

Chemical Analysis Report

SO-DIST-2019-08-30-01

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

Event Description: **Sara Tidal**
Request ID: **RQ-2019-08-19-26**
Customer: **SO-DIST**
Project ID: **SMP**

Send Reports to:
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FLDEP South District Office
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Certified by: Dr. rer. nat. Bettina Steinbock, Environmental Administrator

Date Certified: 20-SEP-2019 17:54



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 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: Curry(Tidal)@AlbeeFarm

Collection Date/Time: 08/29/2019 09:45

Field ID: G3SD0066

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2116013	EPA 180.1 Rev. 2.0	Turbidity	2.3		NTU	P370012	
	EPA 300.0	Bromide	0.33		mg Br/L	P370340	
	SM 2320 B-97	Total Alkalinity	85		mg CaCO3/L	P370208	
	SM 2540 D-97	TSS	2	IA	mg/L	P370252	
	SM 4500 F-C-97	Fluoride	0.18		mg F/L	P370210	
2116014	EPA 350.1 Rev. 2.0	Ammonia-N	0.077		mg N/L	P370445	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.2		mg N/L	P370147	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.078		mg N/L	P370184	
	EPA 365.1 Rev. 2.0	Total-P	0.45		mg P/L	P370332	
	SM 5310 B-00	Organic Carbon	26		mg C/L	P370245	
2116015	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.40		mg P/L	P370007	
2116034	EPA 200.7 Rev. 4.4	Iron	640		ug/L	P370126	
		Manganese	24.7		ug/L	P370126	
		Zinc	5.0	U	ug/L	P370126	
	EPA 200.8 Rev. 5.4	Aluminum	98		ug/L	P370126	
		Antimony	0.11	I	ug/L	P370126	
		Arsenic	1.85		ug/L	P370126	
		Cadmium	0.020	U	ug/L	P370126	
		Chromium	0.73	I	ug/L	P370126	
		Copper	1.60		ug/L	P370126	
		Lead	0.20	U	ug/L	P370126	
		Nickel	0.50	U	ug/L	P370126	
		Selenium	0.21	I	ug/L	P370126	
		Silver	0.010	U	ug/L	P370126	
		Thallium	0.10	U	ug/L	P370126	

Ref. Method and Comment:

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: Curry(Tidal)@AlbeeFarm

Collection Date/Time: 08/29/2019 09:50

Field ID: G3SD0066_DUP

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2116019	EPA 180.1 Rev. 2.0	Turbidity	2.4		NTU	P370012	
	EPA 300.0	Bromide	0.33		mg Br/L	P370340	
	SM 2320 B-97	Total Alkalinity	86		mg CaCO3/L	P370208	
	SM 2540 D-97	TSS	3	I	mg/L	P370252	
	SM 4500 F-C-97	Fluoride	0.18		mg F/L	P370210	
2116020	EPA 350.1 Rev. 2.0	Ammonia-N	0.077		mg N/L	P370445	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.2		mg N/L	P370147	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.084		mg N/L	P370184	
	EPA 365.1 Rev. 2.0	Total-P	0.45		mg P/L	P370334	
	SM 5310 B-00	Organic Carbon	26		mg C/L	P370245	
2116021	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.40		mg P/L	P370007	
2116035	EPA 200.7 Rev. 4.4	Iron	620		ug/L	P370126	
		Manganese	24.9		ug/L	P370126	
		Zinc	5.0	U	ug/L	P370126	
	EPA 200.8 Rev. 5.4	Aluminum	91		ug/L	P370126	
		Antimony	0.10	I	ug/L	P370126	
		Arsenic	1.80		ug/L	P370126	
		Cadmium	0.020	U	ug/L	P370126	
		Chromium	0.70	I	ug/L	P370126	
		Copper	1.50		ug/L	P370126	
		Lead	0.20	U	ug/L	P370126	
		Nickel	0.50	U	ug/L	P370126	
		Selenium	0.20	U	ug/L	P370126	
		Silver	0.010	U	ug/L	P370126	
		Thallium	0.10	U	ug/L	P370126	

Ref. Method and Comment:

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: Alligator @ Jacaranda

Collection Date/Time: 08/29/2019 10:40

Field ID: G2SD0026

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2116016	EPA 180.1 Rev. 2.0	Turbidity	3.1		NTU	P370012	
	EPA 300.0 Rev. 2.1	Chloride	87		mg Cl/L	P370345	
		Sulfate	72		mg SO4/L	P370348	
		Color (true)	82		PCU	P370081	
	SM 2320 B-97	Total Alkalinity	135		mg CaCO3/L	P370208	
	SM 2540 C-97	TDS	408		mg/L	P370384	
	SM 2540 D-97	TSS	4	I	mg/L	P370251	
	SM 4500 F-C-97	Fluoride	0.14		mg F/L	P370210	
2116017	EPA 350.1 Rev. 2.0	Ammonia-N	0.11		mg N/L	P370445	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.1		mg N/L	P370147	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.081		mg N/L	P370184	
	EPA 365.1 Rev. 2.0	Total-P	0.11		mg P/L	P370332	
	SM 5310 B-00	Organic Carbon	15		mg C/L	P370245	
2116018	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.062		mg P/L	P370007	

