

Chemical Analysis Report

NE-DIST-2017-05-04-01

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

Event Description: **UEC North**
Request ID: **RQ-2017-04-24-03**
Customer: **NE-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
8800 Baymeadows Way w
Suite 100
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Certified by: Liang Lin, Environmental Administrator

Date Certified: 30-MAY-2017 15:32

A handwritten signature in black ink, appearing to read "Liang Lin", on a light-colored 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 groups are included in this report: Metals and 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: Ponte Vedra Lk @ Sawgrass Dr

Collection Date/Time: 05/03/2017 13:25

Field ID: G5NE0188 05032017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1896417	EPA 180.1 Rev. 2.0	Turbidity	4.1		NTU	P324689	
	EPA 300.0 Rev. 2.1	Chloride	110		mg Cl/L	P325109	
		Sulfate	92		mg SO4/L	P325112	
	SM 2120 B	Color (true)	72		PCU	P324633	
	SM 2320 B-97	Total Alkalinity	133	Q	mg CaCO3/L	P325520	
	SM 2540 C-97	TDS	493		mg/L	P325501	
	SM 2540 D-97	TSS	19	I	mg/L	P325304	
	SM 4500 F-C-97	Fluoride	0.25		mg F/L	P325808	
1896420	EPA 350.1 Rev. 2.0	Ammonia-N	0.039		mg N/L	P324641	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.5		mg N/L	P324984	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P324973	
	EPA 365.1 Rev. 2.0	Total-P	0.24		mg P/L	P324808	
	SM 5310 B-00	Organic Carbon	20		mg C/L	P324769	
1896423	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.15		mg P/L	P324707	

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Sulfate: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

SM 2320 B-97: Sample expired prior to analysis due to analytical difficulties.

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample. The PQL was elevated due to sample matrix interference.

Sample Location: Ponte Vedra @ Solana Rd

Collection Date/Time: 05/03/2017 13:45

Field ID: G5NE0186 05032017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1896418	EPA 180.1 Rev. 2.0	Turbidity	11		NTU	P324689	
	EPA 300.0 Rev. 2.1	Chloride	140		mg Cl/L	P325109	
		Sulfate	100		mg SO4/L	P325112	
	SM 2120 B	Color (true)	60		PCU	P324633	
	SM 2320 B-97	Total Alkalinity	141		mg CaCO3/L	P325401	
	SM 2540 C-97	TDS	569		mg/L	P325501	
	SM 2540 D-97	TSS	14		mg/L	P325304	
	SM 4500 F-C-97	Fluoride	0.28		mg F/L	P325404	RPD
1896421	EPA 350.1 Rev. 2.0	Ammonia-N	0.006		mg N/L	P324641	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	2.2		mg N/L	P325084	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P324973	
	EPA 365.1 Rev. 2.0	Total-P	0.22		mg P/L	P324808	
	SM 5310 B-00	Organic Carbon	19		mg C/L	P324769	
1896424	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.030		mg P/L	P324707	

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Sulfate: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

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

Sample Location: Oyster Crk @ S.Dixie Hwy

Collection Date/Time: 05/03/2017 09:50

Field ID: G5NE0075 05032017

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
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Field ID: G5NE0075 05032017

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1896426	EPA 180.1 Rev. 2.0	Turbidity	31	A	NTU	P324690	
	SM 2320 B-97	Total Alkalinity	148		mg CaCO3/L	P325238	
	SM 2540 D-97	TSS	46	A	mg/L	P325307	
	SM 4500 F-C-97	Fluoride	1.2		mg F/L	P325240	RPD
1896427	EPA 350.1 Rev. 2.0	Ammonia-N	0.0053		mg N/L	P324643	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.2		mg N/L	P324982	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P325083	
	EPA 365.1 Rev. 2.0	Total-P	0.18		mg P/L	P324987	
	SM 5310 B-00	Organic Carbon	6.4		mg C/L	P324771	
1896428	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.055		mg P/L	P324710	

