

Chemical Analysis Report

NW-DIST-2016-03-01-01

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

Event Description: **Project Greenshores**

Request ID: **RQ-2016-02-22-17**

Customer: **NW-DIST**

Project ID: **DISTRICT**

Send Reports to:
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160 Government Center
Suite 308
Pensacola, FL 32502-5794
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Certified by: Thekkekalathil Chandrasekhar, Chemist Administrator

Date Certified: 21-MAR-2016 13:28



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 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: Range Marker East of Texar

Collection Date/Time: 02/29/2016 11:24

Field ID: 1

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1775444	EPA 180.1 Rev. 2.0	Turbidity	11		NTU	P299552	
	SM 2120 B	Color (true)	32	A	PCU	P299532	
	SM 2540 D-97	TSS	4	I	mg/L	P299791	
1775460	EPA 350.1 Rev. 2.0	Ammonia-N	0.005		mg N/L	P300076	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.31	I	mg N/L	P299666	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.13		mg N/L	P299853	
	EPA 365.1 Rev. 2.0	Total-P	0.024		mg P/L	P299671	

Ref. Method and Comment:

SM 2540 D-97: The precision data is unavailable due to the low analyte concentration in the QC sample.

Sample Location: 1/2 Bridge and Muscogee

Collection Date/Time: 02/29/2016 11:39

Field ID: 2

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1775445	EPA 180.1 Rev. 2.0	Turbidity	9.8		NTU	P299552	
	SM 2120 B	Color (true)	30		PCU	P299532	
	SM 2540 D-97	TSS	7	I	mg/L	P299792	
1775461	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P300076	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.28	I	mg N/L	P299666	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.13		mg N/L	P299853	
	EPA 365.1 Rev. 2.0	Total-P	0.022		mg P/L	P299671	

Ref. Method and Comment:

SM 2540 D-97: The precision data is unavailable due to the low analyte concentration in the QC sample.

Sample Location: E. of Primary Stormdrain inside PGS1

Collection Date/Time: 02/29/2016 11:47

Field ID: 3

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1775446	EPA 180.1 Rev. 2.0	Turbidity	5.9		NTU	P299552	
	SM 2120 B	Color (true)	26		PCU	P299532	
	SM 2540 D-97	TSS	3	I	mg/L	P299792	
1775462	EPA 350.1 Rev. 2.0	Ammonia-N	0.005	I	mg N/L	P300076	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.26	I	mg N/L	P299666	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.12		mg N/L	P299853	
	EPA 365.1 Rev. 2.0	Total-P	0.019		mg P/L	P299671	

Ref. Method and Comment:

SM 2540 D-97: The precision data is unavailable due to the low analyte concentration in the QC sample.

Sample Location: 100 ft South of Outfall

Collection Date/Time: 02/29/2016 11:53

Field ID: 4

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1775447	EPA 180.1 Rev. 2.0	Turbidity	7.3		NTU	P299552	
	SM 2120 B	Color (true)	26		PCU	P299532	
	SM 2540 D-97	TSS	4	I	mg/L	P299792	
1775463	EPA 350.1 Rev. 2.0	Ammonia-N	0.005		mg N/L	P300075	

Field ID: 4

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1775463	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.33	I	mg N/L	P299666	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.12		mg N/L	P299853	
	EPA 365.1 Rev. 2.0	Total-P	0.021		mg P/L	P299671	

Ref. Method and Comment:

SM 2540 D-97: The precision data is unavailable due to the low analyte concentration in the QC sample.

Sample Location: End of Chase Street**Collection Date/Time: 02/29/2016 11:59****Field ID: 5**

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1775448	EPA 180.1 Rev. 2.0	Turbidity	8.6		NTU	P299552	
	SM 2120 B	Color (true)	28		PCU	P299532	
	SM 2540 D-97	TSS	4	I	mg/L	P299792	
1775464	EPA 350.1 Rev. 2.0	Ammonia-N	0.005	I	mg N/L	P300075	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.33	I	mg N/L	P299729	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.12		mg N/L	P299853	
	EPA 365.1 Rev. 2.0	Total-P	0.021		mg P/L	P299671	

Ref. Method and Comment:

SM 2540 D-97: The precision data is unavailable due to the low analyte concentration in the QC sample.

