

Chemical Analysis Report

SO-DIST-2021-08-31-01

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

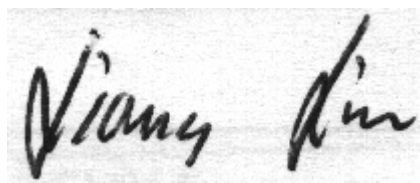
Event Description: **2021 SMP : Okee Canals**
Request ID: **RQ-2021-08-30-39**
Customer: **SO-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
FLDEP South District Office
2295 Victoria Ave. Suite 364
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Certified by: Liang Lin, Environmental Administrator

Date Certified: 23-SEP-2021 14:17

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: 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 @ SR 70

Collection Date/Time: 08/30/2021 09:20

Field ID: G4SD0173

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2272774	EPA 180.1 Rev. 2.0	Turbidity	2.5		NTU	P403227	
	EPA 300.0 Rev. 2.1	Chloride	32		mg Cl/L	P403407	
		Sulfate	55		mg SO4/L	P403409	
	SM 2120 B-2011	Color (true)	310		PCU	P403224	
	SM 2320 B-2011	Total Alkalinity	51	A	mg CaCO3/L	P403300	
	SM 2540 C-2011	TDS	280		mg/L	P403469	
	SM 2540 D-2011	TSS	2	I	mg/L	P403470	
	SM 4500 F-C-2011	Fluoride	0.12		mg F/L	P403302	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.38		mg N/L	P403322	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	2.3		mg N/L	P403357	RPD
2272776	EPA 353.2 Rev. 2.0	NO2NO3-N	0.030		mg N/L	P403295	
	EPA 365.1 Rev. 2.0	Total-P	0.41		mg P/L	P403246	
	SM 5310 B-2011	Organic Carbon	35		mg C/L	P403345	
	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.33		mg P/L	P403219	

Ref. Method and Comment:

EPA 351.2 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: Indian Prairie Canal @ SR 70

Collection Date/Time: 08/30/2021 09:45

Field ID: G4SD0174

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2272780	EPA 180.1 Rev. 2.0	Turbidity	5.1		NTU	P403227	
	EPA 300.0 Rev. 2.1	Chloride	23		mg Cl/L	P403407	
		Sulfate	17		mg SO4/L	P403409	
		Color (true)	300		PCU	P403224	
	SM 2320 B-2011	Total Alkalinity	17		mg CaCO3/L	P403300	
	SM 2540 C-2011	TDS	156	A	mg/L	P403469	
	SM 2540 D-2011	TSS	5	I	mg/L	P403470	
	SM 4500 F-C-2011	Fluoride	0.076	I	mg F/L	P403302	
2272781	EPA 350.1 Rev. 2.0	Ammonia-N	0.18		mg N/L	P403322	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.7		mg N/L	P403357	RPD
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P403295	
	EPA 365.1 Rev. 2.0	Total-P	0.045		mg P/L	P403246	
	SM 5310 B-2011	Organic Carbon	26		mg C/L	P403345	
2272782	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P403220	
2272788	EPA 8276	Chlordane	5.1	U	ng/L	P403259	
		Toxaphene	31	U	ng/L	P403259	

Ref. Method and Comment:

EPA 351.2 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: C-41 A @ SR 70

Collection Date/Time: 08/30/2021 10:15

Field ID: G4SD0175

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2272775	EPA 180.1 Rev. 2.0	Turbidity	11		NTU	P403227	
	EPA 300.0 Rev. 2.1	Chloride	25		mg Cl/L	P403407	
		Sulfate	25		mg SO4/L	P403409	
	SM 2120 B-2011	Color (true)	77		PCU	P403224	
	SM 2320 B-2011	Total Alkalinity	26		mg CaCO3/L	P403300	
	SM 2540 C-2011	TDS	151		mg/L	P403469	
	SM 2540 D-2011	TSS	26	A	mg/L	P403470	
	SM 4500 F-C-2011	Fluoride	0.077	I	mg F/L	P403302	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.006		mg N/L	P403322	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.6		mg N/L	P403411	
2272777	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P403295	
	EPA 365.1 Rev. 2.0	Total-P	0.075		mg P/L	P403246	
	SM 5310 B-2011	Organic Carbon	16		mg C/L	P403345	
	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P403219	

