

Chemical Analysis Report

NW-DIST-2016-04-06-01

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

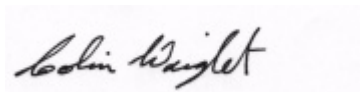
Event Description: **WBID 10D 10E**
Request ID: **RQ-2016-03-07-72**
Customer: **NW-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
160 W Government st
Suite 208A
Pensacola, FL 32502-5794
Attn: Michael King

For additional information please contact
Timothy W. Fitzpatrick
Liang-Tsair Lin, Ph.D.
Colin Wright, Ph.D.
Thekkekalathil Chandrasekhar, PhD, QA Officer
Phone (850) 245-8085

Certified by: Colin Wright, Environmental Administrator

Date Certified: 26-APR-2016 10:56

A handwritten signature in black ink, appearing to read "Colin Wright", is displayed 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: BEAR LAKE @ CENTER

Collection Date/Time: 04/05/2016 11:45

Field ID: G4NW0361

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1786762	EPA 180.1 Rev. 2.0	Turbidity	1.7		NTU	P301751	
	EPA 300.0 Rev. 2.1	Chloride	2.4		mg Cl/L	P301955	
		Sulfate	0.80		mg SO4/L	P301957	
	SM 2120 B	Color (true)	32	A	PCU	P301735	
	SM 2320 B-97	Total Alkalinity	6.9		mg CaCO3/L	P301934	
	SM 2540 C-97	TDS	21	I	mg/L	P302479	
	SM 2540 D-97	TSS	4	I	mg/L	P302394	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P301937	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.003	I	mg N/L	P302137	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.28		mg N/L	P302337	
1786767	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P302009	
	EPA 365.1 Rev. 2.0	Total-P	0.018		mg P/L	P302141	
	SM 5310 B-00	Organic Carbon	5.0		mg C/L	P301929	
	EPA 365.1 Rev. 2.0	O-Phosphate-P	0.004	U	mg P/L	P301715	
	dissolved						

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: HURRICANE LAKE @ CENTER

Collection Date/Time: 04/05/2016 12:35

Field ID: G4NW0117

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1786763	EPA 180.1 Rev. 2.0	Turbidity	1.4		NTU	P301751	
	EPA 300.0 Rev. 2.1	Chloride	2.6		mg Cl/L	P301955	
		Sulfate	0.89		mg SO4/L	P301957	
	SM 2120 B	Color (true)	16		PCU	P301735	
	SM 2320 B-97	Total Alkalinity	4.4		mg CaCO3/L	P301934	
	SM 2540 C-97	TDS	15	U	mg/L	P302479	
	SM 2540 D-97	TSS	3	I	mg/L	P302394	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P301937	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.008		mg N/L	P302137	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.35		mg N/L	P302337	
1786768	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P302009	
	EPA 365.1 Rev. 2.0	Total-P	0.014		mg P/L	P302141	
	SM 5310 B-00	Organic Carbon	4.0		mg C/L	P301929	
	EPA 365.1 Rev. 2.0	O-Phosphate-P	0.004	U	mg P/L	P301715	
	dissolved						

Ref. Method and Comment:

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

EPA 350.1 Rev. 2.0: The result was confirmed on 04/14/2016.

Sample Location: HURRICANE LAKE @ CENTER

Collection Date/Time: 04/05/2016 12:40

Field ID: G4NW0117DUPLICATE

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1786764	EPA 180.1 Rev. 2.0	Turbidity	1.2		NTU	P301751	
	EPA 300.0 Rev. 2.1	Chloride	2.6		mg Cl/L	P301955	

Field ID: G4NW0117DUPLICATE

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1786764	EPA 300.0 Rev. 2.1	Sulfate	0.88		mg SO4/L	P301957	
	SM 2120 B	Color (true)	16		PCU	P301735	
	SM 2320 B-97	Total Alkalinity	4.7		mg CaCO3/L	P301934	
	SM 2540 C-97	TDS	19	I	mg/L	P302479	
	SM 2540 D-97	TSS	3	I	mg/L	P302394	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P301937	
1786769	EPA 350.1 Rev. 2.0	Ammonia-N	0.005		mg N/L	P302137	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.29		mg N/L	P302337	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P302009	
	EPA 365.1 Rev. 2.0	Total-P	0.013		mg P/L	P302141	
	SM 5310 B-00	Organic Carbon	3.8		mg C/L	P301929	
1786774	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P301715	

Ref. Method and Comment:

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

EPA 350.1 Rev. 2.0: The result was confirmed on 04/14/2016.

