

Chemical Analysis Report

SO-DIST-2019-06-27-01

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

Event Description: **Nowhere**
Request ID: **RQ-2019-05-13-44**
Customer: **SO-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
FLDEP South District Office
2295 Victoria Ave. Suite 364
Fort Myers, FL 33901-3381
Attn: Maryann Dugan

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: Dr. rer. nat. Bettina Steinbock, Environmental Administrator

Date Certified: 19-JUL-2019 15:49



Case Narrative

Unless otherwise noted, all samples included in this report were received in accordance with protocols referenced in Chapter 62-160, Florida Administrative Code (F.A.C.). Results published in this report pertain only to the samples as submitted to, and received by the laboratory. All times in this report are adjusted to the applicable Eastern Time Zone (EST or EDT).

Results for the following analytical group are included in this report: Nutrients.

Scientific notation may be used in reporting very large or small values. Values reported using scientific notation will take the form of the following example: 1.3E+03, which is equivalent to 1.3×10^3 or 1300.

Unless otherwise noted, analytical values for soil and sediment samples are reported on a dry weight basis, and analytical values for waste and tissue samples are reported on a wet weight basis.

Results for TNI accredited tests met requirements established by The NELAC Institute. A double asterisk (**) is used to indicate an analyte/matrix/method for which the laboratory is not TNI accredited 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: 8067 @ ENRE5

Collection Date/Time: 06/26/2019 10:35

Field ID: G5SD0038

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2098966	EPA 180.1 Rev. 2.0	Turbidity	2.2		NTU	P366418	
	EPA 300.0	Bromide	72		mg Br/L	P366634	
	SM 2320 B-97	Total Alkalinity	135		mg CaCO3/L	P366672	
	SM 2540 D-97	TSS	5	I	mg/L	P366852	
	SM 4500 F-C-97	Fluoride	1.2		mg F/L	P366859	
2098974	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P366755	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.50		mg N/L	P366471	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P366597	
	EPA 365.1 Rev. 2.0	Total-P	0.020		mg P/L	P366467	
	SM 5310 B-00	Organic Carbon	4.8		mg C/L	P366521	
2098982	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P366457	

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: WBID8068 @ENRE 5 S.Site

Collection Date/Time: 06/26/2019 11:25

Field ID: G5SD0100

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2098967	EPA 180.1 Rev. 2.0	Turbidity	2.6		NTU	P366418	
	EPA 300.0	Bromide	70		mg Br/L	P366634	
	SM 2320 B-97	Total Alkalinity	156		mg CaCO3/L	P366672	
	SM 2540 D-97	TSS	7	I	mg/L	P366852	
	SM 4500 F-C-97	Fluoride	1.2		mg F/L	P366859	
2098975	EPA 350.1 Rev. 2.0	Ammonia-N	0.006		mg N/L	P366785	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.52		mg N/L	P366471	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P366597	
	EPA 365.1 Rev. 2.0	Total-P	0.019		mg P/L	P366467	
	SM 5310 B-00	Organic Carbon	6.5		mg C/L	P366521	
2098983	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P366457	

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: 8069 - ENRE5

Collection Date/Time: 06/26/2019 11:50

Field ID: G5SD0036

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2098968	EPA 180.1 Rev. 2.0	Turbidity	1.6		NTU	P366418	
	EPA 300.0	Bromide	74		mg Br/L	P366795	
	SM 2320 B-97	Total Alkalinity	129		mg CaCO3/L	P366672	
	SM 2540 D-97	TSS	6	I	mg/L	P366852	
	SM 4500 F-C-97	Fluoride	1.3		mg F/L	P366859	
2098976	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P366550	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.34	I	mg N/L	P366471	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P366597	
	EPA 365.1 Rev. 2.0	Total-P	0.014		mg P/L	P366467	
	SM 5310 B-00	Organic Carbon	3.8		mg C/L	P366521	
2098984	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P366457	

