

Chemical Analysis Report

WAS-SECT-2022-03-29-01

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

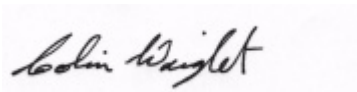
Event Description: **Merrit's Mill Pond BMAP**
Request ID: **RQ-2022-03-28-06**
Customer: **WAS-SECT**
Project ID: **BMAP**

Send Reports to:
FL Dept. of Environmental Protection
2600 Blair Stone Rd
Tallahassee, FL 32399
Attn: Curtis Musson

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

Certified by: Colin Wright, Program Administrator

Date Certified: 21-APR-2022 11:20

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 and Nutrients.

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: Merritts Mill Pond 600m downstream

Collection Date/Time: 03/29/2022 12:17

Field ID: G2WA0007

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2315203	DEP SOP: NU-094-1	Color (true)**	2.5	U	PCU	P411745	
	EPA 180.1 Rev. 2.0	Turbidity	0.10	I	NTU	P411770	
	EPA 300.0 Rev. 2.1	Chloride	4.9		mg Cl/L	P411906	
		Sulfate	1.4		mg SO4/L	P411909	
	SM 2320 B-2011	Total Alkalinity	119		mg CaCO3/L	P411967	
	SM 2540 C-2011	TDS	166	A	mg/L	P411924	
	SM 2540 D-2011	TSS	2	UA	mg/L	P411893	
	SM 4500-F- C-2011	Fluoride	0.036	I	mg F/L	P411971	
2315207	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	I	mg N/L	P411959	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P412172	
	EPA 353.2 Rev. 2.0	NO2NO3-N	3.7		mg N/L	P411797	
	EPA 365.1 Rev. 2.0	Total-P	0.022		mg P/L	P411946	
	SM 5310 B-2011	Organic Carbon	0.50	U	mg C/L	P411832	
2315211	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.020		mg P/L	P411763	
2315222	EPA 200.7 Rev. 4.4	Calcium	52.4		mg/L	P411895	
		Iron	30	U	ug/L	P411895	
		Magnesium	2.46		mg/L	P411895	
		Potassium	0.44	I	mg/L	P411895	
		Sodium	1.9	I	mg/L	P411895	
		Strontium	37.4		ug/L	P411895	
		Tin	3.0	U	ug/L	P411895	
		Titanium	0.75	U	ug/L	P411895	
	EPA 200.8 Rev. 5.4	Vanadium	2.0	U	ug/L	P411895	
		Zinc	5.0	U	ug/L	P411895	
		Aluminum	5.0	U	ug/L	P411895	
		Antimony	0.050	U	ug/L	P411895	
		Arsenic	0.25		ug/L	P411895	
		Barium	6.57		ug/L	P411895	
		Beryllium	0.015	I	ug/L	P411895	
		Boron**	8.4		ug/L	P411895	
		Cadmium	0.020	U	ug/L	P411895	
		Chromium	1.1	I	ug/L	P411895	
		Cobalt	0.020	U	ug/L	P411895	
		Copper	0.40	U	ug/L	P411895	
		Lead	0.20	U	ug/L	P411895	
		Manganese	0.12	I	ug/L	P411895	
		Molybdenum	0.15	U	ug/L	P411895	
		Nickel	0.50	U	ug/L	P411895	
		Selenium	0.20	U	ug/L	P411895	
		Silver	0.010	U	ug/L	P411895	
		Thallium	0.10	U	ug/L	P411895	
	SM 2340 B-2011	Hardness	141		mg/L	P411895	

Ref. Method and Comment:

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

Sample Location: Merritts Mill Pond Mid under power lines

Collection Date/Time: 03/29/2022 11:47

Field ID: G2WA0008

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2315204	DEP SOP: NU-094-1	Color (true)**	2.5	U	PCU	P411745	
	EPA 180.1 Rev. 2.0	Turbidity	0.75	I	NTU	P411770	
	EPA 300.0 Rev. 2.1	Chloride	5.0		mg Cl/L	P411906	
		Sulfate	1.4		mg SO4/L	P411909	
	SM 2320 B-2011	Total Alkalinity	120		mg CaCO3/L	P411967	
	SM 2540 C-2011	TDS	157		mg/L	P411924	
	SM 2540 D-2011	TSS	2	U	mg/L	P411893	
	SM 4500-F- C-2011	Fluoride	0.041	I	mg F/L	P411971	
2315208	EPA 350.1 Rev. 2.0	Ammonia-N	0.031		mg N/L	P411959	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.15	I	mg N/L	P412169	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	2.9		mg N/L	P411797	
	EPA 365.1 Rev. 2.0	Total-P	0.013		mg P/L	P411946	
	SM 5310 B-2011	Organic Carbon	0.83	I	mg C/L	P411832	
2315212	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.007	I	mg P/L	P411763	
2315223	EPA 200.7 Rev. 4.4	Calcium	52.4		mg/L	P411895	
		Iron	30	U	ug/L	P411895	
		Magnesium	2.77		mg/L	P411895	
		Potassium	0.36	I	mg/L	P411895	
		Sodium	2.0		mg/L	P411895	
		Strontium	42.1		ug/L	P411895	
		Tin	3.0	U	ug/L	P411895	
	EPA 200.8 Rev. 5.4	Titanium	0.75	U	ug/L	P411895	
		Vanadium	2.0	U	ug/L	P411895	
		Zinc	5.0	U	ug/L	P411895	
		Aluminum	6.3	I	ug/L	P411895	
		Antimony	0.050	U	ug/L	P411895	
		Arsenic	0.26		ug/L	P411895	
		Barium	6.09		ug/L	P411895	
		Beryllium	0.011	I	ug/L	P411895	
		Boron**	9.1		ug/L	P411895	
		Cadmium	0.020	U	ug/L	P411895	
		Chromium	0.92	I	ug/L	P411895	
		Cobalt	0.020	U	ug/L	P411895	
		Copper	0.40	U	ug/L	P411895	
		Lead	0.20	U	ug/L	P411895	
		Manganese	0.96		ug/L	P411895	
		Molybdenum	0.15	U	ug/L	P411895	
		Nickel	0.50	U	ug/L	P411895	
		Selenium	0.20	U	ug/L	P411895	
		Silver	0.010	U	ug/L	P411895	
		Thallium	0.10	U	ug/L	P411895	
	SM 2340 B-2011	Hardness	142		mg/L	P411895	