Ref. Method and Comment:

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: WoodmereCreek@HeronRd

Collection Date/Time: 08/29/2019 11:10

Field ID: G2SD0027

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2116032	EPA 8321B	Acesulfame K**	0.60		ug/L	P370034	
		2,4-D	0.040		ug/L	P370004	MS
		AMPA**	0.37	I	ug/L	P370034	MS
		Sucralose**	1.6		ug/L	P370034	
		Acetaminophen**	0.0080	U	ug/L	P370004	
		Endothall**	0.25	U	ug/L	P370034	
		Acetamiprid**	0.0020	U	ug/L	P370004	
		Glufosinate**	0.10	U	ug/L	P370034	
		Glyphosate**	0.25	I	ug/L	P370034	
		Afidopyropen**	0.0020	UJ	ug/L	P370004	
		Bentazon	0.0098		ug/L	P370004	
		Benzovindiflupyr**	0.0020	UJ	ug/L	P370004	
		Carbamazepine**	0.012		ug/L	P370004	
		Clothianidin**	0.012		ug/L	P370004	
		Dinotefuran**	0.0020	U	ug/L	P370004	
		Diuron	0.042		ug/L	P370004	
		Fenuron	0.016	U	ug/L	P370004	
		Fluridone**	0.026		ug/L	P370004	
		Imazapyr**	0.13		ug/L	P370004	
		Hydrocodone**	0.0020	U	ug/L	P370004	
		Ibuprofen**	0.020	U	ug/L	P370004	
		Imidacloprid	0.099		ug/L	P370004	MS
		Linuron	0.0040	U	ug/L	P370004	
		Mandestrobin**	0.0020	UJ	ug/L	P370004	
		MCPP	0.0090		ug/L	P370004	MS
		Naproxen**	0.0080	U	ug/L	P370004	
		Primidone**	0.015	I	ug/L	P370004	
		Pyraclostrobin**	0.0020	U	ug/L	P370004	
		Thiamethoxam**	0.0031	I	ug/L	P370004	MS
		Tolfenpyrad**	0.0020	U	ug/L	P370004	
		Triclopyr**	0.0040	U	ug/L	P370004	MS

Ref. Method and Comment:

EPA 8321B: J - second source check standards for some analytes were not available for analysis.

Sample Location: Gottfried@DeerCkMobile

Collection Date/Time: 08/29/2019 11:55

Field ID: G2SD0028

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2116033	EPA 8321B	Acesulfame K**	0.10	U	ug/L	P370034	
		2,4-D	0.051		ug/L	P370004	MS
		AMPA**	1.0	U	ug/L	P370034	MS
		Sucralose**	0.36		ug/L	P370034	
		Acetaminophen**	0.0080	U	ug/L	P370004	
		Endothall**	0.25	U	ug/L	P370034	
		Acetamiprid**	0.0020	U	ug/L	P370004	
		Glufosinate**	1.0	U	ug/L	P370034	
		Glyphosate**	1.0	U	ug/L	P370034	
		Afidopyropen**	0.0020	UJ	ug/L	P370004	
		Bentazon	0.0081		ug/L	P370004	
		Benzovindiflupyr**	0.0020	UJ	ug/L	P370004	
		Carbamazepine**	0.0013	I	ug/L	P370004	
		Clothianidin**	0.0020	U	ug/L	P370004	
		Dinotefuran**	0.0020	U	ug/L	P370004	
		Diuron	0.0031	I	ug/L	P370004	
		Fenuron	0.016	U	ug/L	P370004	
		Fluridone**	0.014		ug/L	P370004	
		Imazapyr**	0.15		ug/L	P370004	
		Hydrocodone**	0.0020	U	ug/L	P370004	
		Ibuprofen**	0.020	U	ug/L	P370004	
		Imidacloprid	0.019		ug/L	P370004	MS
		Linuron	0.0040	U	ug/L	P370004	
		Mandestrobin**	0.0020	UJ	ug/L	P370004	
		MCPP	0.0033	I	ug/L	P370004	MS
		Naproxen**	0.0080	U	ug/L	P370004	
		Primidone**	0.0040	U	ug/L	P370004	
		Pyraclostrobin**	0.0020	U	ug/L	P370004	
		Thiamethoxam**	0.0020	U	ug/L	P370004	MS
		Tolfenpyrad**	0.0020	U	ug/L	P370004	
		Triclopyr**	0.0040	U	ug/L	P370004	MS

Ref. Method and Comment:

EPA 8321B: MDL for some parameters elevated due to matrix interference.

