

Chemical Analysis Report

CEN-DIST-2020-12-08-02

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

Event Description: **Reedy Creek Abv Russell/Upper Cypress**
Request ID: **RQ-2020-11-30-22**
Customer: **CEN-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
FL Dept. of Environmental Protection
3319 Maguire Blvd., Suite 232
Orlando, FL 32803-3767
Attn: Kalina Warren

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: Thekkekalathil Chandrasekhar, Chemist Administrator

Date Certified: 29-DEC-2020 11:00



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 group are included in this report: 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: Upper Cypress Creek @ Jacaranda

Collection Date/Time: 12/07/2020 10:25

Field ID: G4CE0157

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2211409	EPA 180.1 Rev. 2.0	Turbidity	0.90		NTU	P390847	
	EPA 300.0 Rev. 2.1	Chloride	37		mg Cl/L	P391016	
		Sulfate	18		mg SO4/L	P391017	
	SM 2120 B-2011	Color (true)	120		PCU	P390921	
	SM 2320 B-2011	Total Alkalinity	15		mg CaCO3/L	P391089	
	SM 2540 C-2011	TDS	142		mg/L	P391169	
	SM 2540 D-2011	TSS	2	U	mg/L	P391149	
	SM 4500 F-C-2011	Fluoride	0.080	I	mg F/L	P390970	
2211410	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P391081	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.53		mg N/L	P391455	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.006	I	mg N/L	P390960	
	EPA 365.1 Rev. 2.0	Total-P	0.012		mg P/L	P390984	
	SM 5310 B-2011	Organic Carbon	12		mg C/L	P391060	
2211411	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.005	I	mg P/L	P390854	

Ref. Method and Comment:

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P390847

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P391016

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P391017

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P391081

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P391455

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P390960

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P390984

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P390854

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

Reference Method: SM 2120 B-2011
Batch ID: P390921

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Quality Assurance Report

Method Blank Results

Reference Method: SM 2320 B-2011
Batch ID: P391089

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

Reference Method: SM 2540 C-2011
Batch ID: P391169

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P391149

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P390970

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P391060

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P391016

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

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P391017

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: P391081

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

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P391455

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

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P390960

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	101		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P390984

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P390854

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

Reference Method: SM 2120 B-2011
 Batch ID: P390921

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	98.6		P	90 - 110

Reference Method: SM 2320 B-2011
 Batch ID: P391089

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	103		P	93 - 104

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 4500 F-C-2011
Batch ID: P390970

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.9		P	90 - 106

Reference Method: SM 5310 B-2011
Batch ID: P391060

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	98.2		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P391016

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2211305	Chloride	99.0		P	90 - 110
2211680	Chloride	97.7		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P391017

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2211305	Sulfate	99.6		P	90 - 110
2211680	Sulfate	98.0		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P391081

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2212207	Ammonia-N	94.8	94.2	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P391455

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2211368	Kjeldahl Nitrogen	70.6	70.2	F/F	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P390960

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2211307	NO2NO3-N	97.0	97.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P390984

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2211324	Total-P	105	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P390854

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2211326	O-Phosphate-P	101	100	P/P	90 - 110

Reference Method: SM 4500 F-C-2011
Batch ID: P390970

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2211416	Fluoride	97.7	99.0	P/P	94 - 107

Reference Method: SM 5310 B-2011
Batch ID: P391060

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2211260	Organic Carbon	98.4	98.9	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P390847

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2211416	Turbidity	3.31	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P391016

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2211680	Chloride	0.649	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P391017

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2211680	Sulfate	0.178	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P391081

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2212207	Ammonia-N	0.417	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P391455

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2211368	Kjeldahl Nitrogen	0.342	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P390960

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2211307	NO2NO3-N	0.475	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P390984

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2211324	Total-P	0.679	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P390854

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2211326	O-Phosphate-P	0.401	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: SM 2120 B-2011
Batch ID: P390921

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2211365	Color (true)	5.78	Sample	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P391089

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2211322	Total Alkalinity	1.20	Sample	P	0 - 8.1

Reference Method: SM 2540 C-2011
Batch ID: P391169

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2211322	TDS	4.04	Sample	P	0 - 10