Ref. Method and Comment:

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

Sample Location: Merritts Mill Pond

Collection Date/Time: 03/29/2022 10:37

Field ID: G2WA0009

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2315205	DEP SOP: NU-094-1	Color (true)**	2.5	U	PCU	P411745	
	EPA 180.1 Rev. 2.0	Turbidity	0.60	I	NTU	P411770	
	EPA 300.0 Rev. 2.1	Chloride	5.1		mg Cl/L	P411906	
		Sulfate	1.4		mg SO4/L	P411909	
	SM 2320 B-2011	Total Alkalinity	116		mg CaCO3/L	P411967	
	SM 2540 C-2011	TDS	157		mg/L	P411924	
	SM 2540 D-2011	TSS	2	U	mg/L	P411893	
	SM 4500-F- C-2011	Fluoride	0.041	I	mg F/L	P411971	
2315209	EPA 350.1 Rev. 2.0	Ammonia-N	0.040		mg N/L	P411959	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.15	I	mg N/L	P412168	
	EPA 353.2 Rev. 2.0	NO2NO3-N	2.6		mg N/L	P411797	
	EPA 365.1 Rev. 2.0	Total-P	0.012		mg P/L	P411946	
	SM 5310 B-2011	Organic Carbon	0.79	I	mg C/L	P411832	
2315213	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.006	I	mg P/L	P411763	
2315224	EPA 200.7 Rev. 4.4	Calcium	47.5		mg/L	P411895	
		Iron	30	U	ug/L	P411895	
		Magnesium	2.71		mg/L	P411895	
		Potassium	0.35	I	mg/L	P411895	
		Sodium	2.0		mg/L	P411895	
		Strontium	40.0		ug/L	P411895	
		Tin	3.0	U	ug/L	P411895	
		Titanium	0.75	U	ug/L	P411895	
	EPA 200.8 Rev. 5.4	Vanadium	2.0	U	ug/L	P411895	
		Zinc	5.0	U	ug/L	P411895	
		Aluminum	6.4	I	ug/L	P411895	
		Antimony	0.050	U	ug/L	P411895	
		Arsenic	0.29		ug/L	P411895	
		Barium	5.90		ug/L	P411895	
		Beryllium	0.010	U	ug/L	P411895	
		Boron**	8.4		ug/L	P411895	
		Cadmium	0.020	U	ug/L	P411895	
		Chromium	0.81	I	ug/L	P411895	
		Cobalt	0.020	U	ug/L	P411895	
		Copper	0.40	U	ug/L	P411895	
		Lead	0.20	U	ug/L	P411895	
		Manganese	4.25		ug/L	P411895	
		Molybdenum	0.15	U	ug/L	P411895	
		Nickel	0.50	U	ug/L	P411895	
		Selenium	0.20	U	ug/L	P411895	
		Silver	0.010	U	ug/L	P411895	
		Thallium	0.10	U	ug/L	P411895	
	SM 2340 B-2011	Hardness	130		mg/L	P411895	

Ref. Method and Comment:

