

Chemical Analysis Report

SO-DIST-2021-08-10-02

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

Event Description: **2021 SMP : Myakka**

Request ID: **RQ-2021-08-02-76**

Customer: **SO-DIST**

Project ID: **SMP**

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FLDEP South District Office
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Date Certified: 01-SEP-2021 15:41



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: Osborn Branch

Collection Date/Time: 08/09/2021 10:05

Field ID: G3SD0179

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2268352	EPA 180.1 Rev. 2.0	Turbidity	0.90		NTU	P402282	
	EPA 300.0 Rev. 2.1	Chloride	14		mg Cl/L	P402550	
		Sulfate	36		mg SO4/L	P402552	
		Color (true)	280		PCU	P402285	
	SM 2320 B-2011	Total Alkalinity	27		mg CaCO3/L	P402367	
	SM 2540 C-2011	TDS	172		mg/L	P402570	
	SM 2540 D-2011	TSS	2	I	mg/L	P402575	
	SM 4500 F-C-2011	Fluoride	0.10		mg F/L	P402623	
2268353	EPA 350.1 Rev. 2.0	Ammonia-N	0.008		mg N/L	P402457	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.1		mg N/L	P402964	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P402300	
	EPA 365.1 Rev. 2.0	Total-P	0.089		mg P/L	P402355	MS
	SM 5310 B-2011	Organic Carbon	28		mg C/L	P402992	
2268354	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.057		mg P/L	P402278	

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Sulfate: Batch matrix spike recoveries for one of two spiked samples are unavailable because of high analyte concentration in the QC sample.

SM 2540 C-2011: The result was confirmed on 8/25/2021.

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

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

Sample Location: Brandy Branch @ SR 70

Collection Date/Time: 08/09/2021 10:50

Field ID: G3SD0083

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2268355	EPA 180.1 Rev. 2.0	Turbidity	4.8	A	NTU	P402283	
	EPA 300.0 Rev. 2.1	Chloride	20		mg Cl/L	P402550	
		Sulfate	310		mg SO4/L	P402927	
	SM 2120 B-2011	Color (true)	250		PCU	P402285	
	SM 2320 B-2011	Total Alkalinity	42		mg CaCO3/L	P402370	
	SM 2540 C-2011	TDS	667	A	mg/L	P402571	
	SM 2540 D-2011	TSS	10	A	mg/L	P402576	
	SM 4500 F-C-2011	Fluoride	0.41		mg F/L	P402623	
2268356	EPA 350.1 Rev. 2.0	Ammonia-N	0.058		mg N/L	P402457	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.5		mg N/L	P402964	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.57		mg N/L	P402300	
	EPA 365.1 Rev. 2.0	Total-P	0.44		mg P/L	P402404	
	SM 5310 B-2011	Organic Carbon	25		mg C/L	P402992	
2268357	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.32		mg P/L	P402278	
2268365	EPA 8276	Chlordane	5.2	U	ng/L	P402230	
		Toxaphene	31	UJ	ng/L	P402230	CCV

Ref. Method and Comment:

SM 2540 C-2011: The result was confirmed on 8/25/2021.

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

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

EPA 8276: Refer to the Lab Analysis Report for an explanation of QC Codes.

Sample Location: Lake Myakka (Lower) @ Middle

Collection Date/Time: 08/09/2021 12:20

Field ID: G3SD0107

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2268349	EPA 180.1 Rev. 2.0	Turbidity	3.3		NTU	P402282	
	EPA 300.0 Rev. 2.1	Chloride	15	A	mg Cl/L	P402550	
		Sulfate	65	A	mg SO4/L	P402552	
	SM 2120 B-2011	Color (true)	230		PCU	P402285	
	SM 2320 B-2011	Total Alkalinity	40		mg CaCO3/L	P402367	
	SM 2540 C-2011	TDS	215		mg/L	P402570	
	SM 2540 D-2011	TSS	6	I	mg/L	P402575	
	SM 4500 F-C-2011	Fluoride	0.20		mg F/L	P402623	
2268350	EPA 350.1 Rev. 2.0	Ammonia-N	0.009		mg N/L	P402457	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.6		mg N/L	P402964	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P402299	
	EPA 365.1 Rev. 2.0	Total-P	0.68		mg P/L	P402355	MS
	SM 5310 B-2011	Organic Carbon	24		mg C/L	P402992	
2268351	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.54		mg P/L	P402278	

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Sulfate: Batch matrix spike recoveries for one of two spiked samples are unavailable because of high analyte concentration in the QC sample.