EPA 8321B: J - second source check standards for some analytes were not available for analysis.

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P370012

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P370126

Component	Result	Code	Units
Iron	30	U	ug/L
Manganese	1.0	U	ug/L
Zinc	5.0	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P370126

Component	Result	Code	Units
Aluminum	5.0	U	ug/L
Antimony	0.050	U	ug/L
Arsenic	0.050	U	ug/L
Cadmium	0.020	U	ug/L
Chromium	0.40	U	ug/L
Copper	0.40	U	ug/L
Lead	0.20	U	ug/L
Nickel	0.50	U	ug/L
Selenium	0.20	U	ug/L
Silver	0.010	U	ug/L
Thallium	0.10	U	ug/L

Reference Method: EPA 300.0
Batch ID: P370340

Component	Result	Code	Units
Bromide	0.013	U	mg Br/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P370345

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P370348

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P370445

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P370147

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P370184

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P370332

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P370334

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P370007

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

Reference Method: EPA 8321B
Batch ID: P370004

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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8321B
Batch ID: P370004

Component	Result	Code	Units
Thiamethoxam	0.0020	U	ug/L
Tolfenpyrad	0.0020	U	ug/L
Triclopyr	0.0040	U	ug/L

Reference Method: EPA 8321B
Batch ID: P370034

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 2120 B
Batch ID: P370081

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P370208

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

Reference Method: SM 2540 C-97
Batch ID: P370384

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P370251

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P370252

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P370210

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 5310 B-00
Batch ID: P370245

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: P370126

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Iron	111		P	85 - 115
Manganese	105		P	85 - 115
Zinc	104		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P370126

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	95.3		P	85 - 115
Antimony	95.6		P	85 - 115
Arsenic	97.0		P	85 - 115
Cadmium	97.6		P	85 - 115
Chromium	93.3		P	85 - 115
Copper	95.6		P	85 - 115
Lead	94.0		P	85 - 115
Nickel	95.7		P	85 - 115
Selenium	95.8		P	85 - 115
Silver	100		P	85 - 115
Thallium	98.3		P	85 - 115

Reference Method: EPA 300.0
Batch ID: P370340

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P370345

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	99.1		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P370348

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	98.9		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P370445

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P370147

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	108		P	90 - 110

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P370184

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P370332

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	95.4		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P370334

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	93.8		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P370007

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	98.1		P	90 - 110

Reference Method: EPA 8321B
Batch ID: P370004

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	110		P	40 - 160
Acetaminophen	73.1		P	30 - 160
Acetamiprid	87.0		P	40 - 160
Afidopyropen	99.1		P	40 - 160
Bentazon	90.4		P	30 - 160
Benzovindiflupyr	87.2		P	40 - 160
Carbamazepine	94.7		P	40 - 160
Clothianidin	94.1		P	40 - 160
Dinotefuran	82.7		P	40 - 160
Diuron	97.6		P	40 - 160
Fenuron	99.3		P	40 - 160
Fluridone	107		P	40 - 160
Hydrocodone	90.7		P	40 - 160
Ibuprofen	135		P	30 - 160
Imazapyr	75.9		P	40 - 160
Imidacloprid	94.2		P	40 - 160
Linuron	76.7		P	40 - 160
Mandestrobin	95.7		P	40 - 160
MCPP	139		P	40 - 160
Naproxen	112		P	40 - 160
Primidone	82.6		P	40 - 160
Pyraclostrobin	87.1		P	30 - 160
Thiamethoxam	91.7		P	40 - 160
Tolfenpyrad	70.6		P	40 - 160
Triclopyr	75.8		P	30 - 160

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P370034

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	150		P	40 - 150
AMPA	149		P	40 - 150
Endothall	109		P	40 - 150
Glufosinate	118		P	40 - 150
Glyphosate	130		P	40 - 140
Sucralose	101		P	40 - 150

Reference Method: SM 2120 B
Batch ID: P370081

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

Reference Method: SM 2320 B-97
Batch ID: P370208

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	103		P	98 - 106

Reference Method: SM 4500 F-C-97
Batch ID: P370210

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	96.1		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P370245

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	102		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P370126

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2116008	Iron	109	109	P/P	80 - 120
2116008	Manganese	105	104	P/P	80 - 120
2116008	Zinc	104	102	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P370126

