

Chemical Analysis Report

CEN-DIST-2017-06-06-02

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

Event Description: **Horse Creek/Elbow Creek**
Request ID: **RQ-2017-06-05-37**
Customer: **CEN-DIST**
Project ID: **SMP**

Send Reports to:
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3319 Maguire Blvd., Suite 232
Orlando, FL 32803-3767
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Certified by: Thekkekalathil Chandrasekhar, Chemist Administrator

Date Certified: 28-JUN-2017 12:55



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: ELBOW CREEK @ 540M DS OF APOLLO BLVD. Collection Date/Time: 06/05/2017 10:40

Field ID: G5CE0070

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1903656	EPA 180.1 Rev. 2.0	Turbidity	1.2		NTU	P326344	
	EPA 300.0 Rev. 2.1	Chloride	110		mg Cl/L	P326860	
		Sulfate	30		mg SO4/L	P326862	
	SM 2120 B	Color (true)	79		PCU	P326490	
	SM 2320 B-97	Total Alkalinity	129		mg CaCO3/L	P326590	
	SM 2540 C-97	TDS	433		mg/L	P326695	
	SM 2540 D-97	TSS	4	I	mg/L	P326666	
	SM 4500 F-C-97	Fluoride	0.11		mg F/L	P327061	
1903657	EPA 350.1 Rev. 2.0	Ammonia-N	0.028		mg N/L	P326378	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.63		mg N/L	P326559	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.056		mg N/L	P326448	
	EPA 365.1 Rev. 2.0	Total-P	0.084		mg P/L	P326388	
	SM 5310 B-00	Organic Carbon	15		mg C/L	P326505	
1903658	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.063		mg P/L	P326312	

Ref. Method and Comment:

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

Sample Location: HORSE CREEK WEST OF US HIGHWAY 1 BRIDGE

Collection Date/Time: 06/05/2017 11:05

Field ID: G5CE0071

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1903650	EPA 180.1 Rev. 2.0	Turbidity	5.1		NTU	P326344	
	SM 2320 B-97	Total Alkalinity	114		mg CaCO3/L	P326654	
	SM 2540 D-97	TSS	9	I	mg/L	P326669	
	SM 4500 F-C-97	Fluoride	0.74		mg F/L	P326656	
1903652	EPA 350.1 Rev. 2.0	Ammonia-N	0.064		mg N/L	P326380	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.72		mg N/L	P326412	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.042		mg N/L	P326623	
	EPA 365.1 Rev. 2.0	Total-P	0.11		mg P/L	P326429	
	SM 5310 B-00	Organic Carbon	11		mg C/L	P326507	
1903654	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.056		mg P/L	P326313	
1903662	EPA 200.7 Rev. 4.4	Iron	270	I	ug/L	P326778	
	EPA 200.8 Rev. 5.4	Arsenic	2.1		ug/L	P326778	
		Cadmium	0.10	U	ug/L	P326778	
		Chromium	2.0	U	ug/L	P326778	
		Copper	1.0	U	ug/L	P326778	
		Lead	0.34	I	ug/L	P326778	
		Nickel	1.0	U	ug/L	P326778	
		Silver	0.050	U	ug/L	P326778	
		Zinc	5.0	U	ug/L	P326778	

Ref. Method and Comment:

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

Sample Location: HORSE CREEK @ CROTON ROAD BRIDGE

Collection Date/Time: 06/05/2017 11:30

Field ID: G5CE0078

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1903651	EPA 180.1 Rev. 2.0	Turbidity	2.3		NTU	P326344	
	SM 2320 B-97	Total Alkalinity	88		mg CaCO3/L	P326593	
	SM 2540 D-97	TSS	3	I	mg/L	P326668	
	SM 4500 F-C-97	Fluoride	0.14		mg F/L	P326597	
1903653	EPA 350.1 Rev. 2.0	Ammonia-N	0.024		mg N/L	P326378	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.81		mg N/L	P326559	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.084		mg N/L	P326448	
	EPA 365.1 Rev. 2.0	Total-P	0.039		mg P/L	P326388	
	SM 5310 B-00	Organic Carbon	17		mg C/L	P326505	
1903655	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.017		mg P/L	P326311	
1903663	EPA 200.7 Rev. 4.4	Iron	80	I	ug/L	P326516	
		Zinc	5.0	U	ug/L	P326516	
	EPA 200.8 Rev. 5.4	Arsenic	1.62		ug/L	P326516	
		Cadmium	0.020	U	ug/L	P326516	
		Chromium	0.53	I	ug/L	P326516	
		Copper	0.81		ug/L	P326516	
		Lead	0.14	I	ug/L	P326516	
		Nickel	0.38	I	ug/L	P326516	
		Silver	0.010	U	ug/L	P326516	

Ref. Method and Comment:

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: P326344

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P326516

Component	Result	Code	Units
Iron	30	U	ug/L
Zinc	5.0	U	ug/L

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P326778

Component	Result	Code	Units
Iron	30	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P326516

Component	Result	Code	Units
Arsenic	0.050	U	ug/L
Cadmium	0.020	U	ug/L
Chromium	0.40	U	ug/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P326516

Component	Result	Code	Units
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 200.8 Rev. 5.4
Batch ID: P326778

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
Zinc	1.0	U	ug/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P326860

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P326862

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P326378

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P326380

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P326412

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P326559

Component	Result	Code	Units
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Quality Assurance Report

Method Blank Results

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P326559

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P326448

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: P326623

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: P326388

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P326429

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P326311

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P326312

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P326313

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

Reference Method: SM 2120 B
Batch ID: P326490

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Quality Assurance Report

Method Blank Results

Reference Method: SM 2320 B-97
Batch ID: P326590

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

Reference Method: SM 2320 B-97
Batch ID: P326593

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

Reference Method: SM 2320 B-97
Batch ID: P326654

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

Reference Method: SM 2540 C-97
Batch ID: P326695

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P326666

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P326668

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P326669

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P326597

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-97
Batch ID: P326656

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Quality Assurance Report Method Blank Results

Reference Method: SM 4500 F-C-97
Batch ID: P327061

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P326505

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

Reference Method: SM 5310 B-00
Batch ID: P326507

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: P326516

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Iron	104		P	85 - 115
Zinc	97.5		P	85 - 115

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P326778

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Iron	104		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P326516

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Arsenic	105		P	85 - 115
Cadmium	103		P	85 - 115
Chromium	100		P	85 - 115
Copper	100		P	85 - 115
Lead	97.9		P	85 - 115
Nickel	102		P	85 - 115
Silver	98.8		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P326778

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Arsenic	98.0		P	85 - 115
Cadmium	98.8		P	85 - 115
Chromium	98.8		P	85 - 115
Copper	97.0		P	85 - 115
Lead	96.3		P	85 - 115

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P326778

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Nickel	100		P	85 - 115
Silver	95.0		P	85 - 115
Zinc	98.1		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P326860

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	99.2		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P326862

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	99.9		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P326378

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P326380

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: P326412

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	97.3		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P326559

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P326448

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO ₂ NO ₃ -N	103		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P326623

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO ₂ NO ₃ -N	103		P	90 - 110

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P326388

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P326429

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P326311

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	97.5		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P326312

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P326313

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	97.3		P	90 - 110

Reference Method: SM 2320 B-97
Batch ID: P326590

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	102		P	95 - 108

Reference Method: SM 2320 B-97
Batch ID: P326593

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

Reference Method: SM 2320 B-97
Batch ID: P326654

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

Reference Method: SM 4500 F-C-97
Batch ID: P326597

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.2		P	92 - 103

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 4500 F-C-97
Batch ID: P326656