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

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: P402282

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P402283

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P402550

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P402552

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P402927

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P402457

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P402964

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P402299

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P402300

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: P402355

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P402404

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P402278

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

Reference Method: EPA 8276
Batch ID: P402230

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: P402285

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-2011
Batch ID: P402367

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

Reference Method: SM 2320 B-2011
Batch ID: P402370

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

Reference Method: SM 2540 C-2011
Batch ID: P402570

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-2011
Batch ID: P402571

Component	Result	Code	Units
TDS	15	U	mg/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 2540 D-2011
Batch ID: P402575

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P402576

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P402623

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P402992

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: P402550

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P402552

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P402927

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P402457

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	99.8		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P402964

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P402299

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P402300

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P402355

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	108		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P402404

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	109		P	90 - 110

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P402278

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

Reference Method: EPA 8276
Batch ID: P402230

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlordane	72.5	64.4	P/P	56 - 117
Toxaphene	60.4	57.5	P/P	45 - 116

Reference Method: SM 2120 B-2011
Batch ID: P402285

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	99.5		P	85 - 115

Reference Method: SM 2320 B-2011
Batch ID: P402367

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	99.5		P	94 - 106

Reference Method: SM 2320 B-2011
Batch ID: P402370

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

Reference Method: SM 4500 F-C-2011
Batch ID: P402623

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	99.9		P	93 - 104

Reference Method: SM 5310 B-2011
Batch ID: P402992

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	96.4		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P402550

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2268349	Chloride	96.3		P	90 - 110
2268421	Chloride	99.1		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P402552

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2268421	Sulfate	101		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P402927

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2269094	Sulfate	101		P	90 - 110
2269240	Sulfate	96.1		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P402457

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2268353	Ammonia-N	100	99.8	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P402299

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2268329	NO2NO3-N	102	102	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P402300

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2268390	NO2NO3-N	100	99.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P402355

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2268341	Total-P	110	108	F/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P402404

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2268373	Total-P	109	108	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P402278

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2268330	O-Phosphate-P	100	99.9	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8276

Batch ID: P402230

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2268338	Chlordane	62.9	63.3	P/P	47 - 128
2268338	Toxaphene	59.4	59.3	P/P	11 - 163

Reference Method: SM 4500 F-C-2011

Batch ID: P402623

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2268224	Fluoride	99.1	98.6	P/P	92 - 107

Reference Method: SM 5310 B-2011

Batch ID: P402992

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2268329	Organic Carbon	97.8	94.0	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P402282

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2268296	Turbidity	0.707	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P402283

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2268355	Turbidity	0.417	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P402550

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2268349	Chloride	0.488	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P402552

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2268349	Sulfate	0.910	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P402927

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2269240	Sulfate	0.446	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P402457

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2268353	Ammonia-N	0.172	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P402964

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2268372	Kjeldahl Nitrogen	0.878	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P402299

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2268329	NO2NO3-N	0.491	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P402300

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2268390	NO2NO3-N	0.501	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P402355

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2268341	Total-P	1.18	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P402404

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2268373	Total-P	1.21	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P402278

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2268330	O-Phosphate-P	0.100	Spike	P	0 - 20

Reference Method: EPA 8276

Batch ID: P402230

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2268338	Chlordane	0.577	Spike	P	0 - 30
2268338	Toxaphene	0.155	Spike	P	0 - 30
LFB	Chlordane	11.8	LCS	P	0 - 30
LFB	Toxaphene	4.94	LCS	P	0 - 30

Reference Method: SM 2120 B-2011

Batch ID: P402285

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2268328	Color (true)	0.960	Sample	P	0 - 20

Reference Method: SM 2320 B-2011

Batch ID: P402367

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2268224	Total Alkalinity	2.20	Sample	P	0 - 5.2

Quality Assurance Report Precision

Reference Method: SM 2320 B-2011
Batch ID: P402370

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2268226	Total Alkalinity	0.486	Sample	P	0 - 5.2

