

Chemical Analysis Report

SE-DIST-2018-10-18-02

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

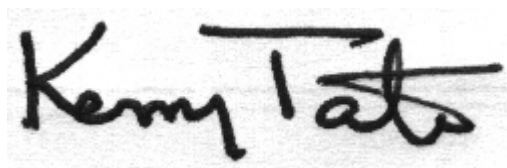
Event Description: **SMP- Dade**
Request ID: **RQ-2018-10-15-41**
Customer: **SE-DIST**
Project ID: **SMP**

Send Reports to:
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Certified by: Kerry Tate, Ph.D., Environmental Administrator

Date Certified: 15-NOV-2018 14:34

A handwritten signature in black ink that reads "Kerry Tate". The signature is written in a cursive, flowing style with a horizontal line above the first name.

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: SNAKE CREEK (EAST) @ FLAMINGO

Collection Date/Time: 10/17/2018 12:00

Field ID: G4SE0023

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2033914	EPA 180.1 Rev. 2.0	Turbidity	1.1		NTU	P353460	
	EPA 300.0 Rev. 2.1	Chloride	62		mg Cl/L	P353721	
		Sulfate	3.3		mg SO4/L	P353723	
		Color (true)	35		PCU	P353298	
	SM 2120 B	Total Alkalinity	191		mg CaCO3/L	P353711	
	SM 2540 C-97	TDS	326		mg/L	P353887	
	SM 2540 D-97	TSS	2	I	mg/L	P353841	
	SM 4500 F-C-97	Fluoride	0.28		mg F/L	P353714	
2033916	EPA 350.1 Rev. 2.0	Ammonia-N	0.16		mg N/L	P353862	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.97		mg N/L	P353606	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.015		mg N/L	P353354	
	EPA 365.1 Rev. 2.0	Total-P	0.006		mg P/L	P353405	
	SM 5310 B-00	Organic Carbon	12		mg C/L	P353622	
2033918	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P353315	
2033948	EPA 200.7 Rev. 4.4	Calcium	60.8		mg/L	P353462	
		Iron	210		ug/L	P353462	
		Magnesium	9.54		mg/L	P353462	
		Potassium	2.4		mg/L	P353462	
		Sodium	37.5		mg/L	P353462	
		Zinc	5.0	U	ug/L	P353462	
	EPA 200.8 Rev. 5.4	Arsenic	0.93		ug/L	P353462	
		Cadmium	0.020	U	ug/L	P353462	
		Chromium	0.40	U	ug/L	P353462	
		Copper	0.20	U	ug/L	P353462	
		Lead	0.060	I	ug/L	P353462	
		Nickel	0.20	U	ug/L	P353462	
		Silver	0.010	U	ug/L	P353462	

Sample Location: SNAKE CREEK (EAST) @ FLAMINGO

Collection Date/Time: 10/17/2018 12:10

Field ID: DUPE

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2033915	EPA 180.1 Rev. 2.0	Turbidity	1.2		NTU	P353460	
	EPA 300.0 Rev. 2.1	Chloride	61		mg Cl/L	P353721	
		Sulfate	3.2		mg SO4/L	P353723	
		Color (true)	35		PCU	P353298	
	SM 2320 B-97	Total Alkalinity	190		mg CaCO3/L	P353711	
	SM 2540 C-97	TDS	322		mg/L	P353887	
	SM 2540 D-97	TSS	3	I	mg/L	P353841	
	SM 4500 F-C-97	Fluoride	0.28		mg F/L	P353714	
2033917	EPA 350.1 Rev. 2.0	Ammonia-N	0.17		mg N/L	P353863	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.94		mg N/L	P353606	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.016		mg N/L	P353354	
	EPA 365.1 Rev. 2.0	Total-P	0.006		mg P/L	P353405	
	SM 5310 B-00	Organic Carbon	12		mg C/L	P353623	
2033919	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P353315	
2033949	EPA 200.7 Rev. 4.4	Calcium	61.4		mg/L	P353462	
		Iron	210		ug/L	P353462	
		Magnesium	9.61		mg/L	P353462	
		Potassium	2.4		mg/L	P353462	
		Sodium	37.7		mg/L	P353462	
		Zinc	5.0	U	ug/L	P353462	
	EPA 200.8 Rev. 5.4	Arsenic	0.93		ug/L	P353462	
		Cadmium	0.020	U	ug/L	P353462	
		Chromium	0.40	U	ug/L	P353462	
		Copper	0.20	U	ug/L	P353462	
		Lead	0.067	I	ug/L	P353462	
		Nickel	0.20	U	ug/L	P353462	
		Silver	0.010	U	ug/L	P353462	

