

Chemical Analysis Report

NW-DIST-2020-03-11-03

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

Event Description: **Perdido Run**
Request ID: **RQ-2020-03-09-22**
Customer: **NW-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
160 Government Center
Suite 208
Pensacola, FL 32502-5794
Attn: Cheryl Bunch

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

Certified by: Thekkekalathil Chandrasekhar, Chemist Administrator

Date Certified: 31-MAR-2020 09:37



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 by the Florida Department of Health Environmental Laboratory Certification Program or where accreditation for that field of testing is not applicable.

Any significant anomalies or deviations from established protocols are documented in Non-Conformance Reports, which, where appropriate, are included within this analytical report. Additional comments related to specific analytical tests may be included as remarks following the analytical results for each sample. Such comments and remarks are for informational purposes only and are not intended to convey judgement about the usability of the reported data.

A quality control report on the performance of the test method for the submitted samples is included. Uncertainty associated with the analytical results contained in this report can be estimated from the reported quality assurance results and from published quality control acceptance limits for each analytical test. Matrix quality control results (matrix spike recoveries and matrix sample precision) pertain only to the matrix sample tested and do not necessarily reflect test method performance for other samples.

Typical matrix quality control (QC) measurements may include matrix spike recovery, matrix spike duplicate recovery, matrix spike precision and matrix sample precision. Not all matrix QC results may be available or reportable; where they are not an explanation is provided. Typical reasons for unavailable QC results include, but are not limited to, a) insufficient matrix sample to perform some or all QC measurements; b) analyte concentration in the sample replicated was too low for a meaningful measurement of precision and c) analyte concentration in the matrix sample spiked was too high (relative to the amount of analyte spiked) for a meaningful measurement of recovery. Where matrix QC results are unavailable, other method performance metrics (e.g., LCS recovery, LCS precision, surrogate recovery) may be used to assess performance of the method. Comments explaining any missing QC measurements are not intended to convey any adverse conclusions about the quality of the reported data.

Precision is reported as relative percent difference unless otherwise noted.

Quality Control codes as defined below may be used in this report to indicate results that are associated with one or more quality control elements which did not fall within established test method criteria. Such results may be qualified as estimates using a J qualifier as required by 62-160 F.A.C. Explanations are included in the report for any results that were reported as estimates for other reasons.

QC Codes used in this report may include:

- LCS – Recovery for the batch Laboratory Control Sample (LCS) was outside existing control limits;
- MS – Recovery for the batch matrix spike (MS) was outside existing control limits;
- CCV – Recovery for a continuing calibration verification (CCV) standard was outside existing control limits;
- SUR – Recovery of a surrogate (SUR) for associated analytes was outside existing control limits;
- RPD – The precision, measured as relative percent difference (RPD), of batch replicate measurements was outside existing control limits;
- RSD – The precision, measured as relative standard deviation (RSD), of batch replicate measurements was outside existing control limits;
- SMP – Sample - used precision derived from replicate analyses of a sample;

The following data qualifiers are used, where applicable, in this report as specified in 62-160 F.A.C.

- A - Value reported is the mean of two or more determinations.
- B - Results based on colony counts outside the acceptable range.
- I - The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
- J - Estimated value and/or the analysis did not meet established quality control criteria.
- K - Actual value is known to be less than value given.
- L - Actual value is known to be greater than value given.
- N - Presumptive evidence of presence of material.
- O - Sampled, but analysis lost or not performed.
- Q - Sample held beyond normal holding time.
- T - Value reported is less than the criterion of detection.
- U - Material was analyzed for but not detected. The reported value is the method detection limit for the sample analyzed.
- V - Analyte was detected in both sample and method blank.
- X - Too few individuals to calculate SCI value.
- Y - The laboratory analysis was from an unpreserved or improperly preserved sample. The data may not be accurate.
- Z - Colonies were too numerous to count (TNTC).

Quality control information from overflow laboratories may not be included in this report. Please refer to the associated report from the overflow laboratory for additional information.

Sample Location: Bidge Creek (Tidal Portion)