Sample Location: Wildwood Crk @ Wildwood Rd

Collection Date/Time: 05/03/2017 10:20

Field ID: G5NE0194 05032017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1896419	EPA 180.1 Rev. 2.0	Turbidity	1.9		NTU	P324689	
	EPA 300.0 Rev. 2.1	Chloride	56		mg Cl/L	P325109	
		Sulfate	11		mg SO4/L	P325112	
	SM 2120 B	Color (true)	63		PCU	P324633	
	SM 2320 B-97	Total Alkalinity	117		mg CaCO3/L	P325400	
	SM 2540 C-97	TDS	262	A	mg/L	P325502	
	SM 2540 D-97	TSS	5	IA	mg/L	P325305	
	SM 4500 F-C-97	Fluoride	0.11		mg F/L	P325739	RPD
1896422	EPA 350.1 Rev. 2.0	Ammonia-N	0.020		mg N/L	P324641	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.51		mg N/L	P325084	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.016		mg N/L	P324973	
	EPA 365.1 Rev. 2.0	Total-P	0.16		mg P/L	P324808	
	SM 5310 B-00	Organic Carbon	9.1		mg C/L	P324769	
1896425	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.13		mg P/L	P324712	

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Sulfate: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

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

Sample Location: Cracker Branch 1.5mi N of CR 204

Collection Date/Time: 05/03/2017 10:45

Field ID: G5NE0580 05032017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1896429	EPA 180.1 Rev. 2.0	Turbidity	1.4		NTU	P324690	
	EPA 300.0 Rev. 2.1	Chloride	320		mg Cl/L	P325109	
		Sulfate	48		mg SO4/L	P325112	
	SM 2120 B	Color (true)	38		PCU	P324633	
	SM 2320 B-97	Total Alkalinity	100		mg CaCO3/L	P325400	
	SM 2540 C-97	TDS	703		mg/L	P325501	
	SM 2540 D-97	TSS	2	I	mg/L	P325304	
	SM 4500 F-C-97	Fluoride	0.15		mg F/L	P325739	RPD
1896430	EPA 350.1 Rev. 2.0	Ammonia-N	0.036		mg N/L	P324641	

Field ID: G5NE0580 05032017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1896430	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.29		mg N/L	P324986	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.047		mg N/L	P324973	
	EPA 365.1 Rev. 2.0	Total-P	0.27		mg P/L	P324808	
	SM 5310 B-00	Organic Carbon	4.9		mg C/L	P324769	
1896431	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.21		mg P/L	P324707	
1896438	EPA 200.7 Rev. 4.4	Calcium	45.1		mg/L	P324943	
		Iron	300		ug/L	P324943	
		Magnesium	22.9		mg/L	P324943	
		Potassium	6.1		mg/L	P324943	
		Sodium	167		mg/L	P324943	
	EPA 200.8 Rev. 5.4	Zinc	5.0	U	ug/L	P324943	
		Arsenic	0.30		ug/L	P324943	
		Cadmium	0.020	U	ug/L	P324943	
		Chromium	0.40	U	ug/L	P324943	
		Copper	0.20	U	ug/L	P324943	
		Lead	0.058	I	ug/L	P324943	
		Nickel	0.20	U	ug/L	P324943	
		Silver	0.010	U	ug/L	P324943	

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Sulfate: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P324689

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P324690

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P324943

Component	Result	Code	Units
Calcium	0.075	U	mg/L
Iron	30	U	ug/L
Magnesium	0.040	U	mg/L
Potassium	0.30	U	mg/L
Sodium	0.50	U	mg/L
Zinc	5.0	U	ug/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P324943

Component	Result	Code	Units
Arsenic	0.050	U	ug/L
Cadmium	0.020	U	ug/L
Chromium	0.40	U	ug/L
Copper	0.20	U	ug/L
Lead	0.050	U	ug/L
Nickel	0.20	U	ug/L
Silver	0.010	U	ug/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P325109

