake @ NW end of Southern Quarter

Collection Date/Time: 12/06/2022 11:30

Field ID: G3SW0105

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2373456	DEP SOP: NU-094-1	Color (true)	27		PCU	P423228	
	EPA 180.1 Rev. 2.0	Turbidity	20		NTU	P423242	
	EPA 300.0 Rev. 2.1	Chloride	74		mg Cl/L	P423672	
		Sulfate	81		mg SO4/L	P423676	
	SM 2320 B-2011	Total Alkalinity	127		mg CaCO3/L	P423496	
	SM 2540 C-2015	TDS	420		mg/L	P423650	
	SM 2540 D-2015	TSS	31		mg/L	P423454	
2373457	SM 4500-F- C-2011	Fluoride	0.56		mg F/L	P423500	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.011		mg N/L	P423436	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.9		mg N/L	P423349	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P423361	
	EPA 365.1 Rev. 2.0	Total-P	0.21		mg P/L	P423333	
2373458	SM 5310 B-2011	Organic Carbon	15		mg C/L	P423563	
	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P423230	

Ref. Method and Comment:

DEP SOP: NU-094-1: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: Island Park Boat Basin off Dock

Collection Date/Time: 12/06/2022 12:45

Field ID: G3SW0061

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2373462	EPA 180.1 Rev. 2.0	Turbidity	3.6		NTU	P423242	
	SM 2320 B-2011	Total Alkalinity	112		mg CaCO3/L	P423574	
	SM 2540 D-2015	TSS	3	U	mg/L	P423457	
	SM 4500-F- C-2011	Fluoride	1.3		mg F/L	P423578	
2373463	EPA 350.1 Rev. 2.0	Ammonia-N	0.006		mg N/L	P423860	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.49		mg N/L	P423387	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P423403	
	EPA 365.1 Rev. 2.0	Total-P	0.035		mg P/L	P423271	
	SM 5310 B-2011	Organic Carbon	4.2		mg C/L	P423709	
2373464	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.005	I	mg P/L	P423231	
2373470	EPA 200.7 Rev. 4.4	Calcium	405		mg/L	P423337	
		Iron	300	U	ug/L	P423337	
		Magnesium	1.20E+03		mg/L	P423337	
		Strontium	7.39E+03		ug/L	P423337	
		Tin	30	U	ug/L	P423337	
		Titanium	7.5	U	ug/L	P423337	
		Vanadium	20	U	ug/L	P423337	
		Zinc	50	U	ug/L	P423337	
	EPA 200.8 Rev. 5.4	Aluminum	47	I	ug/L	P423337	
		Antimony	0.20	U	ug/L	P423337	
		Arsenic	2.37		ug/L	P423337	
		Beryllium	0.040	U	ug/L	P423337	
		Cadmium	0.080	U	ug/L	P423337	
		Chromium	1.6	U	ug/L	P423337	
		Cobalt	0.22	I	ug/L	P423337	
		Copper	4.0	U	ug/L	P423337	
		Lead	2.0	U	ug/L	P423337	
		Manganese	3.5		ug/L	P423337	
		Molybdenum	12.9		ug/L	P423337	
		Nickel	2.0	U	ug/L	P423337	
		Selenium	2.0	U	ug/L	P423337	
		Silver	0.040	U	ug/L	P423337	
		Thallium	1.0	U	ug/L	P423337	

Ref. Method and Comment:

SM 2540 D-2015: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

EPA 200.7 Rev. 4.4: Batch matrix spike recoveries for calcium, magnesium and strontium are unavailable because of high analyte concentration in the QC sample.

