Chemical Analysis Report

CEN-DIST-2018-11-06-01

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

Event Description: **Wolf / Crab**
Request ID: **RQ-2018-11-05-24**
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
Colin Wright, Ph.D.
Liang-Tsair Lin, Ph.D.
Kerry Tate, Ph.D.
Dr. rer. nat. Bettina Steinbock
Thekkekalathil Chandrasekhar, Ph.D, QA Officer
Phone (850) 245-8085

Certified by: Dr. rer. nat. Bettina Steinbock, Environmental Administrator Date Certified: 28-NOV-2018 12:07

B. Steinbock

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: WOLF CREEK @ DEER PARK RD **Collection Date/Time: 11/05/2018 10:32**

Field ID: G3CE0007 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2039177	EPA 180.1 Rev. 2.0	Turbidity	2.6		NTU	P354306	
	EPA 300.0 Rev. 2.1	Chloride	17		mg Cl/L	P355062	
		Sulfate	5.7		mg SO4/L	P355060	
	SM 2120 B	Color (true)	75	A	PCU	P354285	
	SM 2320 B-97	Total Alkalinity	59		mg CaCO3/L	P354554	
	SM 2540 C-97	TDS	141	A	mg/L	P354705	
	SM 2540 D-97	TSS	4	IA	mg/L	P354717	
	SM 4500 F-C-97	Fluoride	0.037	I	mg F/L	P354934	MS
2039178	EPA 350.1 Rev. 2.0	Ammonia-N	0.003	I	mg N/L	P354630	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.66		mg N/L	P354515	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.024		mg N/L	P354667	
	EPA 365.1 Rev. 2.0	Total-P	0.092		mg P/L	P354441	
	SM 5310 B-00	Organic Carbon	15		mg C/L	P354400	
2039179	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.051		mg P/L	P354315	

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: CRABGRASS CREEK @ 250M SOUTH OF HIGHWAY 192 BRIDGE

Collection Date/Time: 11/05/2018 11:52

Field ID: G3CE0008

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2039180	EPA 180.1 Rev. 2.0	Turbidity	1.6		NTU	P354306	
	EPA 300.0 Rev. 2.1	Chloride	14		mg Cl/L	P355062	
		Sulfate	2.1		mg SO4/L	P355060	
	SM 2120 B	Color (true)	88		PCU	P354285	
	SM 2320 B-97	Total Alkalinity	95		mg CaCO3/L	P354554	
	SM 2540 C-97	TDS	140		mg/L	P354705	
	SM 2540 D-97	TSS	3	I	mg/L	P354717	
	SM 4500 F-C-97	Fluoride	0.049	I	mg F/L	P354934	MS
2039181	EPA 350.1 Rev. 2.0	Ammonia-N	0.043		mg N/L	P354630	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.58		mg N/L	P354515	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.075		mg N/L	P354667	
	EPA 365.1 Rev. 2.0	Total-P	0.10		mg P/L	P354441	
	SM 5310 B-00	Organic Carbon	14		mg C/L	P354400	
2039182	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.078		mg P/L	P354315	

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: P354306

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P355060

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P355062

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P354630

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P354515

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P354667

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P354441

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P354315

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

Reference Method: SM 2120 B
Batch ID: P354285

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Quality Assurance Report
Method Blank Results

Reference Method: SM 2320 B-97
Batch ID: P354554

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

Reference Method: SM 2540 C-97
Batch ID: P354705

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P354717

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P354934

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P354400

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: P355060

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	94.6		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P355062

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P354630

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: P354515

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P354667

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P354441

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P354315

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

Reference Method: SM 2120 B
Batch ID: P354285

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	100		P	85 - 115

Reference Method: SM 2320 B-97
Batch ID: P354554

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	102		P	98 - 107

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: SM 4500 F-C-97
Batch ID: P354934

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.0		P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P354400

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	98.2		P	85 - 115

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P355060

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2038662	Sulfate	92.2		P	90 - 110
2038935	Sulfate	99.6		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P355062

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2038662	Chloride	98.2		P	90 - 110
2038935	Chloride	101		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P354630

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2038940	Ammonia-N	100	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P354515

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2039181	Kjeldahl Nitrogen	109	109	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P354667

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2039178	NO2NO3-N	101	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P354441

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2039271	Total-P	101	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P354315

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2039206	O-Phosphate-P	100	101	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P354934

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2038777	Fluoride	105	105	F/F	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P354400

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2038699	Organic Carbon	100	98.6	P/P	85 - 115

Quality Assurance Report
Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P354306

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2039191	Turbidity	2.86	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P355060

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2038662	Sulfate	0.688	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P355062

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2038662	Chloride	0.643	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P354630

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2038940	Ammonia-N	0.242	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P354515

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2039181	Kjeldahl Nitrogen	0.445	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P354667

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2039178	NO2NO3-N	2.19	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P354441

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2039271	Total-P	2.94	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P354315

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2039206	O-Phosphate-P	0.794	Spike	P	0 - 20

Quality Assurance Report
Precision

Reference Method: SM 2120 B
Batch ID: P354285

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2039177	Color (true)	0.355	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P354554

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2038777	Total Alkalinity	0.322	Sample	P	0 - 1.6

