

Chemical Analysis Report

SE-DIST-2016-06-29-02

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

Event Description: **SMP-Bay Run**
Request ID: **RQ-2016-06-06-42**
Customer: **SE-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
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2199 South Rock Road
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Certified by: Thekkekalathil Chandrasekhar, Chemist Administrator Date Certified: 20-JUL-2016 14:55



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 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: ENRG_8090

Collection Date/Time: 06/28/2016 11:55

Field ID: G5SE0033

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1812141	EPA 180.1 Rev. 2.0	Turbidity	1.1		NTU	P307123	
	SM 2320 B-97	Total Alkalinity	111		mg CaCO3/L	P307618	
	SM 2540 D-97	TSS	3	U	mg/L	P307689	
	SM 4500 F-C-97	Fluoride	1.3		mg F/L	P307622	
1812143	EPA 350.1 Rev. 2.0	Ammonia-N	0.009		mg N/L	P307424	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.31	I	mg N/L	P307261	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.007	I	mg N/L	P307292	
	EPA 365.1 Rev. 2.0	Total-P	0.008	IJ	mg P/L	P307206	MS
	SM 5310 B-00	Organic Carbon	2.2		mg C/L	P307485	
1812145	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P307100	

Ref. Method and Comment:

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

EPA 365.1 Rev. 2.0: Total-P: Refer to the narrative for an explanation of QC Codes.

Sample Location: ENRG_8090 Field Duplicate

Collection Date/Time: 06/28/2016 12:00

Field ID: G5SE0033-dupe

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1812142	EPA 180.1 Rev. 2.0	Turbidity	1.1		NTU	P307123	
	SM 2320 B-97	Total Alkalinity	111		mg CaCO3/L	P307618	
	SM 2540 D-97	TSS	3	U	mg/L	P307689	
	SM 4500 F-C-97	Fluoride	1.3		mg F/L	P307622	
1812144	EPA 350.1 Rev. 2.0	Ammonia-N	0.008		mg N/L	P307424	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.34	I	mg N/L	P307261	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.007	I	mg N/L	P307292	
	EPA 365.1 Rev. 2.0	Total-P	0.009	I	mg P/L	P307206	MS
	SM 5310 B-00	Organic Carbon	2.1		mg C/L	P307485	
1812146	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P307100	

Ref. Method and Comment:

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

Sample Location: Biscayne Bay ENRH4/329313

Collection Date/Time: 06/28/2016 12:25

Field ID: G4SEBB32

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1812147	EPA 180.1 Rev. 2.0	Turbidity	1.1		NTU	P307123	
	SM 2320 B-97	Total Alkalinity	122	A	mg CaCO3/L	P307618	
	SM 2540 D-97	TSS	3	I	mg/L	P307689	
	SM 4500 F-C-97	Fluoride	1.2		mg F/L	P307622	
1812148	EPA 350.1 Rev. 2.0	Ammonia-N	0.025		mg N/L	P307424	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.43		mg N/L	P307261	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.01	I	mg N/L	P307292	
	EPA 365.1 Rev. 2.0	Total-P	0.009	I	mg P/L	P307206	MS
	SM 5310 B-00	Organic Carbon	3.2		mg C/L	P307485	
1812149	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P307100	

Field ID: G4SEBB32

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1812153	EPA 200.7 Rev. 4.4	Iron	90	U	ug/L	P307496	
	EPA 200.8 Rev. 5.4	Arsenic	2.02		ug/L	P307496	
		Cadmium	0.060	U	ug/L	P307496	
		Chromium	0.15	U	ug/L	P307496	
		Copper	0.39	I	ug/L	P307496	
		Lead	0.15	U	ug/L	P307496	
		Silver	0.015	U	ug/L	P307496	
		Zinc	3.0	U	ug/L	P307496	

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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
 Batch ID: P307123

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
 Batch ID: P307496

Component	Result	Code	Units
Iron	30	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
 Batch ID: P307496

Component	Result	Code	Units
Arsenic	0.050	U	ug/L
Cadmium	0.020	U	ug/L
Chromium	0.050	U	ug/L
Copper	0.10	U	ug/L
Lead	0.050	U	ug/L
Silver	0.0050	U	ug/L
Zinc	1.0	U	ug/L