Sample Location: Hudson Bayou Tidal by Marie Selby Botanical Gardens **Collection Date/Time:** 12/06/2022 12:20

Field ID: G3SW0108

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2373459	EPA 180.1 Rev. 2.0	Turbidity	3.7		NTU	P423242	
	SM 2320 B-2011	Total Alkalinity	117		mg CaCO3/L	P423574	
	SM 2540 D-2015	TSS	6	I	mg/L	P423457	
	SM 4500-F- C-2011	Fluoride	1.2		mg F/L	P423578	
2373460	EPA 350.1 Rev. 2.0	Ammonia-N	0.016		mg N/L	P423860	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.47		mg N/L	P423387	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.005	I	mg N/L	P423403	
	EPA 365.1 Rev. 2.0	Total-P	0.064		mg P/L	P423271	
	SM 5310 B-2011	Organic Carbon	4.9		mg C/L	P423360	
2373461	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.022		mg P/L	P423231	

Ref. Method and Comment:

SM 2540 D-2015: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Quality Assurance Report Method Blank Results

Reference Method: DEP SOP: NU-094-1
Batch ID: P423228

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P423242

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P423337

Component	Result	Code	Units
Calcium	0.075	U	mg/L
Iron	30	U	ug/L
Magnesium	0.040	U	mg/L
Strontium	2.0	U	ug/L
Tin	3.0	U	ug/L
Titanium	0.75	U	ug/L
Vanadium	2.0	U	ug/L
Zinc	5.0	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P423337

Component	Result	Code	Units
Aluminum	5.0	U	ug/L
Antimony	0.050	U	ug/L
Arsenic	0.050	U	ug/L
Beryllium	0.010	U	ug/L
Cadmium	0.020	U	ug/L
Chromium	0.40	U	ug/L
Cobalt	0.020	U	ug/L
Copper	0.40	U	ug/L
Lead	0.20	U	ug/L
Manganese	0.10	U	ug/L
Molybdenum	0.15	U	ug/L
Nickel	0.50	U	ug/L
Selenium	0.20	U	ug/L
Silver	0.010	U	ug/L
Thallium	0.10	U	ug/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P423672

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P423676

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Quality Assurance Report

Method Blank Results

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P423436

Component	Result	Code	Units
Ammonia-N	0.002	U	mg N/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P423860

Component	Result	Code	Units
Ammonia-N	0.002	U	mg N/L

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P423349

Component	Result	Code	Units
Kjeldahl Nitrogen	0.080	U	mg N/L

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P423387

Component	Result	Code	Units
Kjeldahl Nitrogen	0.080	U	mg N/L

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P423361

Component	Result	Code	Units
NO2NO3-N	0.004	U	mg N/L

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P423403

Component	Result	Code	Units
NO2NO3-N	0.004	U	mg N/L

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P423271

Component	Result	Code	Units
Total-P	0.002	U	mg P/L

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P423333

Component	Result	Code	Units
Total-P	0.002	U	mg P/L

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P423230

Component	Result	Code	Units
O-Phosphate-P	0.004	U	mg P/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P423231

Component	Result	Code	Units
O-Phosphate-P	0.004	U	mg P/L

Reference Method: SM 2320 B-2011
Batch ID: P423496

Component	Result	Code	Units
Total Alkalinity	0.65	U	mg CaCO ₃ /L

Reference Method: SM 2320 B-2011
Batch ID: P423574

Component	Result	Code	Units
Total Alkalinity	0.65	U	mg CaCO ₃ /L

Reference Method: SM 2540 C-2015
Batch ID: P423650

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2015
Batch ID: P423454

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-2015
Batch ID: P423457

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500-F- C-2011
Batch ID: P423500

Component	Result	Code	Units
Fluoride	0.025	U	mg F/L

Reference Method: SM 4500-F- C-2011
Batch ID: P423578

Component	Result	Code	Units
Fluoride	0.025	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P423360

Component	Result	Code	Units
Organic Carbon	0.50	U	mg C/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 5310 B-2011
Batch ID: P423563

Component	Result	Code	Units
Organic Carbon	0.50	U	mg C/L

Reference Method: SM 5310 B-2011
Batch ID: P423709

Component	Result	Code	Units
Organic Carbon	0.50	U	mg C/L

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: DEP SOP: NU-094-1
Batch ID: P423228

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	104		P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P423242

