

Chemical Analysis Report

CEN-DIST-2016-10-11-02

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

Event Description: **Lake Van 4A**
Request ID: **RQ-2016-10-10-55**
Customer: **CEN-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
FL Dept. of Environmental Protection
3319 Maguire Blvd., Suite 232
Orlando, FL 32803-3767
Attn: Mike Linger

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Certified by: Liang Lin, Environmental Administrator

Date Certified: 02-NOV-2016 09:56

A handwritten signature in black ink, appearing to read "Liang Lin", on a light-colored background.

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: Lake Van @ SW Corner of West Lobe

Collection Date/Time: 10/10/2016 10:57

Field ID: G4CE0099

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1839458	EPA 180.1 Rev. 2.0	Turbidity	3.3		NTU	P312972	
	EPA 300.0 Rev. 2.1	Chloride	28	A	mg Cl/L	P313654	
		Sulfate	29	A	mg SO4/L	P313657	
	SM 2120 B	Color (true)	83		PCU	P312920	
	SM 2320 B-97	Total Alkalinity	15		mg CaCO3/L	P313058	
	SM 2540 C-97	TDS	131		mg/L	P313423	
	SM 2540 D-97	TSS	4	I	mg/L	P313431	
	SM 4500 F-C-97	Fluoride	0.29		mg F/L	P313061	
1839461	EPA 350.1 Rev. 2.0	Ammonia-N	0.015		mg N/L	P313504	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.19	I	mg N/L	P313448	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.040		mg N/L	P313221	
	EPA 365.1 Rev. 2.0	Total-P	0.074		mg P/L	P313755	
	SM 5310 B-00	Organic Carbon	11		mg C/L	P313093	
1839464	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.039		mg P/L	P312916	

Ref. Method and Comment:

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: Lake Van @ NW Corner of West Lobe

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

Field ID: G4CE0100

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1839459	EPA 180.1 Rev. 2.0	Turbidity	3.5	A	NTU	P312973	
	EPA 300.0 Rev. 2.1	Chloride	28		mg Cl/L	P313654	
		Sulfate	29		mg SO4/L	P313657	
	SM 2120 B	Color (true)	83		PCU	P312920	
	SM 2320 B-97	Total Alkalinity	15		mg CaCO3/L	P313058	
	SM 2540 C-97	TDS	134		mg/L	P313423	
	SM 2540 D-97	TSS	4	I	mg/L	P313431	
	SM 4500 F-C-97	Fluoride	0.30		mg F/L	P313061	
1839462	EPA 350.1 Rev. 2.0	Ammonia-N	0.022		mg N/L	P313505	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P313448	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.036		mg N/L	P313221	
	EPA 365.1 Rev. 2.0	Total-P	0.074		mg P/L	P313755	
	SM 5310 B-00	Organic Carbon	12		mg C/L	P313093	
1839465	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.036		mg P/L	P312916	

Ref. Method and Comment:

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: Lake Van @ North End of Lake

Collection Date/Time: 10/10/2016 11:27

Field ID: G4CE0101

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1839460	EPA 180.1 Rev. 2.0	Turbidity	3.5		NTU	P312973	
	EPA 300.0 Rev. 2.1	Chloride	28		mg Cl/L	P313654	
		Sulfate	30		mg SO4/L	P313657	

Field ID: G4CE0101

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1839460	SM 2120 B	Color (true)	82	A	PCU	P312920	
	SM 2320 B-97	Total Alkalinity	15		mg CaCO3/L	P313058	
	SM 2540 C-97	TDS	140	A	mg/L	P313423	
	SM 2540 D-97	TSS	4	I	mg/L	P313431	
	SM 4500 F-C-97	Fluoride	0.30		mg F/L	P313061	
1839463	EPA 350.1 Rev. 2.0	Ammonia-N	0.029		mg N/L	P313505	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.081	I	mg N/L	P313448	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.038		mg N/L	P313221	
	EPA 365.1 Rev. 2.0	Total-P	0.073		mg P/L	P313755	
	SM 5310 B-00	Organic Carbon	11		mg C/L	P313093	
1839466	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.037		mg P/L	P312916	

