

Chemical Analysis Report

NE-DIST-2022-09-08-01

Florida DEP Laboratory
2600 Blair Stone Road
Tallahassee, FL 32399-2400
DOH Accreditation E31780

Event Description: **GTM NERR-Guana River SMP-7 site&blank**
Request ID: **RQ-2022-09-05-22**
Customer: **NE-DIST**
Project ID: **SMP**

Send Reports to:
GTM NERR
505 Guana River Rd.
Ponte Vedra Beach, FL 32082
Attn: Nikki Dix

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

Date Certified: 03-OCT-2022 12:53



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: DEPGR3

Collection Date/Time: 09/07/2022 08:03

Field ID: GTMGR3NUT

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2354915	EPA 180.1 Rev. 2.0	Turbidity	4.3		NTU	P419324	
	SM 2320 B-2011	Total Alkalinity	116		mg CaCO3/L	P419603	
	SM 2540 D-2011	TSS	7	I	mg/L	P419668	
	SM 4500-F- C-2011	Fluoride	1.1		mg F/L	P419606	
2354922	EPA 350.1 Rev. 2.0 dissolved	Ammonia-N	0.097		mg N/L	P419729	
	EPA 351.2 Rev. 2.0 dissolved	Kjeldahl Nitrogen	0.65		mg N/L	P419453	
	EPA 353.2 Rev. 2.0 dissolved	NO2NO3-N	0.019		mg N/L	P420297	
2354929	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.033		mg P/L	P419313	
2354936	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.67		mg N/L	P419453	
	EPA 365.1 Rev. 2.0	Total-P	0.066		mg P/L	P419534	
	SM 5310 B-2011	Organic Carbon	6.7		mg C/L	P419401	

Ref. Method and Comment:

SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: DEPGR2

Collection Date/Time: 09/07/2022 08:17

Field ID: GTMGRNUT

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2354916	EPA 180.1 Rev. 2.0	Turbidity	4.8		NTU	P419324	
	SM 2320 B-2011	Total Alkalinity	115	A	mg CaCO3/L	P419603	
	SM 2540 D-2011	TSS	7	I	mg/L	P419668	
	SM 4500-F- C-2011	Fluoride	1.0		mg F/L	P419606	
2354923	EPA 350.1 Rev. 2.0 dissolved	Ammonia-N	0.10		mg N/L	P419729	
	EPA 351.2 Rev. 2.0 dissolved	Kjeldahl Nitrogen	0.78		mg N/L	P419453	
	EPA 353.2 Rev. 2.0 dissolved	NO2NO3-N	0.020		mg N/L	P419436	
2354930	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.034		mg P/L	P419313	
2354937	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.76		mg N/L	P419453	
	EPA 365.1 Rev. 2.0	Total-P	0.067		mg P/L	P419534	
	SM 5310 B-2011	Organic Carbon	7.0		mg C/L	P419561	

Ref. Method and Comment:

SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: DEPGR1

Collection Date/Time: 09/07/2022 08:42

Field ID: GTMGR1NUT

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2354917	EPA 180.1 Rev. 2.0	Turbidity	9.4		NTU	P419324	
	SM 2320 B-2011	Total Alkalinity	118		mg CaCO3/L	P419603	
	SM 2540 D-2011	TSS	41		mg/L	P419668	
	SM 4500-F- C-2011	Fluoride	1.1		mg F/L	P419606	
2354924	EPA 350.1 Rev. 2.0 dissolved	Ammonia-N	0.038		mg N/L	P419730	
	EPA 351.2 Rev. 2.0 dissolved	Kjeldahl Nitrogen	0.95		mg N/L	P419453	
	EPA 353.2 Rev. 2.0 dissolved	NO2NO3-N	0.005	I	mg N/L	P419436	
2354931	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.018		mg P/L	P419313	
2354938	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.2		mg N/L	P419453	
	EPA 365.1 Rev. 2.0	Total-P	0.099		mg P/L	P419534	
	SM 5310 B-2011	Organic Carbon	12		mg C/L	P419561	

Ref. Method and Comment:

SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: DEPGL4

Collection Date/Time: 09/07/2022 09:55

Field ID: GTMGL4NUT

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2354918	EPA 180.1 Rev. 2.0	Turbidity	10		NTU	P419324	
	SM 2320 B-2011	Total Alkalinity	127		mg CaCO3/L	P419603	
	SM 2540 D-2011	TSS	22		mg/L	P419668	
	SM 4500-F- C-2011	Fluoride	0.99		mg F/L	P419606	
2354925	EPA 350.1 Rev. 2.0 dissolved	Ammonia-N	0.032		mg N/L	P419730	
	EPA 351.2 Rev. 2.0 dissolved	Kjeldahl Nitrogen	1.4		mg N/L	P419453	
	EPA 353.2 Rev. 2.0 dissolved	NO2NO3-N	0.008	I	mg N/L	P419436	
2354932	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P419313	
2354939	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	2.2		mg N/L	P419453	
	EPA 365.1 Rev. 2.0	Total-P	0.090		mg P/L	P419534	
	SM 5310 B-2011	Organic Carbon	22		mg C/L	P419561	

Ref. Method and Comment:

SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: DEPGL3

Collection Date/Time: 09/07/2022 10:15

Field ID: GTMLMNUT

Matrix: W-BRACKISH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2354919	EPA 180.1 Rev. 2.0	Turbidity	11		NTU	P419324	
	SM 2320 B-2011	Total Alkalinity	138		mg CaCO3/L	P419884	
	SM 2540 D-2011	TSS	20		mg/L	P419668	
	SM 4500-F- C-2011	Fluoride	0.70		mg F/L	P419606	
2354926	EPA 350.1 Rev. 2.0 dissolved	Ammonia-N	0.026		mg N/L	P419730	
	EPA 351.2 Rev. 2.0 dissolved	Kjeldahl Nitrogen	1.7		mg N/L	P419453	
	EPA 353.2 Rev. 2.0 dissolved	NO2NO3-N	0.004	U	mg N/L	P419436	
2354933	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P419313	
2354940	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	2.6		mg N/L	P419453	
	EPA 365.1 Rev. 2.0	Total-P	0.10		mg P/L	P419535	
	SM 5310 B-2011	Organic Carbon	28		mg C/L	P419639	

Ref. Method and Comment:

SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: DEPGL2

Collection Date/Time: 09/07/2022 10:35

Field ID: GTMGL2NUT

Matrix: W-BRACKISH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2354920	EPA 180.1 Rev. 2.0	Turbidity	9.6		NTU	P419324	
	SM 2320 B-2011	Total Alkalinity	117		mg CaCO3/L	P419602	
	SM 2540 D-2011	TSS	12		mg/L	P419663	
	SM 4500-F- C-2011	Fluoride	0.30		mg F/L	P419605	
2354927	EPA 350.1 Rev. 2.0 dissolved	Ammonia-N	0.019		mg N/L	P419912	
	EPA 351.2 Rev. 2.0 dissolved	Kjeldahl Nitrogen	1.6		mg N/L	P419516	
	EPA 353.2 Rev. 2.0 dissolved	NO2NO3-N	0.004	U	mg N/L	P419436	
2354934	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P419326	
2354941	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	2.3		mg N/L	P419516	
	EPA 365.1 Rev. 2.0	Total-P	0.11		mg P/L	P419535	
	SM 5310 B-2011	Organic Carbon	26		mg C/L	P419491	

Ref. Method and Comment:

SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: DEPGL1

Collection Date/Time: 09/07/2022 11:10

Field ID: GTMGL1NUT

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2354921	EPA 180.1 Rev. 2.0	Turbidity	1.9		NTU	P419324	
	SM 2320 B-2011	Total Alkalinity	131		mg CaCO3/L	P419602	
	SM 2540 D-2011	TSS	3	I	mg/L	P419663	
	SM 4500-F- C-2011	Fluoride	0.20		mg F/L	P419605	
2354928	EPA 350.1 Rev. 2.0 dissolved	Ammonia-N	0.037		mg N/L	P419722	
	EPA 351.2 Rev. 2.0 dissolved	Kjeldahl Nitrogen	1.3		mg N/L	P419455	
	EPA 353.2 Rev. 2.0 dissolved	NO2NO3-N	0.004	I	mg N/L	P419539	
2354935	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.060		mg P/L	P419312	
2354942	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.4		mg N/L	P419455	
	EPA 365.1 Rev. 2.0	Total-P	0.13		mg P/L	P419533	
	SM 5310 B-2011	Organic Carbon	23		mg C/L	P419491	

Ref. Method and Comment:

SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

EPA 351.2 Rev. 2.0 dissolved: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

EPA 353.2 Rev. 2.0 dissolved: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