Sample Location: L-49

Collection Date/Time: 08/30/2021 10:55

Field ID: G4SD0190

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2272771	EPA 180.1 Rev. 2.0	Turbidity	1.9	A	NTU	P403227	
	EPA 300.0 Rev. 2.1	Chloride	100		mg Cl/L	P403407	
		Sulfate	43		mg SO4/L	P403409	
	SM 2120 B-2011	Color (true)	88	A	PCU	P403224	
	SM 2320 B-2011	Total Alkalinity	196		mg CaCO3/L	P403300	
	SM 2540 C-2011	TDS	502		mg/L	P403469	
	SM 2540 D-2011	TSS	2	I	mg/L	P403470	
	SM 4500 F-C-2011	Fluoride	0.20		mg F/L	P403302	
2272772	EPA 350.1 Rev. 2.0	Ammonia-N	0.008		mg N/L	P403322	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.4		mg N/L	P403357	RPD
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P403295	
	EPA 365.1 Rev. 2.0	Total-P	0.037		mg P/L	P403246	
	SM 5310 B-2011	Organic Carbon	20		mg C/L	P403345	
2272773	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P403219	

Ref. Method and Comment:

EPA 351.2 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P403227

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P403407

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P403409

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P403322

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P403357

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P403411

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P403295

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P403246

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P403219

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: P403220

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

Reference Method: EPA 8276
Batch ID: P403259

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: P403224

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-2011
Batch ID: P403300

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

Reference Method: SM 2540 C-2011
Batch ID: P403469

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P403470

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P403302

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P403345

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: P403407

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	99.3		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P403409

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	98.3		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P403322

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	98.2		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P403357

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	93.6		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P403411

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	103		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P403295

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P403246

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P403219

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P403220

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8276

Batch ID: P403259

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlordane	96.4	89.1	P/P	56 - 117
Toxaphene	100	86.2	P/P	45 - 116

Reference Method: SM 2120 B-2011

Batch ID: P403224

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

Reference Method: SM 2320 B-2011

Batch ID: P403300

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	100		P	94 - 106

Reference Method: SM 4500 F-C-2011

Batch ID: P403302

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

Reference Method: SM 5310 B-2011

Batch ID: P403345

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	99.2		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P403407

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2272421	Chloride	97.5		P	90 - 110
2272891	Chloride	97.3		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P403409

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2272421	Sulfate	98.0		P	90 - 110
2272891	Sulfate	98.4		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P403322

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2272730	Ammonia-N	95.8	96.6	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P403411

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2273162	Kjeldahl Nitrogen	103	100	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P403295

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2272730	NO2NO3-N	98.5	98.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P403246

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2272772	Total-P	103	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P403219

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2272731	O-Phosphate-P	96.3	97.3	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P403220

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2272803	O-Phosphate-P	102	103	P/P	90 - 110

Reference Method: EPA 8276
Batch ID: P403259

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2272899	Chlordane	66.2	78.4	P/P	47 - 128
2272899	Toxaphene	74.5	77.1	P/P	11 - 163

Quality Assurance Report

Matrix Spike Accuracy

Reference Method: SM 4500 F-C-2011
Batch ID: P403302

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2272774	Fluoride	100	99.1	P/P	92 - 107

Reference Method: SM 5310 B-2011
Batch ID: P403345

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2272233	Organic Carbon	96.2	98.8	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P403227

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2272771	Turbidity	0.0	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P403407

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2272421	Chloride	0.345	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P403409

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2272421	Sulfate	0.156	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P403322

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2272730	Ammonia-N	0.738	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P403357

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2272729	Kjeldahl Nitrogen	24.5	Spike	F	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P403411

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2273162	Kjeldahl Nitrogen	1.90	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P403295

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2272730	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P403246

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2272772	Total-P	1.34	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P403219

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2272731	O-Phosphate-P	1.03	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P403220

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2272803	O-Phosphate-P	0.433	Spike	P	0 - 20

Reference Method: EPA 8276
Batch ID: P403259

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2272899	Chlordane	16.9	Spike	P	0 - 30
2272899	Toxaphene	3.45	Spike	P	0 - 30
LFB	Chlordane	7.84	LCS	P	0 - 30
LFB	Toxaphene	15.1	LCS	P	0 - 30

Reference Method: SM 2120 B-2011
Batch ID: P403224

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2272771	Color (true)	0.986	Sample	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P403300

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2272774	Total Alkalinity	2.41	Sample	P	0 - 5.2

Reference Method: SM 2540 C-2011
Batch ID: P403469

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2272780	TDS	0.639	Sample	P	0 - 10

Reference Method: SM 2540 D-2011
Batch ID: P403470

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2272775	TSS	0.0	Sample	P	0 - 10