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Turbidity	99.4		P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P423337

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	106		P	85 - 115
Iron	99.9		P	85 - 115
Magnesium	102		P	85 - 115
Strontium	95.2		P	85 - 115
Tin	95.3		P	85 - 115
Titanium	98.5		P	85 - 115
Vanadium	96.8		P	85 - 115
Zinc	99.5		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P423337

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	101		P	85 - 115
Antimony	103		P	85 - 115
Arsenic	104		P	85 - 115
Beryllium	91.6		P	85 - 115
Cadmium	104		P	85 - 115
Chromium	96.8		P	85 - 115
Cobalt	99.0		P	85 - 115
Copper	91.8		P	85 - 115
Lead	96.4		P	85 - 115
Manganese	99.8		P	85 - 115
Molybdenum	100		P	85 - 115
Nickel	100		P	85 - 115
Selenium	98.3		P	85 - 115
Silver	103		P	85 - 115
Thallium	98.6		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P423672

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	99.9		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P423676

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	99.9		P	90 - 110

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P423436

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	91.8		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P423860

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	95.8		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P423349

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	98.6		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P423387

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	97.3		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P423361

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	99.0		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P423403

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	101		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P423271

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	106		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P423333

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	104		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P423230

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	100		P	90 - 110

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P423231

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	100		P	90 - 110

Reference Method: SM 2320 B-2011
Batch ID: P423496

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	97.2		P	94 - 106

Reference Method: SM 2320 B-2011
Batch ID: P423574

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	95.1		P	94 - 106

Reference Method: SM 2540 C-2015
Batch ID: P423650

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TDS	102		P	90 - 110

Reference Method: SM 2540 D-2015
Batch ID: P423454

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TSS	91.5		P	85 - 106

Reference Method: SM 2540 D-2015
Batch ID: P423457

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TSS	101		P	85 - 106

Reference Method: SM 4500-F- C-2011
Batch ID: P423500

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	100		P	96 - 104

Reference Method: SM 4500-F- C-2011
Batch ID: P423578

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	103		P	96 - 104

Reference Method: SM 5310 B-2011
Batch ID: P423360

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	97.8		P	85 - 115

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 5310 B-2011
Batch ID: P423563

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	96.8		P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P423709

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	97.3		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P423337

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2373079	Iron	97.5	102	P/P	70 - 130
2373079	Tin	87.1	92.0	P/P	70 - 130
2373079	Titanium	105	100	P/P	70 - 130
2373079	Vanadium	97.0	102	P/P	70 - 130
2373079	Zinc	96.8	101	P/P	70 - 130

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P423337

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2373079	Aluminum	110	111	P/P	70 - 130
2373079	Antimony	110	108	P/P	70 - 130
2373079	Arsenic	117	116	P/P	70 - 130
2373079	Beryllium	104	99.2	P/P	70 - 130
2373079	Cadmium	106	103	P/P	70 - 130
2373079	Chromium	91.8	90.1	P/P	70 - 130
2373079	Cobalt	115	114	P/P	70 - 130
2373079	Copper	101	99.1	P/P	70 - 130
2373079	Lead	108	106	P/P	70 - 130
2373079	Manganese	92.5	90.2	P/P	70 - 130
2373079	Molybdenum	118	117	P/P	70 - 130
2373079	Nickel	115	114	P/P	70 - 130
2373079	Selenium	103	103	P/P	70 - 130
2373079	Silver	97.8	97.0	P/P	70 - 130
2373079	Thallium	114	112	P/P	70 - 130

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P423672

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2373374	Chloride	98.2		P	90 - 110
2373786	Chloride	97.0		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P423676

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2373374	Sulfate	94.0		P	90 - 110
2373786	Sulfate	98.5		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P423436

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2373325	Ammonia-N	96.0	95.8	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P423860

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2372792	Ammonia-N	101	105	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P423349

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2373565	Kjeldahl Nitrogen	101	104	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P423387

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2373297	Kjeldahl Nitrogen	104	98.4	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P423361

