

Chemical Analysis Report

SO-DIST-2021-06-30-02

Florida Department of Environmental Protection
Central Laboratory
2600 Blair Stone Road
Tallahassee, FL 32399-2400
DOH Accreditation E31780

Event Description: **2021 SMP : Okee Canals**
Request ID: **RQ-2021-06-28-11**
Customer: **SO-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
FLDEP South District Office
2295 Victoria Ave. Suite 364
Fort Myers, FL 33901-3381
Attn: William Mullen

For additional information please contact
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Liang-Tsair Lin, Ph.D.
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Certified by: Colin Wright, Program Administrator

Date Certified: 27-JUL-2021 14:33



NON-CONFORMANCE REPORT INCLUDED

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: Nutrients and Pesticides.

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: Harney Pond Canal @ SR70

Collection Date/Time: 06/29/2021 09:25

Field ID: G4SD0173

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2258087	EPA 180.1 Rev. 2.0	Turbidity	5.4		NTU	P400433	
	EPA 300.0 Rev. 2.1	Chloride	31		mg Cl/L	P400719	
		Sulfate	49		mg SO4/L	P400721	
	SM 2120 B-2011	Color (true)	130		PCU	P400425	
	SM 2320 B-2011	Total Alkalinity	35		mg CaCO3/L	P400782	
	SM 2540 C-2011	TDS	243		mg/L	P400765	
	SM 2540 D-2011	TSS	7	I	mg/L	P400673	
	SM 4500 F-C-2011	Fluoride	0.10		mg F/L	P400786	
2258089	EPA 350.1 Rev. 2.0	Ammonia-N	0.051		mg N/L	P400741	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.9		mg N/L	P401334	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.058		mg N/L	P400445	
	EPA 365.1 Rev. 2.0	Total-P	0.16		mg P/L	P400529	
	SM 5310 B-2011	Organic Carbon	24		mg C/L	P400822	
2258091	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.039		mg P/L	P400412	

Ref. Method and Comment:

SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: IndianPraireCanal@SR70

Collection Date/Time: 06/29/2021 09:50

Field ID: G4SD0174

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2258093	EPA 180.1 Rev. 2.0	Turbidity	4.5		NTU	P400434	
	EPA 300.0 Rev. 2.1	Chloride	32		mg Cl/L	P400719	
		Sulfate	58		mg SO4/L	P400721	
		Color (true)	150		PCU	P400425	
	SM 2320 B-2011	Total Alkalinity	38		mg CaCO3/L	P400782	
	SM 2540 C-2011	TDS	241		mg/L	P400765	
	SM 2540 D-2011	TSS	6	I	mg/L	P400673	
	SM 4500 F-C-2011	Fluoride	0.11		mg F/L	P400786	
2258094	EPA 350.1 Rev. 2.0	Ammonia-N	0.28		mg N/L	P400945	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	2.1		mg N/L	P401334	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.084		mg N/L	P400446	
	EPA 365.1 Rev. 2.0	Total-P	0.22		mg P/L	P400529	
	SM 5310 B-2011	Organic Carbon	26		mg C/L	P400822	
2258095	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.078		mg P/L	P400412	
2258105	EPA 8276	Chlordane	5.3	U	ng/L	P400365	
		Toxaphene	32	U	ng/L	P400365	

Ref. Method and Comment:

SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: C-41A @ SR70

Collection Date/Time: 06/29/2021 10:30

Field ID: G4SD0175

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2258088	EPA 180.1 Rev. 2.0	Turbidity	4.8	A	NTU	P400434	
	EPA 300.0 Rev. 2.1	Chloride	41		mg Cl/L	P400719	
		Sulfate	29		mg SO4/L	P400721	
	SM 2120 B-2011	Color (true)	55		PCU	P400425	
	SM 2320 B-2011	Total Alkalinity	49		mg CaCO3/L	P400782	
	SM 2540 C-2011	TDS	212		mg/L	P400765	
	SM 2540 D-2011	TSS	5	I	mg/L	P400673	
	SM 4500 F-C-2011	Fluoride	0.11		mg F/L	P400786	
2258090	EPA 350.1 Rev. 2.0	Ammonia-N	0.054		mg N/L	P400945	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.3		mg N/L	P401334	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.023		mg N/L	P400445	
	EPA 365.1 Rev. 2.0	Total-P	0.042		mg P/L	P400529	
	SM 5310 B-2011	Organic Carbon	18		mg C/L	P400822	
2258092	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P400412	

Ref. Method and Comment:

SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: L-49 at Dyess Ditch

Collection Date/Time: 06/29/2021 11:10

Field ID: G4SD0190

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2258084	EPA 180.1 Rev. 2.0	Turbidity	2.4		NTU	P400433	
	EPA 300.0 Rev. 2.1	Chloride	110		mg Cl/L	P400719	
		Sulfate	51		mg SO4/L	P400721	
	SM 2120 B-2011	Color (true)	61	A	PCU	P400425	
	SM 2320 B-2011	Total Alkalinity	208		mg CaCO3/L	P400781	
	SM 2540 C-2011	TDS	548		mg/L	P400765	
	SM 2540 D-2011	TSS	4	I	mg/L	P400673	
	SM 4500 F-C-2011	Fluoride	0.23		mg F/L	P400785	
2258086	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P400410	

Ref. Method and Comment:

SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: L-49 at Dyess Ditch

Collection Date/Time: 06/29/2021 11:10

Field ID: FB_06292021

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2258096	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P400434	
	EPA 300.0 Rev. 2.1	Chloride	0.20	U	mg Cl/L	P400719	
		Sulfate	0.20	U	mg SO4/L	P400721	
		Color (true)	2.5	U	PCU	P400425	
	SM 2320 B-2011	Total Alkalinity	0.65	U	mg CaCO3/L	P400782	
	SM 2540 C-2011	TDS	15	U	mg/L	P400761	
	SM 2540 D-2011	TSS	2	U	mg/L	P400669	
	SM 4500 F-C-2011	Fluoride	0.035	U	mg F/L	P400786	
2258098	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P400412	

Ref. Method and Comment:

SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Non-Conformance Report

NCR ID: 8911

<u>Event(s)</u>	<u>Job(s)</u>	<u>Sample(s)</u>	<u>Test(s)</u>
SO-DIST-2021-06-30-02	TLH-2021-06-30-78	2258085	
SO-DIST-2021-06-30-02	TLH-2021-06-30-78	2258097	

NCR Type: SHIPPING/RECEIVING

NCR Category: Preservation Not Intact

Observation: The acidified aliquots for the samples with field ID G4SD0190 and field ID FB 06292021 appear to be preserved with nitric acid instead of sulfuric acid. The concentrations of nitrate/nitrite in the aliquots are around 400 mg N/L and there is less than 0.20 mg N/L in the two equivalent unpreserved aliquots (sample IDs 2258084 and 2258096).

Resolution: Customer contacted; The tests for Ammonia-N, NO₂NO₃-N, Total-P, Kjeldahl Nitrogen, and Organic Carbon for the field IDs G4SD0190 and FB 06292021 were cancelled.

Authorized by/Date: Colin Wright 7/27/2021

The Non-Conformance Report details exceptions or problems encountered with the events/jobs/samples/test.
Please address questions to:

Chemistry	Colin Wright	(850) 245-8085
Biology	Cheryl Swanson	(850) 245-8177

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P400433

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P400434

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P400719

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P400721

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P400741

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P400945

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P401334

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P400445

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P400446

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P400529

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P400410

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P400412

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

Reference Method: EPA 8276
Batch ID: P400365

Component	Result	Code	Units
Chlordane	5.0	U	ng/L
Chlordane	5.0	U	ng/L
Toxaphene	30	U	ng/L
Toxaphene	30	U	ng/L

Reference Method: SM 2120 B-2011
Batch ID: P400425

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-2011
Batch ID: P400781

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

Reference Method: SM 2320 B-2011
Batch ID: P400782

Component	Result	Code	Units
Total Alkalinity	0.72	I	mg CaCO ₃ /L

Reference Method: SM 2540 C-2011
Batch ID: P400761

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-2011
Batch ID: P400765

Component	Result	Code	Units
TDS	15	U	mg/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 2540 D-2011
Batch ID: P400669

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P400673

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P400785

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-2011
Batch ID: P400786

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P400822

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P400719

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	99.5		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P400721

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P400741

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	92.2		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P400945

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	98.8		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P401334

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	98.7		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P400445

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P400446

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P400529

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P400410

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P400412

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

Reference Method: EPA 8276
Batch ID: P400365

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlordane	77.9	76.0	P/P	56 - 117
Toxaphene	62.2	59.9	P/P	45 - 116

