

Chemical Analysis Report

NW-DIST-2022-11-18-01

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

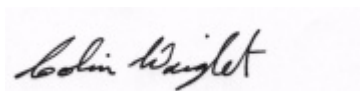
Event Description: **Twin Lakes Continuous Monitoring**
Request ID: **RQ-2022-11-14-32**
Customer: **NW-DIST**
Project ID: **SMP**

Send Reports to:
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160 W Government Street
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Pensacola, FL 32502-5794
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Certified by: Colin Wright, Program Administrator

Date Certified: 12-DEC-2022 10:00

A handwritten signature in black ink, appearing to read "Colin Wright", is displayed on a light gray rectangular 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 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: Twin Lake

Collection Date/Time: 11/16/2022 10:20

Field ID: G3NW0215

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2370881	DEP SOP: NU-094-1	Color (true)	38	Q	PCU	P422588	
	EPA 180.1 Rev. 2.0	Turbidity	270	Q	NTU	P422601	
	EPA 300.0 Rev. 2.1	Chloride	27		mg Cl/L	P423086	
		Sulfate	16		mg SO4/L	P423088	
	SM 2320 B-2011	Total Alkalinity	50		mg CaCO3/L	P422891	
	SM 2540 C-2015	TDS	126		mg/L	P423109	
	SM 2540 D-2015	TSS	822		mg/L	P422926	
	SM 4500-F- C-2011	Fluoride	0.093	I	mg F/L	P422895	
2370882	EPA 350.1 Rev. 2.0	Ammonia-N	0.066		mg N/L	P423159	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	17		mg N/L	P422898	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P422724	
	EPA 365.1 Rev. 2.0	Total-P	3.8		mg P/L	P422850	
	SM 5310 B-2011	Organic Carbon	15		mg C/L	P422886	
2370897	EPA 8321B	2,4-D	0.0020	U	ug/L	P422681	
		Acesulfame K	0.10	U	ug/L	P422568	
		2,4,5-T	0.0040	U	ug/L	P422681	
		AMPA	0.10	U	ug/L	P422568	
		Acetaminophen	0.0080	U	ug/L	P422681	
		Acetamiprid	0.0020	U	ug/L	P422681	
		Endothall	0.25	U	ug/L	P422568	MS
		Glufosinate	0.10	U	ug/L	P422568	
		Glyphosate	0.10	U	ug/L	P422568	
		Afidopyropen	0.0020	U	ug/L	P422681	
		Bentazon	8.0E-04	U	ug/L	P422681	
		Sucralose	5.8		ug/L	P422568	
		Benzovindiflupyr	0.0020	U	ug/L	P422681	
		Carbamazepine	0.0056		ug/L	P422681	
		Clothianidin	0.0020	U	ug/L	P422681	
		Dinotefuran	0.0027	I	ug/L	P422681	
		Diuron	0.0020	U	ug/L	P422681	
		Fenuron	0.032	U	ug/L	P422681	
		Fluridone	8.0E-04	U	ug/L	P422681	
		Imazapyr	0.0045	I	ug/L	P422681	
		Hydrocodone	0.0020	U	ug/L	P422681	
		Ibuprofen	0.20	U	ug/L	P422681	
		Imidacloprid	0.023		ug/L	P422681	MS
		Linuron	0.0040	U	ug/L	P422681	
		Mandestrobin	0.0020	U	ug/L	P422681	
		MCPP	0.0040	U	ug/L	P422681	
		Naproxen	0.0080	U	ug/L	P422681	
		Primidone	0.014	I	ug/L	P422681	
		Pyraclostrobin	0.0020	U	ug/L	P422681	
		Silvex	0.0040	U	ug/L	P422681	
		Thiamethoxam	0.0020	U	ug/L	P422681	MS

Field ID: G3NW0215

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2370897	EPA 8321B	Tolfenpyrad	0.0020	U	ug/L	P422681	
		Triclopyr	0.0040	U	ug/L	P422681	

Ref. Method and Comment:
DEP SOP: NU-094-1: The sample expired upon receipt.
EPA 180.1 Rev. 2.0: The sample expired upon receipt.
SM 2540 D-2015: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
EPA 8321B: MS accuracy for some analytes could not be assessed due to high concentration of parameter in the spiked sample.

Sample Location: Coleman Lake

Collection Date/Time: 11/16/2022 11:45

Field ID: G3NW0216

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2370887	DEP SOP: NU-094-1	Color (true)	32	Q	PCU	P422588	
	EPA 180.1 Rev. 2.0	Turbidity	17		NTU	P422601	
	EPA 300.0 Rev. 2.1	Chloride	22	A	mg Cl/L	P423086	
		Sulfate	8.6	A	mg SO4/L	P423088	
	SM 2320 B-2011	Total Alkalinity	44		mg CaCO3/L	P422891	
	SM 2540 C-2015	TDS	102		mg/L	P423109	
	SM 2540 D-2015	TSS	11	I	mg/L	P422926	
	SM 4500-F- C-2011	Fluoride	0.078	I	mg F/L	P422895	
2370888	EPA 350.1 Rev. 2.0	Ammonia-N	0.007		mg N/L	P423234	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.4		mg N/L	P422687	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.006	I	mg N/L	P422724	
	EPA 365.1 Rev. 2.0	Total-P	0.15		mg P/L	P422689	
	SM 5310 B-2011	Organic Carbon	7.1		mg C/L	P422886	
2370898	EPA 8321B	2,4-D	0.0020	U	ug/L	P422681	
		Acesulfame K	0.13	I	ug/L	P422568	
		2,4,5-T	0.0040	U	ug/L	P422681	
		AMPA	0.10	U	ug/L	P422568	
		Acetaminophen	0.0080	U	ug/L	P422681	
		Acetamiprid	0.0020	U	ug/L	P422681	
		Endothall	0.25	U	ug/L	P422568	MS
		Glufosinate	0.10	U	ug/L	P422568	
		Glyphosate	0.10	U	ug/L	P422568	
		Afidopyropen	0.0020	U	ug/L	P422681	
		Bentazon	0.0052		ug/L	P422681	
		Sucralose	3.9		ug/L	P422568	
		Benzovindiflupyr	0.0020	U	ug/L	P422681	
		Carbamazepine	0.0043		ug/L	P422681	
		Clothianidin	0.0031	I	ug/L	P422681	
		Dinotefuran	0.0044	I	ug/L	P422681	
		Diuron	0.0026	I	ug/L	P422681	
		Fenuron	0.032	U	ug/L	P422681	
		Fluridone	8.0E-04	U	ug/L	P422681	
		Imazapyr	0.0050	I	ug/L	P422681	
		Hydrocodone	0.0020	U	ug/L	P422681	
		Ibuprofen	0.20	U	ug/L	P422681	
		Imidacloprid	0.022		ug/L	P422681	MS
		Linuron	0.0040	U	ug/L	P422681	
		Mandestrobin	0.0020	U	ug/L	P422681	
		MCP	0.0040	U	ug/L	P422681	
		Naproxen	0.0080	U	ug/L	P422681	
		Primidone	0.0067	I	ug/L	P422681	
		Pyraclostrobin	0.0020	U	ug/L	P422681	
		Silvex	0.0040	U	ug/L	P422681	
		Thiamethoxam	0.0020	U	ug/L	P422681	MS