Collection Date/Time: 03/10/2020 11:25

Field ID: G5NW0129

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2164110	EPA 180.1 Rev. 2.0	Turbidity	2.0		NTU	P380537	
	EPA 300.0 Rev. 2.1	Bromide	12		mg Br/L	P380677	
	SM 2320 B-2011	Total Alkalinity	30		mg CaCO3/L	P381064	
	SM 2540 D-2011	TSS	3	U	mg/L	P380986	
	SM 4500 F-C-2011	Fluoride	0.25		mg F/L	P381351	MS
2164111	EPA 350.1 Rev. 2.0	Ammonia-N	0.023		mg N/L	P380971	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.33	I	mg N/L	P380688	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.10		mg N/L	P381128	
	EPA 365.1 Rev. 2.0	Total-P	0.012		mg P/L	P380802	
	SM 5310 B-2011	Organic Carbon	4.8		mg C/L	P380673	
2164112	EPA 365.1 Rev. 2.0	O-Phosphate-P	0.004	U	mg P/L	P380503	
2164168	EPA 8321B	2,4-D	0.028		ug/L	P380459	
		Acesulfame K**	0.10	U	ug/L	P380603	MS
		AMPA**	1.0	U	ug/L	P380603	
		Sucralose**	0.81		ug/L	P380603	
		Acetaminophen**	0.0080	U	ug/L	P380459	
		Acetamiprid**	0.0020	U	ug/L	P380459	
		Endothall**	0.25	U	ug/L	P380603	
		Glufosinate**	1.0	U	ug/L	P380603	
		Glyphosate**	1.0	U	ug/L	P380603	
		Afidopyropen**	0.0020	UJ	ug/L	P380459	
		Bentazon	0.0014	I	ug/L	P380459	
		Benzovindiflupyr**	0.0020	UJ	ug/L	P380459	
		Carbamazepine**	0.0011	I	ug/L	P380459	
		Clothianidin**	0.0020	U	ug/L	P380459	
		Dinotefuran**	0.0020	U	ug/L	P380459	
		Diuron	0.0020	U	ug/L	P380459	
		Fenuron	0.016	U	ug/L	P380459	
		Fluridone**	8.0E-04	U	ug/L	P380459	
		Imazapyr**	0.0040	U	ug/L	P380459	
		Hydrocodone**	0.0020	U	ug/L	P380459	
		Ibuprofen**	0.020	U	ug/L	P380459	
		Imidacloprid	0.024		ug/L	P380459	MS
		Linuron	0.0040	U	ug/L	P380459	
		Mandestrobin**	0.0020	UJ	ug/L	P380459	
		MCP	0.0020	U	ug/L	P380459	MS
		Naproxen**	0.0080	U	ug/L	P380459	
		Primidone**	0.0040	U	ug/L	P380459	
		Pyraclostrobin**	0.0020	U	ug/L	P380459	
		Thiamethoxam**	0.0020	U	ug/L	P380459	MS
		Tolfenpyrad**	0.0020	U	ug/L	P380459	
		Triclopyr**	0.0040	U	ug/L	P380459	

Field ID: G5NW0129

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
-----------	-------------	-----------	--------	------	-------	----------	----------

Ref. Method and Comment:
SM 2540 D-2011: The MDL was elevated because of analytical difficulties.
EPA 8321B: J - second source check standards for some analytes were not available for analysis.
EPA 8321B: MDL elevated due to matrix interference.

Sample Location: Weekly Bayou Near Mouth

Collection Date/Time: 03/10/2020 12:30

Field ID: G5NW0158

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2164113	EPA 180.1 Rev. 2.0	Turbidity	1.3		NTU	P380537	
	EPA 300.0 Rev. 2.1	Bromide	26		mg Br/L	P380678	
	SM 2320 B-2011	Total Alkalinity	52		mg CaCO3/L	P381064	
	SM 2540 D-2011	TSS	6	I	mg/L	P380986	
	SM 4500 F-C-2011	Fluoride	0.50		mg F/L	P381351	MS
2164116	EPA 350.1 Rev. 2.0	Ammonia-N	0.019		mg N/L	P380971	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.29	I	mg N/L	P380688	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.033		mg N/L	P381128	
	EPA 365.1 Rev. 2.0	Total-P	0.011		mg P/L	P380802	
	SM 5310 B-2011	Organic Carbon	4.3		mg C/L	P380836	
2164119	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P380503	

Sample Location: Weekly Bayou Middle Portion

Collection Date/Time: 03/10/2020 12:45

Field ID: G5NW0157

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2164122	EPA 180.1 Rev. 2.0	Turbidity	2.1		NTU	P380537	
	EPA 300.0 Rev. 2.1	Bromide	25		mg Br/L	P380678	
	SM 2320 B-2011	Total Alkalinity	48		mg CaCO3/L	P381064	
	SM 2540 D-2011	TSS	3	UA	mg/L	P380987	
	SM 4500 F-C-2011	Fluoride	0.47	I	mg F/L	P381351	MS
2164123	EPA 350.1 Rev. 2.0	Ammonia-N	0.022		mg N/L	P380971	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.31	I	mg N/L	P380688	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.067		mg N/L	P381128	
	EPA 365.1 Rev. 2.0	Total-P	0.014		mg P/L	P380802	
	SM 5310 B-2011	Organic Carbon	4.9		mg C/L	P380836	
2164124	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P380503	

Ref. Method and Comment:

SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

EPA 353.2 Rev. 2.0: The result was confirmed on 03/18/2020.