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	96.5		P	92 - 103

Reference Method: SM 4500 F-C-97
Batch ID: P327061

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

Reference Method: SM 5310 B-00
Batch ID: P326505

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

Reference Method: SM 5310 B-00
Batch ID: P326507

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

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P326516

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1903833	Iron	107		P	80 - 120
1903833	Zinc	101		P	80 - 120
1904095	Iron	104	104	P/P	80 - 120
1904095	Zinc	100	98.1	P/P	80 - 120

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P326778

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1903834	Iron	103	102	P/P	70 - 130

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P326516

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1903833	Arsenic	106		P	80 - 120
1903833	Cadmium	103		P	80 - 120
1903833	Chromium	98.0		P	80 - 120
1903833	Copper	96.9		P	80 - 120
1903833	Lead	101		P	80 - 120
1903833	Nickel	98.3		P	80 - 120
1903833	Silver	98.7		P	80 - 120
1904095	Arsenic	106	106	P/P	80 - 120
1904095	Cadmium	106	105	P/P	80 - 120

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P326516

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1904095	Chromium	97.1	97.3	P/P	80 - 120
1904095	Copper	98.5	98.4	P/P	80 - 120
1904095	Lead	100	100	P/P	80 - 120
1904095	Nickel	99.8	99.8	P/P	80 - 120
1904095	Silver	98.7	98.3	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P326778

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1903834	Arsenic	91.8	93.4	P/P	70 - 130
1903834	Cadmium	93.6	91.2	P/P	80 - 120
1903834	Chromium	86.7	87.2	P/P	80 - 120
1903834	Copper	94.4	95.7	P/P	80 - 120
1903834	Lead	100	102	P/P	80 - 120
1903834	Nickel	102	103	P/P	80 - 120
1903834	Silver	88.8	89.2	P/P	80 - 120
1903834	Zinc	92.0	92.7	P/P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P326860

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1903324	Chloride	106		P	90 - 110
1903963	Chloride	97.9		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P326862

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1903324	Sulfate	104		P	90 - 110
1903963	Sulfate	95.3		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P326378

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1903563	Ammonia-N	100	102	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P326380

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1903881	Ammonia-N	101	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P326412

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1903516	Kjeldahl Nitrogen	102	102	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P326559

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1903681	Kjeldahl Nitrogen	103	102	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P326448

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1903653	NO2NO3-N	103	103	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P326623

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1903881	NO2NO3-N	104	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P326388

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1903587	Total-P	98.3	99.9	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P326429

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1903515	Total-P	93.2	92.4	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P326311

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1903591	O-Phosphate-P	96.5	97.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P326312

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1903721	O-Phosphate-P	96.4	97.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P326313

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1903793	O-Phosphate-P	95.1	96.3	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P326597

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1903965	Fluoride	97.4	97.9	P/P	91 - 105

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SM 4500 F-C-97
Batch ID: P326656

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1904221	Fluoride	99.1	99.1	P/P	91 - 105

Reference Method: SM 4500 F-C-97
Batch ID: P327061

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1903394	Fluoride	101	101	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P326505

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1903398	Organic Carbon	97.3	97.6	P/P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P326507

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1903200	Organic Carbon	96.0	94.1	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P326344

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1903612	Turbidity	1.66	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P326516

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1904095	Iron	0.201	Spike	P	0 - 20
1904095	Zinc	1.98	Spike	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P326778

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1903834	Iron	1.29	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P326516

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1904095	Arsenic	0.762	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P326516

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1904095	Cadmium	1.52	Spike	P	0 - 20
1904095	Chromium	0.160	Spike	P	0 - 20
1904095	Copper	0.119	Spike	P	0 - 20
1904095	Lead	0.519	Spike	P	0 - 20
1904095	Nickel	0.0363	Spike	P	0 - 20
1904095	Silver	0.409	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P326778