Sample Location: SNAKE CREEK CANAL (NORTH FORK) @ STIRLING

Collection Date/Time: 10/17/2018 12:20

Field ID: G4SE0049

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2033926	EPA 180.1 Rev. 2.0	Turbidity	2.0		NTU	P353460	
	EPA 300.0 Rev. 2.1	Chloride	76		mg Cl/L	P353721	
		Sulfate	2.0		mg SO4/L	P353723	
	SM 2120 B	Color (true)	44		PCU	P353298	
	SM 2320 B-97	Total Alkalinity	244		mg CaCO3/L	P353711	
	SM 2540 C-97	TDS	380		mg/L	P353887	
	SM 2540 D-97	TSS	3	I	mg/L	P353841	
	SM 4500 F-C-97	Fluoride	0.29		mg F/L	P353714	
2033927	EPA 350.1 Rev. 2.0	Ammonia-N	0.27		mg N/L	P353863	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.4		mg N/L	P353606	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.066		mg N/L	P353354	
	EPA 365.1 Rev. 2.0	Total-P	0.012		mg P/L	P353405	
	SM 5310 B-00	Organic Carbon	17		mg C/L	P353623	
2033928	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P353316	

Sample Location: MIAMI (C-6 @ S26)

Collection Date/Time: 10/17/2018 14:15

Field ID: G4SE0024

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2033920	EPA 180.1 Rev. 2.0	Turbidity	1.7		NTU	P353460	
	SM 2320 B-97	Total Alkalinity	193	A	mg CaCO3/L	P353711	
	SM 2540 D-97	TSS	2	I	mg/L	P353843	
	SM 4500 F-C-97	Fluoride	0.25		mg F/L	P353714	
2033921	EPA 350.1 Rev. 2.0	Ammonia-N	0.22		mg N/L	P353863	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.0		mg N/L	P353606	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.12		mg N/L	P353354	
	EPA 365.1 Rev. 2.0	Total-P	0.009		mg P/L	P353405	
	SM 5310 B-00	Organic Carbon	11		mg C/L	P353623	
2033922	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P353315	
2033946	EPA 8321B	2,4-D	0.0020	U	ug/L	P353225	
		Bentazon	0.0074		ug/L	P353225	
		MCP	0.0020	U	ug/L	P353225	
		Triclopyr**	0.0040	U	ug/L	P353225	
		Imidacloprid	0.0020	U	ug/L	P353225	MS
		Diuron	0.0036	I	ug/L	P353225	
		Pyraclostrobin**	0.0020	U	ug/L	P353225	
		Primidone**	0.0040	U	ug/L	P353225	
		Linuron	0.0040	U	ug/L	P353225	
		Acetaminophen**	0.0080	U	ug/L	P353225	
		Fenuron	0.016	U	ug/L	P353225	
		Imazapyr**	0.14		ug/L	P353225	MS
		Carbamazepine**	8.0E-04	U	ug/L	P353225	
		Fluridone**	0.0050		ug/L	P353225	
		Hydrocodone**	8.0E-04	U	ug/L	P353225	
		Naproxen**	0.0080	U	ug/L	P353225	
		Ibuprofen**	0.020	U	ug/L	P353225	
		Sucralose**	0.028	I	ug/L	P353202	
		Acesulfame K**	0.10	U	ug/L	P353202	

Sample Location: WAGNER CREEK (WC-02)

Collection Date/Time: 10/17/2018 15:10

Field ID: G4SEWC02

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2033923	EPA 180.1 Rev. 2.0	Turbidity	1.2		NTU	P353460	
	SM 2320 B-97	Total Alkalinity	181		mg CaCO3/L	P353815	
	SM 2540 D-97	TSS	2	I	mg/L	P353843	
	SM 4500 F-C-97	Fluoride	0.38		mg F/L	P354099	
2033924	EPA 350.1 Rev. 2.0	Ammonia-N	0.17		mg N/L	P353853	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.50		mg N/L	P353612	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.18		mg N/L	P353594	
	EPA 365.1 Rev. 2.0	Total-P	0.045		mg P/L	P353470	
	SM 5310 B-00	Organic Carbon	4.3		mg C/L	P353623	
2033925	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.035		mg P/L	P353312	
2033947	EPA 8321B	2,4-D	0.0020	U	ug/L	P353225	
		Bentazon	0.0026	I	ug/L	P353225	
		MCP	0.0020	U	ug/L	P353225	
		Triclopyr**	0.0040	U	ug/L	P353225	
		Imidacloprid	0.0089		ug/L	P353225	MS
		Diuron	0.0096		ug/L	P353225	
		Pyraclostrobin**	0.0020	U	ug/L	P353225	
		Primidone**	0.0040	U	ug/L	P353225	
		Linuron	0.0040	U	ug/L	P353225	
		Acetaminophen**	0.30		ug/L	P353225	
		Fenuron	0.016	U	ug/L	P353225	
		Imazapyr**	0.075		ug/L	P353225	MS
		Carbamazepine**	0.0033		ug/L	P353225	
		Fluridone**	0.0031		ug/L	P353225	
		Hydrocodone**	8.0E-04	U	ug/L	P353225	
		Naproxen**	0.0080	U	ug/L	P353225	
		Ibuprofen**	0.020	U	ug/L	P353225	
		Sucralose**	0.27		ug/L	P353202	
		Acesulfame K**	0.18	I	ug/L	P353202	

