

Chemical Analysis Report

NW-DIST-2016-06-01-01

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-2016-05-30-29**

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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Date Certified: 24-JUN-2016 14:01



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 TEXAS

Collection Date/Time: 05/31/2016 11:15

Field ID: 1

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1803585	EPA 180.1 Rev. 2.0	Turbidity	2.3		NTU	P305416	
	SM 2120 B	Color (true)	14		PCU	P305381	
	SM 2540 D-97	TSS	4	I	mg/L	P305843	
1803601	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P305865	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.37	I	mg N/L	P305611	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.010		mg N/L	P305640	
	EPA 365.1 Rev. 2.0	Total-P	0.016		mg P/L	P305922	

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: 05/31/2016 11:28

Field ID: 2

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1803586	EPA 180.1 Rev. 2.0	Turbidity	2.1		NTU	P305416	
	SM 2120 B	Color (true)	14		PCU	P305381	
	SM 2540 D-97	TSS	3	U	mg/L	P305843	
1803602	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	I	mg N/L	P305865	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.29	I	mg N/L	P305611	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P305640	
	EPA 365.1 Rev. 2.0	Total-P	0.014		mg P/L	P305922	

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 PGS1

Collection Date/Time: 05/31/2016 11:34

Field ID: 3

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1803587	EPA 180.1 Rev. 2.0	Turbidity	1.3		NTU	P305416	
	SM 2120 B	Color (true)	10		PCU	P305381	
	SM 2540 D-97	TSS	3	U	mg/L	P305843	
1803603	EPA 350.1 Rev. 2.0	Ammonia-N	0.010		mg N/L	P305865	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.33	I	mg N/L	P305611	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.014		mg N/L	P305640	
	EPA 365.1 Rev. 2.0	Total-P	0.012		mg P/L	P305922	

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: 100FT S. OF STORMDRAIN

Collection Date/Time: 05/31/2016 11:39

Field ID: 4

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1803588	EPA 180.1 Rev. 2.0	Turbidity	1.2		NTU	P305416	
	SM 2120 B	Color (true)	32		PCU	P305381	
	SM 2540 D-97	TSS	3	I	mg/L	P305843	
1803604	EPA 350.1 Rev. 2.0	Ammonia-N	0.019		mg N/L	P305865	

Field ID: 4

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1803604	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.33	I	mg N/L	P305611	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.017		mg N/L	P305640	
	EPA 365.1 Rev. 2.0	Total-P	0.013		mg P/L	P305922	

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 ST.

Collection Date/Time: 05/31/2016 11:53

Field ID: 5

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1803589	EPA 180.1 Rev. 2.0	Turbidity	1.5		NTU	P305416	
	SM 2120 B	Color (true)	11		PCU	P305381	
	SM 2540 D-97	TSS	4	I	mg/L	P305843	
1803605	EPA 350.1 Rev. 2.0	Ammonia-N	0.006		mg N/L	P305865	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.43		mg N/L	P305611	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.008	I	mg N/L	P305640	
	EPA 365.1 Rev. 2.0	Total-P	0.013		mg P/L	P305922	

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: FB END OF CHASE ST.

Collection Date/Time: 05/31/2016 11:55

Field ID: 5 BLANK

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1803590	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P305416	
	SM 2120 B	Color (true)	2.5	U	PCU	P305381	
	SM 2540 D-97	TSS	2	U	mg/L	P305842	
1803606	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P305871	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P305610	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P305535	
	EPA 365.1 Rev. 2.0	Total-P	0.004	I	mg P/L	P305921	

Ref. Method and Comment:

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

EPA 365.1 Rev. 2.0: Total-P: The result was confirmed on 06/15/2016.

