

Chemical Analysis Report

SE-DIST-2023-04-25-01

Florida DEP Laboratory
2600 Blair Stone Road
Tallahassee, FL 32399-2400
DOH Accreditation E31780

Event Description: **Buck Lake / Arbuckle Creek Makeup**
Request ID: **RQ-2023-04-24-16**
Customer: **SE-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
FL Dept. of Environmental Protection
2199 South Rock Road
Fort Pierce, FL 34945
Attn: Jordan Skaggs

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

Certified by: Kerry Tate, Ph.D., Environmental Administrator

Date Certified: 19-MAY-2023 11:46

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

Case Narrative

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

Results for the following analytical groups are included in this report: 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: BUCK LAKE NEAR CENTER

Collection Date/Time: 04/24/2023 09:15

Field ID: G4SE0167

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2402648	DEP SOP: NU-094-1	Color (true)	4.0	I	PCU	P428954	
	EPA 180.1 Rev. 2.0	Turbidity	0.40	I	NTU	P428972	
	EPA 300.0 Rev. 2.1	Chloride	15		mg Cl/L	P429144	
		Sulfate	58		mg SO4/L	P429147	
	SM 2320 B-2011	Total Alkalinity	17	A	mg CaCO3/L	P429192	
	SM 2540 C-2015	TDS	189	Q	mg/L	P429605	
	SM 2540 D-2015	TSS	2	U	mg/L	P429317	
	SM 4500-F- C-2011	Fluoride	0.071	I	mg F/L	P429283	
2402649	EPA 350.1 Rev. 2.0	Ammonia-N	0.003	I	mg N/L	P429140	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.44		mg N/L	P429952	
	EPA 353.2 Rev. 2.0	NO2NO3-N	11		mg N/L	P429327	
	EPA 365.1 Rev. 2.0	Total-P	0.003	I	mg P/L	P429156	
	SM 5310 B-2011	Organic Carbon	3.9		mg C/L	P429190	

Ref. Method and Comment:

SM 2540 C-2015: The sample was analyzed out of holding time because of analytical difficulties.

SM 2540 D-2015: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: ARBUCKLE BRANCH AT ARBUCKLE CREEK RD

Collection Date/Time: 04/24/2023 10:15

Field ID: G4SE0149

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2402650	DEP SOP: NU-094-1	Color (true)	35	A	PCU	P428956	
	EPA 180.1 Rev. 2.0	Turbidity	160		NTU	P428973	
	EPA 300.0 Rev. 2.1	Chloride	43		mg Cl/L	P429144	
		Sulfate	33		mg SO4/L	P429147	
	SM 2320 B-2011	Total Alkalinity	3.7		mg CaCO3/L	P429192	
	SM 2540 C-2015	TDS	187		mg/L	P429500	
	SM 2540 D-2015	TSS	371	J	mg/L	P429317	
	SM 4500-F- C-2011	Fluoride	0.036	I	mg F/L	P429283	
2402651	EPA 350.1 Rev. 2.0	Ammonia-N	0.017		mg N/L	P429140	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.1		mg N/L	P429300	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P429327	
	EPA 365.1 Rev. 2.0	Total-P	0.056		mg P/L	P429156	
	SM 5310 B-2011	Organic Carbon	18		mg C/L	P429190	
2402659	EPA 8321B	2,4-D	0.0020	U	ug/L	P429013	
		Acesulfame K	0.10	U	ug/L	P428982	
		2,4,5-T	0.0040	U	ug/L	P429013	
		AMPA	0.10	U	ug/L	P428982	
		Acetaminophen	0.0080	U	ug/L	P429013	
		Acetamiprid	0.0020	U	ug/L	P429013	
		Endothall	0.25	U	ug/L	P428982	
		Glufosinate	0.10	U	ug/L	P428982	
		Glyphosate	0.10	U	ug/L	P428982	
		Afidopyropen	0.0028	I	ug/L	P429013	
		Bentazon	0.0016	I	ug/L	P429013	
		Sucralose	0.065		ug/L	P428982	
		Benzovindiflupyr	0.0020	U	ug/L	P429013	
		Carbamazepine	8.0E-04	U	ug/L	P429013	
		Clothianidin	0.0020	U	ug/L	P429013	
		Dinotefuran	0.0020	U	ug/L	P429013	
		Diuron	0.0020	U	ug/L	P429013	
		Fenuron	0.032	U	ug/L	P429013	
		Fluridone	8.0E-04	U	ug/L	P429013	
		Imazapyr	0.0040	U	ug/L	P429013	
		Hydrocodone	0.0020	U	ug/L	P429013	
		Ibuprofen	0.080	U	ug/L	P429013	
		Imidacloprid	0.0020	U	ug/L	P429013	
		Linuron	0.0040	U	ug/L	P429013	
		Mandestrobin	0.0020	U	ug/L	P429013	
		MCP	0.0020	U	ug/L	P429013	
		Naproxen	0.0080	U	ug/L	P429013	
		Primidone	0.0040	U	ug/L	P429013	
		Pyraclostrobin	0.0020	U	ug/L	P429013	
		Silvex	0.0040	U	ug/L	P429013	

