

Chemical Analysis Report

CEN-DIST-2017-03-10-01

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

Event Description: **Glencoe / Sand / UnDrain 2673**
Request ID: **RQ-2017-03-06-45**
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

For additional information please contact
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Certified by: Liang Lin, Environmental Administrator

Date Certified: 05-APR-2017 11:20

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: Sand Creek @ Unnamed Road 0.5 miles W of Tomoka Farms Road **Collection Date/Time: 03/09/2017 10:55**

Field ID: G5CE0076

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1879323	EPA 180.1 Rev. 2.0	Turbidity	13		NTU	P321398	
	EPA 300.0 Rev. 2.1	Chloride	65		mg Cl/L	P321810	
		Sulfate	12		mg SO4/L	P321814	
	SM 2120 B	Color (true)	83		PCU	P321368	
	SM 2320 B-97	Total Alkalinity	57		mg CaCO3/L	P321702	
	SM 2540 C-97	TDS	199		mg/L	P321888	
	SM 2540 D-97	TSS	8	I	mg/L	P321820	
	SM 4500 F-C-97	Fluoride	0.11		mg F/L	P321707	
1879326	EPA 350.1 Rev. 2.0	Ammonia-N	0.016		mg N/L	P321470	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.64		mg N/L	P321584	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	I	mg N/L	P321834	
	EPA 365.1 Rev. 2.0	Total-P	0.026		mg P/L	P321488	
	SM 5310 B-00	Organic Carbon	15		mg C/L	P321416	
1879329	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.006	I	mg P/L	P321403	

Ref. Method and Comment:

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

SM 4500 F-C-97: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: Unnamed Drain of Spruce Creek

Collection Date/Time: 03/09/2017 10:35

Field ID: G5CE0022

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1879324	EPA 180.1 Rev. 2.0	Turbidity	4.6		NTU	P321398	
	EPA 300.0 Rev. 2.1	Chloride	74		mg Cl/L	P321810	
		Sulfate	3.5		mg SO4/L	P321814	
	SM 2120 B	Color (true)	34	A	PCU	P321368	
	SM 2320 B-97	Total Alkalinity	289		mg CaCO3/L	P321702	
	SM 2540 C-97	TDS	424		mg/L	P321888	
	SM 2540 D-97	TSS	3	I	mg/L	P321820	
	SM 4500 F-C-97	Fluoride	0.15		mg F/L	P321707	
1879327	EPA 350.1 Rev. 2.0	Ammonia-N	0.042		mg N/L	P321470	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.54		mg N/L	P321585	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.007	I	mg N/L	P321834	
	EPA 365.1 Rev. 2.0	Total-P	0.12		mg P/L	P321488	
	SM 5310 B-00	Organic Carbon	12		mg C/L	P321416	
1879330	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.030		mg P/L	P321403	

Ref. Method and Comment:

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

SM 4500 F-C-97: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: Glencoe Dithes @ 225 South of Turnbull Bay Rd.

Collection Date/Time: 03/09/2017 10:10

Field ID: G5CE0077

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
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Field ID: G5CE0077

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1879325	EPA 180.1 Rev. 2.0	Turbidity	8.4		NTU	P321398	
	EPA 300.0 Rev. 2.1	Chloride	130		mg Cl/L	P321810	
		Sulfate	8.0		mg SO4/L	P321814	
	SM 2120 B	Color (true)	80		PCU	P321368	
	SM 2320 B-97	Total Alkalinity	263		mg CaCO3/L	P321702	
	SM 2540 C-97	TDS	511		mg/L	P321888	
	SM 2540 D-97	TSS	6	I	mg/L	P321820	
	SM 4500 F-C-97	Fluoride	0.054	I	mg F/L	P321707	
1879328	EPA 350.1 Rev. 2.0	Ammonia-N	0.046		mg N/L	P321470	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.43		mg N/L	P321585	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.007	I	mg N/L	P321834	
	EPA 365.1 Rev. 2.0	Total-P	0.13		mg P/L	P321488	
	SM 5310 B-00	Organic Carbon	7.5		mg C/L	P321416	
1879331	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.037		mg P/L	P321403	

