

Chemical Analysis Report

SO-DIST-2017-03-01-01

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

Event Description: **SMP: L-28 Tieback, C-139s, Drain of Corkscrew**
Request ID: **RQ-2017-02-27-32**
Customer: **SO-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
FLDEP South District Office
2295 Victoria Ave. Suite 364
Fort Myers, FL 33901
Attn: Ben Paswater

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Certified by: Thekkekalathil Chandrasekhar, Chemist Administrator Date Certified: 27-MAR-2017 11:01



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: L-28 Tieback @ I-75

Collection Date/Time: 02/28/2017 09:30

Field ID: EVRGWC0113FTM

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1876237	EPA 180.1 Rev. 2.0	Turbidity	6.7		NTU	P320745	
	EPA 300.0 Rev. 2.1	Chloride	26		mg Cl/L	P321453	
		Sulfate	6.6		mg SO4/L	P321622	
	SM 2120 B	Color (true)	35		PCU	P320754	
	SM 2320 B-97	Total Alkalinity	208		mg CaCO3/L	P321208	
	SM 2540 C-97	TDS	286		mg/L	P321279	
	SM 2540 D-97	TSS	8	I	mg/L	P321216	
	SM 4500 F-C-97	Fluoride	0.24		mg F/L	P321043	
1876242	EPA 350.1 Rev. 2.0	Ammonia-N	0.007		mg N/L	P321048	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.3		mg N/L	P320814	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P320989	
	EPA 365.1 Rev. 2.0	Total-P	0.046		mg P/L	P320808	
	SM 5310 B-00	Organic Carbon	15		mg C/L	P320899	
1876247	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P320761	

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: L-28 Tieback @ I-75

Collection Date/Time: 02/28/2017 09:35

Field ID: EVRGWC0113FTM-D

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1876238	EPA 180.1 Rev. 2.0	Turbidity	7.5		NTU	P320745	
	EPA 300.0 Rev. 2.1	Chloride	26		mg Cl/L	P321453	
		Sulfate	6.7		mg SO4/L	P321622	
	SM 2120 B	Color (true)	36		PCU	P320754	
	SM 2320 B-97	Total Alkalinity	210		mg CaCO3/L	P321208	
	SM 2540 C-97	TDS	296		mg/L	P321279	
	SM 2540 D-97	TSS	9	I	mg/L	P321216	
	SM 4500 F-C-97	Fluoride	0.25		mg F/L	P321043	
1876243	EPA 350.1 Rev. 2.0	Ammonia-N	0.007		mg N/L	P321048	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.3		mg N/L	P320814	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P320989	
	EPA 365.1 Rev. 2.0	Total-P	0.046		mg P/L	P320808	
	SM 5310 B-00	Organic Carbon	16		mg C/L	P320899	
1876248	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P320761	

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: C-139 Annex @ Half Bridge Rd

Collection Date/Time: 02/28/2017 10:10

Field ID: G1SD0049

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1876239	EPA 180.1 Rev. 2.0	Turbidity	1.4		NTU	P320745	
	EPA 300.0 Rev. 2.1	Chloride	74		mg Cl/L	P321453	
		Sulfate	27		mg SO4/L	P321622	

Field ID: G1SD0049

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1876239	SM 2120 B	Color (true)	61		PCU	P320754	
	SM 2320 B-97	Total Alkalinity	202		mg CaCO3/L	P321208	
	SM 2540 C-97	TDS	394		mg/L	P321279	
	SM 2540 D-97	TSS	3	I	mg/L	P321216	
	SM 4500 F-C-97	Fluoride	0.34		mg F/L	P321043	
1876244	EPA 350.1 Rev. 2.0	Ammonia-N	0.024		mg N/L	P321048	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.4		mg N/L	P320814	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.059		mg N/L	P320989	
	EPA 365.1 Rev. 2.0	Total-P	0.016		mg P/L	P320808	
	SM 5310 B-00	Organic Carbon	22		mg C/L	P320899	
1876249	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P320761	

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: C-139 - SE

Collection Date/Time: 02/28/2017 10:50

Field ID: G1SD0056

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1876240	EPA 180.1 Rev. 2.0	Turbidity	4.8		NTU	P320745	
	EPA 300.0 Rev. 2.1	Chloride	37		mg Cl/L	P321453	
		Sulfate	13		mg SO4/L	P321622	
		Color (true)	81		PCU	P320754	
	SM 2320 B-97	Total Alkalinity	233		mg CaCO3/L	P321208	
	SM 2540 C-97	TDS	323		mg/L	P321279	
	SM 2540 D-97	TSS	8	I	mg/L	P321216	
	SM 4500 F-C-97	Fluoride	0.28		mg F/L	P321043	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.14		mg N/L	P321048	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.5		mg N/L	P320814	
1876245	EPA 353.2 Rev. 2.0	NO2NO3-N	0.11		mg N/L	P320989	
	EPA 365.1 Rev. 2.0	Total-P	0.14		mg P/L	P320808	
	SM 5310 B-00	Organic Carbon	20		mg C/L	P320899	
	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.047		mg P/L	P320761	