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: 8070 - North

Collection Date/Time: 06/26/2019 12:05

Field ID: G5SD0075

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2098969	EPA 180.1 Rev. 2.0	Turbidity	2.3		NTU	P366418	
	EPA 300.0	Bromide	73		mg Br/L	P366795	
	SM 2320 B-97	Total Alkalinity	116		mg CaCO3/L	P366672	
	SM 2540 D-97	TSS	6	I	mg/L	P366852	
	SM 4500 F-C-97	Fluoride	1.3		mg F/L	P366859	
2098977	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P366785	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.32	I	mg N/L	P366471	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P366597	
	EPA 365.1 Rev. 2.0	Total-P	0.015		mg P/L	P366467	
	SM 5310 B-00	Organic Carbon	2.9		mg C/L	P366521	
2098985	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P366457	

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: 8068 @ ENRE5 - Middle

Collection Date/Time: 06/26/2019 11:05

Field ID: G5SD0037

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2098970	EPA 180.1 Rev. 2.0	Turbidity	3.2		NTU	P366418	
	EPA 300.0	Bromide	66		mg Br/L	P366795	
	SM 2320 B-97	Total Alkalinity	161		mg CaCO3/L	P366672	
	SM 2540 D-97	TSS	6	I	mg/L	P366852	
	SM 4500 F-C-97	Fluoride	1.2		mg F/L	P366859	
2098978	EPA 350.1 Rev. 2.0	Ammonia-N	0.006		mg N/L	P366785	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.60		mg N/L	P366471	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P366597	
	EPA 365.1 Rev. 2.0	Total-P	0.021		mg P/L	P366467	
	SM 5310 B-00	Organic Carbon	6.6		mg C/L	P366521	
2098986	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P366459	

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: 8070 ENRE 5 Site 2

Collection Date/Time: 06/26/2019 12:20

Field ID: G5SD0101

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2098971	EPA 180.1 Rev. 2.0	Turbidity	2.3		NTU	P366419	
	EPA 300.0	Bromide	72		mg Br/L	P366795	
	SM 2320 B-97	Total Alkalinity	114		mg CaCO3/L	P366672	
	SM 2540 D-97	TSS	4	I	mg/L	P366852	
	SM 4500 F-C-97	Fluoride	1.3		mg F/L	P366859	
2098979	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P366550	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.43		mg N/L	P366700	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P366597	
	EPA 365.1 Rev. 2.0	Total-P	0.013		mg P/L	P366558	
	SM 5310 B-00	Organic Carbon	2.7		mg C/L	P366521	
2098987	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P366459	

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: 8069 - ENRE13

Collection Date/Time: 06/26/2019 12:55

Field ID: G5SD0076

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2098972	EPA 180.1 Rev. 2.0	Turbidity	2.3		NTU	P366419	
	EPA 300.0	Bromide	67		mg Br/L	P366795	
	SM 2320 B-97	Total Alkalinity	161		mg CaCO3/L	P366672	
	SM 2540 D-97	TSS	7	IA	mg/L	P366852	
	SM 4500 F-C-97	Fluoride	1.2		mg F/L	P366859	
2098980	EPA 350.1 Rev. 2.0	Ammonia-N	0.007		mg N/L	P366785	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.58		mg N/L	P366700	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.005	I	mg N/L	P366597	
	EPA 365.1 Rev. 2.0	Total-P	0.018		mg P/L	P366558	
	SM 5310 B-00	Organic Carbon	6.5		mg C/L	P366521	
2098988	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P366459	

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: 8073#2 S of FtZachENRG3

Collection Date/Time: 06/26/2019 13:45

Field ID: G5SD0095

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2098973	EPA 180.1 Rev. 2.0	Turbidity	7.9		NTU	P366419	
	EPA 300.0	Bromide	52		mg Br/L	P366910	
	SM 2320 B-97	Total Alkalinity	172		mg CaCO3/L	P366672	
	SM 2540 D-97	TSS	10	I	mg/L	P366852	
	SM 4500 F-C-97	Fluoride	1.0		mg F/L	P366859	
2098981	EPA 350.1 Rev. 2.0	Ammonia-N	0.012		mg N/L	P366785	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.76		mg N/L	P366700	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.009	I	mg N/L	P366597	
	EPA 365.1 Rev. 2.0	Total-P	0.025		mg P/L	P366558	
	SM 5310 B-00	Organic Carbon	9.9		mg C/L	P366521	
2098989	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P366459	