Ref. Method and Comment:

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

SM 4500 F-C-97: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Quality Assurance Report

Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P321398

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P321810

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P321814

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P321470

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

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P321584

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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P321585

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P321834

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: P321488

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P321403

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

Reference Method: SM 2120 B
Batch ID: P321368

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P321702

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

Reference Method: SM 2540 C-97
Batch ID: P321888

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P321820

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P321707

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: P321416

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: P321810

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

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P321814

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

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P321470

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	97.2		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P321584

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: P321585

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

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P321834

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

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P321488

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P321403

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: P321403

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

Reference Method: SM 2320 B-97
 Batch ID: P321702

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

Reference Method: SM 4500 F-C-97
 Batch ID: P321707

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.1		P	92 - 103

Reference Method: SM 5310 B-00
 Batch ID: P321416

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

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P321810

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1879237	Chloride	107		P	90 - 110
1879239	Chloride	105		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P321814

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1879237	Sulfate	100		P	90 - 110
1879239	Sulfate	98.5		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P321470

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1879326	Ammonia-N	97.5	97.8	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P321584

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1879318	Kjeldahl Nitrogen	102	95.7	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P321585

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1879364	Kjeldahl Nitrogen	99.7	102	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P321834

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1879327	NO2NO3-N	100	99.4	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P321488

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1879265	Total-P	101	105	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P321403

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1879329	O-Phosphate-P	93.3	92.4	P/P	90 - 110

Reference Method: SM 5310 B-00
 Batch ID: P321416

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1879264	Organic Carbon	96.0	95.9	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
 Batch ID: P321398

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1879317	Turbidity	2.44	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P321810

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1879239	Chloride	1.21	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P321814

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1879239	Sulfate	1.40	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P321470

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1879326	Ammonia-N	0.176	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P321584

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1879318	Kjeldahl Nitrogen	3.95	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P321585

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1879364	Kjeldahl Nitrogen	1.05	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P321834

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1879327	NO2NO3-N	0.966	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P321488

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1879265	Total-P	3.00	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P321403

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1879329	O-Phosphate-P	0.914	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P321368

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1879324	Color (true)	5.30	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P321702

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1879317	Total Alkalinity	0.0669	Sample	P	0 - 4.8

Quality Assurance Report Precision

Reference Method: SM 2540 C-97
Batch ID: P321888

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1879263	TDS	4.08	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P321707

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1879317	Fluoride	0.470	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P321416

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1879264	Organic Carbon	0.0939	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: SM 2120 B
Run ID: A75024
Included Lab Sample IDs: 1879323, 1879324, 1879325

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	97.6	99.0	P/P	85 - 115

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A75034
Included Lab Sample IDs: 1879323, 1879324, 1879325

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A75035
Included Lab Sample IDs: 1879329, 1879330, 1879331

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.9	99.2	P/P	90 - 110
O-Phosphate-P	99.2	99.7	P/P	90 - 110

Reference Method: SM 5310 B-00
Run ID: A75042
Included Lab Sample IDs: 1879326, 1879327, 1879328

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	94.8	95.0	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A75062

Included Lab Sample IDs: 1879326, 1879327, 1879328

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	104	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A75144

Included Lab Sample IDs: 1879327, 1879328

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	106	105	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A75152

Included Lab Sample IDs: 1879323, 1879324, 1879325

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	104	102	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A75152

Included Lab Sample IDs: 1879323, 1879324, 1879325

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A75169

Included Lab Sample IDs: 1879326

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A75185

Included Lab Sample IDs: 1879326, 1879327, 1879328

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	99.1	97.3	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A75193

Included Lab Sample IDs: 1879323, 1879324, 1879325

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	108	109	P/P	90 - 110
Sulfate	107	106	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A75199

