

Chemical Analysis Report

CEN-DIST-2016-04-08-02

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

Event Description: **Hart Branch/+1 +D&B**

Request ID: **RQ-2016-04-11-44**

Customer: **CEN-DIST**

Project ID: **SMP**

Send Reports to:

FL Dept. of Environmental Protection
FL Dept. of Environmental Protection
3319 Maguire Blvd., Suite 232
Orlando, FL 32803-3767
Attn: Mike Linger

For additional information please contact

Timothy W. Fitzpatrick
Liang-Tsair Lin, Ph.D.
Colin Wright, Ph.D.
Thekkekalathil Chandrasekhar, PhD, QA Officer
Phone (850) 245-8085

Certified by: Thekkekalathil Chandrasekhar, Chemist Administrator

Date Certified: 06-MAY-2016 11:11



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: Hart Branch @ Moss Park Rd.

Collection Date/Time: 04/07/2016 09:50

Field ID: G4CE0109

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1788063	EPA 180.1 Rev. 2.0	Turbidity	1.8	A	NTU	P301925	
	EPA 300.0 Rev. 2.1	Chloride	17		mg Cl/L	P302307	
		Sulfate	1.2		mg SO4/L	P302313	
	SM 2120 B	Color (true)	350		PCU	P301902	
	SM 2320 B-97	Total Alkalinity	14		mg CaCO3/L	P302373	
	SM 2540 C-97	TDS	109		mg/L	P302491	
	SM 2540 D-97	TSS	3	I	mg/L	P302441	
	SM 4500 F-C-97	Fluoride	0.077	I	mg F/L	P302376	
1788066	EPA 350.1 Rev. 2.0	Ammonia-N	0.022		mg N/L	P302561	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.1		mg N/L	P302932	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.009	I	mg N/L	P302263	
	EPA 365.1 Rev. 2.0	Total-P	0.064		mg P/L	P302478	
	SM 5310 B-00	Organic Carbon	34		mg C/L	P302367	
1788069	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.040		mg P/L	P301921	

Ref. Method and Comment:

EPA 180.1 Rev. 2.0: The sample was reanalyzed on 05/04/2016. The result was 1.1 Q NTU.

EPA 351.2 Rev. 2.0: Matrix spike recovery data is unavailable due to high analyte concentration in the QC sample.

EPA 365.1 Rev. 2.0: Total-P: Matrix spike recovery data is unavailable due to high analyte concentration in the QC sample.

Sample Location: Hart Branch @ Moss Park Rd.

Collection Date/Time: 04/07/2016 09:40

Field ID: G4CE0109D

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1788064	EPA 180.1 Rev. 2.0	Turbidity	1.4		NTU	P301925	
	EPA 300.0 Rev. 2.1	Chloride	17		mg Cl/L	P302307	
		Sulfate	1.0		mg SO4/L	P302313	
	SM 2120 B	Color (true)	360		PCU	P301902	
	SM 2320 B-97	Total Alkalinity	14		mg CaCO3/L	P302373	
	SM 2540 C-97	TDS	102		mg/L	P302491	
	SM 2540 D-97	TSS	4	I	mg/L	P302441	
	SM 4500 F-C-97	Fluoride	0.076	I	mg F/L	P302376	
1788067	EPA 350.1 Rev. 2.0	Ammonia-N	0.023		mg N/L	P302561	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.2		mg N/L	P302932	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.008	I	mg N/L	P302263	
	EPA 365.1 Rev. 2.0	Total-P	0.064		mg P/L	P302478	
	SM 5310 B-00	Organic Carbon	34		mg C/L	P302367	
1788070	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.045		mg P/L	P301921	

Ref. Method and Comment:

EPA 180.1 Rev. 2.0: The sample was reanalyzed on 05/04/2016. The result was 1.3 Q NTU.

EPA 351.2 Rev. 2.0: Matrix spike recovery data is unavailable due to high analyte concentration in the QC sample.

EPA 365.1 Rev. 2.0: Total-P: Matrix spike recovery data is unavailable due to high analyte concentration in the QC sample.

Sample Location: Hart Branch @ Moss Park Rd.