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

Sample Location: SHANGRILA SPRING Vent

Collection Date/Time: 03/29/2022 12:27

Field ID: G2WA0022

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2315206	DEP SOP: NU-094-1	Color (true)**	2.5	U	PCU	P411745	
	EPA 180.1 Rev. 2.0	Turbidity	0.10	I	NTU	P411770	
	EPA 300.0 Rev. 2.1	Chloride	5.3		mg Cl/L	P411906	
		Sulfate	1.5		mg SO4/L	P411909	
	SM 2320 B-2011	Total Alkalinity	137		mg CaCO3/L	P411967	
	SM 2540 C-2011	TDS	187		mg/L	P411924	
	SM 2540 D-2011	TSS	2	U	mg/L	P411893	
	SM 4500-F- C-2011	Fluoride	0.042	I	mg F/L	P411971	
2315210	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P411959	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P412172	
	EPA 353.2 Rev. 2.0	NO2NO3-N	3.9		mg N/L	P411797	
	EPA 365.1 Rev. 2.0	Total-P	0.026		mg P/L	P411946	
	SM 5310 B-2011	Organic Carbon	0.50	U	mg C/L	P411832	
2315214	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.025		mg P/L	P411763	
2315225	EPA 200.7 Rev. 4.4	Calcium	60.8		mg/L	P411895	
		Iron	30	U	ug/L	P411895	
		Magnesium	2.06		mg/L	P411895	
		Potassium	0.44	I	mg/L	P411895	
		Sodium	1.9	I	mg/L	P411895	
		Strontium	46.4		ug/L	P411895	
		Tin	3.0	U	ug/L	P411895	
		Titanium	0.75	U	ug/L	P411895	
	EPA 200.8 Rev. 5.4	Vanadium	2.0	U	ug/L	P411895	
		Zinc	5.0	U	ug/L	P411895	
		Aluminum	5.0	U	ug/L	P411895	
		Antimony	0.050	U	ug/L	P411895	
		Arsenic	0.22		ug/L	P411895	
		Barium	5.54		ug/L	P411895	
		Beryllium	0.010	U	ug/L	P411895	
		Boron**	8.9		ug/L	P411895	
		Cadmium	0.020	U	ug/L	P411895	
		Chromium	1.4	I	ug/L	P411895	
		Cobalt	0.020	U	ug/L	P411895	
		Copper	0.40	U	ug/L	P411895	
		Lead	0.20	U	ug/L	P411895	
		Manganese	0.14	I	ug/L	P411895	
		Molybdenum	0.15	U	ug/L	P411895	
		Nickel	0.50	U	ug/L	P411895	
		Selenium	0.22	I	ug/L	P411895	
		Silver	0.010	U	ug/L	P411895	
		Thallium	0.10	U	ug/L	P411895	
	SM 2340 B-2011	Hardness	160		mg/L	P411895	

Ref. Method and Comment:

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

Sample Location: FB

Collection Date/Time: 03/29/2022 10:47

Field ID: FB_03292022

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2315215	DEP SOP: NU-094-1	Color (true)**	2.5	U	PCU	P411746	
	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P411770	
	EPA 300.0 Rev. 2.1	Chloride	0.20	U	mg Cl/L	P411906	
		Sulfate	0.20	U	mg SO4/L	P411909	
	SM 2320 B-2011	Total Alkalinity	0.65	U	mg CaCO3/L	P411967	
	SM 2540 C-2011	TDS	15	U	mg/L	P411924	
	SM 2540 D-2011	TSS	2	U	mg/L	P411893	
2315216	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P411959	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P412167	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P411797	
	EPA 365.1 Rev. 2.0	Total-P	0.002	I	mg P/L	P411938	
	SM 5310 B-2011	Organic Carbon	0.50	U	mg C/L	P411832	
2315217	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P411763	
2315226	EPA 200.7 Rev. 4.4	Calcium	0.075	U	mg/L	P411895	
		Iron	30	U	ug/L	P411895	
		Magnesium	0.040	U	mg/L	P411895	
		Potassium	0.30	U	mg/L	P411895	
		Sodium	0.50	U	mg/L	P411895	
		Strontium	2.0	U	ug/L	P411895	
		Tin	3.0	U	ug/L	P411895	
		Titanium	0.75	U	ug/L	P411895	
		Vanadium	2.0	U	ug/L	P411895	
		Zinc	13	I	ug/L	P411895	
	EPA 200.8 Rev. 5.4	Aluminum	5.0	U	ug/L	P411895	
		Antimony	0.050	U	ug/L	P411895	
		Arsenic	0.050	U	ug/L	P411895	
		Barium	0.20	U	ug/L	P411895	
		Beryllium	0.010	U	ug/L	P411895	
		Boron**	2.0	U	ug/L	P411895	
		Cadmium	0.020	U	ug/L	P411895	
		Chromium	0.40	U	ug/L	P411895	
		Cobalt	0.020	U	ug/L	P411895	
		Copper	0.40	U	ug/L	P411895	
		Lead	0.20	U	ug/L	P411895	
		Manganese	0.10	U	ug/L	P411895	
		Molybdenum	0.15	U	ug/L	P411895	
		Nickel	0.50	U	ug/L	P411895	
		Selenium	0.20	U	ug/L	P411895	
		Silver	0.010	U	ug/L	P411895	
		Thallium	0.10	U	ug/L	P411895	
	SM 2340 B-2011	Hardness	0.35	U	mg/L	P411895	

Field ID: FB_03292022

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
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Ref. Method and Comment:

DEP SOP: NU-094-1: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

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

EPA 365.1 Rev. 2.0: Total-P: The result was confirmed on 04/11/2022.

EPA 200.7 Rev. 4.4: The zinc result was confirmed in the undigested sample on 04/08/2022.

