

Chemical Analysis Report

CEN-DIST-2016-12-09-01

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

Event Description: **Sand Creek/Unnd Drain (2673)**
Request ID: **RQ-2016-10-31-25**
Customer: **CEN-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
FL Dept. of Environmental Protection
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Date Certified: 05-JAN-2017 12:49



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 AT CR 415

Collection Date/Time: 12/08/2016 09:30

Field ID: 27010538

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1856780	EPA 180.1 Rev. 2.0	Turbidity	8.5	A	NTU	P316531	
	EPA 300.0 Rev. 2.1	Chloride	68		mg Cl/L	P317166	
		Sulfate	8.5		mg SO4/L	P317169	
	SM 2120 B	Color (true)	120		PCU	P316536	
	SM 2320 B-97	Total Alkalinity	59		mg CaCO3/L	P317055	
	SM 2540 C-97	TDS	215		mg/L	P316934	
	SM 2540 D-97	TSS	6	I	mg/L	P316925	
	SM 4500 F-C-97	Fluoride	0.10		mg F/L	P317058	
1856782	EPA 350.1 Rev. 2.0	Ammonia-N	0.044		mg N/L	P317076	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.86		mg N/L	P317016	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.006	I	mg N/L	P316946	
	EPA 365.1 Rev. 2.0	Total-P	0.048		mg P/L	P317419	
	SM 5310 B-00	Organic Carbon	19		mg C/L	P316768	
1856784	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.011		mg P/L	P316538	

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Sulfate: Batch matrix spike recoveries for one of two spiked samples are unavailable because of high analyte concentration in the QC sample.

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

Sample Location: UNNAMED DRAIN @ TAYLOR RD.

Collection Date/Time: 12/08/2016 09:56

Field ID: 27010216

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1856781	EPA 180.1 Rev. 2.0	Turbidity	6.4		NTU	P316531	
	EPA 300.0 Rev. 2.1	Chloride	66		mg Cl/L	P316979	
		Sulfate	5.3		mg SO4/L	P316976	
	SM 2120 B	Color (true)	40	A	PCU	P316536	
	SM 2320 B-97	Total Alkalinity	275		mg CaCO3/L	P317055	
	SM 2540 C-97	TDS	402	A	mg/L	P316934	
	SM 2540 D-97	TSS	8	I	mg/L	P316925	
	SM 4500 F-C-97	Fluoride	0.15		mg F/L	P317058	
1856783	EPA 350.1 Rev. 2.0	Ammonia-N	0.22		mg N/L	P317312	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.85		mg N/L	P317016	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.010		mg N/L	P316946	
	EPA 365.1 Rev. 2.0	Total-P	0.13		mg P/L	P317044	
	SM 5310 B-00	Organic Carbon	13		mg C/L	P316768	
1856785	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.042		mg P/L	P316538	

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P316531

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P316976

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P316979

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P317166

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P317169

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P317076

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P317312

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P317016

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P316946

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P317044

Component	Result	Code	Units
Total-P	0.005	U	mg P/L

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P317419

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P316538

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

Reference Method: SM 2120 B
Batch ID: P316536

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P317055

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

Reference Method: SM 2540 C-97
Batch ID: P316934

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P316925

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P317058

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P316768

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: P316976

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	91.2		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P316979

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P317166

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P317169

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	96.9		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P317076

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P317312

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P317016

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P316946

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: P317044

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	97.1		P	90 - 110

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P317419

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	93.7		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P316538

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

Reference Method: SM 2320 B-97
Batch ID: P317055

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	99.2		P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P317058

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	100		P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P316768

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	100		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P316976

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1856324	Sulfate	93.1		P	90 - 110
1856798	Sulfate	97.6		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P316979

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1856324	Chloride	98.9		P	90 - 110
1856798	Chloride	101		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P317166

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1855236	Chloride	96.5		P	90 - 110
1855237	Chloride	99.7		P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P317169

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1855237	Sulfate	97.7		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P317076

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1856746	Ammonia-N	95.9	97.2	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P317312

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1857712	Ammonia-N	102	97.8	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P317016

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1856766	Kjeldahl Nitrogen	104	103	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P316946

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1856782	NO2NO3-N	94.9	97.4	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P317044

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1856746	Total-P	95.6	96.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P317419

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1856832	Total-P	92.8	96.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P316538

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1856749	O-Phosphate-P	102	102	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P317058

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1857125	Fluoride	101	102	P/P	91 - 105

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SM 5310 B-00
Batch ID: P316768

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1856734	Organic Carbon	104		P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P316531

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1856780	Turbidity	2.24	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P316976

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1856798	Sulfate	1.18	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P316979

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1856798	Chloride	0.323	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P317166

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1855237	Chloride	0.0696	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P317169

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1855237	Sulfate	0.783	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P317076

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1856746	Ammonia-N	0.981	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P317312

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1857712	Ammonia-N	1.98	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P317016

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1856766	Kjeldahl Nitrogen	0.844	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P316946

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1856782	NO2NO3-N	2.52	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P317044

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1856746	Total-P	0.461	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P317419

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1856832	Total-P	3.42	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P316538

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1856749	O-Phosphate-P	0.0900	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P316536

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1856781	Color (true)	2.46	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P317055

