Chemical Analysis Report

CEN-DIST-2023-05-05-01

Florida DEP Laboratory
2600 Blair Stone Road
Tallahassee, FL 32399-2400
DOH Accreditation E31780

Event Description: **Run 14**
Request ID: **RQ-2023-05-01-25**
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: Matthew Bearden

For additional information please contact
Colin Wright, Ph.D.
Chris Bowen, B.S.
Kerry Tate, Ph.D.
Dr. rer. nat. Bettina Steinbock
Thekkekalathil Chandrasekhar, Ph.D, QA Officer
Phone (850) 245-8085

Certified by: Colin Wright, Program Administrator

Date Certified: 23-MAY-2023 11:14

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 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: DOUBLE RUN SPRING RUN DS OF DOUBLE RUN RD **Collection Date/Time: 05/04/2023 10:06**

Field ID: G1CE0122 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2406051	DEP SOP: NU-094-1	Color (true)	11	A	PCU	P429504	
	EPA 180.1 Rev. 2.0	Turbidity	0.35	I	NTU	P429492	
	EPA 300.0 Rev. 2.1	Chloride	11		mg Cl/L	P429662	
		Sulfate	18		mg SO4/L	P429664	
	SM 2320 B-2011	Total Alkalinity	55		mg CaCO3/L	P429832	
	SM 2540 C-2015	TDS	111		mg/L	P430021	
	SM 2540 D-2015	TSS	2	I	mg/L	P429891	
	SM 4500-F- C-2011	Fluoride	0.043	I	mg F/L	P429884	
2406055	EPA 350.1 Rev. 2.0	Ammonia-N	0.006		mg N/L	P429613	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.35		mg N/L	P429629	
	EPA 353.2 Rev. 2.0	NO2NO3-N	1.6		mg N/L	P429814	
	EPA 365.1 Rev. 2.0	Total-P	0.040		mg P/L	P429540	
	SM 5310 B-2011	Organic Carbon	2.0		mg C/L	P429757	

Ref. Method and Comment:
EPA 365.1 Rev. 2.0: Total-P: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: BLUE SPRING (LAKE COUNTY) AT WEIR **Collection Date/Time: 05/04/2023 10:39**

Field ID: G1CE0024 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2406052	DEP SOP: NU-094-1	Color (true)	2.5	U	PCU	P429504	
	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P429492	
	EPA 300.0 Rev. 2.1	Chloride	12		mg Cl/L	P429662	
		Sulfate	9.5		mg SO4/L	P429664	
	SM 2320 B-2011	Total Alkalinity	104	A	mg CaCO3/L	P429832	
	SM 2540 C-2015	TDS	146		mg/L	P430021	
	SM 2540 D-2015	TSS	2	U	mg/L	P429891	
	SM 4500-F- C-2011	Fluoride	0.075	I	mg F/L	P429884	
2406056	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P429613	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P429629	
	EPA 353.2 Rev. 2.0	NO2NO3-N	2.7		mg N/L	P429814	
	EPA 365.1 Rev. 2.0	Total-P	0.035		mg P/L	P429540	
	SM 5310 B-2011	Organic Carbon	0.68	I	mg C/L	P429757	

Ref. Method and Comment:
EPA 365.1 Rev. 2.0: Total-P: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: HOLIDAY SPRING ABOVE PUMP HOUSE **Collection Date/Time: 05/04/2023 11:00**

Field ID: G1CE0029 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2406053	DEP SOP: NU-094-1	Color (true)	2.5	U	PCU	P429504	
	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P429492	
	EPA 300.0 Rev. 2.1	Chloride	13		mg Cl/L	P429662	
		Sulfate	11		mg SO4/L	P429664	
	SM 2320 B-2011	Total Alkalinity	108		mg CaCO3/L	P429832	
	SM 2540 C-2015	TDS	154		mg/L	P430021	
	SM 2540 D-2015	TSS	2	U	mg/L	P429891	
	SM 4500-F- C-2011	Fluoride	0.086	I	mg F/L	P429884	
2406057	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P429613	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P429629	
	EPA 353.2 Rev. 2.0	NO2NO3-N	2.6		mg N/L	P429814	
	EPA 365.1 Rev. 2.0	Total-P	0.037		mg P/L	P429540	
	SM 5310 B-2011	Organic Carbon	0.50	U	mg C/L	P429757	