EPA 351.2 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: Field Blank

Collection Date/Time: 09/07/2022 07:58

Field ID: Field Blank

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2354943	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P419324	
	SM 2320 B-2011	Total Alkalinity	0.65	U	mg CaCO3/L	P419602	
	SM 2540 D-2011	TSS	2	U	mg/L	P419664	
	SM 4500-F- C-2011	Fluoride	0.035	U	mg F/L	P419605	
2354944	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P419362	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P419445	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P419540	
	EPA 365.1 Rev. 2.0	Total-P	0.002	U	mg P/L	P419466	
	SM 5310 B-2011	Organic Carbon	0.50	U	mg C/L	P419491	
2354945	EPA 350.1 Rev. 2.0	Ammonia-N	0.006		mg N/L	P419722	
	dissolved						
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.091	I	mg N/L	P419445	
	dissolved						
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P419539	
	dissolved						
2354946	EPA 365.1 Rev. 2.0	O-Phosphate-P	0.004	U	mg P/L	P419312	
	dissolved						

Ref. Method and Comment:

SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

EPA 350.1 Rev. 2.0 dissolved: The result was confirmed on 09/21/2022.

EPA 351.2 Rev. 2.0 dissolved: The result was confirmed on 09/22/2022.

EPA 353.2 Rev. 2.0 dissolved: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P419324

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P419362

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

Reference Method: EPA 350.1 Rev. 2.0 dissolved
Batch ID: P419722

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

Reference Method: EPA 350.1 Rev. 2.0 dissolved
Batch ID: P419729

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

Reference Method: EPA 350.1 Rev. 2.0 dissolved
Batch ID: P419730

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

Reference Method: EPA 350.1 Rev. 2.0 dissolved
Batch ID: P419912

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P4194450

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P419453

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P419455

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: P419516

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

Reference Method: EPA 351.2 Rev. 2.0 dissolved
Batch ID: P4194450

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

Reference Method: EPA 351.2 Rev. 2.0 dissolved
Batch ID: P419453

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

Reference Method: EPA 351.2 Rev. 2.0 dissolved
Batch ID: P419455

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

Reference Method: EPA 351.2 Rev. 2.0 dissolved
Batch ID: P419516

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P419540

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

Reference Method: EPA 353.2 Rev. 2.0 dissolved
Batch ID: P419436

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

Reference Method: EPA 353.2 Rev. 2.0 dissolved
Batch ID: P419539

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

Reference Method: EPA 353.2 Rev. 2.0 dissolved
Batch ID: P420297

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P419466

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P419533

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P419534

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P419535

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P419312

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P419313

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P419326

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

Reference Method: SM 2320 B-2011
Batch ID: P419602

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

Reference Method: SM 2320 B-2011
Batch ID: P419603

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

Quality Assurance Report Method Blank Results

Reference Method: SM 2320 B-2011
Batch ID: P419884

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

Reference Method: SM 2540 D-2011
Batch ID: P419663

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P419664

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P419668

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500-F- C-2011
Batch ID: P419605

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500-F- C-2011
Batch ID: P419606

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P419401

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

Reference Method: SM 5310 B-2011
Batch ID: P419491

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

Reference Method: SM 5310 B-2011
Batch ID: P419561

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

Quality Assurance Report

Method Blank Results

Reference Method: SM 5310 B-2011
Batch ID: P419639

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P419324

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Turbidity	96.9		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P419362

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	95.2		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0 dissolved
Batch ID: P419722

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	97.8		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0 dissolved
Batch ID: P419729

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	95.6		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0 dissolved
Batch ID: P419730

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	94.8		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0 dissolved
Batch ID: P419912

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	96.4		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P4194450

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	96.0		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P419453

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: P419455

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P419516

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

Reference Method: EPA 351.2 Rev. 2.0 dissolved

Batch ID: P4194450

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	96.0		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0 dissolved

Batch ID: P419453

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

Reference Method: EPA 351.2 Rev. 2.0 dissolved

Batch ID: P419455

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

Reference Method: EPA 351.2 Rev. 2.0 dissolved

Batch ID: P419516

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

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P419540

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

Reference Method: EPA 353.2 Rev. 2.0 dissolved

Batch ID: P419436

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

Reference Method: EPA 353.2 Rev. 2.0 dissolved

Batch ID: P419539

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

Reference Method: EPA 353.2 Rev. 2.0 dissolved

Batch ID: P420297

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P419466

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P419533

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P419534

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P419535

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P419312

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P419313

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P419326

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

Reference Method: SM 2320 B-2011
Batch ID: P419602

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	99.7		P	94 - 106

Reference Method: SM 2320 B-2011
Batch ID: P419603

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	101		P	94 - 106

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 2320 B-2011
Batch ID: P419884