Quality Assurance Report Precision

Reference Method: SM 4500 F-C-2011
Batch ID: P403302

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2272774	Fluoride	0.953	Spike	P	0 - 2.1

Reference Method: SM 5310 B-2011
Batch ID: P403345

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2272233	Organic Carbon	1.58	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2272788
Field Sample ID: G4SD0174

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8276	Decachlorobiphenyl	73.7	P	29 - 92.0
EPA 8276	PCNB	85.1	P	43 - 134

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A107576

Included Lab Sample IDs: 2272773, 2272778, 2272779, 2272782

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

Reference Method: SM 2120 B-2011

Run ID: A107577

Included Lab Sample IDs: 2272771, 2272774, 2272775, 2272780

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	99.9	100	P/P	90 - 115

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A107578

Included Lab Sample IDs: 2272771, 2272774, 2272775, 2272780

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A107613

Included Lab Sample IDs: 2272772, 2272776, 2272777, 2272781

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	98.5	98.0	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A107614

Included Lab Sample IDs: 2272771, 2272774, 2272775, 2272780

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	101	102	P/P	90 - 110
Total Alkalinity	102	99.6	P/P	90 - 110

Reference Method: SM 4500 F-C-2011

Run ID: A107614

Included Lab Sample IDs: 2272771, 2272774, 2272775, 2272780

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A107615

Included Lab Sample IDs: 2272776, 2272777

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.4	99.6	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A107618

Included Lab Sample IDs: 2272772, 2272776, 2272777, 2272781

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.1	98.4	P/P	90 - 110
Ammonia-N	98.4	98.1	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A107622

Included Lab Sample IDs: 2272772, 2272781

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

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A107634

Included Lab Sample IDs: 2272771, 2272774, 2272775, 2272780

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	99.3	100	P/P	90 - 110
Sulfate	99.0	100	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A107635

Included Lab Sample IDs: 2272772, 2272776, 2272777, 2272781

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A107660

Included Lab Sample IDs: 2272772, 2272776, 2272781

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	96.3	96.0	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A107697

Included Lab Sample IDs: 2272777

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	96.3	101	P/P	90 - 110

Reference Method: EPA 8276

Run ID: A107749

Included Lab Sample IDs: 2272788

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chlordane	99.6		P	80 - 120
Toxaphene	109		P	80 - 120

* 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						0.0	
EPA 300.0 Rev. 2.1	Chloride	99.3		97.5	97.3		0.345	
	Sulfate	98.3		98.0	98.4		0.156	
EPA 350.1 Rev. 2.0	Ammonia-N	98.2		95.8	96.6			0.738
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	93.6						24.5
	Kjeldahl Nitrogen	103		103	100			1.90
EPA 353.2 Rev. 2.0	NO2NO3-N	98.0		98.5	98.5			0.0
EPA 365.1 Rev. 2.0	Total-P	106		103	104			1.34
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	99.9		96.3	97.3			1.03
	O-Phosphate-P	102		102	103			0.433
EPA 8276	Chlordane	96.4	89.1	66.2	78.4	7.84		16.9
	Toxaphene	100	86.2	74.5	77.1	15.1		3.45
SM 2120 B-2011	Color (true)	101					0.986	
SM 2320 B-2011	Total Alkalinity	100					2.41	
SM 2540 C-2011	TDS						0.639	
SM 2540 D-2011	TSS						0.0	
SM 4500 F-C-2011	Fluoride	100		100	99.1			0.953
SM 5310 B-2011	Organic Carbon	99.2		96.2	98.8			1.58

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2272771, 2272774, 2272775, 2272780
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2272771, 2272774, 2272775, 2272780
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2272771, 2272774, 2272775, 2272780
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2272772, 2272776, 2272777, 2272781
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2272772, 2272776, 2272777, 2272781
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2272772, 2272776, 2272777, 2272781
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2272772, 2272776, 2272777, 2272781
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2272773, 2272778, 2272779, 2272782
EPA 8276	Organochlorine pesticides in water matrices by GC/MS with Negative Chemical Ionization	2272788
SM 2120 B-2011	True Color measured at 450 nm (not valid for NPDES monitoring)	2272771, 2272774, 2272775, 2272780
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2272771, 2272774, 2272775, 2272780
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2272771, 2272774, 2272775, 2272780
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2272771, 2272774, 2272775, 2272780
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2272771, 2272774, 2272775, 2272780
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2272772, 2272776, 2272777, 2272781

