

Chemical Analysis Report

SE-DIST-2019-05-01-01

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

Event Description: **SMP-SLE Boat**
Request ID: **RQ-2019-04-29-66**
Customer: **SE-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
FL Dept. of Environmental Protection
2199 South Rock Road
Fort Pierce, FL 34945
Attn: Drew Liddick

For additional information please contact
Colin Wright, Ph.D.
Liang-Tsair Lin, Ph.D.
Kerry Tate, Ph.D.
Dr. rer. nat. Bettina Steinbock
Thekkekalathil Chandrasekhar, Ph.D, QA Officer
Phone (850) 245-8085

Certified by: Kerry Tate, Ph.D., Environmental Administrator

Date Certified: 16-MAY-2019 13:21

A handwritten signature in black ink that reads "Kerry Tate". The signature is written in a cursive, flowing style with a horizontal line above the first name.

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 by the Florida Department of Health Environmental Laboratory Certification Program 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: South Fork SLR @ Gaines Ave

Collection Date/Time: 04/30/2019 10:30

Field ID: G2SE0039

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2082081	EPA 180.1 Rev. 2.0	Turbidity	4.8		NTU	P363181	
	EPA 300.0	Bromide	5.2		mg Br/L	P363643	
	SM 2320 B-97	Total Alkalinity	210		mg CaCO3/L	P363755	
	SM 2540 D-97	TSS	7	I	mg/L	P363832	
	SM 4500 F-C-97	Fluoride	0.29		mg F/L	P363959	
2082082	EPA 350.1 Rev. 2.0	Ammonia-N	0.005		mg N/L	P363382	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.97		mg N/L	P363401	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.11		mg N/L	P363494	
	EPA 365.1 Rev. 2.0	Total-P	0.16		mg P/L	P363277	
	SM 5310 B-00	Organic Carbon	13		mg C/L	P363352	
2082083	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.087		mg P/L	P363193	
2082098	EPA 200.7 Rev. 4.4	Iron	220		ug/L	P363273	
		Magnesium	95.7		mg/L	P363273	
		Manganese	44.0		ug/L	P363273	
		Zinc	5.0	U	ug/L	P363273	
	EPA 200.8 Rev. 5.4	Aluminum	123		ug/L	P363273	
		Antimony	0.11	I	ug/L	P363273	
		Arsenic	2.42		ug/L	P363273	
		Cadmium	0.020	U	ug/L	P363273	
		Chromium	0.43	I	ug/L	P363273	
		Copper	1.92		ug/L	P363273	
		Lead	0.20	U	ug/L	P363273	
		Nickel	0.50	U	ug/L	P363273	
		Selenium	0.27	I	ug/L	P363273	
		Silver	0.010	U	ug/L	P363273	
		Thallium	0.10	U	ug/L	P363273	

Ref. Method and Comment:

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

SM 4500 F-C-97: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: South Fork Saint Lucie @ Martin Hwy

Collection Date/Time: 04/30/2019 11:45

Field ID: G2SE0044

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2082084	EPA 180.1 Rev. 2.0	Turbidity	9.5		NTU	P363181	
	EPA 300.0	Bromide	29		mg Br/L	P363643	
	SM 2320 B-97	Total Alkalinity	149		mg CaCO3/L	P363495	
	SM 2540 D-97	TSS	15		mg/L	P363456	RPD
	SM 4500 F-C-97	Fluoride	0.61		mg F/L	P363872	
2082085	EPA 350.1 Rev. 2.0	Ammonia-N	0.006		mg N/L	P363380	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.1		mg N/L	P363400	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P363406	
	EPA 365.1 Rev. 2.0	Total-P	0.20		mg P/L	P363279	
	SM 5310 B-00	Organic Carbon	9.7		mg C/L	P363355	
2082086	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.11		mg P/L	P363194	

