

Chemical Analysis Report

NE-DIST-2018-03-07-01

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

Event Description: **Nassau West_2018**
Request ID: **RQ-2018-03-12-22**
Customer: **NE-DIST**
Project ID: **SMP**

Send Reports to:
NE ROC
8800 Baymeadows Way
Suite 100
Jacksonville, FL 32256-7577
Attn: Nicole Frederick

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

Date Certified: 27-MAR-2018 17:41

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: Calkins Ck Trib @ Hamp Register Rd

Collection Date/Time: 03/06/2018 10:00

Field ID: 19010042

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1972430	EPA 180.1 Rev. 2.0	Turbidity	3.2		NTU	P341132	
	EPA 300.0 Rev. 2.1	Chloride	8.5		mg Cl/L	P341420	
		Sulfate	0.63		mg SO4/L	P341425	
	SM 2120 B	Color (true)	96	A	PCU	P341125	
	SM 2320 B-97	Total Alkalinity	13		mg CaCO3/L	P341521	
	SM 2540 C-97	TDS	45		mg/L	P341590	
	SM 2540 D-97	TSS	4	I	mg/L	P341607	
	SM 4500 F-C-97	Fluoride	0.049	I	mg F/L	P341524	
1972434	EPA 350.1 Rev. 2.0	Ammonia-N	0.016		mg N/L	P341261	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.56		mg N/L	P341299	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.045		mg N/L	P341284	
	EPA 365.1 Rev. 2.0	Total-P	0.036		mg P/L	P341313	
	SM 5310 B-00	Organic Carbon	7.2		mg C/L	P341326	
1972438	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.008	I	mg P/L	P341140	

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: Unnamed Branch @ CR125

Collection Date/Time: 03/06/2018 10:45

Field ID: 19010123

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1972431	EPA 180.1 Rev. 2.0	Turbidity	2.7		NTU	P341132	
	EPA 300.0 Rev. 2.1	Chloride	8.9		mg Cl/L	P341420	
		Sulfate	0.43	I	mg SO4/L	P341425	
	SM 2120 B	Color (true)	200		PCU	P341125	
	SM 2320 B-97	Total Alkalinity	14		mg CaCO3/L	P341521	
	SM 2540 C-97	TDS	57		mg/L	P341590	
	SM 2540 D-97	TSS	2	I	mg/L	P341607	
	SM 4500 F-C-97	Fluoride	0.046	I	mg F/L	P341524	
1972435	EPA 350.1 Rev. 2.0	Ammonia-N	0.032		mg N/L	P341261	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.62		mg N/L	P341299	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.050		mg N/L	P341284	
	EPA 365.1 Rev. 2.0	Total-P	0.089		mg P/L	P341313	
	SM 5310 B-00	Organic Carbon	17		mg C/L	P341326	
1972439	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.060		mg P/L	P341140	

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: St Marys R S Prong @ SR125

Collection Date/Time: 03/06/2018 13:00

Field ID: 19010018

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1972432	EPA 180.1 Rev. 2.0	Turbidity	3.7		NTU	P341132	
	EPA 300.0 Rev. 2.1	Chloride	11		mg Cl/L	P341420	
		Sulfate	0.25	I	mg SO4/L	P341425	

Field ID: 19010018

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1972432	SM 2120 B	Color (true)	330		PCU	P341125	
	SM 2320 B-97	Total Alkalinity	1.0	I	mg CaCO3/L	P341521	
	SM 2540 C-97	TDS	68		mg/L	P341590	
	SM 2540 D-97	TSS	3	I	mg/L	P341607	
	SM 4500 F-C-97	Fluoride	0.037	I	mg F/L	P341524	
1972436	EPA 350.1 Rev. 2.0	Ammonia-N	0.10		mg N/L	P341261	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.1		mg N/L	P341357	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.076		mg N/L	P341284	
	EPA 365.1 Rev. 2.0	Total-P	0.036		mg P/L	P341313	
	SM 5310 B-00	Organic Carbon	34		mg C/L	P341326	
1972440	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.014		mg P/L	P341140	