Field ID: G4SE0149

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2402659	EPA 8321B	Thiamethoxam	0.0020	U	ug/L	P429013	
		Tolfenpyrad	0.0020	U	ug/L	P429013	
		Triclopyr	0.0040	U	ug/L	P429013	

Ref. Method and Comment:
SM 2540 D-2015: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample. Constant dry weight was not attained.
EPA 8321B: MS accuracy for some analytes could not be assessed due to high concentration of parameter in the spiked sample.

Quality Assurance Report Method Blank Results

Reference Method: DEP SOP: NU-094-1
Batch ID: P428954

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: DEP SOP: NU-094-1
Batch ID: P428956

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P428972

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P428973

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P429144

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P429147

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P429140

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P429300

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P429952

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P429327

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P429156

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

Reference Method: EPA 8321B
Batch ID: P428982

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: EPA 8321B
Batch ID: P429013

Component	Result	Code	Units
2,4-D	0.0020	U	ug/L
2,4,5-T	0.0040	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	0.032	U	ug/L
Fluridone	8.0E-04	U	ug/L
Hydrocodone	0.0020	U	ug/L
Ibuprofen	0.080	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
Silvex	0.0040	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: SM 2320 B-2011
Batch ID: P429192

Component	Result	Code	Units
Total Alkalinity	0.65	U	mg CaCO ₃ /L

Reference Method: SM 2540 C-2015
Batch ID: P429500

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-2015
Batch ID: P429605

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2015
Batch ID: P429317

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500-F- C-2011
Batch ID: P429283

Component	Result	Code	Units
Fluoride	0.025	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P429190

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: DEP SOP: NU-094-1
Batch ID: P428954

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	97.3		P	90 - 110

Reference Method: DEP SOP: NU-094-1
Batch ID: P428956

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	95.9		P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P428972

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

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P428973

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P429144

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P429147

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P429140

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	97.0		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P429300

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P429952

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P429327

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P429156

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

Reference Method: EPA 8321B
Batch ID: P428982

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	122		P	40 - 150
AMPA	96.2		P	40 - 150
Endothall	80.7		P	40 - 150
Glufosinate	77.6		P	40 - 150
Glyphosate	98.2		P	40 - 150
Sucralose	102		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P429013

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	106		P	40 - 150
2,4,5-T	100		P	40 - 150
Acetaminophen	94.9		P	30 - 150
Acetamiprid	81.7		P	40 - 150
Afidopyropen	66.2		P	30 - 150
Bentazon	95.9		P	30 - 150
Benzovindiflupyr	91.6		P	40 - 150
Carbamazepine	98.7		P	40 - 150
Clothianidin	95.4		P	40 - 150
Dinotefuran	99.3		P	40 - 150
Diuron	88.5		P	40 - 150
Fenuron	93.5		P	40 - 150
Fluridone	89.2		P	40 - 150
Hydrocodone	90.7		P	40 - 150
Ibuprofen	93.1		P	40 - 150
Imazapyr	99.5		P	40 - 150
Imidacloprid	86.9		P	40 - 150
Linuron	87.0		P	40 - 150
Mandestrobin	88.0		P	40 - 150
MCPP	109		P	40 - 150
Naproxen	82.6		P	40 - 150
Primidone	92.2		P	40 - 150
Pyraclostrobin	86.0		P	40 - 150
Silvex	96.2		P	40 - 150
Thiamethoxam	97.2		P	40 - 150
Tolfenpyrad	59.4		P	30 - 150
Triclopyr	89.1		P	40 - 150

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 2320 B-2011
Batch ID: P429192