Quality Assurance Report Method Blank Results

Reference Method: DEP SOP: NU-094-1
Batch ID: P411745

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: DEP SOP: NU-094-1
Batch ID: P411746

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P411770

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P411895

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: P411895

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: P411906

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P411909

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P411959

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P412167

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P412168

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P412169

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P412172

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P411797

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P411938

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P411946

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P411763

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

Reference Method: SM 2320 B-2011
Batch ID: P411967

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

Reference Method: SM 2540 C-2011
Batch ID: P411924

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P411893

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500-F- C-2011
Batch ID: P411971

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P411832

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: P411745

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	100		P	85 - 115

Reference Method: DEP SOP: NU-094-1
Batch ID: P411746

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

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P411770

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

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P411895

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	101		P	85 - 115
Iron	104		P	85 - 115
Magnesium	107		P	85 - 115
Potassium	95.7		P	85 - 115
Sodium	96.5		P	85 - 115
Strontium	95.5		P	85 - 115
Tin	101		P	85 - 115
Titanium	97.4		P	85 - 115
Vanadium	92.5		P	85 - 115
Zinc	98.7		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P411895

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	99.1		P	80 - 120
Antimony	96.7		P	80 - 120
Arsenic	100		P	80 - 120
Barium	101		P	80 - 120
Beryllium	94.1		P	80 - 120
Boron	103		P	80 - 120
Cadmium	97.1		P	80 - 120
Chromium	95.3		P	80 - 120
Cobalt	100		P	80 - 120
Copper	97.7		P	80 - 120
Lead	98.4		P	80 - 120
Manganese	94.9		P	80 - 120
Molybdenum	98.4		P	80 - 120
Nickel	99.0		P	80 - 120
Selenium	98.8		P	80 - 120
Silver	101		P	80 - 120
Thallium	99.9		P	80 - 120

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P411906

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P411909

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P411959

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P412167

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P412168

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P412169

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P412172

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	97.5		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P411797

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	99.0		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P411938

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P411946

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P411763

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

Reference Method: SM 2320 B-2011
Batch ID: P411967

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

Reference Method: SM 4500-F- C-2011
Batch ID: P411971

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	101		P	93 - 104

Reference Method: SM 5310 B-2011
Batch ID: P411832

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

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P411895

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2315224	Calcium	101		P	80 - 120
2315224	Iron	102		P	80 - 120
2315224	Magnesium	104		P	80 - 120
2315224	Potassium	95.5		P	80 - 120
2315224	Sodium	99.8		P	80 - 120
2315224	Strontium	94.9		P	80 - 120
2315224	Tin	99.4		P	80 - 120
2315224	Titanium	103		P	80 - 120
2315224	Vanadium	98.7		P	80 - 120
2315224	Zinc	100		P	80 - 120
2315487	Calcium	100		P	80 - 120
2315487	Iron	101	103	P/P	80 - 120
2315487	Magnesium	102	105	P/P	80 - 120
2315487	Potassium	93.6	94.9	P/P	80 - 120
2315487	Sodium	94.8		P	80 - 120
2315487	Strontium	98.0	103	P/P	80 - 120
2315487	Tin	103	105	P/P	80 - 120
2315487	Titanium	102	105	P/P	80 - 120
2315487	Vanadium	99.1	102	P/P	80 - 120
2315487	Zinc	105	107	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P411895

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2315224	Aluminum	109		P	80 - 120
2315224	Antimony	97.9		P	80 - 120
2315224	Arsenic	99.5		P	80 - 120
2315224	Barium	99.5		P	80 - 120
2315224	Beryllium	94.9		P	80 - 120
2315224	Boron	102		P	80 - 120
2315224	Cadmium	97.9		P	80 - 120
2315224	Chromium	96.7		P	80 - 120
2315224	Cobalt	98.9		P	80 - 120
2315224	Copper	94.8		P	80 - 120
2315224	Lead	96.8		P	80 - 120
2315224	Manganese	95.7		P	80 - 120
2315224	Molybdenum	99.9		P	80 - 120
2315224	Nickel	97.5		P	80 - 120
2315224	Selenium	97.6		P	80 - 120
2315224	Silver	101		P	80 - 120
2315224	Thallium	100		P	80 - 120
2315487	Aluminum	98.7	96.4	P/P	80 - 120
2315487	Antimony	97.9	96.8	P/P	80 - 120
2315487	Arsenic	99.3	98.6	P/P	80 - 120
2315487	Barium	99.4	98.2	P/P	80 - 120
2315487	Beryllium	95.9	94.4	P/P	80 - 120
2315487	Boron	105	105	P/P	80 - 120
2315487	Cadmium	97.0	96.5	P/P	80 - 120
2315487	Chromium	98.4	97.3	P/P	80 - 120
2315487	Cobalt	98.4	96.6	P/P	80 - 120
2315487	Copper	96.4	95.1	P/P	80 - 120

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P411895

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2315487	Lead	98.7	97.4	P/P	80 - 120
2315487	Manganese	96.0	94.3	P/P	80 - 120
2315487	Molybdenum	101	99.3	P/P	80 - 120
2315487	Nickel	97.9	96.3	P/P	80 - 120
2315487	Selenium	98.1	96.1	P/P	80 - 120
2315487	Silver	100	98.9	P/P	80 - 120
2315487	Thallium	101	101	P/P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P411906

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2315182	Chloride	99.8		P	90 - 110
2315234	Chloride	100		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P411909

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2315182	Sulfate	98.2		P	90 - 110
2315234	Sulfate	97.1		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P411959

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2315207	Ammonia-N	94.0	94.4	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P412167

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2315498	Kjeldahl Nitrogen	97.6	107	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P412168

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2315097	Kjeldahl Nitrogen	101	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P412169

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2315163	Kjeldahl Nitrogen	106	116	P/F	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P412172

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2315207	Kjeldahl Nitrogen	93.7	93.2	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P411797