Sample Location: 1/2 MUSCOGEE AND HAWKSHOW 400FT FROM SHORE

Collection Date/Time: 05/31/2016 12:01

Field ID: 6

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1803591	EPA 180.1 Rev. 2.0	Turbidity	1.9		NTU	P305416	
	SM 2120 B	Color (true)	13		PCU	P305381	
	SM 2540 D-97	TSS	3	I	mg/L	P305843	
1803607	EPA 350.1 Rev. 2.0	Ammonia-N	0.003	I	mg N/L	P305865	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.40	I	mg N/L	P305611	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.007	I	mg N/L	P305640	
	EPA 365.1 Rev. 2.0	Total-P	0.015		mg P/L	P305922	

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 PORT

Collection Date/Time: 05/31/2016 12:08

Field ID: 7

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1803592	EPA 180.1 Rev. 2.0	Turbidity	1.9	A	NTU	P305417	
	SM 2120 B	Color (true)	15		PCU	P305381	
	SM 2540 D-97	TSS	4	I	mg/L	P305843	
1803608	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P305865	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.35	I	mg N/L	P305611	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.012		mg N/L	P305641	
	EPA 365.1 Rev. 2.0	Total-P	0.014		mg P/L	P305922	

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 STORMDRAIN INSIDE ROCKS

Collection Date/Time: 05/31/2016 11:46

Field ID: 8

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1803593	EPA 180.1 Rev. 2.0	Turbidity	1.9		NTU	P305417	
	SM 2120 B	Color (true)	9.0		PCU	P305460	
	SM 2540 D-97	TSS	3	I	mg/L	P305843	
1803609	EPA 350.1 Rev. 2.0	Ammonia-N	0.023		mg N/L	P305866	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.36	I	mg N/L	P305611	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.024		mg N/L	P305641	
	EPA 365.1 Rev. 2.0	Total-P	0.017		mg P/L	P305922	

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 HAWKSHOW 100FT S. OF OUTFALL

Collection Date/Time: 05/31/2016 12:29

Field ID: 9

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1803594	EPA 180.1 Rev. 2.0	Turbidity	1.6		NTU	P305417	
	SM 2120 B	Color (true)	13	A	PCU	P305460	
	SM 2540 D-97	TSS	4	I	mg/L	P305844	
1803610	EPA 350.1 Rev. 2.0	Ammonia-N	0.010		mg N/L	P305866	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.38	I	mg N/L	P305611	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.008	I	mg N/L	P305641	
	EPA 365.1 Rev. 2.0	Total-P	0.014		mg P/L	P305922	

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: 05/31/2016 12:23

Field ID: 10

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1803595	EPA 180.1 Rev. 2.0	Turbidity	1.6		NTU	P305417	
	SM 2120 B	Color (true)	11		PCU	P305460	
	SM 2540 D-97	TSS	3	U	mg/L	P305844	
1803611	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	I	mg N/L	P305866	

Field ID: 10

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1803611	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.43		mg N/L	P305611	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.007	I	mg N/L	P305641	
	EPA 365.1 Rev. 2.0	Total-P	0.013		mg P/L	P305923	

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: 05/31/2016 12:17****Field ID: 11**

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1803596	EPA 180.1 Rev. 2.0	Turbidity	1.7		NTU	P305417	
	SM 2120 B	Color (true)	9.0		PCU	P305460	
	SM 2540 D-97	TSS	5	I	mg/L	P305844	
1803612	EPA 350.1 Rev. 2.0	Ammonia-N	0.016		mg N/L	P305866	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.32	I	mg N/L	P305670	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.014		mg N/L	P305641	
	EPA 365.1 Rev. 2.0	Total-P	0.017		mg P/L	P305923	

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**Collection Date/Time: 05/31/2016 12:12****Field ID: 12**

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1803597	EPA 180.1 Rev. 2.0	Turbidity	1.7		NTU	P305417	
	SM 2120 B	Color (true)	12		PCU	P305460	
	SM 2540 D-97	TSS	3	U	mg/L	P305844	
1803613	EPA 350.1 Rev. 2.0	Ammonia-N	0.003	I	mg N/L	P305866	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.33	I	mg N/L	P305670	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.007	I	mg N/L	P305641	
	EPA 365.1 Rev. 2.0	Total-P	0.014		mg P/L	P305923	

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 HAWKSHOW LAGOON**Collection Date/Time: 05/31/2016 12:38****Field ID: 13**

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1803598	EPA 180.1 Rev. 2.0	Turbidity	5.6		NTU	P305417	
	SM 2120 B	Color (true)	14		PCU	P305460	
	SM 2540 D-97	TSS	8	I	mg/L	P305844	
1803614	EPA 350.1 Rev. 2.0	Ammonia-N	0.058		mg N/L	P305866	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.61		mg N/L	P305670	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.011		mg N/L	P305641	
	EPA 365.1 Rev. 2.0	Total-P	0.068		mg P/L	P305923	

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: The result was confirmed on 06/17/2016.

