

Chemical Analysis Report

SW-DIST-2016-05-11-02

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

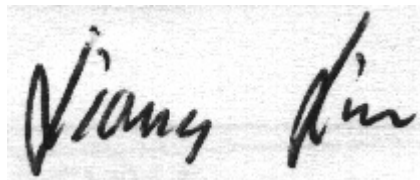
Event Description: **Horse Ref**
Request ID: **RQ-2016-05-09-60**
Customer: **SW-DIST**
Project ID: **SCIREF**

Send Reports to:
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Certified by: Liang Lin, Environmental Administrator

Date Certified: 03-JUN-2016 18:27

A handwritten signature in black ink, appearing to read "Liang Lin", on a light-colored background.

Case Narrative

Unless otherwise noted, all samples included in this report were received in accordance with protocols referenced in Chapter 62-160, Florida Administrative Code (F.A.C.). Results published in this report pertain only to the samples as submitted to, and received by the laboratory. All times in this report are adjusted to the applicable Eastern Time Zone (EST or EDT).

Results for the following analytical groups are included in this report: Metals, Nutrients and Pesticides.

Scientific notation may be used in reporting very large or small values. Values reported using scientific notation will take the form of the following example: 1.3E+03, which is equivalent to 1.3×10^3 or 1300.

Unless otherwise noted, analytical values for soil and sediment samples are reported on a dry weight basis, and analytical values for waste and tissue samples are reported on a wet weight basis.

Results for TNI accredited tests met requirements established by The NELAC Institute. A double asterisk (**) is used to indicate an analyte/matrix/method for which the laboratory is not TNI accredited or where accreditation for that field of testing is not applicable.

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

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

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

Precision is reported as relative percent difference unless otherwise noted.

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

QC Codes used in this report may include:

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

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

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

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

Sample Location: HORSEREF

Collection Date/Time: 05/10/2016 13:00

Field ID: 25020111

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1797435	EPA 180.1 Rev. 2.0	Turbidity	3.4	A	NTU	P304131	
	EPA 300.0	Bromide**	0.11		mg Br/L	P304960	
	EPA 300.0 Rev. 2.1	Chloride	19		mg Cl/L	P304779	
		Sulfate	140		mg SO4/L	P304782	
	SM 2120 B	Color (true)	120		PCU	P304066	
	SM 2320 B-97	Total Alkalinity	52		mg CaCO3/L	P304665	
	SM 2540 C-97	TDS	329		mg/L	P304856	
	SM 2540 D-97	TSS	6	I	mg/L	P304756	
	SM 4500 F-C-97	Fluoride	0.39		mg F/L	P304668	
1797436	EPA 350.1 Rev. 2.0	Ammonia-N	0.020		mg N/L	P304318	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.88		mg N/L	P304866	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.13		mg N/L	P304526	
	EPA 365.1 Rev. 2.0	Total-P	0.40		mg P/L	P304914	
	SM 5310 B-00	Organic Carbon	22		mg C/L	P304979	
1797458	EPA 200.7 Rev. 4.4	Calcium	44.1		mg/L	P304155	
		Magnesium	21.6		mg/L	P304155	
		Potassium	5.4		mg/L	P304155	
		Sodium	23.9		mg/L	P304155	
1797459	EPA 8321B	Diuron	0.0020	U	ug/L	P303923	
		Fenuron	0.0080	U	ug/L	P303923	
		Imidacloprid	0.19		ug/L	P303923	
		Linuron	0.0040	U	ug/L	P303923	
		Sucralose**	0.010	U	ug/L	P303922	
		Acetaminophen**	0.0040	U	ug/L	P303923	
		Carbamazepine**	4.0E-04	U	ug/L	P303923	
		Primidone**	0.0080	U	ug/L	P303923	
		Fluridone**	4.0E-04	U	ug/L	P303923	

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Sulfate: Matrix spike recovery data for one of two spiked samples is unavailable due to high analyte concentration in the QC sample.

SM 2540 D-97: The precision data is unavailable due to the low analyte concentration in the QC sample.

EPA 200.7 Rev. 4.4: The calcium and potassium matrix spike recovery data for one of two spiked samples is unavailable due to high analyte concentration in the QC sample.