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	98.7		P	94 - 106

Reference Method: SM 4500-F- C-2011
Batch ID: P419605

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	99.8		P	96 - 104

Reference Method: SM 4500-F- C-2011
Batch ID: P419606

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	100		P	96 - 104

Reference Method: SM 5310 B-2011
Batch ID: P419401

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	96.8		P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P419491

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

Reference Method: SM 5310 B-2011
Batch ID: P419561

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

Reference Method: SM 5310 B-2011
Batch ID: P419639

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	97.8		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P419362

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2354820	Ammonia-N	100	99.8	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0 dissolved

Batch ID: P419722

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2355860	Ammonia-N	91.0	95.2	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0 dissolved

Batch ID: P419729

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2354616	Ammonia-N	94.0	93.2	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0 dissolved

Batch ID: P419730

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2354924	Ammonia-N	100	102	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0 dissolved

Batch ID: P419912

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2356439	Ammonia-N	98.0	98.8	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P4194450

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2354412	Kjeldahl Nitrogen	99.7	104	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P419453

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2354939	Kjeldahl Nitrogen	100	103	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P419516

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2354650	Kjeldahl Nitrogen	103	99.1	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0 dissolved

Batch ID: P4194450

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2354412	Kjeldahl Nitrogen	99.7	104	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 351.2 Rev. 2.0 dissolved
Batch ID: P419453

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2354939	Kjeldahl Nitrogen	100	103	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0 dissolved
Batch ID: P419516

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2354650	Kjeldahl Nitrogen	103	99.1	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P419540

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2354820	NO2NO3-N	97.8	98.8	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0 dissolved
Batch ID: P419436

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2354890	NO2NO3-N	102	102	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0 dissolved
Batch ID: P420297

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2355286	NO2NO3-N	101	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P419466

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2354637	Total-P	108	106	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P419533

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2355042	Total-P	102	99.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P419534

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2354889	Total-P	95.9	95.6	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P419535

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2354941	Total-P	103	105	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P419312

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2354990	O-Phosphate-P	95.4	95.7	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P419313

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2354931	O-Phosphate-P	98.6	98.4	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P419326

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2354934	O-Phosphate-P	99.6	96.9	P/P	90 - 110

Reference Method: SM 4500-F- C-2011
Batch ID: P419605

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2354066	Fluoride	100	100	P/P	94 - 104

Reference Method: SM 4500-F- C-2011
Batch ID: P419606

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2354916	Fluoride	97.6	97.6	P/P	94 - 104

Reference Method: SM 5310 B-2011
Batch ID: P419401

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2354936	Organic Carbon	86.2	88.8	P/P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P419491

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2354958	Organic Carbon	96.6	97.0	P/P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P419561

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2354937	Organic Carbon	91.2	88.1	P/P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P419639

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2355027	Organic Carbon	88.5	89.8	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P419324

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2354819	Turbidity	5.79	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P419362

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2354820	Ammonia-N	0.177	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0 dissolved

Batch ID: P419722

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2355860	Ammonia-N	3.57	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0 dissolved

Batch ID: P419729

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2354616	Ammonia-N	0.621	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0 dissolved

Batch ID: P419730

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2354924	Ammonia-N	1.24	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0 dissolved

Batch ID: P419912

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2356439	Ammonia-N	0.555	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P4194450

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2354412	Kjeldahl Nitrogen	2.66	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P419453

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2354939	Kjeldahl Nitrogen	1.14	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P419455

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2354942	Kjeldahl Nitrogen	5.99	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P419516

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2354650	Kjeldahl Nitrogen	2.86	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0 dissolved

Batch ID: P4194450

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2354412	Kjeldahl Nitrogen	2.66	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0 dissolved

Batch ID: P419453

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2354939	Kjeldahl Nitrogen	1.14	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0 dissolved

Batch ID: P419455

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2354942	Kjeldahl Nitrogen	5.99	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0 dissolved

Batch ID: P419516

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2354650	Kjeldahl Nitrogen	2.86	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P419540

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2354820	NO2NO3-N	0.870	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0 dissolved

Batch ID: P419436

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2354890	NO2NO3-N	0.491	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 353.2 Rev. 2.0 dissolved
Batch ID: P419539

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2354141	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0 dissolved
Batch ID: P420297

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2355286	NO2NO3-N	2.34	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P419466

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2354637	Total-P	1.65	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P419533

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2355042	Total-P	2.66	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P419534

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2354889	Total-P	0.339	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P419535

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2354941	Total-P	1.84	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P419312

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2354990	O-Phosphate-P	0.300	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P419313

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2354931	O-Phosphate-P	0.172	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P419326

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2354934	O-Phosphate-P	2.75	Spike	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P419602