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: P366418

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P366419

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0
Batch ID: P366634

Component	Result	Code	Units
Bromide	0.013	U	mg Br/L

Reference Method: EPA 300.0
Batch ID: P366795

Component	Result	Code	Units
Bromide	0.013	U	mg Br/L

Reference Method: EPA 300.0
Batch ID: P366910

Component	Result	Code	Units
Bromide	0.013	U	mg Br/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P366550

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P366755

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P366785

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P366471

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: P366700

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P366597

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P366467

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P366558

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P366457

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P366459

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

Reference Method: SM 2320 B-97
Batch ID: P366672

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

Reference Method: SM 2540 D-97
Batch ID: P366852

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P366859

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Quality Assurance Report Method Blank Results

Reference Method: SM 5310 B-00
Batch ID: P366521

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 300.0
Batch ID: P366634

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

Reference Method: EPA 300.0
Batch ID: P366795

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

Reference Method: EPA 300.0
Batch ID: P366910

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Bromide	96.6		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P366550

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P366755

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: P366785

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P366471

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P366700

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P366597

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO ₂ NO ₃ -N	102		P	90 - 110

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P366467

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	99.4		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P366558

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: P366457

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P366459

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	99.7		P	90 - 110

Reference Method: SM 2320 B-97
Batch ID: P366672

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

Reference Method: SM 4500 F-C-97
Batch ID: P366859

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

Reference Method: SM 5310 B-00
Batch ID: P366521

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

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0
Batch ID: P366634

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2097263	Bromide	96.6	97.5	P/P	90 - 110
2098522	Bromide	94.4		P	90 - 110

Reference Method: EPA 300.0
Batch ID: P366795

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2099104	Bromide	95.7	96.3	P/P	90 - 110
2099566	Bromide	96.0		P	90 - 110

Reference Method: EPA 300.0
Batch ID: P366910

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2098973	Bromide	94.9	92.9	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P366550

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2098774	Ammonia-N	108	108	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P366755

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2098518	Ammonia-N	105	106	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P366785

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2098975	Ammonia-N	103	105	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P366471

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2098881	Kjeldahl Nitrogen	98.7	94.3	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P366700

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2098979	Kjeldahl Nitrogen	92.7	94.3	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P366597

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2098951	NO2NO3-N	102	101	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P366467

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2098881	Total-P	93.9	95.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P366558

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2098951	Total-P	98.8	98.4	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P366457

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2098982	O-Phosphate-P	96.2	97.6	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P366459

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2098989	O-Phosphate-P	99.0	97.6	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P366859

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2099567	Fluoride	98.1	98.1	P/P	89 - 106

Reference Method: SM 5310 B-00
Batch ID: P366521

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2098980	Organic Carbon	94.1	95.5	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P366418

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2098950	Turbidity	3.28	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P366419

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2099095	Turbidity	0.491	Sample	P	0 - 20

Reference Method: EPA 300.0
Batch ID: P366634

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2097263	Bromide	0.904	Spike	P	0 - 20

Reference Method: EPA 300.0
Batch ID: P366795

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2099104	Bromide	0.496	Spike	P	0 - 20

Reference Method: EPA 300.0
Batch ID: P366910

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2098973	Bromide	0.987	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P366550

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2098774	Ammonia-N	0.295	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P366755

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2098518	Ammonia-N	0.266	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P366785

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2098975	Ammonia-N	1.47	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P366471

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2098881	Kjeldahl Nitrogen	3.27	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P366700

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2098979	Kjeldahl Nitrogen	1.46	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P366597

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2098951	NO2NO3-N	0.421	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P366467

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2098881	Total-P	1.86	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P366558

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2098951	Total-P	0.391	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P366457

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2098982	O-Phosphate-P	1.44	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P366459

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2098989	O-Phosphate-P	1.42	Spike	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P366672

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2099566	Total Alkalinity	0.276	Sample	P	0 - 2.8

Quality Assurance Report Precision

Reference Method: SM 4500 F-C-97
Batch ID: P366859

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2099567	Fluoride	0.0	Spike	P	0 - 2.5

Reference Method: SM 5310 B-00
Batch ID: P366521

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2098980	Organic Carbon	1.31	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: A92405

Included Lab Sample IDs: 2098966, 2098967, 2098968, 2098969, 2098970, 2098971, 2098972, 2098973

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	97.0	98.0	P/P	95 - 105
Turbidity	98.0	97.5	P/P	95 - 105