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2116008	Aluminum	95.6	95.3	P/P	80 - 120
2116008	Antimony	96.8	97.1	P/P	80 - 120
2116008	Arsenic	98.1	98.3	P/P	80 - 120
2116008	Cadmium	99.0	99.9	P/P	80 - 120
2116008	Chromium	94.5	94.8	P/P	80 - 120
2116008	Copper	93.7	94.9	P/P	80 - 120
2116008	Lead	95.6	96.2	P/P	80 - 120
2116008	Nickel	94.3	95.0	P/P	80 - 120
2116008	Selenium	95.1	92.3	P/P	80 - 120
2116008	Silver	99.8	99.3	P/P	80 - 120
2116008	Thallium	101	103	P/P	80 - 120

Reference Method: EPA 300.0
Batch ID: P370340

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2116013	Bromide	93.8	94.7	P/P	90 - 110
2116078	Bromide	94.6		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P370345

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2115920	Chloride	97.8		P	90 - 110
2115949	Chloride	99.4		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P370348

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2115920	Sulfate	98.4		P	90 - 110
2115949	Sulfate	98.4		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P370445

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2115952	Ammonia-N	94.4	95.1	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P370147

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2115953	Kjeldahl Nitrogen	98.9	102	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P370184

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2116067	NO2NO3-N	104	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P370332

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2115934	Total-P	101	95.2	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P370334

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2116044	Total-P	98.8	99.4	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P370007

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2115908	O-Phosphate-P	98.2	98.3	P/P	90 - 110

Reference Method: EPA 8321B
 Batch ID: P370004

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2115469	2,4-D	205	180	F/F	40 - 160
2115469	Acetaminophen	104	83.0	P/P	30 - 160
2115469	Acetamiprid	107	102	P/P	40 - 160
2115469	Afidopyropen	114	99.1	P/P	40 - 160
2115469	Bentazon	56.8	55.7	P/P	30 - 160
2115469	Benzovindiflupyr	114	101	P/P	40 - 160
2115469	Carbamazepine	121	109	P/P	40 - 160
2115469	Clothianidin	139	123	P/P	40 - 160
2115469	Dinotefuran	138	118	P/P	40 - 160
2115469	Diuron	115	102	P/P	40 - 160
2115469	Fenuron	102	93.6	P/P	40 - 160
2115469	Fluridone	127	109	P/P	40 - 160
2115469	Hydrocodone	121	114	P/P	40 - 160
2115469	Ibuprofen	150	144	P/P	30 - 160
2115469	Imazapyr	112	102	P/P	40 - 160
2115469	Imidacloprid	257	210	F/F	40 - 160
2115469	Linuron	87.8	77.1	P/P	40 - 160
2115469	Mandestrobin	113	103	P/P	40 - 160
2115469	MCP	238	221	F/F	40 - 160
2115469	Naproxen	136	133	P/P	40 - 160
2115469	Primidone	117	112	P/P	40 - 160
2115469	Pyraclostrobin	109	108	P/P	30 - 160
2115469	Thiamethoxam	206	178	F/F	40 - 160
2115469	Tolfenpyrad	101	93.7	P/P	40 - 160
2115469	Triclopyr	162	137	F/P	30 - 160

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P370034

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2115665	Acesulfame K	136	139	P/P	40 - 150
2115665	AMPA	150	153	P/F	40 - 150
2115665	Endothall	107	106	P/P	40 - 150
2115665	Glufosinate	119	118	P/P	40 - 150
2115665	Glyphosate	128	132	P/P	40 - 140
2115665	Sucralose	93.3	113	P/P	40 - 150

Reference Method: SM 4500 F-C-97
Batch ID: P370210

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2115914	Fluoride	97.6	97.6	P/P	89 - 106

Reference Method: SM 5310 B-00
Batch ID: P370245

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2116070	Organic Carbon	102	102	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
 Batch ID: P370012

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2115947	Turbidity	2.21	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
 Batch ID: P370126

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2116008	Iron	0.222	Spike	P	0 - 20
2116008	Manganese	0.382	Spike	P	0 - 20
2116008	Zinc	1.85	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
 Batch ID: P370126

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2116008	Aluminum	0.268	Spike	P	0 - 20
2116008	Antimony	0.298	Spike	P	0 - 20
2116008	Arsenic	0.174	Spike	P	0 - 20
2116008	Cadmium	0.910	Spike	P	0 - 20
2116008	Chromium	0.317	Spike	P	0 - 20
2116008	Copper	1.25	Spike	P	0 - 20
2116008	Lead	0.653	Spike	P	0 - 20
2116008	Nickel	0.754	Spike	P	0 - 20
2116008	Selenium	2.99	Spike	P	0 - 20
2116008	Silver	0.544	Spike	P	0 - 20
2116008	Thallium	2.56	Spike	P	0 - 20