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P353460

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P353462

Component	Result	Code	Units
Calcium	0.075	U	mg/L
Iron	30	U	ug/L
Magnesium	0.040	U	mg/L
Potassium	0.30	U	mg/L
Sodium	0.50	U	mg/L
Zinc	5.0	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P353462

Component	Result	Code	Units
Arsenic	0.050	U	ug/L
Cadmium	0.020	U	ug/L
Chromium	0.40	U	ug/L
Copper	0.20	U	ug/L
Lead	0.050	U	ug/L
Nickel	0.20	U	ug/L
Silver	0.010	U	ug/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P353721

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P353723

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P353853

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P353862

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P353863

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P353606

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P353612

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P353354

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P353594

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: P353405

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P353470

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P353312

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P353315

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P353316

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

Reference Method: EPA 8321B
Batch ID: P353202

Component	Result	Code	Units
Acesulfame K	0.10	U	ug/L
Sucralose	0.010	U	ug/L

Reference Method: EPA 8321B
Batch ID: P353225

Component	Result	Code	Units
2,4-D	0.0020	U	ug/L
Acetaminophen	0.0080	U	ug/L
Bentazon	8.0E-04	U	ug/L
Carbamazepine	8.0E-04	U	ug/L
Diuron	0.0020	U	ug/L
Fenuron	0.016	U	ug/L
Fluridone	4.0E-04	U	ug/L
Hydrocodone	8.0E-04	U	ug/L
Ibuprofen	0.020	U	ug/L
Imazapyr	0.0040	U	ug/L
Imidacloprid	0.0020	U	ug/L
Linuron	0.0040	U	ug/L
MCPP	0.0020	U	ug/L
Naproxen	0.0080	U	ug/L
Primidone	0.0040	U	ug/L
Pyraclostrobin	0.0020	U	ug/L
Triclopyr	0.0040	U	ug/L

Reference Method: SM 2120 B
Batch ID: P353298

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P353711

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

Reference Method: SM 2320 B-97
Batch ID: P353815

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

Quality Assurance Report

Method Blank Results

Reference Method: SM 2540 C-97
Batch ID: P353887

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P353841

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P353843

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P353714

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-97
Batch ID: P354099

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P353622

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

Reference Method: SM 5310 B-00
Batch ID: P353623

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: P353462

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	103		P	85 - 115
Iron	103		P	85 - 115
Magnesium	104		P	85 - 115
Potassium	98.6		P	85 - 115
Sodium	106		P	85 - 115
Zinc	92.4		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P353462

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Arsenic	102		P	85 - 115
Cadmium	101		P	85 - 115
Chromium	101		P	85 - 115
Copper	102		P	85 - 115
Lead	94.9		P	85 - 115
Nickel	102		P	85 - 115
Silver	98.7		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P353721

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P353723

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	99.7		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P353853

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P353862

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P353863

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P353606

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P353612

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	97.7		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P353354

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P353594

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P353405

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P353470

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P353312

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	97.6		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P353315

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P353316

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: EPA 8321B
Batch ID: P353202

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	107		P	40 - 150
Sucralose	84.4		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P353225

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	92.7		P	40 - 150
Acetaminophen	148		P	30 - 150
Bentazon	94.1		P	30 - 150
Carbamazepine	98.8		P	40 - 150
Diuron	101		P	40 - 150
Fenuron	139		P	40 - 150
Fluridone	115		P	40 - 150
Hydrocodone	131		P	40 - 150
Ibuprofen	57.2		P	40 - 150
Imazapyr	108		P	40 - 150
Imidacloprid	123		P	40 - 160
Linuron	86.5		P	40 - 150
MCPP	88.0		P	40 - 150
Naproxen	57.6		P	40 - 150
Primidone	129		P	40 - 150
Pyraclostrobin	78.1		P	40 - 150
Triclopyr	85.3		P	40 - 150

Reference Method: SM 2120 B
Batch ID: P353298

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

Reference Method: SM 2320 B-97
Batch ID: P353711

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	103		P	98 - 107

Reference Method: SM 2320 B-97
Batch ID: P353815

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	103		P	98 - 107

Reference Method: SM 4500 F-C-97
Batch ID: P353714

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.9		P	91 - 105

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 4500 F-C-97
Batch ID: P354099

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

Reference Method: SM 5310 B-00
Batch ID: P353622

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	96.8		P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P353623

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	95.1		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P353462

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2033892	Calcium	99.8		P	80 - 120
2033892	Iron	104		P	80 - 120
2033892	Magnesium	104		P	80 - 120
2033892	Potassium	101		P	80 - 120
2033892	Sodium	95.1		P	80 - 120
2033892	Zinc	91.2		P	80 - 120
2033902	Calcium	99.7	102	P/P	80 - 120
2033902	Iron	102	101	P/P	80 - 120
2033902	Magnesium	101	99.8	P/P	80 - 120
2033902	Potassium	97.3	95.1	P/P	80 - 120
2033902	Sodium	97.6	94.4	P/P	80 - 120
2033902	Zinc	91.9	92.7	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P353462

