

Chemical Analysis Report

TLH-ROC-2018-01-02-01

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

Event Description: **kit A w/ bacteria**
Request ID: **RQ-2018-01-01-24**
Customer: **TLH-ROC**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
2600 Blair Stone Rd
Tallahassee, FL 32399
Attn: Michael Eckles

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

Date Certified: 22-JAN-2018 15:41

A handwritten signature in black ink, appearing to read "Liang Lin", is written on a light-colored, textured 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: Steinhatchee 40m N of Yearling

Collection Date/Time: 01/02/2018 13:30

Field ID: G1TLHR0065-2018

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1956903	EPA 180.1 Rev. 2.0	Turbidity	3.4	A	NTU	P337755	
	EPA 300.0 Rev. 2.1	Chloride	9.4		mg Cl/L	P337780	
		Sulfate	7.4		mg SO4/L	P337782	
	SM 2120 B	Color (true)	170		PCU	P337746	
	SM 2320 B-97	Total Alkalinity	161		mg CaCO3/L	P338202	
	SM 2540 C-97	TDS	235		mg/L	P337951	
	SM 2540 D-97	TSS	17		mg/L	P338190	
	SM 4500 F-C-97	Fluoride	0.13		mg F/L	P338010	
1956907	EPA 350.1 Rev. 2.0	Ammonia-N	0.006	U	mg N/L	P337857	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.65		mg N/L	P337841	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004		mg N/L	P337724	
	EPA 365.1 Rev. 2.0	Total-P	0.077		mg P/L	P337729	
	SM 5310 B-00	Organic Carbon	21		mg C/L	P337772	
1956911	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.063		mg P/L	P337762	

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: Steinhatchee @ S. Canal Rd.

Collection Date/Time: 01/02/2018 13:50

Field ID: G1TLHR0064-2018

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1956904	EPA 180.1 Rev. 2.0	Turbidity	5.4		NTU	P337755	
	EPA 300.0 Rev. 2.1	Chloride	9.5		mg Cl/L	P337780	
		Sulfate	8.9		mg SO4/L	P337782	
	SM 2120 B	Color (true)	140		PCU	P337746	
	SM 2320 B-97	Total Alkalinity	158		mg CaCO3/L	P338202	
	SM 2540 C-97	TDS	240		mg/L	P337951	
	SM 2540 D-97	TSS	22		mg/L	P338190	
	SM 4500 F-C-97	Fluoride	0.11		mg F/L	P338010	
1956908	EPA 350.1 Rev. 2.0	Ammonia-N	0.009	U	mg N/L	P337857	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.61		mg N/L	P337841	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004		mg N/L	P337724	
	EPA 365.1 Rev. 2.0	Total-P	0.056		mg P/L	P337729	
	SM 5310 B-00	Organic Carbon	21		mg C/L	P337772	
1956912	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.045		mg P/L	P337762	

Ref. Method and Comment:

EPA 180.1 Rev. 2.0: The result was confirmed on 01/09/2018.

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample. The result was confirmed on 01/10/2018.

EPA 365.1 Rev. 2.0: Total-P: The result was confirmed on 01/11/2018.

Sample Location: Steinhatchee @ S. Canal Rd.

Collection Date/Time: 01/02/2018 13:53

Field ID: G1TLHR0064-2018 DUP

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1956905	EPA 180.1 Rev. 2.0	Turbidity	2.5		NTU	P337755	

Field ID: G1TLHR0064-2018 DUP

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1956905	EPA 300.0 Rev. 2.1	Chloride	9.5		mg Cl/L	P337780	
		Sulfate	8.9		mg SO4/L	P337782	
	SM 2120 B	Color (true)	140		PCU	P337746	
	SM 2320 B-97	Total Alkalinity	158		mg CaCO3/L	P338202	
	SM 2540 C-97	TDS	229		mg/L	P337951	
	SM 2540 D-97	TSS	7	I	mg/L	P338190	
	SM 4500 F-C-97	Fluoride	0.11		mg F/L	P338010	
1956909	EPA 350.1 Rev. 2.0	Ammonia-N	0.008		mg N/L	P337857	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.74		mg N/L	P337841	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P337724	
	EPA 365.1 Rev. 2.0	Total-P	0.092		mg P/L	P337729	
	SM 5310 B-00	Organic Carbon	21		mg C/L	P337772	
1956913	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.045		mg P/L	P337762	

Ref. Method and Comment:

EPA 180.1 Rev. 2.0: The result was confirmed on 01/09/2018.

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample. The result was confirmed on 01/10/2018.

EPA 365.1 Rev. 2.0: Total-P: The result was confirmed on 01/11/2018.