Reference Method: EPA 300.0
 Batch ID: P370340

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2116013	Bromide	0.722	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P370345

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2115920	Chloride	1.24	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P370348

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2115920	Sulfate	2.65	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P370445

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2115952	Ammonia-N	0.498	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P370147

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2115953	Kjeldahl Nitrogen	2.52	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P370184

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2116067	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P370332

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2115934	Total-P	5.19	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P370334

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2116044	Total-P	0.368	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P370007

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2115908	O-Phosphate-P	0.102	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P370004

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2115469	2,4-D	13.0	Spike	P	0 - 30
2115469	Acetaminophen	22.4	Spike	P	0 - 30
2115469	Acetamiprid	4.65	Spike	P	0 - 30
2115469	Afidopyropen	13.7	Spike	P	0 - 30
2115469	Bentazon	1.91	Spike	P	0 - 30
2115469	Benzovindiflupyr	11.5	Spike	P	0 - 30
2115469	Carbamazepine	10.1	Spike	P	0 - 30
2115469	Clothianidin	12.1	Spike	P	0 - 30
2115469	Dinotefuran	16.1	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P370004

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2115469	Diuron	11.9	Spike	P	0 - 30
2115469	Fenuron	8.16	Spike	P	0 - 30
2115469	Fluridone	15.8	Spike	P	0 - 30
2115469	Hydrocodone	6.14	Spike	P	0 - 30
2115469	Ibuprofen	4.27	Spike	P	0 - 30
2115469	Imazapyr	9.35	Spike	P	0 - 30
2115469	Imidacloprid	20.2	Spike	P	0 - 30
2115469	Linuron	12.9	Spike	P	0 - 30
2115469	Mandestrobin	9.43	Spike	P	0 - 30
2115469	MCP	7.30	Spike	P	0 - 30
2115469	Naproxen	2.65	Spike	P	0 - 30
2115469	Primidone	4.61	Spike	P	0 - 30
2115469	Pyraclostrobin	1.19	Spike	P	0 - 30
2115469	Thiamethoxam	14.8	Spike	P	0 - 30
2115469	Tolfenpyrad	7.84	Spike	P	0 - 30
2115469	Triclopyr	17.1	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P370034

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2115665	Acesulfame K	2.52	Spike	P	0 - 30
2115665	AMPA	2.19	Spike	P	0 - 30
2115665	Endothall	0.565	Spike	P	0 - 30
2115665	Glufosinate	0.959	Spike	P	0 - 30
2115665	Glyphosate	3.46	Spike	P	0 - 30
2115665	Sucralose	19.1	Spike	P	0 - 30

Reference Method: SM 2120 B
Batch ID: P370081

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2116068	Color (true)	2.83	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P370208

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2115914	Total Alkalinity	0.487	Sample	P	0 - 2.8

Reference Method: SM 2540 C-97
Batch ID: P370384

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2115933	TDS	1.86	Sample	P	0 - 10

Quality Assurance Report Precision

Reference Method: SM 4500 F-C-97
Batch ID: P370210

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2115914	Fluoride	0.0	Spike	P	0 - 2.5

Reference Method: SM 5310 B-00
Batch ID: P370245

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2116070	Organic Carbon	0.460	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: 2116032
Field Sample ID: G2SD0027

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	117	P	30 - 160
EPA 8321B	Acetaminophen-d4	95.1	P	30 - 160
EPA 8321B	Carbamazepine-d10	101	P	30 - 160
EPA 8321B	Diuron-d6	104	P	30 - 160
EPA 8321B	Endothall-d6	98.8	P	30 - 160
EPA 8321B	Endothall-d6	98.8	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	112	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	112	P	30 - 160
EPA 8321B	Ibuprofen-d3	145	P	30 - 160
EPA 8321B	Primidone-d5	136	P	30 - 160
EPA 8321B	Sucralose-d6	145	P	30 - 160
EPA 8321B	Sucralose-d6	145	P	30 - 160

Lab Sample ID: 2116033
Field Sample ID: G2SD0028

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	114	P	30 - 160
EPA 8321B	Acetaminophen-d4	89.9	P	30 - 160
EPA 8321B	Carbamazepine-d10	101	P	30 - 160
EPA 8321B	Diuron-d6	104	P	30 - 160
EPA 8321B	Endothall-d6	83.1	P	30 - 160
EPA 8321B	Endothall-d6	83.1	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	44.3	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	44.3	P	30 - 160
EPA 8321B	Ibuprofen-d3	123	P	30 - 160
EPA 8321B	Primidone-d5	118	P	30 - 160
EPA 8321B	Sucralose-d6	132	P	30 - 160
EPA 8321B	Sucralose-d6	132	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A93926