EPA 8321B: MS accuracy for imidacloprid could not be assessed due to high concentration of parameter in the spiked sample.

Quality Assurance Report

Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P304131

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P304155

Component	Result	Code	Units
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Quality Assurance Report Method Blank Results

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P304155

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

Reference Method: EPA 300.0
Batch ID: P304960

Component	Result	Code	Units
Bromide	0.016	U	mg Br/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P304779

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P304782

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P304318

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P304866

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P304526

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P304914

Component	Result	Code	Units
Total-P	0.005	U	mg P/L

Reference Method: EPA 8321B
Batch ID: P303922

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B
Batch ID: P303923

Component	Result	Code	Units
Acetaminophen	0.0040	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	0.0040	U	ug/L
Linuron	0.0040	U	ug/L
Primidone	0.0080	U	ug/L

Reference Method: SM 2120 B
Batch ID: P304066

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P304665

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

Reference Method: SM 2540 C-97
Batch ID: P304856

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P304756

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P304668

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P304979

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

Quality Assurance Report Laboratory Control Sample Accuracy

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P304155

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	105		P	85 - 115
Magnesium	106		P	85 - 115
Potassium	102		P	85 - 115
Sodium	105		P	85 - 115

Reference Method: EPA 300.0
Batch ID: P304960

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P304779

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P304782

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	96.4		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P304318

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	98.6		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P304866

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P304526

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: P304914

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

Reference Method: EPA 8321B
Batch ID: P303922

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	86.8		P	40 - 140

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P303923

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acetaminophen	114		P	40 - 140
Carbamazepine	105		P	40 - 140
Diuron	111		P	40 - 140
Fenuron	96.4		P	40 - 140
Fluridone	102		P	40 - 140
Imidacloprid	98.4		P	40 - 160
Linuron	107		P	40 - 140
Primidone	102		P	40 - 140

Reference Method: SM 2320 B-97
Batch ID: P304665

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

Reference Method: SM 4500 F-C-97
Batch ID: P304668

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	96.0		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P304979

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	97.4		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P304155

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1797116	Calcium	105	102	P/P	80 - 120
1797116	Magnesium	108	104	P/P	80 - 120
1797116	Potassium	103	100	P/P	80 - 120
1797116	Sodium	103	101	P/P	80 - 120
1797323	Magnesium	108		P	80 - 120
1797323	Sodium	104		P	80 - 120

Reference Method: EPA 300.0
Batch ID: P304960

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1797081	Bromide	101		P	90 - 110
1797435	Bromide	101	101	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P304779

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1797301	Chloride	98.0		P	90 - 110
1798406	Chloride	98.6	98.7	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P304782

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1797301	Sulfate	94.3		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P304318

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1797411	Ammonia-N	98.7	99.0	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P304866

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1797997	Kjeldahl Nitrogen	98.6	97.6	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P304526

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1797413	NO2NO3-N	100	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P304914

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1797411	Total-P	102	103	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P303922

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1797459	Sucralose	81.9	92.6	P/P	40 - 140

Reference Method: EPA 8321B
Batch ID: P303923

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1797459	Acetaminophen	68.4	73.6	P/P	40 - 140
1797459	Carbamazepine	82.4	84.4	P/P	40 - 140
1797459	Diuron	84.4	82.4	P/P	40 - 140
1797459	Fenuron	72.8	74.4	P/P	40 - 140
1797459	Fluridone	87.6	90.0	P/P	40 - 140
1797459	Linuron	86.8	89.2	P/P	40 - 140
1797459	Primidone	84.4	82.8	P/P	40 - 140

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SM 4500 F-C-97
Batch ID: P304668

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1797277	Fluoride	98.5	97.9	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P304979

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1797388	Organic Carbon	104		P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P304131

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1797435	Turbidity	4.46	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P304155

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1797116	Calcium	1.70	Spike	P	0 - 20
1797116	Magnesium	3.31	Spike	P	0 - 20
1797116	Potassium	2.40	Spike	P	0 - 20
1797116	Sodium	1.61	Spike	P	0 - 20

Reference Method: EPA 300.0
Batch ID: P304960

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1797435	Bromide	0.307	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P304779

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1798406	Chloride	0.106	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P304782