Ref. Method and Comment:
EPA 365.1 Rev. 2.0: Total-P: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: BUGG SPRING AT VENT **Collection Date/Time: 05/04/2023 11:46**

Field ID: G1CE0109 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2406054	DEP SOP: NU-094-1	Color (true)	2.5	U	PCU	P429504	
	EPA 180.1 Rev. 2.0	Turbidity	0.50	I	NTU	P429492	
	EPA 300.0 Rev. 2.1	Chloride	20		mg Cl/L	P429662	
		Sulfate	10		mg SO4/L	P429664	
	SM 2320 B-2011	Total Alkalinity	140		mg CaCO3/L	P429832	
	SM 2540 C-2015	TDS	197		mg/L	P430021	
	SM 2540 D-2015	TSS	2	U	mg/L	P429891	
	SM 4500-F- C-2011	Fluoride	0.049	I	mg F/L	P429884	
2406058	EPA 350.1 Rev. 2.0	Ammonia-N	0.007		mg N/L	P429613	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.38		mg N/L	P429629	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.70		mg N/L	P429814	
	EPA 365.1 Rev. 2.0	Total-P	0.085		mg P/L	P429540	
	SM 5310 B-2011	Organic Carbon	1.2		mg C/L	P429758	

Ref. Method and Comment:
EPA 365.1 Rev. 2.0: Total-P: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Quality Assurance Report
Method Blank Results

Reference Method: DEP SOP: NU-094-1
Batch ID: P429504

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P429492

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P429662

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P429664

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P429613

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P429629

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P429814

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P429540

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

Reference Method: SM 2320 B-2011
Batch ID: P429832

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

Quality Assurance Report
Method Blank Results

Reference Method: SM 2540 C-2015
Batch ID: P430021

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2015
Batch ID: P429891

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500-F- C-2011
Batch ID: P429884

Component	Result	Code	Units
Fluoride	0.025	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P429757

Component	Result	Code	Units
Organic Carbon	0.50	U	mg C/L

Reference Method: SM 5310 B-2011
Batch ID: P429758

Component	Result	Code	Units
Organic Carbon	0.50	U	mg C/L

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: DEP SOP: NU-094-1
Batch ID: P429504

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	100		P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P429492

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P429662

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	98.7		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P429664

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	97.3		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P429613

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	96.2		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P429629

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P429814

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P429540

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

Reference Method: SM 2320 B-2011
Batch ID: P429832

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	98.6		P	94 - 106

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: SM 2540 C-2015
Batch ID: P430021

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

Reference Method: SM 2540 D-2015
Batch ID: P429891

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TSS	97.4		P	85 - 106

Reference Method: SM 4500-F- C-2011
Batch ID: P429884

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.5		P	94 - 106

Reference Method: SM 5310 B-2011
Batch ID: P429757

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

Reference Method: SM 5310 B-2011
Batch ID: P429758

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	97.1		P	85 - 115

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P429662

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2405693	Chloride	91.5		P	90 - 110
2406008	Chloride	98.0		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P429664

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2405693	Sulfate	94.1		P	90 - 110
2406008	Sulfate	95.3		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P429613

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2406055	Ammonia-N	98.6	99.6	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P429629

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2406057	Kjeldahl Nitrogen	98.8	95.0	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P429814

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2406006	NO2NO3-N	104	104	P/P	90 - 110

Reference Method: SM 4500-F- C-2011
Batch ID: P429884

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2406054	Fluoride	97.8	98.3	P/P	94 - 106

Reference Method: SM 5310 B-2011
Batch ID: P429757

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2406005	Organic Carbon	96.7	97.9	P/P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P429758

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2406058	Organic Carbon	96.0	97.6	P/P	85 - 115

Quality Assurance Report
Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P429504

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2406051	Color (true)	0.426	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P429492

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2405919	Turbidity	15.9	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P429662

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2405693	Chloride	0.314	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P429664

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2405693	Sulfate	1.07	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P429613

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2406055	Ammonia-N	0.900	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P429629

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2406057	Kjeldahl Nitrogen	3.97	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P429814

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2406006	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P429540

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2406031	Total-P	0.240	Spike	P	0 - 20

Quality Assurance Report
Precision

Reference Method: SM 2320 B-2011
Batch ID: P429832

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2406052	Total Alkalinity	0.346	Sample	P	0 - 3.8