Included Lab Sample IDs: 1879326, 1879327, 1879328

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

Quality Assurance Report Calibration Verification

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

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision		
					LCS	SMP	MS
EPA 180.1 Rev. 2.0	Turbidity					2.44	
EPA 300.0 Rev. 2.1	Chloride	107	105	107		1.21	
	Sulfate	102	98.5	100		1.40	
EPA 350.1 Rev. 2.0	Ammonia-N	97.2	97.5	97.8			0.176
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	100	102	95.7			3.95
	Kjeldahl Nitrogen	103	99.7	102			1.05
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	102	100	99.4			0.966
EPA 365.1 Rev. 2.0	Total-P	104	101	105			3.00
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	101	93.3	92.4			0.914
SM 2120 B	Color (true)					5.30	
SM 2320 B-97	Total Alkalinity	104				0.0669	
SM 2540 C-97	TDS					4.08	
SM 4500 F-C-97	Fluoride	98.1					0.470
SM 5310 B-00	Organic Carbon	97.1	96.0	95.9			0.0939

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1879323, 1879324, 1879325
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1879323, 1879324, 1879325
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1879323, 1879324, 1879325
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1879326, 1879327, 1879328
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1879326, 1879327, 1879328
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1879326, 1879327, 1879328
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1879326, 1879327, 1879328
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1879329, 1879330, 1879331
SM 2120 B / E31780	True Color measured at 450 nm	1879323, 1879324, 1879325
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	1879323, 1879324, 1879325
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1879323, 1879324, 1879325
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1879323, 1879324, 1879325
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1879323, 1879324, 1879325
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1879326, 1879327, 1879328

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	03/10/2017			03/10/2017 12:54	Sima Feizi	1879323
	03/10/2017			03/10/2017 12:55	Sima Feizi	1879324
	03/10/2017			03/10/2017 12:56	Sima Feizi	1879325
EPA 300.0 Rev. 2.1	03/10/2017			03/18/2017	Elisa J Lutz	1879323, 1879324, 1879325
EPA 350.1 Rev. 2.0	03/10/2017			03/13/2017	Julie Michelle Frank	1879326, 1879327, 1879328
EPA 351.2 Rev. 2.0	03/10/2017	03/15/2017	Adrian Shelby	03/17/2017	Joseph Suarez	1879326, 1879327, 1879328
EPA 353.2 Rev. 2.0	03/10/2017			03/20/2017	Beverly Y. Sanders	1879326, 1879327, 1879328
EPA 365.1 Rev. 2.0	03/10/2017	03/14/2017	Adrian Shelby	03/16/2017	Lipi Saha	1879327, 1879328
	03/10/2017	03/14/2017	Adrian Shelby	03/17/2017	Lipi Saha	1879326
EPA 365.1 Rev. 2.0 dissolved	03/10/2017			03/10/2017 17:47	Virginia P. Brown	1879329
	03/10/2017			03/10/2017 17:59	Virginia P. Brown	1879330
	03/10/2017			03/10/2017 18:00	Virginia P. Brown	1879331
SM 2120 B	03/10/2017			03/10/2017 13:11	Julia Storbeck	1879323
	03/10/2017			03/10/2017 13:12	Julia Storbeck	1879324
	03/10/2017			03/10/2017 13:13	Julia Storbeck	1879325
SM 2320 B-97	03/10/2017			03/16/2017	Dale L. Simmons	1879323, 1879324, 1879325
SM 2540 C-97	03/10/2017			03/10/2017	Yijie Li	1879323, 1879324, 1879325
SM 2540 D-97	03/10/2017			03/10/2017	Yijie Li	1879323, 1879324, 1879325
SM 4500 F-C-97	03/10/2017			03/16/2017	Dale L. Simmons	1879323, 1879324, 1879325
SM 5310 B-00	03/10/2017			03/10/2017	Julie Michelle Frank	1879326, 1879327, 1879328