

Chemical Analysis Report

SW-DIST-2016-06-03-01

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

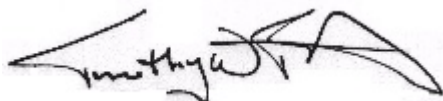
Event Description: **Gap Creek Ref. Stream**
Request ID: **RQ-2016-05-30-43**
Customer: **SW-DIST**
Project ID: **SCIREF**

Send Reports to:
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Certified by: Timothy Fitzpatrick, Program Administrator

Date Certified: 30-JUN-2016 10:44

A handwritten signature in black ink, appearing to read "Timothy Fitzpatrick", with a stylized flourish at the end.

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 groups are included in this report: Metals, Nutrients and Pesticides.

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: GAP CREEK REF. SITE

Collection Date/Time: 06/02/2016 12:00

Field ID: TP108

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1804863	EPA 180.1 Rev. 2.0	Turbidity	2.8	A	NTU	P305579	
	EPA 300.0	Bromide**	0.54		mg Br/L	P306209	
	EPA 300.0 Rev. 2.1	Chloride	110		mg Cl/L	P306258	
		Sulfate	98		mg SO4/L	P306264	
	SM 2120 B	Color (true)	56	A	PCU	P305573	
	SM 2320 B-97	Total Alkalinity	159		mg CaCO3/L	P305934	
	SM 2540 C-97	TDS	555	A	mg/L	P306109	
	SM 2540 D-97	TSS	6	I	mg/L	P306135	
	SM 4500 F-C-97	Fluoride	0.59		mg F/L	P305937	
1804864	EPA 350.1 Rev. 2.0	Ammonia-N	0.027		mg N/L	P305909	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.88		mg N/L	P305771	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.042		mg N/L	P305699	
	EPA 365.1 Rev. 2.0	Total-P	0.51		mg P/L	P306060	
	SM 5310 B-00	Organic Carbon	14		mg C/L	P306205	
1804886	EPA 200.7 Rev. 4.4	Calcium	81.4		mg/L	P305731	
		Magnesium	21.5		mg/L	P305731	
		Potassium	5.8		mg/L	P305731	
		Sodium	68.2		mg/L	P305731	
1804895	EPA 8321B	Diuron	0.0044	I	ug/L	P305424	
		Fenuron	0.0080	U	ug/L	P305424	
		Imidacloprid	0.10		ug/L	P305424	MS
		Linuron	0.0040	U	ug/L	P305424	
		Sucralose**	0.18		ug/L	P305424	
		Acetaminophen**	0.0040	U	ug/L	P305424	
		Carbamazepine**	0.0016		ug/L	P305424	
		Primidone**	0.0080	U	ug/L	P305424	
		Fluridone**	0.33		ug/L	P305424	

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: P305579

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P305731

Component	Result	Code	Units
Calcium	0.075	U	mg/L
Magnesium	0.040	U	mg/L
Potassium	0.30	U	mg/L
Sodium	0.50	U	mg/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 300.0
Batch ID: P306209

Component	Result	Code	Units
Bromide	0.016	U	mg Br/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P306258

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P306264

Component	Result	Code	Units
Sulfate	0.20	U	mg SO ₄ /L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P305909

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P305771

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P305699

Component	Result	Code	Units
NO ₂ NO ₃ -N	0.004	U	mg N/L

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P306060

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

Reference Method: EPA 8321B
Batch ID: P305424

Component	Result	Code	Units
Acetaminophen	0.0040	U	ug/L
Carbamazepine	4.0E-04	U	ug/L
Diuron	0.0040	U	ug/L
Fenuron	0.0080	U	ug/L
Fluridone	4.0E-04	U	ug/L
Imidacloprid	0.0040	U	ug/L
Linuron	0.0040	U	ug/L
Primidone	0.0080	U	ug/L
Sucralose	0.010	U	ug/L

