

Chemical Analysis Report

SO-DIST-2019-04-04-03

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

Event Description: **2019 SMP : Lee**
Request ID: **RQ-2019-04-01-54**
Customer: **SO-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
FLDEP South District Office
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Certified by: Dr. rer. nat. Bettina Steinbock, Environmental Administrator

Date Certified: 29-APR-2019 17:11



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 group are included in this report: Nutrients.

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

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

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

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

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

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

Precision is reported as relative percent difference unless otherwise noted.

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

QC Codes used in this report may include:

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

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

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

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

Sample Location: C-139Annex@DeerFenceRd

Collection Date/Time: 04/03/2019 11:55

Field ID: G1SD0076

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2075717	EPA 180.1 Rev. 2.0	Turbidity	2.9		NTU	P361619	
	EPA 300.0 Rev. 2.1	Chloride	44		mg Cl/L	P362022	
		Sulfate	11		mg SO4/L	P362024	
	SM 2120 B	Color (true)	67		PCU	P361596	
	SM 2320 B-97	Total Alkalinity	234		mg CaCO3/L	P361985	
	SM 2540 C-97	TDS	373		mg/L	P362093	
	SM 2540 D-97	TSS	5	I	mg/L	P361871	
	SM 4500 F-C-97	Fluoride	0.31		mg F/L	P361988	
2075719	EPA 350.1 Rev. 2.0	Ammonia-N	0.009		mg N/L	P362114	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.4		mg N/L	P362085	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P362217	
	EPA 365.1 Rev. 2.0	Total-P	0.073		mg P/L	P362079	
	SM 5310 B-00	Organic Carbon	19		mg C/L	P361778	
2075721	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.020		mg P/L	P361611	

Ref. Method and Comment:

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: Drainage Ditch@CR850

Collection Date/Time: 04/03/2019 13:05

Field ID: G1SD0061

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2075718	EPA 180.1 Rev. 2.0	Turbidity	22		NTU	P361619	
	EPA 300.0 Rev. 2.1	Chloride	25		mg Cl/L	P362022	
		Sulfate	38		mg SO4/L	P362024	
	SM 2120 B	Color (true)	44	A	PCU	P361600	
	SM 2320 B-97	Total Alkalinity	225		mg CaCO3/L	P361985	
	SM 2540 C-97	TDS	376	A	mg/L	P362094	
	SM 2540 D-97	TSS	60	A	mg/L	P361872	
	SM 4500 F-C-97	Fluoride	0.085	I	mg F/L	P361988	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.037		mg N/L	P362114	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.7		mg N/L	P362085	
2075720	EPA 353.2 Rev. 2.0	NO2NO3-N	0.008	I	mg N/L	P362217	
	EPA 365.1 Rev. 2.0	Total-P	0.14		mg P/L	P362079	
	SM 5310 B-00	Organic Carbon	15		mg C/L	P361779	
	EPA 365.1 Rev. 2.0	O-Phosphate-P	0.007	I	mg P/L	P361611	
	dissolved						

Ref. Method and Comment:

SM 2540 D-97: Sample has large amount of particulate matter.

Sample Location: Drainage Ditch@CR850

Collection Date/Time: 04/03/2019 13:15

Field ID: FB_04032019

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2075723	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P361619	
	EPA 300.0 Rev. 2.1	Chloride	0.20	U	mg Cl/L	P362022	
		Sulfate	0.20	U	mg SO4/L	P362024	
	SM 2120 B	Color (true)	2.5	U	PCU	P361597	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P361985	
	SM 2540 C-97	TDS	15	U	mg/L	P362094	
	SM 2540 D-97	TSS	2	U	mg/L	P361872	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P361988	
2075724	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P362114	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P362085	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P362217	
	EPA 365.1 Rev. 2.0	Total-P	0.002	U	mg P/L	P362080	
	SM 5310 B-00	Organic Carbon	0.50	U	mg C/L	P361779	
2075725	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P361611	

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P361619

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P362022

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P362024

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P362114

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P362085

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P362217

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P362079

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P362080

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P361611

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

Quality Assurance Report

Method Blank Results

Reference Method: SM 2120 B
Batch ID: P361596

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2120 B
Batch ID: P361597

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2120 B
Batch ID: P361600

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P361985

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

Reference Method: SM 2540 C-97
Batch ID: P362093

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-97
Batch ID: P362094

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P361871

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P361872

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P361988

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 5310 B-00
Batch ID: P361778

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

Reference Method: SM 5310 B-00
Batch ID: P361779

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: P362022

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P362024

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P362114

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P362085

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: P362217

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: P362079

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P362080

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P361611

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

Reference Method: SM 2120 B
Batch ID: P361596

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 2120 B
Batch ID: P361597

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

Reference Method: SM 2120 B
Batch ID: P361600

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	99.9		P	85 - 115

Reference Method: SM 2320 B-97
Batch ID: P361985

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	99.9		P	98 - 106

Reference Method: SM 4500 F-C-97
Batch ID: P361988

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.0		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P361778