Sample Location: Weekly Bayou Middle Portion

Collection Date/Time: 03/10/2020 12:50

Field ID: G5NW0157_DUP

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2164114	EPA 180.1 Rev. 2.0	Turbidity	2.3		NTU	P380537	
	EPA 300.0 Rev. 2.1	Bromide	26		mg Br/L	P380678	
	SM 2320 B-2011	Total Alkalinity	51		mg CaCO3/L	P381064	
	SM 2540 D-2011	TSS	3	I	mg/L	P380986	
	SM 4500 F-C-2011	Fluoride	0.49	I	mg F/L	P381351	MS
2164117	EPA 350.1 Rev. 2.0	Ammonia-N	0.024		mg N/L	P380971	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.26	I	mg N/L	P380688	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.051		mg N/L	P381128	
	EPA 365.1 Rev. 2.0	Total-P	0.015		mg P/L	P380802	
	SM 5310 B-2011	Organic Carbon	4.6		mg C/L	P380836	
2164120	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P380503	

Ref. Method and Comment:

EPA 353.2 Rev. 2.0: The result was confirmed on 03/18/2020.

Sample Location: Weekly Bayou

Collection Date/Time: 03/10/2020 12:50

Field ID: FB_03092020

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2164125	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P380537	
	EPA 300.0 Rev. 2.1	Bromide	0.013	U	mg Br/L	P380678	
	SM 2320 B-2011	Total Alkalinity	0.65	U	mg CaCO3/L	P380928	
	SM 2540 D-2011	TSS	2	U	mg/L	P380983	
	SM 4500 F-C-2011	Fluoride	0.035	U	mg F/L	P381260	
2164126	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P380973	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P380691	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P381096	
	EPA 365.1 Rev. 2.0	Total-P	0.002	U	mg P/L	P380799	
	SM 5310 B-2011	Organic Carbon	0.50	U	mg C/L	P380673	
2164127	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P380504	

Ref. Method and Comment:

SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: Bayou Garcon

Collection Date/Time: 03/10/2020 13:15

Field ID: G5NW0152

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2164115	EPA 180.1 Rev. 2.0	Turbidity	1.6		NTU	P380537	
	EPA 300.0 Rev. 2.1	Bromide	32		mg Br/L	P380678	
	SM 2320 B-2011	Total Alkalinity	62		mg CaCO3/L	P381064	
	SM 2540 D-2011	TSS	6	I	mg/L	P380986	
	SM 4500 F-C-2011	Fluoride	0.60		mg F/L	P381351	MS
2164118	EPA 350.1 Rev. 2.0	Ammonia-N	0.007		mg N/L	P380971	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.31	I	mg N/L	P380688	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.01	I	mg N/L	P381128	
	EPA 365.1 Rev. 2.0	Total-P	0.015		mg P/L	P380802	
	SM 5310 B-2011	Organic Carbon	4.7		mg C/L	P380836	
2164121	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P380503	

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P380537

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P380677

Component	Result	Code	Units
Bromide	0.013	U	mg Br/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P380678

Component	Result	Code	Units
Bromide	0.013	U	mg Br/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P380971

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P380973

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P380688

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P380691

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P381096

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P381128

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P380799

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

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P380802

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P380503

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P380504

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

Reference Method: EPA 8321B
 Batch ID: P380459

Component	Result	Code	Units
2,4-D	0.0020	U	ug/L
Acetaminophen	0.0080	U	ug/L
Acetamiprid	0.0020	U	ug/L
Afidopyropen	0.0020	U	ug/L
Bentazon	8.0E-04	U	ug/L
Benzovindiflupyr	0.0020	U	ug/L
Carbamazepine	8.0E-04	U	ug/L
Clothianidin	0.0020	U	ug/L
Dinotefuran	0.0020	U	ug/L
Diuron	0.0020	U	ug/L
Fenuron	0.016	U	ug/L
Fluridone	8.0E-04	U	ug/L
Hydrocodone	0.0020	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
Mandestrobin	0.0020	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
Thiamethoxam	0.0020	U	ug/L
Tolfenpyrad	0.0020	U	ug/L
Triclopyr	0.0040	U	ug/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B
Batch ID: P380603

Component	Result	Code	Units
Acesulfame K	0.10	U	ug/L
AMPA	0.10	U	ug/L
Endothall	0.25	U	ug/L
Glufosinate	0.10	U	ug/L
Glyphosate	0.10	U	ug/L
Sucralose	0.010	U	ug/L

Reference Method: SM 2320 B-2011
Batch ID: P380928

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

Reference Method: SM 2320 B-2011
Batch ID: P381064

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

Reference Method: SM 2540 D-2011
Batch ID: P380983

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P380986

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P380987

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P381260

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-2011
Batch ID: P381351

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 5310 B-2011
Batch ID: P380673

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

Reference Method: SM 5310 B-2011
Batch ID: P380836

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: P380677

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P380678

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Bromide	96.6		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P380971

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P380973

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P380688

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	96.1		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P380691

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	95.7		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P381096

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P381128

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	96.5		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P380799

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P380802

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: P380503

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	96.6		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P380504