Ref. Method and Comment:

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P312972

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P312973

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P313654

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P313657

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P313504

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

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P313505

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P313448

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P313221

Component	Result	Code	Units
NO ₂ NO ₃ -N	0.004	U	mg N/L

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P313755

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P312916

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

Reference Method: SM 2120 B
Batch ID: P312920

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P313058

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

Reference Method: SM 2540 C-97
Batch ID: P313423

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P313431

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P313061

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Quality Assurance Report Method Blank Results

Reference Method: SM 5310 B-00
Batch ID: P313093

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: P313654

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P313657

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P313504

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P313505

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P313448

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P313221

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	107		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P313755

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P312916

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P312916

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	99.1		P	90 - 110

Reference Method: SM 2320 B-97
 Batch ID: P313058

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	104		P	95 - 108

Reference Method: SM 4500 F-C-97
 Batch ID: P313061

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.6		P	92 - 103

Reference Method: SM 5310 B-00
 Batch ID: P313093

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	99.0		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P313654

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1839458	Chloride	98.2		P	90 - 110
1839459	Chloride	99.2		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P313657

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1839458	Sulfate	97.9		P	90 - 110
1839459	Sulfate	93.6		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P313504

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1839419	Ammonia-N	100	102	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P313505

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1839493	Ammonia-N	96.9	98.8	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P313448

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1839440	Kjeldahl Nitrogen	97.3	97.3	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P313221

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1839434	NO2NO3-N	106	106	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P313755

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1839441	Total-P	101	98.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P312916

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1839465	O-Phosphate-P	97.5	98.6	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P313061

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1839403	Fluoride	98.4	99.0	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P313093

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1839418	Organic Carbon	94.8	93.0	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P312972

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1839361	Turbidity	1.68	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P312973

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1839459	Turbidity	4.62	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P313654

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1839458	Chloride	0.139	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P313657

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1839458	Sulfate	0.332	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P313504

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1839419	Ammonia-N	1.45	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P313505

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1839493	Ammonia-N	1.69	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P313448

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1839440	Kjeldahl Nitrogen	0.0310	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P313221

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1839434	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P313755

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1839441	Total-P	2.57	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P312916

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1839465	O-Phosphate-P	0.819	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: SM 2120 B
Batch ID: P312920

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1839460	Color (true)	0.797	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P313058

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1839403	Total Alkalinity	0.331	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
Batch ID: P313423

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1839460	TDS	7.14	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P313061

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1839403	Fluoride	0.477	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P313093

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1839418	Organic Carbon	0.954	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: A72157
Included Lab Sample IDs: 1839464, 1839465, 1839466

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.7	99.6	P/P	90 - 110
O-Phosphate-P	99.7	99.8	P/P	90 - 110

Reference Method: SM 2120 B
Run ID: A72158
Included Lab Sample IDs: 1839458, 1839459, 1839460

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	100	98.8	P/P	85 - 115

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A72177

Included Lab Sample IDs: 1839458, 1839459, 1839460

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

Reference Method: SM 2320 B-97

Run ID: A72195

Included Lab Sample IDs: 1839458, 1839459, 1839460

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	104	101	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A72195

Included Lab Sample IDs: 1839458, 1839459, 1839460

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	99.1	100	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A72203

Included Lab Sample IDs: 1839461, 1839462, 1839463

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A72235

Included Lab Sample IDs: 1839461, 1839462, 1839463

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	102	103	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A72305

Included Lab Sample IDs: 1839458, 1839459, 1839460

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	102	101	P/P	90 - 110
Chloride	102	102	P/P	90 - 110
Sulfate	98.1	96.5	P/P	90 - 110
Sulfate	98.2	98.0	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A72319