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	102		P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P361779

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	101		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P362022

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2075689	Chloride	99.7		P	90 - 110
2075729	Chloride	99.5		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P362024

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2075689	Sulfate	97.8		P	90 - 110
2075729	Sulfate	98.8		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P362114

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2075719	Ammonia-N	103	103	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P362085

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2075758	Kjeldahl Nitrogen	97.5	102	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P362217

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2075669	NO2NO3-N	102	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P362079

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2075758	Total-P	100	98.3	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P362080

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2076121	Total-P	99.7	99.6	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P361611

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2075696	O-Phosphate-P	95.3	96.5	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P361988

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2075689	Fluoride	97.8	97.8	P/P	89 - 106

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SM 5310 B-00
Batch ID: P361778

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2075564	Organic Carbon	101	102	P/P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P361779

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2075757	Organic Carbon	99.4	99.6	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P361619

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2075692	Turbidity	1.92	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P362022

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2075689	Chloride	0.810	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P362024

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2075689	Sulfate	1.50	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P362114

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2075719	Ammonia-N	0.155	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P362085

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2075758	Kjeldahl Nitrogen	2.52	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P362217

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2075669	NO2NO3-N	0.939	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P362079

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2075758	Total-P	2.04	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P362080

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2076121	Total-P	0.0616	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P361611

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2075696	O-Phosphate-P	1.10	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P361596

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2075614	Color (true)	1.21	Sample	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P361597

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2075755	Color (true)	0.541	Sample	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P361600

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2075718	Color (true)	0.135	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P361985

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2075689	Total Alkalinity	0.159	Sample	P	0 - 2.8

Reference Method: SM 2540 C-97
Batch ID: P362093

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2075560	TDS	0.0	Sample	P	0 - 10

Reference Method: SM 2540 C-97
Batch ID: P362094

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2075718	TDS	0.266	Sample	P	0 - 10

Reference Method: SM 2540 D-97
Batch ID: P361872

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2075718	TSS	2.67	Sample	P	0 - 10

Quality Assurance Report Precision

Reference Method: SM 4500 F-C-97
Batch ID: P361988

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2075689	Fluoride	0.0	Spike	P	0 - 2.5

Reference Method: SM 5310 B-00
Batch ID: P361778

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2075564	Organic Carbon	1.41	Spike	P	0 - 20

Reference Method: SM 5310 B-00
Batch ID: P361779

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2075757	Organic Carbon	0.150	Spike	P	0 - 20

* Sample, spike and/or laboratory control sample precision (LCS) is reported.
Replicate spike precision may be reported when sample results are below quantifiable levels.

Quality Assurance Report Calibration Verification

Reference Method: SM 2120 B

Run ID: A90452

Included Lab Sample IDs: 2075717, 2075718, 2075723

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	101	101	P/P	85 - 115
Color (true)	101	102	P/P	90 - 115
Color (true)	102	101	P/P	90 - 115

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A90461

Included Lab Sample IDs: 2075721, 2075722, 2075725

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	96.7	96.0	P/P	90 - 110
O-Phosphate-P	97.4	98.1	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A90465

Included Lab Sample IDs: 2075717, 2075718, 2075723

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	100	99.5	P/P	95 - 105

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A90538

Included Lab Sample IDs: 2075717, 2075718, 2075723

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	103	95.3	P/P	90 - 110
Chloride	95.3	93.9	P/P	90 - 110
Sulfate	102	94.7	P/P	90 - 110
Sulfate	94.7	93.5	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A90539

Included Lab Sample IDs: 2075719, 2075720, 2075724

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

Reference Method: SM 2320 B-97

Run ID: A90626

Included Lab Sample IDs: 2075717, 2075718, 2075723

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	101	99.1	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A90626

Included Lab Sample IDs: 2075717, 2075718, 2075723

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	99.5	101	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A90707

Included Lab Sample IDs: 2075719, 2075720, 2075724

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A90722

Included Lab Sample IDs: 2075719, 2075720

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A90727

Included Lab Sample IDs: 2075724

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	100	99.5	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A90741

Included Lab Sample IDs: 2075719, 2075720, 2075724

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	94.3	95.5	P/P	90 - 110
Kjeldahl Nitrogen	97.1	94.3	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A90746