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

Reference Method: EPA 8321B
Batch ID: P380459

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	146		P	30 - 160
Acetaminophen	87.7		P	30 - 160
Acetamiprid	109		P	30 - 160
Afidopyropen	130		P	30 - 160
Bentazon	75.7		P	30 - 160
Benzovindiflupyr	85.5		P	30 - 160
Carbamazepine	106		P	30 - 160
Clothianidin	91.1		P	30 - 160
Dinotefuran	99.7		P	30 - 160
Diuron	97.1		P	30 - 160
Fenuron	108		P	30 - 160
Fluridone	86.4		P	30 - 160
Hydrocodone	94.3		P	30 - 160
Ibuprofen	81.7		P	30 - 160
Imazapyr	81.7		P	30 - 160
Imidacloprid	101		P	30 - 160
Linuron	83.6		P	30 - 160
Mandestrobin	85.0		P	30 - 160
MCPP	158		P	30 - 160
Naproxen	78.9		P	30 - 160
Primidone	103		P	30 - 160
Pyraclostrobin	74.0		P	30 - 160
Thiamethoxam	111		P	30 - 160
Tolfenpyrad	53.5		P	30 - 160
Triclopyr	117		P	30 - 160

Reference Method: EPA 8321B
Batch ID: P380603

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	77.2		P	40 - 150
AMPA	92.5		P	40 - 150
Endothall	128		P	40 - 150
Glufosinate	121		P	40 - 150

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P380603

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Glyphosate	93.7		P	40 - 140
Sucralose	104		P	40 - 150

Reference Method: SM 2320 B-2011
Batch ID: P380928

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	104		P	98 - 106

Reference Method: SM 2320 B-2011
Batch ID: P381064

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	102		P	98 - 106

Reference Method: SM 4500 F-C-2011
Batch ID: P381260

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	95.3		P	92 - 103

Reference Method: SM 4500 F-C-2011
Batch ID: P381351

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	96.7		P	92 - 104

Reference Method: SM 5310 B-2011
Batch ID: P380673

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	94.6		P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P380836

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	98.3		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P380677

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2163647	Bromide	94.3	93.9	P/P	90 - 110
2163663	Bromide	94.3		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P380678

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2164630	Bromide	94.4	96.4	P/P	90 - 110
2164635	Bromide	94.9		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P380971

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2164217	Ammonia-N	103	103	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P380973

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2164228	Ammonia-N	97.1	98.0	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P380688

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2164142	Kjeldahl Nitrogen	99.4	99.4	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P380691

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2164228	Kjeldahl Nitrogen	95.3	96.0	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P381096

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2163866	NO2NO3-N	99.5	98.5	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P381128

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2164111	NO2NO3-N	101	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P380799

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2163866	Total-P	108	107	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P380802

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2164082	Total-P	96.4	96.7	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P380503

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2163735	O-Phosphate-P	97.7	98.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P380504

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2163872	O-Phosphate-P	97.4	98.7	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P380459

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2163998	2,4-D	146	141	P/P	30 - 160
2163998	Acetaminophen	82.1	85.2	P/P	30 - 160
2163998	Acetamiprid	96.3	85.0	P/P	30 - 160
2163998	Afidopyropen	118	105	P/P	30 - 160
2163998	Bentazon	44.6	38.0	P/P	30 - 160
2163998	Benzovindiflupyr	62.5	63.1	P/P	30 - 160
2163998	Carbamazepine	85.3	89.5	P/P	30 - 160
2163998	Clothianidin	106	98.3	P/P	30 - 160
2163998	Dinotefuran	117	100	P/P	30 - 160
2163998	Diuron	68.6	74.3	P/P	30 - 160
2163998	Fenuron	88.8	65.7	P/P	30 - 160
2163998	Fluridone	79.5	75.6	P/P	30 - 160
2163998	Hydrocodone	94.0	97.5	P/P	30 - 160
2163998	Ibuprofen	71.2	69.3	P/P	30 - 160
2163998	Imazapyr	104	105	P/P	30 - 160
2163998	Imidacloprid	190	185	F/F	30 - 160
2163998	Linuron	62.2	58.5	P/P	30 - 160
2163998	Mandestrobin	70.9	70.3	P/P	30 - 160
2163998	MCP	165	157	F/P	30 - 160
2163998	Naproxen	82.0	70.6	P/P	30 - 160
2163998	Primidone	91.6	91.5	P/P	30 - 160
2163998	Pyraclostrobin	68.0	65.3	P/P	30 - 160
2163998	Thiamethoxam	170	153	F/P	30 - 160
2163998	Tolfenpyrad	46.0	49.4	P/P	30 - 160
2163998	Triclopyr	124	123	P/P	30 - 160

Reference Method: EPA 8321B
Batch ID: P380603

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2163766	Acesulfame K	19.2	20.2	F/F	40 - 150
2163766	AMPA	96.6	90.1	P/P	40 - 150
2163766	Endothall	111	115	P/P	40 - 150
2163766	Glufosinate	104	113	P/P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P380603

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2163766	Glyphosate	124	119	P/P	40 - 140
2163766	Sucralose	85.0	109	P/P	40 - 150

Reference Method: SM 4500 F-C-2011
Batch ID: P381260

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2164225	Fluoride	100	99.3	P/P	89 - 106