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	08/31/2021			08/31/2021 14:52	Sarah A Nixon	2272771, 2272774, 2272775, 2272780
EPA 300.0 Rev. 2.1	08/31/2021			09/03/2021 16:11	Roberta Tatti	2272771
	08/31/2021			09/03/2021 16:23	Roberta Tatti	2272774
	08/31/2021			09/03/2021 16:35	Roberta Tatti	2272775
	08/31/2021			09/03/2021 16:47	Roberta Tatti	2272780
EPA 350.1 Rev. 2.0	08/31/2021			09/02/2021 12:58	Ping Hua	2272772
	08/31/2021			09/02/2021 13:02	Ping Hua	2272781
	08/31/2021			09/02/2021 13:17	Ping Hua	2272776
	08/31/2021			09/02/2021 13:18	Ping Hua	2272777
EPA 351.2 Rev. 2.0	08/31/2021	09/03/2021 13:24	Benjamin T. Nordmann	09/07/2021 11:57	Alexandra J Mattheus	2272772
	08/31/2021	09/03/2021 13:24	Benjamin T. Nordmann	09/07/2021 11:59	Alexandra J Mattheus	2272776
	08/31/2021	09/03/2021 13:24	Benjamin T. Nordmann	09/07/2021 12:02	Alexandra J Mattheus	2272781
	08/31/2021	09/08/2021 16:15	Benjamin T. Nordmann	09/09/2021 12:02	Alexandra J Mattheus	2272777
EPA 353.2 Rev. 2.0	08/31/2021			09/02/2021 09:48	Beverly Y. Sanders	2272772
	08/31/2021			09/02/2021 09:49	Beverly Y. Sanders	2272776
	08/31/2021			09/02/2021 09:50	Beverly Y. Sanders	2272777
	08/31/2021			09/02/2021 09:51	Beverly Y. Sanders	2272781
EPA 365.1 Rev. 2.0	08/31/2021	09/01/2021 14:48	Simonne.V. Calhoun	09/02/2021 11:01	Lipi Saha	2272776
	08/31/2021	09/01/2021 14:48	Simonne.V. Calhoun	09/02/2021 11:02	Lipi Saha	2272777
	08/31/2021	09/01/2021 14:48	Simonne.V. Calhoun	09/02/2021 15:18	Lipi Saha	2272772
	08/31/2021	09/01/2021 14:48	Simonne.V. Calhoun	09/02/2021 15:22	Lipi Saha	2272781
EPA 365.1 Rev. 2.0 dissolved	08/31/2021			08/31/2021 14:36	James L Waggeberby	2272773
	08/31/2021			08/31/2021 14:37	James L Waggeberby	2272778
	08/31/2021			08/31/2021 14:44	James L Waggeberby	2272779
	08/31/2021			08/31/2021 14:50	James L Waggeberby	2272782
EPA 8276	08/31/2021	09/03/2021 08:00	Rasheda Ghaffari	09/10/2021 07:22	Julie Wi	2272788
SM 2120 B-2011	08/31/2021			08/31/2021 15:40	Sarah A Nixon	2272771
	08/31/2021			08/31/2021 15:42	Sarah A Nixon	2272775
	08/31/2021			08/31/2021 15:45	Sarah A Nixon	2272774
	08/31/2021			08/31/2021 15:46	Sarah A Nixon	2272780
SM 2320 B-2011	08/31/2021			09/01/2021 15:26	Dale L. Simmons	2272774
	08/31/2021			09/01/2021 16:29	Dale L. Simmons	2272771
	08/31/2021			09/01/2021 16:43	Dale L. Simmons	2272775
	08/31/2021			09/01/2021 16:56	Dale L. Simmons	2272780
SM 2540 C-2011	08/31/2021			09/03/2021 11:43	Simonne.V. Calhoun	2272771, 2272774, 2272775, 2272780
SM 2540 D-2011	08/31/2021			09/03/2021 16:00	Simonne.V. Calhoun	2272771, 2272774, 2272775, 2272780
SM 4500 F-C-2011	08/31/2021			09/01/2021 15:14	Dale L. Simmons	2272774
	08/31/2021			09/01/2021 16:29	Dale L. Simmons	2272771
	08/31/2021			09/01/2021 16:43	Dale L. Simmons	2272775
	08/31/2021			09/01/2021 16:56	Dale L. Simmons	2272780

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 5310 B-2011	08/31/2021			09/02/2021 09:04	Touraj Touran	2272772
	08/31/2021			09/02/2021 09:17	Touraj Touran	2272776
	08/31/2021			09/02/2021 09:30	Touraj Touran	2272777
	08/31/2021			09/02/2021 09:43	Touraj Touran	2272781