Included Lab Sample IDs: 2116015, 2116018, 2116021

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	100	98.7	P/P	90 - 110
O-Phosphate-P	99.5	98.9	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A93927

Included Lab Sample IDs: 2116013, 2116016, 2116019

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	102	102	P/P	95 - 105

Reference Method: SM 2120 B

Run ID: A93960

Included Lab Sample IDs: 2116016

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	102	103	P/P	90 - 115

Reference Method: EPA 8321B

Run ID: A93975

Included Lab Sample IDs: 2116032, 2116033

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	114	109	P/P	60 - 160
AMPA	115	114	P/P	60 - 160
Glufosinate	103	110	P/P	60 - 160
Glufosinate	110	116	P/P	60 - 160
Glyphosate	115	117	P/P	60 - 160
Glyphosate	117	119	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A93977

Included Lab Sample IDs: 2116032, 2116033

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	109	107	P/P	60 - 160
Endothall	112	113	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A93996

Included Lab Sample IDs: 2116032, 2116033

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	88.2	84.5	P/P	60 - 160

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A93999

Included Lab Sample IDs: 2116014, 2116017, 2116020

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	102	103	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 2320 B-97

Run ID: A94011

Included Lab Sample IDs: 2116013, 2116016, 2116019

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	102	105	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A94011

Included Lab Sample IDs: 2116013, 2116016, 2116019

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

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A94012

Included Lab Sample IDs: 2116016

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	100	99.8	P/P	90 - 110
Sulfate	102	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A94015

Included Lab Sample IDs: 2116014, 2116017, 2116020

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	94.5	95.3	P/P	90 - 110
Kjeldahl Nitrogen	95.3	96.1	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A94021

Included Lab Sample IDs: 2116014, 2116017, 2116020

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	103	106	P/P	90 - 110
Organic Carbon	104	103	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A94050

Included Lab Sample IDs: 2116034, 2116035

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Iron	103	102	P/P	90 - 110
Manganese	102	102	P/P	90 - 110
Zinc	102	100	P/P	90 - 110

Reference Method: EPA 300.0

Run ID: A94066

Included Lab Sample IDs: 2116013, 2116019

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A94099

Included Lab Sample IDs: 2116014, 2116017, 2116020

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	98.2	98.6	P/P	90 - 110
Total-P	99.5	98.5	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A94110

Included Lab Sample IDs: 2116014, 2116017, 2116020

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.8	100	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A94124

Included Lab Sample IDs: 2116032, 2116033

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	115	106	P/P	50 - 150
Acetaminophen	101	104	P/P	60 - 160
Acetamiprid	107	108	P/P	50 - 150
Afidopyropen	100	107	P/P	50 - 150
Bentazon	93.3	95.8	P/P	50 - 160
Benzovindiflupyr	107	104	P/P	50 - 150
Carbamazepine	114	114	P/P	60 - 150
Clothianidin	111	116	P/P	60 - 150
Dinotefuran	97.8	96.7	P/P	50 - 150
Diuron	93.9	106	P/P	60 - 150
Fenuron	111	110	P/P	60 - 150
Fluridone	122	122	P/P	60 - 160
Hydrocodone	113	98.0	P/P	60 - 150
Ibuprofen	103	101	P/P	50 - 160
Imazapyr	89.4	80.9	P/P	50 - 150
Imidacloprid	103	97.4	P/P	60 - 150
Linuron	92.4	89.7	P/P	60 - 150
Mandestrobin	121	118	P/P	50 - 150
MCPP	124	125	P/P	50 - 150
Naproxen	119	131	P/P	50 - 160
Primidone	99.9	100	P/P	60 - 150
Pyraclostrobin	120	116	P/P	60 - 150
Thiamethoxam	107	97.7	P/P	50 - 150
Tolfenpyrad	139	140	P/P	60 - 150
Triclopyr	126	118	P/P	50 - 150

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A94206

Included Lab Sample IDs: 2116034, 2116035

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	97.2	98.6	P/P	90 - 110
Antimony	95.9	95.6	P/P	90 - 110
Arsenic	101	99.6	P/P	90 - 110
Cadmium	101	100	P/P	90 - 110
Copper	99.7	101	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A94206

Included Lab Sample IDs: 2116034, 2116035

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Lead	97.0	98.9	P/P	90 - 110
Nickel	99.3	99.9	P/P	90 - 110
Selenium	98.9	98.6	P/P	90 - 110
Silver	98.4	98.2	P/P	90 - 110
Thallium	95.8	96.2	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A94208

