Chemical Analysis Report

NE-DIST-2018-02-07-02

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

Event Description: **LSJR West 1 2018**
Request ID: **RQ-2018-02-05-22**
Customer: **NE-DIST**
Project ID: **SMP**

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Certified by: Thekkekalathil Chandrasekhar, Chemist Administrator Date Certified: 28-FEB-2018 16:23

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: 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: Williamson Creek @ Jammes Rd. Jacksonville **Collection Date/Time: 02/06/2018 13:40**

Field ID: 20030618 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1965439	EPA 180.1 Rev. 2.0	Turbidity	3.3	A	NTU	P339494	
	EPA 300.0 Rev. 2.1	Chloride	20		mg Cl/L	P340014	
		Sulfate	20		mg SO4/L	P340017	
	SM 2120 B	Color (true)	36	A	PCU	P339500	
	SM 2320 B-97	Total Alkalinity	79		mg CaCO3/L	P340206	
	SM 2540 C-97	TDS	186		mg/L	P339841	
	SM 2540 D-97	TSS	2	I	mg/L	P339805	
	SM 4500 F-C-97	Fluoride	0.059	I	mg F/L	P340474	
1965442	EPA 350.1 Rev. 2.0	Ammonia-N	0.060		mg N/L	P340181	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.52		mg N/L	P339569	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.18		mg N/L	P340042	
	EPA 365.1 Rev. 2.0	Total-P	0.038		mg P/L	P339861	
	SM 5310 B-00	Organic Carbon	7.4		mg C/L	P340091	
1965445	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.016		mg P/L	P339541	
1965462	EPA 8321B	2,4-D	0.0020	U	ug/L	P339489	
		Sucralose**	0.19		ug/L	P339456	
		Bentazon	0.0016	I	ug/L	P339489	MS
		MCPP	0.0023	I	ug/L	P339489	MS
		Triclopyr**	0.0040	U	ug/L	P339489	MS
		Imidacloprid	0.021		ug/L	P339489	MS
		Diuron	0.0032	I	ug/L	P339489	
		Primidone**	0.0040	U	ug/L	P339489	
		Linuron	0.0040	U	ug/L	P339489	
		Acetaminophen**	0.0080	U	ug/L	P339489	
		Fenuron	0.0080	U	ug/L	P339489	
		Carbamazepine**	4.0E-04	U	ug/L	P339489	
		Fluridone**	0.011		ug/L	P339489	

Ref. Method and Comment:
SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
SM 4500 F-C-97: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: Jax Heights at Wesconett **Collection Date/Time: 02/06/2018 10:45**

Field ID: 20030608 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1965440	EPA 180.1 Rev. 2.0	Turbidity	3.2		NTU	P339494	
	EPA 300.0 Rev. 2.1	Chloride	21		mg Cl/L	P340014	
		Sulfate	14		mg SO4/L	P340017	
	SM 2120 B	Color (true)	110		PCU	P339500	
	SM 2320 B-97	Total Alkalinity	60		mg CaCO3/L	P340206	
	SM 2540 C-97	TDS	176		mg/L	P339841	
	SM 2540 D-97	TSS	2	I	mg/L	P339805	
	SM 4500 F-C-97	Fluoride	0.053	I	mg F/L	P340474	
1965443	EPA 350.1 Rev. 2.0	Ammonia-N	0.058		mg N/L	P340181	

Field ID: 20030608 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1965443	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.59		mg N/L	P339569	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.17		mg N/L	P340042	
	EPA 365.1 Rev. 2.0	Total-P	0.043		mg P/L	P339861	
	SM 5310 B-00	Organic Carbon	16		mg C/L	P340092	
1965446	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.024		mg P/L	P339541	
1965463	EPA 8321B	2,4-D	0.0020	U	ug/L	P339489	
		Sucralose**	0.58		ug/L	P339456	
		Bentazon	0.0043		ug/L	P339489	MS
		MCPP	0.0020	U	ug/L	P339489	MS
		Triclopyr**	0.0040	U	ug/L	P339489	MS
		Imidacloprid	0.011		ug/L	P339489	MS
		Diuron	0.0050	I	ug/L	P339489	
		Primidone**	0.0040	U	ug/L	P339489	
		Linuron	0.0040	U	ug/L	P339489	
		Acetaminophen**	0.0082	I	ug/L	P339489	
		Fenuron	0.0080	U	ug/L	P339489	
		Carbamazepine**	4.1E-04	I	ug/L	P339489	
		Fluridone**	5.0E-04	I	ug/L	P339489	