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: St Marys S Prong @ CR23C

Collection Date/Time: 03/06/2018 11:45

Field ID: 19010023

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1972433	EPA 180.1 Rev. 2.0	Turbidity	3.0		NTU	P341132	
	EPA 300.0 Rev. 2.1	Chloride	14	A	mg Cl/L	P341420	
		Sulfate	2.0	A	mg SO4/L	P341425	
	SM 2120 B	Color (true)	250		PCU	P341125	
	SM 2320 B-97	Total Alkalinity	15		mg CaCO3/L	P341521	
	SM 2540 C-97	TDS	85		mg/L	P341590	
	SM 2540 D-97	TSS	3	I	mg/L	P341607	
	SM 4500 F-C-97	Fluoride	0.064	I	mg F/L	P341524	
1972437	EPA 350.1 Rev. 2.0	Ammonia-N	0.045		mg N/L	P341493	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.80		mg N/L	P341357	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.36		mg N/L	P341284	
	EPA 365.1 Rev. 2.0	Total-P	0.12		mg P/L	P341313	
	SM 5310 B-00	Organic Carbon	22		mg C/L	P341326	
1972441	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.093		mg P/L	P341140	

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: P341132

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P341420

Component	Result	Code	Units
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Quality Assurance Report Method Blank Results

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P341420

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P341425

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P341261

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P341493

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P341299

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P341357

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P341284

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P341313

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P341140

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

Quality Assurance Report Method Blank Results

Reference Method: SM 2120 B
Batch ID: P341125

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P341521

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

Reference Method: SM 2540 C-97
Batch ID: P341590

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P341607

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P341524

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P341326

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: P341420

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P341425

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P341261

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: P341261

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P341493

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	95.5		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P341299

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: P341357

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P341284

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P341313

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P341140

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

Reference Method: SM 2320 B-97
Batch ID: P341521

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	99.2		P	95 - 108

Reference Method: SM 4500 F-C-97
Batch ID: P341524

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	95.7		P	92 - 103

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 5310 B-00
Batch ID: P341326

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	98.2		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P341420

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1972433	Chloride	98.9		P	90 - 110
1972454	Chloride	102		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P341425

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1972433	Sulfate	99.0		P	90 - 110
1972454	Sulfate	103		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P341261

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1972355	Ammonia-N	102	95.2	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P341493

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1972284	Ammonia-N	98.9	100	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P341299

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1972355	Kjeldahl Nitrogen	106	89.2	P/F	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P341357

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1972465	Kjeldahl Nitrogen	102	106	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P341284

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1972434	NO2NO3-N	103	100	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P341313

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1972462	Total-P	98.6	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P341140

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1972438	O-Phosphate-P	94.0	94.5	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P341524

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1972840	Fluoride	96.4	97.0	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P341326

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1972416	Organic Carbon	113		P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P341132

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1972412	Turbidity	2.40	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P341420

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1972433	Chloride	0.0511	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P341425

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1972433	Sulfate	0.500	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P341261

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1972355	Ammonia-N	4.45	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P341493

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1972284	Ammonia-N	0.869	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P341299

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1972355	Kjeldahl Nitrogen	13.3	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P341357

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1972465	Kjeldahl Nitrogen	3.82	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P341284

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1972434	NO2NO3-N	2.41	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P341313

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1972462	Total-P	2.71	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P341140

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1972438	O-Phosphate-P	0.489	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P341125

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1972430	Color (true)	1.62	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P341521

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1972840	Total Alkalinity	0.318	Sample	P	0 - 4.8

Quality Assurance Report Precision

Reference Method: SM 2540 C-97
Batch ID: P341590

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1972412	TDS	6.43	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P341524

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1972840	Fluoride	0.477	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P341326

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1972416	Organic Carbon	0.235	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: A82485
Included Lab Sample IDs: 1972430, 1972431, 1972432, 1972433

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	100	101	P/P	85 - 115
Color (true)	98.4	98.3	P/P	85 - 115

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A82487
Included Lab Sample IDs: 1972430, 1972431, 1972432, 1972433

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	99.0	99.0	P/P	95 - 105

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A82489
Included Lab Sample IDs: 1972438, 1972439, 1972440, 1972441

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	100	100	P/P	90 - 110
O-Phosphate-P	98.3	102	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A82509
Included Lab Sample IDs: 1972430, 1972431, 1972432, 1972433

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
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Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A82509

Included Lab Sample IDs: 1972430, 1972431, 1972432, 1972433

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	97.3	96.7	P/P	90 - 110
Sulfate	98.6	97.2	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A82515

Included Lab Sample IDs: 1972434, 1972435, 1972436

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	103	100	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A82523

Included Lab Sample IDs: 1972434, 1972435, 1972436, 1972437

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

Reference Method: SM 5310 B-00

Run ID: A82537

Included Lab Sample IDs: 1972434, 1972435, 1972436, 1972437

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	97.9	99.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A82548

Included Lab Sample IDs: 1972435, 1972437

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A82550

Included Lab Sample IDs: 1972434, 1972436

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A82573

Included Lab Sample IDs: 1972434, 1972435

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A82584

Included Lab Sample IDs: 1972437

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
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Quality Assurance Report Calibration Verification