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2315186	NO2NO3-N	97.5	99.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P411938

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2315351	Total-P	104	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P411946

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2315163	Total-P	106	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P411763

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2315211	O-Phosphate-P	98.6	98.5	P/P	90 - 110

Reference Method: SM 4500-F- C-2011
Batch ID: P411971

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2315236	Fluoride	100	99.9	P/P	92 - 107

Reference Method: SM 5310 B-2011
Batch ID: P411832

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2315351	Organic Carbon	92.9	90.0	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P411745

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2315183	Color (true)	2.00	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P411770

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2315183	Turbidity	1.59	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P411895

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2315487	Calcium	0.836	Spike	P	0 - 20
2315487	Iron	1.21	Spike	P	0 - 20
2315487	Magnesium	1.55	Spike	P	0 - 20
2315487	Potassium	1.16	Spike	P	0 - 20
2315487	Sodium	0.893	Spike	P	0 - 20
2315487	Strontium	4.58	Spike	P	0 - 20
2315487	Tin	2.06	Spike	P	0 - 20
2315487	Titanium	2.37	Spike	P	0 - 20
2315487	Vanadium	2.48	Spike	P	0 - 20
2315487	Zinc	2.70	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P411895

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2315487	Aluminum	1.99	Spike	P	0 - 20
2315487	Antimony	1.13	Spike	P	0 - 20
2315487	Arsenic	0.695	Spike	P	0 - 20
2315487	Barium	1.09	Spike	P	0 - 20
2315487	Beryllium	1.63	Spike	P	0 - 20
2315487	Boron	0.432	Spike	P	0 - 20
2315487	Cadmium	0.488	Spike	P	0 - 20
2315487	Chromium	1.06	Spike	P	0 - 20
2315487	Cobalt	1.78	Spike	P	0 - 20
2315487	Copper	1.33	Spike	P	0 - 20
2315487	Lead	1.25	Spike	P	0 - 20
2315487	Manganese	1.51	Spike	P	0 - 20
2315487	Molybdenum	1.49	Spike	P	0 - 20
2315487	Nickel	1.61	Spike	P	0 - 20
2315487	Selenium	2.06	Spike	P	0 - 20
2315487	Silver	1.24	Spike	P	0 - 20
2315487	Thallium	0.0325	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P411906

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2315182	Chloride	0.973	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P411909

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2315182	Sulfate	1.17	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P411959

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2315207	Ammonia-N	0.407	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P412167

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2315498	Kjeldahl Nitrogen	5.26	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P412168

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2315097	Kjeldahl Nitrogen	0.0495	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P412169

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2315163	Kjeldahl Nitrogen	7.04	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P412172

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2315207	Kjeldahl Nitrogen	0.491	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P411797

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2315186	NO2NO3-N	1.53	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P411938

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2315351	Total-P	0.317	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P411946

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2315163	Total-P	1.11	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P411763

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2315211	O-Phosphate-P	0.0847	Spike	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P411967

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2315236	Total Alkalinity	0.837	Sample	P	0 - 5.2

Reference Method: SM 2540 C-2011
Batch ID: P411924

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2315203	TDS	3.61	Sample	P	0 - 10

Reference Method: SM 4500-F- C-2011
Batch ID: P411971

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2315236	Fluoride	0.483	Spike	P	0 - 2.1

Reference Method: SM 5310 B-2011
Batch ID: P411832

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2315351	Organic Carbon	1.53	Spike	P	0 - 20

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A111208

Included Lab Sample IDs: 2315203, 2315204, 2315205, 2315206, 2315215

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

Reference Method: DEP SOP: NU-094-1

Run ID: A111228

Included Lab Sample IDs: 2315203, 2315204, 2315205, 2315206, 2315215

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A111236

Included Lab Sample IDs: 2315211, 2315212, 2315213, 2315214, 2315217

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	101	100	P/P	90 - 110
O-Phosphate-P	99.9	101	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A111239

Included Lab Sample IDs: 2315203, 2315204, 2315205, 2315206, 2315215

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 353.2 Rev. 2.0

Run ID: A111245

Included Lab Sample IDs: 2315207, 2315208, 2315209, 2315210, 2315216

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	97.5	96.5	P/P	90 - 110
NO2NO3-N	97.5	97.5	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A111262

Included Lab Sample IDs: 2315207, 2315208, 2315209, 2315210, 2315216

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	95.9	96.8	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A111293

Included Lab Sample IDs: 2315222, 2315223, 2315224, 2315225, 2315226

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	97.4	98.7	P/P	90 - 110
Aluminum	98.7	98.8	P/P	90 - 110
Antimony	97.4	98.7	P/P	90 - 110
Antimony	98.7	97.7	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A111293