Sample Location: Steinhatchee @ S. Canal Rd.

Collection Date/Time: 01/02/2018 13:56

Field ID: G1TLHR0064-2018 BLANK

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1956906	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P337755	
	EPA 300.0 Rev. 2.1	Chloride	0.20	U	mg Cl/L	P337780	
		Sulfate	0.20	U	mg SO4/L	P337782	
	SM 2120 B	Color (true)	2.5	U	PCU	P337746	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P338202	
	SM 2540 C-97	TDS	15	U	mg/L	P337951	
	SM 2540 D-97	TSS	2	U	mg/L	P338190	
1956910	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P338010	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P337857	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P337841	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P337724	
	EPA 365.1 Rev. 2.0	Total-P	0.002	U	mg P/L	P337895	
1956914	SM 5310 B-00	Organic Carbon	0.50	U	mg C/L	P337772	
	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P337762	

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: P337755

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Quality Assurance Report Method Blank Results

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P337780

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P337782

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P337857

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P337841

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P337724

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P337729

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P337895

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P337762

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

Reference Method: SM 2120 B
Batch ID: P337746

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Quality Assurance Report Method Blank Results

Reference Method: SM 2320 B-97
Batch ID: P338202

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

Reference Method: SM 2540 C-97
Batch ID: P337951

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P338190

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P338010

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P337772

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: P337780

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P337782

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P337857

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P337841

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: P337841

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	94.6		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P337724

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P337729

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P337895

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P337762

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	98.0		P	90 - 110

Reference Method: SM 2320 B-97
Batch ID: P338202

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	102		P	95 - 108

Reference Method: SM 4500 F-C-97
Batch ID: P338010

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	94.8		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P337772

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	97.0		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P337780

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: P337780

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1956509	Chloride	108		P	90 - 110
1956540	Chloride	109		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P337782

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1956509	Sulfate	108		P	90 - 110
1956540	Sulfate	107		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P337857

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1956907	Ammonia-N	106	104	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P337841

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1956948	Kjeldahl Nitrogen	93.0	98.4	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P337724

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1956907	NO2NO3-N	102	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P337729

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1956948	Total-P	102	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P337895

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1957497	Total-P	102	97.4	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P337762

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1956911	O-Phosphate-P	94.8	95.2	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P338010

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1957378	Fluoride	94.0	95.6	P/P	91 - 105

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SM 5310 B-00
 Batch ID: P337772

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1956907	Organic Carbon	105		P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
 Batch ID: P337755

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1956903	Turbidity	1.18	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P337780

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1956540	Chloride	0.596	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P337782

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1956540	Sulfate	0.563	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P337857

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1956907	Ammonia-N	1.96	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P337841

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1956948	Kjeldahl Nitrogen	4.62	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P337724

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1956907	NO2NO3-N	0.489	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P337729

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1956948	Total-P	0.570	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P337895

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1957497	Total-P	3.42	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P337762

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1956911	O-Phosphate-P	0.253	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P337746

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1956927	Color (true)	1.96	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P338202

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1957478	Total Alkalinity	0.320	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
Batch ID: P337951

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1956947	TDS	4.48	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P338010

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1957378	Fluoride	1.41	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P337772

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1956907	Organic Carbon	0.797	Spike	P	0 - 20

Quality Assurance Report Precision

* 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 353.2 Rev. 2.0

Run ID: A81235

Included Lab Sample IDs: 1956907, 1956908, 1956909, 1956910

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

Reference Method: SM 2120 B

Run ID: A81259

Included Lab Sample IDs: 1956903, 1956904, 1956905, 1956906

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	101	101	P/P	85 - 115
Color (true)	96.4	99.7	P/P	85 - 115

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A81261

Included Lab Sample IDs: 1956903, 1956904, 1956905, 1956906

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: A81262

Included Lab Sample IDs: 1956911, 1956912, 1956913, 1956914

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

Reference Method: SM 5310 B-00

Run ID: A81270

Included Lab Sample IDs: 1956907, 1956908, 1956909, 1956910

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	97.0	98.2	P/P	90 - 110
Organic Carbon	98.2	99.0	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A81273

Included Lab Sample IDs: 1956903, 1956904, 1956905, 1956906

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	107	106	P/P	90 - 110
Sulfate	107	105	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A81274

Included Lab Sample IDs: 1956907, 1956908, 1956909

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A81300

Included Lab Sample IDs: 1956907, 1956908, 1956909, 1956910

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	100	98.9	P/P	90 - 110
Ammonia-N	98.9	97.2	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A81322