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: Drainage Ditch @ CR 850

Collection Date/Time: 02/28/2017 12:00

Field ID: EVRGWC0104FTM

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1876241	EPA 180.1 Rev. 2.0	Turbidity	4.4		NTU	P320745	
	EPA 300.0 Rev. 2.1	Chloride	33		mg Cl/L	P321453	
		Sulfate	70		mg SO4/L	P321622	
	SM 2120 B	Color (true)	34		PCU	P320754	
	SM 2320 B-97	Total Alkalinity	202		mg CaCO3/L	P321208	
	SM 2540 C-97	TDS	388	A	mg/L	P321279	
	SM 2540 D-97	TSS	9	I	mg/L	P321216	

Field ID: EVRGWC0104FTM

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1876241	SM 4500 F-C-97	Fluoride	0.077	I	mg F/L	P321043	
1876246	EPA 350.1 Rev. 2.0	Ammonia-N	0.016		mg N/L	P321048	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.75		mg N/L	P320814	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.011		mg N/L	P320989	
	EPA 365.1 Rev. 2.0	Total-P	0.18		mg P/L	P320917	
	SM 5310 B-00	Organic Carbon	12		mg C/L	P320899	
1876251	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.060		mg P/L	P320761	

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: P320745

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P321453

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P321622

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P321048

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P320814

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P320989

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P320808

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P320917

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P320761

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

Reference Method: SM 2120 B
Batch ID: P320754

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P321208

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

Reference Method: SM 2540 C-97
Batch ID: P321279

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P321216

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P321043

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P320899

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: P321453

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P321453

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P321622

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P321048

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P320814

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: P320989

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P320808

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	92.5		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P320917

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P320761

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	99.5		P	90 - 110

Reference Method: SM 2320 B-97
Batch ID: P321208

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 4500 F-C-97
Batch ID: P321043

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.3		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P320899

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: P321453

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1876208	Chloride	93.6		P	90 - 110
1876213	Chloride	94.1		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P321622

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1876211	Sulfate	100		P	90 - 110
1876300	Sulfate	100		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P321048

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1876218	Ammonia-N	94.2	97.7	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P320814

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1876305	Kjeldahl Nitrogen	103	99.8	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P320989

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1876221	NO2NO3-N	106	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P320808

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1876242	Total-P	98.6	96.0	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P320917

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1876175	Total-P	104	98.2	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P320761

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1876227	O-Phosphate-P	98.0	99.5	P/P	90 - 110

Reference Method: SM 4500 F-C-97
 Batch ID: P321043

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1876211	Fluoride	104	105	P/P	91 - 105

Reference Method: SM 5310 B-00
 Batch ID: P320899

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1876173	Organic Carbon	98.6	99.8	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
 Batch ID: P320745

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1876214	Turbidity	9.94	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P321453

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1876213	Chloride	0.000880	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P321622

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1876211	Sulfate	0.0989	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P321048

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1876218	Ammonia-N	3.31	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P320814

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1876305	Kjeldahl Nitrogen	3.15	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P320989

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1876221	NO2NO3-N	1.75	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P320808

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1876242	Total-P	2.50	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P320917

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1876175	Total-P	5.05	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P320761

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1876227	O-Phosphate-P	1.52	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P320754

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1876171	Color (true)	3.03	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P321208

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1876212	Total Alkalinity	1.49	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
Batch ID: P321279

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1876241	TDS	4.64	Sample	P	0 - 10

Quality Assurance Report Precision

Reference Method: SM 4500 F-C-97
Batch ID: P321043

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1876211	Fluoride	0.503	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P320899

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1876173	Organic Carbon	1.11	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: A74813
Included Lab Sample IDs: 1876237, 1876238, 1876239, 1876240, 1876241

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

Reference Method: SM 2120 B
Run ID: A74814
Included Lab Sample IDs: 1876237, 1876238, 1876239, 1876240, 1876241

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	94.9	94.5	P/P	85 - 115

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A74815
Included Lab Sample IDs: 1876247, 1876248, 1876249, 1876250, 1876251

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

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A74853
Included Lab Sample IDs: 1876245

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	97.6	101	P/P	90 - 110

Reference Method: SM 5310 B-00
Run ID: A74870
Included Lab Sample IDs: 1876242, 1876243, 1876244, 1876245, 1876246

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A74877

Included Lab Sample IDs: 1876242, 1876243, 1876244

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.2	99.0	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A74890

Included Lab Sample IDs: 1876242, 1876243, 1876244, 1876245, 1876246

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	96.9	97.4	P/P	90 - 110
Kjeldahl Nitrogen	97.4	99.7	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A74901

Included Lab Sample IDs: 1876242, 1876243, 1876244, 1876245, 1876246

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A74902

Included Lab Sample IDs: 1876246

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.7	101	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A74917

Included Lab Sample IDs: 1876237, 1876238, 1876239, 1876240, 1876241

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	101	99.5	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A74921

Included Lab Sample IDs: 1876242, 1876243, 1876244, 1876245, 1876246

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	97.3	97.9	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A74976