Sample Location: 1/2 Muscogee & Hawkshaw (400ft.from Shore)**Collection Date/Time: 02/29/2016 12:15****Field ID: 6**

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1775449	EPA 180.1 Rev. 2.0	Turbidity	9.1		NTU	P299552	
	SM 2120 B	Color (true)	28		PCU	P299532	
	SM 2540 D-97	TSS	5	I	mg/L	P299792	
1775465	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P300075	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.28	I	mg N/L	P299729	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.12		mg N/L	P299853	
	EPA 365.1 Rev. 2.0	Total-P	0.020		mg P/L	P299671	

Ref. Method and Comment:

SM 2540 D-97: The precision data is unavailable due to the low analyte concentration in the QC sample.

Sample Location: 1/2 Bridge & Port**Collection Date/Time: 02/29/2016 12:48****Field ID: 7**

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1775450	EPA 180.1 Rev. 2.0	Turbidity	8.9		NTU	P299552	
	SM 2120 B	Color (true)	29		PCU	P299532	
	SM 2540 D-97	TSS	4	I	mg/L	P299792	
1775466	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P300075	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.33	I	mg N/L	P299729	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.12		mg N/L	P299853	
	EPA 365.1 Rev. 2.0	Total-P	0.024		mg P/L	P299671	

Ref. Method and Comment:

SM 2540 D-97: The precision data is unavailable due to the low analyte concentration in the QC sample.

Sample Location: West of Stromdrain, inside Rocks**Collection Date/Time: 02/29/2016 12:04**

Field ID: 8

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1775451	EPA 180.1 Rev. 2.0	Turbidity	7.0	A	NTU	P299553	
	SM 2120 B	Color (true)	27	A	PCU	P299533	
	SM 2540 D-97	TSS	3	I	mg/L	P299792	
1775467	EPA 350.1 Rev. 2.0	Ammonia-N	0.012		mg N/L	P300075	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.34	I	mg N/L	P299729	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.12		mg N/L	P299854	
	EPA 365.1 Rev. 2.0	Total-P	0.019		mg P/L	P299925	

Ref. Method and Comment:

SM 2540 D-97: The precision data is unavailable due to the low analyte concentration in the QC sample.

Sample Location: West End of Hawkshaw

Collection Date/Time: 02/29/2016 13:16

Field ID: 9

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1775452	EPA 180.1 Rev. 2.0	Turbidity	8.8		NTU	P299553	
	SM 2120 B	Color (true)	27		PCU	P299533	
	SM 2540 D-97	TSS	4	I	mg/L	P299792	
1775468	EPA 350.1 Rev. 2.0	Ammonia-N	0.003	I	mg N/L	P300075	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.39	I	mg N/L	P299729	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.12		mg N/L	P299854	
	EPA 365.1 Rev. 2.0	Total-P	0.020		mg P/L	P299925	

Ref. Method and Comment:

SM 2540 D-97: The precision data is unavailable due to the low analyte concentration in the QC sample.

Sample Location: Between Marina and Outfall

Collection Date/Time: 02/29/2016 13:09

Field ID: 10

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1775453	EPA 180.1 Rev. 2.0	Turbidity	8.5		NTU	P299553	
	SM 2120 B	Color (true)	28		PCU	P299533	
	SM 2540 D-97	TSS	4	I	mg/L	P299792	
1775469	EPA 350.1 Rev. 2.0	Ammonia-N	0.003	I	mg N/L	P300075	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.35	I	mg N/L	P299729	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.12		mg N/L	P299854	
	EPA 365.1 Rev. 2.0	Total-P	0.021		mg P/L	P299925	

Ref. Method and Comment:

SM 2540 D-97: The precision data is unavailable due to the low analyte concentration in the QC sample.

