

Chemical Analysis Report

NE-DIST-2016-11-17-03

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

Event Description: **Nass Mid west**
Request ID: **RQ-2016-11-21-11**
Customer: **NE-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
8800 Baymeadows Way West
Jacksonville, FL 32256-7577
Attn: Jeremy Parrish

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

Date Certified: 13-DEC-2016 14:07

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: Field Blank

Collection Date/Time: 11/16/2016 10:40

Field ID: Field Blank

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1851194	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P315420	
	EPA 300.0 Rev. 2.1	Chloride	0.20	U	mg Cl/L	P316065	
		Sulfate	0.20	U	mg SO4/L	P316134	
	SM 2120 B	Color (true)	2.5	U	PCU	P315396	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P315674	
	SM 2540 C-97	TDS	15	U	mg/L	P316004	
	SM 2540 D-97	TSS	2	U	mg/L	P315756	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P315813	
1851197	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P315789	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P316071	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P315843	
	EPA 365.1 Rev. 2.0	Total-P	0.002	U	mg P/L	P315910	
	SM 5310 B-00	Organic Carbon	0.50	U	mg C/L	P315409	
1851200	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P315388	

Ref. Method and Comment:

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

SM 5310 B-00: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: Calkins @ Hamp Register

Collection Date/Time: 11/16/2016 10:45

Field ID: 19010042 11162016

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1851195	EPA 180.1 Rev. 2.0	Turbidity	1.2	A	NTU	P315421	
	EPA 300.0 Rev. 2.1	Chloride	8.2	A	mg Cl/L	P316064	
		Sulfate	1.3	A	mg SO4/L	P316067	
	SM 2120 B	Color (true)	44		PCU	P315396	
	SM 2320 B-97	Total Alkalinity	36		mg CaCO3/L	P315674	
	SM 2540 C-97	TDS	74		mg/L	P316004	
	SM 2540 D-97	TSS	2	U	mg/L	P315756	
	SM 4500 F-C-97	Fluoride	0.073	I	mg F/L	P315813	
1851198	EPA 350.1 Rev. 2.0	Ammonia-N	0.014		mg N/L	P315789	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.22		mg N/L	P316146	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.11		mg N/L	P315843	
	EPA 365.1 Rev. 2.0	Total-P	0.020		mg P/L	P315910	
	SM 5310 B-00	Organic Carbon	3.4		mg C/L	P315409	
1851201	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.008	I	mg P/L	P315388	

Ref. Method and Comment:

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

EPA 365.1 Rev. 2.0: Total-P: The result was confirmed on 12/01/2016.

SM 5310 B-00: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: Calkins @ Hamp Register dup

Collection Date/Time: 11/16/2016 10:55

Field ID: 19010042 11162016

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1851196	EPA 180.1 Rev. 2.0	Turbidity	1.2		NTU	P315421	

Field ID: 19010042 11162016

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1851196	EPA 300.0 Rev. 2.1	Chloride	8.2		mg Cl/L	P316064	
		Sulfate	1.3		mg SO4/L	P316067	
	SM 2120 B	Color (true)	44		PCU	P315396	
	SM 2320 B-97	Total Alkalinity	37	A	mg CaCO3/L	P315674	
	SM 2540 C-97	TDS	76		mg/L	P316004	
	SM 2540 D-97	TSS	2	U	mg/L	P315756	
	SM 4500 F-C-97	Fluoride	0.073	I	mg F/L	P315813	
1851199	EPA 350.1 Rev. 2.0	Ammonia-N	0.013		mg N/L	P315789	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.18	I	mg N/L	P316146	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.11		mg N/L	P315843	
	EPA 365.1 Rev. 2.0	Total-P	0.014		mg P/L	P315910	
	SM 5310 B-00	Organic Carbon	3.3		mg C/L	P315409	
1851202	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.008	I	mg P/L	P315388	

Ref. Method and Comment:

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

EPA 365.1 Rev. 2.0: Total-P: The result was confirmed on 12/01/2016.