Included Lab Sample IDs: 2116034, 2116035

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chromium	99.6	99.4	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						2.21	
EPA 200.7 Rev. 4.4	Iron	111		109	109			0.222
	Manganese	105		105	104			0.382
	Zinc	104		104	102			1.85
EPA 200.8 Rev. 5.4	Aluminum	95.3		95.6	95.3			0.268
	Antimony	95.6		96.8	97.1			0.298
	Arsenic	97.0		98.1	98.3			0.174
	Cadmium	97.6		99.0	99.9			0.910
	Chromium	93.3		94.5	94.8			0.317
	Copper	95.6		93.7	94.9			1.25
	Lead	94.0		95.6	96.2			0.653
	Nickel	95.7		94.3	95.0			0.754
	Selenium	95.8		95.1	92.3			2.99
	Silver	100		99.8	99.3			0.544
	Thallium	98.3		101	103			2.56
EPA 300.0	Bromide	97.8		93.8	94.7	94.6		0.722
EPA 300.0 Rev. 2.1	Chloride	99.1		97.8	99.4		1.24	
	Sulfate	98.9		98.4	98.4		2.65	
EPA 350.1 Rev. 2.0	Ammonia-N	98.5		94.4	95.1			0.498
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	108		98.9	102			2.52
EPA 353.2 Rev. 2.0	NO2NO3-N	102		104	104			0.0
EPA 365.1 Rev. 2.0	Total-P	95.4		101	95.2			5.19
	Total-P	93.8		98.8	99.4			0.368
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	98.1		98.2	98.3			0.102
EPA 8321B	2,4-D	110		205	180			13.0
	Acesulfame K	150		136	139			2.52
	Acetaminophen	73.1		104	83.0			22.4
	Acetamiprid	87.0		107	102			4.65
	Afidopyropen	99.1		114	99.1			13.7
	AMPA	149		150	153			2.19
	Bentazon	90.4		56.8	55.7			1.91
	Benzovindiflupyr	87.2		114	101			11.5
	Carbamazepine	94.7		121	109			10.1
	Clothianidin	94.1		139	123			12.1
	Dinotefuran	82.7		138	118			16.1
	Diuron	97.6		115	102			11.9
	Endothall	109		107	106			0.565
	Fenuron	99.3		102	93.6			8.16
	Fluridone	107		127	109			15.8
	Glufosinate	118		119	118			0.959
	Glyphosate	130		128	132			3.46
	Hydrocodone	90.7		121	114			6.14
	Ibuprofen	135		150	144			4.27
	Imazapyr	75.9		112	102			9.35
	Imidacloprid	94.2		257	210			20.2
	Linuron	76.7		87.8	77.1			12.9
	Mandestrobin	95.7		113	103			9.43
	MCPP	139		238	221			7.30
	Naproxen	112		136	133			2.65
	Primidone	82.6		117	112			4.61
	Pyraclostrobin	87.1		109	108			1.19
	Sucralose	101		93.3	113			19.1
	Thiamethoxam	91.7		206	178			14.8
	Tolfenpyrad	70.6		101	93.7			7.84

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery	LCS	Precision SMP	MS
EPA 8321B	Triclopyr	75.8	162 137			17.1
SM 2120 B	Color (true)	101			2.83	
SM 2320 B-97	Total Alkalinity	103			0.487	
SM 2540 C-97	TDS				1.86	
SM 4500 F-C-97	Fluoride	96.1	97.6 97.6			0.0
SM 5310 B-00	Organic Carbon	102	102 102			0.460

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2116013, 2116016, 2116019
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2116034, 2116035
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2116034, 2116035
EPA 300.0 / E31780	Bromide in aqueous matrices	2116013, 2116019
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2116016
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2116016
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2116014, 2116017, 2116020
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2116014, 2116017, 2116020
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2116014, 2116017, 2116020
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2116014, 2116017, 2116020
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2116015, 2116018, 2116021
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2116032, 2116033
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	2116032, 2116033
SM 2120 B / E31780	True Color measured at 450 nm	2116016
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	2116013, 2116016, 2116019
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2116016
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2116013, 2116016, 2116019
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2116013, 2116016, 2116019
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2116014, 2116017, 2116020