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2373450	NO2NO3-N	99.0	98.5	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P423403

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2373460	NO2NO3-N	103	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P423271

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2373475	Total-P	98.5	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P423333

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2373562	Total-P	103	105	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P423230

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2373458	O-Phosphate-P	102	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P423231

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2373464	O-Phosphate-P	98.7	99.6	P/P	90 - 110

Reference Method: SM 4500-F- C-2011
Batch ID: P423500

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2373693	Fluoride	101	100	P/P	94 - 104

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SM 4500-F- C-2011
Batch ID: P423578

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2374709	Fluoride	99.2	99.9	P/P	94 - 104

Reference Method: SM 5310 B-2011
Batch ID: P423360

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2373393	Organic Carbon	91.7	93.1	P/P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P423563

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2373562	Organic Carbon	99.1	99.1	P/P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P423709

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2375074	Organic Carbon	92.7	92.7	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P423242

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2373189	Turbidity	2.26	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P423337

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2373079	Calcium	4.00	Spike	P	0 - 20
2373079	Iron	3.93	Spike	P	0 - 20
2373079	Magnesium	2.28	Spike	P	0 - 20
2373079	Strontium	4.16	Spike	P	0 - 20
2373079	Tin	5.45	Spike	P	0 - 20
2373079	Titanium	4.25	Spike	P	0 - 20
2373079	Vanadium	4.92	Spike	P	0 - 20
2373079	Zinc	4.47	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P423337

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2373079	Aluminum	0.914	Spike	P	0 - 20
2373079	Antimony	1.69	Spike	P	0 - 20
2373079	Arsenic	1.20	Spike	P	0 - 20
2373079	Beryllium	4.29	Spike	P	0 - 20
2373079	Cadmium	2.92	Spike	P	0 - 20
2373079	Chromium	1.88	Spike	P	0 - 20
2373079	Cobalt	0.665	Spike	P	0 - 20
2373079	Copper	2.19	Spike	P	0 - 20
2373079	Lead	1.29	Spike	P	0 - 20
2373079	Manganese	2.02	Spike	P	0 - 20
2373079	Molybdenum	0.643	Spike	P	0 - 20
2373079	Nickel	0.737	Spike	P	0 - 20
2373079	Selenium	0.172	Spike	P	0 - 20
2373079	Silver	0.771	Spike	P	0 - 20
2373079	Thallium	1.75	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P423672

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2373374	Chloride	0.459	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P423676

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2373374	Sulfate	0.525	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P423436

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2373325	Ammonia-N	0.196	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P423860

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2372792	Ammonia-N	3.65	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P423349

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2373565	Kjeldahl Nitrogen	2.36	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P423387

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2373297	Kjeldahl Nitrogen	4.65	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P423361

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2373450	NO2NO3-N	0.277	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P423403

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2373460	NO2NO3-N	0.475	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P423271

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2373475	Total-P	2.84	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P423333

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2373562	Total-P	1.57	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P423230

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2373458	O-Phosphate-P	0.589	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P423231

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2373464	O-Phosphate-P	0.861	Spike	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P423496

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2373693	Total Alkalinity	0.983	Sample	P	0 - 3.8

Reference Method: SM 2320 B-2011
Batch ID: P423574

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2374709	Total Alkalinity	0.885	Sample	P	0 - 3.8

Reference Method: SM 2540 C-2015
Batch ID: P423650

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2372999	TDS	5.08	Sample	P	0 - 10

Reference Method: SM 2540 D-2015
Batch ID: P423454

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2372999	TSS	8.85	Sample	P	0 - 10

Reference Method: SM 4500-F- C-2011
Batch ID: P423500

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2373693	Fluoride	1.01	Spike	P	0 - 1.6

Reference Method: SM 4500-F- C-2011
Batch ID: P423578

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2374709	Fluoride	0.470	Spike	P	0 - 1.6

Quality Assurance Report Precision

Reference Method: SM 5310 B-2011
Batch ID: P423360

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2373393	Organic Carbon	1.02	Spike	P	0 - 20

Reference Method: SM 5310 B-2011
Batch ID: P423563

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2373562	Organic Carbon	0.0	Spike	P	0 - 20

Reference Method: SM 5310 B-2011
Batch ID: P423709

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2375074	Organic Carbon	0.0	Spike	P	0 - 20

* Sample, spike and/or laboratory control sample precision (LCS) is reported.

