Chemical Analysis Report

SO-DIST-2019-04-09-01

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

Event Description: **2019 SMP : Canals**
Request ID: **RQ-2019-04-01-56**
Customer: **SO-DIST**
Project ID: **SMP**

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FLDEP South District Office
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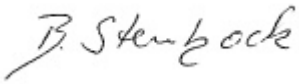
Certified by: Dr. rer. nat. Bettina Steinbock, Environmental Administrator Date Certified: 24-APR-2019 17:38



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-19 @ US 27 **Collection Date/Time: 04/08/2019 09:55**

Field ID: G3SD0087 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2076487	EPA 180.1 Rev. 2.0	Turbidity	7.3		NTU	P361819	
	EPA 300.0 Rev. 2.1	Chloride	51		mg Cl/L	P362267	
		Sulfate	21		mg SO4/L	P362270	
	SM 2120 B	Color (true)	73	A	PCU	P361861	
	SM 2320 B-97	Total Alkalinity	155		mg CaCO3/L	P362173	RPD
	SM 2540 C-97	TDS	312		mg/L	P362514	
	SM 2540 D-97	TSS	11		mg/L	P362231	
	SM 4500 F-C-97	Fluoride	0.18		mg F/L	P362179	
2076490	EPA 350.1 Rev. 2.0	Ammonia-N	0.008		mg N/L	P362284	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.5		mg N/L	P362337	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P362329	
	EPA 365.1 Rev. 2.0	Total-P	0.14		mg P/L	P362146	
	SM 5310 B-00	Organic Carbon	17		mg C/L	P361976	
2076493	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.025		mg P/L	P361838	

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

Sample Location: Lake Hicpochee Canal **Collection Date/Time: 04/08/2019 10:30**

Field ID: G3SD0102 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2076488	EPA 180.1 Rev. 2.0	Turbidity	13	A	NTU	P361819	
	EPA 300.0 Rev. 2.1	Chloride	51		mg Cl/L	P362267	
		Sulfate	27		mg SO4/L	P362270	
	SM 2120 B	Color (true)	51		PCU	P361861	
	SM 2320 B-97	Total Alkalinity	96		mg CaCO3/L	P362173	RPD
	SM 2540 C-97	TDS	248		mg/L	P362514	
	SM 2540 D-97	TSS	14		mg/L	P362231	
	SM 4500 F-C-97	Fluoride	0.18		mg F/L	P362179	
2076491	EPA 350.1 Rev. 2.0	Ammonia-N	0.032		mg N/L	P362284	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.7		mg N/L	P362337	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.024		mg N/L	P362329	
	EPA 365.1 Rev. 2.0	Total-P	0.10		mg P/L	P362146	
	SM 5310 B-00	Organic Carbon	17		mg C/L	P361976	
2076494	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	I	mg P/L	P361838	

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

Sample Location: Nine Mile Canal @SR80 **Collection Date/Time: 04/08/2019 11:00**

Field ID: G3SD0088 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2076489	EPA 180.1 Rev. 2.0	Turbidity	6.8		NTU	P361819	
	EPA 300.0 Rev. 2.1	Chloride	52		mg Cl/L	P362267	
		Sulfate	28		mg SO4/L	P362270	
	SM 2120 B	Color (true)	50		PCU	P361861	
	SM 2320 B-97	Total Alkalinity	105		mg CaCO3/L	P362173	RPD
	SM 2540 C-97	TDS	264	A	mg/L	P362515	
	SM 2540 D-97	TSS	9	IA	mg/L	P362232	
	SM 4500 F-C-97	Fluoride	0.19		mg F/L	P362179	
2076492	EPA 350.1 Rev. 2.0	Ammonia-N	0.010		mg N/L	P362284	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.3		mg N/L	P362264	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.005	I	mg N/L	P362329	
	EPA 365.1 Rev. 2.0	Total-P	0.076		mg P/L	P362146	
	SM 5310 B-00	Organic Carbon	16		mg C/L	P361976	
2076495	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.01	I	mg P/L	P361838	

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

Quality Assurance Report
Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P361819

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P362267

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P362270

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P362284

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P362264

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P362337

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P362329

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P362146

Component	Result	Code	Units
Total-P	0.005	U	mg P/L

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P361838

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: P361861

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P362173

Component	Result	Code	Units
Total Alkalinity	0.65	U	mg CaCO3/L

Reference Method: SM 2540 C-97
Batch ID: P362514

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-97
Batch ID: P362515

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P362231

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P362232

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P362179

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P361976

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: P362267

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P362270

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	105		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P362284