Ref. Method and Comment:
SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
SM 4500 F-C-97: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: McCoy Creek @ Myrtle Ave **Collection Date/Time: 02/06/2018 14:40**

Field ID: 20030693 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1965441	EPA 180.1 Rev. 2.0	Turbidity	6.4		NTU	P339494	
	EPA 300.0 Rev. 2.1	Chloride	19		mg Cl/L	P340014	
		Sulfate	42		mg SO4/L	P340017	
	SM 2120 B	Color (true)	28		PCU	P339500	
	SM 2320 B-97	Total Alkalinity	142		mg CaCO3/L	P340206	
	SM 2540 C-97	TDS	275		mg/L	P339841	
	SM 2540 D-97	TSS	6	I	mg/L	P339805	
	SM 4500 F-C-97	Fluoride	0.23		mg F/L	P340474	
1965444	EPA 350.1 Rev. 2.0	Ammonia-N	0.12		mg N/L	P340181	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.64		mg N/L	P339569	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.24		mg N/L	P340042	
	EPA 365.1 Rev. 2.0	Total-P	0.11		mg P/L	P339861	
	SM 5310 B-00	Organic Carbon	7.3		mg C/L	P340092	
1965447	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.038		mg P/L	P339542	
1965464	EPA 8321B	2,4-D	0.012		ug/L	P339489	
		Sucralose**	0.24		ug/L	P339456	
		Bentazon	0.017		ug/L	P339489	MS
		MCPP	0.0037	I	ug/L	P339489	MS
		Triclopyr**	0.0040	U	ug/L	P339489	MS

Field ID: 20030693 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1965464	EPA 8321B	Imidacloprid	0.35		ug/L	P339489	MS
		Diuron	0.072		ug/L	P339489	
		Primidone**	0.0040	U	ug/L	P339489	
		Linuron	0.0040	U	ug/L	P339489	
		Acetaminophen**	0.11		ug/L	P339489	
		Fenuron	0.0080	U	ug/L	P339489	
		Carbamazepine**	4.5E-04	I	ug/L	P339489	
		Fluridone**	0.0012	I	ug/L	P339489	

Ref. Method and Comment:
SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
SM 4500 F-C-97: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: Williamson Creek @ Hugh Edwards Dr. **Collection Date/Time: 02/06/2018 13:50**

Field ID: 20030429 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1965465	EPA 8321B	2,4-D	0.0020	U	ug/L	P339489	
		Sucralose**	0.23		ug/L	P339456	
		Bentazon	0.0016	I	ug/L	P339489	MS
		MCPP	0.0020	U	ug/L	P339489	MS
		Triclopyr**	0.0040	U	ug/L	P339489	MS
		Imidacloprid	0.026		ug/L	P339489	MS
		Diuron	0.0028	I	ug/L	P339489	
		Primidone**	0.0040	U	ug/L	P339489	
		Linuron	0.0040	U	ug/L	P339489	
		Acetaminophen**	0.0080	U	ug/L	P339489	
		Fenuron	0.0080	U	ug/L	P339489	
		Carbamazepine**	4.0E-04	U	ug/L	P339489	
		Fluridone**	0.011		ug/L	P339489	

Sample Location: McCoy Creek @ McDuff **Collection Date/Time: 02/06/2018 14:15**

Field ID: 20030881 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1965466	EPA 8321B	2,4-D	0.0032	I	ug/L	P339489	
		Sucralose**	0.76		ug/L	P339456	
		Bentazon	0.0031	I	ug/L	P339489	MS
		MCPP	0.0020	U	ug/L	P339489	MS
		Triclopyr**	0.0040	U	ug/L	P339489	MS
		Imidacloprid	0.019		ug/L	P339489	MS
		Diuron	0.015		ug/L	P339489	
		Primidone**	0.0040	U	ug/L	P339489	
		Linuron	0.0040	U	ug/L	P339489	
		Acetaminophen**	0.035		ug/L	P339489	
		Fenuron	0.0080	U	ug/L	P339489	
		Carbamazepine**	7.2E-04	I	ug/L	P339489	