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	95.8		P	94 - 106

Reference Method: SM 2540 C-2015
Batch ID: P429500

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

Reference Method: SM 2540 C-2015
Batch ID: P429605

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

Reference Method: SM 2540 D-2015
Batch ID: P429317

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TSS	95.3		P	85 - 106

Reference Method: SM 4500-F- C-2011
Batch ID: P429283

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.8		P	96 - 104

Reference Method: SM 5310 B-2011
Batch ID: P429190

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	95.6		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P429144

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2402616	Chloride	101		P	90 - 110
2402650	Chloride	100		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P429147

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2402616	Sulfate	101		P	90 - 110
2402650	Sulfate	97.8		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P429140

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2402621	Ammonia-N	96.4	97.0	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P429300

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2402966	Kjeldahl Nitrogen	94.3	104	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P429952

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2408313	Kjeldahl Nitrogen	98.4	107	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P429327

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2402622	NO2NO3-N	105	105	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P429156

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2402649	Total-P	98.8	101	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P428982

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2402494	Acesulfame K	144	144	P/P	40 - 150
2402494	AMPA	90.5	88.5	P/P	40 - 150
2402494	Endothall	80.5	81.7	P/P	40 - 150
2402494	Glufosinate	111	88.7	P/P	40 - 150
2402494	Glyphosate	121	149	P/P	40 - 150
2402494	Sucralose	119	108	P/P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B

Batch ID: P429013

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2402644	2,4,5-T	115	123	P/P	40 - 150
2402644	Acetaminophen	101	102	P/P	30 - 150
2402644	Acetamiprid	78.3	80.3	P/P	40 - 150
2402644	Afidopyropen	103	94.8	P/P	30 - 150
2402644	Benzovindiflupyr	95.0	87.1	P/P	40 - 150
2402644	Carbamazepine	91.8	82.8	P/P	40 - 150
2402644	Clothianidin	107	101	P/P	40 - 150
2402644	Dinotefuran	69.9	67.7	P/P	40 - 150
2402644	Diuron	75.7	77.1	P/P	40 - 150
2402644	Fenuron	63.6	63.6	P/P	40 - 150
2402644	Hydrocodone	61.2	60.3	P/P	40 - 150
2402644	Ibuprofen	84.7	92.0	P/P	40 - 150
2402644	Imazapyr	100	98.0	P/P	40 - 150
2402644	Imidacloprid	132	124	P/P	40 - 150
2402644	Linuron	81.7	73.9	P/P	40 - 150
2402644	Mandestrobin	95.7	87.3	P/P	40 - 150
2402644	MCPP	131	131	P/P	40 - 150
2402644	Naproxen	91.2	78.0	P/P	40 - 150
2402644	Primidone	90.8	93.7	P/P	40 - 150
2402644	Pyraclostrobin	94.7	85.7	P/P	40 - 150
2402644	Silvex	110	102	P/P	40 - 150
2402644	Thiamethoxam	89.0	83.4	P/P	40 - 150
2402644	Tolfenpyrad	60.8	58.8	P/P	30 - 150
2402644	Triclopyr	127	129	P/P	40 - 150

Reference Method: SM 4500-F- C-2011

Batch ID: P429283

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2402648	Fluoride	100	102	P/P	94 - 104

Reference Method: SM 5310 B-2011

Batch ID: P429190

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2402623	Organic Carbon	94.2	94.9	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P428954

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2402619	Color (true)	1.27	Sample	P	0 - 20

Reference Method: DEP SOP: NU-094-1
Batch ID: P428956

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2402650	Color (true)	9.13	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P428972

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2402507	Turbidity	6.01	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P428973

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2402688	Turbidity	0.0	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P429144

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2402616	Chloride	0.583	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P429147

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2402616	Sulfate	0.336	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P429140

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2402621	Ammonia-N	0.567	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P429300

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2402966	Kjeldahl Nitrogen	10.2	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P429952

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2408313	Kjeldahl Nitrogen	6.12	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P429327

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2402622	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P429156

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2402649	Total-P	1.71	Spike	P	0 - 20

Reference Method: EPA 8321B

Batch ID: P428982

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2402494	Acesulfame K	0.560	Spike	P	0 - 30
2402494	AMPA	1.58	Spike	P	0 - 30
2402494	Endothall	1.50	Spike	P	0 - 30
2402494	Glufosinate	22.3	Spike	P	0 - 30
2402494	Glyphosate	13.4	Spike	P	0 - 30
2402494	Sucralose	9.46	Spike	P	0 - 30