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P325112

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P324641

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P324643

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P324982

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P324984

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P324986

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P325084

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P324973

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P325083

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: P324808

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P324987

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P324707

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P324710

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P324712

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

Reference Method: SM 2120 B
Batch ID: P324633

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Quality Assurance Report Method Blank Results

Reference Method: SM 2320 B-97
Batch ID: P325238

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

Reference Method: SM 2320 B-97
Batch ID: P325400

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

Reference Method: SM 2320 B-97
Batch ID: P325401

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

Reference Method: SM 2320 B-97
Batch ID: P325520

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

Reference Method: SM 2540 C-97
Batch ID: P325501

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-97
Batch ID: P325502

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P325304

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P325305

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P325307

Component	Result	Code	Units
TSS	3	U	mg/L

Quality Assurance Report Method Blank Results

Reference Method: SM 4500 F-C-97
Batch ID: P325240

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-97
Batch ID: P325404

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-97
Batch ID: P325739

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-97
Batch ID: P325808

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P324769

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

Reference Method: SM 5310 B-00
Batch ID: P324771

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P324943

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	101		P	85 - 115
Iron	107		P	85 - 115
Magnesium	104		P	85 - 115
Potassium	100		P	85 - 115
Sodium	102		P	85 - 115
Zinc	99.4		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P324943

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Arsenic	103		P	85 - 115

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P324943

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Cadmium	103		P	85 - 115
Chromium	100		P	85 - 115
Copper	98.9		P	85 - 115
Lead	100		P	85 - 115
Nickel	101		P	85 - 115
Silver	97.5		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P325109

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P325112

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P324641

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P324643

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P324982

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P324984

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P324986

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P325084

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P324973

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	103		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P325083

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	104		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P324808

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P324987

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P324707

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P324710

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	98.2		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P324712

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

Reference Method: SM 2320 B-97
Batch ID: P325238

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	103		P	95 - 108

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 2320 B-97
Batch ID: P325400

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	103		P	95 - 108

Reference Method: SM 2320 B-97
Batch ID: P325401

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	103		P	95 - 108

Reference Method: SM 2320 B-97
Batch ID: P325520

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	104		P	95 - 108

Reference Method: SM 4500 F-C-97
Batch ID: P325240

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	95.7		P	92 - 103

Reference Method: SM 4500 F-C-97
Batch ID: P325404

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	94.3		P	92 - 103

Reference Method: SM 4500 F-C-97
Batch ID: P325739

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	101		P	92 - 103

Reference Method: SM 4500 F-C-97
Batch ID: P325808

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.9		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P324769

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

Reference Method: SM 5310 B-00
Batch ID: P324771

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

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P324943

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1896164	Calcium	101		P	80 - 120
1896164	Iron	106		P	80 - 120
1896164	Magnesium	103		P	80 - 120
1896164	Potassium	101		P	80 - 120
1896164	Sodium	104		P	80 - 120
1896164	Zinc	96.8		P	80 - 120
1896381	Calcium	104		P	80 - 120
1896381	Iron	104	105	P/P	80 - 120
1896381	Magnesium	105		P	80 - 120
1896381	Potassium	99.0	96.6	P/P	80 - 120
1896381	Sodium	103		P	80 - 120
1896381	Zinc	98.7	98.9	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P324943

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1896164	Arsenic	104		P	80 - 120
1896164	Cadmium	105		P	80 - 120
1896164	Chromium	97.6		P	80 - 120
1896164	Copper	96.6		P	80 - 120
1896164	Lead	100		P	80 - 120
1896164	Nickel	98.5		P	80 - 120
1896164	Silver	97.0		P	80 - 120
1896381	Arsenic	105	106	P/P	80 - 120
1896381	Cadmium	106	105	P/P	80 - 120
1896381	Chromium	96.2	95.9	P/P	80 - 120
1896381	Copper	94.8	96.2	P/P	80 - 120
1896381	Lead	101	102	P/P	80 - 120
1896381	Nickel	96.1	96.8	P/P	80 - 120
1896381	Silver	95.1	96.2	P/P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P325109