Quality Assurance Report Calibration Verification

Reference Method: DEP SOP: NU-094-1

Run ID: A116307

Included Lab Sample IDs: 2373456

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	102	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A116309

Included Lab Sample IDs: 2373458, 2373461, 2373464

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.0	99.7	P/P	90 - 110
O-Phosphate-P	99.1	99.0	P/P	90 - 110
O-Phosphate-P	99.7	99.3	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A116311

Included Lab Sample IDs: 2373456, 2373459, 2373462

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	98.5	98.0	P/P	95 - 105

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A116352

Included Lab Sample IDs: 2373457

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	100	100	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A116353

Included Lab Sample IDs: 2373460

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	97.6	99.3	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A116363

Included Lab Sample IDs: 2373460, 2373463

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	98.5	98.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A116385

Included Lab Sample IDs: 2373457

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	101	101	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A116387

Included Lab Sample IDs: 2373460, 2373463

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
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Quality Assurance Report Calibration Verification

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A116387

Included Lab Sample IDs: 2373460, 2373463

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	100	100	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A116398

Included Lab Sample IDs: 2373456

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	102	101	P/P	90 - 110
Sulfate	102	102	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A116399

Included Lab Sample IDs: 2373457

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	94.1	94.5	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A116403

Included Lab Sample IDs: 2373457

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	97.8	94.0	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A116421

Included Lab Sample IDs: 2373456

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	97.8	95.8	P/P	90 - 110

Reference Method: SM 4500-F- C-2011

Run ID: A116421

Included Lab Sample IDs: 2373456

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	99.0	99.0	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A116447

Included Lab Sample IDs: 2373460, 2373463

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	102	98.1	P/P	90 - 110
Kjeldahl Nitrogen	98.1	98.3	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A116450

Included Lab Sample IDs: 2373457

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
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Quality Assurance Report Calibration Verification

Reference Method: SM 5310 B-2011

Run ID: A116450

Included Lab Sample IDs: 2373457

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	98.8	99.9	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A116456

Included Lab Sample IDs: 2373459, 2373462

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	96.0	94.7	P/P	90 - 110

Reference Method: SM 4500-F- C-2011

Run ID: A116456

Included Lab Sample IDs: 2373459, 2373462

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	101	102	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A116546

Included Lab Sample IDs: 2373463

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	99.9	96.2	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A116556

Included Lab Sample IDs: 2373470

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	100	97.1	P/P	90 - 110
Iron	102	99.1	P/P	90 - 110
Magnesium	99.3	96.7	P/P	90 - 110
Strontium	99.3	101	P/P	90 - 110
Tin	97.0	99.0	P/P	90 - 110
Titanium	98.3	100	P/P	90 - 110
Vanadium	97.5	99.3	P/P	90 - 110
Zinc	99.0	99.2	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A116610

Included Lab Sample IDs: 2373460, 2373463

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	97.3	97.2	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A116793

Included Lab Sample IDs: 2373470

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	102	105	P/P	90 - 110
Antimony	102	100	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A116793

Included Lab Sample IDs: 2373470

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Arsenic	105	107	P/P	90 - 110
Beryllium	99.1	100	P/P	90 - 110
Cadmium	103	101	P/P	90 - 110
Chromium	96.5	93.9	P/P	90 - 110
Cobalt	100	103	P/P	90 - 110
Lead	95.2	95.7	P/P	90 - 110
Manganese	99.8	98.9	P/P	90 - 110
Molybdenum	99.9	101	P/P	90 - 110
Nickel	102	105	P/P	90 - 110
Silver	101	101	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A116822

Included Lab Sample IDs: 2373470

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Selenium	102	104	P/P	90 - 110
Thallium	99.0	99.5	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A116837

Included Lab Sample IDs: 2373470

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Copper	104	107	P/P	90 - 110

* Pass/Fail determinations are made for each bracketing calibration verification check.

