

Chemical Analysis Report

WQAP-2016-03-08-03

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

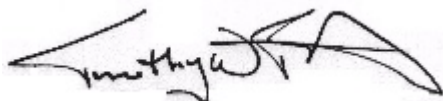
Event Description: **East River, Moriah Creek, Wakulla River and St. Marks River**
Request ID: **RQ-2016-03-07-64**
Customer: **WQAP**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
2600 Blair Stone Rd
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Attn: Ben Ralys

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Certified by: Timothy Fitzpatrick, Program Administrator

Date Certified: 28-MAR-2016 13:46

A handwritten signature in black ink, appearing to read "Timothy Fitzpatrick", with a stylized flourish at the end.

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: WAKULLA RIVER BELOW US 98

Collection Date/Time: 03/08/2016 10:45

Field ID: G1WA0028

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1778148	EPA 180.1 Rev. 2.0	Turbidity	1.2		NTU	P300080	
	EPA 300.0 Rev. 2.1	Chloride	14		mg Cl/L	P300214	
	EPA 353.2 Rev. 2.0	Nitrite-N	0.003	I	mg N/L	P299969	
	SM 2120 B	Color (true)	12		PCU	P300049	
	SM 2320 B-97	Total Alkalinity	147		mg CaCO3/L	P300453	
	SM 2540 C-97	TDS	189	A	mg/L	P300528	
	SM 2540 D-97	TSS	3	I	mg/L	P300284	
	SM 4500 F-C-97	Fluoride	0.13		mg F/L	P300457	
1778151	EPA 350.1 Rev. 2.0	Ammonia-N	0.01		mg N/L	P300478	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.12	I	mg N/L	P300626	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.37		mg N/L	P300308	
	EPA 365.1 Rev. 2.0	Total-P	0.028		mg P/L	P300541	
	SM 5310 B-00	Organic Carbon	1.4		mg C/L	P300327	
1778154	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.021		mg P/L	P299956	

Ref. Method and Comment:

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

EPA 353.2 Rev. 2.0: Matrix spike recovery data is unavailable due to high analyte concentration in the QC sample.

Sample Location: ST. MARKS RIVER AT CHANNEL MARKER 60

Collection Date/Time: 03/08/2016 11:30

Field ID: G1WA0055

Matrix: WATER

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1778136	EPA 180.1 Rev. 2.0	Turbidity	1.6	A	NTU	P300080	
	SM 2320 B-97	Total Alkalinity	138		mg CaCO3/L	P300453	
	SM 2540 D-97	TSS	2	I	mg/L	P300287	
	SM 4500 F-C-97	Fluoride	0.15		mg F/L	P300457	
1778140	EPA 350.1 Rev. 2.0	Ammonia-N	0.014		mg N/L	P300478	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.24		mg N/L	P300626	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.20		mg N/L	P300307	
	EPA 365.1 Rev. 2.0	Total-P	0.032		mg P/L	P300541	
	SM 5310 B-00	Organic Carbon	3.1		mg C/L	P300327	
1778144	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.022		mg P/L	P299961	

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: ST. MARKS RIVER AT CHANNEL MARKER 22

Collection Date/Time: 03/08/2016 12:00

Field ID: G1WA0008

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1778137	EPA 180.1 Rev. 2.0	Turbidity	2.0		NTU	P300080	
	SM 2320 B-97	Total Alkalinity	124		mg CaCO3/L	P300588	
	SM 2540 D-97	TSS	5	I	mg/L	P300289	
	SM 4500 F-C-97	Fluoride	0.66		mg F/L	P300591	
1778141	EPA 350.1 Rev. 2.0	Ammonia-N	0.008		mg N/L	P300471	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.31	I	mg N/L	P300415	

Field ID: G1WA0008

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1778141	EPA 353.2 Rev. 2.0	NO2NO3-N	0.012		mg N/L	P300334	
	EPA 365.1 Rev. 2.0	Total-P	0.017		mg P/L	P300539	
	SM 5310 B-00	Organic Carbon	3.9		mg C/L	P300237	
1778145	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	I	mg P/L	P299961	