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1896394	Chloride	105		P	90 - 110
1896473	Chloride	105		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P325112

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1896394	Sulfate	99.2		P	90 - 110
1896473	Sulfate	98.7		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P324641

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1896339	Ammonia-N	106	108	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P324643

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1896279	Ammonia-N	108	108	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P324982

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1896350	Kjeldahl Nitrogen	97.9	98.5	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P324984

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1896401	Kjeldahl Nitrogen	101	97.2	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P324986

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1896482	Kjeldahl Nitrogen	96.9	94.9	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P325084

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1896916	Kjeldahl Nitrogen	103	107	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P324973

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1896420	NO2NO3-N	101	102	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P325083

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1896350	NO2NO3-N	105	108	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P324808

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1896398	Total-P	104	108	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P324987

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1897111	Total-P	97.2	102	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P324707

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1896156	O-Phosphate-P	98.1	97.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P324710

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1896228	O-Phosphate-P	98.2	99.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P324712

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1896487	O-Phosphate-P	98.1	98.6	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P325240

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1895713	Fluoride	92.5	98.8	P/P	91 - 105

Reference Method: SM 4500 F-C-97
Batch ID: P325404

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1896397	Fluoride	97.0	101	P/P	91 - 105

Reference Method: SM 4500 F-C-97
Batch ID: P325739

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1896078	Fluoride	99.7	104	P/P	91 - 105

Reference Method: SM 4500 F-C-97
Batch ID: P325808

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1896723	Fluoride	98.7	99.4	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P324769

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1896225	Organic Carbon	100	102	P/P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P324771

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1896212	Organic Carbon	97.1	98.2	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P324689

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1896338	Turbidity	5.08	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P324690

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1896426	Turbidity	0.324	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P324943

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1896381	Calcium	2.34	Spike	P	0 - 20
1896381	Iron	0.798	Spike	P	0 - 20
1896381	Magnesium	0.858	Spike	P	0 - 20
1896381	Potassium	1.39	Spike	P	0 - 20
1896381	Sodium	1.72	Spike	P	0 - 20
1896381	Zinc	0.126	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P324943

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1896381	Arsenic	0.754	Spike	P	0 - 20
1896381	Cadmium	0.292	Spike	P	0 - 20
1896381	Chromium	0.332	Spike	P	0 - 20
1896381	Copper	1.42	Spike	P	0 - 20
1896381	Lead	0.920	Spike	P	0 - 20
1896381	Nickel	0.674	Spike	P	0 - 20
1896381	Silver	1.13	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P325109

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1896394	Chloride	0.356	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P324641

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1896339	Ammonia-N	1.50	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P324643

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1896279	Ammonia-N	0.313	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P324982

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1896350	Kjeldahl Nitrogen	0.368	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P324984

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1896401	Kjeldahl Nitrogen	2.70	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P324986

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1896482	Kjeldahl Nitrogen	1.54	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P325084

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1896916	Kjeldahl Nitrogen	3.20	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P324973

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1896420	NO2NO3-N	1.47	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P325083

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1896350	NO2NO3-N	2.35	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P324808

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1896398	Total-P	3.46	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P324987

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1897111	Total-P	3.92	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P324707

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1896156	O-Phosphate-P	0.213	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P324710

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1896228	O-Phosphate-P	1.02	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P324712

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1896487	O-Phosphate-P	0.508	Spike	P	0 - 20

Reference Method: SM 2120 B

Batch ID: P324633

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1896475	Color (true)	1.26	Sample	P	0 - 20

Reference Method: SM 2320 B-97

Batch ID: P325238

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1895713	Total Alkalinity	0.724	Sample	P	0 - 4.8

Reference Method: SM 2320 B-97

Batch ID: P325400

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1896144	Total Alkalinity	0.0829	Sample	P	0 - 4.8