Sample Location: Entrance of Marina

Collection Date/Time: 02/29/2016 13:00

Field ID: 11

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1775454	EPA 180.1 Rev. 2.0	Turbidity	8.2		NTU	P299553	
	SM 2120 B	Color (true)	26		PCU	P299533	
	SM 2540 D-97	TSS	6	I	mg/L	P299792	
1775470	EPA 350.1 Rev. 2.0	Ammonia-N	0.003	I	mg N/L	P300075	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.31	I	mg N/L	P299729	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.12		mg N/L	P299854	

Field ID: 11

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1775470	EPA 365.1 Rev. 2.0	Total-P	0.021		mg P/L	P299925	

Ref. Method and Comment:

SM 2540 D-97: The precision data is unavailable due to the low analyte concentration in the QC sample.

Sample Location: 1/4 Between Bridge and Port (400ft from Shore) Collection Date/Time: 02/29/2016 12:52

Field ID: 12

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1775455	EPA 180.1 Rev. 2.0	Turbidity	8.6		NTU	P299553	
	SM 2120 B	Color (true)	28		PCU	P299533	
	SM 2540 D-97	TSS	5	I	mg/L	P299793	
1775471	EPA 350.1 Rev. 2.0	Ammonia-N	0.003	I	mg N/L	P300075	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.37	I	mg N/L	P299729	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.12		mg N/L	P299854	
	EPA 365.1 Rev. 2.0	Total-P	0.023		mg P/L	P299925	

Ref. Method and Comment:

SM 2540 D-97: The precision data is unavailable due to the low analyte concentration in the QC sample.

Sample Location: Inside Hawkshaw Lagoon

Collection Date/Time: 02/29/2016 13:31

Field ID: 13

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1775456	EPA 180.1 Rev. 2.0	Turbidity	2.0		NTU	P299553	
	SM 2120 B	Color (true)	18		PCU	P299533	
	SM 2540 D-97	TSS	3	I	mg/L	P299793	
1775472	EPA 350.1 Rev. 2.0	Ammonia-N	0.003	I	mg N/L	P300075	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.42		mg N/L	P299729	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.008	I	mg N/L	P299854	
	EPA 365.1 Rev. 2.0	Total-P	0.035		mg P/L	P299925	

Ref. Method and Comment:

SM 2540 D-97: The precision data is unavailable due to the low analyte concentration in the QC sample.

Sample Location: East of Stormdrain inside PGS 2

Collection Date/Time: 02/29/2016 13:43

Field ID: 14

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1775457	EPA 180.1 Rev. 2.0	Turbidity	6.8		NTU	P299553	
	SM 2120 B	Color (true)	26		PCU	P299533	
	SM 2540 D-97	TSS	6	I	mg/L	P299793	
1775473	EPA 350.1 Rev. 2.0	Ammonia-N	0.010		mg N/L	P300076	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.35	I	mg N/L	P299897	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.11		mg N/L	P299854	
	EPA 365.1 Rev. 2.0	Total-P	0.022		mg P/L	P299925	

Ref. Method and Comment:

SM 2540 D-97: The precision data is unavailable due to the low analyte concentration in the QC sample.

Sample Location: Hawkshaw Lagoon-Field Blank

Collection Date/Time: 02/29/2016 13:31

Field ID: 13

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1775458	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P299553	
	SM 2120 B	Color (true)	2.5	U	PCU	P299533	
	SM 2540 D-97	TSS	2	U	mg/L	P299793	
1775474	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P300072	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P299728	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P299804	
	EPA 365.1 Rev. 2.0	Total-P	0.003	I	mg P/L	P299746	

Ref. Method and Comment:

SM 2540 D-97: The precision data is unavailable due to the low analyte concentration in the QC sample.

EPA 350.1 Rev. 2.0: Matrix spike recovery data is unavailable due to high analyte concentration in the QC sample.

EPA 365.1 Rev. 2.0: Total-P: The result was confirmed on 03/09/2016.