Quality Assurance Report Method Blank Results

Reference Method: SM 2120 B
Batch ID: P305573

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P305934

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

Reference Method: SM 2540 C-97
Batch ID: P306109

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P306135

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P305937

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P306205

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P305731

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	105		P	85 - 115
Magnesium	104		P	85 - 115
Potassium	101		P	85 - 115
Sodium	103		P	85 - 115

Reference Method: EPA 300.0
Batch ID: P306209

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Bromide	98.3		P	90 - 110

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P306258

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P306264

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P305909

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P305771

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P305699

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: P306060

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

Reference Method: EPA 8321B
Batch ID: P305424

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acetaminophen	87.2		P	40 - 140
Carbamazepine	90.4		P	40 - 140
Diuron	108		P	40 - 140
Fenuron	88.8		P	40 - 140
Fluridone	98.0		P	40 - 140
Imidacloprid	86.8		P	40 - 160
Linuron	78.0		P	40 - 140
Primidone	86.8		P	40 - 140
Sucralose	78.3		P	40 - 140

Reference Method: SM 2320 B-97
Batch ID: P305934

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	103		P	95 - 105

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 4500 F-C-97
Batch ID: P305937

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.5		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P306205

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	96.1		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P305731

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1803981	Calcium	106		P	80 - 120
1803981	Magnesium	103		P	80 - 120
1803981	Potassium	102		P	80 - 120
1803981	Sodium	107		P	80 - 120
1804983	Calcium	104	103	P/P	80 - 120
1804983	Magnesium	104	105	P/P	80 - 120
1804983	Potassium	102	103	P/P	80 - 120
1804983	Sodium	106	106	P/P	80 - 120

Reference Method: EPA 300.0
Batch ID: P306209

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1806407	Bromide	98.3	98.4	P/P	90 - 110
1807236	Bromide	101		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P306258

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1806407	Chloride	97.4	96.8	P/P	90 - 110
1807236	Chloride	98.4		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P306264

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1806688	Sulfate	97.8		P	90 - 110
1806794	Sulfate	98.4		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P305909

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1804784	Ammonia-N	98.5	99.9	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P305771

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1804809	Kjeldahl Nitrogen	94.6	98.8	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P305699

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1804822	NO2NO3-N	94.0	96.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P306060

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1803975	Total-P	102	98.2	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P305424

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1803837	Acetaminophen	75.6	82.8	P/P	40 - 140
1803837	Carbamazepine	100	95.6	P/P	40 - 140
1803837	Diuron	94.8	97.2	P/P	40 - 140
1803837	Fenuron	88.0	88.8	P/P	40 - 140
1803837	Fluridone	101	95.7	P/P	40 - 140
1803837	Imidacloprid	214	210	F/F	40 - 160
1803837	Linuron	101	86.8	P/P	40 - 140
1803837	Primidone	98.4	110	P/P	40 - 140
1803837	Sucralose	75.7	87.7	P/P	40 - 140

Reference Method: SM 4500 F-C-97
Batch ID: P305937

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1804783	Fluoride	99.9	99.9	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P306205

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1804819	Organic Carbon	103		P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P305579

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1804863	Turbidity	3.21	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P305731

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1804983	Calcium	0.911	Spike	P	0 - 20
1804983	Magnesium	0.342	Spike	P	0 - 20
1804983	Potassium	1.23	Spike	P	0 - 20
1804983	Sodium	0.110	Spike	P	0 - 20

Reference Method: EPA 300.0
Batch ID: P306209

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1806407	Bromide	0.115	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P306258

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1806407	Chloride	0.400	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P306264

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1806688	Sulfate	2.37	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P305909

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1804784	Ammonia-N	1.18	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P305771

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1804809	Kjeldahl Nitrogen	2.13	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P305699

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1804822	NO2NO3-N	2.11	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P306060

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1803975	Total-P	4.16	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P305424

