

Chemical Analysis Report

CEN-DIST-2019-04-11-02

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

Event Description: **Hidden / Deaton / Okahumpka + D&B**
Request ID: **RQ-2019-04-15-33**
Customer: **CEN-DIST**
Project ID: **SMP**

Send Reports to:
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Date Certified: 03-MAY-2019 18:53



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: $1.3\text{E}+03$, 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 by the Florida Department of Health Environmental Laboratory Certification Program 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: Lake Deaton @ Center

Collection Date/Time: 04/10/2019 11:55

Field ID: G4CE0160

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2077663	EPA 180.1 Rev. 2.0	Turbidity	1.9		NTU	P362005	
	EPA 300.0 Rev. 2.1	Chloride	33		mg Cl/L	P362299	
		Sulfate	2.8		mg SO4/L	P362302	
	SM 2120 B	Color (true)	42	A	PCU	P362032	
	SM 2320 B-97	Total Alkalinity	30	A	mg CaCO3/L	P362572	
	SM 2540 C-97	TDS	126		mg/L	P362631	
	SM 2540 D-97	TSS	3	I	mg/L	P362206	
	SM 4500 F-C-97	Fluoride	0.14		mg F/L	P362577	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.006		mg N/L	P362563	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.99		mg N/L	P362481	
2077665	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P362494	
	EPA 365.1 Rev. 2.0	Total-P	0.013		mg P/L	P362390	
	SM 5310 B-00	Organic Carbon	19		mg C/L	P362314	
	EPA 365.1 Rev. 2.0	O-Phosphate-P	0.004	U	mg P/L	P362019	
	dissolved						

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: Hidden Lake @ Center

Collection Date/Time: 04/10/2019 12:41

Field ID: G4CE0158

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2077664	EPA 180.1 Rev. 2.0	Turbidity	70		NTU	P362005	
	EPA 300.0 Rev. 2.1	Chloride	22		mg Cl/L	P362299	
		Sulfate	2.2		mg SO4/L	P362302	
		Color (true)	48		PCU	P362033	
	SM 2320 B-97	Total Alkalinity	99		mg CaCO3/L	P362572	
	SM 2540 C-97	TDS	218		mg/L	P362631	
	SM 2540 D-97	TSS	32		mg/L	P362206	
	SM 4500 F-C-97	Fluoride	0.15		mg F/L	P362577	
2077666	EPA 350.1 Rev. 2.0	Ammonia-N	0.021		mg N/L	P362563	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	6.4		mg N/L	P362481	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P362494	
	EPA 365.1 Rev. 2.0	Total-P	0.13		mg P/L	P362390	
	SM 5310 B-00	Organic Carbon	30		mg C/L	P362314	
2077668	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P362019	

Ref. Method and Comment:

SM 2120 B: Sample visibly different compared to the field duplicate. Contains large amount of particles.

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample. Sample visibly different compared to the field duplicate. Contains large amount of particles.

Sample Location: Hidden Lake @ Center

Collection Date/Time: 04/10/2019 12:45

Field ID: G4CE0158_DUP

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2077669	EPA 180.1 Rev. 2.0	Turbidity	80		NTU	P362005	
	EPA 300.0 Rev. 2.1	Chloride	22		mg Cl/L	P362299	
		Sulfate	2.2		mg SO4/L	P362302	
	SM 2120 B	Color (true)	65		PCU	P362033	
	SM 2320 B-97	Total Alkalinity	100		mg CaCO3/L	P362572	
	SM 2540 C-97	TDS	211		mg/L	P362631	
	SM 2540 D-97	TSS	41		mg/L	P362206	
	SM 4500 F-C-97	Fluoride	0.15		mg F/L	P362577	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.022		mg N/L	P362563	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	6.4		mg N/L	P362481	
2077671	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P362494	
	EPA 365.1 Rev. 2.0	Total-P	0.14		mg P/L	P362390	
	SM 5310 B-00	Organic Carbon	30		mg C/L	P362314	
	EPA 365.1 Rev. 2.0	O-Phosphate-P	0.004	U	mg P/L	P362019	
	dissolved						

Ref. Method and Comment:

SM 2120 B: Sample visibly different compared to the field duplicate. Contains large amount of particles.