Field ID: 20030881 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1965466	EPA 8321B	Fluridone**	4.0E-04	U	ug/L	P339489	

Quality Assurance Report
Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P339494

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P340014

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P340017

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P340181

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P339569

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P340042

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P339861

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P339541

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: P339542

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

Reference Method: EPA 8321B
Batch ID: P339456

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Reference Method: EPA 8321B
Batch ID: P339489

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	4.0E-04	U	ug/L
Diuron	0.0020	U	ug/L
Fenuron	0.0080	U	ug/L
Fluridone	4.0E-04	U	ug/L
Imidacloprid	0.0020	U	ug/L
Linuron	0.0040	U	ug/L
MCPP	0.0020	U	ug/L
Primidone	0.0040	U	ug/L
Triclopyr	0.0040	U	ug/L

Reference Method: SM 2120 B
Batch ID: P339500

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P340206

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

Reference Method: SM 2540 C-97
Batch ID: P339841

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P339805

Component	Result	Code	Units
TSS	2	U	mg/L

Quality Assurance Report
Method Blank Results

Reference Method: SM 4500 F-C-97
Batch ID: P340474

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P340091

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

Reference Method: SM 5310 B-00
Batch ID: P340092

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: P340014

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	99.6		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P340017

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P340181

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P339569

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P340042

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P339861

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P339861

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P339541

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P339542

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

Reference Method: EPA 8321B
Batch ID: P339456

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	110		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P339489

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	69.5		P	40 - 150
Acetaminophen	92.2		P	30 - 150
Bentazon	87.1		P	30 - 150
Carbamazepine	85.8		P	40 - 150
Diuron	76.3		P	40 - 150
Fenuron	96.9		P	40 - 150
Fluridone	74.6		P	40 - 150
Imidacloprid	83.4		P	40 - 160
Linuron	80.2		P	40 - 150
MCPP	67.6		P	40 - 150
Primidone	105		P	40 - 150
Triclopyr	69.0		P	40 - 150

Reference Method: SM 2320 B-97
Batch ID: P340206

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	99.4		P	95 - 108

Reference Method: SM 4500 F-C-97
Batch ID: P340474

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.6		P	92 - 103

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: SM 5310 B-00
Batch ID: P340091

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	98.4		P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P340092

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

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P340014

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1965507	Chloride	103		P	90 - 110
1965562	Chloride	101		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P340017

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1965507	Sulfate	104		P	90 - 110
1965562	Sulfate	102		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P340181

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1965392	Ammonia-N	96.9	95.6	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P339569

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1965442	Kjeldahl Nitrogen	91.6	91.2	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P340042

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1965392	NO2NO3-N	105	105	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P339861

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1965442	Total-P	98.7	99.7	P/P	90 - 110

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P339541

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1965174	O-Phosphate-P	97.7	97.3	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P339542

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1965288	O-Phosphate-P	97.1	96.7	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P339456

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1965337	Sucralose	109	108	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P339489

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1964945	2,4-D	46.1	49.4	P/P	40 - 150
1964945	Acetaminophen	123	108	P/P	30 - 150
1964945	Bentazon	27.3	29.7	F/F	30 - 150
1964945	Carbamazepine	85.1	84.5	P/P	40 - 150
1964945	Diuron	77.2	74.5	P/P	40 - 150
1964945	Fenuron	85.0	83.1	P/P	40 - 150
1964945	Fluridone	67.3	65.9	P/P	40 - 150
1964945	Imidacloprid	165	146	F/P	40 - 160
1964945	Linuron	79.8	83.0	P/P	40 - 150
1964945	MCPP	38.1	40.3	F/P	40 - 150
1964945	Primidone	105	108	P/P	40 - 150
1964945	Triclopyr	39.1	40.4	F/P	40 - 150

Reference Method: SM 5310 B-00
Batch ID: P340091

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1965186	Organic Carbon	100	101	P/P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P340092