Reference Method: EPA 8321B

Batch ID: P429013

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2402644	2,4-D	7.57	Spike	P	0 - 30
2402644	2,4,5-T	6.62	Spike	P	0 - 30
2402644	Acetaminophen	1.28	Spike	P	0 - 30
2402644	Acetamiprid	2.44	Spike	P	0 - 30
2402644	Afidopyropen	8.18	Spike	P	0 - 30
2402644	Bentazon	3.60	Spike	P	0 - 30
2402644	Benzovindiflupyr	8.67	Spike	P	0 - 30
2402644	Carbamazepine	10.3	Spike	P	0 - 30
2402644	Clothianidin	5.43	Spike	P	0 - 30
2402644	Dinotefuran	3.17	Spike	P	0 - 30
2402644	Diuron	1.70	Spike	P	0 - 30
2402644	Fenuron	0.0412	Spike	P	0 - 30
2402644	Fluridone	4.16	Spike	P	0 - 30
2402644	Hydrocodone	1.33	Spike	P	0 - 30
2402644	Ibuprofen	8.26	Spike	P	0 - 30
2402644	Imazapyr	1.71	Spike	P	0 - 30
2402644	Imidacloprid	5.21	Spike	P	0 - 30
2402644	Linuron	10.0	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B

Batch ID: P429013

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2402644	Mandestrobin	9.10	Spike	P	0 - 30
2402644	MCCP	0.202	Spike	P	0 - 30
2402644	Naproxen	15.6	Spike	P	0 - 30
2402644	Primidone	2.93	Spike	P	0 - 30
2402644	Pyraclostrobin	10.0	Spike	P	0 - 30
2402644	Silvex	7.26	Spike	P	0 - 30
2402644	Thiamethoxam	6.40	Spike	P	0 - 30
2402644	Tolfenpyrad	3.37	Spike	P	0 - 30
2402644	Triclopyr	2.00	Spike	P	0 - 30

Reference Method: SM 2320 B-2011

Batch ID: P429192

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2402648	Total Alkalinity	1.96	Sample	P	0 - 3.8

Reference Method: SM 2540 C-2015

Batch ID: P429500

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2401995	TDS	5.85	Sample	P	0 - 10

Reference Method: SM 2540 C-2015

Batch ID: P429605

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2404436	TDS	2.15	Sample	P	0 - 10

Reference Method: SM 4500-F- C-2011

Batch ID: P429283

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2402648	Fluoride	1.01	Spike	P	0 - 1.6

Reference Method: SM 5310 B-2011

Batch ID: P429190

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2402623	Organic Carbon	0.483	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2402659
Field Sample ID: G4SE0149

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	86.0	P	30 - 160
EPA 8321B	Acetaminophen-d4	102	P	30 - 160
EPA 8321B	Carbamazepine-d10	60.5	P	30 - 160
EPA 8321B	Diuron-d6	62.1	P	30 - 160
EPA 8321B	Endothall-d6	90.4	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	78.2	P	30 - 160
EPA 8321B	Ibuprofen-d3	65.1	P	30 - 160
EPA 8321B	Primidone-d5	84.2	P	30 - 160
EPA 8321B	Sucralose-d6	90.6	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A118755

Included Lab Sample IDs: 2402648, 2402650

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	97.8	98.0	P/P	90 - 110
Chloride	98.0	97.8	P/P	90 - 110
Sulfate	98.5	98.9	P/P	90 - 110
Sulfate	98.9	99.1	P/P	90 - 110

Reference Method: DEP SOP: NU-094-1

Run ID: A118763

Included Lab Sample IDs: 2402648, 2402650

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	96.4	102	P/P	90 - 110
Color (true)	99.1	97.7	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A118771

Included Lab Sample IDs: 2402648, 2402650

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A118854

Included Lab Sample IDs: 2402649, 2402651

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.8	98.4	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A118855

Included Lab Sample IDs: 2402659

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	92.1	92.8	P/P	50 - 150
2,4,5-T	101	100	P/P	50 - 150
Acetaminophen	103	106	P/P	60 - 160
Acetamiprid	106	103	P/P	50 - 150
Afidopyropen	111	69.1	P/P	50 - 150
Bentazon	128	130	P/P	50 - 160
Benzovindiflupyr	108	105	P/P	50 - 150
Carbamazepine	111	107	P/P	60 - 150
Clothianidin	105	103	P/P	60 - 150
Dinotefuran	112	113	P/P	50 - 150
Diuron	122	106	P/P	60 - 160
Fenuron	106	109	P/P	60 - 150
Fluridone	114	116	P/P	60 - 160
Hydrocodone	107	96.9	P/P	60 - 150
Ibuprofen	130	88.7	P/P	50 - 160
Imazapyr	112	102	P/P	50 - 150
Imidacloprid	99.7	97.0	P/P	60 - 150
Linuron	89.2	84.1	P/P	60 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A118855
Included Lab Sample IDs: 2402659