Field ID: G3NW0216

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2370898	EPA 8321B	Tolfenpyrad	0.0020	U	ug/L	P422681	
		Triclopyr	0.0040	U	ug/L	P422681	
2370903	EPA 200.7 Rev. 4.4	Calcium	13.9		mg/L	P422595	
		Iron	82	I	ug/L	P422595	
		Magnesium	2.47		mg/L	P422595	
		Potassium	2.1		mg/L	P422595	
		Sodium	14.9		mg/L	P422595	
		Strontium	163		ug/L	P422595	
		Tin	3.0	U	ug/L	P422595	
		Titanium	1.5	I	ug/L	P422595	
		Vanadium	2.0	U	ug/L	P422595	
		Zinc	5.0	U	ug/L	P422595	
	EPA 200.8 Rev. 5.4	Aluminum	167		ug/L	P422595	
		Antimony	0.14	I	ug/L	P422595	
		Arsenic	2.81		ug/L	P422595	
		Barium	4.19		ug/L	P422595	
		Beryllium	0.010	U	ug/L	P422595	
		Boron	45.5		ug/L	P422595	
		Cadmium	0.020	U	ug/L	P422595	
		Chromium	0.56	I	ug/L	P422595	
		Cobalt	0.040	I	ug/L	P422595	
		Copper	1.29		ug/L	P422595	
		Lead	0.20	U	ug/L	P422595	
		Manganese	6.17		ug/L	P422595	
		Molybdenum	0.52	I	ug/L	P422595	
		Nickel	0.50	U	ug/L	P422595	
		Selenium	0.24	I	ug/L	P422595	
		Silver	0.010	U	ug/L	P422595	
		Thallium	0.10	U	ug/L	P422595	
	SM 2340 B-2011	Hardness	44.9		mg/L	P422595	

Ref. Method and Comment:

DEP SOP: NU-094-1: The sample expired upon receipt.

SM 2540 D-2015: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample. The PQL was elevated because of sample matrix interference.

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

Sample Location: Kell-Aire Lake

Collection Date/Time: 11/16/2022 12:00

Field ID: G3NW0217

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2370889	DEP SOP: NU-094-1	Color (true)	35	A	PCU	P422588	
	EPA 180.1 Rev. 2.0	Turbidity	16		NTU	P422601	
	EPA 300.0 Rev. 2.1	Chloride	22		mg Cl/L	P423086	
		Sulfate	8.3		mg SO4/L	P423088	
	SM 2320 B-2011	Total Alkalinity	47		mg CaCO3/L	P422891	
	SM 2540 C-2015	TDS	110		mg/L	P423109	
	SM 2540 D-2015	TSS	12	I	mg/L	P422926	
2370890	SM 4500-F- C-2011	Fluoride	0.087	I	mg F/L	P422895	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.006		mg N/L	P423183	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.4		mg N/L	P422687	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P422724	
	EPA 365.1 Rev. 2.0	Total-P	0.15		mg P/L	P422689	
2370904	SM 5310 B-2011	Organic Carbon	7.9		mg C/L	P422886	
	EPA 200.7 Rev. 4.4	Calcium	16.4		mg/L	P422595	
		Iron	62	I	ug/L	P422595	
		Magnesium	2.93		mg/L	P422595	
		Potassium	2.6		mg/L	P422595	
		Sodium	17.9		mg/L	P422595	
		Strontium	205		ug/L	P422595	
		Tin	3.0	U	ug/L	P422595	
		Titanium	1.1	I	ug/L	P422595	
		Vanadium	2.0	U	ug/L	P422595	
		Zinc	5.0	U	ug/L	P422595	
	EPA 200.8 Rev. 5.4	Aluminum	114		ug/L	P422595	
		Antimony	0.14	I	ug/L	P422595	
		Arsenic	3.39		ug/L	P422595	
		Barium	4.30		ug/L	P422595	
		Beryllium	0.010	U	ug/L	P422595	
		Boron	47.5		ug/L	P422595	
		Cadmium	0.020	U	ug/L	P422595	
		Chromium	0.49	I	ug/L	P422595	
		Cobalt	0.037	I	ug/L	P422595	
		Copper	1.11		ug/L	P422595	
		Lead	0.20	U	ug/L	P422595	
		Manganese	7.54		ug/L	P422595	
		Molybdenum	0.60	I	ug/L	P422595	
		Nickel	0.50	U	ug/L	P422595	
		Selenium	0.27	I	ug/L	P422595	
		Silver	0.010	U	ug/L	P422595	
		Thallium	0.10	U	ug/L	P422595	
	SM 2340 B-2011	Hardness	53.0		mg/L	P422595	

Ref. Method and Comment:

SM 2540 D-2015: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample. The PQL was elevated because of sample matrix interference.