Reference Method: SM 4500 F-C-2011
Batch ID: P390970

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2211416	Fluoride	0.982	Spike	P	0 - 2.8

Reference Method: SM 5310 B-2011
Batch ID: P391060

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2211260	Organic Carbon	0.419	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: A102455

Included Lab Sample IDs: 2211409

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	100	99.6	P/P	90 - 110
Sulfate	99.2	99.1	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A102471

Included Lab Sample IDs: 2211409

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	98.5	102	P/P	95 - 105

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A102472

Included Lab Sample IDs: 2211411

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.5	99.0	P/P	90 - 110

Reference Method: SM 2120 B-2011

Run ID: A102494

Included Lab Sample IDs: 2211409

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	102	102	P/P	85 - 115

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A102515

Included Lab Sample IDs: 2211410

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	99.5	100	P/P	90 - 110

Reference Method: SM 4500 F-C-2011

Run ID: A102518

Included Lab Sample IDs: 2211409

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	99.5	100	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A102548

Included Lab Sample IDs: 2211410

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	98.8	99.1	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A102553

Included Lab Sample IDs: 2211410

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.1	96.4	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 2320 B-2011

Run ID: A102561

Included Lab Sample IDs: 2211409

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A102574

Included Lab Sample IDs: 2211410

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	98.0	97.5	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A102694

Included Lab Sample IDs: 2211410

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	103	97.5	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	MS
						SMP	
EPA 180.1 Rev. 2.0	Turbidity					3.31	
EPA 300.0 Rev. 2.1	Chloride	98.3	97.7	99.0		0.649	
	Sulfate	99.1	98.0	99.6		0.178	
EPA 350.1 Rev. 2.0	Ammonia-N	95.6	94.8	94.2			0.417
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	107	70.6	70.2			0.342
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	101	97.0	97.5			0.475
EPA 365.1 Rev. 2.0	Total-P	102	105	104			0.679
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	102	101	100			0.401
SM 2120 B-2011	Color (true)	98.6				5.78	
SM 2320 B-2011	Total Alkalinity	103				1.20	
SM 2540 C-2011	TDS					4.04	
SM 4500 F-C-2011	Fluoride	97.9	97.7	99.0			0.982
SM 5310 B-2011	Organic Carbon	98.2	98.4	98.9			0.419

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2211409
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2211409
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2211409
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2211410
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2211410
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2211410
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2211410
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2211411
SM 2120 B-2011	True Color measured at 450 nm (not valid for NPDES monitoring)	2211409
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2211409
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2211409
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2211409
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2211409
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2211410

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	12/08/2020			12/08/2020 16:15	Yen Ta	2211409
EPA 300.0 Rev. 2.1	12/08/2020			12/10/2020 18:52	Lipi Saha	2211409
EPA 350.1 Rev. 2.0	12/08/2020			12/13/2020 16:06	Ping Hua	2211410
EPA 351.2 Rev. 2.0	12/08/2020	12/18/2020 14:40	David Boose	12/20/2020 20:55	Julia Storbeck	2211410
EPA 353.2 Rev. 2.0	12/08/2020			12/10/2020 09:47	Beverly Y. Sanders	2211410
EPA 365.1 Rev. 2.0	12/08/2020	12/10/2020 12:58	Yen Ta	12/14/2020 14:33	Lipi Saha	2211410
EPA 365.1 Rev. 2.0 dissolved	12/08/2020			12/08/2020 16:28	Samantha Davila	2211411
SM 2120 B-2011	12/08/2020			12/08/2020 16:59	Benjamin T. Nordmann	2211409
SM 2320 B-2011	12/08/2020			12/12/2020 02:18	Dale L. Simmons	2211409
SM 2540 C-2011	12/08/2020			12/09/2020 14:21	Yijie Li	2211409
SM 2540 D-2011	12/08/2020			12/09/2020 14:21	Yijie Li	2211409
SM 4500 F-C-2011	12/08/2020			12/09/2020 19:10	Dale L. Simmons	2211409
SM 5310 B-2011	12/08/2020			12/10/2020 20:18	Madeline Gruver	2211410