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P307424

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

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P307261

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

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P307292

Component	Result	Code	Units
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Quality Assurance Report Method Blank Results

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P307292

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P307206

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P307100

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

Reference Method: SM 2320 B-97
Batch ID: P307618

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

Reference Method: SM 2540 D-97
Batch ID: P307689

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P307622

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P307485

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P307496

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

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P307496

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
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Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P307496

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Arsenic	101		P	85 - 115
Cadmium	99.9		P	85 - 115
Chromium	97.4		P	85 - 115
Copper	97.2		P	85 - 115
Lead	97.6		P	85 - 115
Silver	98.0		P	85 - 115
Zinc	99.2		P	85 - 115

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P307424

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P307261

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P307292

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P307206

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	97.1		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P307100

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

Reference Method: SM 2320 B-97
Batch ID: P307618

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	103		P	95 - 108

Reference Method: SM 4500 F-C-97
Batch ID: P307622

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.0		P	92 - 103

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 5310 B-00
Batch ID: P307485

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	97.0		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P307496

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1814016	Iron	105	104	P/P	70 - 130

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P307496

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1814016	Arsenic	101	104	P/P	70 - 130
1814016	Cadmium	99.9	98.0	P/P	80 - 120
1814016	Chromium	82.9	85.0	P/P	70 - 130
1814016	Copper	90.3	93.1	P/P	70 - 130
1814016	Lead	104	106	P/P	80 - 120
1814016	Silver	90.7	91.8	P/P	80 - 120
1814016	Zinc	90.5	93.1	P/P	70 - 130

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P307424

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1812148	Ammonia-N	102	103	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P307261

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1812121	Kjeldahl Nitrogen	93.0	94.2	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P307292

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1812118	NO2NO3-N	100	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P307206

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1812143	Total-P	90.6	89.6	P/F	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P307100

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
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Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P307100

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1812149	O-Phosphate-P	97.8	101	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P307622

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1812147	Fluoride	93.3	94.0	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P307485

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1810784	Organic Carbon	92.3	95.3	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P307123

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1812073	Turbidity	0.438	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P307496

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1814016	Iron	1.22	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P307496

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1814016	Arsenic	2.35	Spike	P	0 - 20
1814016	Cadmium	2.02	Spike	P	0 - 20
1814016	Chromium	2.41	Spike	P	0 - 20
1814016	Copper	3.02	Spike	P	0 - 20
1814016	Lead	1.95	Spike	P	0 - 20
1814016	Silver	1.16	Spike	P	0 - 20
1814016	Zinc	2.76	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P307424

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1812148	Ammonia-N	0.545	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P307261

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1812121	Kjeldahl Nitrogen	1.03	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P307292

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1812118	NO2NO3-N	1.97	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P307206

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1812143	Total-P	0.999	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P307100

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1812149	O-Phosphate-P	2.92	Spike	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P307618

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1812147	Total Alkalinity	0.0226	Sample	P	0 - 4.8

Reference Method: SM 4500 F-C-97
Batch ID: P307622

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1812147	Fluoride	0.467	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P307485

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1810784	Organic Carbon	2.45	Spike	P	0 - 20

* Sample, spike and/or laboratory control sample precision (LCS) is reported.
Replicate spike precision may be reported when sample results are below quantifiable levels.

Quality Assurance Report Calibration Verification

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A70308

Included Lab Sample IDs: 1812145, 1812146, 1812149

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.2	101	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A70317

Included Lab Sample IDs: 1812141, 1812142, 1812147

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	100	101	P/P	95 - 105

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A70379

Included Lab Sample IDs: 1812143, 1812144, 1812148

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	100	100	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A70419

Included Lab Sample IDs: 1812143, 1812144, 1812148

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A70434

Included Lab Sample IDs: 1812143, 1812144, 1812148

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

Reference Method: SM 5310 B-00

Run ID: A70437

Included Lab Sample IDs: 1812143, 1812144, 1812148

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	98.2	90.1	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A70469

Included Lab Sample IDs: 1812143, 1812144, 1812148

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	93.8	94.9	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A70474