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample. Sample visibly different compared to the field duplicate. Contains large amount of particles.

Sample Location: Field Blank

Collection Date/Time: 04/10/2019 12:35

Field ID: FB_04102019

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2077670	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P362005	
	EPA 300.0 Rev. 2.1	Chloride	0.20	U	mg Cl/L	P362299	
		Sulfate	0.20	U	mg SO4/L	P362302	
	SM 2120 B	Color (true)	2.5	U	PCU	P362032	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P362572	
	SM 2540 C-97	TDS	15	U	mg/L	P362631	
	SM 2540 D-97	TSS	2	U	mg/L	P362206	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P362577	
2077672	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P362563	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P362481	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P362495	
	EPA 365.1 Rev. 2.0	Total-P	0.002	U	mg P/L	P362430	
	SM 5310 B-00	Organic Carbon	0.50	U	mg C/L	P362314	
2077674	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P362019	

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: P362005

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P362299

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P362302

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P362563

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P362481

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P362494

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P362495

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P362390

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P362430

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 dissolved
Batch ID: P362019

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

Reference Method: SM 2120 B
Batch ID: P362032

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2120 B
Batch ID: P362033

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P362572

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

Reference Method: SM 2540 C-97
Batch ID: P362631

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P362206

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P362577

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P362314

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: P362299

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P362302

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P362563

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P362481

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P362494

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P362495

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P362390

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P362430

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P362019

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 2120 B
Batch ID: P362032

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	103		P	85 - 115

Reference Method: SM 2120 B
Batch ID: P362033

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

Reference Method: SM 2320 B-97
Batch ID: P362572

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	99.7		P	98 - 106

Reference Method: SM 4500 F-C-97
Batch ID: P362577

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	99.3		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P362314

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	99.9		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P362299

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2077574	Chloride	101		P	90 - 110
2077580	Chloride	102		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P362302

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2077574	Sulfate	103		P	90 - 110
2077580	Sulfate	103		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P362563

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2077684	Ammonia-N	101	103	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P362481

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2077665	Kjeldahl Nitrogen	101	101	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P362494

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2077627	NO2NO3-N	99.9	99.4	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P362495

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2077683	NO2NO3-N	102	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P362390

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2077665	Total-P	95.9	98.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P362430

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2077703	Total-P	98.6	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P362019

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2077667	O-Phosphate-P	95.4	96.6	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SM 4500 F-C-97
Batch ID: P362577

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2077663	Fluoride	101	100	P/P	89 - 106

Reference Method: SM 5310 B-00
Batch ID: P362314

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2077683	Organic Carbon	102	103	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P362005

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2077640	Turbidity	6.80	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P362299

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2077574	Chloride	0.0275	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P362302

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2077574	Sulfate	0.196	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P362563

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2077684	Ammonia-N	1.86	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P362481

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2077665	Kjeldahl Nitrogen	0.0136	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P362494

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2077627	NO2NO3-N	0.489	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P362495

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2077683	NO2NO3-N	0.491	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P362390

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2077665	Total-P	2.15	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P362430

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2077703	Total-P	4.16	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P362019

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2077667	O-Phosphate-P	1.25	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P362032

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2077663	Color (true)	3.84	Sample	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P362033

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2077352	Color (true)	9.57	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P362572

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2077663	Total Alkalinity	0.559	Sample	P	0 - 2.8

Reference Method: SM 2540 C-97
Batch ID: P362631

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2077640	TDS	0.191	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P362577

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2077663	Fluoride	0.470	Spike	P	0 - 2.5

Reference Method: SM 5310 B-00
Batch ID: P362314

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2077683	Organic Carbon	0.814	Spike	P	0 - 20