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2354066	Total Alkalinity	0.671	Sample	P	0 - 3.8

Reference Method: SM 2320 B-2011
Batch ID: P419603

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2354916	Total Alkalinity	1.16	Sample	P	0 - 3.8

Reference Method: SM 2320 B-2011
Batch ID: P419884

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2355026	Total Alkalinity	0.0450	Sample	P	0 - 3.8

Reference Method: SM 4500-F- C-2011
Batch ID: P419605

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2354066	Fluoride	0.0	Spike	P	0 - 1.6

Reference Method: SM 4500-F- C-2011
Batch ID: P419606

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2354916	Fluoride	0.0	Spike	P	0 - 1.6

Reference Method: SM 5310 B-2011
Batch ID: P419401

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2354936	Organic Carbon	2.71	Spike	P	0 - 20

Reference Method: SM 5310 B-2011
Batch ID: P419491

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2354958	Organic Carbon	0.248	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: SM 5310 B-2011
Batch ID: P419561

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2354937	Organic Carbon	2.94	Spike	P	0 - 20

Reference Method: SM 5310 B-2011
Batch ID: P419639

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2355027	Organic Carbon	1.14	Spike	P	0 - 20

* Sample, spike and/or laboratory control sample precision (LCS) is reported.

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A114614

Included Lab Sample IDs: 2354929, 2354930, 2354931, 2354932, 2354933, 2354935, 2354946

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	97.4	98.2	P/P	90 - 110
O-Phosphate-P	98.1	97.4	P/P	90 - 110
O-Phosphate-P	98.2	96.5	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A114618

Included Lab Sample IDs: 2354915, 2354916, 2354917, 2354918, 2354919, 2354920, 2354921, 2354943

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A114619

Included Lab Sample IDs: 2354934

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	97.6	95.5	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A114639

Included Lab Sample IDs: 2354944

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	97.0	97.0	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A114663

Included Lab Sample IDs: 2354936

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	96.7	93.4	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0 dissolved

Run ID: A114677

Included Lab Sample IDs: 2354923, 2354924, 2354925, 2354926, 2354927

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

Reference Method: SM 5310 B-2011

Run ID: A114693

Included Lab Sample IDs: 2354941, 2354942, 2354944

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	95.9	95.4	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A114711

Included Lab Sample IDs: 2354944

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

Reference Method: EPA 353.2 Rev. 2.0 dissolved

Run ID: A114711

Included Lab Sample IDs: 2354928, 2354945

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A114716

Included Lab Sample IDs: 2354944

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

Reference Method: EPA 351.2 Rev. 2.0 dissolved

Run ID: A114716

Included Lab Sample IDs: 2354945

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A114718

Included Lab Sample IDs: 2354944

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	97.8	99.8	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A114720

Included Lab Sample IDs: 2354937, 2354938, 2354939

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	93.1	94.5	P/P	90 - 110
Organic Carbon	97.0	91.7	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A114732

Included Lab Sample IDs: 2354915, 2354916, 2354917, 2354918, 2354920, 2354921, 2354943

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	102	97.4	P/P	90 - 110
Total Alkalinity	97.4	103	P/P	90 - 110

Reference Method: SM 4500-F- C-2011

Run ID: A114732

Included Lab Sample IDs: 2354915, 2354916, 2354917, 2354918, 2354919, 2354920, 2354921, 2354943

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

Reference Method: SM 4500-F- C-2011

Run ID: A114732

Included Lab Sample IDs: 2354915, 2354916, 2354917, 2354918, 2354919, 2354920, 2354921, 2354943

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A114741

Included Lab Sample IDs: 2354941

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	98.8	97.7	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0 dissolved

Run ID: A114741

Included Lab Sample IDs: 2354927

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	98.8	97.7	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A114742

Included Lab Sample IDs: 2354936, 2354937, 2354938, 2354939, 2354940, 2354942

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	101	99.2	P/P	90 - 110
Kjeldahl Nitrogen	101	96.6	P/P	90 - 110
Kjeldahl Nitrogen	95.8	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0 dissolved

Run ID: A114742

Included Lab Sample IDs: 2354922, 2354923, 2354924, 2354925, 2354926, 2354928

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	101	99.2	P/P	90 - 110
Kjeldahl Nitrogen	95.8	101	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A114746

Included Lab Sample IDs: 2354940

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	96.8	93.6	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A114752

Included Lab Sample IDs: 2354940, 2354941, 2354942

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	101	101	P/P	90 - 110
Total-P	101	102	P/P	90 - 110
Total-P	99.8	102	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A114755