SM 5310 B-00: 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: P315420

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P315421

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P316064

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P316065

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P316067

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P316134

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P315789

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P316071

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P316146

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P315843

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P315910

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P315388

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

Reference Method: SM 2120 B
Batch ID: P315396

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P315674

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

Quality Assurance Report Method Blank Results

Reference Method: SM 2540 C-97
Batch ID: P316004

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P315756

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P315813

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P315409

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: P316064

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P316065

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P316067

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	96.4		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P316134

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P315789

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: P315789

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P316071

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P316146

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P315843

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: P315910

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: P315388

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

Reference Method: SM 2320 B-97
Batch ID: P315674

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

Reference Method: SM 4500 F-C-97
Batch ID: P315813

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	96.4		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P315409

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	101		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P316064

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1851195	Chloride	101		P	90 - 110
1851196	Chloride	101		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P316065

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1849598	Chloride	100		P	90 - 110
1851137	Chloride	95.4		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P316067

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1851195	Sulfate	97.1		P	90 - 110
1851196	Sulfate	96.7		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P316134

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1854429	Sulfate	107		P	90 - 110
1854432	Sulfate	104		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P315789

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1851121	Ammonia-N	101	98.9	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P316071

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1851301	Kjeldahl Nitrogen	98.4	106	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P316146

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1850951	Kjeldahl Nitrogen	103	100	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P315843

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1851182	NO2NO3-N	106	105	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P315910

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P315910

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1851139	Total-P	93.2	93.4	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P315388

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1851141	O-Phosphate-P	99.7	101	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P315813

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1852076	Fluoride	98.8	99.5	P/P	91 - 105

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P315420

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1851131	Turbidity	0.259	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P315421

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1851195	Turbidity	5.08	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P316064

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1851195	Chloride	0.112	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P316065

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1849598	Chloride	0.0783	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P316067

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1851195	Sulfate	1.53	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P316134

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1854432	Sulfate	0.466	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P315789

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1851121	Ammonia-N	2.27	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P316071

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1851301	Kjeldahl Nitrogen	7.18	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P316146

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1850951	Kjeldahl Nitrogen	2.61	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P315843

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1851182	NO2NO3-N	0.475	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P315910

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1851139	Total-P	0.220	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P315388

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1851141	O-Phosphate-P	1.49	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P315396

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1851212	Color (true)	1.52	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: SM 2320 B-97
Batch ID: P315674

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1851196	Total Alkalinity	0.390	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
Batch ID: P316004

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1851136	TDS	1.09	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P315813

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1852076	Fluoride	0.490	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P315409

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1851176	Organic Carbon	0.0971	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: A72868
Included Lab Sample IDs: 1851200, 1851201, 1851202

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

Reference Method: SM 2120 B
Run ID: A72873
Included Lab Sample IDs: 1851194, 1851195, 1851196

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	101	102	P/P	85 - 115

Reference Method: SM 5310 B-00
Run ID: A72882
Included Lab Sample IDs: 1851197, 1851198, 1851199

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A72884

Included Lab Sample IDs: 1851194, 1851195, 1851196

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

Reference Method: SM 2320 B-97

Run ID: A72982

Included Lab Sample IDs: 1851194, 1851195, 1851196

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	101	103	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A73030

Included Lab Sample IDs: 1851197, 1851198, 1851199

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

Reference Method: SM 4500 F-C-97

Run ID: A73035

Included Lab Sample IDs: 1851194, 1851195, 1851196

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	98.0	98.5	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A73050

Included Lab Sample IDs: 1851197, 1851198, 1851199

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A73115

Included Lab Sample IDs: 1851197, 1851198, 1851199

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

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A73131

Included Lab Sample IDs: 1851194, 1851195, 1851196

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	100	101	P/P	90 - 110
Chloride	102	98.9	P/P	90 - 110
Sulfate	105	108	P/P	90 - 110
Sulfate	97.5	98.3	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A73185