Sample Location: LAKE KARICK @ CENTER

Collection Date/Time: 04/05/2016 14:00

Field ID: G4NW0274

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1786765	EPA 180.1 Rev. 2.0	Turbidity	1.8		NTU	P301751	
	EPA 300.0 Rev. 2.1	Chloride	2.2		mg Cl/L	P301955	
		Sulfate	0.87		mg SO4/L	P301957	
	SM 2120 B	Color (true)	19	A	PCU	P301736	
	SM 2320 B-97	Total Alkalinity	4.9		mg CaCO3/L	P301934	
	SM 2540 C-97	TDS	21	I	mg/L	P302479	
	SM 2540 D-97	TSS	3	I	mg/L	P302394	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P301937	
1786770	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	I	mg N/L	P302269	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.27		mg N/L	P302337	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P302009	
	EPA 365.1 Rev. 2.0	Total-P	0.013		mg P/L	P302141	
	SM 5310 B-00	Organic Carbon	3.3		mg C/L	P301929	
1786775	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P301716	

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: FIELD BLANK

Collection Date/Time: 04/05/2016 14:05

Field ID: FIELD BLANK

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1786766	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P301751	
	EPA 300.0 Rev. 2.1	Chloride	0.20	U	mg Cl/L	P301955	
		Sulfate	0.20	U	mg SO4/L	P301957	
	SM 2120 B	Color (true)	2.5	U	PCU	P301736	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P301934	

Field ID: FIELD BLANK

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1786766	SM 2540 C-97	TDS	15	U	mg/L	P302479	
	SM 2540 D-97	TSS	2	U	mg/L	P302394	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P301937	
1786771	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P302269	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P302337	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P302009	
	EPA 365.1 Rev. 2.0	Total-P	0.002	U	mg P/L	P302141	
	SM 5310 B-00	Organic Carbon	0.50	U	mg C/L	P301929	
1786776	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P301716	

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: P301751

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P301955

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P301957

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P302137

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

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P302269

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

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P302337

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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P302009

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P302141

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P301715

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P301716

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

Reference Method: SM 2120 B
Batch ID: P301735

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2120 B
Batch ID: P301736

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P301934

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

Reference Method: SM 2540 C-97
Batch ID: P302479

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P302394

Component	Result	Code	Units
TSS	2	U	mg/L

Quality Assurance Report Method Blank Results

Reference Method: SM 4500 F-C-97
Batch ID: P301937

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P301929

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: P301955

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P301957

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P302137

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P302269

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P302337

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P302009

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO ₂ NO ₃ -N	96.5		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P302141

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
-----------	---------	---------	-----------	----------------

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P302141

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P301715

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P301716

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

Reference Method: SM 2320 B-97
Batch ID: P301934

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	102		P	95 - 105

Reference Method: SM 4500 F-C-97
Batch ID: P301937

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.3		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P301929

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	95.0		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P301955

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1786870	Chloride	103		P	90 - 110
1786910	Chloride	104		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P301957

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1786870	Sulfate	102		P	90 - 110
1786910	Sulfate	109		P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P302137

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1786767	Ammonia-N	100	100	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P302269

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1786782	Ammonia-N	102	104	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P302337

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1786767	Kjeldahl Nitrogen	107	105	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P302009

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1786780	NO2NO3-N	94.2		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P302141

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1786737	Total-P	99.3	96.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P301715