Included Lab Sample IDs: 2354936, 2354937, 2354938, 2354939

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	98.8	101	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0 dissolved

Run ID: A114783

Included Lab Sample IDs: 2354928, 2354945

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.6	99.4	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0 dissolved

Run ID: A114785

Included Lab Sample IDs: 2354922, 2354923, 2354924, 2354925, 2354926

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.2	97.5	P/P	90 - 110
Ammonia-N	98.4	98.2	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A114840

Included Lab Sample IDs: 2354919

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	99.9	96.7	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0 dissolved

Run ID: A114854

Included Lab Sample IDs: 2354927

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.0	97.7	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0 dissolved

Run ID: A115023

Included Lab Sample IDs: 2354922

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	104	104	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	
					LCS	SMP MS
EPA 180.1 Rev. 2.0	Turbidity	96.9				5.79
EPA 350.1 Rev. 2.0	Ammonia-N	95.2	100	99.8		0.177
EPA 350.1 Rev. 2.0 dissolved	Ammonia-N	97.8	91.0	95.2		3.57
	Ammonia-N	95.6	94.0	93.2		0.621
	Ammonia-N	94.8	100	102		1.24
	Ammonia-N	96.4	98.0	98.8		0.555
	Ammonia-N					
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	96.0	99.7	104		2.66
	Kjeldahl Nitrogen	105	100	103		1.14
	Kjeldahl Nitrogen	106				5.99
	Kjeldahl Nitrogen	107	103	99.1		2.86
EPA 351.2 Rev. 2.0 dissolved	Kjeldahl Nitrogen	96.0	99.7	104		2.66
	Kjeldahl Nitrogen	105	100	103		1.14
	Kjeldahl Nitrogen	106				5.99
	Kjeldahl Nitrogen	107	103	99.1		2.86
EPA 353.2 Rev. 2.0	NO2NO3-N	100	97.8	98.8		0.870
EPA 353.2 Rev. 2.0 dissolved	NO2NO3-N	102	102	102		0.491
	NO2NO3-N	100				0.0
	NO2NO3-N	103	101	103		2.34
EPA 365.1 Rev. 2.0	Total-P	108	108	106		1.65
	Total-P	99.8	102	99.0		2.66
	Total-P	102	95.9	95.6		0.339
	Total-P	104	103	105		1.84
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	99.2	95.4	95.7		0.300
	O-Phosphate-P	99.3	98.6	98.4		0.172
	O-Phosphate-P	98.1	99.6	96.9		2.75
SM 2320 B-2011	Total Alkalinity	99.7			0.671	
	Total Alkalinity	101			1.16	
	Total Alkalinity	98.7			0.0450	
SM 4500-F- C-2011	Fluoride	99.8	100	100		0.0
	Fluoride	100	97.6	97.6		0.0
SM 5310 B-2011	Organic Carbon	96.8	86.2	88.8		2.71
	Organic Carbon	95.5	96.6	97.0		0.248
	Organic Carbon	97.1	91.2	88.1		2.94
	Organic Carbon	97.8	88.5	89.8		1.14

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2354915, 2354916, 2354917, 2354918, 2354919, 2354920, 2354921, 2354943 2354944
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2354922, 2354923, 2354924, 2354925, 2354926, 2354927, 2354928, 2354945
EPA 350.1 Rev. 2.0 dissolved	Ammonia, dissolved, in filtered, aqueous matrices as mg N/L	2354936, 2354937, 2354938, 2354939, 2354940, 2354941, 2354942, 2354944
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2354922, 2354923, 2354924, 2354925, 2354926, 2354927, 2354928, 2354945
EPA 351.2 Rev. 2.0 dissolved	Total Kjeldahl Nitrogen, dissolved, in filtered, aqueous matrices	2354922, 2354923, 2354924, 2354925, 2354926, 2354927, 2354928, 2354945
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2354922, 2354923, 2354924, 2354925, 2354926, 2354927, 2354928, 2354945
EPA 353.2 Rev. 2.0 dissolved	Nitrite/Nitrate, dissolved, in filtered, aqueous matrices as mg N/L	2354936, 2354937, 2354938, 2354939, 2354940, 2354941, 2354942, 2354944
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2354929, 2354930, 2354931, 2354932, 2354933, 2354934, 2354935, 2354946
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	

Reference Method Descriptions

Method	Description	<u>Associated Samples</u>
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2354915, 2354916, 2354917, 2354918, 2354919, 2354920, 2354921, 2354943
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2354915, 2354916, 2354917, 2354918, 2354919, 2354920, 2354921, 2354943
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2354915, 2354916, 2354917, 2354918, 2354919, 2354920, 2354921, 2354943
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2354936, 2354937, 2354938, 2354939, 2354940, 2354941, 2354942, 2354944