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1965443	Organic Carbon	97.8	101	P/P	85 - 115

Quality Assurance Report
Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P339494

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits

Quality Assurance Report
Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P339494

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1965439	Turbidity	0.601	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P340014

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1965507	Chloride	0.575	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P340017

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1965507	Sulfate	0.254	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P340181

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1965392	Ammonia-N	1.21	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P339569

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1965442	Kjeldahl Nitrogen	0.272	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P340042

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1965392	NO2NO3-N	0.390	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P339861

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1965442	Total-P	0.925	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P339541

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1965174	O-Phosphate-P	0.254	Spike	P	0 - 20

Quality Assurance Report
Precision

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P339542

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1965288	O-Phosphate-P	0.384	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P339456

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1965337	Sucralose	1.35	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P339489

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1964945	2,4-D	7.05	Spike	P	0 - 30
1964945	Acetaminophen	12.7	Spike	P	0 - 30
1964945	Bentazon	6.75	Spike	P	0 - 30
1964945	Carbamazepine	0.653	Spike	P	0 - 30
1964945	Diuron	2.39	Spike	P	0 - 30
1964945	Fenuron	2.26	Spike	P	0 - 30
1964945	Fluridone	2.11	Spike	P	0 - 30
1964945	Imidacloprid	11.4	Spike	P	0 - 30
1964945	Linuron	3.93	Spike	P	0 - 30
1964945	MCPP	5.65	Spike	P	0 - 30
1964945	Primidone	3.58	Spike	P	0 - 30
1964945	Triclopyr	3.31	Spike	P	0 - 30

Reference Method: SM 2120 B
Batch ID: P339500

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1965439	Color (true)	0.140	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P340206

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1965352	Total Alkalinity	0.306	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
Batch ID: P339841

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1965278	TDS	0.332	Sample	P	0 - 10

Quality Assurance Report
Precision

Reference Method: SM 4500 F-C-97
Batch ID: P340474

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1965350	Fluoride	0.937	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P340091

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1965186	Organic Carbon	0.135	Spike	P	0 - 20

Reference Method: SM 5310 B-00
Batch ID: P340092

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1965443	Organic Carbon	1.72	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: 1965462
Field Sample ID: 20030618

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	49.1	P	30 - 160
EPA 8321B	Acetaminophen-d4	109	P	30 - 160
EPA 8321B	Carbamazepine-d10	91.9	P	30 - 160
EPA 8321B	Diuron-d6	81.2	P	30 - 160
EPA 8321B	Primidone-d5	105	P	30 - 160
EPA 8321B	Sucralose-d6	101	P	40 - 160

Lab Sample ID: 1965463
Field Sample ID: 20030608

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	53.1	P	30 - 160
EPA 8321B	Acetaminophen-d4	124	P	30 - 160
EPA 8321B	Carbamazepine-d10	95.3	P	30 - 160
EPA 8321B	Diuron-d6	89.9	P	30 - 160
EPA 8321B	Primidone-d5	111	P	30 - 160
EPA 8321B	Sucralose-d6	136	P	40 - 160

Lab Sample ID: 1965464
Field Sample ID: 20030693

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	47.9	P	30 - 160
EPA 8321B	Acetaminophen-d4	140	P	30 - 160

Quality Assurance Report
Surrogates

Lab Sample ID: 1965464
Field Sample ID: 20030693

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Carbamazepine-d10	108	P	30 - 160
EPA 8321B	Diuron-d6	95.9	P	30 - 160
EPA 8321B	Primidone-d5	136	P	30 - 160
EPA 8321B	Sucralose-d6	120	P	40 - 160

Lab Sample ID: 1965465
Field Sample ID: 20030429

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	45.5	P	30 - 160
EPA 8321B	Acetaminophen-d4	127	P	30 - 160
EPA 8321B	Carbamazepine-d10	105	P	30 - 160
EPA 8321B	Diuron-d6	98.8	P	30 - 160
EPA 8321B	Primidone-d5	122	P	30 - 160
EPA 8321B	Sucralose-d6	119	P	40 - 160