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1803837	Acetaminophen	9.09	Spike	P	0 - 30
1803837	Carbamazepine	4.46	Spike	P	0 - 30
1803837	Diuron	2.37	Spike	P	0 - 30
1803837	Fenuron	0.905	Spike	P	0 - 30
1803837	Fluridone	5.65	Spike	P	0 - 30
1803837	Imidacloprid	1.78	Spike	P	0 - 30
1803837	Linuron	14.9	Spike	P	0 - 30
1803837	Primidone	11.1	Spike	P	0 - 30
1803837	Sucralose	10.8	Spike	P	0 - 30

Reference Method: SM 2120 B
Batch ID: P305573

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1804863	Color (true)	0.930	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P305934

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1804783	Total Alkalinity	0.154	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
Batch ID: P306109

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1804863	TDS	3.60	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P305937

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1804783	Fluoride	0.0	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P306205

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1804819	Organic Carbon	0.373	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 Surrogates

Lab Sample ID: 1804895

Field Sample ID: TP108

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Acetaminophen-d4	62.6	P	30 - 150
EPA 8321B	Acetaminophen-d4	62.6	P	30 - 150
EPA 8321B	Carbamazepine-d10	75.4	P	40 - 160
EPA 8321B	Carbamazepine-d10	75.4	P	40 - 160
EPA 8321B	Diuron-d6	55.6	P	40 - 150
EPA 8321B	Diuron-d6	55.6	P	40 - 150
EPA 8321B	Primidone-d5	88.2	P	40 - 150
EPA 8321B	Primidone-d5	88.2	P	40 - 150
EPA 8321B	Sucralose-d6	50.0	P	40 - 150
EPA 8321B	Sucralose-d6	50.0	P	40 - 150

Quality Assurance Report Calibration Verification

Reference Method: SM 2120 B

Run ID: A69838

Included Lab Sample IDs: 1804863

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	102	101	P/P	90 - 115

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A69839

Included Lab Sample IDs: 1804863

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	98.5	101	P/P	95 - 105

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A69898

Included Lab Sample IDs: 1804864

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	101	101	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A69902

Included Lab Sample IDs: 1804895

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	85.4	116	P/P	70 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A69929

Included Lab Sample IDs: 1804864

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	99.6	104	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A69931

Included Lab Sample IDs: 1804895

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acetaminophen	112	110	P/P	60 - 150
Carbamazepine	129	140	P/P	60 - 150
Diuron	107	112	P/P	60 - 150
Fenuron	119	124	P/P	60 - 150
Fluridone	112	119	P/P	60 - 150
Imidacloprid	122	110	P/P	60 - 150
Linuron	148	143	P/P	60 - 150
Primidone	106	110	P/P	60 - 150

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A69948

Included Lab Sample IDs: 1804864

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	100	99.6	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A69953

Included Lab Sample IDs: 1804863

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	103	99.8	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A69953

Included Lab Sample IDs: 1804863

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	100	99.5	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A69986

Included Lab Sample IDs: 1804886

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	102	103	P/P	90 - 110
Magnesium	104	103	P/P	90 - 110
Potassium	102	102	P/P	90 - 110
Sodium	102	105	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A70018

Included Lab Sample IDs: 1804864

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.3	100	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A70044

Included Lab Sample IDs: 1804864

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	94.1	95.0	P/P	90 - 110

Reference Method: EPA 300.0

Run ID: A70045

Included Lab Sample IDs: 1804863

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Bromide	94.3	93.5	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A70045