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: MOUTH OF EAST RIVER

Collection Date/Time: 03/08/2016 12:30

Field ID: G1WA0011

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1778138	EPA 180.1 Rev. 2.0	Turbidity	4.1		NTU	P300080	
	SM 2320 B-97	Total Alkalinity	118		mg CaCO3/L	P300588	
	SM 2540 D-97	TSS	14		mg/L	P300289	
	SM 4500 F-C-97	Fluoride	0.82		mg F/L	P300591	
1778142	EPA 350.1 Rev. 2.0	Ammonia-N	0.009		mg N/L	P300471	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.43		mg N/L	P300415	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P300334	
	EPA 365.1 Rev. 2.0	Total-P	0.016		mg P/L	P300539	
	SM 5310 B-00	Organic Carbon	4.1		mg C/L	P300237	
1778146	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P299959	

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: EAST RIVER DOWNSTREAM OF BOGGY BAYOU

Collection Date/Time: 03/08/2016 12:50

Field ID: G1WA0056

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1778139	EPA 180.1 Rev. 2.0	Turbidity	3.6		NTU	P300080	
	SM 2320 B-97	Total Alkalinity	119		mg CaCO3/L	P300588	
	SM 2540 D-97	TSS	9	I	mg/L	P300289	
	SM 4500 F-C-97	Fluoride	0.79		mg F/L	P300591	
1778143	EPA 350.1 Rev. 2.0	Ammonia-N	0.008		mg N/L	P300471	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.34	I	mg N/L	P300547	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P300334	
	EPA 365.1 Rev. 2.0	Total-P	0.014		mg P/L	P300539	
	SM 5310 B-00	Organic Carbon	4.2		mg C/L	P300360	
1778147	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P300064	

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: MORIAH CREEK US 98

Collection Date/Time: 03/08/2016 14:20

Field ID: G1WA0027

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1778149	EPA 180.1 Rev. 2.0	Turbidity	0.70		NTU	P300080	

Field ID: G1WA0027

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1778149	EPA 300.0 Rev. 2.1	Chloride	6.0		mg Cl/L	P300214	
	EPA 353.2 Rev. 2.0	Nitrite-N	0.003	I	mg N/L	P300051	
	SM 2120 B	Color (true)	46	A	PCU	P300049	
	SM 2320 B-97	Total Alkalinity	238		mg CaCO3/L	P300453	
	SM 2540 C-97	TDS	261		mg/L	P300528	
	SM 2540 D-97	TSS	2	U	mg/L	P300284	
	SM 4500 F-C-97	Fluoride	0.12		mg F/L	P300457	
1778152	EPA 350.1 Rev. 2.0	Ammonia-N	0.013		mg N/L	P300564	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.46		mg N/L	P300626	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P300709	
	EPA 365.1 Rev. 2.0	Total-P	0.007		mg P/L	P300541	
	SM 5310 B-00	Organic Carbon	9.9		mg C/L	P300360	
1778155	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P299960	

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: MORIAH CREEK 100 METERS UPSTREAM OF NEWPORT RD. **Collection Date/Time: 03/08/2016 14:45**

Field ID: G1WA0057

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1778150	EPA 180.1 Rev. 2.0	Turbidity	0.65		NTU	P300080	
	EPA 300.0 Rev. 2.1	Chloride	6.0		mg Cl/L	P300214	
	EPA 353.2 Rev. 2.0	Nitrite-N	0.003	U	mg N/L	P300051	
	SM 2120 B	Color (true)	46		PCU	P300049	
	SM 2320 B-97	Total Alkalinity	237		mg CaCO3/L	P300688	
	SM 2540 C-97	TDS	251		mg/L	P300528	
	SM 2540 D-97	TSS	2	U	mg/L	P300284	
1778153	SM 4500 F-C-97	Fluoride	0.13		mg F/L	P300457	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.01		mg N/L	P300564	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.42		mg N/L	P300628	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P300709	
	EPA 365.1 Rev. 2.0	Total-P	0.006		mg P/L	P300541	
1778156	SM 5310 B-00	Organic Carbon	10		mg C/L	P300360	
	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P299960	