Reference Method: SM 2320 B-97

Batch ID: P325401

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1896397	Total Alkalinity	0.451	Sample	P	0 - 4.8

Quality Assurance Report Precision

Reference Method: SM 2320 B-97
Batch ID: P325520

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1898240	Total Alkalinity	0.00206	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
Batch ID: P325501

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1896345	TDS	2.16	Sample	P	0 - 10

Reference Method: SM 2540 C-97
Batch ID: P325502

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1896419	TDS	1.53	Sample	P	0 - 10

Reference Method: SM 2540 D-97
Batch ID: P325307

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1896426	TSS	1.09	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P325240

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1895713	Fluoride	3.84	Spike	F	0 - 3.0

Reference Method: SM 4500 F-C-97
Batch ID: P325404

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1896397	Fluoride	3.56	Spike	F	0 - 3.0

Reference Method: SM 4500 F-C-97
Batch ID: P325739

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1896078	Fluoride	3.49	Spike	F	0 - 3.0

Reference Method: SM 4500 F-C-97
Batch ID: P325808

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1896723	Fluoride	0.480	Spike	P	0 - 3.0

Quality Assurance Report Precision

Reference Method: SM 5310 B-00
Batch ID: P324769

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1896225	Organic Carbon	0.941	Spike	P	0 - 20

Reference Method: SM 5310 B-00
Batch ID: P324771

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1896212	Organic Carbon	0.851	Spike	P	0 - 20

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

Quality Assurance Report Calibration Verification

Reference Method: SM 2120 B
Run ID: A76192
Included Lab Sample IDs: 1896417, 1896418, 1896419, 1896429

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	101	99.7	P/P	85 - 115

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A76193
Included Lab Sample IDs: 1896420, 1896421, 1896422, 1896427, 1896430

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

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A76202
Included Lab Sample IDs: 1896417, 1896418, 1896419, 1896426, 1896429

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	101	101	P/P	95 - 105

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A76210
Included Lab Sample IDs: 1896423, 1896424, 1896425, 1896428, 1896431

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.1	99.2	P/P	90 - 110
O-Phosphate-P	99.9	99.3	P/P	90 - 110

Reference Method: SM 5310 B-00
Run ID: A76231
Included Lab Sample IDs: 1896420, 1896421, 1896422, 1896427, 1896430

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
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Quality Assurance Report Calibration Verification

Reference Method: SM 5310 B-00

Run ID: A76231

Included Lab Sample IDs: 1896420, 1896421, 1896422, 1896427, 1896430

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	101	101	P/P	90 - 110
Organic Carbon	99.6	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A76259

Included Lab Sample IDs: 1896420, 1896421, 1896422, 1896430

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

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A76269

Included Lab Sample IDs: 1896417, 1896418, 1896419, 1896429

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	102	103	P/P	90 - 110
Sulfate	95.2	96.5	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A76313

Included Lab Sample IDs: 1896420, 1896421, 1896422, 1896430

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A76348

Included Lab Sample IDs: 1896427

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A76350

Included Lab Sample IDs: 1896427

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

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A76365

Included Lab Sample IDs: 1896438

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Arsenic	97.2	97.5	P/P	90 - 110
Cadmium	99.3	99.4	P/P	90 - 110
Chromium	95.1	96.4	P/P	90 - 110
Copper	98.0	97.3	P/P	90 - 110
Lead	98.4	97.4	P/P	90 - 110
Nickel	96.3	95.2	P/P	90 - 110
Silver	98.4	97.7	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A76391

Included Lab Sample IDs: 1896420, 1896427

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

Reference Method: SM 2320 B-97

Run ID: A76396

Included Lab Sample IDs: 1896426

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

Reference Method: SM 4500 F-C-97

Run ID: A76396

Included Lab Sample IDs: 1896426

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	96.4	100	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A76416

Included Lab Sample IDs: 1896421, 1896422

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

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A76431

Included Lab Sample IDs: 1896438

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	102	102	P/P	90 - 110
Iron	102	102	P/P	90 - 110
Magnesium	102	103	P/P	90 - 110
Potassium	102	102	P/P	90 - 110
Sodium	101	102	P/P	90 - 110
Zinc	101	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A76434