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1786724	O-Phosphate-P	99.0	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P301716

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1786775	O-Phosphate-P	102	103	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P301937

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1786477	Fluoride	98.5	98.5	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P301929

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1786528	Organic Carbon	98.7		P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P301751

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1786719	Turbidity	2.53	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P301955

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1786870	Chloride	0.283	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P301957

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1786870	Sulfate	2.45	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P302137

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1786767	Ammonia-N	0.352	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P302269

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1786782	Ammonia-N	1.30	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P302337

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1786767	Kjeldahl Nitrogen	1.53	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P302009

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1786780	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P302141

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1786737	Total-P	3.41	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P301715

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1786724	O-Phosphate-P	1.30	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P301716

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1786775	O-Phosphate-P	0.779	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P301735

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1786762	Color (true)	0.513	Sample	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P301736

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1786765	Color (true)	1.08	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P301934

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1786477	Total Alkalinity	0.122	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
Batch ID: P302479

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1786778	TDS	4.90	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P301937

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1786477	Fluoride	0.0	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P301929

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1786528	Organic Carbon	0.433	Spike	P	0 - 20

Quality Assurance Report Precision

* 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 300.0 Rev. 2.1

Run ID: A68637

Included Lab Sample IDs: 1786762, 1786763, 1786764, 1786765, 1786766

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	102	101	P/P	90 - 110
Chloride	105	102	P/P	90 - 110
Sulfate	104	99.8	P/P	90 - 110
Sulfate	99.8	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A68691

Included Lab Sample IDs: 1786772, 1786773, 1786774, 1786775, 1786776

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	101	99.6	P/P	90 - 110
O-Phosphate-P	99.5	101	P/P	90 - 110
O-Phosphate-P	99.6	101	P/P	90 - 110
O-Phosphate-P	99.6	99.5	P/P	90 - 110

Reference Method: SM 2120 B

Run ID: A68699

Included Lab Sample IDs: 1786762, 1786763, 1786764, 1786765, 1786766

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	98.6	98.6	P/P	85 - 115
Color (true)	98.6	101	P/P	85 - 115

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A68705

Included Lab Sample IDs: 1786762, 1786763, 1786764, 1786765, 1786766

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	99.0	99.5	P/P	95 - 105

Reference Method: SM 5310 B-00

Run ID: A68767

Included Lab Sample IDs: 1786767, 1786768, 1786769, 1786770, 1786771

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	96.4	96.8	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A68768

Included Lab Sample IDs: 1786762, 1786763, 1786764, 1786765, 1786766

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

Quality Assurance Report Calibration Verification

Reference Method: SM 4500 F-C-97

Run ID: A68768

Included Lab Sample IDs: 1786762, 1786763, 1786764, 1786765, 1786766

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A68799

Included Lab Sample IDs: 1786767, 1786768, 1786769, 1786770, 1786771

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	97.5	96.0	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A68841

Included Lab Sample IDs: 1786767, 1786768, 1786769

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A68881

Included Lab Sample IDs: 1786767, 1786768, 1786769, 1786770, 1786771

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	98.5	97.5	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A68885

Included Lab Sample IDs: 1786770, 1786771

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	101	101	P/P	90 - 110
Ammonia-N	100	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A68947

Included Lab Sample IDs: 1786767, 1786768, 1786769, 1786770, 1786771

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	100	96.9	P/P	90 - 110
Kjeldahl Nitrogen	96.4	97.9	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 SMP	MS
EPA 180.1 Rev. 2.0	Turbidity			2.53	

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		LCS	Precision	MS
						SMP	
EPA 300.0 Rev. 2.1	Chloride	103	103	104		0.283	
	Sulfate	102	102	109		2.45	
EPA 350.1 Rev. 2.0	Ammonia-N	101	100	100			0.352
	Ammonia-N	99.8	102	104			1.30
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	95.4	107	105			1.53
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	96.5	94.2				0.0
EPA 365.1 Rev. 2.0	Total-P	97.2	99.3	96.0			3.41
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	100	99.0	100			1.30
	O-Phosphate-P	105	102	103			0.779
SM 2120 B	Color (true)					0.513	
	Color (true)					1.08	
SM 2320 B-97	Total Alkalinity	102				0.122	
SM 2540 C-97	TDS					4.90	
SM 4500 F-C-97	Fluoride	98.3	98.5	98.5			0.0
SM 5310 B-00	Organic Carbon	95.0	98.7				0.433