Included Lab Sample IDs: 2075719, 2075720, 2075724

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	101	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		Precision	
					LCS	MS
EPA 180.1 Rev. 2.0	Turbidity				1.92	
EPA 300.0 Rev. 2.1	Chloride	101	99.7	99.5	0.810	
	Sulfate	100	97.8	98.8	1.50	
EPA 350.1 Rev. 2.0	Ammonia-N	103	103	103		0.155
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	103	97.5	102		2.52
EPA 353.2 Rev. 2.0	NO2NO3-N	102	102	100		0.939
EPA 365.1 Rev. 2.0	Total-P	104	100	98.3		2.04
	Total-P	103	99.7	99.6		0.0616
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	100	95.3	96.5		1.10
SM 2120 B	Color (true)	101			1.21	
	Color (true)	101			0.541	
	Color (true)	99.9			0.135	
SM 2320 B-97	Total Alkalinity	99.9			0.159	
SM 2540 C-97	TDS				0.0	
	TDS				0.266	
SM 2540 D-97	TSS				2.67	
SM 4500 F-C-97	Fluoride	98.0	97.8	97.8		0.0
SM 5310 B-00	Organic Carbon	102	101	102		1.41
	Organic Carbon	101	99.4	99.6		0.150

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2075717, 2075718, 2075723
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2075717, 2075718, 2075723
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2075717, 2075718, 2075723
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2075719, 2075720, 2075724
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2075719, 2075720, 2075724
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2075719, 2075720, 2075724
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2075719, 2075720, 2075724
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2075721, 2075722, 2075725
SM 2120 B / E31780	True Color measured at 450 nm	2075717, 2075718, 2075723
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	2075717, 2075718, 2075723
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2075717, 2075718, 2075723
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2075717, 2075718, 2075723
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2075717, 2075718, 2075723
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2075719, 2075720, 2075724

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	04/04/2019			04/04/2019 15:03	Adrian Shelby	2075717, 2075718, 2075723
EPA 300.0 Rev. 2.1	04/04/2019			04/11/2019 22:50	Lipi Saha	2075717
	04/04/2019			04/11/2019 23:02	Lipi Saha	2075718
	04/04/2019			04/11/2019 23:38	Lipi Saha	2075723
EPA 350.1 Rev. 2.0	04/04/2019			04/12/2019 11:21	Ping Hua	2075719
	04/04/2019			04/12/2019 11:32	Ping Hua	2075720
	04/04/2019			04/12/2019 11:33	Ping Hua	2075724
EPA 351.2 Rev. 2.0	04/04/2019	04/12/2019 14:20	Adrian Shelby	04/16/2019 10:19	Joseph Suarez	2075719
	04/04/2019	04/12/2019 14:20	Adrian Shelby	04/16/2019 10:20	Joseph Suarez	2075720
	04/04/2019	04/12/2019 14:20	Adrian Shelby	04/16/2019 10:25	Joseph Suarez	2075724
EPA 353.2 Rev. 2.0	04/04/2019			04/16/2019 09:44	Beverly Y. Sanders	2075719
	04/04/2019			04/16/2019 09:45	Beverly Y. Sanders	2075720
	04/04/2019			04/16/2019 09:46	Beverly Y. Sanders	2075724
EPA 365.1 Rev. 2.0	04/04/2019	04/12/2019 15:40	Sima Feizi	04/15/2019 13:46	Rosalyn Ballman	2075719
	04/04/2019	04/12/2019 15:40	Sima Feizi	04/15/2019 13:47	Rosalyn Ballman	2075720
	04/04/2019	04/12/2019 15:40	Sima Feizi	04/15/2019 18:47	Rosalyn Ballman	2075724
EPA 365.1 Rev. 2.0 dissolved	04/04/2019			04/04/2019 15:34	Jhamieka S. Greenwood	2075725
	04/04/2019			04/04/2019 16:22	Jhamieka S. Greenwood	2075721
	04/04/2019			04/04/2019 16:23	Jhamieka S. Greenwood	2075722
SM 2120 B	04/04/2019			04/04/2019 15:34	Blanca Fach	2075717
	04/04/2019			04/04/2019 15:40	Blanca Fach	2075723
	04/04/2019			04/04/2019 16:05	Blanca Fach	2075718
SM 2320 B-97	04/04/2019			04/11/2019 10:57	Dale L. Simmons	2075717
	04/04/2019			04/11/2019 11:11	Dale L. Simmons	2075718
	04/04/2019			04/11/2019 11:25	Dale L. Simmons	2075723
SM 2540 C-97	04/04/2019			04/05/2019 17:22	Mariam Hanna	2075717, 2075718, 2075723
SM 2540 D-97	04/04/2019			04/05/2019 15:54	Mariam Hanna	2075717, 2075718, 2075723
SM 4500 F-C-97	04/04/2019			04/11/2019 10:57	Dale L. Simmons	2075717
	04/04/2019			04/11/2019 11:11	Dale L. Simmons	2075718
	04/04/2019			04/11/2019 11:25	Dale L. Simmons	2075723
SM 5310 B-00	04/04/2019			04/08/2019 19:42	Julia Storbeck	2075719
	04/04/2019			04/08/2019 21:33	Julia Storbeck	2075720
	04/04/2019			04/08/2019 21:46	Julia Storbeck	2075724