Sample Location: Entrance of Marina

Collection Date/Time: 02/29/2016 12:52

Field ID: 11-DUPLICATE

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1775459	EPA 180.1 Rev. 2.0	Turbidity	7.9		NTU	P299553	
	SM 2120 B	Color (true)	26		PCU	P299533	
	SM 2540 D-97	TSS	7	I	mg/L	P299793	
1775475	EPA 350.1 Rev. 2.0	Ammonia-N	0.003	I	mg N/L	P300076	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.40		mg N/L	P299729	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.12		mg N/L	P299854	
	EPA 365.1 Rev. 2.0	Total-P	0.023		mg P/L	P299925	

Ref. Method and Comment:

SM 2540 D-97: The precision data is unavailable due to the low analyte concentration in the QC sample.

Quality Assurance Report

Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P299552

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P299553

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P300072

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

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P300075

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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P300076

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P299666

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P299728

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P299729

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P299897

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P299804

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P299853

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P299854

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P299671

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
Batch ID: P299746

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P299925

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

Reference Method: SM 2120 B
Batch ID: P299532

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2120 B
Batch ID: P299533

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2540 D-97
Batch ID: P299791

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P299792

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P299793

Component	Result	Code	Units
TSS	2	U	mg/L

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P300072

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P300075

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
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Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P300075

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P300076

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P299666

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	92.2		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P299728

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P299729

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P299897

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P299804

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P299853

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P299854

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P299671

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P299746

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: P299925

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

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P300075

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1775463	Ammonia-N	98.8	99.7	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P300076

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1775473	Ammonia-N	98.3	97.4	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P299666

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1774381	Kjeldahl Nitrogen	91.3	84.9	P/F	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P299728

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1775378	Kjeldahl Nitrogen	101	99.4	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P299729

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1775464	Kjeldahl Nitrogen	103	99.2	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P299897

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
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Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P299897

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1775473	Kjeldahl Nitrogen	95.3	97.2	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P299804

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1775241	NO2NO3-N	104	104	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P299853

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1775460	NO2NO3-N	99.5	98.5	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P299854

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1775473	NO2NO3-N	101	99.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P299671

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1774469	Total-P	97.0	94.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P299746

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1775378	Total-P	101	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P299925

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1775467	Total-P	102	98.4	P/P	90 - 110

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P299552

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1775375	Turbidity	0.619	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P299553

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1775451	Turbidity	0.856	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P300072

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1775503	Ammonia-N	1.37	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P300075

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1775463	Ammonia-N	0.833	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P300076

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1775473	Ammonia-N	0.715	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P299666

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1774381	Kjeldahl Nitrogen	5.13	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P299728

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1775378	Kjeldahl Nitrogen	1.40	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P299729

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1775464	Kjeldahl Nitrogen	2.88	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P299897

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1775473	Kjeldahl Nitrogen	1.70	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P299804

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1775241	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P299853

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1775460	NO2NO3-N	0.604	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P299854

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1775473	NO2NO3-N	0.957	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P299671

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1774469	Total-P	3.09	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P299746

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1775378	Total-P	0.188	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P299925

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1775467	Total-P	3.12	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P299532

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1775444	Color (true)	3.60	Sample	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P299533

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1775451	Color (true)	2.03	Sample	P	0 - 20

Quality Assurance Report Precision

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

Quality Assurance Report Calibration Verification

Reference Method: SM 2120 B

Run ID: A67922

Included Lab Sample IDs: 1775444, 1775445, 1775446, 1775447, 1775448, 1775449, 1775450, 1775451, 1775452, 1775453, 1775454, 1775455, 1775456, 1775457, 1775458, 1775459

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	97.1	98.6	P/P	90 - 115
Color (true)	98.6	97.1	P/P	90 - 115

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A67932

Included Lab Sample IDs: 1775444, 1775445, 1775446, 1775447, 1775448, 1775449, 1775450, 1775451, 1775452, 1775453, 1775454, 1775455, 1775456, 1775457, 1775458, 1775459

