

Chemical Analysis Report

WQAP-2016-01-19-01

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

Event Description: **Freeman Creek, Stafford Creek and Soapstone Branch**

Request ID: **RQ-2016-01-18-38**

Customer: **WQAP**

Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
2600 Blair Stone Rd
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Tallahassee, FL 32399-2400
Attn: Benjamin Ralys

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Certified by: Colin Wright, Environmental Administrator

Date Certified: 05-FEB-2016 12:02

A handwritten signature in black ink, appearing to read "Colin Wright", is written on a light-colored rectangular 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 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 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: Freeman Creek Upstream of SR 267 (Bloxham Cutoff) **Collection Date/Time: 01/19/2016 09:25**

Field ID: G1WA0010

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1763688	EPA 180.1 Rev. 2.0	Turbidity	2.6	A	NTU	P297296	
	EPA 300.0 Rev. 2.1	Chloride	3.1		mg Cl/L	P297452	
	EPA 353.2 Rev. 2.0	Nitrite-N	0.003	U	mg N/L	P297315	
	SM 2120 B	Color (true)	260		PCU	P297288	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P297520	
	SM 2540 C-97	TDS	37		mg/L	P297557	
	SM 2540 D-97	TSS	2	I	mg/L	P297523	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P297513	
1763690	EPA 350.1 Rev. 2.0	Ammonia-N	0.013		mg N/L	P297611	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.56		mg N/L	P297411	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P297488	
	EPA 365.1 Rev. 2.0	Total-P	0.006		mg P/L	P297698	
	SM 5310 B-00	Organic Carbon	27		mg C/L	P297473	
1763692	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P297280	

Ref. Method and Comment:

SM 2540 D-97: The precision data is unavailable due to the low analyte concentration in the QC sample.

Sample Location: Soapstone Branch 100 Meters Upstream of SR375 **Collection Date/Time: 01/19/2016 13:55**

Field ID: G1WA0012

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1763689	EPA 180.1 Rev. 2.0	Turbidity	2.5		NTU	P297296	
	EPA 300.0 Rev. 2.1	Chloride	3.5		mg Cl/L	P297452	
	EPA 353.2 Rev. 2.0	Nitrite-N	0.003	U	mg N/L	P297315	
	SM 2120 B	Color (true)	310		PCU	P297288	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P297520	
	SM 2540 C-97	TDS	42		mg/L	P297557	
	SM 2540 D-97	TSS	2	I	mg/L	P297523	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P297513	
1763691	EPA 350.1 Rev. 2.0	Ammonia-N	0.007		mg N/L	P297611	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.62		mg N/L	P297411	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P297488	
	EPA 365.1 Rev. 2.0	Total-P	0.008		mg P/L	P297698	
	SM 5310 B-00	Organic Carbon	29		mg C/L	P297473	
1763693	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P297280	

Ref. Method and Comment:

SM 2540 D-97: The precision data is unavailable due to the low analyte concentration in the QC sample.

Quality Assurance Report

Method Blank Results

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P297296

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P297452

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P297611

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P297411

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P297315

Component	Result	Code	Units
Nitrite-N	0.003	U	mg N/L

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P297488

Component	Result	Code	Units
NO ₂ NO ₃ -N	0.004	U	mg N/L

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P297698

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P297280

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

Reference Method: SM 2120 B
Batch ID: P297288

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Quality Assurance Report Method Blank Results

Reference Method: SM 2320 B-97
Batch ID: P297520

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

Reference Method: SM 2540 C-97
Batch ID: P297557

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P297523

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P297513

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P297473

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: P297452

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P297611

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: P297411

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P297315

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
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Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P297315

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Nitrite-N	92.7		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P297488

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	94.0		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P297698

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P297280

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

Reference Method: SM 2320 B-97
Batch ID: P297520

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

Reference Method: SM 4500 F-C-97
Batch ID: P297513

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	96.5		P	94 - 108

Reference Method: SM 5310 B-00
Batch ID: P297473

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

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P297452

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1763440	Chloride	103		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P297611

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
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Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P297611

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1763690	Ammonia-N	104	105	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P297411

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1763690	Kjeldahl Nitrogen	98.6	99.8	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P297315

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1763688	Nitrite-N	91.2	91.4	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P297488

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1763722	NO2NO3-N	90.1	92.1	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P297698

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1763642	Total-P	101	96.4	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P297280

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1763791	O-Phosphate-P	98.7	99.8	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P297513

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1763980	Fluoride	96.7	97.3	P/P	94 - 107

Reference Method: SM 5310 B-00
Batch ID: P297473

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1763646	Organic Carbon	90.4	92.2	P/P	85 - 115

Quality Assurance Report Precision

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P297296

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1763688	Turbidity	3.92	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P297452

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1763440	Chloride	2.60	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P297611

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1763690	Ammonia-N	0.0412	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P297411

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1763690	Kjeldahl Nitrogen	0.838	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P297315

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1763688	Nitrite-N	0.183	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P297488

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1763722	NO2NO3-N	1.53	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P297698

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1763642	Total-P	2.99	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P297280

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1763791	O-Phosphate-P	0.919	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: SM 2120 B
Batch ID: P297288