Reference Method: SM 2540 C-2011
Batch ID: P402570

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2268226	TDS	2.20	Sample	P	0 - 10

Reference Method: SM 2540 C-2011
Batch ID: P402571

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2268355	TDS	1.50	Sample	P	0 - 10

Reference Method: SM 4500 F-C-2011
Batch ID: P402623

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2268224	Fluoride	0.479	Spike	P	0 - 2.1

Reference Method: SM 5310 B-2011
Batch ID: P402992

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2268329	Organic Carbon	2.34	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2268365
Field Sample ID: G3SD0083

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8276	Decachlorobiphenyl	62.5	P	29 - 92.0
EPA 8276	PCNB	74.2	P	43 - 134

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A107156

Included Lab Sample IDs: 2268351, 2268354, 2268357

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.3	98.9	P/P	90 - 110
O-Phosphate-P	98.7	100	P/P	90 - 110
O-Phosphate-P	98.9	99.5	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A107157

Included Lab Sample IDs: 2268349, 2268352, 2268355

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	102	102	P/P	95 - 105
Turbidity	102	101	P/P	95 - 105

Reference Method: SM 2120 B-2011

Run ID: A107158

Included Lab Sample IDs: 2268349, 2268352, 2268355

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	101	102	P/P	90 - 115

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A107169

Included Lab Sample IDs: 2268350, 2268353, 2268356

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

Reference Method: SM 2320 B-2011

Run ID: A107204

Included Lab Sample IDs: 2268349, 2268352, 2268355

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	103	99.2	P/P	90 - 110
Total Alkalinity	99.2	101	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A107243

Included Lab Sample IDs: 2268350, 2268353, 2268356

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.5	98.7	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A107249

Included Lab Sample IDs: 2268350, 2268353

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	107	106	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A107257

Included Lab Sample IDs: 2268356

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	108	108	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A107288

Included Lab Sample IDs: 2268349, 2268352, 2268355

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	100	99.9	P/P	90 - 110
Sulfate	100	100	P/P	90 - 110

Reference Method: SM 4500 F-C-2011

Run ID: A107310

Included Lab Sample IDs: 2268349, 2268352, 2268355

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

Reference Method: EPA 8276

Run ID: A107328

Included Lab Sample IDs: 2268365

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chlordane	94.2		P	80 - 120
Toxaphene	61.2*		F	80 - 120

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A107449

Included Lab Sample IDs: 2268355

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

Reference Method: SM 5310 B-2011

Run ID: A107473

Included Lab Sample IDs: 2268350, 2268353, 2268356

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	95.8	95.5	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A107494

Included Lab Sample IDs: 2268350, 2268353, 2268356

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	105	105	P/P	90 - 110
Kjeldahl Nitrogen	105	101	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		LCS	Precision	
							SMP	MS
EPA 180.1 Rev. 2.0	Turbidity						0.707	
	Turbidity						0.417	
EPA 300.0 Rev. 2.1	Chloride	100		96.3	99.1		0.488	
	Sulfate	101		101			0.910	
	Sulfate	102		96.1	101		0.446	
EPA 350.1 Rev. 2.0	Ammonia-N	99.8		100	99.8			0.172
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	106						0.878
EPA 353.2 Rev. 2.0	NO2NO3-N	102		102	102			0.491
	NO2NO3-N	102		100	99.5			0.501
EPA 365.1 Rev. 2.0	Total-P	108		110	108			1.18
	Total-P	109		109	108			1.21
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	99.0		100	99.9			0.100
EPA 8276	Chlordane	72.5	64.4	62.9	63.3	11.8		0.577
	Toxaphene	60.4	57.5	59.4	59.3	4.94		0.155
SM 2120 B-2011	Color (true)	99.5					0.960	
SM 2320 B-2011	Total Alkalinity	99.5					2.20	
	Total Alkalinity	102					0.486	
SM 2540 C-2011	TDS						2.20	
	TDS						1.50	
SM 4500 F-C-2011	Fluoride	99.9		99.1	98.6			0.479
SM 5310 B-2011	Organic Carbon	96.4		97.8	94.0			2.34