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1857125	Total Alkalinity	0.337	Sample	P	0 - 4.8

Quality Assurance Report Precision

Reference Method: SM 2540 C-97
Batch ID: P316934

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1856781	TDS	2.24	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P317058

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1857125	Fluoride	0.470	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P316768

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1856734	Organic Carbon	0.0539	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 180.1 Rev. 2.0
Run ID: A73281
Included Lab Sample IDs: 1856780, 1856781

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	95.5	99.5	P/P	95 - 105

Reference Method: SM 2120 B
Run ID: A73282
Included Lab Sample IDs: 1856780, 1856781

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	99.7	102	P/P	85 - 115

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A73283
Included Lab Sample IDs: 1856784, 1856785

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	100	99.3	P/P	90 - 110

Reference Method: SM 5310 B-00
Run ID: A73366
Included Lab Sample IDs: 1856782, 1856783

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	96.8	97.2	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A73375

Included Lab Sample IDs: 1856781

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	103	104	P/P	90 - 110
Sulfate	98.7	100	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A73417

Included Lab Sample IDs: 1856782, 1856783

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	96.5	97.0	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A73482

Included Lab Sample IDs: 1856780, 1856781

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	98.9	97.7	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A73482

Included Lab Sample IDs: 1856780, 1856781

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	102	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A73487

Included Lab Sample IDs: 1856782, 1856783

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	98.4	98.1	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A73488

Included Lab Sample IDs: 1856782

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	100	96.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A73516

Included Lab Sample IDs: 1856783

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

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A73523

Included Lab Sample IDs: 1856780

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	102	101	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A73523

Included Lab Sample IDs: 1856780

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sulfate	97.5	99.2	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A73559

Included Lab Sample IDs: 1856783

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A73674

Included Lab Sample IDs: 1856782

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	96.2	97.0	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				2.24	
EPA 300.0 Rev. 2.1	Chloride	102	101 98.9		0.323	
	Chloride	99.8	99.7 96.5		0.0696	
	Sulfate	91.2	97.6 93.1		1.18	
	Sulfate	96.9	97.7		0.783	
EPA 350.1 Rev. 2.0	Ammonia-N	107	95.9 97.2			0.981
	Ammonia-N	104	102 97.8			1.98
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	102	104 103			0.844
EPA 353.2 Rev. 2.0	NO2NO3-N	102	94.9 97.4			2.52
EPA 365.1 Rev. 2.0	Total-P	97.1	95.6 96.0			0.461
	Total-P	93.7	92.8 96.0			3.42
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	104	102 102			0.0900
SM 2120 B	Color (true)				2.46	
SM 2320 B-97	Total Alkalinity	99.2			0.337	
SM 2540 C-97	TDS				2.24	
SM 4500 F-C-97	Fluoride	100	101 102			0.470
SM 5310 B-00	Organic Carbon	100	104			0.0539

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1856780, 1856781
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1856780, 1856781

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1856780, 1856781
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1856782, 1856783
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1856782, 1856783
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1856782, 1856783
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1856782, 1856783
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1856784, 1856785
SM 2120 B / E31780	True Color measured at 450 nm	1856780, 1856781
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	1856780, 1856781
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1856780, 1856781
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1856780, 1856781
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1856780, 1856781
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1856782, 1856783

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	12/09/2016			12/09/2016 13:30	Julie Michelle Frank	1856780, 1856781
EPA 300.0 Rev. 2.1	12/09/2016			12/17/2016	Ping Hua	1856781
	12/09/2016			12/20/2016	Ping Hua	1856780
EPA 350.1 Rev. 2.0	12/09/2016			12/19/2016	Sofia Elnemr	1856782
	12/09/2016			12/22/2016	Sofia Elnemr	1856783
EPA 351.2 Rev. 2.0	12/09/2016	12/19/2016	Adrian Shelby	12/20/2016	Joseph Suarez	1856782, 1856783
EPA 353.2 Rev. 2.0	12/09/2016			12/15/2016	Beverly Y. Sanders	1856782, 1856783
EPA 365.1 Rev. 2.0	12/09/2016	12/20/2016	Vijayalakshmi Reddy	12/21/2016	Lipi Saha	1856783
	12/09/2016	12/27/2016	Vijayalakshmi Reddy	12/30/2016	Lipi Saha	1856782
EPA 365.1 Rev. 2.0 dissolved	12/09/2016			12/09/2016 16:34	Julia Storbeck	1856784
	12/09/2016			12/09/2016 16:35	Julia Storbeck	1856785
SM 2120 B	12/09/2016			12/09/2016 15:43	Jared I. Manley	1856781
	12/09/2016			12/09/2016 15:45	Jared I. Manley	1856780
SM 2320 B-97	12/09/2016			12/16/2016	Dale L. Simmons	1856780, 1856781
SM 2540 C-97	12/09/2016			12/13/2016	Yijie Li	1856780, 1856781
SM 2540 D-97	12/09/2016			12/13/2016	Yijie Li	1856780, 1856781
SM 4500 F-C-97	12/09/2016			12/16/2016	Dale L. Simmons	1856780, 1856781
SM 5310 B-00	12/09/2016			12/13/2016	Julie Michelle Frank	1856782, 1856783