Included Lab Sample IDs: 1896430

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

Reference Method: SM 2320 B-97

Run ID: A76469

Included Lab Sample IDs: 1896418, 1896419, 1896429

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	100	102	P/P	90 - 110
Total Alkalinity	101	103	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 2320 B-97

Run ID: A76469

Included Lab Sample IDs: 1896418, 1896419, 1896429

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	102	101	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A76469

Included Lab Sample IDs: 1896418

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	95.3	98.4	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A76528

Included Lab Sample IDs: 1896417

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	101	104	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A76633

Included Lab Sample IDs: 1896419, 1896429

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	98.0	104	P/P	90 - 110
Fluoride	99.1	98.0	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A76661

Included Lab Sample IDs: 1896417

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	101	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				5.08	
	Turbidity				0.324	
EPA 200.7 Rev. 4.4	Calcium	101	101 104			2.34
	Iron	107	106 104 105			0.798
	Magnesium	104	103 105			0.858
	Potassium	100	101 99.0 96.6			1.39
	Sodium	102	104 103			1.72
	Zinc	99.4	96.8 98.7 98.9			0.126
EPA 200.8 Rev. 5.4	Arsenic	103	104 105 106			0.754
	Cadmium	103	105 106 105			0.292

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery			Precision SMP	MS
			LCS				
EPA 200.8 Rev. 5.4	Chromium	100	97.6	96.2	95.9		0.332
	Copper	98.9	96.6	94.8	96.2		1.42
	Lead	100	100	101	102		0.920
	Nickel	101	98.5	96.1	96.8		0.674
	Silver	97.5	97.0	95.1	96.2		1.13
EPA 300.0 Rev. 2.1	Chloride	106	105	105		0.356	
	Sulfate	98.5	99.2	98.7			
EPA 350.1 Rev. 2.0	Ammonia-N	108	106	108			1.50
	Ammonia-N	108	108	108			0.313
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	100	97.9	98.5			0.368
	Kjeldahl Nitrogen	100	101	97.2			2.70
	Kjeldahl Nitrogen	104	96.9	94.9			1.54
	Kjeldahl Nitrogen	102	103	107			3.20
EPA 353.2 Rev. 2.0	NO2NO3-N	103	101	102			1.47
	NO2NO3-N	104	105	108			2.35
EPA 365.1 Rev. 2.0	Total-P	102	104	108			3.46
	Total-P	101	97.2	102			3.92
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	98.7	98.1	97.8			0.213
	O-Phosphate-P	98.2	98.2	99.8			1.02
	O-Phosphate-P	98.6	98.1	98.6			0.508
SM 2120 B	Color (true)					1.26	
SM 2320 B-97	Total Alkalinity	103				0.724	
	Total Alkalinity	103				0.0829	
	Total Alkalinity	103				0.451	
	Total Alkalinity	104				0.0020	
SM 2540 C-97	TDS					2.16	
	TDS					1.53	
SM 2540 D-97	TSS					1.09	
SM 4500 F-C-97	Fluoride	95.7	92.5	98.8			3.84
	Fluoride	94.3	97.0	101			3.56
	Fluoride	101	99.7	104			3.49
	Fluoride	98.9	98.7	99.4			0.480
SM 5310 B-00	Organic Carbon	101	100	102			0.941
	Organic Carbon	102	97.1	98.2			0.851

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1896417, 1896418, 1896419, 1896426, 1896429
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	1896438
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	1896438
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1896417, 1896418, 1896419, 1896429
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1896417, 1896418, 1896419, 1896429
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1896420, 1896421, 1896422, 1896427, 1896430
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1896420, 1896421, 1896422, 1896427, 1896430
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1896420, 1896421, 1896422, 1896427, 1896430