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1903834	Arsenic	1.62	Spike	P	0 - 20
1903834	Cadmium	2.65	Spike	P	0 - 20
1903834	Chromium	0.604	Spike	P	0 - 20
1903834	Copper	1.28	Spike	P	0 - 20
1903834	Lead	1.15	Spike	P	0 - 20
1903834	Nickel	1.09	Spike	P	0 - 20
1903834	Silver	0.374	Spike	P	0 - 20
1903834	Zinc	0.777	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P326860

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1903324	Chloride	2.98	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P326862

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1903324	Sulfate	3.34	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P326378

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1903563	Ammonia-N	1.43	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P326380

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1903881	Ammonia-N	0.452	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P326412

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1903516	Kjeldahl Nitrogen	0.879	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P326559

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1903681	Kjeldahl Nitrogen	0.410	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P326448

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1903653	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P326623

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1903881	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P326388

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1903587	Total-P	1.55	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P326429

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1903515	Total-P	0.833	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P326311

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1903591	O-Phosphate-P	0.925	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P326312

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1903721	O-Phosphate-P	0.751	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P326313

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1903793	O-Phosphate-P	0.667	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P326490

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1903581	Color (true)	2.05	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P326590

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1903676	Total Alkalinity	0.0294	Sample	P	0 - 4.8

Reference Method: SM 2320 B-97
Batch ID: P326593

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1903965	Total Alkalinity	0.722	Sample	P	0 - 4.8

Reference Method: SM 2320 B-97
Batch ID: P326654

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1904221	Total Alkalinity	0.00963	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
Batch ID: P326695

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1903599	TDS	5.58	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P326597

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1903965	Fluoride	0.495	Spike	P	0 - 3.0

Reference Method: SM 4500 F-C-97
Batch ID: P326656

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1904221	Fluoride	0.0	Spike	P	0 - 3.0

Quality Assurance Report Precision

Reference Method: SM 4500 F-C-97
Batch ID: P327061

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1903394	Fluoride	0.0	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P326505

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1903398	Organic Carbon	0.313	Spike	P	0 - 20

Reference Method: SM 5310 B-00
Batch ID: P326507

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1903200	Organic Carbon	1.85	Spike	P	0 - 20

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A76901
Included Lab Sample IDs: 1903654, 1903655, 1903658

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	100	99.9	P/P	90 - 110
O-Phosphate-P	99.5	101	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A76911
Included Lab Sample IDs: 1903650, 1903651, 1903656

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	100	101	P/P	95 - 105

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A76928
Included Lab Sample IDs: 1903652, 1903653, 1903657

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

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A76953
Included Lab Sample IDs: 1903653, 1903657

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A76953

Included Lab Sample IDs: 1903653, 1903657

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	100	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A76954

Included Lab Sample IDs: 1903657

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A76955

Included Lab Sample IDs: 1903653

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	98.5	96.8	P/P	90 - 110

Reference Method: SM 2120 B

Run ID: A76974

Included Lab Sample IDs: 1903656

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	104	104	P/P	85 - 115

Reference Method: SM 5310 B-00

Run ID: A76978

Included Lab Sample IDs: 1903652, 1903653, 1903657

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	101	104	P/P	90 - 110
Organic Carbon	104	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A76980

Included Lab Sample IDs: 1903652

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A76990

Included Lab Sample IDs: 1903652

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	97.3	94.8	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A77001

Included Lab Sample IDs: 1903651, 1903656

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	105	101	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 2320 B-97

Run ID: A77001

Included Lab Sample IDs: 1903651, 1903656

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	99.9	102	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A77001

Included Lab Sample IDs: 1903651

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	99.0	101	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A77012

Included Lab Sample IDs: 1903652

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

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A77022

Included Lab Sample IDs: 1903663

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Iron	101	102	P/P	90 - 110
Zinc	99.4	101	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A77029

Included Lab Sample IDs: 1903650

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

Reference Method: SM 4500 F-C-97

Run ID: A77029

Included Lab Sample IDs: 1903650

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	99.0	98.5	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A77055