Collection Date/Time: 04/07/2016 10:00

Field ID: BLANK

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
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Field ID: BLANK

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1788065	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P301925	
	EPA 300.0 Rev. 2.1	Chloride	0.20	U	mg Cl/L	P302307	
		Sulfate	0.20	U	mg SO4/L	P302313	
	SM 2120 B	Color (true)	2.5	U	PCU	P301902	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P302373	
	SM 2540 C-97	TDS	15	U	mg/L	P302490	
	SM 2540 D-97	TSS	2	U	mg/L	P302440	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P302376	
1788068	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P302656	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P303325	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P302263	
	EPA 365.1 Rev. 2.0	Total-P	0.002	U	mg P/L	P302923	
	SM 5310 B-00	Organic Carbon	0.50	U	mg C/L	P302367	
1788071	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P301921	

Ref. Method and Comment:
 SM 2540 D-97: The precision data is unavailable due to the low analyte concentration in the QC sample.

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
 Batch ID: P301925

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P302307

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P302313

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P302561

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

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P302656

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P302932

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P303325

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P302263

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P302478

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P302923

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P301921

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

Reference Method: SM 2120 B
Batch ID: P301902

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P302373

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

Reference Method: SM 2540 C-97
Batch ID: P302490

Component	Result	Code	Units
TDS	15	U	mg/L

Quality Assurance Report Method Blank Results

Reference Method: SM 2540 C-97
 Batch ID: P302491

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
 Batch ID: P302440

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
 Batch ID: P302441

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
 Batch ID: P302376

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
 Batch ID: P302367

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: P302307

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	99.9		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P302313

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	97.8		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P302561

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

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P302656

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: P302656

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: P302932

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P303325

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	99.1		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P302263

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO ₂ NO ₃ -N	100		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P302478

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P302923

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	95.0		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P301921

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

Reference Method: SM 2320 B-97
Batch ID: P302373

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	102		P	95 - 105

Reference Method: SM 4500 F-C-97
Batch ID: P302376

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.7		P	92 - 103

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 5310 B-00
Batch ID: P302367

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	98.4		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P302307

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1788010	Chloride	102		P	90 - 110
1788063	Chloride	101		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P302313

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1788010	Sulfate	97.4		P	90 - 110
1788063	Sulfate	101		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P302561

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1788023	Ammonia-N	101	104	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P302656

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1788012	Ammonia-N	102	104	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P303325

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1789634	Kjeldahl Nitrogen	98.4	104	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P302263

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1788025	NO2NO3-N	98.4	98.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P302923

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1789248	Total-P	97.4	95.2	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P301921

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1788015	O-Phosphate-P	98.1	98.0	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P302376

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1788281	Fluoride	97.2	97.8	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P302367

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1788066	Organic Carbon	103		P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P301925

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1788063	Turbidity	3.39	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P302307

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1788010	Chloride	0.101	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P302313

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1788010	Sulfate	6.92	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P302561

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1788023	Ammonia-N	1.77	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P302656

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1788012	Ammonia-N	0.937	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P302932

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1788067	Kjeldahl Nitrogen	7.80	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P303325

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1789634	Kjeldahl Nitrogen	3.15	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P302263

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1788025	NO2NO3-N	0.475	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P302478

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1788023	Total-P	1.81	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P302923

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1789248	Total-P	2.02	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P301921

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1788015	O-Phosphate-P	0.0702	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P301902

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1788022	Color (true)	1.09	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P302373

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1788281	Total Alkalinity	0.274	Sample	P	0 - 4.8

Quality Assurance Report Precision

Reference Method: SM 2540 C-97
Batch ID: P302490

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1788022	TDS	3.83	Sample	P	0 - 10

Reference Method: SM 2540 C-97
Batch ID: P302491

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1788076	TDS	3.00	Sample	P	0 - 10

Reference Method: SM 2540 D-97
Batch ID: P302441

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1788076	TSS	6.19	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P302376

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1788281	Fluoride	0.495	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P302367

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1788066	Organic Carbon	0.659	Spike	P	0 - 20

* Sample, spike and/or laboratory control sample precision (LCS) is reported.
Replicate spike precision may be reported when sample results are below quantifiable levels.

Quality Assurance Report Calibration Verification

Reference Method: SM 2120 B
Run ID: A68758
Included Lab Sample IDs: 1788063, 1788064, 1788065

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	100	99.9	P/P	90 - 115
Color (true)	101	98.6	P/P	90 - 115

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A68764
Included Lab Sample IDs: 1788069, 1788070, 1788071

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A68766

Included Lab Sample IDs: 1788063, 1788064, 1788065

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

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A68804

Included Lab Sample IDs: 1788063, 1788064, 1788065

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	100	101	P/P	90 - 110
Chloride	101	100	P/P	90 - 110
Sulfate	98.5	100	P/P	90 - 110
Sulfate	98.9	94.1	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A68882

Included Lab Sample IDs: 1788066, 1788067, 1788068

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	99.5	99.0	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A68909