Reference Method: SM 4500 F-C-2011
Batch ID: P381351

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2166025	Fluoride	102	105	P/F	91 - 105

Reference Method: SM 5310 B-2011
Batch ID: P380673

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2164304	Organic Carbon	95.3	96.9	P/P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P380836

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2163928	Organic Carbon	95.1	96.2	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P380537

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2164133	Turbidity	9.79	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P380677

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2163647	Bromide	0.407	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P380678

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2164630	Bromide	2.01	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P380971

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2164217	Ammonia-N	0.0622	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P380973

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2164228	Ammonia-N	0.838	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P380688

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2164142	Kjeldahl Nitrogen	0.0878	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P380691

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2164228	Kjeldahl Nitrogen	0.552	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P381096

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2163866	NO2NO3-N	1.01	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P381128

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2164111	NO2NO3-N	0.651	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P380799

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2163866	Total-P	0.628	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P380802

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2164082	Total-P	0.290	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P380503

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2163735	O-Phosphate-P	0.413	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P380504

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2163872	O-Phosphate-P	1.33	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P380459

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2163998	2,4-D	3.19	Spike	P	0 - 30
2163998	Acetaminophen	3.69	Spike	P	0 - 30
2163998	Acetamiprid	12.5	Spike	P	0 - 30
2163998	Afidopyropen	11.5	Spike	P	0 - 30
2163998	Bentazon	16.0	Spike	P	0 - 30
2163998	Benzovindiflupyr	0.986	Spike	P	0 - 30
2163998	Carbamazepine	4.89	Spike	P	0 - 30
2163998	Clothianidin	7.84	Spike	P	0 - 30
2163998	Dinotefuran	15.2	Spike	P	0 - 30
2163998	Diuron	8.03	Spike	P	0 - 30
2163998	Fenuron	20.8	Spike	P	0 - 30
2163998	Fluridone	4.99	Spike	P	0 - 30
2163998	Hydrocodone	3.73	Spike	P	0 - 30
2163998	Ibuprofen	2.65	Spike	P	0 - 30
2163998	Imazapyr	1.11	Spike	P	0 - 30
2163998	Imidacloprid	2.84	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P380459

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2163998	Linuron	6.13	Spike	P	0 - 30
2163998	Mandestrobin	0.793	Spike	P	0 - 30
2163998	MCP	4.79	Spike	P	0 - 30
2163998	Naproxen	14.9	Spike	P	0 - 30
2163998	Primidone	0.139	Spike	P	0 - 30
2163998	Pyraclostrobin	4.03	Spike	P	0 - 30
2163998	Thiamethoxam	10.5	Spike	P	0 - 30
2163998	Tolfenpyrad	6.99	Spike	P	0 - 30
2163998	Triclopyr	0.786	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P380603

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2163766	Acesulfame K	3.67	Spike	P	0 - 30
2163766	AMPA	5.88	Spike	P	0 - 30
2163766	Endothall	2.89	Spike	P	0 - 30
2163766	Glufosinate	8.46	Spike	P	0 - 30
2163766	Glyphosate	3.31	Spike	P	0 - 30
2163766	Sucralose	15.7	Spike	P	0 - 30

Reference Method: SM 2320 B-2011
Batch ID: P380928

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2163858	Total Alkalinity	0.270	Sample	P	0 - 2.8

Reference Method: SM 2320 B-2011
Batch ID: P381064

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2166025	Total Alkalinity	0.535	Sample	P	0 - 2.8

Reference Method: SM 2540 D-2011
Batch ID: P380986

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2164095	TSS	6.06	Sample	P	0 - 10

Reference Method: SM 4500 F-C-2011
Batch ID: P381260

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2164225	Fluoride	0.473	Spike	P	0 - 2.5

Quality Assurance Report Precision

Reference Method: SM 4500 F-C-2011
Batch ID: P381351

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2166025	Fluoride	1.92	Spike	P	0 - 2.0

Reference Method: SM 5310 B-2011
Batch ID: P380673

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2164304	Organic Carbon	1.12	Spike	P	0 - 20

Reference Method: SM 5310 B-2011
Batch ID: P380836

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2163928	Organic Carbon	0.947	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2164168
Field Sample ID: G5NW0129

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	110	P	30 - 160
EPA 8321B	Acetaminophen-d4	93.3	P	30 - 160
EPA 8321B	Carbamazepine-d10	106	P	30 - 160
EPA 8321B	Diuron-d6	108	P	30 - 160
EPA 8321B	Endothall-d6	133	P	30 - 160
EPA 8321B	Endothall-d6	133	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	65.6	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	65.6	P	30 - 160
EPA 8321B	Ibuprofen-d3	82.6	P	30 - 160
EPA 8321B	Primidone-d5	94.3	P	30 - 160
EPA 8321B	Sucralose-d6	99.1	P	30 - 160
EPA 8321B	Sucralose-d6	99.1	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A98086