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A82584

Included Lab Sample IDs: 1972437

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.4	100	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A82600

Included Lab Sample IDs: 1972436, 1972437

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	105	107	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A82604

Included Lab Sample IDs: 1972430, 1972431, 1972432, 1972433

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	98.7	97.9	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A82604

Included Lab Sample IDs: 1972430, 1972431, 1972432, 1972433

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	98.1	98.6	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				2.40	
EPA 300.0 Rev. 2.1	Chloride	101	98.9	102	0.0511	
	Sulfate	104	99.0	103	0.500	
EPA 350.1 Rev. 2.0	Ammonia-N	104	102	95.2		4.45
	Ammonia-N	95.5	98.9	100		0.869
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	100	106	89.2		13.3
	Kjeldahl Nitrogen	100	102	106		3.82
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	103	103	100		2.41
EPA 365.1 Rev. 2.0	Total-P	102	98.6	101		2.71
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	97.5	94.0	94.5		0.489
SM 2120 B	Color (true)				1.62	
SM 2320 B-97	Total Alkalinity	99.2			0.318	
SM 2540 C-97	TDS				6.43	
SM 4500 F-C-97	Fluoride	95.7	96.4	97.0		0.477
SM 5310 B-00	Organic Carbon	98.2	113			0.235

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1972430, 1972431, 1972432, 1972433
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1972430, 1972431, 1972432, 1972433
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1972430, 1972431, 1972432, 1972433
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1972434, 1972435, 1972436, 1972437
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1972434, 1972435, 1972436, 1972437
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1972434, 1972435, 1972436, 1972437
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1972434, 1972435, 1972436, 1972437
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1972438, 1972439, 1972440, 1972441
SM 2120 B / E31780	True Color measured at 450 nm	1972430, 1972431, 1972432, 1972433
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	1972430, 1972431, 1972432, 1972433
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1972430, 1972431, 1972432, 1972433
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1972430, 1972431, 1972432, 1972433
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1972430, 1972431, 1972432, 1972433
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1972434, 1972435, 1972436, 1972437

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	03/07/2018			03/07/2018 15:18	DeAsia Armster	1972430, 1972431, 1972432, 1972433
EPA 300.0 Rev. 2.1	03/07/2018			03/08/2018	Julia Storbeck	1972430, 1972431, 1972432, 1972433
EPA 350.1 Rev. 2.0	03/07/2018			03/08/2018	Ping Hua	1972434, 1972435, 1972436
	03/07/2018			03/12/2018	Ping Hua	1972437
EPA 351.2 Rev. 2.0	03/07/2018	03/09/2018	Adrian Shelby	03/13/2018	Joseph Suarez	1972434, 1972435
	03/07/2018	03/12/2018	Adrian Shelby	03/14/2018	Joseph Suarez	1972436, 1972437
EPA 353.2 Rev. 2.0	03/07/2018			03/09/2018	Beverly Y. Sanders	1972434, 1972435, 1972436, 1972437
EPA 365.1 Rev. 2.0	03/07/2018	03/09/2018	Sima Feizi	03/12/2018	Beverly Y. Sanders	1972434, 1972435, 1972436, 1972437
EPA 365.1 Rev. 2.0 dissolved	03/07/2018			03/07/2018 16:55	Megan Treadwell	1972438
	03/07/2018			03/07/2018 18:03	Megan Treadwell	1972440
	03/07/2018			03/07/2018 18:04	Megan Treadwell	1972441
	03/07/2018			03/07/2018 18:05	Megan Treadwell	1972439
SM 2120 B	03/07/2018			03/07/2018 15:20	Tanya Welborn	1972430
	03/07/2018			03/07/2018 16:04	Tanya Welborn	1972431
	03/07/2018			03/07/2018 16:05	Tanya Welborn	1972432
	03/07/2018			03/07/2018 16:06	Tanya Welborn	1972433
SM 2320 B-97	03/07/2018			03/13/2018	Dale L. Simmons	1972430, 1972431, 1972432, 1972433
SM 2540 C-97	03/07/2018			03/10/2018	Yijie Li	1972430, 1972431, 1972432, 1972433
SM 2540 D-97	03/07/2018			03/10/2018	Yijie Li	1972430, 1972431, 1972432, 1972433
SM 4500 F-C-97	03/07/2018			03/13/2018	Dale L. Simmons	1972430, 1972431, 1972432, 1972433
SM 5310 B-00	03/07/2018			03/09/2018	Megan Treadwell	1972434, 1972435, 1972436, 1972437