Sample Location: Twin Lake south lobe

Collection Date/Time: 11/16/2022 10:45

Field ID: G3NW0448

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2370883	DEP SOP: NU-094-1	Color (true)	57	Q	PCU	P422587	
	EPA 180.1 Rev. 2.0	Turbidity	2.1	Q	NTU	P422601	
	EPA 300.0 Rev. 2.1	Chloride	25		mg Cl/L	P423086	
		Sulfate	12		mg SO4/L	P423088	
	SM 2320 B-2011	Total Alkalinity	53	A	mg CaCO3/L	P422891	
	SM 2540 C-2015	TDS	132		mg/L	P423109	
	SM 2540 D-2015	TSS	5	I	mg/L	P422926	
	SM 4500-F- C-2011	Fluoride	0.11		mg F/L	P422895	
2370885	EPA 350.1 Rev. 2.0	Ammonia-N	0.020		mg N/L	P423159	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.80		mg N/L	P422685	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	I	mg N/L	P422724	
	EPA 365.1 Rev. 2.0	Total-P	0.13		mg P/L	P422689	
	SM 5310 B-2011	Organic Carbon	11		mg C/L	P422886	

Ref. Method and Comment:

DEP SOP: NU-094-1: The sample expired upon receipt.

EPA 180.1 Rev. 2.0: The sample expired upon receipt.

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

Sample Location: Twin Lake eastern lake

Collection Date/Time: 11/16/2022 11:05

Field ID: G3NW0449

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2370884	DEP SOP: NU-094-1	Color (true)	27	Q	PCU	P422587	
	EPA 180.1 Rev. 2.0	Turbidity	3.9		NTU	P422601	
	EPA 300.0 Rev. 2.1	Chloride	18		mg Cl/L	P423086	
		Sulfate	7.5		mg SO4/L	P423088	
	SM 2320 B-2011	Total Alkalinity	53		mg CaCO3/L	P422891	
	SM 2540 C-2015	TDS	105		mg/L	P423109	
	SM 2540 D-2015	TSS	8	I	mg/L	P422926	
	SM 4500-F- C-2011	Fluoride	0.058	I	mg F/L	P422895	
2370886	EPA 350.1 Rev. 2.0	Ammonia-N	0.006		mg N/L	P423183	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.3		mg N/L	P422685	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P422724	
	EPA 365.1 Rev. 2.0	Total-P	0.13		mg P/L	P422689	
	SM 5310 B-2011	Organic Carbon	7.9		mg C/L	P422886	

Ref. Method and Comment:

DEP SOP: NU-094-1: The sample expired upon receipt.

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

Quality Assurance Report Method Blank Results

Reference Method: DEP SOP: NU-094-1
Batch ID: P422587

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: DEP SOP: NU-094-1
Batch ID: P422588

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P422601

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P422595

Component	Result	Code	Units
Calcium	0.075	U	mg/L
Iron	30	U	ug/L
Magnesium	0.040	U	mg/L
Potassium	0.30	U	mg/L
Sodium	0.50	U	mg/L
Strontium	2.0	U	ug/L
Tin	3.0	U	ug/L
Titanium	0.75	U	ug/L
Vanadium	2.0	U	ug/L
Zinc	5.0	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P422595

Component	Result	Code	Units
Aluminum	5.0	U	ug/L
Antimony	0.050	U	ug/L
Arsenic	0.050	U	ug/L
Barium	0.20	U	ug/L
Beryllium	0.010	U	ug/L
Boron	2.0	U	ug/L
Cadmium	0.020	U	ug/L
Chromium	0.40	U	ug/L
Cobalt	0.020	U	ug/L
Copper	0.40	U	ug/L
Lead	0.20	U	ug/L
Manganese	0.10	U	ug/L
Molybdenum	0.15	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

Quality Assurance Report Method Blank Results

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P423086

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P423088

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P423159

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P423183

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P423234

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P422685

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P422687

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P422898

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P422724

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P422689

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P422850

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

Reference Method: EPA 8321B
Batch ID: P422568

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: P422681

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	0.20	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	0.0040	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: P422891

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

Reference Method: SM 2540 C-2015
Batch ID: P423109

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2015
Batch ID: P422926

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500-F- C-2011
Batch ID: P422895

Component	Result	Code	Units
Fluoride	0.025	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P422886

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: P422587

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	98.3		P	90 - 110

Reference Method: DEP SOP: NU-094-1
Batch ID: P422588

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	101		P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P422601

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

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P422595

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	105		P	85 - 115
Iron	109		P	85 - 115
Magnesium	110		P	85 - 115
Potassium	106		P	85 - 115
Sodium	103		P	85 - 115
Strontium	111		P	85 - 115
Tin	108		P	85 - 115
Titanium	107		P	85 - 115
Vanadium	106		P	85 - 115
Zinc	104		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P422595

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	98.9		P	85 - 115
Antimony	102		P	85 - 115
Arsenic	103		P	85 - 115
Barium	106		P	85 - 115
Beryllium	99.0		P	85 - 115
Boron	99.2		P	85 - 115
Cadmium	98.8		P	85 - 115
Chromium	101		P	85 - 115
Cobalt	100		P	85 - 115
Copper	102		P	85 - 115
Lead	93.7		P	85 - 115
Manganese	102		P	85 - 115
Molybdenum	98.3		P	85 - 115
Nickel	101		P	85 - 115
Selenium	101		P	85 - 115
Silver	98.7		P	85 - 115
Thallium	98.6		P	85 - 115

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P423086

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P423088

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P423159

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	93.0		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P423183

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P423234

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P422685

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P422687

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P422898

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P422724

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P422689

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

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P422850

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

Reference Method: EPA 8321B

Batch ID: P422568

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	136		P	40 - 150
AMPA	111		P	40 - 150
Endothall	112		P	40 - 150
Glufosinate	107		P	40 - 150
Glyphosate	111		P	40 - 150
Sucralose	102		P	40 - 150