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1763719	Color (true)	0.830	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P297520

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1763980	Total Alkalinity	1.29	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
Batch ID: P297557

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1763382	TDS	1.81	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P297513

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1763980	Fluoride	0.490	Spike	P	0 - 3.7

Reference Method: SM 5310 B-00
Batch ID: P297473

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1763646	Organic Carbon	1.08	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 365.1 Rev. 2.0 dissolved
Run ID: A67175
Included Lab Sample IDs: 1763692, 1763693

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.5	99.2	P/P	90 - 110

Reference Method: SM 2120 B
Run ID: A67179
Included Lab Sample IDs: 1763688, 1763689

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	102	103	P/P	90 - 115

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A67181

Included Lab Sample IDs: 1763688, 1763689

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: A67187

Included Lab Sample IDs: 1763688, 1763689

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Nitrite-N	100	107	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A67217

Included Lab Sample IDs: 1763688, 1763689

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

Reference Method: SM 5310 B-00

Run ID: A67237

Included Lab Sample IDs: 1763690, 1763691

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	91.4	93.2	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A67243

Included Lab Sample IDs: 1763690, 1763691

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	94.5	92.5	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A67249

Included Lab Sample IDs: 1763690, 1763691

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	103	102	P/P	90 - 110
Kjeldahl Nitrogen	100	99.6	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A67252

Included Lab Sample IDs: 1763688, 1763689

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	98.0	99.0	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A67254

Included Lab Sample IDs: 1763688, 1763689

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	97.5	99.5	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A67289
Included Lab Sample IDs: 1763690, 1763691

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	105	105	P/P	90 - 110
Ammonia-N	106	106	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A67347
Included Lab Sample IDs: 1763690, 1763691

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	101	97.2	P/P	90 - 110
Total-P	98.0	96.0	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				3.92	
EPA 300.0 Rev. 2.1	Chloride	104	103		2.60	
EPA 350.1 Rev. 2.0	Ammonia-N	103	104	105		0.0412
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	97.2	98.6	99.8		0.838
EPA 353.2 Rev. 2.0	Nitrite-N	92.7	91.2	91.4		0.183
	NO2NO3-N	94.0	90.1	92.1		1.53
EPA 365.1 Rev. 2.0	Total-P	99.5	101	96.4		2.99
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	101	98.7	99.8		0.919
SM 2120 B	Color (true)				0.830	
SM 2320 B-97	Total Alkalinity	100			1.29	
SM 2540 C-97	TDS				1.81	
SM 4500 F-C-97	Fluoride	96.5	96.7	97.3		0.490
SM 5310 B-00	Organic Carbon	96.2	90.4	92.2		1.08

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1763688, 1763689
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1763688, 1763689
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1763690, 1763691
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1763690, 1763691
EPA 353.2 Rev. 2.0 / E31780	Nitrite in aqueous matrices as mg N/L	1763688, 1763689
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1763690, 1763691
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1763690, 1763691

Reference Method Descriptions

Method / DoH Cert #	Description	<u>Associated Samples</u>
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1763692, 1763693
SM 2120 B / E31780	True Color measured at 450 nm	1763688, 1763689
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	1763688, 1763689
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1763688, 1763689
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1763688, 1763689
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1763688, 1763689
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1763690, 1763691

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	01/19/2016			01/20/2016 15:14	Sima Feizi	1763688, 1763689
EPA 300.0 Rev. 2.1	01/19/2016			01/22/2016	Ping Hua	1763688, 1763689
EPA 350.1 Rev. 2.0	01/19/2016			01/26/2016	Diana M. Turner	1763690, 1763691
EPA 351.2 Rev. 2.0	01/19/2016	01/22/2016	Christopher Armour	01/25/2016	Rochelle Y Jackson	1763690, 1763691
EPA 353.2 Rev. 2.0	01/19/2016			01/20/2016 15:05	Virginia P. Brown	1763688
	01/19/2016			01/20/2016 15:09	Virginia P. Brown	1763689
	01/19/2016			01/25/2016	Diana M. Turner	1763690, 1763691
EPA 365.1 Rev. 2.0	01/19/2016	01/28/2016	Christopher Armour	01/29/2016	Lipi Saha	1763690, 1763691
EPA 365.1 Rev. 2.0 dissolved	01/19/2016			01/20/2016 13:26	Julia Storbeck	1763692
	01/19/2016			01/20/2016 13:27	Julia Storbeck	1763693
SM 2120 B	01/19/2016			01/20/2016 14:57	Rochelle Y Jackson	1763688
	01/19/2016			01/20/2016 14:58	Rochelle Y Jackson	1763689
SM 2320 B-97	01/19/2016			01/25/2016	Dale L. Simmons	1763688, 1763689
SM 2540 C-97	01/19/2016			01/20/2016	Yijie Li	1763688, 1763689
SM 2540 D-97	01/19/2016			01/20/2016	Yijie Li	1763688, 1763689
SM 4500 F-C-97	01/19/2016			01/25/2016	Dale L. Simmons	1763688, 1763689
SM 5310 B-00	01/19/2016			01/22/2016	Sofia Elnemr	1763690, 1763691