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

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P300080

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Quality Assurance Report Method Blank Results

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P300214

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P300471

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P300478

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P300564

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P300415

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P300547

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P300626

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P300628

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P299969

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P300051

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P300307

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P300308

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P300334

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P300709

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P300539

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P300541

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P299956

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P299959

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P299960

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P299961

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P300064

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

Reference Method: SM 2120 B
Batch ID: P300049

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P300453

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

Reference Method: SM 2320 B-97
Batch ID: P300588

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

Reference Method: SM 2320 B-97
Batch ID: P300688

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

Reference Method: SM 2540 C-97
Batch ID: P300528

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P300284

Component	Result	Code	Units
TSS	2	U	mg/L

Quality Assurance Report Method Blank Results

Reference Method: SM 2540 D-97
Batch ID: P300287

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P300289

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P300457

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-97
Batch ID: P300591

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P300237

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

Reference Method: SM 5310 B-00
Batch ID: P300327

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

Reference Method: SM 5310 B-00
Batch ID: P300360

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: P300214

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P300471

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P300471

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	98.9		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P300478

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	97.6		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P300564

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P300415

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	90.5		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P300547

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P300626

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	95.9		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P300628

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	98.8		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P300051

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P300307

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P300308

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P300334

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P300709

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	106		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P300539

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	98.6		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P300541

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P299956

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	97.9		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P299959

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P299960

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	96.8		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P299961

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	98.9		P	90 - 110

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P300064

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	99.1		P	90 - 110

Reference Method: SM 2320 B-97
Batch ID: P300453

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	103		P	95 - 105

Reference Method: SM 2320 B-97
Batch ID: P300588

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	103		P	95 - 105

Reference Method: SM 2320 B-97
Batch ID: P300688

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	103		P	95 - 105

Reference Method: SM 4500 F-C-97
Batch ID: P300457

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.1		P	94 - 108

Reference Method: SM 4500 F-C-97
Batch ID: P300591

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	102		P	94 - 108

Reference Method: SM 5310 B-00
Batch ID: P300237

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	105		P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P300327

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

Reference Method: SM 5310 B-00
Batch ID: P300360

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	105		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P300214

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1778097	Chloride	108		P	90 - 110
1778100	Chloride	108		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P300471

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1778023	Ammonia-N	102	104	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P300478

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1778187	Ammonia-N	98.0	97.6	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P300564

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1778376	Ammonia-N	102	104	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P300415

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1777797	Kjeldahl Nitrogen	95.4	93.4	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P300547

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1778388	Kjeldahl Nitrogen	93.5	100	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P300626

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1778111	Kjeldahl Nitrogen	98.8	94.3	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P300628

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1778153	Kjeldahl Nitrogen	91.3	104	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P299969

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1778148	Nitrite-N	92.8	95.5	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P300051

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1778149	Nitrite-N	95.1	92.4	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P300307

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1778187	NO2NO3-N	98.2		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P300334

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1778022	NO2NO3-N	101	99.8	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P300709

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1779829	NO2NO3-N	106	107	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P300539

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1778021	Total-P	96.9	96.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P300541

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1778110	Total-P	94.4	93.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P299956

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1777555	O-Phosphate-P	93.1	92.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P299959

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1777865	O-Phosphate-P	94.7	95.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P299960

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1777909	O-Phosphate-P	92.7	93.0	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P299961

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1778112	O-Phosphate-P	94.8	98.1	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P300064

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1778471	O-Phosphate-P	95.7	98.7	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P300457

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1778103	Fluoride	98.2	98.9	P/P	94 - 107

Reference Method: SM 4500 F-C-97
Batch ID: P300591

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1778466	Fluoride	99.6	100	P/P	94 - 107

Reference Method: SM 5310 B-00
Batch ID: P300237

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1776887	Organic Carbon	90.3	90.2	P/P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P300327

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1778109	Organic Carbon	92.6	93.1	P/P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P300360