Reference Method: EPA 8321B

Batch ID: P422681

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	88.9		P	40 - 150
2,4,5-T	70.0		P	40 - 150
Acetaminophen	88.1		P	30 - 150
Acetamiprid	78.0		P	40 - 150
Afidopyropen	57.9		P	30 - 150
Bentazon	94.0		P	30 - 150
Benzovindiflupyr	83.6		P	40 - 150
Carbamazepine	81.3		P	40 - 150
Clothianidin	96.7		P	40 - 150
Dinotefuran	102		P	40 - 150
Diuron	85.7		P	40 - 150
Fenuron	101		P	40 - 150
Fluridone	98.7		P	40 - 150
Hydrocodone	94.8		P	40 - 150
Ibuprofen	86.2		P	40 - 150
Imazapyr	88.4		P	40 - 150
Imidacloprid	102		P	40 - 150
Linuron	89.0		P	40 - 150
Mandestrobin	93.5		P	40 - 150
MCPP	94.7		P	40 - 150
Naproxen	60.1		P	40 - 150
Primidone	83.3		P	40 - 150
Pyraclostrobin	80.8		P	40 - 150
Silvex	72.2		P	40 - 150
Thiamethoxam	95.7		P	40 - 150
Tolfenpyrad	48.4		P	30 - 150
Triclopyr	79.0		P	40 - 150

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 2320 B-2011
Batch ID: P422891

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	97.5		P	94 - 106

Reference Method: SM 2540 C-2015
Batch ID: P423109

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TDS	97.7		P	90 - 110

Reference Method: SM 2540 D-2015
Batch ID: P422926

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TSS	93.6		P	85 - 106

Reference Method: SM 4500-F- C-2011
Batch ID: P422895

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	102		P	96 - 104

Reference Method: SM 5310 B-2011
Batch ID: P422886

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	96.4		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P422595

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2370981	Calcium	107		P	80 - 120
2370981	Iron	103	109	P/P	80 - 120
2370981	Magnesium	103	109	P/P	80 - 120
2370981	Potassium	99.0	105	P/P	80 - 120
2370981	Sodium	105		P	80 - 120
2370981	Strontium	104	108	P/P	80 - 120
2370981	Tin	107	106	P/P	80 - 120
2370981	Titanium	104	105	P/P	80 - 120
2370981	Vanadium	106	107	P/P	80 - 120
2370981	Zinc	103	104	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P422595

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2370981	Aluminum	103	104	P/P	80 - 120
2370981	Antimony	102	102	P/P	80 - 120
2370981	Arsenic	102	103	P/P	80 - 120
2370981	Barium	105	106	P/P	80 - 120
2370981	Beryllium	99.6	95.9	P/P	80 - 120
2370981	Boron	105	105	P/P	80 - 120
2370981	Cadmium	101	101	P/P	80 - 120
2370981	Chromium	101	101	P/P	80 - 120
2370981	Cobalt	100	99.9	P/P	80 - 120
2370981	Copper	102	102	P/P	80 - 120
2370981	Lead	94.8	95.0	P/P	80 - 120
2370981	Manganese	105	104	P/P	80 - 120
2370981	Molybdenum	100	101	P/P	80 - 120
2370981	Nickel	99.8	102	P/P	80 - 120
2370981	Selenium	101	101	P/P	80 - 120
2370981	Silver	98.9	98.9	P/P	80 - 120
2370981	Thallium	101	103	P/P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P423086

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2370887	Chloride	96.9		P	90 - 110
2370899	Chloride	98.0		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P423088

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2370887	Sulfate	96.1		P	90 - 110
2370899	Sulfate	97.1		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P423159

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2370803	Ammonia-N	94.0	95.6	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P423183

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2370886	Ammonia-N	96.6	97.6	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P423234

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2370118	Ammonia-N	96.8	96.4	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P422685

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2370885	Kjeldahl Nitrogen	99.3	97.4	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P422687

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2370848	Kjeldahl Nitrogen	103	104	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P422898

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2371175	Kjeldahl Nitrogen	101	95.0	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P422724

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2370877	NO2NO3-N	105	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P422689

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2370848	Total-P	104	105	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P422850

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2370877	Total-P	104	103	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P422568

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2370304	Acesulfame K	53.9	49.8	P/P	40 - 150
2370304	AMPA	85.9	77.0	P/P	40 - 150
2370304	Endothall	168	170	F/F	40 - 150
2370304	Glufosinate	81.0	77.8	P/P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P422568

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2370304	Glyphosate	103	105	P/P	40 - 150
2370304	Sucralose	92.5	98.0	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P422681

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2370840	2,4-D	119	124	P/P	40 - 150
2370840	2,4,5-T	70.4	81.3	P/P	40 - 150
2370840	Acetaminophen	104	104	P/P	30 - 150
2370840	Acetamiprid	64.3	64.8	P/P	40 - 150
2370840	Afidopyropen	59.4	69.6	P/P	30 - 150
2370840	Benzovindiflupyr	79.4	83.4	P/P	40 - 150
2370840	Carbamazepine	72.2	67.8	P/P	40 - 150
2370840	Clothianidin	135	137	P/P	40 - 150
2370840	Dinotefuran	138	143	P/P	40 - 150
2370840	Diuron	57.7	61.9	P/P	40 - 150
2370840	Fenuron	97.9	91.9	P/P	40 - 150
2370840	Hydrocodone	128	119	P/P	40 - 150
2370840	Ibuprofen	76.5	83.2	P/P	40 - 150
2370840	Imidacloprid	157	146	F/P	40 - 150
2370840	Linuron	67.9	69.3	P/P	40 - 150
2370840	Mandestrobin	81.5	86.3	P/P	40 - 150
2370840	MCP	102	104	P/P	40 - 150
2370840	Naproxen	81.8	101	P/P	40 - 150
2370840	Primidone	119	106	P/P	40 - 150
2370840	Pyraclostrobin	80.0	84.3	P/P	40 - 150
2370840	Silvex	101	107	P/P	40 - 150
2370840	Thiamethoxam	163	158	F/F	40 - 150
2370840	Tolfenpyrad	50.8	51.4	P/P	30 - 150
2370840	Triclopyr	75.6	93.6	P/P	40 - 150

Reference Method: SM 4500-F- C-2011
Batch ID: P422895

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2370883	Fluoride	101	101	P/P	94 - 104