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1786762, 1786763, 1786764, 1786765, 1786766
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1786762, 1786763, 1786764, 1786765, 1786766
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1786762, 1786763, 1786764, 1786765, 1786766
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1786767, 1786768, 1786769, 1786770, 1786771
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1786767, 1786768, 1786769, 1786770, 1786771
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1786767, 1786768, 1786769, 1786770, 1786771
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1786767, 1786768, 1786769, 1786770, 1786771
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1786772, 1786773, 1786774, 1786775, 1786776
SM 2120 B / E31780	True Color measured at 450 nm	1786762, 1786763, 1786764, 1786765, 1786766
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	1786762, 1786763, 1786764, 1786765, 1786766
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1786762, 1786763, 1786764, 1786765, 1786766
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1786762, 1786763, 1786764, 1786765, 1786766
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1786762, 1786763, 1786764, 1786765, 1786766
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1786767, 1786768, 1786769, 1786770, 1786771

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	04/06/2016			04/06/2016 16:24	Sima Feizi	1786762, 1786763, 1786764, 1786765, 1786766
EPA 300.0 Rev. 2.1	04/06/2016			04/08/2016	Julia Storbeck	1786762, 1786763, 1786764, 1786765, 1786766
EPA 350.1 Rev. 2.0	04/06/2016			04/12/2016	Diana M. Turner	1786767, 1786768, 1786769
	04/06/2016			04/14/2016	Diana M. Turner	1786770, 1786771
EPA 351.2 Rev. 2.0	04/06/2016	04/15/2016	Sofia Elnemr	04/18/2016	Virginia P. Brown	1786767, 1786768, 1786769, 1786770, 1786771
EPA 353.2 Rev. 2.0	04/06/2016			04/11/2016	Diana M. Turner	1786767, 1786768, 1786769, 1786770, 1786771
EPA 365.1 Rev. 2.0	04/06/2016	04/13/2016	Christopher Armour	04/14/2016	Lipi Saha	1786767, 1786768, 1786769, 1786770, 1786771
EPA 365.1 Rev. 2.0 dissolved	04/06/2016			04/06/2016 13:45	Julia Storbeck	1786775
	04/06/2016			04/06/2016 14:23	Julia Storbeck	1786776
	04/06/2016			04/06/2016 14:32	Julia Storbeck	1786773
	04/06/2016			04/06/2016 14:33	Julia Storbeck	1786774
	04/06/2016			04/06/2016 14:42	Julia Storbeck	1786772
SM 2120 B	04/06/2016			04/06/2016 15:32	Blanca Fach	1786762
	04/06/2016			04/06/2016 15:38	Blanca Fach	1786763, 1786764
	04/06/2016			04/06/2016 15:42	Blanca Fach	1786765
	04/06/2016			04/06/2016 15:43	Blanca Fach	1786766
SM 2320 B-97	04/06/2016			04/08/2016	Dale L. Simmons	1786762, 1786763, 1786764, 1786765, 1786766
SM 2540 C-97	04/06/2016			04/11/2016	Yijie Li	1786762, 1786763, 1786764, 1786765, 1786766
SM 2540 D-97	04/06/2016			04/11/2016	Yijie Li	1786762, 1786763, 1786764, 1786765, 1786766
SM 4500 F-C-97	04/06/2016			04/08/2016	Dale L. Simmons	1786762, 1786763, 1786764, 1786765, 1786766
SM 5310 B-00	04/06/2016			04/08/2016	Sofia Elnemr	1786767, 1786768, 1786769, 1786770, 1786771