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A68006

Included Lab Sample IDs: 1775460, 1775461, 1775462, 1775463, 1775464, 1775465, 1775466

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	97.5	97.8	P/P	90 - 110
Total-P	97.8	97.0	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A68011

Included Lab Sample IDs: 1775474

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A68042

Included Lab Sample IDs: 1775474

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A68043

Included Lab Sample IDs: 1775460, 1775461, 1775462, 1775463, 1775464, 1775465, 1775466, 1775467, 1775468, 1775469, 1775470, 1775471, 1775472, 1775473, 1775475

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A68110

Included Lab Sample IDs: 1775467, 1775468, 1775469, 1775470, 1775471, 1775472, 1775473, 1775475

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	98.5	99.5	P/P	90 - 110
Total-P	99.5	101	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A68112

Included Lab Sample IDs: 1775460, 1775461, 1775462, 1775463, 1775464, 1775465, 1775466, 1775467, 1775468, 1775469, 1775470, 1775471, 1775472, 1775473, 1775474, 1775475

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.8	99.5	P/P	90 - 110
Ammonia-N	99.2	98.3	P/P	90 - 110
Ammonia-N	99.3	99.5	P/P	90 - 110
Ammonia-N	99.5	99.2	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A68116

Included Lab Sample IDs: 1775464, 1775474

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	101	106	P/P	90 - 110
Kjeldahl Nitrogen	106	107	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A68119

Included Lab Sample IDs: 1775473

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	95.0	97.2	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A68140

Included Lab Sample IDs: 1775460, 1775461, 1775462, 1775463

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A68208

Included Lab Sample IDs: 1775465, 1775466, 1775467, 1775468, 1775469, 1775470, 1775471, 1775472, 1775475

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	93.3	93.3	P/P	90 - 110
Kjeldahl Nitrogen	95.4	93.3	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	MS
EPA 180.1 Rev. 2.0	Turbidity				0.619	
	Turbidity				0.856	
EPA 350.1 Rev. 2.0	Ammonia-N	99.2				1.37
	Ammonia-N	98.8	98.8	99.7		0.833
	Ammonia-N	99.4	98.3	97.4		0.715
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	92.2	91.3	84.9		5.13
	Kjeldahl Nitrogen	103	101	99.4		1.40
	Kjeldahl Nitrogen	108	103	99.2		2.88
	Kjeldahl Nitrogen	99.8	95.3	97.2		1.70
EPA 353.2 Rev. 2.0	NO2NO3-N	104	104	104		0.0
	NO2NO3-N	100	99.5	98.5		0.604
	NO2NO3-N	101	101	99.5		0.957
EPA 365.1 Rev. 2.0	Total-P	97.1	97.0	94.0		3.09
	Total-P	102	101	100		0.188
	Total-P	102	102	98.4		3.12
SM 2120 B	Color (true)				3.60	
	Color (true)				2.03	

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1775444, 1775445, 1775446, 1775447, 1775448, 1775449, 1775450, 1775451, 1775452, 1775453, 1775454, 1775455, 1775456, 1775457, 1775458, 1775459
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1775460, 1775461, 1775462, 1775463, 1775464, 1775465, 1775466, 1775467, 1775468, 1775469, 1775470, 1775471, 1775472, 1775473, 1775474, 1775475
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1775460, 1775461, 1775462, 1775463, 1775464, 1775465, 1775466, 1775467, 1775468, 1775469, 1775470, 1775471, 1775472, 1775473, 1775474, 1775475
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1775460, 1775461, 1775462, 1775463, 1775464, 1775465, 1775466, 1775467, 1775468, 1775469, 1775470, 1775471, 1775472, 1775473, 1775474, 1775475
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1775460, 1775461, 1775462, 1775463, 1775464, 1775465, 1775466, 1775467, 1775468, 1775469, 1775470, 1775471, 1775472, 1775473, 1775474, 1775475
SM 2120 B / E31780	True Color measured at 450 nm	1775444, 1775445, 1775446, 1775447, 1775448, 1775449, 1775450, 1775451, 1775452, 1775453, 1775454, 1775455, 1775456, 1775457, 1775458, 1775459
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1775444, 1775445, 1775446, 1775447, 1775448, 1775449, 1775450, 1775451, 1775452, 1775453, 1775454, 1775455, 1775456, 1775457, 1775458, 1775459