Included Lab Sample IDs: 2315222, 2315223, 2315224, 2315225, 2315226

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Arsenic	100	99.2	P/P	90 - 110
Arsenic	102	100	P/P	90 - 110
Barium	96.5	97.0	P/P	90 - 110
Barium	97.2	96.5	P/P	90 - 110
Beryllium	95.3	95.5	P/P	90 - 110
Beryllium	95.5	93.8	P/P	90 - 110
Boron	101	102	P/P	90 - 110
Boron	97.3	101	P/P	90 - 110
Cadmium	97.6	98.8	P/P	90 - 110
Cadmium	98.8	97.8	P/P	90 - 110
Chromium	96.4	98.2	P/P	90 - 110
Chromium	98.2	96.9	P/P	90 - 110
Cobalt	101	99.0	P/P	90 - 110
Cobalt	99.0	97.9	P/P	90 - 110
Copper	101	98.9	P/P	90 - 110
Copper	98.9	98.0	P/P	90 - 110
Lead	96.9	96.9	P/P	90 - 110
Lead	97.1	96.9	P/P	90 - 110
Manganese	95.4	96.7	P/P	90 - 110
Manganese	96.7	95.6	P/P	90 - 110
Molybdenum	98.3	97.1	P/P	90 - 110
Molybdenum	98.8	98.3	P/P	90 - 110
Nickel	101	98.8	P/P	90 - 110
Nickel	98.8	97.4	P/P	90 - 110
Selenium	100	97.6	P/P	90 - 110
Selenium	98.8	100	P/P	90 - 110
Silver	104	103	P/P	90 - 110
Silver	104	104	P/P	90 - 110
Thallium	96.7	97.0	P/P	90 - 110
Thallium	97.0	97.4	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A111304

Included Lab Sample IDs: 2315207, 2315208, 2315209, 2315210, 2315216

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.7	99.6	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A111305

Included Lab Sample IDs: 2315203, 2315204, 2315205, 2315206, 2315215

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	96.7	98.3	P/P	90 - 110
Total Alkalinity	98.3	97.0	P/P	90 - 110

Reference Method: SM 4500-F- C-2011

Run ID: A111305

Included Lab Sample IDs: 2315203, 2315204, 2315205, 2315206

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
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Quality Assurance Report Calibration Verification

Reference Method: SM 4500-F- C-2011

Run ID: A111305

Included Lab Sample IDs: 2315203, 2315204, 2315205, 2315206

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A111344

Included Lab Sample IDs: 2315207, 2315208, 2315209, 2315210

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.8	99.2	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A111389

Included Lab Sample IDs: 2315216

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

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A111402

Included Lab Sample IDs: 2315222, 2315223, 2315224, 2315225, 2315226

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Strontium	105	98.1	P/P	90 - 110
Strontium	98.1	99.6	P/P	90 - 110
Tin	106	103	P/P	90 - 110
Titanium	105	103	P/P	90 - 110
Vanadium	105	103	P/P	90 - 110
Zinc	104	103	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A111453

Included Lab Sample IDs: 2315208, 2315216

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	100	105	P/P	90 - 110
Kjeldahl Nitrogen	105	95.1	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A111463

Included Lab Sample IDs: 2315209

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	101	106	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A111501

Included Lab Sample IDs: 2315222, 2315223, 2315224, 2315225, 2315226

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	103	104	P/P	95 - 105
Calcium	104	103	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A111501

Included Lab Sample IDs: 2315222, 2315223, 2315224, 2315225, 2315226

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Iron	103	104	P/P	95 - 105
Iron	104	102	P/P	90 - 110
Magnesium	103	104	P/P	95 - 105
Magnesium	104	102	P/P	90 - 110
Potassium	101	103	P/P	95 - 105
Potassium	103	99.4	P/P	90 - 110
Sodium	100	102	P/P	95 - 105
Sodium	102	98.0	P/P	90 - 110
Tin	103	104	P/P	95 - 105
Titanium	102	102	P/P	95 - 105
Vanadium	102	102	P/P	95 - 105
Zinc	102	103	P/P	95 - 105

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A111528

Included Lab Sample IDs: 2315207, 2315210

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	99.4	98.0	P/P	90 - 110
Kjeldahl Nitrogen	99.8	101	P/P	90 - 110

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

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

Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery			Precision SMP	MS
			LCS				
DEP SOP: NU-094-1	Color (true)	100				2.00	
	Color (true)	101					
EPA 180.1 Rev. 2.0	Turbidity	97.0				1.59	
EPA 200.7 Rev. 4.4	Calcium	101	101	100			0.836
	Iron	104	102	101	103		1.21
	Magnesium	107	104	102	105		1.55
	Potassium	95.7	95.5	93.6	94.9		1.16
	Sodium	96.5	99.8	94.8			0.893
	Strontium	95.5	94.9	98.0	103		4.58
	Tin	101	99.4	103	105		2.06
	Titanium	97.4	103	102	105		2.37
	Vanadium	92.5	98.7	99.1	102		2.48
	Zinc	98.7	100	105	107		2.70
EPA 200.8 Rev. 5.4	Aluminum	99.1	109	98.7	96.4		1.99
	Antimony	96.7	97.9	97.9	96.8		1.13
	Arsenic	100	99.5	99.3	98.6		0.695
	Barium	101	99.5	99.4	98.2		1.09
	Beryllium	94.1	94.9	95.9	94.4		1.63
	Boron	103	102	105	105		0.432
	Cadmium	97.1	97.9	97.0	96.5		0.488
	Chromium	95.3	96.7	98.4	97.3		1.06
	Cobalt	100	98.9	98.4	96.6		1.78
	Copper	97.7	94.8	96.4	95.1		1.33
	Lead	98.4	96.8	98.7	97.4		1.25
	Manganese	94.9	95.7	96.0	94.3		1.51
	Molybdenum	98.4	99.9	101	99.3		1.49
	Nickel	99.0	97.5	97.9	96.3		1.61
	Selenium	98.8	97.6	98.1	96.1		2.06
	Silver	101	101	100	98.9		1.24
	Thallium	99.9	100	101	101		0.0325
EPA 300.0 Rev. 2.1	Chloride	101	99.8	100		0.973	
	Sulfate	99.1	98.2	97.1		1.17	
EPA 350.1 Rev. 2.0	Ammonia-N	98.8	94.0	94.4			0.407
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	99.2	97.6	107			5.26
	Kjeldahl Nitrogen	102	101	101			0.0495
	Kjeldahl Nitrogen	106	106	116			7.04
	Kjeldahl Nitrogen	97.5	93.7	93.2			0.491
EPA 353.2 Rev. 2.0	NO2NO3-N	99.0	97.5	99.0			1.53
EPA 365.1 Rev. 2.0	Total-P	103	104	104			0.317
	Total-P	105	106	104			1.11
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	98.4	98.6	98.5			0.0847
SM 2320 B-2011	Total Alkalinity	97.5				0.837	
SM 2540 C-2011	TDS					3.61	
SM 4500-F- C-2011	Fluoride	101	100	99.9			0.483
SM 5310 B-2011	Organic Carbon	94.2	92.9	90.0			1.53

Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2315203, 2315204, 2315205, 2315206, 2315215
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2315203, 2315204, 2315205, 2315206, 2315215

Reference Method Descriptions

Method	Description	Associated Samples
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2315222, 2315223, 2315224, 2315225, 2315226
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2315222, 2315223, 2315224, 2315225, 2315226
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2315203, 2315204, 2315205, 2315206, 2315215
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2315203, 2315204, 2315205, 2315206, 2315215
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2315207, 2315208, 2315209, 2315210, 2315216
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2315207, 2315208, 2315209, 2315210, 2315216
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2315207, 2315208, 2315209, 2315210, 2315216
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2315207, 2315208, 2315209, 2315210, 2315216
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2315211, 2315212, 2315213, 2315214, 2315217
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2315203, 2315204, 2315205, 2315206, 2315215
SM 2340 B-2011	Hardness by calculation, in aqueous matrices, reported as mg/L CaCO ₃	2315222, 2315223, 2315224, 2315225, 2315226
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2315203, 2315204, 2315205, 2315206, 2315215
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2315203, 2315204, 2315205, 2315206, 2315215
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2315203, 2315204, 2315205, 2315206
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2315207, 2315208, 2315209, 2315210, 2315216

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	03/29/2022			03/30/2022 11:28	Samantha L Bates	2315203
	03/29/2022			03/30/2022 11:29	Samantha L Bates	2315204
	03/29/2022			03/30/2022 11:30	Samantha L Bates	2315205
	03/29/2022			03/30/2022 11:31	Samantha L Bates	2315206
	03/29/2022			03/30/2022 11:34	Samantha L Bates	2315215
EPA 180.1 Rev. 2.0	03/29/2022			03/30/2022 10:33	Anna M. Plaviak	2315203
	03/29/2022			03/30/2022 10:34	Anna M. Plaviak	2315204
	03/29/2022			03/30/2022 10:35	Anna M. Plaviak	2315205
	03/29/2022			03/30/2022 10:40	Anna M. Plaviak	2315206
	03/29/2022			03/30/2022 10:41	Anna M. Plaviak	2315215
EPA 200.7 Rev. 4.4	03/29/2022	04/04/2022 10:40	Megan Whitefoot	04/08/2022 19:14	McKinley C Carter	2315226
	03/29/2022	04/04/2022 10:40	Megan Whitefoot	04/08/2022 19:45	McKinley C Carter	2315222
	03/29/2022	04/04/2022 10:40	Megan Whitefoot	04/08/2022 19:53	McKinley C Carter	2315223
	03/29/2022	04/04/2022 10:40	Megan Whitefoot	04/08/2022 20:29	McKinley C Carter	2315224
	03/29/2022	04/04/2022 10:40	Megan Whitefoot	04/08/2022 20:50	McKinley C Carter	2315225
	03/29/2022	04/04/2022 10:40	Megan Whitefoot	04/13/2022 11:54	McKinley C Carter	2315226
	03/29/2022	04/04/2022 10:40	Megan Whitefoot	04/13/2022 12:27	McKinley C Carter	2315222
	03/29/2022	04/04/2022 10:40	Megan Whitefoot	04/13/2022 12:35	McKinley C Carter	2315223
	03/29/2022	04/04/2022 10:40	Megan Whitefoot	04/13/2022 13:09	McKinley C Carter	2315224
	03/29/2022	04/04/2022 10:40	Megan Whitefoot	04/13/2022 13:28	McKinley C Carter	2315225
EPA 200.8 Rev. 5.4	03/29/2022	04/04/2022 10:40	Megan Whitefoot	04/04/2022 23:24	Alexander Thompson	2315226
	03/29/2022	04/04/2022 10:40	Megan Whitefoot	04/05/2022 00:12	Alexander Thompson	2315224
	03/29/2022	04/04/2022 10:40	Megan Whitefoot	04/05/2022 01:10	Alexander Thompson	2315222
	03/29/2022	04/04/2022 10:40	Megan Whitefoot	04/05/2022 01:20	Alexander Thompson	2315223
	03/29/2022	04/04/2022 10:40	Megan Whitefoot	04/05/2022 01:29	Alexander Thompson	2315225
EPA 300.0 Rev. 2.1	03/29/2022			04/01/2022 19:48	Anna M. Plaviak	2315203
	03/29/2022			04/01/2022 20:00	Anna M. Plaviak	2315204
	03/29/2022			04/01/2022 20:12	Anna M. Plaviak	2315205
	03/29/2022			04/01/2022 20:25	Anna M. Plaviak	2315206
	03/29/2022			04/01/2022 20:37	Anna M. Plaviak	2315215
EPA 350.1 Rev. 2.0	03/29/2022			04/01/2022 12:42	Ping Hua	2315207
	03/29/2022			04/01/2022 12:48	Ping Hua	2315208
	03/29/2022			04/01/2022 12:49	Ping Hua	2315209
	03/29/2022			04/01/2022 12:50	Ping Hua	2315210
	03/29/2022			04/01/2022 12:57	Ping Hua	2315216
EPA 351.2 Rev. 2.0	03/29/2022	04/12/2022 17:00	Samantha L Bates	04/18/2022 12:06	Alexandra J Mattheus	2315207
	03/29/2022	04/12/2022 17:00	Samantha L Bates	04/18/2022 13:05	Alexandra J Mattheus	2315210
	03/29/2022	04/13/2022 07:54	Samantha L Bates	04/13/2022 13:22	Alexandra J Mattheus	2315208
	03/29/2022	04/13/2022 07:54	Samantha L Bates	04/13/2022 13:45	Alexandra J Mattheus	2315216
	03/29/2022	04/13/2022 07:54	Samantha L Bates	04/13/2022 15:47	Alexandra J Mattheus	2315209