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1798406	Sulfate	0.263	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P304318

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1797411	Ammonia-N	0.336	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P304866

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1797997	Kjeldahl Nitrogen	0.749	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P304526

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1797413	NO2NO3-N	1.65	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P304914

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1797411	Total-P	0.192	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P303922

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1797459	Sucralose	12.3	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P303923

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1797459	Acetaminophen	7.32	Spike	P	0 - 30
1797459	Carbamazepine	2.40	Spike	P	0 - 30
1797459	Diuron	2.40	Spike	P	0 - 30
1797459	Fenuron	2.17	Spike	P	0 - 30
1797459	Fluridone	2.70	Spike	P	0 - 30
1797459	Imidacloprid	15.2	Spike	P	0 - 30
1797459	Linuron	2.73	Spike	P	0 - 30
1797459	Primidone	1.91	Spike	P	0 - 30

Reference Method: SM 2120 B
Batch ID: P304066

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1797443	Color (true)	2.34	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: SM 2320 B-97
 Batch ID: P304665

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1797277	Total Alkalinity	0.966	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
 Batch ID: P304856

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1797410	TDS	3.18	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
 Batch ID: P304668

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1797277	Fluoride	0.477	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
 Batch ID: P304979

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1797388	Organic Carbon	1.86	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: 1797459
 Field Sample ID: 25020111

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Acetaminophen-d4	64.2	P	30 - 150
EPA 8321B	Acetaminophen-d4	64.2	P	30 - 150
EPA 8321B	Carbamazepine-d10	94.4	P	40 - 160
EPA 8321B	Carbamazepine-d10	94.4	P	40 - 160
EPA 8321B	Diuron-d6	78.6	P	40 - 150
EPA 8321B	Diuron-d6	78.6	P	40 - 150
EPA 8321B	Primidone-d5	98.2	P	40 - 150
EPA 8321B	Primidone-d5	98.2	P	40 - 150
EPA 8321B	Sucralose-d6	83.5	P	40 - 150
EPA 8321B	Sucralose-d6	83.5	P	40 - 150

Quality Assurance Report Calibration Verification

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A39620

Included Lab Sample IDs: 1797435

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	99.9	99.6	P/P	90 - 110
Sulfate	99.3	97.7	P/P	90 - 110

Reference Method: SM 2120 B

Run ID: A69424

Included Lab Sample IDs: 1797435

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	99.3	96.8	P/P	90 - 115

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A69439

Included Lab Sample IDs: 1797435

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	100	99.5	P/P	95 - 105

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A69475

Included Lab Sample IDs: 1797436

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

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A69476

Included Lab Sample IDs: 1797458

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	104	105	P/P	90 - 110
Magnesium	104	106	P/P	90 - 110
Potassium	102	102	P/P	90 - 110
Sodium	103	103	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A69517

Included Lab Sample IDs: 1797459

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acetaminophen	101	106	P/P	60 - 150
Carbamazepine	102	107	P/P	60 - 150
Diuron	91.2	116	P/P	60 - 150
Fenuron	98.4	105	P/P	60 - 150
Fluridone	91.6	99.6	P/P	60 - 150
Imidacloprid	100	105	P/P	60 - 150
Linuron	103	130	P/P	60 - 150
Primidone	83.6	96.0	P/P	60 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A69529
Included Lab Sample IDs: 1797459

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	91.0	87.0	P/P	70 - 150

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A69550
Included Lab Sample IDs: 1797436

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

Reference Method: SM 2320 B-97
Run ID: A69588
Included Lab Sample IDs: 1797435

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	98.2	102	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Run ID: A69588
Included Lab Sample IDs: 1797435

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	99.1	99.0	P/P	90 - 110

Reference Method: EPA 300.0
Run ID: A69676
Included Lab Sample IDs: 1797435

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Bromide	98.0	99.8	P/P	90 - 110

Reference Method: SM 5310 B-00
Run ID: A69683
Included Lab Sample IDs: 1797436

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	99.8	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A69705
Included Lab Sample IDs: 1797436

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	102	107	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A69724
Included Lab Sample IDs: 1797436