Control limits for initial calibration checks may be different from those for continuing checks, depending on method requirements. Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	SMP
DEP SOP: NU-094-1	Color (true)	104				
EPA 180.1 Rev. 2.0	Turbidity	99.4				2.26
EPA 200.7 Rev. 4.4	Calcium	106				
	Iron	99.9	97.5	102		4.00
	Magnesium	102				3.93
	Strontium	95.2				2.28
	Tin	95.3	87.1	92.0		4.16
	Titanium	98.5	105	100		5.45
	Vanadium	96.8	97.0	102		4.25
	Zinc	99.5	96.8	101		4.92
EPA 200.8 Rev. 5.4	Aluminum	101	110	111		4.47
	Antimony	103	110	108		0.914
	Arsenic	104	117	116		1.69
	Beryllium	91.6	104	99.2		1.20
	Cadmium	104	106	103		4.29
	Chromium	96.8	91.8	90.1		2.92
	Cobalt	99.0	115	114		1.88
	Copper	91.8	101	99.1		0.665
	Lead	96.4	108	106		2.19
	Manganese	99.8	92.5	90.2		1.29
	Molybdenum	100	118	117		2.02
	Nickel	100	115	114		0.643
	Selenium	98.3	103	103		0.737
	Silver	103	97.8	97.0		0.172
	Thallium	98.6	114	112		0.771
EPA 300.0 Rev. 2.1	Chloride	99.9	98.2	97.0		1.75
	Sulfate	99.9	94.0	98.5		0.459
EPA 350.1 Rev. 2.0	Ammonia-N	91.8	96.0	95.8		0.525
	Ammonia-N	95.8	101	105		
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	98.6	101	104		0.196
	Kjeldahl Nitrogen	97.3	104	98.4		3.65
EPA 353.2 Rev. 2.0	NO2NO3-N	99.0	99.0	98.5		2.36
	NO2NO3-N	101	103	103		4.65
EPA 365.1 Rev. 2.0	Total-P	106	98.5	101		0.277
	Total-P	104	103	105		0.475
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	100	102	102		2.84
	O-Phosphate-P	100	98.7	99.6		1.57
SM 2320 B-2011	Total Alkalinity	97.2				0.589
	Total Alkalinity	95.1				0.861
SM 2540 C-2015	TDS	102				0.983
SM 2540 D-2015	TSS	91.5				0.885
	TSS	101				5.08
SM 4500-F- C-2011	Fluoride	100	101	100		8.85
	Fluoride	103	99.2	99.9		
SM 5310 B-2011	Organic Carbon	97.8	91.7	93.1		1.01
	Organic Carbon	96.8	99.1	99.1		0.470
	Organic Carbon	97.3	92.7	92.7		1.02
						0.0
						0.0

Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2373456
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2373456, 2373459, 2373462

Reference Method Descriptions

Method	Description	Associated Samples
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2373470
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2373470
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2373456
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2373456
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2373457, 2373460, 2373463
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2373457, 2373460, 2373463
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2373457, 2373460, 2373463
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2373457, 2373460, 2373463
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2373458, 2373461, 2373464
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2373456, 2373459, 2373462
SM 2540 C-2015	Total Dissolved Solids in aqueous matrices	2373456
SM 2540 D-2015	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2373456, 2373459, 2373462
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2373456, 2373459, 2373462
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2373457, 2373460, 2373463

