

Chemical Analysis Report

NW-DIST-2016-07-08-01

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

Event Description: **WBID 351 432 476 445 361 321**

Request ID: **RQ-2016-07-04-35**

Customer: **NW-DIST**

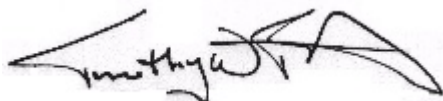
Project ID: **SMP**

Send Reports to:
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160 W Government st
Suite 208A
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Attn: Michael King

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Certified by: Timothy Fitzpatrick, Program Administrator

Date Certified: 03-AUG-2016 11:04

A handwritten signature in black ink, appearing to read 'Timothy Fitzpatrick', with a stylized flourish at the end.

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: TITI CREEK ABV EGLIN RD 207

Collection Date/Time: 07/07/2016 10:55

Field ID: G4NW0364

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1814664	EPA 180.1 Rev. 2.0	Turbidity	2.5		NTU	P307588	
	EPA 300.0 Rev. 2.1	Chloride	2.1		mg Cl/L	P308800	
		Sulfate	0.65		mg SO4/L	P308798	
	SM 2120 B	Color (true)	63		PCU	P307596	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P308092	
	SM 2540 C-97	TDS	20	I	mg/L	P308211	
	SM 2540 D-97	TSS	4	I	mg/L	P308203	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P308098	
1814667	EPA 350.1 Rev. 2.0	Ammonia-N	0.005		mg N/L	P307938	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.16	I	mg N/L	P307991	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.15		mg N/L	P308147	
	EPA 365.1 Rev. 2.0	Total-P	0.008		mg P/L	P307881	
	SM 5310 B-00	Organic Carbon	3.8		mg C/L	P308328	
1814670	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P307584	

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: TITI CREEK @ EGLIN 220 AKA JAXGRD #0701S007

Collection Date/Time: 07/07/2016 11:10

Field ID: G4NW0368

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1814665	EPA 180.1 Rev. 2.0	Turbidity	2.1		NTU	P307588	
	EPA 300.0 Rev. 2.1	Chloride	2.1		mg Cl/L	P308800	
		Sulfate	0.64		mg SO4/L	P308798	
	SM 2120 B	Color (true)	57		PCU	P307596	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P308092	
	SM 2540 C-97	TDS	26		mg/L	P308212	
	SM 2540 D-97	TSS	5	I	mg/L	P308204	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P308098	
1814668	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P307938	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.25		mg N/L	P307872	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.11		mg N/L	P308147	
	EPA 365.1 Rev. 2.0	Total-P	0.006		mg P/L	P307773	
	SM 5310 B-00	Organic Carbon	3.5		mg C/L	P308328	
1814671	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P307584	

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: LITTLE ROCKY CREEK ABV EGLIN RD 515

Collection Date/Time: 07/07/2016 12:10

Field ID: G3NW0103

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1814666	EPA 180.1 Rev. 2.0	Turbidity	1.2		NTU	P307588	
	EPA 300.0 Rev. 2.1	Chloride	2.3		mg Cl/L	P308800	

Field ID: G3NW0103

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1814666	EPA 300.0 Rev. 2.1	Sulfate	0.68		mg SO4/L	P308798	
	SM 2120 B	Color (true)	21		PCU	P307596	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P308092	
	SM 2540 C-97	TDS	18	I	mg/L	P308212	
	SM 2540 D-97	TSS	3	I	mg/L	P308204	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P308098	
1814669	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P307938	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.16	I	mg N/L	P307872	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.082		mg N/L	P308147	
	EPA 365.1 Rev. 2.0	Total-P	0.005	I	mg P/L	P307773	
	SM 5310 B-00	Organic Carbon	1.6		mg C/L	P308328	
1814672	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P307584	

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: P307588

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P308798

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P308800

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P307938

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

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P307872

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

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P307991

Component	Result	Code	Units
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Quality Assurance Report Method Blank Results