Included Lab Sample IDs: 1812141, 1812142, 1812147

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

Quality Assurance Report Calibration Verification

Reference Method: SM 2320 B-97

Run ID: A70474

Included Lab Sample IDs: 1812141, 1812142, 1812147

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

Reference Method: SM 4500 F-C-97

Run ID: A70474

Included Lab Sample IDs: 1812141, 1812142, 1812147

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

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A70490

Included Lab Sample IDs: 1812153

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

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A70553

Included Lab Sample IDs: 1812153

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Cadmium	100	98.3	P/P	90 - 110
Lead	95.1	95.9	P/P	90 - 110
Silver	96.6	96.7	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A70599

Included Lab Sample IDs: 1812153

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Arsenic	94.5	95.3	P/P	90 - 110
Chromium	95.2	93.4	P/P	90 - 110
Copper	94.4	94.9	P/P	90 - 110
Zinc	94.1	93.5	P/P	90 - 110

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

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

Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery	LCS	Precision SMP	MS
EPA 180.1 Rev. 2.0	Turbidity				0.438	
EPA 200.7 Rev. 4.4	Iron	105	105 104			1.22
EPA 200.8 Rev. 5.4	Arsenic	101	101 104			2.35
	Cadmium	99.9	99.9 98.0			2.02
	Chromium	97.4	82.9 85.0			2.41
	Copper	97.2	90.3 93.1			3.02

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	SMP
EPA 200.8 Rev. 5.4	Lead	97.6	104	106		1.95
	Silver	98.0	90.7	91.8		1.16
	Zinc	99.2	90.5	93.1		2.76
EPA 350.1 Rev. 2.0	Ammonia-N	98.1	102	103		0.545
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	98.0	93.0	94.2		1.03
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	103	100	102		1.97
EPA 365.1 Rev. 2.0	Total-P	97.1	90.6	89.6		0.999
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	102	97.8	101		2.92
SM 2320 B-97	Total Alkalinity	103			0.0226	
SM 4500 F-C-97	Fluoride	98.0	93.3	94.0		0.467
SM 5310 B-00	Organic Carbon	97.0	92.3	95.3		2.45

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1812141, 1812142, 1812147
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	1812153
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	1812153
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1812143, 1812144, 1812148
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1812143, 1812144, 1812148
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1812143, 1812144, 1812148
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1812143, 1812144, 1812148
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1812145, 1812146, 1812149
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	1812141, 1812142, 1812147
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1812141, 1812142, 1812147
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1812141, 1812142, 1812147
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1812143, 1812144, 1812148

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 180.1 Rev. 2.0	06/29/2016			06/29/2016 15:59	Sima Feizi	1812141, 1812142, 1812147
EPA 200.7 Rev. 4.4	06/29/2016	07/07/2016	Elliott D. Healy	07/12/2016	Joshua Ayres	1812153
EPA 200.8 Rev. 5.4	06/29/2016	07/07/2016	Elliott D. Healy	07/13/2016	Charles J. Peterson	1812153
	06/29/2016	07/07/2016	Elliott D. Healy	07/15/2016	Charles J. Peterson	1812153
EPA 350.1 Rev. 2.0	06/29/2016			07/06/2016	Diana M. Turner	1812143, 1812144, 1812148
EPA 351.2 Rev. 2.0	06/29/2016	07/05/2016	Sofia Elnemr	07/07/2016	Christopher Armour	1812143, 1812144, 1812148
EPA 353.2 Rev. 2.0	06/29/2016			07/05/2016	Beverly Y. Sanders	1812143, 1812144, 1812148
EPA 365.1 Rev. 2.0	06/29/2016	07/01/2016	Vijayalakshmi Reddy	07/07/2016	Lipi Saha	1812143, 1812144, 1812148
EPA 365.1 Rev. 2.0 dissolved	06/29/2016			06/29/2016 15:16	Julia Storbeck	1812149
	06/29/2016			06/29/2016 15:19	Julia Storbeck	1812145
	06/29/2016			06/29/2016 15:20	Julia Storbeck	1812146
SM 2320 B-97	06/29/2016			07/08/2016	Dale L. Simmons	1812141, 1812142, 1812147
SM 2540 D-97	06/29/2016			07/01/2016	Yijie Li	1812141, 1812142, 1812147
SM 4500 F-C-97	06/29/2016			07/08/2016	Dale L. Simmons	1812141, 1812142, 1812147
SM 5310 B-00	06/29/2016			07/07/2016	Sofia Elnemr	1812143, 1812144, 1812148