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
DEP SOP: NU-094-1	12/07/2022			12/07/2022 14:46	Chandler E Cox	2373456
EPA 180.1 Rev. 2.0	12/07/2022			12/07/2022 13:32	Khloe J Berg	2373456
	12/07/2022			12/07/2022 13:33	Khloe J Berg	2373459
	12/07/2022			12/07/2022 13:34	Khloe J Berg	2373462
EPA 200.7 Rev. 4.4	12/07/2022	12/09/2022 12:00	Vijayalakshmi Reddy	12/20/2022 02:15	Betina Topolski	2373470
	12/07/2022	12/09/2022 12:00	Vijayalakshmi Reddy	12/20/2022 02:28	Betina Topolski	2373470
EPA 200.8 Rev. 5.4	12/07/2022	12/09/2022 12:00	Vijayalakshmi Reddy	01/06/2023 19:37	Emily M Philpot	2373470
	12/07/2022	12/09/2022 12:00	Vijayalakshmi Reddy	01/06/2023 21:23	Emily M Philpot	2373470
	12/07/2022	12/09/2022 12:00	Vijayalakshmi Reddy	01/09/2023 15:53	Emily M Philpot	2373470
	12/07/2022	12/09/2022 12:00	Vijayalakshmi Reddy	01/10/2023 19:02	Emily M Philpot	2373470
EPA 300.0 Rev. 2.1	12/07/2022			12/14/2022 23:43	Anna M. Plaviak	2373456
EPA 350.1 Rev. 2.0	12/07/2022			12/13/2022 11:19	Ping Hua	2373457
	12/07/2022			12/21/2022 13:26	Judith K. Clark	2373460
	12/07/2022			12/21/2022 13:27	Judith K. Clark	2373463
EPA 351.2 Rev. 2.0	12/07/2022	12/12/2022 08:23	Judith K. Clark	12/13/2022 13:02	Judith K. Clark	2373457
	12/07/2022	12/12/2022 11:45	Samantha L Bates	12/14/2022 15:37	Samantha L Bates	2373460
	12/07/2022	12/12/2022 11:45	Samantha L Bates	12/14/2022 15:42	Samantha L Bates	2373463
EPA 353.2 Rev. 2.0	12/07/2022			12/09/2022 11:03	Beverly Y. Sanders	2373457
	12/07/2022			12/12/2022 10:18	Beverly Y. Sanders	2373460
	12/07/2022			12/12/2022 10:24	Beverly Y. Sanders	2373463
EPA 365.1 Rev. 2.0	12/07/2022	12/08/2022 15:42	Adam P Silver	12/09/2022 14:00	James L Waggeberby	2373460
	12/07/2022	12/08/2022 15:42	Adam P Silver	12/09/2022 14:01	James L Waggeberby	2373463
	12/07/2022	12/09/2022 15:40	Adam P Silver	12/12/2022 09:46	James L Waggeberby	2373457
EPA 365.1 Rev. 2.0 dissolved	12/07/2022			12/07/2022 14:27	Elise M. Gillis	2373458
	12/07/2022			12/07/2022 14:40	Elise M. Gillis	2373464
	12/07/2022			12/07/2022 14:53	Elise M. Gillis	2373461
SM 2320 B-2011	12/07/2022			12/14/2022 06:36	Dale L. Simmons	2373456
	12/07/2022			12/15/2022 00:11	Dale L. Simmons	2373459
	12/07/2022			12/15/2022 00:25	Dale L. Simmons	2373462
SM 2540 C-2015	12/07/2022			12/08/2022 15:34	Yijie Li	2373456
SM 2540 D-2015	12/07/2022			12/08/2022 15:34	Yijie Li	2373456, 2373459, 2373462
SM 4500-F- C-2011	12/07/2022			12/14/2022 06:36	Dale L. Simmons	2373456
	12/07/2022			12/14/2022 21:35	Dale L. Simmons	2373459
	12/07/2022			12/14/2022 21:40	Dale L. Simmons	2373462
SM 5310 B-2011	12/07/2022			12/09/2022 10:13	Elise M. Gillis	2373460
	12/07/2022			12/14/2022 17:00	Khloe J Berg	2373457
	12/07/2022			12/17/2022 03:47	Elise M. Gillis	2373463