Reference Method: SM 2120 B-2011
Batch ID: P400425

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	101		P	85 - 115

Reference Method: SM 2320 B-2011
Batch ID: P400781

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	103		P	94 - 106

Reference Method: SM 2320 B-2011
Batch ID: P400782

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	102		P	94 - 106

Reference Method: SM 4500 F-C-2011
Batch ID: P400785

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	100		P	93 - 104

Reference Method: SM 4500 F-C-2011
Batch ID: P400786

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	100		P	93 - 104

Reference Method: SM 5310 B-2011
Batch ID: P400822

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	98.5		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P400719

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2258042	Chloride	97.4		P	90 - 110
2258179	Chloride	98.4		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P400721

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2258042	Sulfate	95.6		P	90 - 110
2258179	Sulfate	98.2		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P400741

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2258180	Ammonia-N	96.4	97.0	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P400945

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2258632	Ammonia-N	99.0	99.2	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P401334

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2258442	Kjeldahl Nitrogen	94.3	98.0	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P400445

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2258043	NO2NO3-N	102	102	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P400446

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2258094	NO2NO3-N	97.5	98.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P400529

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2258094	Total-P	102	105	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P400410

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2258067	O-Phosphate-P	101	100	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P400412

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2258092	O-Phosphate-P	101	99.9	P/P	90 - 110

Reference Method: EPA 8276
Batch ID: P400365

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2258113	Chlordane	81.2	81.6	P/P	47 - 128
2258113	Toxaphene	72.8	67.7	P/P	11 - 163

Reference Method: SM 4500 F-C-2011
Batch ID: P400785

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2259724	Fluoride	97.2	98.4	P/P	92 - 107

Reference Method: SM 4500 F-C-2011
Batch ID: P400786

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2258566	Fluoride	99.4	98.8	P/P	92 - 107

Reference Method: SM 5310 B-2011
Batch ID: P400822

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2258043	Organic Carbon	100	99.8	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P400433

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2258003	Turbidity	6.90	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P400434

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2258088	Turbidity	0.0	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P400719

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2258042	Chloride	0.430	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P400721

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2258042	Sulfate	0.389	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P400741

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2258180	Ammonia-N	0.367	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P400945

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2258632	Ammonia-N	0.173	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P401334

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2258442	Kjeldahl Nitrogen	3.27	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P400445

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2258043	NO2NO3-N	0.489	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P400446

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2258094	NO2NO3-N	0.358	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P400529

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2258094	Total-P	2.22	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P400410

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2258067	O-Phosphate-P	0.166	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P400412

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2258092	O-Phosphate-P	0.897	Spike	P	0 - 20

Reference Method: EPA 8276

Batch ID: P400365

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2258113	Chlordane	0.593	Spike	P	0 - 30
2258113	Toxaphene	7.18	Spike	P	0 - 30
LFB	Chlordane	2.52	LCS	P	0 - 30
LFB	Toxaphene	3.81	LCS	P	0 - 30

Reference Method: SM 2120 B-2011

Batch ID: P400425

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2258084	Color (true)	0.0558	Sample	P	0 - 20

Reference Method: SM 2320 B-2011

Batch ID: P400781

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2259724	Total Alkalinity	0.135	Sample	P	0 - 5.2

Quality Assurance Report Precision

Reference Method: SM 2320 B-2011
 Batch ID: P400782

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2258566	Total Alkalinity	1.54	Sample	P	0 - 5.2

Reference Method: SM 2540 C-2011
 Batch ID: P400761

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2257423	TDS	6.21	Sample	P	0 - 10

Reference Method: SM 2540 C-2011
 Batch ID: P400765

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2258042	TDS	5.71	Sample	P	0 - 10

Reference Method: SM 4500 F-C-2011
 Batch ID: P400785

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2259724	Fluoride	0.972	Spike	P	0 - 2.1

Reference Method: SM 4500 F-C-2011
 Batch ID: P400786

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2258566	Fluoride	0.506	Spike	P	0 - 2.1

Reference Method: SM 5310 B-2011
 Batch ID: P400822

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2258043	Organic Carbon	0.401	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2258105
Field Sample ID: G4SD0174

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8276	Decachlorobiphenyl	72.2	P	29 - 92.0
EPA 8276	PCNB	99.4	P	43 - 134

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A106369

Included Lab Sample IDs: 2258086, 2258091, 2258092, 2258095, 2258098

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.3	99.3	P/P	90 - 110
O-Phosphate-P	99.3	99.8	P/P	90 - 110

Reference Method: SM 2120 B-2011

Run ID: A106379

Included Lab Sample IDs: 2258084, 2258087, 2258088, 2258093, 2258096

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	99.7	101	P/P	90 - 115

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A106383

Included Lab Sample IDs: 2258084, 2258087, 2258088, 2258093, 2258096

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	100	99.0	P/P	95 - 105
Turbidity	99.0	99.0	P/P	95 - 105