Included Lab Sample IDs: 1903663

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Arsenic	101	99.3	P/P	90 - 110
Cadmium	99.7	98.6	P/P	90 - 110
Chromium	97.8	98.1	P/P	90 - 110
Copper	100	97.9	P/P	90 - 110
Lead	92.4	94.1	P/P	90 - 110
Nickel	99.3	97.8	P/P	90 - 110
Silver	98.4	97.4	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A77076

Included Lab Sample IDs: 1903656

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	98.3	99.5	P/P	90 - 110
Sulfate	105	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A77114

Included Lab Sample IDs: 1903653, 1903657

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	98.1	95.4	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A77123

Included Lab Sample IDs: 1903662

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

Reference Method: SM 4500 F-C-97

Run ID: A77172

Included Lab Sample IDs: 1903656

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	96.0	96.2	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A77218

Included Lab Sample IDs: 1903662

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Cadmium	95.9	96.5	P/P	90 - 110
Chromium	95.6	94.4	P/P	90 - 110
Copper	98.4	99.9	P/P	90 - 110
Lead	94.6	95.5	P/P	90 - 110
Nickel	99.4	101	P/P	90 - 110
Silver	95.0	96.4	P/P	90 - 110
Zinc	97.1	97.3	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A77321

Included Lab Sample IDs: 1903662

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Arsenic	99.3	98.0	P/P	90 - 110

* Pass/Fail determinations are made for each bracketing calibration verification check.

Control limits for initial calibration checks may be different from those for continuing checks, depending on method requirements. Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery			MS % Recovery			LCS	Precision SMP	MS
EPA 180.1 Rev. 2.0	Turbidity								1.66	
EPA 200.7 Rev. 4.4	Iron	104			107	104	104			0.201
	Iron	104			103	102				1.29
	Zinc	97.5			101	100	98.1			1.98
EPA 200.8 Rev. 5.4	Arsenic	105			106	106	106			0.762
	Arsenic	98.0			91.8	93.4				1.62
	Cadmium	103			103	106	105			1.52
	Cadmium	98.8			93.6	91.2				2.65
	Chromium	100			98.0	97.1	97.3			0.160
	Chromium	98.8			86.7	87.2				0.604
	Copper	100			96.9	98.5	98.4			0.119
	Copper	97.0			94.4	95.7				1.28
	Lead	97.9			101	100	100			0.519
	Lead	96.3			100	102				1.15
	Nickel	102			98.3	99.8	99.8			0.0363
	Nickel	100			102	103				1.09
	Silver	98.8			98.7	98.7	98.3			0.409
	Silver	95.0			88.8	89.2				0.374
	Zinc	98.1			92.0	92.7				0.777
EPA 300.0 Rev. 2.1	Chloride	99.2			106	97.9			2.98	
	Sulfate	99.9			104	95.3			3.34	
EPA 350.1 Rev. 2.0	Ammonia-N	102			100	102				1.43
	Ammonia-N	108			101	101				0.452
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	97.3			102	102				0.879
	Kjeldahl Nitrogen	106			103	102				0.410
EPA 353.2 Rev. 2.0	NO2NO3-N	103			103	103				0.0
	NO2NO3-N	103			104	104				0.0
EPA 365.1 Rev. 2.0	Total-P	98.8			98.3	99.9				1.55
	Total-P	99.8			93.2	92.4				0.833
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	97.5			96.5	97.5				0.925
	O-Phosphate-P	98.3			96.4	97.8				0.751
	O-Phosphate-P	97.3			95.1	96.3				0.667
SM 2120 B	Color (true)								2.05	
SM 2320 B-97	Total Alkalinity	102							0.0294	
	Total Alkalinity	103							0.722	
	Total Alkalinity	103							0.0096	
SM 2540 C-97	TDS								5.58	
SM 4500 F-C-97	Fluoride	98.2			97.4	97.9				0.495
	Fluoride	96.5			99.1	99.1				0.0
	Fluoride	98.9			101	101				0.0
SM 5310 B-00	Organic Carbon	98.2			97.3	97.6				0.313
	Organic Carbon	101			96.0	94.1				1.85