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1778143	Organic Carbon	95.8	94.8	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P300080

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1778136	Turbidity	10.9	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P300214

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1778097	Chloride	0.0598	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P300471

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1778023	Ammonia-N	1.13	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P300478

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1778187	Ammonia-N	0.369	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P300564

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1778376	Ammonia-N	1.06	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P300415

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1777797	Kjeldahl Nitrogen	1.64	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P300547

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1778388	Kjeldahl Nitrogen	5.74	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P300626

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1778111	Kjeldahl Nitrogen	4.67	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P300628

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1778153	Kjeldahl Nitrogen	9.35	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P299969

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1778148	Nitrite-N	2.70	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P300051

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1778149	Nitrite-N	2.69	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P300307

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1778187	NO2NO3-N	0.436	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P300308

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1778221	NO2NO3-N	0.279	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P300334

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1778022	NO2NO3-N	0.943	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P300709

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1779829	NO2NO3-N	0.468	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P300539

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1778021	Total-P	0.0509	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P300541

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1778110	Total-P	1.29	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P299956

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1777555	O-Phosphate-P	0.300	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P299959

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1777865	O-Phosphate-P	0.941	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P299960

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1777909	O-Phosphate-P	0.238	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P299961

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1778112	O-Phosphate-P	2.61	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P300064

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1778471	O-Phosphate-P	3.09	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P300049

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1778149	Color (true)	3.55	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P300453

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1778103	Total Alkalinity	0.112	Sample	P	0 - 4.8

Reference Method: SM 2320 B-97
Batch ID: P300588

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1778466	Total Alkalinity	0.134	Sample	P	0 - 4.8

Quality Assurance Report Precision

Reference Method: SM 2320 B-97
Batch ID: P300688

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1780201	Total Alkalinity	0.0829	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
Batch ID: P300528

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1778148	TDS	8.47	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P300457

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1778103	Fluoride	0.516	Spike	P	0 - 3.7

Reference Method: SM 4500 F-C-97
Batch ID: P300591

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1778466	Fluoride	0.470	Spike	P	0 - 3.7

Reference Method: SM 5310 B-00
Batch ID: P300237

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1776887	Organic Carbon	0.137	Spike	P	0 - 20

Reference Method: SM 5310 B-00
Batch ID: P300327

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1778109	Organic Carbon	0.533	Spike	P	0 - 20

Reference Method: SM 5310 B-00
Batch ID: P300360

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1778143	Organic Carbon	0.945	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

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A68082

Included Lab Sample IDs: 1778144, 1778145, 1778146, 1778154, 1778155, 1778156

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	95.9	95.9	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A68084

Included Lab Sample IDs: 1778148

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

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A68089

Included Lab Sample IDs: 1778148, 1778149, 1778150

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

Reference Method: SM 2120 B

Run ID: A68106

Included Lab Sample IDs: 1778148, 1778149, 1778150

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	97.9	97.5	P/P	90 - 115

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A68107

Included Lab Sample IDs: 1778149, 1778150

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Nitrite-N	99.5	108	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A68113

Included Lab Sample IDs: 1778147

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	97.2	96.2	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A68115

Included Lab Sample IDs: 1778136, 1778137, 1778138, 1778139, 1778148, 1778149, 1778150

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

Reference Method: SM 5310 B-00

Run ID: A68174

Included Lab Sample IDs: 1778141, 1778142

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	94.0	96.4	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A68199

Included Lab Sample IDs: 1778140, 1778151

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A68204

Included Lab Sample IDs: 1778141, 1778142, 1778143

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

Reference Method: SM 5310 B-00

Run ID: A68205

Included Lab Sample IDs: 1778140, 1778151

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	93.6	94.0	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A68221

Included Lab Sample IDs: 1778143, 1778152, 1778153

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	98.2	96.0	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A68254

Included Lab Sample IDs: 1778136, 1778148, 1778149

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	103	99.6	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A68254

Included Lab Sample IDs: 1778136, 1778148, 1778149, 1778150

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	99.0	99.5	P/P	90 - 110
Fluoride	99.5	97.6	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A68260