Quality Assurance Report

Precision

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A90636

Included Lab Sample IDs: 2077663, 2077664, 2077669, 2077670

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A90643

Included Lab Sample IDs: 2077667, 2077668, 2077673, 2077674

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	96.8	96.5	P/P	90 - 110
O-Phosphate-P	98.9	97.7	P/P	90 - 110
O-Phosphate-P	99.9	98.9	P/P	90 - 110

Reference Method: SM 2120 B

Run ID: A90648

Included Lab Sample IDs: 2077663, 2077664, 2077669, 2077670

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	102	103	P/P	85 - 115
Color (true)	103	103	P/P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A90760

Included Lab Sample IDs: 2077663, 2077664, 2077669, 2077670

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	104	104	P/P	90 - 110
Sulfate	105	105	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A90771

Included Lab Sample IDs: 2077665, 2077666, 2077671, 2077672

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	104	105	P/P	90 - 110
Organic Carbon	105	106	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A90845

Included Lab Sample IDs: 2077665, 2077666, 2077671, 2077672

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A90847

Included Lab Sample IDs: 2077666, 2077671

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A90858

Included Lab Sample IDs: 2077672

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	102	95.0	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A90870

Included Lab Sample IDs: 2077665, 2077666, 2077671, 2077672

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

Reference Method: SM 2320 B-97

Run ID: A90871

Included Lab Sample IDs: 2077663, 2077664, 2077669, 2077670

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	100	98.5	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A90871

Included Lab Sample IDs: 2077663, 2077664, 2077669, 2077670

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A90889

Included Lab Sample IDs: 2077665

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A90897

Included Lab Sample IDs: 2077665, 2077666, 2077671, 2077672

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	104	99.8	P/P	90 - 110
Kjeldahl Nitrogen	96.5	96.0	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	MS
						SMP	
EPA 180.1 Rev. 2.0	Turbidity					6.80	
EPA 300.0 Rev. 2.1	Chloride	105	101	102		0.0275	
	Sulfate	106	103	103		0.196	
EPA 350.1 Rev. 2.0	Ammonia-N	103	101	103			1.86
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	96.9	101	101			0.0136
EPA 353.2 Rev. 2.0	NO2NO3-N	99.5	99.9	99.4			0.489
	NO2NO3-N	99.5	102	102			0.491
EPA 365.1 Rev. 2.0	Total-P	98.5	95.9	98.0			2.15
	Total-P	103	98.6	104			4.16
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	100	95.4	96.6			1.25
SM 2120 B	Color (true)	103				3.84	
	Color (true)	101				9.57	
SM 2320 B-97	Total Alkalinity	99.7				0.559	
SM 2540 C-97	TDS					0.191	
SM 4500 F-C-97	Fluoride	99.3	101	100			0.470
SM 5310 B-00	Organic Carbon	99.9	102	103			0.814

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2077663, 2077664, 2077669, 2077670
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2077663, 2077664, 2077669, 2077670
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2077663, 2077664, 2077669, 2077670
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2077665, 2077666, 2077671, 2077672
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2077665, 2077666, 2077671, 2077672
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2077665, 2077666, 2077671, 2077672
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2077665, 2077666, 2077671, 2077672
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2077667, 2077668, 2077673, 2077674
SM 2120 B / E31780	True Color measured at 450 nm	2077663, 2077664, 2077669, 2077670
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	2077663, 2077664, 2077669, 2077670
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2077663, 2077664, 2077669, 2077670
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2077663, 2077664, 2077669, 2077670
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2077663, 2077664, 2077669, 2077670
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2077665, 2077666, 2077671, 2077672