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A92421

Included Lab Sample IDs: 2098982, 2098983, 2098984, 2098985, 2098986, 2098987, 2098988, 2098989

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	100	99.5	P/P	90 - 110
O-Phosphate-P	97.5	96.3	P/P	90 - 110
O-Phosphate-P	98.0	98.4	P/P	90 - 110
O-Phosphate-P	98.4	97.5	P/P	90 - 110
O-Phosphate-P	99.5	100	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A92454

Included Lab Sample IDs: 2098974, 2098975, 2098976, 2098977, 2098978, 2098979, 2098980, 2098981

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	96.4	91.8	P/P	90 - 110
Organic Carbon	97.1	96.4	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A92461

Included Lab Sample IDs: 2098976, 2098979

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	107	108	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A92467

Included Lab Sample IDs: 2098974, 2098975, 2098976, 2098977, 2098978

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A92496

Included Lab Sample IDs: 2098974, 2098975, 2098976, 2098977, 2098978, 2098979, 2098980, 2098981

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	99.5	100	P/P	90 - 110

Reference Method: EPA 300.0

Run ID: A92511

Included Lab Sample IDs: 2098966, 2098967, 2098968, 2098969, 2098970, 2098971, 2098972

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Bromide	104	106	P/P	90 - 110
Bromide	104	104	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0

Run ID: A92511

Included Lab Sample IDs: 2098966, 2098967, 2098968, 2098969, 2098970, 2098971, 2098972

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Bromide	106	104	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A92514

Included Lab Sample IDs: 2098974, 2098975, 2098976, 2098977, 2098978

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	95.6	99.9	P/P	90 - 110
Kjeldahl Nitrogen	97.9	95.6	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A92520

Included Lab Sample IDs: 2098979, 2098980, 2098981

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

Reference Method: SM 2320 B-97

Run ID: A92529

Included Lab Sample IDs: 2098966, 2098967, 2098968, 2098969, 2098970, 2098971, 2098972, 2098973

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A92572

Included Lab Sample IDs: 2098974

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A92579

Included Lab Sample IDs: 2098975, 2098977, 2098978, 2098980, 2098981

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A92598

Included Lab Sample IDs: 2098979, 2098980, 2098981

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

Reference Method: SM 4500 F-C-97

Run ID: A92633

Included Lab Sample IDs: 2098966, 2098967, 2098968, 2098969, 2098970, 2098971, 2098972, 2098973

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

Reference Method: SM 4500 F-C-97

Run ID: A92633

Included Lab Sample IDs: 2098966, 2098967, 2098968, 2098969, 2098970, 2098971, 2098972, 2098973

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	98.6	99.1	P/P	90 - 110
Fluoride	99.1	99.5	P/P	90 - 110

Reference Method: EPA 300.0

Run ID: A92642

Included Lab Sample IDs: 2098973

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Bromide	101	99.2	P/P	90 - 110

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

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

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery			Precision SMP	MS
			LCS				
EPA 180.1 Rev. 2.0	Turbidity					3.28	
	Turbidity					0.491	
EPA 300.0	Bromide	98.2	96.6	97.5	94.4		0.904
	Bromide	97.6	95.7	96.3	96.0		0.496
	Bromide	96.6	94.9	92.9			0.987
EPA 350.1 Rev. 2.0	Ammonia-N	105	108	108			0.295
	Ammonia-N	103	105	106			0.266
	Ammonia-N	104	103	105			1.47
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	97.2	98.7	94.3			3.27
	Kjeldahl Nitrogen	101	92.7	94.3			1.46
EPA 353.2 Rev. 2.0	NO2NO3-N	102	102	101			0.421
EPA 365.1 Rev. 2.0	Total-P	99.4	93.9	95.8			1.86
	Total-P	101	98.8	98.4			0.391
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	100	96.2	97.6			1.44
	O-Phosphate-P	99.7	99.0	97.6			1.42
SM 2320 B-97	Total Alkalinity	103				0.276	
SM 4500 F-C-97	Fluoride	101	98.1	98.1			0.0
SM 5310 B-00	Organic Carbon	97.0	94.1	95.5			1.31