Sample Location: Manatee Pocket Center

Collection Date/Time: 04/30/2019 13:00

Field ID: G2SE0052

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2082078	EPA 180.1 Rev. 2.0	Turbidity	3.8		NTU	P363181	
	EPA 300.0	Bromide	67		mg Br/L	P363643	
	SM 2320 B-97	Total Alkalinity	127		mg CaCO3/L	P363495	
	SM 2540 D-97	TSS	6	I	mg/L	P363456	RPD
	SM 4500 F-C-97	Fluoride	1.2		mg F/L	P363872	
2082079	EPA 350.1 Rev. 2.0	Ammonia-N	0.003	I	mg N/L	P363380	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.48		mg N/L	P363400	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.006	I	mg N/L	P363406	
	EPA 365.1 Rev. 2.0	Total-P	0.053		mg P/L	P363279	
	SM 5310 B-00	Organic Carbon	3.2		mg C/L	P363355	
2082080	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.013		mg P/L	P363194	
2082097	EPA 200.7 Rev. 4.4	Iron	170	I	ug/L	P363173	
		Magnesium	1.28E+03		mg/L	P363173	
		Manganese	7.9	I	ug/L	P363173	
		Zinc	20	U	ug/L	P363173	
	EPA 200.8 Rev. 5.4	Aluminum	180	I	ug/L	P363173	
		Antimony	0.50	U	ug/L	P363173	
		Arsenic	3.8		ug/L	P363173	
		Cadmium	0.080	U	ug/L	P363173	
		Chromium	4.0	U	ug/L	P363173	
		Copper	6.4		ug/L	P363173	
		Lead	2.0	U	ug/L	P363173	
		Nickel	2.0	U	ug/L	P363173	
		Selenium	2.0	U	ug/L	P363173	
		Silver	0.10	U	ug/L	P363173	
		Thallium	1.0	U	ug/L	P363173	

Ref. Method and Comment:

EPA 200.7 Rev. 4.4: Batch matrix spike recoveries for magnesium are unavailable because of high analyte concentration in the QC sample.

EPA 200.8 Rev. 5.4: The copper result was confirmed in the undigested sample on 05/10/2019.

Sample Location: SLE near Hogs Cove

Collection Date/Time: 04/30/2019 13:40

Field ID: G2SE0046

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2082072	EPA 180.1 Rev. 2.0	Turbidity	7.3		NTU	P363181	
	EPA 300.0	Bromide	55		mg Br/L	P363643	
	SM 2320 B-97	Total Alkalinity	125		mg CaCO3/L	P363495	
	SM 2540 D-97	TSS	10	I	mg/L	P363456	RPD
	SM 4500 F-C-97	Fluoride	1.0		mg F/L	P363872	
2082073	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P363380	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.59		mg N/L	P363400	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.006	I	mg N/L	P363406	
	EPA 365.1 Rev. 2.0	Total-P	0.10		mg P/L	P363279	
	SM 5310 B-00	Organic Carbon	5.2		mg C/L	P363355	
2082074	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.060		mg P/L	P363194	

Sample Location: Great Pocket @ Marker 8

Collection Date/Time: 04/30/2019 14:05

Field ID: G2SE0033

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2082075	EPA 180.1 Rev. 2.0	Turbidity	7.6	A	NTU	P363181	
	EPA 300.0	Bromide	73		mg Br/L	P363643	
	SM 2320 B-97	Total Alkalinity	133		mg CaCO3/L	P363495	
	SM 2540 D-97	TSS	12		mg/L	P363456	RPD
	SM 4500 F-C-97	Fluoride	1.2		mg F/L	P363872	
2082076	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P363380	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.41		mg N/L	P363400	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P363406	
	EPA 365.1 Rev. 2.0	Total-P	0.045		mg P/L	P363279	
	SM 5310 B-00	Organic Carbon	2.6		mg C/L	P363355	
2082077	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.008	I	mg P/L	P363194	

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P363181

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P363173

Component	Result	Code	Units
Iron	30	U	ug/L
Magnesium	0.040	U	mg/L
Manganese	1.0	U	ug/L
Zinc	5.0	U	ug/L

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P363273

Component	Result	Code	Units
Iron	30	U	ug/L
Magnesium	0.040	U	mg/L
Manganese	1.0	U	ug/L
Zinc	5.0	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P363173