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Mandestrobin	99.2	101	P/P	50 - 150
MCPD	105	98.9	P/P	50 - 150
Naproxen	96.0	139	P/P	50 - 160
Primidone	103	102	P/P	60 - 150
Pyraclostrobin	105	113	P/P	60 - 150
Silvex	81.5	104	P/P	50 - 150
Thiamethoxam	112	112	P/P	50 - 150
Tolfenpyrad	98.7	104	P/P	60 - 150
Triclopyr	90.0	95.2	P/P	50 - 150

Reference Method: EPA 8321B
Run ID: A118862
Included Lab Sample IDs: 2402659

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	125	146	P/P	60 - 160
Sucralose	104	130	P/P	60 - 160

Reference Method: EPA 8321B
Run ID: A118863
Included Lab Sample IDs: 2402659

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	94.4	87.9	P/P	60 - 160
Endothall	82.6	82.7	P/P	60 - 160
Glufosinate	82.2	78.7	P/P	60 - 160
Glyphosate	91.6	99.1	P/P	60 - 160

Reference Method: SM 2320 B-2011
Run ID: A118869
Included Lab Sample IDs: 2402648, 2402650

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	95.5	94.8	P/P	90 - 110

Reference Method: SM 5310 B-2011
Run ID: A118872
Included Lab Sample IDs: 2402649, 2402651

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	98.6	98.1	P/P	90 - 110
Organic Carbon	99.0	98.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A118880
Included Lab Sample IDs: 2402651

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A118910

Included Lab Sample IDs: 2402649

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	98.8	100	P/P	90 - 110

Reference Method: SM 4500-F- C-2011

Run ID: A118916

Included Lab Sample IDs: 2402648, 2402650

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A118933

Included Lab Sample IDs: 2402649, 2402651

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A118948

Included Lab Sample IDs: 2402651

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A119245

Included Lab Sample IDs: 2402649

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	106	105	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	MS
						SMP	
DEP SOP: NU-094-1	Color (true)	97.3				1.27	
	Color (true)	95.9				9.13	
EPA 180.1 Rev. 2.0	Turbidity	99.2				6.01	
	Turbidity	99.2				0.0	
EPA 300.0 Rev. 2.1	Chloride	101	101	100		0.583	
	Sulfate	102	101	97.8		0.336	
EPA 350.1 Rev. 2.0	Ammonia-N	97.0	96.4	97.0			0.567
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	97.4	94.3	104			10.2
	Kjeldahl Nitrogen	103	98.4	107			6.12
EPA 353.2 Rev. 2.0	NO2NO3-N	103	105	105			0.0
EPA 365.1 Rev. 2.0	Total-P	99.6	98.8	101			1.71
EPA 8321B	2,4-D	106					7.57
	2,4,5-T	100	115	123			6.62
	Acesulfame K	122	144	144			0.560
	Acetaminophen	94.9	101	102			1.28
	Acetamiprid	81.7	78.3	80.3			2.44
	Afidopyropen	66.2	103	94.8			8.18
	AMPA	96.2	90.5	88.5			1.58
	Bentazon	95.9					3.60
	Benzovindiflupyr	91.6	95.0	87.1			8.67
	Carbamazepine	98.7	91.8	82.8			10.3
	Clothianidin	95.4	107	101			5.43
	Dinotefuran	99.3	69.9	67.7			3.17
	Diuron	88.5	75.7	77.1			1.70
	Endothall	80.7	80.5	81.7			1.50
	Fenuron	93.5	63.6	63.6			0.0412
	Fluridone	89.2					4.16
	Glufosinate	77.6	111	88.7			22.3
	Glyphosate	98.2	121	149			13.4
	Hydrocodone	90.7	61.2	60.3			1.33
	Ibuprofen	93.1	84.7	92.0			8.26
	Imazapyr	99.5	100	98.0			1.71
	Imidacloprid	86.9	132	124			5.21
	Linuron	87.0	81.7	73.9			10.0
	Mandestrobin	88.0	95.7	87.3			9.10
	MCPP	109	131	131			0.202
	Naproxen	82.6	91.2	78.0			15.6
	Primidone	92.2	90.8	93.7			2.93
	Pyraclostrobin	86.0	94.7	85.7			10.0
	Silvex	96.2	110	102			7.26
	Sucralose	102	119	108			9.46
	Thiamethoxam	97.2	89.0	83.4			6.40
	Tolfenpyrad	59.4	60.8	58.8			3.37
	Triclopyr	89.1	127	129			2.00
SM 2320 B-2011	Total Alkalinity	95.8				1.96	
SM 2540 C-2015	TDS	95.4				5.85	
	TDS	95.4				2.15	
SM 2540 D-2015	TSS	95.3					
SM 4500-F- C-2011	Fluoride	97.8	100	102			1.01
SM 5310 B-2011	Organic Carbon	95.6	94.2	94.9			0.483