EPA 365.1 Rev. 2.0: Total-P: The result was confirmed on 06/16/2016.

Sample Location: INSIDE HAWKSHOW LAGOON

Collection Date/Time: 05/31/2016 12:45

Field ID: 13 DUPLICATE

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1803599	EPA 180.1 Rev. 2.0	Turbidity	6.3		NTU	P305417	
	SM 2120 B	Color (true)	16		PCU	P305460	
	SM 2540 D-97	TSS	9	I	mg/L	P305844	
1803615	EPA 350.1 Rev. 2.0	Ammonia-N	0.042		mg N/L	P305866	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.54		mg N/L	P305670	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.009	I	mg N/L	P305641	
	EPA 365.1 Rev. 2.0	Total-P	0.095		mg P/L	P305923	

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: The result was confirmed on 06/17/2016.

EPA 365.1 Rev. 2.0: Total-P: The result was confirmed on 06/16/2016.

Sample Location: EAST OF STORMDRAIN

Collection Date/Time: 05/31/2016 12:52

Field ID: 14

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1803600	EPA 180.1 Rev. 2.0	Turbidity	1.7		NTU	P305417	
	SM 2120 B	Color (true)	14		PCU	P305460	
	SM 2540 D-97	TSS	3	I	mg/L	P305844	
1803616	EPA 350.1 Rev. 2.0	Ammonia-N	0.017		mg N/L	P305866	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.30	I	mg N/L	P305670	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.01	I	mg N/L	P305641	
	EPA 365.1 Rev. 2.0	Total-P	0.018		mg P/L	P305923	

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: P305416

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P305417

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P305865

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

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P305866

Component	Result	Code	Units
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Quality Assurance Report Method Blank Results

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P305866

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P305871

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P305610

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P305611

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P305670

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P305535

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P305640

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P305641

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P305921

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: P305922

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P305923

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

Reference Method: SM 2120 B
Batch ID: P305381

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2120 B
Batch ID: P305460

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2540 D-97
Batch ID: P305842

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P305843

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P305844

Component	Result	Code	Units
TSS	3	U	mg/L

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P305865

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P305866

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: P305866

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P305871

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P305610

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P305611

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P305670

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P305535

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P305640

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P305641

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P305921

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P305922

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P305923

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: P305865

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1803343	Ammonia-N	102	102	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P305866

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1803609	Ammonia-N	103	105	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P305871

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1803529	Ammonia-N	101	102	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P305610

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1803529	Kjeldahl Nitrogen	102	94.2	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P305611

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1803601	Kjeldahl Nitrogen	97.0	95.4	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P305670

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1803612	Kjeldahl Nitrogen	90.3	91.5	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P305535

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P305535

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1803528	NO2NO3-N	102	104	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P305640

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1803343	NO2NO3-N	100	101	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P305641

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1803608	NO2NO3-N	96.4	99.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P305921

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1803493	Total-P	97.4	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P305922

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1803601	Total-P	104	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P305923

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1803611	Total-P	98.6	100	P/P	90 - 110

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P305416

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1803525	Turbidity	3.87	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P305417

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1803592	Turbidity	0.531	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P305865

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1803343	Ammonia-N	0.0732	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P305866

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1803609	Ammonia-N	1.37	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P305871

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1803529	Ammonia-N	1.02	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P305610

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1803529	Kjeldahl Nitrogen	4.87	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P305611

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1803601	Kjeldahl Nitrogen	1.46	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P305670

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1803612	Kjeldahl Nitrogen	1.13	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P305535

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1803528	NO2NO3-N	1.45	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P305640

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1803343	NO2NO3-N	0.881	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P305641