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1903650, 1903651, 1903656
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	1903662, 1903663
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	1903662, 1903663
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1903656

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1903656
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1903652, 1903653, 1903657
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1903652, 1903653, 1903657
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1903652, 1903653, 1903657
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1903652, 1903653, 1903657
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1903654, 1903655, 1903658
SM 2120 B / E31780	True Color measured at 450 nm	1903656
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	1903650, 1903651, 1903656
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1903656
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1903650, 1903651, 1903656
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1903650, 1903651, 1903656
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1903652, 1903653, 1903657

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	06/06/2017			06/06/2017 16:29	Sima Feizi	1903650, 1903651, 1903656
EPA 200.7 Rev. 4.4	06/06/2017	06/09/2017	Elliott D. Healy	06/12/2017	Betina Topolski	1903663
	06/06/2017	06/14/2017	Elliott D. Healy	06/15/2017	Betina Topolski	1903662
EPA 200.8 Rev. 5.4	06/06/2017	06/09/2017	Elliott D. Healy	06/13/2017	Robert K Palmer	1903663
	06/06/2017	06/14/2017	Elliott D. Healy	06/20/2017	Robert K Palmer	1903662
	06/06/2017	06/14/2017	Elliott D. Healy	06/24/2017	Robert K Palmer	1903662
EPA 300.0 Rev. 2.1	06/06/2017			06/15/2017	Julia Storbeck	1903656
EPA 350.1 Rev. 2.0	06/06/2017			06/06/2017	Julie Michelle Frank	1903652, 1903653, 1903657
EPA 351.2 Rev. 2.0	06/06/2017	06/08/2017	Adrian Shelby	06/09/2017	Joseph Suarez	1903652
	06/06/2017	06/12/2017	Adrian Shelby	06/15/2017	Joseph Suarez	1903653, 1903657
EPA 353.2 Rev. 2.0	06/06/2017			06/08/2017	Beverly Y. Sanders	1903653, 1903657
	06/06/2017			06/12/2017	Beverly Y. Sanders	1903652
EPA 365.1 Rev. 2.0	06/06/2017	06/07/2017	Vijayalakshmi Reddy	06/08/2017	Lipi Saha	1903653, 1903657
	06/06/2017	06/08/2017	Adrian Shelby	06/09/2017	Lipi Saha	1903652
EPA 365.1 Rev. 2.0 dissolved	06/06/2017			06/06/2017 16:24	Anthony C. Onicha	1903655
	06/06/2017			06/06/2017 16:25	Anthony C. Onicha	1903658
	06/06/2017			06/06/2017 16:46	Anthony C. Onicha	1903654
SM 2120 B	06/06/2017			06/06/2017 15:25	Tanya Welborn	1903656
SM 2320 B-97	06/06/2017			06/08/2017	Dale L. Simmons	1903656
	06/06/2017			06/09/2017	Dale L. Simmons	1903651
	06/06/2017			06/12/2017	Dale L. Simmons	1903650
SM 2540 C-97	06/06/2017			06/07/2017	Yijie Li	1903656
SM 2540 D-97	06/06/2017			06/07/2017	Yijie Li	1903650, 1903651, 1903656
SM 4500 F-C-97	06/06/2017			06/09/2017	Dale L. Simmons	1903651
	06/06/2017			06/12/2017	Dale L. Simmons	1903650
	06/06/2017			06/17/2017	Elisa J Lutz	1903656
SM 5310 B-00	06/06/2017			06/07/2017	Christopher Armour	1903653, 1903657
	06/06/2017			06/08/2017	Christopher Armour	1903652