Included Lab Sample IDs: 1778140, 1778141, 1778142, 1778143, 1778151

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	101	101	P/P	90 - 110
Ammonia-N	99.9	101	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A68284

Included Lab Sample IDs: 1778152, 1778153

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

Reference Method: SM 2320 B-97

Run ID: A68295

Included Lab Sample IDs: 1778137, 1778138, 1778139

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

Reference Method: SM 4500 F-C-97

Run ID: A68295

Included Lab Sample IDs: 1778137, 1778138, 1778139

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A68325

Included Lab Sample IDs: 1778141, 1778142

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	95.3	92.4	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A68326

Included Lab Sample IDs: 1778140, 1778151, 1778152

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	97.7	93.2	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A68327

Included Lab Sample IDs: 1778143, 1778153

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	95.7	96.7	P/P	90 - 110
Kjeldahl Nitrogen	97.2	97.2	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A68331

Included Lab Sample IDs: 1778150

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	103	100	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A68335

Included Lab Sample IDs: 1778152, 1778153

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A68352

Included Lab Sample IDs: 1778140, 1778141, 1778142, 1778143, 1778151, 1778152, 1778153

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	100	99.5	P/P	90 - 110
Total-P	100	100	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				10.9	
EPA 300.0 Rev. 2.1	Chloride	108	108 108		0.0598	
EPA 350.1 Rev. 2.0	Ammonia-N	98.9	102 104			1.13
	Ammonia-N	97.6	98.0 97.6			0.369
	Ammonia-N	98.0	102 104			1.06
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	90.5	95.4 93.4			1.64
	Kjeldahl Nitrogen	98.3	93.5 100			5.74
	Kjeldahl Nitrogen	95.9	98.8 94.3			4.67
	Kjeldahl Nitrogen	98.8	91.3 104			9.35
EPA 353.2 Rev. 2.0	Nitrite-N		92.8 95.5			2.70
	Nitrite-N	97.2	95.1 92.4			2.69
	NO2NO3-N	100	98.2			0.436
	NO2NO3-N	100				0.279
	NO2NO3-N	99.5	101 99.8			0.943
	NO2NO3-N	106	106 107			0.468
EPA 365.1 Rev. 2.0	Total-P	98.6	96.9 96.8			0.0509
	Total-P	100	94.4 93.0			1.29
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	97.9	93.1 92.8			0.300
	O-Phosphate-P	99.8	94.7 95.8			0.941
	O-Phosphate-P	96.8	92.7 93.0			0.238
	O-Phosphate-P	98.9	94.8 98.1			2.61
	O-Phosphate-P	99.1	95.7 98.7			3.09
SM 2120 B	Color (true)				3.55	
SM 2320 B-97	Total Alkalinity	103			0.112	
	Total Alkalinity	103			0.134	
	Total Alkalinity	103			0.0829	
SM 2540 C-97	TDS				8.47	
SM 4500 F-C-97	Fluoride	98.1	98.2 98.9			0.516
	Fluoride	102	99.6 100			0.470
SM 5310 B-00	Organic Carbon	105	90.3 90.2			0.137
	Organic Carbon	99.6	92.6 93.1			0.533
	Organic Carbon	105	95.8 94.8			0.945

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
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Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1778136, 1778137, 1778138, 1778139, 1778148, 1778149, 1778150
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1778148, 1778149, 1778150
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1778140, 1778141, 1778142, 1778143, 1778151, 1778152, 1778153
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1778140, 1778141, 1778142, 1778143, 1778151, 1778152, 1778153
EPA 353.2 Rev. 2.0 / E31780	Nitrite in aqueous matrices as mg N/L	1778148, 1778149, 1778150
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1778140, 1778141, 1778142, 1778143, 1778151, 1778152, 1778153
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1778140, 1778141, 1778142, 1778143, 1778151, 1778152, 1778153
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1778144, 1778145, 1778146, 1778147, 1778154, 1778155, 1778156
SM 2120 B / E31780	True Color measured at 450 nm	1778148, 1778149, 1778150
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	1778136, 1778137, 1778138, 1778139, 1778148, 1778149, 1778150
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1778148, 1778149, 1778150
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1778136, 1778137, 1778138, 1778139, 1778148, 1778149, 1778150
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1778136, 1778137, 1778138, 1778139, 1778148, 1778149, 1778150
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1778140, 1778141, 1778142, 1778143, 1778151, 1778152, 1778153