Lab Sample ID: 1965466
Field Sample ID: 20030881

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	52.4	P	30 - 160
EPA 8321B	Acetaminophen-d4	119	P	30 - 160
EPA 8321B	Carbamazepine-d10	105	P	30 - 160
EPA 8321B	Diuron-d6	102	P	30 - 160
EPA 8321B	Primidone-d5	130	P	30 - 160
EPA 8321B	Sucralose-d6	116	P	40 - 160

Quality Assurance Report
Calibration Verification

Reference Method: SM 2120 B
Run ID: A81904
Included Lab Sample IDs: 1965439, 1965440, 1965441

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	99.3	97.8	P/P	85 - 115

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A81905
Included Lab Sample IDs: 1965439, 1965440, 1965441

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A81920
Included Lab Sample IDs: 1965445, 1965446, 1965447

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	101	97.5	P/P	90 - 110

Quality Assurance Report
Calibration Verification

Reference Method: EPA 8321B
Run ID: A81986
Included Lab Sample IDs: 1965462, 1965463, 1965464, 1965465, 1965466

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	111	115	P/P	60 - 150

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A81997
Included Lab Sample IDs: 1965442, 1965443, 1965444

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

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A82003
Included Lab Sample IDs: 1965439, 1965440, 1965441

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	102	104	P/P	90 - 110
Chloride	103	102	P/P	90 - 110
Sulfate	102	105	P/P	90 - 110
Sulfate	105	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A82078
Included Lab Sample IDs: 1965444

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

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A82086
Included Lab Sample IDs: 1965442, 1965443

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

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A82097
Included Lab Sample IDs: 1965442, 1965443, 1965444

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

Reference Method: SM 5310 B-00
Run ID: A82117
Included Lab Sample IDs: 1965442, 1965443, 1965444

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	100	99.4	P/P	90 - 110
Organic Carbon	99.4	99.4	P/P	90 - 110

Quality Assurance Report
Calibration Verification

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A82134
Included Lab Sample IDs: 1965442, 1965443, 1965444

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	100	99.4	P/P	90 - 110

Reference Method: SM 2320 B-97
Run ID: A82137
Included Lab Sample IDs: 1965439, 1965440, 1965441

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	97.2	99.8	P/P	90 - 110

Reference Method: EPA 8321B
Run ID: A82192
Included Lab Sample IDs: 1965462, 1965463, 1965464, 1965465, 1965466

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	70.2	74.4	P/P	50 - 150
Acetaminophen	112	115	P/P	60 - 150
Bentazon	95.2	97.8	P/P	50 - 150
Carbamazepine	111	115	P/P	60 - 150
Diuron	112	113	P/P	60 - 150
Fenuron	115	115	P/P	60 - 150
Fluridone	96.1	97.9	P/P	60 - 160
Imidacloprid	96.8	101	P/P	60 - 150
Linuron	120	125	P/P	60 - 150
MCPP	77.6	75.9	P/P	50 - 150
Primidone	107	101	P/P	60 - 150
Triclopyr	77.8	82.0	P/P	50 - 150

Reference Method: SM 4500 F-C-97
Run ID: A82245
Included Lab Sample IDs: 1965439, 1965440, 1965441

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	98.6	98.5	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		
					LCS	SMP	MS
EPA 180.1 Rev. 2.0	Turbidity					0.601	
EPA 300.0 Rev. 2.1	Chloride	99.6	103	101		0.575	
	Sulfate	101	104	102		0.254	
EPA 350.1 Rev. 2.0	Ammonia-N	97.3	96.9	95.6			1.21
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	104	91.6	91.2			0.272
EPA 353.2 Rev. 2.0	NO2NO3-N	104	105	105			0.390
EPA 365.1 Rev. 2.0	Total-P	104	98.7	99.7			0.925