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2033892	Arsenic	102		P	80 - 120
2033892	Cadmium	103		P	80 - 120
2033892	Chromium	103		P	80 - 120
2033892	Copper	101		P	80 - 120
2033892	Lead	95.8		P	80 - 120
2033892	Nickel	101		P	80 - 120
2033892	Silver	99.6		P	80 - 120
2033902	Arsenic	102	101	P/P	80 - 120
2033902	Cadmium	101	98.9	P/P	80 - 120
2033902	Chromium	101	100	P/P	80 - 120
2033902	Copper	103	103	P/P	80 - 120
2033902	Lead	94.2	94.2	P/P	80 - 120
2033902	Nickel	101	101	P/P	80 - 120
2033902	Silver	99.0	98.3	P/P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P353721

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2033859	Chloride	102		P	90 - 110
2033971	Chloride	102		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P353723

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2033859	Sulfate	101		P	90 - 110
2033971	Sulfate	102		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P353853

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2033847	Ammonia-N	100	99.9	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P353862

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2033864	Ammonia-N	98.7	100	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P353863

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2033974	Ammonia-N	99.9	102	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P353606

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2033879	Kjeldahl Nitrogen	104	106	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P353612

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2033775	Kjeldahl Nitrogen	107	105	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P353354

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2033921	NO2NO3-N	100	102	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P353594

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2033787	NO2NO3-N	100	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P353405

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2033974	Total-P	97.8	95.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P353470

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2033924	Total-P	103	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P353312

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2033776	O-Phosphate-P	97.5	97.1	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P353315

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2033918	O-Phosphate-P	93.8	95.6	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P353316

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2033928	O-Phosphate-P	95.7	96.4	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P353202

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2033274	Acesulfame K	59.0	62.3	P/P	40 - 150
2033274	Sucralose	81.3	93.2	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P353225

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2033801	2,4-D	126	139	P/P	40 - 150
2033801	Acetaminophen	131	140	P/P	30 - 150
2033801	Bentazon	52.6	60.3	P/P	30 - 150
2033801	Carbamazepine	80.7	81.8	P/P	40 - 150
2033801	Diuron	72.7	71.9	P/P	40 - 150
2033801	Fenuron	110	113	P/P	40 - 150
2033801	Fluridone	106	110	P/P	40 - 150
2033801	Hydrocodone	108	116	P/P	40 - 150
2033801	Ibuprofen	52.2	65.2	P/P	40 - 150
2033801	Imazapyr	148	161	P/F	40 - 150
2033801	Imidacloprid	189	182	F/F	40 - 160
2033801	Linuron	73.3	76.8	P/P	40 - 150
2033801	MCP	132	137	P/P	40 - 150
2033801	Naproxen	60.2	71.8	P/P	40 - 150
2033801	Primidone	111	110	P/P	40 - 150
2033801	Pyraclostrobin	88.8	86.8	P/P	40 - 150
2033801	Triclopyr	124	140	P/P	40 - 150

Reference Method: SM 4500 F-C-97
Batch ID: P353714

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2033920	Fluoride	97.6	97.6	P/P	91 - 105

Reference Method: SM 4500 F-C-97
Batch ID: P354099

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2036681	Fluoride	96.0	97.2	P/P	91 - 105

Quality Assurance Report

Matrix Spike Accuracy

Reference Method: SM 5310 B-00
Batch ID: P353622

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2033531	Organic Carbon	95.2	94.9	P/P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P353623

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2033917	Organic Carbon	93.4	95.8	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P353460

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2033972	Turbidity	10.7	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P353462

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2033902	Calcium	1.64	Spike	P	0 - 20
2033902	Iron	0.566	Spike	P	0 - 20
2033902	Magnesium	0.856	Spike	P	0 - 20
2033902	Potassium	2.14	Spike	P	0 - 20
2033902	Sodium	1.85	Spike	P	0 - 20
2033902	Zinc	0.876	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P353462

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2033902	Arsenic	0.588	Spike	P	0 - 20
2033902	Cadmium	1.75	Spike	P	0 - 20
2033902	Chromium	0.815	Spike	P	0 - 20
2033902	Copper	0.0989	Spike	P	0 - 20
2033902	Lead	0.0603	Spike	P	0 - 20
2033902	Nickel	0.133	Spike	P	0 - 20
2033902	Silver	0.647	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P353721

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2033859	Chloride	0.142	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P353723

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2033859	Sulfate	0.486	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P353853

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2033847	Ammonia-N	0.456	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P353862

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2033864	Ammonia-N	0.771	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P353863

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2033974	Ammonia-N	2.21	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P353606

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2033879	Kjeldahl Nitrogen	1.98	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P353612

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2033775	Kjeldahl Nitrogen	1.52	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P353354

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2033921	NO2NO3-N	0.621	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P353594

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2033787	NO2NO3-N	0.939	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P353405

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2033974	Total-P	2.84	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P353470

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2033924	Total-P	1.25	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P353312