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	08/30/2019			08/30/2019 16:15	Samantha Davila	2116013, 2116016, 2116019
EPA 200.7 Rev. 4.4	08/30/2019	09/04/2019 13:30	Elliott D. Healy	09/06/2019 16:14	Alexander Thompson	2116034
	08/30/2019	09/04/2019 13:30	Elliott D. Healy	09/06/2019 16:22	Alexander Thompson	2116035
EPA 200.8 Rev. 5.4	08/30/2019	09/04/2019 13:30	Elliott D. Healy	09/12/2019 22:18	Robert K Palmer	2116034
	08/30/2019	09/04/2019 13:30	Elliott D. Healy	09/12/2019 22:28	Robert K Palmer	2116035
	08/30/2019	09/04/2019 13:30	Elliott D. Healy	09/14/2019 03:57	Robert K Palmer	2116034
	08/30/2019	09/04/2019 13:30	Elliott D. Healy	09/14/2019 04:03	Robert K Palmer	2116035
EPA 300.0	08/30/2019			09/06/2019 17:08	Jhamieka S. Greenwood	2116013
	08/30/2019			09/06/2019 19:25	Jhamieka S. Greenwood	2116019
EPA 300.0 Rev. 2.1	08/30/2019			09/06/2019 16:21	Jhamieka S. Greenwood	2116016
EPA 350.1 Rev. 2.0	08/30/2019			09/10/2019 11:39	Ping Hua	2116014
	08/30/2019			09/10/2019 11:40	Ping Hua	2116020
	08/30/2019			09/10/2019 11:42	Ping Hua	2116017
EPA 351.2 Rev. 2.0	08/30/2019	09/04/2019 13:40	Sima Feizi	09/05/2019 15:10	Joseph Suarez	2116014
	08/30/2019	09/04/2019 13:40	Sima Feizi	09/05/2019 15:14	Joseph Suarez	2116017
	08/30/2019	09/04/2019 13:40	Sima Feizi	09/05/2019 15:16	Joseph Suarez	2116020
EPA 353.2 Rev. 2.0	08/30/2019			09/05/2019 10:55	Beverly Y. Sanders	2116014
	08/30/2019			09/05/2019 10:56	Beverly Y. Sanders	2116020
	08/30/2019			09/05/2019 10:58	Beverly Y. Sanders	2116017
EPA 365.1 Rev. 2.0	08/30/2019	09/09/2019 13:10	Lipi Saha	09/10/2019 10:52	Rosalyn Ballman	2116014
	08/30/2019	09/09/2019 13:10	Lipi Saha	09/10/2019 10:53	Rosalyn Ballman	2116017
	08/30/2019	09/09/2019 13:10	Lipi Saha	09/10/2019 11:19	Rosalyn Ballman	2116020
EPA 365.1 Rev. 2.0 dissolved	08/30/2019			08/30/2019 14:37	Jhamieka S. Greenwood	2116018
	08/30/2019			08/30/2019 14:57	Jhamieka S. Greenwood	2116015
	08/30/2019			08/30/2019 14:58	Jhamieka S. Greenwood	2116021
EPA 8321B	08/30/2019	09/03/2019 10:00	Rebecca Ware	09/03/2019 12:16	Rebecca Ware	2116032
	08/30/2019	09/03/2019 10:00	Rebecca Ware	09/03/2019 14:17	Rebecca Ware	2116033
	08/30/2019	09/03/2019 10:00	Rebecca Ware	09/03/2019 18:50	Rebecca Ware	2116032
	08/30/2019	09/03/2019 10:00	Rebecca Ware	09/03/2019 19:04	Rebecca Ware	2116033
	08/30/2019	09/03/2019 10:00	Rebecca Ware	09/04/2019 17:54	Rebecca Ware	2116032
	08/30/2019	09/03/2019 10:00	Rebecca Ware	09/04/2019 18:06	Rebecca Ware	2116033
	08/30/2019	09/04/2019 07:00	Fe-Val Siddell	09/05/2019 23:27	Juyoung Kim	2116032
	08/30/2019	09/04/2019 07:00	Fe-Val Siddell	09/06/2019 00:02	Juyoung Kim	2116033
SM 2120 B	08/30/2019			08/30/2019 17:45	Madeline Funaro	2116016
SM 2320 B-97	08/30/2019			09/04/2019 23:45	Dale L. Simmons	2116013
	08/30/2019			09/04/2019 23:58	Dale L. Simmons	2116016
	08/30/2019			09/05/2019 00:11	Dale L. Simmons	2116019
SM 2540 C-97	08/30/2019			08/30/2019 15:41	Yijie Li	2116016
SM 2540 D-97	08/30/2019			08/30/2019 15:41	Yijie Li	2116013, 2116016, 2116019
SM 4500 F-C-97	08/30/2019			09/04/2019 23:45	Dale L. Simmons	2116013

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 4500 F-C-97	08/30/2019			09/04/2019 23:58	Dale L. Simmons	2116016
	08/30/2019			09/05/2019 00:11	Dale L. Simmons	2116019
SM 5310 B-00	08/30/2019			09/05/2019 20:15	Madeline Funaro	2116014
	08/30/2019			09/05/2019 20:54	Madeline Funaro	2116017
	08/30/2019			09/05/2019 21:08	Madeline Funaro	2116020