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	03/01/2016			03/01/2016 15:06	Sima Feizi	1775444, 1775445, 1775446, 1775447, 1775448, 1775449, 1775450, 1775451, 1775452, 1775453, 1775454, 1775455, 1775456, 1775457, 1775458, 1775459
EPA 350.1 Rev. 2.0	03/01/2016			03/09/2016	Diana M. Turner	1775460, 1775461, 1775462, 1775463, 1775464, 1775465, 1775466, 1775467, 1775468, 1775469, 1775470, 1775471, 1775472, 1775473, 1775474, 1775475
EPA 351.2 Rev. 2.0	03/01/2016	03/03/2016	Sofia Elnemr	03/07/2016	Rochelle Y Jackson	1775460, 1775461, 1775462, 1775463
	03/01/2016	03/04/2016	Christopher Armour	03/09/2016	Rochelle Y Jackson	1775464, 1775474
	03/01/2016	03/04/2016	Christopher Armour	03/11/2016	Rochelle Y Jackson	1775465, 1775466, 1775467, 1775468, 1775469, 1775470, 1775471, 1775472, 1775475
EPA 353.2 Rev. 2.0	03/01/2016	03/08/2016	Sofia Elnemr	03/09/2016	Rochelle Y Jackson	1775473
	03/01/2016			03/04/2016	Virginia P. Brown	1775474
	03/01/2016			03/07/2016	Diana M. Turner	1775460, 1775461, 1775462, 1775463, 1775464, 1775465, 1775466, 1775467, 1775468, 1775469, 1775470, 1775471, 1775472, 1775473, 1775475
EPA 365.1 Rev. 2.0	03/01/2016	03/03/2016	Christopher Armour	03/04/2016	Lipi Saha	1775460, 1775461, 1775462, 1775463, 1775464, 1775465, 1775466
	03/01/2016	03/04/2016	Christopher Armour	03/07/2016	Lipi Saha	1775474
	03/01/2016	03/08/2016	Lipi Saha	03/09/2016	Lipi Saha	1775467, 1775468, 1775469, 1775470, 1775471, 1775472, 1775473, 1775475
SM 2120 B	03/01/2016			03/01/2016 16:20	Rochelle Y Jackson	1775444
	03/01/2016			03/01/2016 16:21	Rochelle Y Jackson	1775445, 1775446
	03/01/2016			03/01/2016 16:22	Rochelle Y Jackson	1775447
	03/01/2016			03/01/2016 16:23	Rochelle Y Jackson	1775448
	03/01/2016			03/01/2016 16:24	Rochelle Y Jackson	1775449, 1775450
	03/01/2016			03/01/2016 16:28	Rochelle Y Jackson	1775451
	03/01/2016			03/01/2016 16:29	Rochelle Y Jackson	1775452
	03/01/2016			03/01/2016 16:30	Rochelle Y Jackson	1775453
	03/01/2016			03/01/2016 16:31	Rochelle Y Jackson	1775454, 1775455
	03/01/2016			03/01/2016 16:32	Rochelle Y Jackson	1775456
	03/01/2016			03/01/2016 16:33	Rochelle Y Jackson	1775457
	03/01/2016			03/01/2016 16:34	Rochelle Y Jackson	1775458, 1775459
SM 2540 D-97	03/01/2016			03/02/2016	Yijie Li	1775444, 1775445, 1775446, 1775447, 1775448, 1775449, 1775450, 1775451, 1775452, 1775453, 1775454, 1775455, 1775456, 1775457, 1775458, 1775459