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2033776	O-Phosphate-P	0.340	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P353315

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2033918	O-Phosphate-P	1.90	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P353316

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2033928	O-Phosphate-P	0.729	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P353202

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2033274	Acesulfame K	5.51	Spike	P	0 - 30
2033274	Sucralose	11.7	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P353225

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2033801	2,4-D	9.52	Spike	P	0 - 30
2033801	Acetaminophen	6.29	Spike	P	0 - 30
2033801	Bentazon	9.84	Spike	P	0 - 30
2033801	Carbamazepine	1.38	Spike	P	0 - 30
2033801	Diuron	0.794	Spike	P	0 - 30
2033801	Fenuron	2.64	Spike	P	0 - 30
2033801	Fluridone	4.07	Spike	P	0 - 30
2033801	Hydrocodone	6.88	Spike	P	0 - 30
2033801	Ibuprofen	22.2	Spike	P	0 - 30
2033801	Imazapyr	3.26	Spike	P	0 - 30
2033801	Imidacloprid	4.05	Spike	P	0 - 30
2033801	Linuron	4.71	Spike	P	0 - 30
2033801	MCPP	3.58	Spike	P	0 - 30
2033801	Naproxen	17.6	Spike	P	0 - 30
2033801	Primidone	0.709	Spike	P	0 - 30
2033801	Pyraclostrobin	2.36	Spike	P	0 - 30
2033801	Triclopyr	12.2	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: SM 2120 B
Batch ID: P353298

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2033859	Color (true)	2.17	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P353711

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2033920	Total Alkalinity	0.631	Sample	P	0 - 1.6

Reference Method: SM 2320 B-97
Batch ID: P353815

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2034476	Total Alkalinity	0.598	Sample	P	0 - 1.6

Reference Method: SM 2540 C-97
Batch ID: P353887

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2033910	TDS	6.71	Sample	P	0 - 10

Reference Method: SM 2540 D-97
Batch ID: P353841

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2033910	TSS	6.90	Sample	P	0 - 10

Reference Method: SM 2540 D-97
Batch ID: P353843

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2034500	TSS	3.64	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P353714

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2033920	Fluoride	0.0	Spike	P	0 - 3.5

Reference Method: SM 4500 F-C-97
Batch ID: P354099

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2036681	Fluoride	0.939	Spike	P	0 - 3.5

Quality Assurance Report Precision

Reference Method: SM 5310 B-00
Batch ID: P353622

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2033531	Organic Carbon	0.154	Spike	P	0 - 20

Reference Method: SM 5310 B-00
Batch ID: P353623

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2033917	Organic Carbon	1.53	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 Surrogates

Lab Sample ID: 2033946
Field Sample ID: G4SE0024

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	155	P	30 - 160
EPA 8321B	Acetaminophen-d4	125	P	30 - 160
EPA 8321B	Carbamazepine-d10	86.8	P	30 - 160
EPA 8321B	Diuron-d6	71.2	P	30 - 160
EPA 8321B	Endothall-d6	94.7	P	40 - 160
EPA 8321B	Ibuprofen-d3	67.6	P	30 - 160
EPA 8321B	Primidone-d5	125	P	30 - 160
EPA 8321B	Sucralose-d6	107	P	40 - 160

Lab Sample ID: 2033947
Field Sample ID: G4SEWC02

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	119	P	30 - 160
EPA 8321B	Acetaminophen-d4	135	P	30 - 160
EPA 8321B	Carbamazepine-d10	89.8	P	30 - 160
EPA 8321B	Diuron-d6	76.9	P	30 - 160
EPA 8321B	Endothall-d6	58.0	P	40 - 160
EPA 8321B	Ibuprofen-d3	49.3	P	30 - 160
EPA 8321B	Primidone-d5	135	P	30 - 160
EPA 8321B	Sucralose-d6	105	P	40 - 160

Quality Assurance Report Calibration Verification

Reference Method: SM 2120 B

Run ID: A87127

Included Lab Sample IDs: 2033914, 2033915, 2033926

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A87131

Included Lab Sample IDs: 2033918, 2033919, 2033922, 2033925, 2033928

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.6	98.8	P/P	90 - 110
O-Phosphate-P	98.8	99.1	P/P	90 - 110
O-Phosphate-P	99.1	98.6	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A87135

Included Lab Sample IDs: 2033946, 2033947

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	103	94.4	P/P	60 - 160

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A87160

Included Lab Sample IDs: 2033916, 2033917, 2033921, 2033927

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

Reference Method: EPA 8321B

Run ID: A87174

Included Lab Sample IDs: 2033946, 2033947

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	82.4	87.1	P/P	60 - 160

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A87200

Included Lab Sample IDs: 2033914, 2033915, 2033920, 2033923, 2033926

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

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A87212

Included Lab Sample IDs: 2033914, 2033915, 2033926

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A87220

Included Lab Sample IDs: 2033916, 2033917, 2033921, 2033924, 2033927

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A87255

Included Lab Sample IDs: 2033924

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	98.5	99.0	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A87260