Component	Result	Code	Units
Aluminum	5.0	U	ug/L
Antimony	0.050	U	ug/L
Arsenic	0.050	U	ug/L
Cadmium	0.020	U	ug/L
Chromium	0.40	U	ug/L
Copper	0.40	U	ug/L
Lead	0.20	U	ug/L
Nickel	0.50	U	ug/L
Selenium	0.20	U	ug/L
Silver	0.010	U	ug/L
Thallium	0.10	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P363273

Component	Result	Code	Units
Aluminum	5.0	U	ug/L
Antimony	0.050	U	ug/L
Arsenic	0.050	U	ug/L
Cadmium	0.020	U	ug/L
Chromium	0.40	U	ug/L
Copper	0.40	U	ug/L
Lead	0.20	U	ug/L
Nickel	0.50	U	ug/L
Selenium	0.20	U	ug/L
Silver	0.010	U	ug/L
Thallium	0.10	U	ug/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 300.0
Batch ID: P363643

Component	Result	Code	Units
Bromide	0.013	U	mg Br/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P363380

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P363382

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P363400

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P363401

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P363406

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: P363494

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: P363277

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P363279

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P363193

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P363194

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

Reference Method: SM 2320 B-97
Batch ID: P363495

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

Reference Method: SM 2320 B-97
Batch ID: P363755

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

Reference Method: SM 2540 D-97
Batch ID: P363456

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P363832

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P363872

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-97
Batch ID: P363959

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P363352

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

Quality Assurance Report Method Blank Results

Reference Method: SM 5310 B-00
Batch ID: P363355

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: P363173

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Iron	103		P	85 - 115
Magnesium	99.8		P	85 - 115
Manganese	100		P	85 - 115
Zinc	99.3		P	85 - 115

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P363273

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Iron	105		P	85 - 115
Magnesium	102		P	85 - 115
Manganese	102		P	85 - 115
Zinc	101		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P363173

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	101		P	85 - 115
Antimony	93.2		P	70 - 130
Arsenic	97.0		P	70 - 130
Cadmium	103		P	85 - 115
Chromium	97.3		P	70 - 130
Copper	95.2		P	70 - 130
Lead	97.2		P	70 - 130
Nickel	96.2		P	70 - 130
Selenium	101		P	85 - 115
Silver	92.7		P	70 - 130
Thallium	98.1		P	70 - 130

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P363273

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	102		P	85 - 115
Antimony	101		P	85 - 115
Arsenic	104		P	85 - 115
Cadmium	103		P	85 - 115
Chromium	101		P	85 - 115
Copper	101		P	85 - 115
Lead	98.2		P	85 - 115
Nickel	102		P	85 - 115
Selenium	102		P	85 - 115
Silver	104		P	85 - 115
Thallium	104		P	85 - 115

Reference Method: EPA 300.0

Batch ID: P363643

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Bromide	97.1		P	90 - 110

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P363380

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P363382

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P363400

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P363401

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	109		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P363406

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P363494

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P363277

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	107		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P363279

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	109		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P363193

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P363194

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

Reference Method: SM 2320 B-97
Batch ID: P363495

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	102		P	98 - 106

Reference Method: SM 2320 B-97
Batch ID: P363755

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	103		P	98 - 106

Reference Method: SM 4500 F-C-97
Batch ID: P363872

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	96.6		P	92 - 103

Reference Method: SM 4500 F-C-97
Batch ID: P363959

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	96.6		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P363352

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	98.4		P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P363355

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	99.0		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P363173

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2080892	Iron	103	103	P/P	80 - 120
2080892	Manganese	95.0	95.9	P/P	80 - 120
2080892	Zinc	99.5	100	P/P	80 - 120
2081091	Iron	101		P	80 - 120
2081091	Manganese	95.0		P	80 - 120
2081091	Zinc	100		P	80 - 120

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P363273

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2081851	Iron	106	104	P/P	80 - 120
2081851	Magnesium	101		P	80 - 120
2081851	Manganese	101	100	P/P	80 - 120
2081851	Zinc	98.0	97.5	P/P	80 - 120
2081896	Iron	103		P	80 - 120
2081896	Magnesium	102		P	80 - 120
2081896	Manganese	101		P	80 - 120
2081896	Zinc	100		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P363173