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	102	100	P/P	90 - 110

Quality Assurance Report Calibration Verification

* Pass/Fail determinations are made for each bracketing calibration verification check.
Control limits for initial calibration checks may be different from those for continuing checks, depending on method requirements.
Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery			Precision SMP	MS
			LCS				
EPA 180.1 Rev. 2.0	Turbidity					4.46	
EPA 200.7 Rev. 4.4	Calcium	105	105	102			1.70
	Magnesium	106	108	104	108		3.31
	Potassium	102	103	100			2.40
	Sodium	105	103	101	104		1.61
EPA 300.0	Bromide	104	101	101	101		0.307
EPA 300.0 Rev. 2.1	Chloride	98.3	98.6	98.7	98.0		0.106
	Sulfate	96.4	94.3				0.263
EPA 350.1 Rev. 2.0	Ammonia-N	98.6	98.7	99.0			0.336
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	106	98.6	97.6			0.749
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	102	100	102			1.65
EPA 365.1 Rev. 2.0	Total-P	104	102	103			0.192
EPA 8321B	Acetaminophen	114	68.4	73.6			7.32
	Carbamazepine	105	82.4	84.4			2.40
	Diuron	111	84.4	82.4			2.40
	Fenuron	96.4	72.8	74.4			2.17
	Fluridone	102	87.6	90.0			2.70
	Imidacloprid	98.4					15.2
	Linuron	107	86.8	89.2			2.73
	Primidone	102	84.4	82.8			1.91
	Sucralose	86.8	81.9	92.6			12.3
SM 2120 B	Color (true)					2.34	
SM 2320 B-97	Total Alkalinity	101				0.966	
SM 2540 C-97	TDS					3.18	
SM 4500 F-C-97	Fluoride	96.0	98.5	97.9			0.477
SM 5310 B-00	Organic Carbon	97.4	104				1.86

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1797435
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	1797458
EPA 300.0 / E31780	Bromide in aqueous matrices	1797435
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1797435
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1797435
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1797436
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1797436
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1797436
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1797436

Reference Method Descriptions

Method / DoH Cert #	Description	<u>Associated Samples</u>
EPA 8321B / E31780	Analysis of sucralose in water matrices by HPLC/MS/MS	1797459
EPA 8321B / E31780	Urea herbicides and other chemicals in water matrices by HPLC/MS/MS	1797459
SM 2120 B / E31780	True Color measured at 450 nm	1797435
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	1797435
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1797435
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1797435
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1797435
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1797436

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	05/11/2016			05/11/2016 15:59	Sima Feizi	1797435
EPA 200.7 Rev. 4.4	05/11/2016	05/12/2016	Elliott D. Healy	05/13/2016	Joshua Ayres	1797458
EPA 300.0	05/11/2016			05/24/2016	Ping Hua	1797435
EPA 300.0 Rev. 2.1	05/11/2016			05/19/2016	Elisa J Lutz	1797435
	05/11/2016			05/20/2016	Elisa J Lutz	1797435
EPA 350.1 Rev. 2.0	05/11/2016			05/13/2016	Diana M. Turner	1797436
EPA 351.2 Rev. 2.0	05/11/2016	05/24/2016	Sofia Elnemr	05/25/2016	Christopher Armour	1797436
EPA 353.2 Rev. 2.0	05/11/2016			05/18/2016	Peter D. Kaus	1797436
EPA 365.1 Rev. 2.0	05/11/2016	05/24/2016	Vijayalakshmi Reddy	05/26/2016	Rochelle Y Jackson	1797436
EPA 8321B	05/11/2016	05/16/2016	Hoor Shaik	05/16/2016	Juyoung Kim	1797459
	05/11/2016	05/16/2016	Hoor Shaik	05/17/2016	Mohammad Ghaffari	1797459
SM 2120 B	05/11/2016			05/11/2016 14:14	Rochelle Y Jackson	1797435
SM 2320 B-97	05/11/2016			05/19/2016	Dale L. Simmons	1797435
SM 2540 C-97	05/11/2016			05/13/2016	Yijie Li	1797435
SM 2540 D-97	05/11/2016			05/13/2016	Yijie Li	1797435
SM 4500 F-C-97	05/11/2016			05/19/2016	Dale L. Simmons	1797435
SM 5310 B-00	05/11/2016			05/24/2016	Diana M. Turner	1797436