Included Lab Sample IDs: 2033916, 2033917, 2033921, 2033924, 2033927

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	96.8	98.3	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A87281

Included Lab Sample IDs: 2033916, 2033917, 2033921, 2033927

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	95.4	97.5	P/P	90 - 110
Kjeldahl Nitrogen	97.5	96.4	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A87284

Included Lab Sample IDs: 2033924

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	99.2	96.0	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A87299

Included Lab Sample IDs: 2033914, 2033915, 2033920, 2033926

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

Reference Method: SM 4500 F-C-97

Run ID: A87299

Included Lab Sample IDs: 2033914, 2033915, 2033920, 2033926

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A87337

Included Lab Sample IDs: 2033948, 2033949

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Potassium	92.2	92.5	P/P	90 - 110
Sodium	94.9	93.1	P/P	90 - 110
Zinc	92.8	92.6	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A87344

Included Lab Sample IDs: 2033923

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	100	104	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A87363

Included Lab Sample IDs: 2033924

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

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A87365

Included Lab Sample IDs: 2033948, 2033949

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	98.1	98.5	P/P	90 - 110
Iron	99.6	99.5	P/P	90 - 110
Magnesium	97.0	97.5	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A87366

Included Lab Sample IDs: 2033916, 2033917, 2033921, 2033927

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	101	103	P/P	90 - 110
Ammonia-N	102	102	P/P	90 - 110
Ammonia-N	103	103	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A87443

Included Lab Sample IDs: 2033946, 2033947

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	107	103	P/P	50 - 150
2,4-D	98.5	107	P/P	50 - 150
Acetaminophen	115	130	P/P	60 - 160
Acetaminophen	129	115	P/P	60 - 160
Bentazon	111	117	P/P	50 - 160
Bentazon	117	122	P/P	50 - 160
Carbamazepine	130	134	P/P	60 - 160
Carbamazepine	134	139	P/P	60 - 160
Diuron	136	143	P/P	60 - 150
Diuron	143	136	P/P	60 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A87443

Included Lab Sample IDs: 2033946, 2033947

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fenuron	123	135	P/P	60 - 150
Fenuron	135	133	P/P	60 - 150
Fluridone	120	124	P/P	60 - 160
Fluridone	124	128	P/P	60 - 160
Hydrocodone	121	128	P/P	60 - 150
Hydrocodone	128	142	P/P	60 - 150
Ibuprofen	63.1	64.9	P/P	50 - 160
Ibuprofen	72.0	63.1	P/P	50 - 160
Imazapyr	113	121	P/P	50 - 150
Imazapyr	116	113	P/P	50 - 150
Imidacloprid	120	138	P/P	60 - 150
Imidacloprid	138	121	P/P	60 - 150
Linuron	126	137	P/P	60 - 150
Linuron	137	135	P/P	60 - 150
MCP	101	108	P/P	50 - 150
MCP	108	106	P/P	50 - 150
Naproxen	95.7	98.6	P/P	50 - 160
Naproxen	98.6	121	P/P	50 - 160
Primidone	130	140	P/P	60 - 150
Primidone	135	130	P/P	60 - 150
Pyraclostrobin	123	130	P/P	60 - 150
Pyraclostrobin	130	128	P/P	60 - 150
Triclopyr	103	109	P/P	50 - 160
Triclopyr	111	103	P/P	50 - 160