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2080892	Aluminum	111	111	P/P	70 - 130
2080892	Antimony	101	95.2	P/P	70 - 130
2080892	Arsenic	109	104	P/P	70 - 130
2080892	Cadmium	99.2	97.6	P/P	70 - 130
2080892	Chromium	96.3	101	P/P	70 - 130
2080892	Copper	98.5	92.9	P/P	70 - 130
2080892	Lead	102	96.1	P/P	70 - 130
2080892	Nickel	98.0	93.5	P/P	70 - 130
2080892	Selenium	107	111	P/P	70 - 130
2080892	Silver	90.4	84.6	P/P	70 - 130
2080892	Thallium	102	96.3	P/P	70 - 130
2081091	Aluminum	106		P	70 - 130
2081091	Antimony	96.4		P	70 - 130
2081091	Arsenic	102		P	70 - 130
2081091	Cadmium	103		P	70 - 130
2081091	Chromium	98.5		P	70 - 130
2081091	Copper	92.4		P	70 - 130
2081091	Lead	98.4		P	70 - 130
2081091	Nickel	92.1		P	70 - 130
2081091	Selenium	114		P	70 - 130
2081091	Silver	87.5		P	70 - 130
2081091	Thallium	97.4		P	70 - 130

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P363273

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2081851	Aluminum	99.7	102	P/P	80 - 120

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P363273

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2081851	Antimony	102	104	P/P	80 - 120
2081851	Arsenic	102	104	P/P	80 - 120
2081851	Cadmium	104	108	P/P	80 - 120
2081851	Chromium	98.8	100	P/P	80 - 120
2081851	Copper	95.8	97.2	P/P	80 - 120
2081851	Lead	97.1	99.0	P/P	80 - 120
2081851	Nickel	95.8	97.2	P/P	80 - 120
2081851	Selenium	101	102	P/P	80 - 120
2081851	Silver	103	105	P/P	80 - 120
2081851	Thallium	104	107	P/P	80 - 120
2081896	Aluminum	96.1		P	80 - 120
2081896	Antimony	102		P	80 - 120
2081896	Arsenic	103		P	80 - 120
2081896	Cadmium	104		P	80 - 120
2081896	Chromium	101		P	80 - 120
2081896	Copper	99.8		P	80 - 120
2081896	Lead	99.3		P	80 - 120
2081896	Nickel	101		P	80 - 120
2081896	Selenium	101		P	80 - 120
2081896	Silver	104		P	80 - 120
2081896	Thallium	108		P	80 - 120

Reference Method: EPA 300.0
Batch ID: P363643

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2082903	Bromide	95.9	94.8	P/P	90 - 110
2082953	Bromide	95.3		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P363380

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2081981	Ammonia-N	104	103	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P363382

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2082105	Ammonia-N	104	102	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P363400

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2082085	Kjeldahl Nitrogen	98.0	97.4	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P363401

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2082105	Kjeldahl Nitrogen	101	101	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P363406

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2082056	NO2NO3-N	104	104	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P363494

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2081996	NO2NO3-N	98.7	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P363277

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2082118	Total-P	103	105	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P363279

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2082076	Total-P	96.2	94.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P363193

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2082121	O-Phosphate-P	94.8	95.9	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P363194

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2081982	O-Phosphate-P	98.4	97.8	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P363872

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2082745	Fluoride	96.6	96.6	P/P	89 - 106

Reference Method: SM 5310 B-00
Batch ID: P363352

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2082003	Organic Carbon	95.6	97.0	P/P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P363355

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2082073	Organic Carbon	95.5	95.7	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P363181

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2082075	Turbidity	2.11	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P363173

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2080892	Iron	0.0690	Spike	P	0 - 20
2080892	Magnesium	0.344	Spike	P	0 - 20
2080892	Manganese	0.905	Spike	P	0 - 20
2080892	Zinc	0.872	Spike	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P363273

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2081851	Iron	1.82	Spike	P	0 - 20
2081851	Magnesium	2.13	Spike	P	0 - 20
2081851	Manganese	0.532	Spike	P	0 - 20
2081851	Zinc	0.486	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P363173