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1803608	NO2NO3-N	2.41	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P305921

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1803493	Total-P	2.05	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P305922

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1803601	Total-P	2.01	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P305923

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1803611	Total-P	1.78	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P305381

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1803525	Color (true)	0.362	Sample	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P305460

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1803594	Color (true)	3.61	Sample	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: SM 2120 B
Run ID: A69787
Included Lab Sample IDs: 1803585, 1803586, 1803587, 1803588, 1803589, 1803590, 1803591, 1803592

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	101	101	P/P	90 - 115

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A69802

Included Lab Sample IDs: 1803585, 1803586, 1803587, 1803588, 1803589, 1803590, 1803591, 1803592, 1803593, 1803594, 1803595, 1803596, 1803597, 1803598, 1803599, 1803600

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

Reference Method: SM 2120 B

Run ID: A69808

Included Lab Sample IDs: 1803593, 1803594, 1803595, 1803596, 1803597, 1803598, 1803599, 1803600

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	100	99.3	P/P	90 - 115

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A69831

Included Lab Sample IDs: 1803606

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A69857

Included Lab Sample IDs: 1803601, 1803602, 1803603, 1803604, 1803605, 1803607, 1803608, 1803609, 1803610, 1803611, 1803612, 1803613, 1803614, 1803615, 1803616

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A69907

Included Lab Sample IDs: 1803601, 1803602, 1803603, 1803604, 1803605, 1803606, 1803607, 1803608, 1803609, 1803610, 1803611, 1803612, 1803613, 1803614, 1803615, 1803616

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	100	99.2	P/P	90 - 110
Kjeldahl Nitrogen	102	104	P/P	90 - 110
Kjeldahl Nitrogen	102	103	P/P	90 - 110
Kjeldahl Nitrogen	103	102	P/P	90 - 110
Kjeldahl Nitrogen	104	100	P/P	90 - 110
Kjeldahl Nitrogen	99.2	103	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A69935

Included Lab Sample IDs: 1803601, 1803602, 1803603, 1803604, 1803605, 1803606, 1803607, 1803608, 1803609, 1803610, 1803611, 1803612, 1803613, 1803614, 1803615, 1803616

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A70005

Included Lab Sample IDs: 1803601, 1803602, 1803603, 1803604, 1803605, 1803606, 1803607, 1803608, 1803609, 1803610, 1803611, 1803612, 1803613, 1803614, 1803615, 1803616

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

* Pass/Fail determinations are made for each bracketing calibration verification check.
Control limits for initial calibration checks may be different from those for continuing checks, depending on method requirements.
Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery	LCS	Precision SMP	MS
EPA 180.1 Rev. 2.0	Turbidity				3.87	
	Turbidity				0.531	
EPA 350.1 Rev. 2.0	Ammonia-N	101	102 102			0.0732
	Ammonia-N	102	103 105			1.37
	Ammonia-N	101	101 102			1.02
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	100	102 94.2			4.87
	Kjeldahl Nitrogen	101	97.0 95.4			1.46
	Kjeldahl Nitrogen	96.9	90.3 91.5			1.13
EPA 353.2 Rev. 2.0	NO2NO3-N	102	102 104			1.45
	NO2NO3-N	102	100 101			0.881
	NO2NO3-N	101	96.4 99.0			2.41
EPA 365.1 Rev. 2.0	Total-P	103	97.4 101			2.05
	Total-P	98.4	104 101			2.01
	Total-P	102	98.6 100			1.78
SM 2120 B	Color (true)				0.362	
	Color (true)				3.61	

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1803585, 1803586, 1803587, 1803588, 1803589, 1803590, 1803591, 1803592, 1803593, 1803594, 1803595, 1803596, 1803597, 1803598, 1803599, 1803600
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1803601, 1803602, 1803603, 1803604, 1803605, 1803606, 1803607, 1803608, 1803609, 1803610, 1803611, 1803612, 1803613, 1803614, 1803615, 1803616
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1803601, 1803602, 1803603, 1803604, 1803605, 1803606, 1803607, 1803608, 1803609, 1803610, 1803611, 1803612, 1803613, 1803614, 1803615, 1803616
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1803601, 1803602, 1803603, 1803604, 1803605, 1803606, 1803607, 1803608, 1803609, 1803610, 1803611, 1803612, 1803613, 1803614, 1803615, 1803616