Reference Method Descriptions

Method	Description	<u>Associated Samples</u>
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2402648, 2402650
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2402648, 2402650
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2402648, 2402650
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2402648, 2402650
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2402649, 2402651
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2402649, 2402651
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2402649, 2402651
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2402649, 2402651
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2402659
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2402648, 2402650
SM 2540 C-2015	Total Dissolved Solids in aqueous matrices	2402648, 2402650
SM 2540 D-2015	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2402648, 2402650
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2402648, 2402650
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2402649, 2402651

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
DEP SOP: NU-094-1	04/25/2023			04/25/2023 14:01	Chandler E Cox	2402648
	04/25/2023			04/25/2023 14:11	Chandler E Cox	2402650
EPA 180.1 Rev. 2.0	04/25/2023			04/25/2023 13:53	Khloe J Berg	2402648
	04/25/2023			04/25/2023 14:19	Khloe J Berg	2402650
EPA 300.0 Rev. 2.1	04/25/2023			04/27/2023 22:04	James L Waggeberby	2402650
	04/25/2023			04/28/2023 01:35	James L Waggeberby	2402648
EPA 350.1 Rev. 2.0	04/25/2023			04/28/2023 13:47	Ping Hua	2402649
	04/25/2023			04/28/2023 13:48	Ping Hua	2402651
EPA 351.2 Rev. 2.0	04/25/2023	05/03/2023 12:13	Dana G. Hughes	05/04/2023 10:42	Samantha L Bates	2402651
	04/25/2023	05/17/2023 10:59	Dana G. Hughes	05/18/2023 09:53	Samantha L Bates	2402649
EPA 353.2 Rev. 2.0	04/25/2023			05/03/2023 11:14	Beverly Y. Sanders	2402649
	04/25/2023			05/03/2023 11:19	Beverly Y. Sanders	2402651
EPA 365.1 Rev. 2.0	04/25/2023	04/28/2023 15:57	Adam P Silver	05/01/2023 12:24	James L Waggeberby	2402651
	04/25/2023	04/28/2023 15:57	Adam P Silver	05/02/2023 15:10	Simonne.V. Calhoun	2402649
EPA 8321B	04/25/2023	04/27/2023 09:00	Hoor Shaik	04/27/2023 21:02	Juyoung Kim	2402659
	04/25/2023	04/28/2023 09:00	Manjita Shrestha	04/28/2023 13:28	Manjita Shrestha	2402659
	04/25/2023	04/28/2023 09:00	Manjita Shrestha	04/29/2023 02:16	Manjita Shrestha	2402659
SM 2320 B-2011	04/25/2023			04/28/2023 06:32	Dale L. Simmons	2402648
	04/25/2023			04/28/2023 08:05	Dale L. Simmons	2402650
SM 2540 C-2015	04/25/2023			04/26/2023 15:12	Yijie Li	2402650
	04/25/2023			05/03/2023 14:10	Yijie Li	2402648
SM 2540 D-2015	04/25/2023			04/26/2023 15:12	Yijie Li	2402648, 2402650
SM 4500-F- C-2011	04/25/2023			05/02/2023 18:37	Dale L. Simmons	2402648
	04/25/2023			05/02/2023 19:02	Dale L. Simmons	2402650
SM 5310 B-2011	04/25/2023			04/28/2023 16:53	Elise M. Gillis	2402651
	04/25/2023			04/28/2023 22:06	Elise M. Gillis	2402649