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2080892	Aluminum	0.461	Spike	P	0 - 20
2080892	Antimony	6.16	Spike	P	0 - 20
2080892	Arsenic	4.62	Spike	P	0 - 20
2080892	Cadmium	1.58	Spike	P	0 - 20
2080892	Chromium	4.80	Spike	P	0 - 20
2080892	Copper	5.87	Spike	P	0 - 20
2080892	Lead	5.67	Spike	P	0 - 20
2080892	Nickel	4.71	Spike	P	0 - 20
2080892	Selenium	3.75	Spike	P	0 - 20
2080892	Silver	6.68	Spike	P	0 - 20
2080892	Thallium	5.50	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P363273

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2081851	Aluminum	1.85	Spike	P	0 - 20
2081851	Antimony	2.33	Spike	P	0 - 20
2081851	Arsenic	1.90	Spike	P	0 - 20
2081851	Cadmium	3.56	Spike	P	0 - 20
2081851	Chromium	1.43	Spike	P	0 - 20
2081851	Copper	1.37	Spike	P	0 - 20
2081851	Lead	1.97	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P363273

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2081851	Nickel	1.42	Spike	P	0 - 20
2081851	Selenium	1.20	Spike	P	0 - 20
2081851	Silver	1.59	Spike	P	0 - 20
2081851	Thallium	2.80	Spike	P	0 - 20

Reference Method: EPA 300.0
Batch ID: P363643

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2082903	Bromide	0.937	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P363380

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2081981	Ammonia-N	0.959	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P363382

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2082105	Ammonia-N	1.46	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P363400

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2082085	Kjeldahl Nitrogen	0.477	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P363401

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2082105	Kjeldahl Nitrogen	0.185	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P363406

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2082056	NO2NO3-N	0.462	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P363494

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2081996	NO2NO3-N	1.04	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P363277

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2082118	Total-P	2.55	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P363279

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2082076	Total-P	1.44	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P363193

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2082121	O-Phosphate-P	1.15	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P363194

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2081982	O-Phosphate-P	0.484	Spike	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P363495

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2082745	Total Alkalinity	0.925	Sample	P	0 - 2.8

Reference Method: SM 2320 B-97
Batch ID: P363755

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2081845	Total Alkalinity	0.904	Sample	P	0 - 2.8

Reference Method: SM 2540 D-97
Batch ID: P363456

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2082745	TSS	17.9	Sample	F	0 - 10

Quality Assurance Report Precision

Reference Method: SM 4500 F-C-97
Batch ID: P363872

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2082745	Fluoride	0.0	Spike	P	0 - 2.5

Reference Method: SM 4500 F-C-97
Batch ID: P363959

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2081845	Fluoride	0.979	Spike	P	0 - 2.5

Reference Method: SM 5310 B-00
Batch ID: P363352

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2082003	Organic Carbon	0.923	Spike	P	0 - 20

Reference Method: SM 5310 B-00
Batch ID: P363355

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2082073	Organic Carbon	0.138	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 180.1 Rev. 2.0

Run ID: A91137

Included Lab Sample IDs: 2082072, 2082075, 2082078, 2082081, 2082084

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A91138

Included Lab Sample IDs: 2082074, 2082077, 2082080, 2082083, 2082086

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	96.4	98.5	P/P	90 - 110
O-Phosphate-P	98.5	98.4	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A91169

Included Lab Sample IDs: 2082097

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Iron	99.1	99.1	P/P	90 - 110
Magnesium	99.5	99.4	P/P	90 - 110
Manganese	98.8	98.8	P/P	90 - 110
Zinc	99.2	99.0	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A91202

Included Lab Sample IDs: 2082098

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Iron	102	102	P/P	90 - 110
Magnesium	102	102	P/P	90 - 110
Manganese	101	99.9	P/P	90 - 110
Zinc	100	101	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A91203

Included Lab Sample IDs: 2082073, 2082076, 2082079, 2082082, 2082085

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	97.7	99.8	P/P	90 - 110
Organic Carbon	98.0	95.3	P/P	90 - 110
Organic Carbon	99.8	98.0	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A91210