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	04/11/2019			04/11/2019 16:15	Adrian Shelby	2077663, 2077664, 2077669, 2077670
EPA 300.0 Rev. 2.1	04/11/2019			04/17/2019 08:28	Lipi Saha	2077663
	04/11/2019			04/17/2019 08:40	Lipi Saha	2077664
	04/11/2019			04/17/2019 08:52	Lipi Saha	2077669
	04/11/2019			04/17/2019 09:04	Lipi Saha	2077670
EPA 350.1 Rev. 2.0	04/11/2019			04/18/2019 11:41	Ping Hua	2077666
	04/11/2019			04/18/2019 11:49	Ping Hua	2077671
	04/11/2019			04/18/2019 11:52	Ping Hua	2077665
	04/11/2019			04/18/2019 11:59	Ping Hua	2077672
EPA 351.2 Rev. 2.0	04/11/2019	04/19/2019 11:00	Adrian Shelby	04/22/2019 15:49	Joseph Suarez	2077665
	04/11/2019	04/19/2019 11:00	Adrian Shelby	04/22/2019 15:57	Joseph Suarez	2077672
	04/11/2019	04/19/2019 11:00	Adrian Shelby	04/22/2019 16:50	Joseph Suarez	2077666
	04/11/2019	04/19/2019 11:00	Adrian Shelby	04/22/2019 16:52	Joseph Suarez	2077671
EPA 353.2 Rev. 2.0	04/11/2019			04/19/2019 10:29	Beverly Y. Sanders	2077665
	04/11/2019			04/19/2019 10:30	Beverly Y. Sanders	2077666
	04/11/2019			04/19/2019 10:31	Beverly Y. Sanders	2077671
	04/11/2019			04/19/2019 10:44	Beverly Y. Sanders	2077672
EPA 365.1 Rev. 2.0	04/11/2019	04/18/2019 13:40	Sima Feizi	04/19/2019 12:19	Rosalyn Ballman	2077666
	04/11/2019	04/18/2019 13:40	Sima Feizi	04/19/2019 12:20	Rosalyn Ballman	2077671
	04/11/2019	04/18/2019 13:40	Sima Feizi	04/19/2019 15:49	Rosalyn Ballman	2077672
	04/11/2019	04/18/2019 13:40	Sima Feizi	04/22/2019 13:25	Rosalyn Ballman	2077665
EPA 365.1 Rev. 2.0 dissolved	04/11/2019			04/11/2019 14:48	Jhamieka S. Greenwood	2077667
	04/11/2019			04/11/2019 14:57	Jhamieka S. Greenwood	2077674
	04/11/2019			04/11/2019 15:46	Jhamieka S. Greenwood	2077668
	04/11/2019			04/11/2019 15:47	Jhamieka S. Greenwood	2077673
SM 2120 B	04/11/2019			04/11/2019 16:09	Mariam Hanna	2077663
	04/11/2019			04/11/2019 16:11	Mariam Hanna	2077670
	04/11/2019			04/11/2019 16:23	Mariam Hanna	2077664
	04/11/2019			04/11/2019 16:24	Mariam Hanna	2077669
SM 2320 B-97	04/11/2019			04/19/2019 10:01	Samantha Davila	2077663
	04/11/2019			04/19/2019 10:47	Samantha Davila	2077664
	04/11/2019			04/19/2019 11:00	Samantha Davila	2077669
	04/11/2019			04/19/2019 11:14	Samantha Davila	2077670
SM 2540 C-97	04/11/2019			04/12/2019 18:11	Mariam Hanna	2077663, 2077664, 2077669, 2077670
SM 2540 D-97	04/11/2019			04/12/2019 18:23	Mariam Hanna	2077663, 2077664, 2077669, 2077670
SM 4500 F-C-97	04/11/2019			04/19/2019 09:51	Samantha Davila	2077663
	04/11/2019			04/19/2019 10:47	Samantha Davila	2077664
	04/11/2019			04/19/2019 11:00	Samantha Davila	2077669
	04/11/2019			04/19/2019 11:14	Samantha Davila	2077670
SM 5310 B-00	04/11/2019			04/16/2019 22:23	Julia Storbeck	2077665

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 5310 B-00	04/11/2019			04/16/2019 22:35	Julia Storbeck	2077666
	04/11/2019			04/16/2019 22:47	Julia Storbeck	2077671
	04/11/2019			04/16/2019 23:26	Julia Storbeck	2077672