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P307991

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P308147

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P307773

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P307881

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P307584

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

Reference Method: SM 2120 B
Batch ID: P307596

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P308092

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

Reference Method: SM 2540 C-97
Batch ID: P308211

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-97
Batch ID: P308212

Component	Result	Code	Units
TDS	15	U	mg/L

Quality Assurance Report Method Blank Results

Reference Method: SM 2540 D-97
Batch ID: P308203

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P308204

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P308098

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P308328

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P308798

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	97.5		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P308800

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P307938

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P307872

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P307991

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P307991

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P308147

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	97.0		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P307773

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	95.0		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P307881

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P307584

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

Reference Method: SM 2320 B-97
Batch ID: P308092

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	103		P	95 - 108

Reference Method: SM 4500 F-C-97
Batch ID: P308098

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.9		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P308328

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	93.8		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P308798

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P308798

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1814676	Sulfate	97.8		P	90 - 110
1818478	Sulfate	97.6	97.1	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P308800

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1814676	Chloride	102		P	90 - 110
1818478	Chloride	102	102	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P307938

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1814667	Ammonia-N	99.5	102	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P307872

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1814669	Kjeldahl Nitrogen	96.6	92.0	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P307991

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1814974	Kjeldahl Nitrogen	92.4	92.7	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P308147

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1814667	NO2NO3-N	94.0	96.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P307773

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1814668	Total-P	99.9	95.7	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P307881

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1814998	Total-P	98.8	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P307584

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1814672	O-Phosphate-P	101	101	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SM 4500 F-C-97
Batch ID: P308098

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1815090	Fluoride	98.9	98.9	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P308328

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1814652	Organic Carbon	93.4	94.1	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P307588

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1814594	Turbidity	2.67	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P308798

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1818478	Sulfate	0.500	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P308800

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1818478	Chloride	0.0223	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P307938

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1814667	Ammonia-N	1.84	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P307872

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1814669	Kjeldahl Nitrogen	4.31	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P307991

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
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Quality Assurance Report Precision

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P307991

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1814974	Kjeldahl Nitrogen	0.178	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P308147

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1814667	NO2NO3-N	1.18	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P307773

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1814668	Total-P	4.21	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P307881

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1814998	Total-P	1.13	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P307584

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1814672	O-Phosphate-P	0.297	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P307596

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1814676	Color (true)	2.88	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P308092

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1815090	Total Alkalinity	0.205	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
Batch ID: P308211

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1814530	TDS	6.11	Sample	P	0 - 10

Quality Assurance Report Precision

Reference Method: SM 2540 C-97
Batch ID: P308212

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1814747	TDS	4.02	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P308098

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1815090	Fluoride	0.0	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P308328

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1814652	Organic Carbon	0.436	Spike	P	0 - 20

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A70464
Included Lab Sample IDs: 1814670, 1814671, 1814672

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	101	100	P/P	90 - 110
O-Phosphate-P	97.7	98.6	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A70466
Included Lab Sample IDs: 1814664, 1814665, 1814666

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

Reference Method: SM 2120 B
Run ID: A70468
Included Lab Sample IDs: 1814664, 1814665, 1814666

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	98.2	96.0	P/P	90 - 115

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A70556
Included Lab Sample IDs: 1814667, 1814668, 1814669

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A70568

Included Lab Sample IDs: 1814668, 1814669

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A70575

Included Lab Sample IDs: 1814667

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	96.2	96.8	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A70579

Included Lab Sample IDs: 1814667, 1814668, 1814669

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	95.0	95.0	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A70594

Included Lab Sample IDs: 1814664, 1814665, 1814666

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	100	104	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A70594

Included Lab Sample IDs: 1814664, 1814665, 1814666

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A70600

Included Lab Sample IDs: 1814668, 1814669

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	102	98.9	P/P	90 - 110
Kjeldahl Nitrogen	98.9	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A70602

Included Lab Sample IDs: 1814667

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	99.4	99.5	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A70669

Included Lab Sample IDs: 1814667, 1814668, 1814669

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	97.0	96.9	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A70802