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1803601, 1803602, 1803603, 1803604, 1803605, 1803606, 1803607, 1803608, 1803609, 1803610, 1803611, 1803612, 1803613, 1803614, 1803615, 1803616
SM 2120 B / E31780	True Color measured at 450 nm	1803585, 1803586, 1803587, 1803588, 1803589, 1803590, 1803591, 1803592, 1803593, 1803594, 1803595, 1803596, 1803597, 1803598, 1803599, 1803600
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1803585, 1803586, 1803587, 1803588, 1803589, 1803590, 1803591, 1803592, 1803593, 1803594, 1803595, 1803596, 1803597, 1803598, 1803599, 1803600

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	06/01/2016			06/01/2016 18:53	Blanca Fach	1803585, 1803586, 1803587, 1803588, 1803589, 1803590, 1803591, 1803592, 1803593, 1803594, 1803595, 1803596, 1803597, 1803598, 1803599, 1803600
EPA 350.1 Rev. 2.0	06/01/2016			06/08/2016	Diana M. Turner	1803601, 1803602, 1803603, 1803604, 1803605, 1803606, 1803607, 1803608, 1803609, 1803610, 1803611, 1803612, 1803613, 1803614, 1803615, 1803616
EPA 351.2 Rev. 2.0	06/01/2016	06/06/2016	Sofia Elnemr	06/08/2016	Christopher Armour	1803601, 1803602, 1803603, 1803604, 1803605, 1803606, 1803607, 1803608, 1803609, 1803610, 1803611
	06/01/2016	06/07/2016	Sofia Elnemr	06/08/2016	Christopher Armour	1803612, 1803613, 1803614, 1803615, 1803616
EPA 353.2 Rev. 2.0	06/01/2016			06/03/2016	Peter D. Kaus	1803606
	06/01/2016			06/06/2016	Peter D. Kaus	1803601, 1803602, 1803603, 1803604, 1803605, 1803607, 1803608, 1803609, 1803610, 1803611, 1803612, 1803613, 1803614, 1803615, 1803616
EPA 365.1 Rev. 2.0	06/01/2016	06/09/2016	Vijayalakshmi Reddy	06/13/2016	Virginia P. Brown	1803601, 1803602, 1803603, 1803604, 1803605, 1803606, 1803607, 1803608, 1803609, 1803610, 1803611, 1803612, 1803613, 1803614, 1803615, 1803616
SM 2120 B	06/01/2016			06/01/2016 18:24	Chrisoulla Rakowski	1803585
	06/01/2016			06/01/2016 18:25	Chrisoulla Rakowski	1803586
	06/01/2016			06/01/2016 18:26	Chrisoulla Rakowski	1803587, 1803588
	06/01/2016			06/01/2016 18:27	Chrisoulla Rakowski	1803589
	06/01/2016			06/01/2016 18:28	Chrisoulla Rakowski	1803590
	06/01/2016			06/01/2016 18:29	Chrisoulla Rakowski	1803591, 1803592
	06/01/2016			06/02/2016 10:22	Chrisoulla Rakowski	1803593
	06/01/2016			06/02/2016 10:24	Chrisoulla Rakowski	1803594, 1803595
	06/01/2016			06/02/2016 10:25	Chrisoulla Rakowski	1803596
	06/01/2016			06/02/2016 10:26	Chrisoulla Rakowski	1803597
	06/01/2016			06/02/2016 10:27	Chrisoulla Rakowski	1803598, 1803599
	06/01/2016			06/02/2016 10:28	Chrisoulla Rakowski	1803600
SM 2540 D-97	06/01/2016			06/03/2016	Yijie Li	1803585, 1803586, 1803587, 1803588, 1803589, 1803590, 1803591, 1803592, 1803593, 1803594, 1803595, 1803596, 1803597, 1803598, 1803599, 1803600