Included Lab Sample IDs: 2164110, 2164113, 2164114, 2164115, 2164122, 2164125

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A98133

Included Lab Sample IDs: 2164112, 2164119, 2164120, 2164121, 2164124, 2164127

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	96.3	96.8	P/P	90 - 110
O-Phosphate-P	96.8	96.8	P/P	90 - 110
O-Phosphate-P	96.8	97.1	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A98149

Included Lab Sample IDs: 2164110, 2164113, 2164114, 2164115, 2164122, 2164125

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	100	98.5	P/P	95 - 105

Reference Method: SM 5310 B-2011

Run ID: A98201

Included Lab Sample IDs: 2164111, 2164126

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	95.9	96.5	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A98208

Included Lab Sample IDs: 2164168

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	86.3	86.2	P/P	40 - 200
Glufosinate	119	106	P/P	40 - 200
Glyphosate	89.1	102	P/P	40 - 200

Reference Method: EPA 8321B

Run ID: A98210

Included Lab Sample IDs: 2164168

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	83.6	84.9	P/P	60 - 160
Endothall	117	115	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A98214

Included Lab Sample IDs: 2164168

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	109	96.1	P/P	50 - 150
Acetaminophen	103	105	P/P	60 - 160
Acetamiprid	106	114	P/P	50 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A98214

Included Lab Sample IDs: 2164168

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Afidopyropen	135	90.4	P/P	50 - 150
Bentazon	98.6	99.6	P/P	50 - 160
Benzovindiflupyr	113	105	P/P	50 - 150
Carbamazepine	103	110	P/P	60 - 150
Clothianidin	85.2	108	P/P	60 - 150
Dinotefuran	107	97.0	P/P	50 - 150
Diuron	116	105	P/P	60 - 150
Fenuron	94.3	107	P/P	60 - 150
Fluridone	99.1	94.7	P/P	60 - 160
Hydrocodone	89.1	107	P/P	60 - 150
Ibuprofen	87.3	92.8	P/P	50 - 160
Imazapyr	84.2	85.8	P/P	50 - 150
Imidacloprid	107	116	P/P	60 - 150
Linuron	115	99.5	P/P	60 - 150
Mandestrobin	100	96.7	P/P	50 - 150
MCPP	106	101	P/P	50 - 150
Naproxen	76.2	81.5	P/P	50 - 160
Primidone	97.4	108	P/P	60 - 150
Pyraclostrobin	103	106	P/P	60 - 150
Thiamethoxam	108	112	P/P	50 - 150
Tolfenpyrad	117	116	P/P	60 - 150
Triclopyr	83.0	103	P/P	50 - 150

Reference Method: EPA 8321B

Run ID: A98229

Included Lab Sample IDs: 2164168

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	106	109	P/P	60 - 160

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A98250

Included Lab Sample IDs: 2164126

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	100	95.5	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A98258

Included Lab Sample IDs: 2164116, 2164117, 2164118, 2164123

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	95.8	94.6	P/P	90 - 110
Organic Carbon	99.2	95.8	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A98271

Included Lab Sample IDs: 2164111, 2164116, 2164117, 2164118, 2164123

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A98271

Included Lab Sample IDs: 2164111, 2164116, 2164117, 2164118, 2164123

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

Reference Method: SM 2320 B-2011

Run ID: A98293

Included Lab Sample IDs: 2164125

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	102	104	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A98309

Included Lab Sample IDs: 2164111, 2164116, 2164117, 2164118, 2164123, 2164126

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.8	99.1	P/P	90 - 110
Ammonia-N	98.9	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A98319

Included Lab Sample IDs: 2164126

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.5	99.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A98331

Included Lab Sample IDs: 2164111, 2164116, 2164117, 2164118, 2164123

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.2	100	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A98340

Included Lab Sample IDs: 2164111, 2164116, 2164117, 2164118, 2164123

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	96.0	100	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A98350

Included Lab Sample IDs: 2164110, 2164113, 2164114, 2164115, 2164122

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	100	103	P/P	90 - 110
Total Alkalinity	103	101	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A98374

Included Lab Sample IDs: 2164126

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A98374

Included Lab Sample IDs: 2164126

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	101	100	P/P	90 - 110

Reference Method: SM 4500 F-C-2011

Run ID: A98428

Included Lab Sample IDs: 2164125

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	97.6	95.6	P/P	90 - 110

Reference Method: SM 4500 F-C-2011

Run ID: A98463

Included Lab Sample IDs: 2164110, 2164113, 2164114, 2164115, 2164122

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

* Pass/Fail determinations are made for each bracketing calibration verification check.

Control limits for initial calibration checks may be different from those for continuing checks, depending on method requirements.

Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery			LCS	Precision SMP	MS
EPA 180.1 Rev. 2.0	Turbidity						9.79	
EPA 300.0 Rev. 2.1	Bromide	97.4	94.3	93.9	94.3			0.407
	Bromide	96.6	94.4	96.4	94.9			2.01
EPA 350.1 Rev. 2.0	Ammonia-N	101	103	103				0.0622
	Ammonia-N	99.6	97.1	98.0				0.838
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	96.1	99.4	99.4				0.0878
	Kjeldahl Nitrogen	95.7	95.3	96.0				0.552
EPA 353.2 Rev. 2.0	NO2NO3-N	98.5	99.5	98.5				1.01
	NO2NO3-N	96.5	101	102				0.651
EPA 365.1 Rev. 2.0	Total-P	104	108	107				0.628
	Total-P	104	96.4	96.7				0.290
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	96.6	97.7	98.5				0.413
	O-Phosphate-P	98.3	97.4	98.7				1.33
EPA 8321B	2,4-D	146	146	141				3.19
	Acesulfame K	77.2	19.2	20.2				3.67
	Acetaminophen	87.7	82.1	85.2				3.69
	Acetamiprid	109	96.3	85.0				12.5
	Afidopyropen	130	118	105				11.5
	AMPA	92.5	96.6	90.1				5.88
	Bentazon	75.7	44.6	38.0				16.0
	Benzovindiflupyr	85.5	62.5	63.1				0.986
	Carbamazepine	106	85.3	89.5				4.89
	Clothianidin	91.1	106	98.3				7.84
	Dinotefuran	99.7	117	100				15.2
	Diuron	97.1	68.6	74.3				8.03
	Endothall	128	111	115				2.89
	Fenuron	108	88.8	65.7				20.8
	Fluridone	86.4	79.5	75.6				4.99
	Glufosinate	121	104	113				8.46
	Glyphosate	93.7	124	119				3.31
	Hydrocodone	94.3	94.0	97.5				3.73
	Ibuprofen	81.7	71.2	69.3				2.65
	Imazapyr	81.7	104	105				1.11
	Imidacloprid	101	190	185				2.84
	Linuron	83.6	62.2	58.5				6.13
	Mandestrobin	85.0	70.9	70.3				0.793
	MCPP	158	165	157				4.79
	Naproxen	78.9	82.0	70.6				14.9
	Primidone	103	91.6	91.5				0.139
	Pyraclostrobin	74.0	68.0	65.3				4.03
	Sucralose	104	85.0	109				15.7
	Thiamethoxam	111	170	153				10.5
	Tolfenpyrad	53.5	46.0	49.4				6.99
	Triclopyr	117	124	123				0.786
SM 2320 B-2011	Total Alkalinity	104					0.270	
	Total Alkalinity	102					0.535	
SM 2540 D-2011	TSS						6.06	
SM 4500 F-C-2011	Fluoride	95.3	100	99.3				0.473
	Fluoride	96.7	102	105				1.92
SM 5310 B-2011	Organic Carbon	94.6	95.3	96.9				1.12
	Organic Carbon	98.3	95.1	96.2				0.947

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2164110, 2164113, 2164114, 2164115, 2164122, 2164125
EPA 300.0 Rev. 2.1	Bromide in aqueous matrices	2164110, 2164113, 2164114, 2164115, 2164122, 2164125
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2164111, 2164116, 2164117, 2164118, 2164123, 2164126
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2164111, 2164116, 2164117, 2164118, 2164123, 2164126
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2164111, 2164116, 2164117, 2164118, 2164123, 2164126
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2164111, 2164116, 2164117, 2164118, 2164123, 2164126
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2164112, 2164119, 2164120, 2164121, 2164124, 2164127
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2164168
EPA 8321B	Water soluble organic compounds by HPLC/MS/MS	2164168
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2164110, 2164113, 2164114, 2164115, 2164122, 2164125
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2164110, 2164113, 2164114, 2164115, 2164122, 2164125
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2164110, 2164113, 2164114, 2164115, 2164122, 2164125
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2164111, 2164116, 2164117, 2164118, 2164123, 2164126