Reference Method: SM 5310 B-2011
Batch ID: P422886

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2370885	Organic Carbon	97.2	95.3	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P422587

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2370669	Color (true)	0.109	Sample	P	0 - 20

Reference Method: DEP SOP: NU-094-1
Batch ID: P422588

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2370889	Color (true)	5.62	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P422601

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2370667	Turbidity	4.99	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P422595

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2370981	Calcium	2.75	Spike	P	0 - 20
2370981	Iron	4.68	Spike	P	0 - 20
2370981	Magnesium	4.56	Spike	P	0 - 20
2370981	Potassium	4.67	Spike	P	0 - 20
2370981	Sodium	2.74	Spike	P	0 - 20
2370981	Strontium	3.70	Spike	P	0 - 20
2370981	Tin	1.16	Spike	P	0 - 20
2370981	Titanium	0.896	Spike	P	0 - 20
2370981	Vanadium	1.07	Spike	P	0 - 20
2370981	Zinc	1.25	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P422595

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2370981	Aluminum	0.0935	Spike	P	0 - 20
2370981	Antimony	0.575	Spike	P	0 - 20
2370981	Arsenic	0.678	Spike	P	0 - 20
2370981	Barium	0.875	Spike	P	0 - 20
2370981	Beryllium	3.31	Spike	P	0 - 20
2370981	Boron	0.159	Spike	P	0 - 20
2370981	Cadmium	0.911	Spike	P	0 - 20
2370981	Chromium	0.201	Spike	P	0 - 20
2370981	Cobalt	0.208	Spike	P	0 - 20
2370981	Copper	0.130	Spike	P	0 - 20
2370981	Lead	0.262	Spike	P	0 - 20
2370981	Manganese	0.415	Spike	P	0 - 20
2370981	Molybdenum	1.08	Spike	P	0 - 20
2370981	Nickel	1.82	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P422595

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2370981	Selenium	0.132	Spike	P	0 - 20
2370981	Silver	0.0395	Spike	P	0 - 20
2370981	Thallium	1.56	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P423086

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2370887	Chloride	0.00828	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P423088

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2370887	Sulfate	0.147	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P423159

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2370803	Ammonia-N	1.42	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P423183

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2370886	Ammonia-N	0.908	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P423234

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2370118	Ammonia-N	0.301	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P422685

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2370885	Kjeldahl Nitrogen	1.30	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P422687

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
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Quality Assurance Report Precision

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P422687

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2370848	Kjeldahl Nitrogen	1.37	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P422898

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2371175	Kjeldahl Nitrogen	3.61	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P422724

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2370877	NO2NO3-N	0.462	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P422689

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2370848	Total-P	0.453	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P422850

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2370877	Total-P	1.04	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P422568

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2370304	Acesulfame K	7.90	Spike	P	0 - 30
2370304	AMPA	9.41	Spike	P	0 - 30
2370304	Endothall	0.917	Spike	P	0 - 30
2370304	Glufosinate	4.04	Spike	P	0 - 30
2370304	Glyphosate	1.43	Spike	P	0 - 30
2370304	Sucralose	5.16	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P422681

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2370840	2,4-D	4.01	Spike	P	0 - 30
2370840	2,4,5-T	14.3	Spike	P	0 - 30
2370840	Acetaminophen	0.320	Spike	P	0 - 30
2370840	Acetamidrid	0.869	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B

Batch ID: P422681

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2370840	Afidopyropen	15.8	Spike	P	0 - 30
2370840	Bentazon	2.69	Spike	P	0 - 30
2370840	Benzovindiflupyr	4.94	Spike	P	0 - 30
2370840	Carbamazepine	4.42	Spike	P	0 - 30
2370840	Clothianidin	1.53	Spike	P	0 - 30
2370840	Dinotefuran	3.36	Spike	P	0 - 30
2370840	Diuron	7.10	Spike	P	0 - 30
2370840	Fenuron	6.39	Spike	P	0 - 30
2370840	Fluridone	0.579	Spike	P	0 - 30
2370840	Hydrocodone	7.36	Spike	P	0 - 30
2370840	Ibuprofen	8.46	Spike	P	0 - 30
2370840	Imazapyr	1.88	Spike	P	0 - 30
2370840	Imidacloprid	6.84	Spike	P	0 - 30
2370840	Linuron	2.14	Spike	P	0 - 30
2370840	Mandestrobin	5.80	Spike	P	0 - 30
2370840	MCPP	1.15	Spike	P	0 - 30
2370840	Naproxen	20.9	Spike	P	0 - 30
2370840	Primidone	9.11	Spike	P	0 - 30
2370840	Pyraclostrobin	5.30	Spike	P	0 - 30
2370840	Silvex	5.80	Spike	P	0 - 30
2370840	Thiamethoxam	3.39	Spike	P	0 - 30
2370840	Tolfenpyrad	1.06	Spike	P	0 - 30
2370840	Triclopyr	21.3	Spike	P	0 - 30

Reference Method: SM 2320 B-2011

Batch ID: P422891

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2370883	Total Alkalinity	0.595	Sample	P	0 - 3.8

Reference Method: SM 2540 C-2015

Batch ID: P423109

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2370586	TDS	1.97	Sample	P	0 - 10

Reference Method: SM 4500-F- C-2011

Batch ID: P422895

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2370883	Fluoride	0.0	Spike	P	0 - 1.6

Reference Method: SM 5310 B-2011

Batch ID: P422886

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2370885	Organic Carbon	1.24	Spike	P	0 - 20

Quality Assurance Report Precision

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

Quality Assurance Report Surrogates

Lab Sample ID: 2370897

Field Sample ID: G3NW0215

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	120	P	30 - 160
EPA 8321B	Acetaminophen-d4	94.2	P	30 - 160
EPA 8321B	Carbamazepine-d10	76.0	P	30 - 160
EPA 8321B	Diuron-d6	64.1	P	30 - 160
EPA 8321B	Endothall-d6	111	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	107	P	30 - 160
EPA 8321B	Ibuprofen-d3	82.7	P	30 - 160
EPA 8321B	Primidone-d5	113	P	30 - 160
EPA 8321B	Sucralose-d6	138	P	30 - 160