Reference Method: SM 4500 F-C-97

Run ID: A87470

Included Lab Sample IDs: 2033923

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

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A87611

Included Lab Sample IDs: 2033948, 2033949

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Arsenic	97.6	101	P/P	90 - 110
Cadmium	98.3	100	P/P	90 - 110
Chromium	100	99.8	P/P	90 - 110
Copper	99.1	103	P/P	90 - 110
Lead	93.6	96.5	P/P	90 - 110
Nickel	99.9	101	P/P	90 - 110
Silver	93.8	96.5	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 SMP	MS
			LCS				
EPA 180.1 Rev. 2.0	Turbidity					10.7	
EPA 200.7 Rev. 4.4	Calcium	103	99.8	99.7	102		1.64
	Iron	103	104	102	101		0.566
	Magnesium	104	104	101	99.8		0.856
	Potassium	98.6	101	97.3	95.1		2.14
	Sodium	106	95.1	97.6	94.4		1.85
	Zinc	92.4	91.2	91.9	92.7		0.876
EPA 200.8 Rev. 5.4	Arsenic	102	102	102	101		0.588
	Cadmium	101	103	101	98.9		1.75
	Chromium	101	103	101	100		0.815
	Copper	102	101	103	103		0.0989
	Lead	94.9	95.8	94.2	94.2		0.0603
	Nickel	102	101	101	101		0.133
	Silver	98.7	99.6	99.0	98.3		0.647
EPA 300.0 Rev. 2.1	Chloride	100	102	102		0.142	
	Sulfate	99.7	101	102		0.486	
EPA 350.1 Rev. 2.0	Ammonia-N	98.3	100	99.9			0.456
	Ammonia-N	100	98.7	100			0.771
	Ammonia-N	102	99.9	102			2.21
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	103	104	106			1.98
	Kjeldahl Nitrogen	97.7	107	105			1.52
EPA 353.2 Rev. 2.0	NO2NO3-N	100	100	102			0.621
	NO2NO3-N	100	100	102			0.939
EPA 365.1 Rev. 2.0	Total-P	103	97.8	95.0			2.84
	Total-P	99.8	103	102			1.25
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	97.6	97.5	97.1			0.340
	O-Phosphate-P	97.8	93.8	95.6			1.90
	O-Phosphate-P	100	95.7	96.4			0.729
EPA 8321B	2,4-D	92.7	126	139			9.52
	Acesulfame K	107	59.0	62.3			5.51
	Acetaminophen	148	131	140			6.29
	Bentazon	94.1	52.6	60.3			9.84
	Carbamazepine	98.8	80.7	81.8			1.38
	Diuron	101	72.7	71.9			0.794
	Fenuron	139	110	113			2.64
	Fluridone	115	106	110			4.07
	Hydrocodone	131	108	116			6.88
	Ibuprofen	57.2	52.2	65.2			22.2
	Imazapyr	108	148	161			3.26
	Imidacloprid	123	189	182			4.05
	Linuron	86.5	73.3	76.8			4.71
	MCPP	88.0	132	137			3.58
	Naproxen	57.6	60.2	71.8			17.6
	Primidone	129	111	110			0.709
	Pyraclostrobin	78.1	88.8	86.8			2.36
	Sucralose	84.4	81.3	93.2			11.7
	Triclopyr	85.3	124	140			12.2
SM 2120 B	Color (true)	101				2.17	
SM 2320 B-97	Total Alkalinity	103				0.631	
	Total Alkalinity	103				0.598	
SM 2540 C-97	TDS					6.71	
SM 2540 D-97	TSS					6.90	
	TSS					3.64	
SM 4500 F-C-97	Fluoride	98.9	97.6	97.6			0.0

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	MS
SM 4500 F-C-97	Fluoride	98.0	96.0	97.2		0.939
SM 5310 B-00	Organic Carbon	96.8	95.2	94.9		0.154
	Organic Carbon	95.1	93.4	95.8		1.53

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2033914, 2033915, 2033920, 2033923, 2033926
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2033948, 2033949
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2033948, 2033949
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2033914, 2033915, 2033926
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2033914, 2033915, 2033926
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2033916, 2033917, 2033921, 2033924, 2033927
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2033916, 2033917, 2033921, 2033924, 2033927
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2033916, 2033917, 2033921, 2033924, 2033927
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2033916, 2033917, 2033921, 2033924, 2033927
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2033918, 2033919, 2033922, 2033925, 2033928
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2033946, 2033947
SM 2120 B / E31780	True Color measured at 450 nm	2033914, 2033915, 2033926
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2033914, 2033915, 2033920, 2033923, 2033926
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2033914, 2033915, 2033926
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2033914, 2033915, 2033920, 2033923, 2033926
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2033914, 2033915, 2033920, 2033923, 2033926
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2033916, 2033917, 2033921, 2033924, 2033927