Included Lab Sample IDs: 1788066, 1788067, 1788068

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	96.7	96.6	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A68910

Included Lab Sample IDs: 1788063, 1788064, 1788065

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	102	99.7	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A68910

Included Lab Sample IDs: 1788063, 1788064, 1788065

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A68974

Included Lab Sample IDs: 1788066, 1788067

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A69001

Included Lab Sample IDs: 1788068

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A69016

Included Lab Sample IDs: 1788066, 1788067

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A69128

Included Lab Sample IDs: 1788066, 1788067

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	103	108	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A69131

Included Lab Sample IDs: 1788068

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	97.8	98.5	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A69236

Included Lab Sample IDs: 1788068

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	104	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				3.39	
EPA 300.0 Rev. 2.1	Chloride	99.9	102 101		0.101	
	Sulfate	97.8	101 97.4		6.92	
EPA 350.1 Rev. 2.0	Ammonia-N	100	101 104			1.77
	Ammonia-N	100	102 104			0.937
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	105				7.80
	Kjeldahl Nitrogen	99.1	98.4 104			3.15
EPA 353.2 Rev. 2.0	NO2NO3-N	100	98.4 98.8			0.475
EPA 365.1 Rev. 2.0	Total-P	97.4				1.81
	Total-P	95.0	97.4 95.2			2.02

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	MS
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	99.8	98.1	98.0		0.0702
SM 2120 B	Color (true)				1.09	
SM 2320 B-97	Total Alkalinity	102			0.274	
SM 2540 C-97	TDS				3.83	
	TDS				3.00	
SM 2540 D-97	TSS				6.19	
SM 4500 F-C-97	Fluoride	98.7	97.2	97.8		0.495
SM 5310 B-00	Organic Carbon	98.4	103			0.659

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1788063, 1788064, 1788065
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1788063, 1788064, 1788065
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1788063, 1788064, 1788065
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1788066, 1788067, 1788068
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1788066, 1788067, 1788068
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1788066, 1788067, 1788068
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1788066, 1788067, 1788068
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1788069, 1788070, 1788071
SM 2120 B / E31780	True Color measured at 450 nm	1788063, 1788064, 1788065
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	1788063, 1788064, 1788065
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1788063, 1788064, 1788065
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1788063, 1788064, 1788065
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1788063, 1788064, 1788065
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1788066, 1788067, 1788068

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	04/08/2016			04/08/2016 13:26	Sima Feizi	1788063, 1788064, 1788065
EPA 300.0 Rev. 2.1	04/08/2016			04/13/2016	Ping Hua	1788063, 1788064, 1788065
EPA 350.1 Rev. 2.0	04/08/2016			04/19/2016	Diana M. Turner	1788066, 1788067
	04/08/2016			04/20/2016	Diana M. Turner	1788068
EPA 351.2 Rev. 2.0	04/08/2016	04/26/2016	Sofia Elnemr	04/27/2016	Rochelle Y Jackson	1788066, 1788067
	04/08/2016	05/02/2016	Sofia Elnemr	05/03/2016	Christopher Armour	1788068
EPA 353.2 Rev. 2.0	04/08/2016			04/14/2016	Peter D. Kaus	1788066, 1788067, 1788068
EPA 365.1 Rev. 2.0	04/08/2016	04/19/2016	Lipi Saha	04/20/2016	Lipi Saha	1788066, 1788067
	04/08/2016	04/26/2016	Christopher Armour	04/27/2016	Lipi Saha	1788068
EPA 365.1 Rev. 2.0 dissolved	04/08/2016			04/08/2016 15:09	Ping Hua	1788069
	04/08/2016			04/08/2016 15:10	Ping Hua	1788070
	04/08/2016			04/08/2016 15:11	Ping Hua	1788071
SM 2120 B	04/08/2016			04/08/2016 13:33	Rochelle Y Jackson	1788065
	04/08/2016			04/08/2016 13:56	Rochelle Y Jackson	1788063
	04/08/2016			04/08/2016 13:57	Rochelle Y Jackson	1788064
SM 2320 B-97	04/08/2016			04/15/2016	Dale L. Simmons	1788063, 1788064, 1788065
SM 2540 C-97	04/08/2016			04/13/2016	Yijie Li	1788063, 1788064, 1788065
SM 2540 D-97	04/08/2016			04/13/2016	Yijie Li	1788063, 1788064, 1788065
SM 4500 F-C-97	04/08/2016			04/15/2016	Dale L. Simmons	1788063, 1788064, 1788065
SM 5310 B-00	04/08/2016			04/14/2016	Sofia Elnemr	1788066, 1788067, 1788068