Lab Sample ID: 2370898

Field Sample ID: G3NW0216

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	104	P	30 - 160
EPA 8321B	Acetaminophen-d4	87.6	P	30 - 160
EPA 8321B	Carbamazepine-d10	81.0	P	30 - 160
EPA 8321B	Diuron-d6	65.5	P	30 - 160
EPA 8321B	Endothall-d6	106	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	111	P	30 - 160
EPA 8321B	Ibuprofen-d3	75.7	P	30 - 160
EPA 8321B	Primidone-d5	102	P	30 - 160
EPA 8321B	Sucralose-d6	144	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: DEP SOP: NU-094-1

Run ID: A116035

Included Lab Sample IDs: 2370881, 2370883, 2370884, 2370887, 2370889

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	100	98.8	P/P	90 - 110
Color (true)	98.8	101	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A116038

Included Lab Sample IDs: 2370881, 2370883, 2370884, 2370887, 2370889

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 200.8 Rev. 5.4

Run ID: A116084

Included Lab Sample IDs: 2370903, 2370904

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	96.7	98.3	P/P	90 - 110
Antimony	96.6	97.6	P/P	90 - 110
Arsenic	99.8	99.5	P/P	90 - 110
Barium	101	102	P/P	90 - 110
Beryllium	101	100	P/P	90 - 110
Boron	99.3	98.7	P/P	90 - 110
Cadmium	98.1	100	P/P	90 - 110
Chromium	98.0	99.9	P/P	90 - 110
Cobalt	97.5	97.7	P/P	90 - 110
Copper	98.4	98.5	P/P	90 - 110
Lead	92.7	93.6	P/P	90 - 110
Manganese	99.0	100	P/P	90 - 110
Molybdenum	96.5	97.3	P/P	90 - 110
Nickel	98.3	98.4	P/P	90 - 110
Selenium	99.5	100	P/P	90 - 110
Silver	95.9	96.6	P/P	90 - 110
Thallium	97.9	99.5	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A116096

Included Lab Sample IDs: 2370882, 2370885, 2370886, 2370888, 2370890

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A116111

Included Lab Sample IDs: 2370885, 2370886, 2370888, 2370890

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A116135

Included Lab Sample IDs: 2370897, 2370898

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	108	111	P/P	60 - 160
Endothall	109	105	P/P	60 - 160
Glufosinate	104	99.2	P/P	60 - 160
Glyphosate	121	113	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A116141

Included Lab Sample IDs: 2370897, 2370898

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	147	131	P/P	60 - 160
Sucralose	106	88.3	P/P	60 - 160

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A116143

Included Lab Sample IDs: 2370885, 2370886, 2370888, 2370890

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	93.2	93.8	P/P	90 - 110
Kjeldahl Nitrogen	93.8	92.4	P/P	90 - 110
Kjeldahl Nitrogen	94.3	92.2	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A116170

Included Lab Sample IDs: 2370897, 2370898

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	95.9	93.8	P/P	50 - 150
2,4,5-T	102	109	P/P	50 - 150
Acetaminophen	99.7	96.0	P/P	60 - 160
Acetamiprid	105	115	P/P	50 - 150
Afidopyropen	89.5	96.4	P/P	50 - 150
Bentazon	102	101	P/P	50 - 160
Benzovindiflupyr	109	105	P/P	50 - 150
Carbamazepine	107	108	P/P	60 - 150
Clothianidin	96.8	107	P/P	60 - 150
Dinotefuran	113	110	P/P	50 - 150
Diuron	112	112	P/P	60 - 160
Fenuron	107	111	P/P	60 - 150
Fluridone	110	112	P/P	60 - 160
Hydrocodone	104	108	P/P	60 - 150
Ibuprofen	96.7	113	P/P	50 - 160
Imazapyr	103	106	P/P	50 - 150
Imidacloprid	94.0	106	P/P	60 - 150
Linuron	118	126	P/P	60 - 150
Mandestrobin	109	109	P/P	50 - 150
MCPP	109	115	P/P	50 - 150
Naproxen	73.1	70.2	P/P	50 - 160
Primidone	101	98.4	P/P	60 - 150
Pyraclostrobin	105	106	P/P	60 - 150
Silvex	94.3	96.4	P/P	50 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A116170

Included Lab Sample IDs: 2370897, 2370898

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Thiamethoxam	104	115	P/P	50 - 150
Tolfenpyrad	103	105	P/P	60 - 150
Triclopyr	112	117	P/P	50 - 150

Reference Method: SM 5310 B-2011

Run ID: A116179

Included Lab Sample IDs: 2370882, 2370885, 2370886, 2370888, 2370890

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	96.9	98.0	P/P	90 - 110
Organic Carbon	98.4	98.5	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A116180

Included Lab Sample IDs: 2370881, 2370883, 2370884, 2370887, 2370889

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	97.5	96.9	P/P	90 - 110

Reference Method: SM 4500-F- C-2011

Run ID: A116180

Included Lab Sample IDs: 2370881, 2370883, 2370884, 2370887, 2370889

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A116184

Included Lab Sample IDs: 2370882

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

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A116199

Included Lab Sample IDs: 2370903, 2370904

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	104	106	P/P	90 - 110
Iron	105	105	P/P	90 - 110
Magnesium	105	105	P/P	90 - 110
Potassium	103	103	P/P	90 - 110
Sodium	103	105	P/P	90 - 110
Strontium	109	103	P/P	90 - 110
Tin	106	102	P/P	90 - 110
Titanium	105	101	P/P	90 - 110
Vanadium	104	100	P/P	90 - 110
Zinc	105	101	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A116206

Included Lab Sample IDs: 2370882

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	99.1	98.4	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A116259

Included Lab Sample IDs: 2370881, 2370883, 2370884, 2370887, 2370889

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A116280

Included Lab Sample IDs: 2370882, 2370885

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	96.2	97.0	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A116287

Included Lab Sample IDs: 2370886, 2370890

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.8	98.6	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A116310