Included Lab Sample IDs: 1851197

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A73212

Included Lab Sample IDs: 1851198, 1851199

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	99.1	99.8	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				0.259	
	Turbidity				5.08	
EPA 300.0 Rev. 2.1	Chloride	101	101 101		0.112	
	Chloride	101	100 95.4		0.0783	
	Sulfate	96.4	97.1 96.7		1.53	
	Sulfate	101	104 107		0.466	
EPA 350.1 Rev. 2.0	Ammonia-N	100	101 98.9			2.27
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	106	98.4 106			7.18
	Kjeldahl Nitrogen	104	103 100			2.61
EPA 353.2 Rev. 2.0	NO2NO3-N	104	106 105			0.475
EPA 365.1 Rev. 2.0	Total-P	101	93.2 93.4			0.220
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	102	99.7 101			1.49
SM 2120 B	Color (true)				1.52	
SM 2320 B-97	Total Alkalinity	102			0.390	
SM 2540 C-97	TDS				1.09	
SM 4500 F-C-97	Fluoride	96.4	98.8 99.5			0.490
SM 5310 B-00	Organic Carbon	101				0.0971

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1851194, 1851195, 1851196
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1851194, 1851195, 1851196
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1851194, 1851195, 1851196
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1851197, 1851198, 1851199
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1851197, 1851198, 1851199
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1851197, 1851198, 1851199

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	1851197, 1851198, 1851199
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1851200, 1851201, 1851202
SM 2120 B / E31780	True Color measured at 450 nm	1851194, 1851195, 1851196
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	1851194, 1851195, 1851196
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1851194, 1851195, 1851196
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1851194, 1851195, 1851196
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1851194, 1851195, 1851196
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1851197, 1851198, 1851199

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	11/17/2016			11/17/2016 16:41	Sima Feizi	1851194, 1851195, 1851196
EPA 300.0 Rev. 2.1	11/17/2016			12/01/2016	Ping Hua	1851195, 1851196
	11/17/2016			12/02/2016	Ping Hua	1851194
	11/17/2016			12/03/2016	Ping Hua	1851194
EPA 350.1 Rev. 2.0	11/17/2016			11/28/2016	Sofia Elnemr	1851197, 1851198, 1851199
EPA 351.2 Rev. 2.0	11/17/2016	12/02/2016	Martin Acosta	12/06/2016	Christopher Armour	1851197
	11/17/2016	12/05/2016	Martin Acosta	12/06/2016	Joseph Suarez	1851198, 1851199
EPA 353.2 Rev. 2.0	11/17/2016			11/29/2016	Beverly Y. Sanders	1851197, 1851198, 1851199
EPA 365.1 Rev. 2.0	11/17/2016	11/30/2016	Adrian Shelby	12/01/2016	Lipi Saha	1851197, 1851198, 1851199
EPA 365.1 Rev. 2.0 dissolved	11/17/2016			11/17/2016 15:17	Julia Storbeck	1851200
	11/17/2016			11/17/2016 15:18	Julia Storbeck	1851201, 1851202
SM 2120 B	11/17/2016			11/17/2016 16:22	Jared I. Manley	1851194, 1851195
	11/17/2016			11/17/2016 16:23	Jared I. Manley	1851196
SM 2320 B-97	11/17/2016			11/23/2016	Dale L. Simmons	1851194, 1851195, 1851196
SM 2540 C-97	11/17/2016			11/21/2016	Sima Feizi	1851194, 1851195, 1851196
SM 2540 D-97	11/17/2016			11/21/2016	Sima Feizi	1851194, 1851195, 1851196
SM 4500 F-C-97	11/17/2016			11/29/2016	Dale L. Simmons	1851194, 1851195, 1851196
SM 5310 B-00	11/17/2016			11/17/2016	Julie Michelle Frank	1851197, 1851198, 1851199