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A106386

Included Lab Sample IDs: 2258089, 2258090, 2258094

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	101	100	P/P	90 - 110
NO2NO3-N	102	101	P/P	90 - 110

Reference Method: EPA 8276

Run ID: A106437

Included Lab Sample IDs: 2258105

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chlordane	100		P	80 - 120
Toxaphene	95.8		P	80 - 120

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A106455

Included Lab Sample IDs: 2258089, 2258094

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A106459

Included Lab Sample IDs: 2258090

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	98.2	98.8	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A106481

Included Lab Sample IDs: 2258084, 2258087, 2258088, 2258093, 2258096

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	98.7	98.8	P/P	90 - 110
Chloride	99.2	98.7	P/P	90 - 110
Sulfate	98.4	98.6	P/P	90 - 110
Sulfate	99.1	98.4	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A106531

Included Lab Sample IDs: 2258089

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	96.7	96.2	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A106546

Included Lab Sample IDs: 2258084, 2258087, 2258088, 2258093, 2258096

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	101	102	P/P	90 - 110
Total Alkalinity	103	101	P/P	90 - 110

Reference Method: SM 4500 F-C-2011

Run ID: A106546

Included Lab Sample IDs: 2258084, 2258087, 2258088, 2258093, 2258096

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	102	104	P/P	90 - 110
Fluoride	104	102	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A106565

Included Lab Sample IDs: 2258089, 2258090, 2258094

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	100	99.8	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A106612

Included Lab Sample IDs: 2258090, 2258094

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.5	98.5	P/P	90 - 110
Ammonia-N	98.8	99.5	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A106788

Included Lab Sample IDs: 2258089, 2258090, 2258094

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	104	107	P/P	90 - 110
Kjeldahl Nitrogen	98.2	104	P/P	90 - 110

Quality Assurance Report

Calibration Verification

* 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		LCS	Precision	
							SMP	MS
EPA 180.1 Rev. 2.0	Turbidity						6.90	
	Turbidity						0.0	
EPA 300.0 Rev. 2.1	Chloride	99.5		97.4	98.4		0.430	
	Sulfate	99.4		95.6	98.2		0.389	
EPA 350.1 Rev. 2.0	Ammonia-N	92.2		96.4	97.0			0.367
	Ammonia-N	98.8		99.0	99.2			0.173
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	98.7		94.3	98.0			3.27
EPA 353.2 Rev. 2.0	NO2NO3-N	101		102	102			0.489
	NO2NO3-N	100		97.5	98.0			0.358
EPA 365.1 Rev. 2.0	Total-P	102		102	105			2.22
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	101		101	100			0.166
	O-Phosphate-P	102		101	99.9			0.897
EPA 8276	Chlordane	77.9	76.0	81.2	81.6	2.52		0.593
	Toxaphene	62.2	59.9	72.8	67.7	3.81		7.18
SM 2120 B-2011	Color (true)	101					0.0558	
SM 2320 B-2011	Total Alkalinity	103					0.135	
	Total Alkalinity	102					1.54	
SM 2540 C-2011	TDS						6.21	
	TDS						5.71	
SM 4500 F-C-2011	Fluoride	100		97.2	98.4			0.972
	Fluoride	100		99.4	98.8			0.506
SM 5310 B-2011	Organic Carbon	98.5		100	99.8			0.401

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2258084, 2258087, 2258088, 2258093, 2258096
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2258084, 2258087, 2258088, 2258093, 2258096
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2258084, 2258087, 2258088, 2258093, 2258096
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2258089, 2258090, 2258094
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2258089, 2258090, 2258094
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2258089, 2258090, 2258094
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2258089, 2258090, 2258094
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2258086, 2258091, 2258092, 2258095, 2258098
EPA 8276	Organochlorine pesticides in water matrices by GC/MS with Negative Chemical Ionization	2258105
SM 2120 B-2011	True Color measured at 450 nm (not valid for NPDES monitoring)	2258084, 2258087, 2258088, 2258093, 2258096
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2258084, 2258087, 2258088, 2258093, 2258096
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2258084, 2258087, 2258088, 2258093, 2258096
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2258084, 2258087, 2258088, 2258093, 2258096
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2258084, 2258087, 2258088, 2258093, 2258096
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2258089, 2258090, 2258094