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2098966, 2098967, 2098968, 2098969, 2098970, 2098971, 2098972, 2098973
EPA 300.0 / E31780	Bromide in aqueous matrices	2098966, 2098967, 2098968, 2098969, 2098970, 2098971, 2098972, 2098973
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2098974, 2098975, 2098976, 2098977, 2098978, 2098979, 2098980, 2098981
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2098974, 2098975, 2098976, 2098977, 2098978, 2098979, 2098980, 2098981
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2098974, 2098975, 2098976, 2098977, 2098978, 2098979, 2098980, 2098981
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2098974, 2098975, 2098976, 2098977, 2098978, 2098979, 2098980, 2098981
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2098982, 2098983, 2098984, 2098985, 2098986, 2098987, 2098988, 2098989
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	2098966, 2098967, 2098968, 2098969, 2098970, 2098971, 2098972, 2098973
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2098966, 2098967, 2098968, 2098969, 2098970, 2098971, 2098972, 2098973
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2098966, 2098967, 2098968, 2098969, 2098970, 2098971, 2098972, 2098973
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2098974, 2098975, 2098976, 2098977, 2098978, 2098979, 2098980, 2098981

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	06/27/2019			06/27/2019 16:49	Julia Storbeck	2098966, 2098967, 2098968, 2098969, 2098970, 2098971, 2098972, 2098973
EPA 300.0	06/27/2019			07/02/2019 05:39	Jhamieka S. Greenwood	2098966
	06/27/2019			07/02/2019 05:56	Jhamieka S. Greenwood	2098967
	06/27/2019			07/05/2019 14:08	Jhamieka S. Greenwood	2098968
	06/27/2019			07/05/2019 14:25	Jhamieka S. Greenwood	2098969
	06/27/2019			07/05/2019 14:42	Jhamieka S. Greenwood	2098970
	06/27/2019			07/05/2019 14:59	Jhamieka S. Greenwood	2098971
	06/27/2019			07/05/2019 15:50	Jhamieka S. Greenwood	2098972
	06/27/2019			07/09/2019 14:57	Jhamieka S. Greenwood	2098973
EPA 350.1 Rev. 2.0	06/27/2019			06/27/2019 14:22	Ping Hua	2098976
	06/27/2019			06/27/2019 14:23	Ping Hua	2098979
	06/27/2019			07/03/2019 11:57	Ping Hua	2098974
	06/27/2019			07/05/2019 12:59	Ping Hua	2098975
	06/27/2019			07/05/2019 13:04	Ping Hua	2098977
	06/27/2019			07/05/2019 13:05	Ping Hua	2098978
	06/27/2019			07/05/2019 13:07	Ping Hua	2098980
	06/27/2019			07/05/2019 13:08	Ping Hua	2098981
EPA 351.2 Rev. 2.0	06/27/2019	06/28/2019 11:25	Sima Feizi	07/02/2019 12:58	Joseph Suarez	2098974
	06/27/2019	06/28/2019 11:25	Sima Feizi	07/02/2019 13:03	Joseph Suarez	2098975
	06/27/2019	06/28/2019 11:25	Sima Feizi	07/02/2019 13:04	Joseph Suarez	2098976
	06/27/2019	06/28/2019 11:25	Sima Feizi	07/02/2019 13:06	Joseph Suarez	2098977
	06/27/2019	06/28/2019 11:25	Sima Feizi	07/02/2019 13:08	Joseph Suarez	2098978
	06/27/2019	07/03/2019 12:30	Adrian Shelby	07/05/2019 11:59	Joseph Suarez	2098979
	06/27/2019	07/03/2019 12:30	Adrian Shelby	07/05/2019 12:03	Joseph Suarez	2098980
	06/27/2019	07/03/2019 12:30	Adrian Shelby	07/05/2019 12:05	Joseph Suarez	2098981
EPA 353.2 Rev. 2.0	06/27/2019			07/02/2019 10:56	Beverly Y. Sanders	2098974
	06/27/2019			07/02/2019 10:57	Beverly Y. Sanders	2098975
	06/27/2019			07/02/2019 10:58	Beverly Y. Sanders	2098976
	06/27/2019			07/02/2019 11:00	Beverly Y. Sanders	2098977
	06/27/2019			07/02/2019 11:01	Beverly Y. Sanders	2098978
	06/27/2019			07/02/2019 11:02	Beverly Y. Sanders	2098979
	06/27/2019			07/02/2019 11:03	Beverly Y. Sanders	2098980
	06/27/2019			07/02/2019 11:04	Beverly Y. Sanders	2098981
EPA 365.1 Rev. 2.0	06/27/2019	06/28/2019 12:40	Sima Feizi	07/01/2019 12:25	Beverly Y. Sanders	2098974
	06/27/2019	06/28/2019 12:40	Sima Feizi	07/01/2019 12:26	Beverly Y. Sanders	2098975, 2098976
	06/27/2019	06/28/2019 12:40	Sima Feizi	07/01/2019 12:34	Beverly Y. Sanders	2098977
	06/27/2019	06/28/2019 12:40	Sima Feizi	07/01/2019 12:35	Beverly Y. Sanders	2098978
	06/27/2019	07/01/2019 12:00	Lipi Saha	07/02/2019 16:00	Rosalyn Ballman	2098979
	06/27/2019	07/01/2019 12:00	Lipi Saha	07/02/2019 16:01	Rosalyn Ballman	2098980