Included Lab Sample IDs: 2082073, 2082076, 2082079, 2082082, 2082085

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A91217

Included Lab Sample IDs: 2082073, 2082076, 2082079, 2082085

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

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A91227

Included Lab Sample IDs: 2082098

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	103	101	P/P	90 - 110
Antimony	98.4	95.9	P/P	90 - 110
Arsenic	99.8	99.7	P/P	90 - 110
Cadmium	101	99.6	P/P	90 - 110
Chromium	99.7	100	P/P	90 - 110
Copper	98.6	100	P/P	90 - 110
Lead	97.1	97.3	P/P	90 - 110
Nickel	97.7	98.4	P/P	90 - 110
Selenium	99.4	99.5	P/P	90 - 110
Silver	102	100	P/P	90 - 110
Thallium	97.5	96.9	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A91249

Included Lab Sample IDs: 2082072, 2082075, 2082078, 2082084

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A91250

Included Lab Sample IDs: 2082082

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A91269

Included Lab Sample IDs: 2082073, 2082082, 2082085

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	104	105	P/P	90 - 110
Total-P	105	104	P/P	90 - 110
Total-P	105	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A91270

Included Lab Sample IDs: 2082076, 2082079

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	100	99.2	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A91280

Included Lab Sample IDs: 2082073, 2082076, 2082079, 2082082, 2082085

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	104	104	P/P	90 - 110
Kjeldahl Nitrogen	107	104	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A91284

Included Lab Sample IDs: 2082097

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Antimony	93.3	93.3	P/P	90 - 110
Arsenic	94.0	94.0	P/P	90 - 110
Chromium	95.4	95.5	P/P	90 - 110
Copper	90.7	90.6	P/P	90 - 110
Lead	94.6	94.9	P/P	90 - 110
Nickel	90.5	90.5	P/P	90 - 110
Silver	92.6	92.8	P/P	90 - 110
Thallium	92.2	92.3	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A91286

Included Lab Sample IDs: 2082097

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

Reference Method: EPA 300.0

Run ID: A91304

Included Lab Sample IDs: 2082072, 2082075, 2082078, 2082081, 2082084

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

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A91334

Included Lab Sample IDs: 2082097

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	98.9	101	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A91346

Included Lab Sample IDs: 2082081

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

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A91393

Included Lab Sample IDs: 2082097

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Selenium	98.5	101	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 4500 F-C-97

Run ID: A91397

Included Lab Sample IDs: 2082072, 2082075, 2082078, 2082084

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	100	98.5	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A91436

Included Lab Sample IDs: 2082081

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	98.5	98.1	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						2.11	
EPA 200.7 Rev. 4.4	Iron	103	103	103	101			0.0690
	Iron	105	106	104	103			1.82
	Magnesium	99.8						0.344
	Magnesium	102	101	102				2.13
	Manganese	100	95.0	95.9	95.0			0.905
	Manganese	102	101	100	101			0.532
	Zinc	99.3	99.5	100	100			0.872
	Zinc	101	98.0	97.5	100			0.486
EPA 200.8 Rev. 5.4	Aluminum	101	111	111	106			0.461
	Aluminum	102	99.7	102	96.1			1.85
	Antimony	93.2	101	95.2	96.4			6.16
	Antimony	101	102	104	102			2.33
	Arsenic	97.0	109	104	102			4.62
	Arsenic	104	102	104	103			1.90
	Cadmium	103	99.2	97.6	103			1.58
	Cadmium	103	104	108	104			3.56
	Chromium	97.3	96.3	101	98.5			4.80
	Chromium	101	98.8	100	101			1.43
	Copper	95.2	98.5	92.9	92.4			5.87
	Copper	101	95.8	97.2	99.8			1.37
	Lead	97.2	102	96.1	98.4			5.67
	Lead	98.2	97.1	99.0	99.3			1.97
	Nickel	96.2	98.0	93.5	92.1			4.71
	Nickel	102	95.8	97.2	101			1.42
	Selenium	101	107	111	114			3.75
	Selenium	102	101	102	101			1.20
	Silver	92.7	90.4	84.6	87.5			6.68
	Silver	104	103	105	104			1.59
	Thallium	98.1	102	96.3	97.4			5.50
	Thallium	104	104	107	108			2.80
EPA 300.0	Bromide	97.1	95.9	94.8	95.3			0.937
EPA 350.1 Rev. 2.0	Ammonia-N	103	104	103				0.959
	Ammonia-N	103	104	102				1.46
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	105	98.0	97.4				0.477
	Kjeldahl Nitrogen	109	101	101				0.185
EPA 353.2 Rev. 2.0	NO2NO3-N	102	104	104				0.462
	NO2NO3-N	100	98.7	100				1.04
EPA 365.1 Rev. 2.0	Total-P	107	103	105				2.55
	Total-P	109	96.2	94.8				1.44
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	98.5	94.8	95.9				1.15
	O-Phosphate-P	102	98.4	97.8				0.484
SM 2320 B-97	Total Alkalinity	102					0.925	
	Total Alkalinity	103					0.904	
SM 2540 D-97	TSS						17.9	
SM 4500 F-C-97	Fluoride	96.6	96.6	96.6				0.0
	Fluoride	96.6						0.979
SM 5310 B-00	Organic Carbon	98.4	95.6	97.0				0.923
	Organic Carbon	99.0	95.5	95.7				0.138