Included Lab Sample IDs: 2370888

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.6	99.6	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)	98.3				0.109	
	Color (true)	101				5.62	
EPA 180.1 Rev. 2.0	Turbidity	101				4.99	
EPA 200.7 Rev. 4.4	Calcium	105	107				2.75
	Iron	109	103	109			4.68
	Magnesium	110	103	109			4.56
	Potassium	106	99.0	105			4.67
	Sodium	103	105				2.74
	Strontium	111	104	108			3.70
	Tin	108	107	106			1.16
	Titanium	107	104	105			0.896
	Vanadium	106	106	107			1.07
	Zinc	104	103	104			1.25
EPA 200.8 Rev. 5.4	Aluminum	98.9	103	104			0.0935
	Antimony	102	102	102			0.575
	Arsenic	103	102	103			0.678
	Barium	106	105	106			0.875
	Beryllium	99.0	99.6	95.9			3.31
	Boron	99.2	105	105			0.159
	Cadmium	98.8	101	101			0.911
	Chromium	101	101	101			0.201
	Cobalt	100	100	99.9			0.208
	Copper	102	102	102			0.130
	Lead	93.7	94.8	95.0			0.262
	Manganese	102	105	104			0.415
	Molybdenum	98.3	100	101			1.08
	Nickel	101	99.8	102			1.82
	Selenium	101	101	101			0.132
	Silver	98.7	98.9	98.9			0.0395
	Thallium	98.6	101	103			1.56
EPA 300.0 Rev. 2.1	Chloride	101	96.9	98.0		0.0082	
	Sulfate	99.8	96.1	97.1		0.147	
EPA 350.1 Rev. 2.0	Ammonia-N	93.0	94.0	95.6			1.42
	Ammonia-N	100	96.6	97.6			0.908
	Ammonia-N	99.2	96.8	96.4			0.301
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	103	99.3	97.4			1.30
	Kjeldahl Nitrogen	97.3	103	104			1.37
	Kjeldahl Nitrogen	98.4	101	95.0			3.61
EPA 353.2 Rev. 2.0	NO2NO3-N	104	105	104			0.462
EPA 365.1 Rev. 2.0	Total-P	105	104	105			0.453
	Total-P	102	104	103			1.04
EPA 8321B	2,4-D	88.9	119	124			4.01
	2,4,5-T	70.0	70.4	81.3			14.3
	Acesulfame K	136	53.9	49.8			7.90
	Acetaminophen	88.1	104	104			0.320
	Acetamiprid	78.0	64.3	64.8			0.869
	Afidopyropen	57.9	59.4	69.6			15.8
	AMPA	111	85.9	77.0			9.41
	Bentazon	94.0					2.69
	Benzovindiflupyr	83.6	79.4	83.4			4.94
	Carbamazepine	81.3	72.2	67.8			4.42
	Clothianidin	96.7	135	137			1.53
	Dinotefuran	102	138	143			3.36
	Diuron	85.7	57.7	61.9			7.10

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	MS
EPA 8321B	Endothall	112	168	170		0.917
	Fenuron	101	97.9	91.9		6.39
	Fluridone	98.7				0.579
	Glufosinate	107	81.0	77.8		4.04
	Glyphosate	111	103	105		1.43
	Hydrocodone	94.8	128	119		7.36
	Ibuprofen	86.2	76.5	83.2		8.46
	Imazapyr	88.4				1.88
	Imidacloprid	102	157	146		6.84
	Linuron	89.0	67.9	69.3		2.14
	Mandestrobin	93.5	81.5	86.3		5.80
	MCPD	94.7	102	104		1.15
	Naproxen	60.1	81.8	101		20.9
	Primidone	83.3	119	106		9.11
	Pyraclostrobin	80.8	80.0	84.3		5.30
	Silvex	72.2	101	107		5.80
	Sucralose	102	92.5	98.0		5.16
	Thiamethoxam	95.7	163	158		3.39
	Tolfenpyrad	48.4	50.8	51.4		1.06
	Triclopyr	79.0	75.6	93.6		21.3
SM 2320 B-2011	Total Alkalinity	97.5			0.595	
SM 2540 C-2015	TDS	97.7			1.97	
SM 2540 D-2015	TSS	93.6				
SM 4500-F- C-2011	Fluoride	102	101	101		0.0
SM 5310 B-2011	Organic Carbon	96.4	97.2	95.3		1.24

Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2370881, 2370883, 2370884, 2370887, 2370889
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2370881, 2370883, 2370884, 2370887, 2370889
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2370903, 2370904
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2370903, 2370904
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2370881, 2370883, 2370884, 2370887, 2370889
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2370881, 2370883, 2370884, 2370887, 2370889
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2370882, 2370885, 2370886, 2370888, 2370890
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2370882, 2370885, 2370886, 2370888, 2370890
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2370882, 2370885, 2370886, 2370888, 2370890
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2370882, 2370885, 2370886, 2370888, 2370890
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2370897, 2370898
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2370881, 2370883, 2370884, 2370887, 2370889
SM 2340 B-2011	Hardness by calculation, in aqueous matrices, reported as mg/L CaCO ₃	2370903, 2370904
SM 2540 C-2015	Total Dissolved Solids in aqueous matrices	2370881, 2370883, 2370884, 2370887, 2370889

Reference Method Descriptions

Method	Description	Associated Samples
SM 2540 D-2015	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2370881, 2370883, 2370884, 2370887, 2370889
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2370881, 2370883, 2370884, 2370887, 2370889
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2370882, 2370885, 2370886, 2370888, 2370890