Included Lab Sample IDs: 1814664, 1814665, 1814666

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	101	104	P/P	90 - 110
Sulfate	96.9	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						2.67	
EPA 300.0 Rev. 2.1	Chloride	102	102	102	102			0.0223
	Sulfate	97.5	97.6	97.1	97.8			0.500
EPA 350.1 Rev. 2.0	Ammonia-N	97.6	99.5	102				1.84
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	102	96.6	92.0				4.31
	Kjeldahl Nitrogen	99.7	92.4	92.7				0.178
EPA 353.2 Rev. 2.0	NO2NO3-N	97.0	94.0	96.0				1.18
EPA 365.1 Rev. 2.0	Total-P	95.0	99.9	95.7				4.21
	Total-P	97.4	98.8	100				1.13
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	104	101	101				0.297
SM 2120 B	Color (true)						2.88	
SM 2320 B-97	Total Alkalinity	103					0.205	
SM 2540 C-97	TDS						6.11	
	TDS						4.02	
SM 4500 F-C-97	Fluoride	98.9	98.9	98.9				0.0
SM 5310 B-00	Organic Carbon	93.8	93.4	94.1				0.436

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1814664, 1814665, 1814666
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1814664, 1814665, 1814666
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1814664, 1814665, 1814666
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1814667, 1814668, 1814669
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1814667, 1814668, 1814669
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1814667, 1814668, 1814669
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1814667, 1814668, 1814669
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1814670, 1814671, 1814672
SM 2120 B / E31780	True Color measured at 450 nm	1814664, 1814665, 1814666
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	1814664, 1814665, 1814666
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1814664, 1814665, 1814666

Reference Method Descriptions

Method / DoH Cert #	Description	<u>Associated Samples</u>
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1814664, 1814665, 1814666
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1814664, 1814665, 1814666
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1814667, 1814668, 1814669

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	07/08/2016			07/08/2016 15:58	Sima Feizi	1814664, 1814665, 1814666
EPA 300.0 Rev. 2.1	07/08/2016			07/28/2016	Ping Hua	1814664, 1814665, 1814666
EPA 350.1 Rev. 2.0	07/08/2016			07/14/2016	Diana M. Turner	1814667, 1814668, 1814669
EPA 351.2 Rev. 2.0	07/08/2016	07/14/2016	Sofia Elnemr	07/15/2016	Christopher Armour	1814668, 1814669
	07/08/2016	07/15/2016	Sofia Elnemr	07/18/2016	Christopher Armour	1814667
EPA 353.2 Rev. 2.0	07/08/2016			07/15/2016	Beverly Y. Sanders	1814667, 1814668, 1814669
EPA 365.1 Rev. 2.0	07/08/2016	07/13/2016	Vijayalakshmi Reddy	07/14/2016	Lipi Saha	1814668, 1814669
	07/08/2016	07/14/2016	Vijayalakshmi Reddy	07/15/2016	Lipi Saha	1814667
EPA 365.1 Rev. 2.0 dissolved	07/08/2016			07/08/2016 15:08	Julia Storbeck	1814672
	07/08/2016			07/08/2016 15:43	Julia Storbeck	1814670
	07/08/2016			07/08/2016 15:44	Julia Storbeck	1814671
SM 2120 B	07/08/2016			07/08/2016 16:56	Rochelle Y Jackson	1814664
	07/08/2016			07/08/2016 16:57	Rochelle Y Jackson	1814665, 1814666
SM 2320 B-97	07/08/2016			07/16/2016	Dale L. Simmons	1814664, 1814665, 1814666
SM 2540 C-97	07/08/2016			07/13/2016	Yijie Li	1814664, 1814665, 1814666
SM 2540 D-97	07/08/2016			07/13/2016	Yijie Li	1814664, 1814665, 1814666
SM 4500 F-C-97	07/08/2016			07/16/2016	Dale L. Simmons	1814664, 1814665, 1814666
SM 5310 B-00	07/08/2016			07/19/2016	Diana M. Turner	1814667, 1814668, 1814669