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1896420, 1896421, 1896422, 1896427, 1896430
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1896423, 1896424, 1896425, 1896428, 1896431
SM 2120 B / E31780	True Color measured at 450 nm	1896417, 1896418, 1896419, 1896429
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	1896417, 1896418, 1896419, 1896426, 1896429
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1896417, 1896418, 1896419, 1896429
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1896417, 1896418, 1896419, 1896426, 1896429
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1896417, 1896418, 1896419, 1896426, 1896429
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1896420, 1896421, 1896422, 1896427, 1896430

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	05/04/2017			05/04/2017 17:05	Sima Feizi	1896417, 1896418, 1896419, 1896426, 1896429
EPA 200.7 Rev. 4.4	05/04/2017	05/09/2017	Elliott D. Healy	05/15/2017	Martin Acosta	1896438
EPA 200.8 Rev. 5.4	05/04/2017	05/09/2017	Elliott D. Healy	05/11/2017	Betina Topolski	1896438
EPA 300.0 Rev. 2.1	05/04/2017			05/11/2017	Ping Hua	1896417, 1896418, 1896419, 1896429
EPA 350.1 Rev. 2.0	05/04/2017			05/04/2017	Julie Michelle Frank	1896420, 1896421, 1896422, 1896427, 1896430
EPA 351.2 Rev. 2.0	05/04/2017	05/10/2017	Adrian Shelby	05/12/2017	Joseph Suarez	1896420, 1896427
	05/04/2017	05/11/2017	Adrian Shelby	05/15/2017	Joseph Suarez	1896421, 1896422, 1896430
EPA 353.2 Rev. 2.0	05/04/2017			05/09/2017	Beverly Y. Sanders	1896420, 1896421, 1896422, 1896430
	05/04/2017			05/11/2017	Beverly Y. Sanders	1896427
EPA 365.1 Rev. 2.0	05/04/2017	05/08/2017	Vijayalakshmi Reddy	05/09/2017	Christopher Armour	1896420, 1896421, 1896422, 1896430
	05/04/2017	05/10/2017	Vijayalakshmi Reddy	05/11/2017	Lipi Saha	1896427
EPA 365.1 Rev. 2.0 dissolved	05/04/2017			05/04/2017 15:16	Anthony C. Onicha	1896431
	05/04/2017			05/04/2017 16:30	Anthony C. Onicha	1896423
	05/04/2017			05/04/2017 16:32	Anthony C. Onicha	1896424
	05/04/2017			05/04/2017 16:33	Anthony C. Onicha	1896425
	05/04/2017			05/04/2017 16:36	Anthony C. Onicha	1896428
SM 2120 B	05/04/2017			05/04/2017 15:55	Julia Storbeck	1896417, 1896418
	05/04/2017			05/04/2017 15:56	Julia Storbeck	1896419
	05/04/2017			05/04/2017 15:57	Julia Storbeck	1896429
SM 2320 B-97	05/04/2017			05/13/2017	Dale L. Simmons	1896426
	05/04/2017			05/15/2017	Dale L. Simmons	1896419
	05/04/2017			05/16/2017	Dale L. Simmons	1896418, 1896429
	05/04/2017			05/18/2017	Dale L. Simmons	1896417
SM 2540 C-97	05/04/2017			05/08/2017	Sima Feizi	1896417, 1896418, 1896419, 1896429
SM 2540 D-97	05/04/2017			05/08/2017	Sima Feizi	1896417, 1896418, 1896419, 1896426, 1896429
SM 4500 F-C-97	05/04/2017			05/13/2017	Dale L. Simmons	1896426
	05/04/2017			05/16/2017	Dale L. Simmons	1896418
	05/04/2017			05/23/2017	Dale L. Simmons	1896419
	05/04/2017			05/24/2017	Dale L. Simmons	1896417, 1896429
SM 5310 B-00	05/04/2017			05/04/2017	Julie Michelle Frank	1896420, 1896421, 1896422, 1896430
	05/04/2017			05/05/2017	Julie Michelle Frank	1896427