Reference Method: SM 2540 C-2015
Batch ID: P430021

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2405966	TDS	2.66	Sample	P	0 - 10

Reference Method: SM 2540 D-2015
Batch ID: P429891

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2405966	TSS	8.45	Sample	P	0 - 10

Reference Method: SM 4500-F- C-2011
Batch ID: P429884

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2406054	Fluoride	0.498	Spike	P	0 - 1.9

Reference Method: SM 5310 B-2011
Batch ID: P429757

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2406005	Organic Carbon	0.718	Spike	P	0 - 20

Reference Method: SM 5310 B-2011
Batch ID: P429758

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2406058	Organic Carbon	1.51	Spike	P	0 - 20

* Sample, spike and/or laboratory control sample precision (LCS) is reported.

Quality Assurance Report
Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A118980
Included Lab Sample IDs: 2406051, 2406052, 2406053, 2406054

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	98.0	98.0	P/P	95 - 105

Reference Method: DEP SOP: NU-094-1
Run ID: A118991
Included Lab Sample IDs: 2406051, 2406052, 2406053, 2406054

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	100	98.9	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A119038
Included Lab Sample IDs: 2406058

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

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A119045
Included Lab Sample IDs: 2406055, 2406056, 2406057, 2406058

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.6	98.9	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A119048
Included Lab Sample IDs: 2406055, 2406056, 2406057

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.5	101	P/P	90 - 110
Total-P	99.8	99.5	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A119070
Included Lab Sample IDs: 2406051, 2406052, 2406053, 2406054

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	97.6	99.2	P/P	90 - 110
Sulfate	96.6	98.0	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A119098
Included Lab Sample IDs: 2406055, 2406056, 2406057, 2406058

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

Quality Assurance Report
Calibration Verification

Reference Method: SM 5310 B-2011
Run ID: A119108
Included Lab Sample IDs: 2406055, 2406056, 2406057, 2406058

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	98.9	99.0	P/P	90 - 110
Organic Carbon	99.0	99.6	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A119129
Included Lab Sample IDs: 2406055, 2406056, 2406057, 2406058

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	103	104	P/P	90 - 110

Reference Method: SM 2320 B-2011
Run ID: A119143
Included Lab Sample IDs: 2406051, 2406052, 2406053, 2406054

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	97.2	99.4	P/P	90 - 110

Reference Method: SM 4500-F- C-2011
Run ID: A119179
Included Lab Sample IDs: 2406051, 2406052, 2406053, 2406054

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	102	99.5	P/P	90 - 110
Fluoride	99.5	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		Precision		
					LCS	SMP	MS
DEP SOP: NU-094-1	Color (true)	100				0.426	
EPA 180.1 Rev. 2.0	Turbidity	97.4				15.9	
EPA 300.0 Rev. 2.1	Chloride	98.7	91.5	98.0		0.314	
	Sulfate	97.3	94.1	95.3		1.07	
EPA 350.1 Rev. 2.0	Ammonia-N	96.2	98.6	99.6			0.900
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	101	98.8	95.0			3.97
EPA 353.2 Rev. 2.0	NO2NO3-N	104	104	104			0.0
EPA 365.1 Rev. 2.0	Total-P	103					0.240
SM 2320 B-2011	Total Alkalinity	98.6				0.346	
SM 2540 C-2015	TDS	103				2.66	
SM 2540 D-2015	TSS	97.4				8.45	
SM 4500-F- C-2011	Fluoride	97.5	97.8	98.3			0.498
SM 5310 B-2011	Organic Carbon	99.8	96.7	97.9			0.718
	Organic Carbon	97.1	96.0	97.6			1.51

Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2406051, 2406052, 2406053, 2406054
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2406051, 2406052, 2406053, 2406054
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2406051, 2406052, 2406053, 2406054
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2406051, 2406052, 2406053, 2406054
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2406055, 2406056, 2406057, 2406058
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2406055, 2406056, 2406057, 2406058
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2406055, 2406056, 2406057, 2406058
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2406055, 2406056, 2406057, 2406058
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2406051, 2406052, 2406053, 2406054
SM 2540 C-2015	Total Dissolved Solids in aqueous matrices	2406051, 2406052, 2406053, 2406054
SM 2540 D-2015	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2406051, 2406052, 2406053, 2406054
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2406051, 2406052, 2406053, 2406054
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2406055, 2406056, 2406057, 2406058