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P362264

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P362337

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: P362329

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P362146

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: P361838

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

Reference Method: SM 2120 B
Batch ID: P361861

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 2320 B-97
Batch ID: P362173

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	101		P	98 - 106

Reference Method: SM 4500 F-C-97
Batch ID: P362179

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	99.5		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P361976

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

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P362267

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2076390	Chloride	106		P	90 - 110
2076511	Chloride	108		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P362270

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2076390	Sulfate	107		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P362284

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2076512	Ammonia-N	99.8	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P362264

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2076545	Kjeldahl Nitrogen	108	104	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P362337

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2076445	Kjeldahl Nitrogen	104	103	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P362329

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2076471	NO2NO3-N	100	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P362146

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2076525	Total-P	98.0	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P361838

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2076493	O-Phosphate-P	95.3	96.2	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P362179

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2076930	Fluoride	100	100	P/P	89 - 106

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: SM 5310 B-00
Batch ID: P361976

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2076492	Organic Carbon	102	95.8	P/P	85 - 115

Quality Assurance Report
Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P361819

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2076488	Turbidity	0.0	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P362267

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2076390	Chloride	9.70	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P362270

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2076390	Sulfate	9.97	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P362284

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2076512	Ammonia-N	0.855	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P362264

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2076545	Kjeldahl Nitrogen	2.29	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P362337

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2076445	Kjeldahl Nitrogen	0.380	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P362329

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2076471	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P362146

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2076525	Total-P	4.54	Spike	P	0 - 20

Quality Assurance Report
Precision

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P361838

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2076493	O-Phosphate-P	0.745	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P361861

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2076487	Color (true)	0.0371	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P362173

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2076930	Total Alkalinity	8.08	Sample	F	0 - 2.8

Reference Method: SM 2540 C-97
Batch ID: P362514

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2076387	TDS	5.12	Sample	P	0 - 10

Reference Method: SM 2540 C-97
Batch ID: P362515

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2076489	TDS	1.89	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P362179

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2076930	Fluoride	0.0	Spike	P	0 - 2.5

Reference Method: SM 5310 B-00
Batch ID: P361976

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2076492	Organic Carbon	3.46	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: EPA 180.1 Rev. 2.0
Run ID: A90551
Included Lab Sample IDs: 2076487, 2076488, 2076489

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A90555
Included Lab Sample IDs: 2076493, 2076494, 2076495

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.4	99.6	P/P	90 - 110
O-Phosphate-P	99.0	98.8	P/P	90 - 110

Reference Method: SM 2120 B
Run ID: A90564
Included Lab Sample IDs: 2076487, 2076488, 2076489

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	101	104	P/P	90 - 115

Reference Method: SM 5310 B-00
Run ID: A90618
Included Lab Sample IDs: 2076490, 2076491, 2076492

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	100	102	P/P	90 - 110
Organic Carbon	102	103	P/P	90 - 110

Reference Method: SM 2320 B-97
Run ID: A90703
Included Lab Sample IDs: 2076487, 2076488, 2076489

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	101	97.7	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Run ID: A90703
Included Lab Sample IDs: 2076487, 2076488, 2076489

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	103	104	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A90760
Included Lab Sample IDs: 2076487, 2076488, 2076489

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	99.5	103	P/P	90 - 110
Sulfate	99.7	104	P/P	90 - 110

Quality Assurance Report
Calibration Verification

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A90762
Included Lab Sample IDs: 2076490, 2076491, 2076492

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

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A90779
Included Lab Sample IDs: 2076490, 2076491, 2076492

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	98.5	99.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A90782
Included Lab Sample IDs: 2076490, 2076491, 2076492

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

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A90786
Included Lab Sample IDs: 2076492

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	99.6	102	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A90817
Included Lab Sample IDs: 2076490, 2076491

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	97.6	97.2	P/P	90 - 110

* Pass/Fail determinations are made for each bracketing calibration verification check.
Control limits for initial calibration checks may be different from those for continuing checks, depending on method requirements.
Where they are different, both control limits are provided.