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	09/08/2022			09/08/2022 13:03	Chandler E Cox	2354915
	09/08/2022			09/08/2022 13:05	Chandler E Cox	2354916
	09/08/2022			09/08/2022 13:06	Chandler E Cox	2354917
	09/08/2022			09/08/2022 13:08	Chandler E Cox	2354918
	09/08/2022			09/08/2022 13:09	Chandler E Cox	2354919
	09/08/2022			09/08/2022 13:10	Chandler E Cox	2354920
	09/08/2022			09/08/2022 13:13	Chandler E Cox	2354921
	09/08/2022			09/08/2022 13:14	Chandler E Cox	2354943
	09/08/2022			09/09/2022 10:58	Judith K. Clark	2354944
EPA 350.1 Rev. 2.0	09/08/2022			09/16/2022 11:08	Judith K. Clark	2354928
EPA 350.1 Rev. 2.0 dissolved	09/08/2022			09/16/2022 11:09	Judith K. Clark	2354945
	09/08/2022			09/16/2022 11:20	Ping Hua	2354922
	09/08/2022			09/16/2022 11:34	Ping Hua	2354923
	09/08/2022			09/16/2022 11:46	Ping Hua	2354924
	09/08/2022			09/16/2022 11:58	Ping Hua	2354925
	09/08/2022			09/16/2022 12:00	Ping Hua	2354926
	09/08/2022			09/21/2022 12:26	Ping Hua	2354927
EPA 351.2 Rev. 2.0	09/08/2022	09/13/2022 10:45	Alexandra J Mattheus	09/14/2022 10:42	Alexandra J Mattheus	2354944
	09/08/2022	09/13/2022 11:52	Alexandra J Mattheus	09/14/2022 13:38	Alexandra J Mattheus	2354936
	09/08/2022	09/13/2022 11:52	Alexandra J Mattheus	09/14/2022 13:42	Alexandra J Mattheus	2354937
	09/08/2022	09/13/2022 11:52	Alexandra J Mattheus	09/14/2022 13:44	Alexandra J Mattheus	2354938
	09/08/2022	09/13/2022 11:52	Alexandra J Mattheus	09/14/2022 13:46	Alexandra J Mattheus	2354939
	09/08/2022	09/13/2022 11:52	Alexandra J Mattheus	09/14/2022 13:51	Alexandra J Mattheus	2354940
	09/08/2022	09/13/2022 11:52	Alexandra J Mattheus	09/14/2022 14:28	Alexandra J Mattheus	2354942
	09/08/2022	09/14/2022 13:25	Samantha L Bates	09/15/2022 10:47	Samantha L Bates	2354941
EPA 351.2 Rev. 2.0 dissolved	09/08/2022	09/13/2022 10:45	Alexandra J Mattheus	09/14/2022 10:44	Alexandra J Mattheus	2354945
	09/08/2022	09/13/2022 11:52	Alexandra J Mattheus	09/14/2022 13:29	Alexandra J Mattheus	2354922
	09/08/2022	09/13/2022 11:52	Alexandra J Mattheus	09/14/2022 13:31	Alexandra J Mattheus	2354923
	09/08/2022	09/13/2022 11:52	Alexandra J Mattheus	09/14/2022 13:33	Alexandra J Mattheus	2354924
	09/08/2022	09/13/2022 11:52	Alexandra J Mattheus	09/14/2022 13:34	Alexandra J Mattheus	2354925
	09/08/2022	09/13/2022 11:52	Alexandra J Mattheus	09/14/2022 13:36	Alexandra J Mattheus	2354926
	09/08/2022	09/13/2022 11:52	Alexandra J Mattheus	09/14/2022 14:27	Alexandra J Mattheus	2354928
	09/08/2022	09/14/2022 13:25	Samantha L Bates	09/15/2022 10:46	Samantha L Bates	2354927
EPA 353.2 Rev. 2.0	09/08/2022			09/14/2022 09:04	Judith K. Clark	2354944
EPA 353.2 Rev. 2.0 dissolved	09/08/2022			09/12/2022 11:55	Beverly Y. Sanders	2354923
	09/08/2022			09/12/2022 11:57	Beverly Y. Sanders	2354924
	09/08/2022			09/12/2022 11:58	Beverly Y. Sanders	2354925
	09/08/2022			09/12/2022 11:59	Beverly Y. Sanders	2354926
	09/08/2022			09/12/2022 12:00	Beverly Y. Sanders	2354927
	09/08/2022			09/14/2022 08:47	Judith K. Clark	2354928