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 353.2 Rev. 2.0	03/29/2022			03/31/2022 10:43	Beverly Y. Sanders	2315216
	03/29/2022			03/31/2022 10:46	Beverly Y. Sanders	2315207
	03/29/2022			03/31/2022 10:47	Beverly Y. Sanders	2315208
	03/29/2022			03/31/2022 10:51	Beverly Y. Sanders	2315209
	03/29/2022			03/31/2022 10:53	Beverly Y. Sanders	2315210
EPA 365.1 Rev. 2.0	03/29/2022	04/05/2022 17:35	Simonne.V. Calhoun	04/06/2022 15:00	James L Waggeberby	2315207
	03/29/2022	04/05/2022 17:35	Simonne.V. Calhoun	04/06/2022 15:01	James L Waggeberby	2315208
	03/29/2022	04/05/2022 17:35	Simonne.V. Calhoun	04/06/2022 15:02	James L Waggeberby	2315209, 2315210
	03/29/2022	04/07/2022 10:00	Simonne.V. Calhoun	04/08/2022 11:15	James L Waggeberby	2315216
EPA 365.1 Rev. 2.0 dissolved	03/29/2022			03/30/2022 15:06	Nathaniel J Jones	2315211
	03/29/2022			03/30/2022 15:08	Nathaniel J Jones	2315212
	03/29/2022			03/30/2022 15:09	Nathaniel J Jones	2315213
	03/29/2022			03/30/2022 15:14	Nathaniel J Jones	2315214
	03/29/2022			03/30/2022 15:15	Nathaniel J Jones	2315217
SM 2320 B-2011	03/29/2022			04/02/2022 07:21	Dale L. Simmons	2315203
	03/29/2022			04/02/2022 08:06	Dale L. Simmons	2315204
	03/29/2022			04/02/2022 08:20	Dale L. Simmons	2315205
	03/29/2022			04/02/2022 08:35	Dale L. Simmons	2315206
	03/29/2022			04/02/2022 08:43	Dale L. Simmons	2315215
SM 2340 B-2011	03/29/2022			04/13/2022 11:54	McKinley C Carter	2315226
	03/29/2022			04/13/2022 12:27	McKinley C Carter	2315222
	03/29/2022			04/13/2022 12:35	McKinley C Carter	2315223
	03/29/2022			04/13/2022 13:09	McKinley C Carter	2315224
	03/29/2022			04/13/2022 13:28	McKinley C Carter	2315225
SM 2540 C-2011	03/29/2022			03/31/2022 15:30	Blanca Fach	2315203, 2315204, 2315205, 2315206, 2315215
SM 2540 D-2011	03/29/2022			03/31/2022 15:30	Blanca Fach	2315203, 2315204, 2315205, 2315206, 2315215
SM 4500-F- C-2011	03/29/2022			04/02/2022 07:21	Dale L. Simmons	2315203
	03/29/2022			04/02/2022 08:06	Dale L. Simmons	2315204
	03/29/2022			04/02/2022 08:20	Dale L. Simmons	2315205
	03/29/2022			04/02/2022 08:35	Dale L. Simmons	2315206
SM 5310 B-2011	03/29/2022			03/31/2022 17:26	Khloe J Berg	2315207
	03/29/2022			03/31/2022 17:39	Khloe J Berg	2315208
	03/29/2022			03/31/2022 17:57	Khloe J Berg	2315209
	03/29/2022			03/31/2022 18:15	Khloe J Berg	2315210
	03/29/2022			03/31/2022 18:28	Khloe J Berg	2315216