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 365.1 Rev. 2.0	06/27/2019	07/01/2019 12:00	Lipi Saha	07/02/2019 16:08	Rosalyn Ballman	2098981
EPA 365.1 Rev. 2.0 dissolved	06/27/2019			06/27/2019 15:17	Jhamieka S. Greenwood	2098982
	06/27/2019			06/27/2019 15:30	Jhamieka S. Greenwood	2098989
	06/27/2019			06/27/2019 16:04	Jhamieka S. Greenwood	2098986
	06/27/2019			06/27/2019 16:05	Jhamieka S. Greenwood	2098987
	06/27/2019			06/27/2019 16:06	Jhamieka S. Greenwood	2098988
	06/27/2019			06/27/2019 16:21	Jhamieka S. Greenwood	2098983
	06/27/2019			06/27/2019 16:22	Jhamieka S. Greenwood	2098984
	06/27/2019			06/27/2019 16:27	Jhamieka S. Greenwood	2098985
SM 2320 B-97	06/27/2019			07/02/2019 22:18	Dale L. Simmons	2098966
	06/27/2019			07/02/2019 22:30	Dale L. Simmons	2098967
	06/27/2019			07/02/2019 22:42	Dale L. Simmons	2098968
	06/27/2019			07/02/2019 22:54	Dale L. Simmons	2098969
	06/27/2019			07/02/2019 23:06	Dale L. Simmons	2098970
	06/27/2019			07/02/2019 23:19	Dale L. Simmons	2098971
	06/27/2019			07/02/2019 23:31	Dale L. Simmons	2098972
	06/27/2019			07/02/2019 23:43	Dale L. Simmons	2098973
SM 2540 D-97	06/27/2019			07/01/2019 10:41	Yijie Li	2098966, 2098967, 2098968, 2098969, 2098970, 2098971, 2098972, 2098973
SM 4500 F-C-97	06/27/2019			07/09/2019 05:03	Dale L. Simmons	2098966
	06/27/2019			07/09/2019 05:07	Dale L. Simmons	2098967
	06/27/2019			07/09/2019 05:11	Dale L. Simmons	2098968
	06/27/2019			07/09/2019 05:16	Dale L. Simmons	2098969
	06/27/2019			07/09/2019 06:03	Dale L. Simmons	2098970
	06/27/2019			07/09/2019 06:07	Dale L. Simmons	2098971
	06/27/2019			07/09/2019 06:11	Dale L. Simmons	2098972
	06/27/2019			07/09/2019 06:15	Dale L. Simmons	2098973
SM 5310 B-00	06/27/2019			06/29/2019 04:07	Madeline Funaro	2098974
	06/27/2019			06/29/2019 04:22	Madeline Funaro	2098975
	06/27/2019			06/29/2019 04:37	Madeline Funaro	2098976
	06/27/2019			06/29/2019 04:50	Madeline Funaro	2098977
	06/27/2019			06/29/2019 05:06	Madeline Funaro	2098978
	06/27/2019			06/29/2019 05:34	Madeline Funaro	2098979
	06/27/2019			06/29/2019 05:52	Madeline Funaro	2098981
	06/27/2019			06/29/2019 12:52	Madeline Funaro	2098980