Included Lab Sample IDs: 1804863

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	100	99.5	P/P	90 - 110
Sulfate	98.4	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			Precision	
			LCS			SMP	MS
EPA 180.1 Rev. 2.0	Turbidity					3.21	
EPA 200.7 Rev. 4.4	Calcium	105	106	104	103		0.911
	Magnesium	104	103	104	105		0.342
	Potassium	101	102	102	103		1.23
	Sodium	103	107	106	106		0.110
EPA 300.0	Bromide	98.3	98.3	98.4	101		0.115
EPA 300.0 Rev. 2.1	Chloride	98.5	97.4	96.8	98.4		0.400
	Sulfate	96.9	97.8	98.4		2.37	
EPA 350.1 Rev. 2.0	Ammonia-N	101	98.5	99.9			1.18
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	99.8	94.6	98.8			2.13
EPA 353.2 Rev. 2.0	NO2NO3-N	99.0	94.0	96.0			2.11
EPA 365.1 Rev. 2.0	Total-P	101	102	98.2			4.16
EPA 8321B	Acetaminophen	87.2	75.6	82.8			9.09
	Carbamazepine	90.4	100	95.6			4.46
	Diuron	108	94.8	97.2			2.37
	Fenuron	88.8	88.0	88.8			0.905
	Fluridone	98.0	101	95.7			5.65

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		LCS	Precision	MS
						SMP	
EPA 8321B	Imidacloprid	86.8	214	210			1.78
	Linuron	78.0	101	86.8			14.9
	Primidone	86.8	98.4	110			11.1
	Sucralose	78.3	75.7	87.7			10.8
SM 2120 B	Color (true)					0.930	
SM 2320 B-97	Total Alkalinity	103				0.154	
SM 2540 C-97	TDS					3.60	
SM 4500 F-C-97	Fluoride	98.5	99.9	99.9			0.0
SM 5310 B-00	Organic Carbon	96.1	103				0.373

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1804863
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	1804886
EPA 300.0 / E31780	Bromide in aqueous matrices	1804863
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1804863
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1804863
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1804864
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1804864
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1804864
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1804864
EPA 8321B / E31780	Analysis of sucralose in water matrices by HPLC/MS/MS	1804895
EPA 8321B / E31780	Urea herbicides and other chemicals in water matrices by HPLC/MS/MS	1804895
SM 2120 B / E31780	True Color measured at 450 nm	1804863
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	1804863
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1804863
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1804863
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1804863
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1804864

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	06/03/2016			06/03/2016 16:06	Rochelle Y Jackson	1804863
EPA 200.7 Rev. 4.4	06/03/2016	06/07/2016	Elliott D. Healy	06/09/2016	Joshua Ayres	1804886
EPA 300.0	06/03/2016			06/14/2016	Elisa J Lutz	1804863
EPA 300.0 Rev. 2.1	06/03/2016			06/14/2016	Elisa J Lutz	1804863
	06/03/2016			06/15/2016	Elisa J Lutz	1804863
EPA 350.1 Rev. 2.0	06/03/2016			06/09/2016	Diana M. Turner	1804864
EPA 351.2 Rev. 2.0	06/03/2016	06/08/2016	Sofia Elnemr	06/09/2016	Christopher Armour	1804864
EPA 353.2 Rev. 2.0	06/03/2016			06/07/2016	Beverly Y. Sanders	1804864
EPA 365.1 Rev. 2.0	06/03/2016	06/13/2016	Vijayalakshmi Reddy	06/14/2016	Lipi Saha	1804864
EPA 8321B	06/03/2016	06/07/2016	Hoor Shaik	06/07/2016	Mohammad Ghaffari	1804895
	06/03/2016	06/07/2016	Hoor Shaik	06/09/2016	Juyoung Kim	1804895
SM 2120 B	06/03/2016			06/03/2016 16:31	Chrisoulla Rakowski	1804863
SM 2320 B-97	06/03/2016			06/09/2016	Dale L. Simmons	1804863
SM 2540 C-97	06/03/2016			06/08/2016	Yijie Li	1804863
SM 2540 D-97	06/03/2016			06/08/2016	Yijie Li	1804863
SM 4500 F-C-97	06/03/2016			06/09/2016	Dale L. Simmons	1804863
SM 5310 B-00	06/03/2016			06/14/2016	Diana M. Turner	1804864