Included Lab Sample IDs: 1876237, 1876238, 1876239, 1876240, 1876241

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

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A74977

Included Lab Sample IDs: 1876237, 1876238, 1876239, 1876240, 1876241

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	92.9	93.9	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A75123

Included Lab Sample IDs: 1876237, 1876238, 1876239, 1876240, 1876241

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sulfate	102	101	P/P	90 - 110
Sulfate	99.8	102	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				9.94	
EPA 300.0 Rev. 2.1	Chloride	93.7	94.1 93.6		0.0008	
	Sulfate	101	100 100		0.0989	
EPA 350.1 Rev. 2.0	Ammonia-N	101	94.2 97.7			3.31
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	104	103 99.8			3.15
EPA 353.2 Rev. 2.0	NO2NO3-N	106	106 104			1.75
EPA 365.1 Rev. 2.0	Total-P	92.5	98.6 96.0			2.50
	Total-P	104	104 98.2			5.05
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	99.5	98.0 99.5			1.52
SM 2120 B	Color (true)				3.03	
SM 2320 B-97	Total Alkalinity	104			1.49	
SM 2540 C-97	TDS				4.64	
SM 4500 F-C-97	Fluoride	97.3	104 105			0.503
SM 5310 B-00	Organic Carbon	100	98.6 99.8			1.11

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1876237, 1876238, 1876239, 1876240, 1876241
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1876237, 1876238, 1876239, 1876240, 1876241
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1876237, 1876238, 1876239, 1876240, 1876241
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1876242, 1876243, 1876244, 1876245, 1876246
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1876242, 1876243, 1876244, 1876245, 1876246
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1876242, 1876243, 1876244, 1876245, 1876246
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1876242, 1876243, 1876244, 1876245, 1876246
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1876247, 1876248, 1876249, 1876250, 1876251
SM 2120 B / E31780	True Color measured at 450 nm	1876237, 1876238, 1876239, 1876240, 1876241
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	1876237, 1876238, 1876239, 1876240, 1876241
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1876237, 1876238, 1876239, 1876240, 1876241

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1876237, 1876238, 1876239, 1876240, 1876241
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1876237, 1876238, 1876239, 1876240, 1876241
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1876242, 1876243, 1876244, 1876245, 1876246

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	03/01/2017			03/01/2017 15:14	Sima Feizi	1876237, 1876238, 1876239, 1876240, 1876241
EPA 300.0 Rev. 2.1	03/01/2017			03/11/2017	Elisa J Lutz	1876237, 1876238, 1876239, 1876240, 1876241
	03/01/2017			03/15/2017	Elisa J Lutz	1876237, 1876238, 1876239, 1876240, 1876241
EPA 350.1 Rev. 2.0	03/01/2017			03/06/2017	Sofia Elnemr	1876242, 1876243, 1876244, 1876245, 1876246
EPA 351.2 Rev. 2.0	03/01/2017	03/02/2017	Adrian Shelby	03/03/2017	Joseph Suarez	1876242, 1876243, 1876244, 1876245, 1876246
EPA 353.2 Rev. 2.0	03/01/2017			03/06/2017	Beverly Y. Sanders	1876242, 1876243, 1876244, 1876245, 1876246
EPA 365.1 Rev. 2.0	03/01/2017	03/02/2017	Adrian Shelby	03/02/2017	Lipi Saha	1876245
	03/01/2017	03/02/2017	Adrian Shelby	03/03/2017	Lipi Saha	1876242, 1876243, 1876244
	03/01/2017	03/03/2017	Vijayalakshmi Reddy	03/06/2017	Lipi Saha	1876246
EPA 365.1 Rev. 2.0 dissolved	03/01/2017			03/01/2017 14:48	Julia Storbeck	1876247
	03/01/2017			03/01/2017 14:49	Julia Storbeck	1876248
	03/01/2017			03/01/2017 15:10	Julia Storbeck	1876249
	03/01/2017			03/01/2017 15:11	Julia Storbeck	1876250
	03/01/2017			03/01/2017 15:12	Julia Storbeck	1876251
SM 2120 B	03/01/2017			03/01/2017 16:17	Julie Michelle Frank	1876237
	03/01/2017			03/01/2017 16:18	Julie Michelle Frank	1876238, 1876239
	03/01/2017			03/01/2017 16:19	Julie Michelle Frank	1876240
	03/01/2017			03/01/2017 16:20	Julie Michelle Frank	1876241
SM 2320 B-97	03/01/2017			03/09/2017	Dale L. Simmons	1876237, 1876238, 1876239, 1876240, 1876241
SM 2540 C-97	03/01/2017			03/03/2017	Yijie Li	1876237, 1876238, 1876239, 1876240, 1876241
SM 2540 D-97	03/01/2017			03/03/2017	Yijie Li	1876237, 1876238, 1876239, 1876240, 1876241
SM 4500 F-C-97	03/01/2017			03/04/2017	Dale L. Simmons	1876237, 1876238, 1876239, 1876240, 1876241
SM 5310 B-00	03/01/2017			03/02/2017	Julie Michelle Frank	1876242, 1876243, 1876244, 1876245, 1876246