Included Lab Sample IDs: 1839461, 1839462, 1839463

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	100	99.8	P/P	90 - 110
Ammonia-N	99.7	100	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A72400

Included Lab Sample IDs: 1839461, 1839462, 1839463

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	103	94.3	P/P	90 - 110
Kjeldahl Nitrogen	97.6	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A72409

Included Lab Sample IDs: 1839461, 1839462, 1839463

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	102	103	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				1.68	
	Turbidity				4.62	
EPA 300.0 Rev. 2.1	Chloride	103	98.2 99.2		0.139	
	Sulfate	98.2	97.9 93.6		0.332	
EPA 350.1 Rev. 2.0	Ammonia-N	103	100 102			1.45
	Ammonia-N	106	96.9 98.8			1.69
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	98.4	97.3 97.3			0.0310
EPA 353.2 Rev. 2.0	NO2NO3-N	107	106 106			0.0
EPA 365.1 Rev. 2.0	Total-P	97.6	101 98.0			2.57
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	99.1	97.5 98.6			0.819
SM 2120 B	Color (true)				0.797	
SM 2320 B-97	Total Alkalinity	104			0.331	
SM 2540 C-97	TDS				7.14	
SM 4500 F-C-97	Fluoride	98.6	98.4 99.0			0.477
SM 5310 B-00	Organic Carbon	99.0	94.8 93.0			0.954

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1839458, 1839459, 1839460
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1839458, 1839459, 1839460
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1839458, 1839459, 1839460
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1839461, 1839462, 1839463
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1839461, 1839462, 1839463
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1839461, 1839462, 1839463

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	1839461, 1839462, 1839463
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1839464, 1839465, 1839466
SM 2120 B / E31780	True Color measured at 450 nm	1839458, 1839459, 1839460
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	1839458, 1839459, 1839460
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1839458, 1839459, 1839460
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1839458, 1839459, 1839460
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1839458, 1839459, 1839460
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1839461, 1839462, 1839463

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	10/11/2016			10/11/2016 15:51	Blanca Fach	1839458, 1839459, 1839460
EPA 300.0 Rev. 2.1	10/11/2016			10/21/2016	Ping Hua	1839458, 1839459, 1839460
EPA 350.1 Rev. 2.0	10/11/2016			10/19/2016	Sofia Elnemr	1839461, 1839462, 1839463
EPA 351.2 Rev. 2.0	10/11/2016	10/19/2016	Adrian Shelby	10/24/2016	Joseph Suarez	1839461, 1839462, 1839463
EPA 353.2 Rev. 2.0	10/11/2016			10/14/2016	Beverly Y. Sanders	1839461, 1839462, 1839463
EPA 365.1 Rev. 2.0	10/11/2016	10/24/2016	Vijayalakshmi Reddy	10/25/2016	Lipi Saha	1839461, 1839462, 1839463
EPA 365.1 Rev. 2.0 dissolved	10/11/2016			10/11/2016 14:20	Julia Storbeck	1839465
	10/11/2016			10/11/2016 15:10	Julia Storbeck	1839464
	10/11/2016			10/11/2016 15:11	Julia Storbeck	1839466
	10/11/2016			10/11/2016 14:33	Julie Michelle Frank	1839460
SM 2120 B	10/11/2016			10/11/2016 14:39	Julie Michelle Frank	1839458
	10/11/2016			10/11/2016 14:40	Julie Michelle Frank	1839459
	10/11/2016			10/13/2016	Dale L. Simmons	1839458, 1839459, 1839460
SM 2320 B-97	10/11/2016			10/12/2016	Yijie Li	1839458, 1839459, 1839460
SM 2540 C-97	10/11/2016			10/12/2016	Yijie Li	1839458, 1839459, 1839460
SM 2540 D-97	10/11/2016			10/13/2016	Dale L. Simmons	1839458, 1839459, 1839460
SM 4500 F-C-97	10/11/2016			10/13/2016	Julie Michelle Frank	1839461, 1839462, 1839463
SM 5310 B-00	10/11/2016					