Quality Assurance Report
Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision		
					LCS	SMP	MS
EPA 180.1 Rev. 2.0	Turbidity					0.0	
EPA 300.0 Rev. 2.1	Chloride	103	106	108		9.70	
	Sulfate	105	107			9.97	
EPA 350.1 Rev. 2.0	Ammonia-N	102	99.8	101			0.855
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	107	108	104			2.29
	Kjeldahl Nitrogen	106	104	103			0.380
EPA 353.2 Rev. 2.0	NO2NO3-N	99.0	100	100			0.0
EPA 365.1 Rev. 2.0	Total-P	102	98.0	104			4.54
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	99.8	95.3	96.2			0.745
SM 2120 B	Color (true)	101				0.0371	
SM 2320 B-97	Total Alkalinity	101				8.08	
SM 2540 C-97	TDS					5.12	
	TDS					1.89	
SM 4500 F-C-97	Fluoride	99.5	100	100			0.0
SM 5310 B-00	Organic Carbon	102	102	95.8			3.46

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2076487, 2076488, 2076489
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2076487, 2076488, 2076489
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2076487, 2076488, 2076489
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2076490, 2076491, 2076492
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2076490, 2076491, 2076492
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2076490, 2076491, 2076492
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2076490, 2076491, 2076492
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2076493, 2076494, 2076495
SM 2120 B / E31780	True Color measured at 450 nm	2076487, 2076488, 2076489
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	2076487, 2076488, 2076489
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2076487, 2076488, 2076489
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2076487, 2076488, 2076489
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2076487, 2076488, 2076489
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2076490, 2076491, 2076492

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	04/09/2019			04/09/2019 15:54	Adrian Shelby	2076487, 2076488, 2076489
EPA 300.0 Rev. 2.1	04/09/2019			04/15/2019 21:24	Julia Storbeck	2076487
	04/09/2019			04/15/2019 21:36	Julia Storbeck	2076488
	04/09/2019			04/15/2019 21:48	Julia Storbeck	2076489
EPA 350.1 Rev. 2.0	04/09/2019			04/15/2019 12:06	Ping Hua	2076490
	04/09/2019			04/15/2019 12:07	Ping Hua	2076491
	04/09/2019			04/15/2019 12:09	Ping Hua	2076492
EPA 351.2 Rev. 2.0	04/09/2019	04/16/2019 12:00	Adrian Shelby	04/17/2019 12:26	Joseph Suarez	2076492
	04/09/2019	04/17/2019 12:45	Adrian Shelby	04/18/2019 11:17	Joseph Suarez	2076490
	04/09/2019	04/17/2019 12:45	Adrian Shelby	04/18/2019 11:18	Joseph Suarez	2076491
EPA 353.2 Rev. 2.0	04/09/2019			04/17/2019 09:38	Beverly Y. Sanders	2076490
	04/09/2019			04/17/2019 09:39	Beverly Y. Sanders	2076491
	04/09/2019			04/17/2019 09:40	Beverly Y. Sanders	2076492
EPA 365.1 Rev. 2.0	04/09/2019	04/15/2019 13:05	Sima Feizi	04/17/2019 13:08	Rosalyn Ballman	2076490
	04/09/2019	04/15/2019 13:05	Sima Feizi	04/17/2019 13:09	Rosalyn Ballman	2076491
	04/09/2019	04/15/2019 13:05	Sima Feizi	04/17/2019 13:10	Rosalyn Ballman	2076492
EPA 365.1 Rev. 2.0 dissolved	04/09/2019			04/09/2019 16:32	Julia Storbeck	2076493
	04/09/2019			04/09/2019 17:18	Julia Storbeck	2076494, 2076495
SM 2120 B	04/09/2019			04/09/2019 15:49	Mariam Hanna	2076487
	04/09/2019			04/09/2019 15:50	Mariam Hanna	2076488
	04/09/2019			04/09/2019 15:51	Mariam Hanna	2076489
SM 2320 B-97	04/09/2019			04/13/2019 13:42	Dale L. Simmons	2076487
	04/09/2019			04/13/2019 13:59	Dale L. Simmons	2076488
	04/09/2019			04/13/2019 14:17	Dale L. Simmons	2076489
SM 2540 C-97	04/09/2019			04/11/2019 16:14	Yijie Li	2076487, 2076488, 2076489
SM 2540 D-97	04/09/2019			04/11/2019 16:14	Yijie Li	2076487, 2076488, 2076489
SM 4500 F-C-97	04/09/2019			04/13/2019 13:42	Dale L. Simmons	2076487
	04/09/2019			04/13/2019 13:59	Dale L. Simmons	2076488
	04/09/2019			04/13/2019 14:17	Dale L. Simmons	2076489
SM 5310 B-00	04/09/2019			04/10/2019 14:25	Julia Storbeck	2076492
	04/09/2019			04/10/2019 19:42	Julia Storbeck	2076490
	04/09/2019			04/10/2019 19:54	Julia Storbeck	2076491