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2268349, 2268352, 2268355
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2268349, 2268352, 2268355
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2268349, 2268352, 2268355
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2268350, 2268353, 2268356
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2268350, 2268353, 2268356
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2268350, 2268353, 2268356
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2268350, 2268353, 2268356
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2268351, 2268354, 2268357
EPA 8276	Organochlorine pesticides in water matrices by GC/MS with Negative Chemical Ionization	2268365
SM 2120 B-2011	True Color measured at 450 nm (not valid for NPDES monitoring)	2268349, 2268352, 2268355
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2268349, 2268352, 2268355
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2268349, 2268352, 2268355
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2268349, 2268352, 2268355
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2268349, 2268352, 2268355
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2268350, 2268353, 2268356

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	08/10/2021			08/10/2021 15:49	Sarah A Nixon	2268349, 2268352, 2268355
EPA 300.0 Rev. 2.1	08/10/2021			08/17/2021 00:42	Lipi Saha	2268349
	08/10/2021			08/17/2021 01:31	Lipi Saha	2268352
	08/10/2021			08/17/2021 01:43	Lipi Saha	2268355
	08/10/2021			08/24/2021 01:12	Lipi Saha	2268355
EPA 350.1 Rev. 2.0	08/10/2021			08/13/2021 12:34	Ping Hua	2268350
	08/10/2021			08/13/2021 12:35	Ping Hua	2268353
	08/10/2021			08/13/2021 12:36	Ping Hua	2268356
EPA 351.2 Rev. 2.0	08/10/2021	08/25/2021 13:54	Benjamin T. Nordmann	08/26/2021 11:10	Virginia P. Brown	2268350
	08/10/2021	08/25/2021 13:54	Benjamin T. Nordmann	08/26/2021 11:15	Virginia P. Brown	2268353
	08/10/2021	08/25/2021 13:54	Benjamin T. Nordmann	08/26/2021 11:17	Virginia P. Brown	2268356
EPA 353.2 Rev. 2.0	08/10/2021			08/11/2021 09:52	Beverly Y. Sanders	2268350
	08/10/2021			08/11/2021 10:05	Beverly Y. Sanders	2268353
	08/10/2021			08/11/2021 10:06	Beverly Y. Sanders	2268356
EPA 365.1 Rev. 2.0	08/10/2021	08/12/2021 15:49	Simonne.V. Calhoun	08/13/2021 16:30	Shengyu Ding	2268350
	08/10/2021	08/12/2021 15:49	Simonne.V. Calhoun	08/13/2021 16:31	Shengyu Ding	2268353
	08/10/2021	08/12/2021 15:49	Simonne.V. Calhoun	08/13/2021 18:12	Shengyu Ding	2268356
EPA 365.1 Rev. 2.0 dissolved	08/10/2021			08/10/2021 15:39	Patrick M. Roche	2268351
	08/10/2021			08/10/2021 15:47	Patrick M. Roche	2268354
	08/10/2021			08/10/2021 16:16	Patrick M. Roche	2268357
EPA 8276	08/10/2021	08/12/2021 08:00	Fe-Val Siddell	08/17/2021 10:38	Michael Poppell	2268365
SM 2120 B-2011	08/10/2021			08/10/2021 16:44	Sarah A Nixon	2268349
	08/10/2021			08/10/2021 16:45	Sarah A Nixon	2268352
	08/10/2021			08/10/2021 16:47	Sarah A Nixon	2268355
SM 2320 B-2011	08/10/2021			08/11/2021 20:53	Dale L. Simmons	2268349
	08/10/2021			08/11/2021 21:07	Dale L. Simmons	2268352
	08/10/2021			08/11/2021 23:38	Dale L. Simmons	2268355
SM 2540 C-2011	08/10/2021			08/11/2021 14:58	Yijie Li	2268349, 2268352, 2268355
SM 2540 D-2011	08/10/2021			08/11/2021 14:58	Yijie Li	2268349, 2268352, 2268355
SM 4500 F-C-2011	08/10/2021			08/18/2021 03:27	Dale L. Simmons	2268349
	08/10/2021			08/18/2021 03:32	Dale L. Simmons	2268352
	08/10/2021			08/18/2021 03:38	Dale L. Simmons	2268355
SM 5310 B-2011	08/10/2021			08/23/2021 23:48	Madeline Gruver	2268350
	08/10/2021			08/23/2021 23:58	Madeline Gruver	2268353
	08/10/2021			08/24/2021 00:08	Madeline Gruver	2268356