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	10/18/2018			10/18/2018 15:59	Megan Treadwell	2033914, 2033915, 2033920, 2033923, 2033926
EPA 200.7 Rev. 4.4	10/18/2018	10/22/2018 14:45	Elliott D. Healy	10/27/2018 00:07	Betina Topolski	2033948
	10/18/2018	10/22/2018 14:45	Elliott D. Healy	10/27/2018 00:13	Betina Topolski	2033949
	10/18/2018	10/22/2018 14:45	Elliott D. Healy	10/29/2018 22:46	Betina Topolski	2033948
	10/18/2018	10/22/2018 14:45	Elliott D. Healy	10/29/2018 22:53	Betina Topolski	2033949
EPA 200.8 Rev. 5.4	10/18/2018	10/22/2018 14:45	Elliott D. Healy	11/07/2018 22:56	Robert K Palmer	2033948
	10/18/2018	10/22/2018 14:45	Elliott D. Healy	11/07/2018 23:06	Robert K Palmer	2033949
EPA 300.0 Rev. 2.1	10/18/2018			10/25/2018 01:44	Lipi Saha	2033914
	10/18/2018			10/25/2018 01:56	Lipi Saha	2033915
	10/18/2018			10/25/2018 02:08	Lipi Saha	2033926
EPA 350.1 Rev. 2.0	10/18/2018			10/29/2018 13:14	Ping Hua	2033916
	10/18/2018			10/29/2018 13:28	Ping Hua	2033917
	10/18/2018			10/29/2018 15:07	Ping Hua	2033921
	10/18/2018			10/29/2018 15:09	Ping Hua	2033927
	10/18/2018			10/29/2018 15:41	Julia Storbeck	2033924
EPA 351.2 Rev. 2.0	10/18/2018	10/24/2018 11:00	Adrian Shelby	10/25/2018 11:24	Joseph Suarez	2033916
	10/18/2018	10/24/2018 11:00	Adrian Shelby	10/25/2018 11:26	Joseph Suarez	2033917
	10/18/2018	10/24/2018 11:00	Adrian Shelby	10/25/2018 11:30	Joseph Suarez	2033921
	10/18/2018	10/24/2018 11:00	Adrian Shelby	10/25/2018 11:32	Joseph Suarez	2033927
	10/18/2018	10/24/2018 11:00	Adrian Shelby	10/25/2018 13:50	Joseph Suarez	2033924
EPA 353.2 Rev. 2.0	10/18/2018			10/19/2018 13:37	Lauren Bottorf	2033921
	10/18/2018			10/19/2018 13:45	Lauren Bottorf	2033916
	10/18/2018			10/19/2018 13:46	Lauren Bottorf	2033917
	10/18/2018			10/19/2018 13:47	Lauren Bottorf	2033927
	10/18/2018			10/24/2018 12:37	Lauren Bottorf	2033924
EPA 365.1 Rev. 2.0	10/18/2018	10/22/2018 13:00	Sima Feizi	10/23/2018 12:02	Beverly Y. Sanders	2033916
	10/18/2018	10/22/2018 13:00	Sima Feizi	10/23/2018 12:03	Beverly Y. Sanders	2033917
	10/18/2018	10/22/2018 13:00	Sima Feizi	10/23/2018 12:04	Beverly Y. Sanders	2033921
	10/18/2018	10/22/2018 13:00	Sima Feizi	10/23/2018 12:12	Beverly Y. Sanders	2033927
	10/18/2018	10/22/2018 13:00	Sima Feizi	10/23/2018 12:37	Beverly Y. Sanders	2033924
EPA 365.1 Rev. 2.0 dissolved	10/18/2018			10/18/2018 17:22	Anthony C. Onicha	2033918
	10/18/2018			10/18/2018 17:26	Anthony C. Onicha	2033928
	10/18/2018			10/18/2018 17:35	Anthony C. Onicha	2033925
	10/18/2018			10/18/2018 17:47	Anthony C. Onicha	2033919, 2033922
EPA 8321B	10/18/2018	10/18/2018 16:00	Rebecca Ware	10/19/2018 05:36	Rebecca Ware	2033946
	10/18/2018	10/18/2018 16:00	Rebecca Ware	10/19/2018 05:51	Rebecca Ware	2033947
	10/18/2018	10/18/2018 16:00	Rebecca Ware	10/20/2018 00:35	Mohammad Ghaffari	2033946
	10/18/2018	10/18/2018 16:00	Rebecca Ware	10/20/2018 00:49	Mohammad Ghaffari	2033947
	10/18/2018	10/22/2018 10:00	Hoor Shaik	10/24/2018 00:50	Juyoung Kim	2033946

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 8321B	10/18/2018	10/22/2018 10:00	Hoor Shaik	10/24/2018 01:59	Juyoung Kim	2033947
	10/18/2018	10/22/2018 10:00	Hoor Shaik	10/25/2018 17:55	Juyoung Kim	2033946
	10/18/2018	10/22/2018 10:00	Hoor Shaik	10/25/2018 19:05	Juyoung Kim	2033947
SM 2120 B	10/18/2018			10/18/2018 15:46	Chelsea Hernandez	2033914
	10/18/2018			10/18/2018 15:47	Chelsea Hernandez	2033915
	10/18/2018			10/18/2018 15:48	Chelsea Hernandez	2033926
SM 2320 B-97	10/18/2018			10/24/2018 12:27	Dale L. Simmons	2033920
	10/18/2018			10/24/2018 14:14	Dale L. Simmons	2033914
	10/18/2018			10/24/2018 14:26	Dale L. Simmons	2033915
	10/18/2018			10/24/2018 14:37	Dale L. Simmons	2033926
	10/18/2018			10/26/2018 11:55	Dale L. Simmons	2033923
SM 2540 C-97	10/18/2018			10/23/2018 15:01	Yijie Li	2033914, 2033915, 2033926
SM 2540 D-97	10/18/2018			10/23/2018 15:01	Yijie Li	2033914, 2033915, 2033920, 2033923, 2033926
SM 4500 F-C-97	10/18/2018			10/24/2018 12:19	Dale L. Simmons	2033920
	10/18/2018			10/24/2018 14:14	Dale L. Simmons	2033914
	10/18/2018			10/24/2018 14:26	Dale L. Simmons	2033915
	10/18/2018			10/24/2018 14:37	Dale L. Simmons	2033926
	10/18/2018			10/30/2018 17:47	Dale L. Simmons	2033923
SM 5310 B-00	10/18/2018			10/24/2018 10:12	Megan Treadwell	2033916
	10/18/2018			10/24/2018 11:04	Megan Treadwell	2033917
	10/18/2018			10/24/2018 12:07	Megan Treadwell	2033921
	10/18/2018			10/24/2018 12:20	Megan Treadwell	2033924
	10/18/2018			10/24/2018 12:34	Megan Treadwell	2033927