Reference Method: SM 2540 C-97
Batch ID: P354705

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2039177	TDS	2.84	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P354934

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2038777	Fluoride	0.0	Spike	P	0 - 3.5

Reference Method: SM 5310 B-00
Batch ID: P354400

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2038699	Organic Carbon	1.31	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: A87565
Included Lab Sample IDs: 2039177, 2039180

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

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A87570
Included Lab Sample IDs: 2039177, 2039180

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	101	101	P/P	95 - 105

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A87573
Included Lab Sample IDs: 2039179, 2039182

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.5	99.4	P/P	90 - 110

Reference Method: SM 5310 B-00
Run ID: A87614
Included Lab Sample IDs: 2039178, 2039181

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	96.5	97.1	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A87664
Included Lab Sample IDs: 2039178, 2039181

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	104	101	P/P	90 - 110

Reference Method: SM 2320 B-97
Run ID: A87701
Included Lab Sample IDs: 2039177, 2039180

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	99.1	102	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A87729
Included Lab Sample IDs: 2039178, 2039181

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	105	103	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A87735
Included Lab Sample IDs: 2039178, 2039181

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

Quality Assurance Report
Calibration Verification

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A87753
Included Lab Sample IDs: 2039178, 2039181

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	100	100	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Run ID: A87869
Included Lab Sample IDs: 2039177, 2039180

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

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A87936
Included Lab Sample IDs: 2039177, 2039180

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	103	101	P/P	90 - 110
Sulfate	102	101	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
EPA 180.1 Rev. 2.0	Turbidity					2.86	
EPA 300.0 Rev. 2.1	Chloride	100	98.2	101		0.643	
	Sulfate	94.6	92.2	99.6		0.688	
EPA 350.1 Rev. 2.0	Ammonia-N	100	100	101			0.242
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	105	109	109			0.445
EPA 353.2 Rev. 2.0	NO2NO3-N	99.0	101	104			2.19
EPA 365.1 Rev. 2.0	Total-P	101	101	104			2.94
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	99.2	100	101			0.794
SM 2120 B	Color (true)	100				0.355	
SM 2320 B-97	Total Alkalinity	102				0.322	
SM 2540 C-97	TDS					2.84	
SM 4500 F-C-97	Fluoride	98.0	105	105			0.0
SM 5310 B-00	Organic Carbon	98.2	100	98.6			1.31

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2039177, 2039180
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2039177, 2039180
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2039177, 2039180
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2039178, 2039181
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2039178, 2039181
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2039178, 2039181
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2039178, 2039181
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2039179, 2039182
SM 2120 B / E31780	True Color measured at 450 nm	2039177, 2039180
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	2039177, 2039180
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2039177, 2039180
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2039177, 2039180
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2039177, 2039180
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2039178, 2039181

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	11/06/2018			11/06/2018 16:51	Megan Treadwell	2039177, 2039180
EPA 300.0 Rev. 2.1	11/06/2018			11/22/2018 12:40	Lipi Saha	2039177
	11/06/2018			11/22/2018 12:52	Lipi Saha	2039180
EPA 350.1 Rev. 2.0	11/06/2018			11/09/2018 11:44	Ping Hua	2039178
	11/06/2018			11/09/2018 11:46	Ping Hua	2039181
EPA 351.2 Rev. 2.0	11/06/2018	11/09/2018 12:30	Adrian Shelby	11/13/2018 14:27	Joseph Suarez	2039178
	11/06/2018	11/09/2018 12:30	Adrian Shelby	11/13/2018 14:28	Joseph Suarez	2039181
EPA 353.2 Rev. 2.0	11/06/2018			11/14/2018 11:11	Lauren Bottorf	2039178
	11/06/2018			11/14/2018 11:26	Lauren Bottorf	2039181
EPA 365.1 Rev. 2.0	11/06/2018	11/08/2018 12:25	Sima Feizi	11/09/2018 11:09	Beverly Y. Sanders	2039178
	11/06/2018	11/08/2018 12:25	Sima Feizi	11/09/2018 11:10	Beverly Y. Sanders	2039181
EPA 365.1 Rev. 2.0 dissolved	11/06/2018			11/06/2018 16:27	Jhamieka S. Greenwood	2039179
	11/06/2018			11/06/2018 16:29	Jhamieka S. Greenwood	2039182
SM 2120 B	11/06/2018			11/06/2018 14:39	Chelsea Hernandez	2039177
	11/06/2018			11/06/2018 14:40	Chelsea Hernandez	2039180
SM 2320 B-97	11/06/2018			11/09/2018 02:56	Dale L. Simmons	2039177
	11/06/2018			11/09/2018 03:06	Dale L. Simmons	2039180
SM 2540 C-97	11/06/2018			11/08/2018 14:01	Yijie Li	2039177, 2039180
SM 2540 D-97	11/06/2018			11/08/2018 14:01	Yijie Li	2039177, 2039180
SM 4500 F-C-97	11/06/2018			11/15/2018 07:02	Dale L. Simmons	2039177
	11/06/2018			11/15/2018 07:07	Dale L. Simmons	2039180
SM 5310 B-00	11/06/2018			11/07/2018 07:01	Megan Treadwell	2039178
	11/06/2018			11/07/2018 07:14	Megan Treadwell	2039181