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
DEP SOP: NU-094-1	05/05/2023			05/05/2023 15:30	Anna M. Plaviak	2406051
	05/05/2023			05/05/2023 15:31	Anna M. Plaviak	2406052
	05/05/2023			05/05/2023 15:32	Anna M. Plaviak	2406053
	05/05/2023			05/05/2023 15:33	Anna M. Plaviak	2406054
EPA 180.1 Rev. 2.0	05/05/2023			05/05/2023 14:04	Alexis Price	2406051
	05/05/2023			05/05/2023 14:05	Alexis Price	2406052
	05/05/2023			05/05/2023 14:07	Alexis Price	2406053
	05/05/2023			05/05/2023 14:08	Alexis Price	2406054
EPA 300.0 Rev. 2.1	05/05/2023			05/10/2023 02:37	James L Waggerby	2406051
	05/05/2023			05/10/2023 02:52	James L Waggerby	2406052
	05/05/2023			05/10/2023 03:07	James L Waggerby	2406053
	05/05/2023			05/10/2023 03:22	James L Waggerby	2406054
EPA 350.1 Rev. 2.0	05/05/2023			05/09/2023 12:17	Khloe J Berg	2406055
	05/05/2023			05/09/2023 12:23	Khloe J Berg	2406056
	05/05/2023			05/09/2023 12:25	Khloe J Berg	2406057
	05/05/2023			05/09/2023 12:26	Khloe J Berg	2406058
EPA 351.2 Rev. 2.0	05/05/2023	05/10/2023 12:02	Dana G. Hughes	05/11/2023 10:49	Ping Hua	2406055
	05/05/2023	05/10/2023 12:02	Dana G. Hughes	05/11/2023 10:51	Ping Hua	2406056
	05/05/2023	05/10/2023 12:02	Dana G. Hughes	05/11/2023 10:52	Ping Hua	2406057
	05/05/2023	05/10/2023 12:02	Dana G. Hughes	05/11/2023 11:00	Ping Hua	2406058
EPA 353.2 Rev. 2.0	05/05/2023			05/12/2023 11:07	Beverly Y. Sanders	2406055
	05/05/2023			05/12/2023 11:08	Beverly Y. Sanders	2406056
	05/05/2023			05/12/2023 11:09	Beverly Y. Sanders	2406057
	05/05/2023			05/12/2023 11:10	Beverly Y. Sanders	2406058
EPA 365.1 Rev. 2.0	05/05/2023	05/08/2023 13:00	Alexis Price	05/09/2023 12:07	Simonne.V. Calhoun	2406058
	05/05/2023	05/08/2023 13:00	Alexis Price	05/09/2023 15:00	Simonne.V. Calhoun	2406055
	05/05/2023	05/08/2023 13:00	Alexis Price	05/09/2023 15:07	Simonne.V. Calhoun	2406056
	05/05/2023	05/08/2023 13:00	Alexis Price	05/09/2023 15:08	Simonne.V. Calhoun	2406057
SM 2320 B-2011	05/05/2023			05/11/2023 16:02	Dale L. Simmons	2406052
	05/05/2023			05/11/2023 17:15	Dale L. Simmons	2406051
	05/05/2023			05/11/2023 17:27	Dale L. Simmons	2406053
	05/05/2023			05/11/2023 17:39	Dale L. Simmons	2406054
SM 2540 C-2015	05/05/2023			05/10/2023 15:30	Yijie Li	2406051, 2406052, 2406053, 2406054
SM 2540 D-2015	05/05/2023			05/10/2023 15:30	Yijie Li	2406051, 2406052, 2406053, 2406054
SM 4500-F- C-2011	05/05/2023			05/15/2023 14:41	Dale L. Simmons	2406054
	05/05/2023			05/15/2023 15:37	Dale L. Simmons	2406051
	05/05/2023			05/15/2023 15:43	Dale L. Simmons	2406052
	05/05/2023			05/15/2023 16:03	Dale L. Simmons	2406053
SM 5310 B-2011	05/05/2023			05/11/2023 02:40	Elise M. Gillis	2406055
	05/05/2023			05/11/2023 02:53	Elise M. Gillis	2406056

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 5310 B-2011	05/05/2023			05/11/2023 03:10	Elise M. Gillis	2406057
	05/05/2023			05/11/2023 04:24	Elise M. Gillis	2406058