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
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Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2082072, 2082075, 2082078, 2082081, 2082084
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2082097, 2082098
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2082097, 2082098
EPA 300.0 / E31780	Bromide in aqueous matrices	2082072, 2082075, 2082078, 2082081, 2082084
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2082073, 2082076, 2082079, 2082082, 2082085
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2082073, 2082076, 2082079, 2082082, 2082085
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2082073, 2082076, 2082079, 2082082, 2082085
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2082073, 2082076, 2082079, 2082082, 2082085
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2082074, 2082077, 2082080, 2082083, 2082086
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2082072, 2082075, 2082078, 2082081, 2082084
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2082072, 2082075, 2082078, 2082081, 2082084
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2082072, 2082075, 2082078, 2082081, 2082084
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2082073, 2082076, 2082079, 2082082, 2082085

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	05/01/2019			05/01/2019 16:13	Adrian Shelby	2082072, 2082075, 2082078, 2082081, 2082084
EPA 200.7 Rev. 4.4	05/01/2019	05/01/2019 16:30	Elliott D. Healy	05/02/2019 18:08	Betina Topolski	2082097
	05/01/2019	05/01/2019 16:30	Elliott D. Healy	05/02/2019 18:17	Betina Topolski	2082097
	05/01/2019	05/02/2019 17:00	Elliott D. Healy	05/03/2019 15:26	Betina Topolski	2082098
EPA 200.8 Rev. 5.4	05/01/2019	05/01/2019 16:30	Elliott D. Healy	05/08/2019 06:01	Martin Acosta	2082097
	05/01/2019	05/01/2019 16:30	Elliott D. Healy	05/08/2019 10:11	Robert K Palmer	2082097
	05/01/2019	05/01/2019 16:30	Elliott D. Healy	05/08/2019 11:25	Martin Acosta	2082097
	05/01/2019	05/01/2019 16:30	Elliott D. Healy	05/09/2019 23:37	Robert K Palmer	2082097
	05/01/2019	05/01/2019 16:30	Elliott D. Healy	05/13/2019 21:20	Robert K Palmer	2082097
	05/01/2019	05/02/2019 17:00	Elliott D. Healy	05/06/2019 20:51	Robert K Palmer	2082098
EPA 300.0	05/01/2019			05/08/2019 19:31	Lipi Saha	2082072
	05/01/2019			05/08/2019 19:48	Lipi Saha	2082075
	05/01/2019			05/08/2019 20:05	Lipi Saha	2082078
	05/01/2019			05/08/2019 20:22	Lipi Saha	2082081
	05/01/2019			05/08/2019 20:40	Lipi Saha	2082084
EPA 350.1 Rev. 2.0	05/01/2019			05/03/2019 12:22	Ping Hua	2082073
	05/01/2019			05/03/2019 12:23	Ping Hua	2082076