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	11/18/2022			11/18/2022 11:49	Chandler E Cox	2370883, 2370884
	11/18/2022			11/18/2022 11:55	Chandler E Cox	2370889
	11/18/2022			11/18/2022 11:56	Chandler E Cox	2370881, 2370887
EPA 180.1 Rev. 2.0	11/18/2022			11/18/2022 10:54	Khloe J Berg	2370884
	11/18/2022			11/18/2022 10:57	Khloe J Berg	2370889
	11/18/2022			11/18/2022 10:59	Khloe J Berg	2370887
	11/18/2022			11/18/2022 11:07	Khloe J Berg	2370883
	11/18/2022			11/18/2022 11:43	Khloe J Berg	2370881
EPA 200.7 Rev. 4.4	11/18/2022	11/18/2022 16:20	George D Taylor	12/01/2022 03:15	McKinley C Carter	2370903
	11/18/2022	11/18/2022 16:20	George D Taylor	12/01/2022 03:23	McKinley C Carter	2370904
EPA 200.8 Rev. 5.4	11/18/2022	11/18/2022 16:20	George D Taylor	11/21/2022 17:20	Megan Whitefoot	2370903
	11/18/2022	11/18/2022 16:20	George D Taylor	11/21/2022 17:29	Megan Whitefoot	2370904
EPA 300.0 Rev. 2.1	11/18/2022			12/02/2022 18:10	Anna M. Plaviak	2370887
	11/18/2022			12/02/2022 20:26	Anna M. Plaviak	2370881
	11/18/2022			12/02/2022 20:41	Anna M. Plaviak	2370883
	11/18/2022			12/02/2022 20:56	Anna M. Plaviak	2370884
	11/18/2022			12/02/2022 21:42	Anna M. Plaviak	2370889
EPA 350.1 Rev. 2.0	11/18/2022			12/06/2022 12:02	Ping Hua	2370882
	11/18/2022			12/06/2022 12:03	Ping Hua	2370885
	11/18/2022			12/06/2022 16:27	Judith K. Clark	2370886
	11/18/2022			12/06/2022 16:31	Judith K. Clark	2370890
	11/18/2022			12/07/2022 11:29	Ping Hua	2370888
EPA 351.2 Rev. 2.0	11/18/2022	11/22/2022 09:10	Simonne.V. Calhoun	11/28/2022 10:33	Judith K. Clark	2370885
	11/18/2022	11/22/2022 09:10	Simonne.V. Calhoun	11/28/2022 10:38	Judith K. Clark	2370886
	11/18/2022	11/22/2022 09:10	Simonne.V. Calhoun	11/28/2022 11:21	Judith K. Clark	2370888
	11/18/2022	11/22/2022 09:10	Simonne.V. Calhoun	11/28/2022 11:26	Judith K. Clark	2370890
	11/18/2022	11/30/2022 11:45	Simonne.V. Calhoun	12/01/2022 10:52	Judith K. Clark	2370882
EPA 353.2 Rev. 2.0	11/18/2022			11/22/2022 11:14	Beverly Y. Sanders	2370882
	11/18/2022			11/22/2022 11:15	Beverly Y. Sanders	2370885
	11/18/2022			11/22/2022 11:16	Beverly Y. Sanders	2370886
	11/18/2022			11/22/2022 11:17	Beverly Y. Sanders	2370888
	11/18/2022			11/22/2022 11:19	Beverly Y. Sanders	2370890
EPA 365.1 Rev. 2.0	11/18/2022	11/22/2022 12:22	Adam P Silver	11/22/2022 15:27	James L Waggeberby	2370885
	11/18/2022	11/22/2022 12:22	Adam P Silver	11/22/2022 15:30	James L Waggeberby	2370886
	11/18/2022	11/22/2022 12:22	Adam P Silver	11/22/2022 15:31	James L Waggeberby	2370888
	11/18/2022	11/22/2022 12:22	Adam P Silver	11/22/2022 15:32	James L Waggeberby	2370890
	11/18/2022	11/29/2022 14:43	Adam P Silver	11/30/2022 09:57	James L Waggeberby	2370882
EPA 8321B	11/18/2022	11/22/2022 06:30	Umesh Chiluwal	11/22/2022 09:26	Umesh Chiluwal	2370897
	11/18/2022	11/22/2022 06:30	Umesh Chiluwal	11/22/2022 09:39	Umesh Chiluwal	2370898
	11/18/2022	11/22/2022 06:30	Umesh Chiluwal	11/23/2022 01:47	Umesh Chiluwal	2370897

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 8321B	11/18/2022	11/22/2022 06:30	Umesh Chiluwal	11/23/2022 02:02	Umesh Chiluwal	2370898
	11/18/2022	11/22/2022 09:30	June Rhew	11/23/2022 18:02	Juyoung Kim	2370897
	11/18/2022	11/22/2022 09:30	June Rhew	11/23/2022 18:23	Juyoung Kim	2370898
SM 2320 B-2011	11/18/2022			11/30/2022 01:28	Dale L. Simmons	2370883
	11/18/2022			11/30/2022 02:00	Dale L. Simmons	2370881
	11/18/2022			11/30/2022 02:12	Dale L. Simmons	2370884
	11/18/2022			11/30/2022 02:24	Dale L. Simmons	2370887
	11/18/2022			11/30/2022 02:36	Dale L. Simmons	2370889
SM 2340 B-2011	11/18/2022			12/01/2022 03:15	McKinley C Carter	2370903
	11/18/2022			12/01/2022 03:23	McKinley C Carter	2370904
SM 2540 C-2015	11/18/2022			11/22/2022 16:06	Yijie Li	2370881, 2370883, 2370884, 2370887, 2370889
SM 2540 D-2015	11/18/2022			11/22/2022 16:06	Yijie Li	2370881, 2370883, 2370884, 2370887, 2370889
SM 4500-F- C-2011	11/18/2022			11/30/2022 01:19	Dale L. Simmons	2370883
	11/18/2022			11/30/2022 02:00	Dale L. Simmons	2370881
	11/18/2022			11/30/2022 02:12	Dale L. Simmons	2370884
	11/18/2022			11/30/2022 02:24	Dale L. Simmons	2370887
	11/18/2022			11/30/2022 02:36	Dale L. Simmons	2370889
SM 5310 B-2011	11/18/2022			11/29/2022 14:25	Khloe J Berg	2370885
	11/18/2022			11/29/2022 15:23	Khloe J Berg	2370886
	11/18/2022			11/29/2022 20:42	Khloe J Berg	2370882
	11/18/2022			11/29/2022 20:56	Khloe J Berg	2370888
	11/18/2022			11/29/2022 21:12	Khloe J Berg	2370890