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	03/08/2016			03/09/2016 14:47	Sima Feizi	1778136, 1778137, 1778138, 1778139, 1778148, 1778149, 1778150
EPA 300.0 Rev. 2.1	03/08/2016			03/11/2016	Julia Storbeck	1778148, 1778149, 1778150
EPA 350.1 Rev. 2.0	03/08/2016			03/16/2016	Diana M. Turner	1778140, 1778141, 1778142, 1778143, 1778151
	03/08/2016			03/17/2016	Diana M. Turner	1778152, 1778153
EPA 351.2 Rev. 2.0	03/08/2016	03/16/2016	Sofia Elnemr	03/18/2016	Christopher Armour	1778141, 1778142
	03/08/2016	03/17/2016	Sofia Elnemr	03/20/2016	Rochelle Y Jackson	1778143
	03/08/2016	03/18/2016	Sofia Elnemr	03/20/2016	Rochelle Y Jackson	1778140, 1778151, 1778152, 1778153
EPA 353.2 Rev. 2.0	03/08/2016			03/08/2016 19:57	Rochelle Y Jackson	1778148
	03/08/2016			03/09/2016 12:30	Virginia P. Brown	1778149
	03/08/2016			03/09/2016 12:34	Virginia P. Brown	1778150
	03/08/2016			03/11/2016	Diana M. Turner	1778140, 1778151
	03/08/2016			03/14/2016	Diana M. Turner	1778141, 1778142, 1778143
	03/08/2016			03/18/2016	Diana M. Turner	1778152, 1778153
EPA 365.1 Rev. 2.0	03/08/2016	03/17/2016	Christopher Armour	03/18/2016	Lipi Saha	1778140, 1778141, 1778142, 1778143, 1778151, 1778152, 1778153
EPA 365.1 Rev. 2.0 dissolved	03/08/2016			03/08/2016 16:35	Ping Hua	1778144
	03/08/2016			03/08/2016 16:36	Ping Hua	1778145
	03/08/2016			03/08/2016 16:37	Ping Hua	1778146
	03/08/2016			03/08/2016 16:39	Ping Hua	1778154
	03/08/2016			03/08/2016 16:40	Ping Hua	1778155
	03/08/2016			03/08/2016 16:41	Ping Hua	1778156
	03/08/2016			03/09/2016 13:41	Ping Hua	1778147
SM 2120 B	03/08/2016			03/09/2016 10:26	Rochelle Y Jackson	1778148
	03/08/2016			03/09/2016 10:28	Rochelle Y Jackson	1778149, 1778150
SM 2320 B-97	03/08/2016			03/15/2016	Dale L. Simmons	1778136, 1778148, 1778149
	03/08/2016			03/17/2016	Dale L. Simmons	1778137, 1778138, 1778139
	03/08/2016			03/18/2016	Dale L. Simmons	1778150
SM 2540 C-97	03/08/2016			03/09/2016	Yijie Li	1778148, 1778149, 1778150
SM 2540 D-97	03/08/2016			03/09/2016	Yijie Li	1778136, 1778137, 1778138, 1778139, 1778148, 1778149, 1778150
SM 4500 F-C-97	03/08/2016			03/15/2016	Dale L. Simmons	1778136, 1778148, 1778149, 1778150
	03/08/2016			03/17/2016	Dale L. Simmons	1778137, 1778138, 1778139
SM 5310 B-00	03/08/2016			03/11/2016	Sofia Elnemr	1778141, 1778142
	03/08/2016			03/12/2016	Sofia Elnemr	1778140, 1778151
	03/08/2016			03/15/2016	Sofia Elnemr	1778143, 1778152, 1778153