	05/01/2019			05/03/2019 12:25	Ping Hua	2082079
	05/01/2019			05/03/2019 12:26	Ping Hua	2082085
	05/01/2019			05/03/2019 13:20	Ping Hua	2082082
EPA 351.2 Rev. 2.0	05/01/2019	05/06/2019 12:50	Jhamieka S. Greenwood	05/08/2019 10:30	Joseph Suarez	2082073
	05/01/2019	05/06/2019 12:50	Jhamieka S. Greenwood	05/08/2019 10:31	Joseph Suarez	2082076
	05/01/2019	05/06/2019 12:50	Jhamieka S. Greenwood	05/08/2019 10:33	Joseph Suarez	2082079
	05/01/2019	05/06/2019 12:50	Jhamieka S. Greenwood	05/08/2019 10:38	Joseph Suarez	2082085
	05/01/2019	05/06/2019 12:50	Jhamieka S. Greenwood	05/08/2019 10:52	Joseph Suarez	2082082
EPA 353.2 Rev. 2.0	05/01/2019			05/06/2019 10:06	Beverly Y. Sanders	2082073
	05/01/2019			05/06/2019 10:07	Beverly Y. Sanders	2082076
	05/01/2019			05/06/2019 10:09	Beverly Y. Sanders	2082079
	05/01/2019			05/06/2019 10:10	Beverly Y. Sanders	2082085
	05/01/2019			05/07/2019 10:43	Lauren Lees	2082082
EPA 365.1 Rev. 2.0	05/01/2019	05/02/2019 13:35	Sima Feizi	05/03/2019 13:41	Rosalyn Ballman	2082082
	05/01/2019	05/02/2019 13:35	Sima Feizi	05/03/2019 14:14	Rosalyn Ballman	2082073
	05/01/2019	05/02/2019 13:35	Sima Feizi	05/03/2019 14:18	Rosalyn Ballman	2082085
	05/01/2019	05/02/2019 13:35	Sima Feizi	05/03/2019 17:18	Rosalyn Ballman	2082076
	05/01/2019	05/02/2019 13:35	Sima Feizi	05/03/2019 17:19	Rosalyn Ballman	2082079
EPA 365.1 Rev. 2.0 dissolved	05/01/2019			05/01/2019 15:50	Jhamieka S. Greenwood	2082083
	05/01/2019			05/01/2019 16:00	Jhamieka S. Greenwood	2082086
	05/01/2019			05/01/2019 16:03	Jhamieka S. Greenwood	2082074, 2082077
	05/01/2019			05/01/2019 16:04	Jhamieka S. Greenwood	2082080

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 2320 B-97	05/01/2019			05/07/2019 09:24	Dale L. Simmons	2082072
	05/01/2019			05/07/2019 09:37	Dale L. Simmons	2082075
	05/01/2019			05/07/2019 09:48	Dale L. Simmons	2082078
	05/01/2019			05/07/2019 10:00	Dale L. Simmons	2082084
	05/01/2019			05/09/2019 04:45	Dale L. Simmons	2082081
SM 2540 D-97	05/01/2019			05/03/2019 15:19	Yijie Li	2082081
	05/01/2019			05/03/2019 16:35	Mariam Hanna	2082072, 2082075, 2082078, 2082084
SM 4500 F-C-97	05/01/2019			05/14/2019 07:20	Dale L. Simmons	2082072
	05/01/2019			05/14/2019 07:24	Dale L. Simmons	2082075
	05/01/2019			05/14/2019 07:29	Dale L. Simmons	2082078
	05/01/2019			05/14/2019 07:38	Dale L. Simmons	2082084
	05/01/2019			05/14/2019 22:38	Dale L. Simmons	2082081
SM 5310 B-00	05/01/2019			05/03/2019 17:53	Lauren Lees	2082082
	05/01/2019			05/04/2019 04:25	Lauren Lees	2082073
	05/01/2019			05/04/2019 05:26	Lauren Lees	2082076
	05/01/2019			05/04/2019 05:39	Lauren Lees	2082079
	05/01/2019			05/04/2019 06:03	Lauren Lees	2082085