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 353.2 Rev. 2.0 dissolved	09/08/2022			09/14/2022 08:48	Judith K. Clark	2354945
	09/08/2022			09/28/2022 16:36	Touraj Touran	2354922
EPA 365.1 Rev. 2.0	09/08/2022	09/13/2022 15:30	Simonne.V. Calhoun	09/14/2022 12:53	James L Waggeberby	2354944
	09/08/2022	09/14/2022 16:15	Simonne.V. Calhoun	09/15/2022 12:59	Simonne.V. Calhoun	2354942
	09/08/2022	09/14/2022 16:15	Simonne.V. Calhoun	09/15/2022 13:30	Simonne.V. Calhoun	2354941
	09/08/2022	09/14/2022 16:15	Simonne.V. Calhoun	09/15/2022 13:35	Simonne.V. Calhoun	2354940
	09/08/2022	09/14/2022 16:15	Simonne.V. Calhoun	09/15/2022 16:00	James L Waggeberby	2354936
	09/08/2022	09/14/2022 16:15	Simonne.V. Calhoun	09/15/2022 16:01	James L Waggeberby	2354937
	09/08/2022	09/14/2022 16:15	Simonne.V. Calhoun	09/15/2022 16:02	James L Waggeberby	2354938
	09/08/2022	09/14/2022 16:15	Simonne.V. Calhoun	09/15/2022 16:03	James L Waggeberby	2354939
EPA 365.1 Rev. 2.0 dissolved	09/08/2022			09/08/2022 14:18	James L Waggeberby	2354935
	09/08/2022			09/08/2022 14:19	James L Waggeberby	2354946
	09/08/2022			09/08/2022 14:30	James L Waggeberby	2354931
	09/08/2022			09/08/2022 14:34	James L Waggeberby	2354929
	09/08/2022			09/08/2022 14:40	James L Waggeberby	2354930
	09/08/2022			09/08/2022 14:41	James L Waggeberby	2354932
	09/08/2022			09/08/2022 14:42	James L Waggeberby	2354933
	09/08/2022			09/08/2022 15:51	James L Waggeberby	2354934
SM 2320 B-2011	09/08/2022			09/14/2022 03:39	Dale L. Simmons	2354943
	09/08/2022			09/14/2022 04:01	Dale L. Simmons	2354921
	09/08/2022			09/14/2022 04:19	Dale L. Simmons	2354920
	09/08/2022			09/14/2022 07:06	Dale L. Simmons	2354916
	09/08/2022			09/14/2022 07:19	Dale L. Simmons	2354915
	09/08/2022			09/14/2022 07:32	Dale L. Simmons	2354917
	09/08/2022			09/14/2022 07:45	Dale L. Simmons	2354918
	09/08/2022			09/20/2022 18:35	Dale L. Simmons	2354919
SM 2540 D-2011	09/08/2022			09/09/2022 16:25	Yijie Li	2354915, 2354916, 2354917, 2354918, 2354919, 2354920, 2354921, 2354943
SM 4500-F- C-2011	09/08/2022			09/14/2022 03:39	Dale L. Simmons	2354943
	09/08/2022			09/14/2022 04:01	Dale L. Simmons	2354921
	09/08/2022			09/14/2022 04:19	Dale L. Simmons	2354920
	09/08/2022			09/14/2022 05:59	Dale L. Simmons	2354916
	09/08/2022			09/14/2022 06:12	Dale L. Simmons	2354915
	09/08/2022			09/14/2022 06:18	Dale L. Simmons	2354917
	09/08/2022			09/14/2022 06:23	Dale L. Simmons	2354918
SM 5310 B-2011	09/08/2022			09/14/2022 06:28	Dale L. Simmons	2354919
	09/08/2022			09/09/2022 21:44	Khloe J Berg	2354936
	09/08/2022			09/12/2022 18:31	Khloe J Berg	2354941
	09/08/2022			09/12/2022 18:46	Khloe J Berg	2354942
	09/08/2022			09/12/2022 19:00	Khloe J Berg	2354944

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 5310 B-2011	09/08/2022			09/14/2022 05:43	Khloe J Berg	2354937
	09/08/2022			09/14/2022 11:56	Khloe J Berg	2354938
	09/08/2022			09/14/2022 12:14	Khloe J Berg	2354939
	09/08/2022			09/15/2022 05:24	Khloe J Berg	2354940