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 180.1 Rev. 2.0	06/30/2021			06/30/2021 16:33	Sarah A Nixon	2258084, 2258087, 2258088, 2258093, 2258096
EPA 300.0 Rev. 2.1	06/30/2021			07/08/2021 17:17	Lipi Saha	2258084
	06/30/2021			07/08/2021 17:29	Lipi Saha	2258087
	06/30/2021			07/08/2021 17:41	Lipi Saha	2258088
	06/30/2021			07/08/2021 17:53	Lipi Saha	2258093
	06/30/2021			07/08/2021 18:29	Lipi Saha	2258096
EPA 350.1 Rev. 2.0	06/30/2021			07/09/2021 13:00	Roberta Tatti	2258089
	06/30/2021			07/14/2021 12:10	Roberta Tatti	2258090
	06/30/2021			07/14/2021 13:41	Roberta Tatti	2258094
EPA 351.2 Rev. 2.0	06/30/2021	07/21/2021 14:12	Benjamin T. Nordmann	07/22/2021 18:21	Letuzia M De Oliveira	2258089
	06/30/2021	07/21/2021 14:12	Benjamin T. Nordmann	07/22/2021 18:26	Letuzia M De Oliveira	2258090
	06/30/2021	07/21/2021 14:12	Benjamin T. Nordmann	07/22/2021 18:27	Letuzia M De Oliveira	2258094
EPA 353.2 Rev. 2.0	06/30/2021			07/01/2021 10:52	Beverly Y. Sanders	2258089
	06/30/2021			07/01/2021 10:54	Beverly Y. Sanders	2258090
	06/30/2021			07/01/2021 11:01	Beverly Y. Sanders	2258094
EPA 365.1 Rev. 2.0	06/30/2021	07/02/2021 14:09	Madeline Gruver	07/06/2021 11:03	Shengyu Ding	2258089
	06/30/2021	07/02/2021 14:09	Madeline Gruver	07/06/2021 11:06	Shengyu Ding	2258094
	06/30/2021	07/02/2021 14:09	Madeline Gruver	07/06/2021 13:39	Shengyu Ding	2258090
EPA 365.1 Rev. 2.0 dissolved	06/30/2021			06/30/2021 14:18	Ping Hua	2258086
	06/30/2021			06/30/2021 14:31	Ping Hua	2258092
	06/30/2021			06/30/2021 14:33	Ping Hua	2258091
	06/30/2021			06/30/2021 14:34	Ping Hua	2258095
	06/30/2021			06/30/2021 14:35	Ping Hua	2258098
EPA 8276	06/30/2021	07/01/2021 08:30	Rasheda Ghaffari	07/05/2021 18:44	Michael Poppell	2258105
SM 2120 B-2011	06/30/2021			06/30/2021 17:24	Sarah A Nixon	2258084
	06/30/2021			06/30/2021 17:27	Sarah A Nixon	2258087
	06/30/2021			06/30/2021 17:28	Sarah A Nixon	2258088
	06/30/2021			06/30/2021 17:29	Sarah A Nixon	2258093
	06/30/2021			06/30/2021 17:30	Sarah A Nixon	2258096
SM 2320 B-2011	06/30/2021			07/10/2021 02:50	Dale L. Simmons	2258084
	06/30/2021			07/10/2021 05:22	Dale L. Simmons	2258087
	06/30/2021			07/10/2021 05:37	Dale L. Simmons	2258088
	06/30/2021			07/10/2021 05:51	Dale L. Simmons	2258093
	06/30/2021			07/10/2021 06:00	Dale L. Simmons	2258096
SM 2540 C-2011	06/30/2021			07/01/2021 15:22	Yijie Li	2258084, 2258087, 2258088, 2258093, 2258096
SM 2540 D-2011	06/30/2021			07/01/2021 15:22	Yijie Li	2258084, 2258087, 2258088, 2258093, 2258096
SM 4500 F-C-2011	06/30/2021			07/10/2021 02:50	Dale L. Simmons	2258084
	06/30/2021			07/10/2021 05:22	Dale L. Simmons	2258087

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 4500 F-C-2011	06/30/2021			07/10/2021 05:37	Dale L. Simmons	2258088
	06/30/2021			07/10/2021 05:51	Dale L. Simmons	2258093
	06/30/2021			07/10/2021 06:00	Dale L. Simmons	2258096
SM 5310 B-2011	06/30/2021			07/09/2021 22:14	Madeline Gruver	2258089
	06/30/2021			07/09/2021 22:27	Madeline Gruver	2258090
	06/30/2021			07/09/2021 22:40	Madeline Gruver	2258094