Quality Assurance Report
Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision		
					LCS	SMP	MS
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	102	97.7	97.3			0.254
	O-Phosphate-P	98.5	97.1	96.7			0.384
EPA 8321B	2,4-D	69.5	46.1	49.4			7.05
	Acetaminophen	92.2	123	108			12.7
	Bentazon	87.1	27.3	29.7			6.75
	Carbamazepine	85.8	85.1	84.5			0.653
	Diuron	76.3	77.2	74.5			2.39
	Fenuron	96.9	85.0	83.1			2.26
	Fluridone	74.6	67.3	65.9			2.11
	Imidacloprid	83.4	165	146			11.4
	Linuron	80.2	79.8	83.0			3.93
	MCPP	67.6	38.1	40.3			5.65
	Primidone	105	105	108			3.58
	Sucralose	110	109	108			1.35
	Triclopyr	69.0	39.1	40.4			3.31
SM 2120 B	Color (true)					0.140	
SM 2320 B-97	Total Alkalinity	99.4				0.306	
SM 2540 C-97	TDS					0.332	
SM 4500 F-C-97	Fluoride	97.6					0.937
SM 5310 B-00	Organic Carbon	98.4	100	101			0.135
	Organic Carbon	99.8	97.8	101			1.72

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1965439, 1965440, 1965441
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1965439, 1965440, 1965441
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1965439, 1965440, 1965441
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1965442, 1965443, 1965444
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1965442, 1965443, 1965444
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1965442, 1965443, 1965444
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1965442, 1965443, 1965444
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1965445, 1965446, 1965447
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	1965462, 1965463, 1965464, 1965465, 1965466
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	1965462, 1965463, 1965464, 1965465, 1965466
SM 2120 B / E31780	True Color measured at 450 nm	1965439, 1965440, 1965441
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	1965439, 1965440, 1965441
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1965439, 1965440, 1965441
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1965439, 1965440, 1965441
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1965439, 1965440, 1965441
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1965442, 1965443, 1965444

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	02/07/2018			02/07/2018 16:34	DeAsia Armster	1965439, 1965440, 1965441
EPA 300.0 Rev. 2.1	02/07/2018			02/14/2018	Julia Storbeck	1965439
	02/07/2018			02/15/2018	Julia Storbeck	1965440, 1965441
EPA 350.1 Rev. 2.0	02/07/2018			02/16/2018	Julia Storbeck	1965442, 1965443, 1965444
EPA 351.2 Rev. 2.0	02/07/2018	02/08/2018	Adrian Shelby	02/12/2018	Joseph Suarez	1965442, 1965443, 1965444
EPA 353.2 Rev. 2.0	02/07/2018			02/15/2018	Lauren Bottorf	1965442, 1965443, 1965444
EPA 365.1 Rev. 2.0	02/07/2018	02/13/2018	Sima Feizi	02/14/2018	Lipi Saha	1965444
	02/07/2018	02/13/2018	Sima Feizi	02/15/2018	Lipi Saha	1965442, 1965443
EPA 365.1 Rev. 2.0 dissolved	02/07/2018			02/07/2018 15:49	Megan Treadwell	1965445
	02/07/2018			02/07/2018 15:50	Megan Treadwell	1965446
	02/07/2018			02/07/2018 15:51	Megan Treadwell	1965447
EPA 8321B	02/07/2018	02/07/2018	Julie Michelle Frank	02/09/2018	Juyoung Kim	1965462, 1965463, 1965464, 1965465, 1965466
	02/07/2018	02/08/2018	Hoor Shaik	02/10/2018	Julie Michelle Frank	1965462, 1965463, 1965464, 1965465, 1965466
	02/07/2018	02/08/2018	Hoor Shaik	02/11/2018	Julie Michelle Frank	1965462, 1965463, 1965464, 1965465, 1965466
SM 2120 B	02/07/2018			02/07/2018 16:18	Tanya Welborn	1965439
	02/07/2018			02/07/2018 16:19	Tanya Welborn	1965440
	02/07/2018			02/07/2018 16:20	Tanya Welborn	1965441
SM 2320 B-97	02/07/2018			02/17/2018	Dale L. Simmons	1965439, 1965440, 1965441
SM 2540 C-97	02/07/2018			02/09/2018	Yijie Li	1965439, 1965440, 1965441
SM 2540 D-97	02/07/2018			02/09/2018	Yijie Li	1965439, 1965440, 1965441
SM 4500 F-C-97	02/07/2018			02/22/2018	Dale L. Simmons	1965439, 1965440, 1965441
SM 5310 B-00	02/07/2018			02/16/2018	Megan Treadwell	1965442, 1965443, 1965444