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	03/11/2020			03/11/2020 19:16	Yen Ta	2164110, 2164113, 2164114, 2164115, 2164122, 2164125
EPA 300.0 Rev. 2.1	03/11/2020			03/13/2020 22:38	Lipi Saha	2164110
	03/11/2020			03/14/2020 01:29	Lipi Saha	2164113
	03/11/2020			03/14/2020 01:46	Lipi Saha	2164114
	03/11/2020			03/14/2020 02:04	Lipi Saha	2164115
	03/11/2020			03/14/2020 02:21	Lipi Saha	2164122
	03/11/2020			03/14/2020 02:38	Lipi Saha	2164125
EPA 350.1 Rev. 2.0	03/11/2020			03/19/2020 13:47	Ping Hua	2164111
	03/11/2020			03/19/2020 13:49	Ping Hua	2164116
	03/11/2020			03/19/2020 13:50	Ping Hua	2164117
	03/11/2020			03/19/2020 13:52	Ping Hua	2164123
	03/11/2020			03/19/2020 13:53	Ping Hua	2164118
	03/11/2020			03/19/2020 14:53	Ping Hua	2164126
EPA 351.2 Rev. 2.0	03/11/2020	03/16/2020 11:50	Sima Feizi	03/17/2020 15:20	Julia Storbeck	2164126
	03/11/2020	03/16/2020 12:00	Sima Feizi	03/17/2020 18:07	Julia Storbeck	2164111
	03/11/2020	03/16/2020 12:00	Sima Feizi	03/17/2020 18:09	Julia Storbeck	2164116
	03/11/2020	03/16/2020 12:00	Sima Feizi	03/17/2020 18:10	Julia Storbeck	2164117
	03/11/2020	03/16/2020 12:00	Sima Feizi	03/17/2020 18:12	Julia Storbeck	2164118
	03/11/2020	03/16/2020 12:00	Sima Feizi	03/17/2020 18:13	Julia Storbeck	2164123
EPA 353.2 Rev. 2.0	03/11/2020			03/18/2020 10:34	Beverly Y. Sanders	2164111
	03/11/2020			03/18/2020 10:42	Beverly Y. Sanders	2164116
	03/11/2020			03/18/2020 10:45	Beverly Y. Sanders	2164118
	03/11/2020			03/18/2020 11:19	Beverly Y. Sanders	2164117
	03/11/2020			03/18/2020 11:21	Beverly Y. Sanders	2164123
	03/11/2020			03/20/2020 11:11	Beverly Y. Sanders	2164126
EPA 365.1 Rev. 2.0	03/11/2020	03/17/2020 13:34	Yen Ta	03/19/2020 16:54	Benjamin T. Nordmann	2164126
	03/11/2020	03/17/2020 13:34	Yen Ta	03/20/2020 12:13	Benjamin T. Nordmann	2164111
	03/11/2020	03/17/2020 13:34	Yen Ta	03/20/2020 12:14	Benjamin T. Nordmann	2164116
	03/11/2020	03/17/2020 13:34	Yen Ta	03/20/2020 12:15	Benjamin T. Nordmann	2164117
	03/11/2020	03/17/2020 13:34	Yen Ta	03/20/2020 12:16	Benjamin T. Nordmann	2164118
	03/11/2020	03/17/2020 13:34	Yen Ta	03/20/2020 12:17	Benjamin T. Nordmann	2164123
EPA 365.1 Rev. 2.0 dissolved	03/11/2020			03/11/2020 15:31	Carlos Miranda	2164112
	03/11/2020			03/11/2020 15:32	Carlos Miranda	2164119
	03/11/2020			03/11/2020 15:37	Carlos Miranda	2164120
	03/11/2020			03/11/2020 15:38	Carlos Miranda	2164121
	03/11/2020			03/11/2020 15:39	Carlos Miranda	2164124
	03/11/2020			03/11/2020 15:51	Carlos Miranda	2164127
EPA 8321B	03/11/2020	03/13/2020 11:00	Mohammad Ghaffari	03/13/2020 17:05	Mohammad Ghaffari	2164168
	03/11/2020	03/13/2020 11:00	Mohammad Ghaffari	03/15/2020 16:33	Mohammad Ghaffari	2164168

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 8321B	03/11/2020	03/13/2020 11:00	Mohammad Ghaffari	03/16/2020 14:20	Mohammad Ghaffari	2164168
	03/11/2020	03/16/2020 08:30	Hoor Shaik	03/17/2020 04:15	Juyoung Kim	2164168
SM 2320 B-2011	03/11/2020			03/19/2020 04:54	Dale L. Simmons	2164125
	03/11/2020			03/20/2020 14:24	Dale L. Simmons	2164110
	03/11/2020			03/20/2020 15:47	Dale L. Simmons	2164113
	03/11/2020			03/20/2020 16:31	Dale L. Simmons	2164114
	03/11/2020			03/20/2020 16:41	Dale L. Simmons	2164115
	03/11/2020			03/20/2020 16:51	Dale L. Simmons	2164122
SM 2540 D-2011	03/11/2020			03/13/2020 15:32	Yijie Li	2164110, 2164113, 2164114, 2164115, 2164122, 2164125
SM 4500 F-C-2011	03/11/2020			03/24/2020 16:40	Dale L. Simmons	2164125
	03/11/2020			03/25/2020 14:31	Dale L. Simmons	2164110
	03/11/2020			03/25/2020 15:01	Dale L. Simmons	2164113
	03/11/2020			03/25/2020 15:06	Dale L. Simmons	2164114
	03/11/2020			03/25/2020 15:11	Dale L. Simmons	2164115
	03/11/2020			03/25/2020 15:16	Dale L. Simmons	2164122
SM 5310 B-2011	03/11/2020			03/13/2020 08:51	Lauren Lees	2164111
	03/11/2020			03/13/2020 09:04	Lauren Lees	2164126
	03/11/2020			03/17/2020 03:23	Lauren Lees	2164118
	03/11/2020			03/17/2020 04:16	Lauren Lees	2164116
	03/11/2020			03/17/2020 04:29	Lauren Lees	2164117
	03/11/2020			03/17/2020 05:09	Lauren Lees	2164123