Included Lab Sample IDs: 1956907, 1956908, 1956909, 1956910

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	102	97.7	P/P	90 - 110
Kjeldahl Nitrogen	97.1	96.0	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A81369

Included Lab Sample IDs: 1956903, 1956904, 1956905, 1956906

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	100	99.5	P/P	90 - 110
Fluoride	99.5	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A81384

Included Lab Sample IDs: 1956910

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

Reference Method: SM 2320 B-97

Run ID: A81446

Included Lab Sample IDs: 1956903, 1956904, 1956905, 1956906

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	102	99.5	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	Precision LCS	Precision SMP	MS
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Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		LCS	Precision	MS
						SMP	
EPA 180.1 Rev. 2.0	Turbidity					1.18	
EPA 300.0 Rev. 2.1	Chloride	104	109	108		0.596	
	Sulfate	103	107	108		0.563	
EPA 350.1 Rev. 2.0	Ammonia-N	102	106	104			1.96
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	94.6	93.0	98.4			4.62
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	104	102	102			0.489
EPA 365.1 Rev. 2.0	Total-P	101	102	102			0.570
	Total-P	101	102	97.4			3.42
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	98.0	94.8	95.2			0.253
SM 2120 B	Color (true)					1.96	
SM 2320 B-97	Total Alkalinity	102				0.320	
SM 2540 C-97	TDS					4.48	
SM 4500 F-C-97	Fluoride	94.8	94.0	95.6			1.41
SM 5310 B-00	Organic Carbon	97.0	105				0.797

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1956903, 1956904, 1956905, 1956906
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1956903, 1956904, 1956905, 1956906
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1956903, 1956904, 1956905, 1956906
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1956907, 1956908, 1956909, 1956910
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1956907, 1956908, 1956909, 1956910
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1956907, 1956908, 1956909, 1956910
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1956907, 1956908, 1956909, 1956910
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1956911, 1956912, 1956913, 1956914
SM 2120 B / E31780	True Color measured at 450 nm	1956903, 1956904, 1956905, 1956906
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	1956903, 1956904, 1956905, 1956906
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1956903, 1956904, 1956905, 1956906
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1956903, 1956904, 1956905, 1956906
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1956903, 1956904, 1956905, 1956906
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1956907, 1956908, 1956909, 1956910

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	01/02/2018			01/03/2018 14:47	DeAsia Armster	1956903, 1956904, 1956905, 1956906
EPA 300.0 Rev. 2.1	01/02/2018			01/03/2018	Julia Storbeck	1956903, 1956904, 1956905, 1956906
EPA 350.1 Rev. 2.0	01/02/2018			01/04/2018	Sofia Elnemr	1956907, 1956908, 1956909, 1956910
EPA 351.2 Rev. 2.0	01/02/2018	01/05/2018	Adrian Shelby	01/08/2018	Joseph Suarez	1956907, 1956908, 1956909, 1956910
EPA 353.2 Rev. 2.0	01/02/2018			01/03/2018	Beverly Y. Sanders	1956907, 1956908, 1956909, 1956910
EPA 365.1 Rev. 2.0	01/02/2018	01/03/2018	Sima Feizi	01/04/2018	Lipi Saha	1956907, 1956908, 1956909
	01/02/2018	01/08/2018	Sima Feizi	01/10/2018	Lipi Saha	1956910
EPA 365.1 Rev. 2.0 dissolved	01/02/2018			01/03/2018 15:45	Megan Treadwell	1956911
	01/02/2018			01/03/2018 15:56	Megan Treadwell	1956912
	01/02/2018			01/03/2018 15:57	Megan Treadwell	1956913
	01/02/2018			01/03/2018 15:58	Megan Treadwell	1956914
SM 2120 B	01/02/2018			01/03/2018 14:26	Tanya Welborn	1956904
	01/02/2018			01/03/2018 14:27	Tanya Welborn	1956905
	01/02/2018			01/03/2018 14:28	Tanya Welborn	1956906
	01/02/2018			01/03/2018 15:11	Tanya Welborn	1956903
SM 2320 B-97	01/02/2018			01/11/2018	Dale L. Simmons	1956903, 1956904, 1956905, 1956906
SM 2540 C-97	01/02/2018			01/05/2018	Yijie Li	1956903, 1956904, 1956905, 1956906
SM 2540 D-97	01/02/2018			01/05/2018	Yijie Li	1956903, 1956904, 1956905, 1956906
SM 4500 F-C-97	01/02/2018			01/09/2018	Dale L. Simmons	1956903, 1956904, 1956905, 1956906
SM 5310 B-00	01/02/2018			01/03/2018	Megan Treadwell	1956907, 1956908, 1956909, 1956910