Chemical Analysis Report

CEN-DIST-2016-03-04-01

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

Event Description: **Wilson Head Spring+HA**
Request ID: **RQ-2016-02-29-50**
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: Mike Linger

For additional information please contact
Timothy W. Fitzpatrick
Liang-Tsair Lin, Ph.D.
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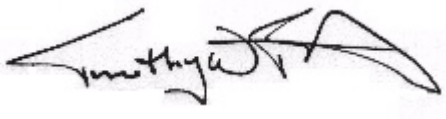
Phone (850) 245-8085

Certified by: Timothy Fitzpatrick, Program Administrator

Date Certified: 21-MAR-2016 16:31



NON-CONFORMANCE REPORT INCLUDED

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 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: WILSON HEAD SPRINGS @ 20M E. OF BOIL **Collection Date/Time: 03/02/2016 11:10**

Field ID: G4CE0098 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1777102	EPA 180.1 Rev. 2.0	Turbidity	0.20	A	NTU	P299781	
	EPA 300.0 Rev. 2.1	Chloride	8.2		mg Cl/L	P300100	
		Sulfate	17		mg SO4/L	P300103	
	SM 2120 B	Color (true)	2.5	U	PCU	P299748	
	SM 2320 B-97	Total Alkalinity	189	A	mg CaCO3/L	P300269	
	SM 2540 C-97	TDS	233		mg/L	P300374	
	SM 2540 D-97	TSS	2	U	mg/L	P300019	
	SM 4500 F-C-97	Fluoride	0.063	I	mg F/L	P300256	
1777103	EPA 350.1 Rev. 2.0	Ammonia-N	0.003	I	mg N/L	P300435	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.12	I	mg N/L	P300185	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.41		mg N/L	P300168	
	EPA 365.1 Rev. 2.0	Total-P	0.049		mg P/L	P300310	
	SM 5310 B-00	Organic Carbon	0.50	U	mg C/L	P300235	
1777104	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.041	Q	mg P/L	P299774	

Ref. Method and Comment:
EPA 180.1 Rev. 2.0: The precision data is unavailable due to the low analyte concentration in the QC sample.
SM 2120 B: The precision data is unavailable due to the low analyte concentration in the QC sample.
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: Matrix spike recovery data is unavailable due to high analyte concentration in the QC sample.
EPA 365.1 Rev. 2.0 dissolved: O-Phosphate-P: The sample expired upon receipt.

Non-Conformance Report

NCR ID: 5731

Event(s)	Job(s)	Sample(s)	Test(s)
CEN-DIST-2016-03-04-01			

NCR Type: SHIPPING/RECEIVING **NCR Category: Samples arrived late**

Observation: Samples arrived 1 day late by FedEx.
Tracking number: 8094 7802 8170

Resolution: Biology and Chemistry supervisors were notified by phone and email. Samples logged in 1 hour before expiration.

Authorised by/Date: Kathryn Holland 3/7/2016

The Non-Conformance Report details exceptions or problems encountered with the events/jobs/samples/test.
Please address questions to:

Chemistry Tim Fitzpatrick (850) 245-8085
Biology Lori Wolfe (850) 245-8177

Quality Assurance Report
Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P299781

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Quality Assurance Report
Method Blank Results

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P300100

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P300103

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P300435

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P300185

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P300168

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P300310

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P299774

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

Reference Method: SM 2120 B
Batch ID: P299748

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P300269

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

Quality Assurance Report
Method Blank Results

Reference Method: SM 2540 C-97
Batch ID: P300374

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P300019

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P300256

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P300235

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: P300100

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P300103

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P300435

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	94.3		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P300185

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	96.4		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P300168

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P300168

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: P300310

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P299774

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

Reference Method: SM 2320 B-97
Batch ID: P300269

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	102		P	95 - 105

Reference Method: SM 4500 F-C-97
Batch ID: P300256

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	101		P	94 - 108

Reference Method: SM 5310 B-00
Batch ID: P300235

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	96.2		P	85 - 115

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P300100

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1777174	Chloride	102		P	90 - 110
1777177	Chloride	103		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P300103

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1777174	Sulfate	99.7		P	90 - 110
1777177	Sulfate	98.4		P	90 - 110

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P300435

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1777135	Ammonia-N	94.0	95.4	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P300185

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1776978	Kjeldahl Nitrogen	86.4	90.3	F/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P300168

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1777093	NO2NO3-N	99.7	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P299774

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1777254	O-Phosphate-P	97.6	102	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P300256

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1777102	Fluoride	98.0	98.6	P/P	94 - 107

Reference Method: SM 5310 B-00
Batch ID: P300235

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1776977	Organic Carbon	94.1	91.0	P/P	85 - 115

Quality Assurance Report
Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P300100

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1777174	Chloride	0.00245	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P300103

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1777174	Sulfate	0.908	Sample	P	0 - 20

Quality Assurance Report
Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P300435

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1777135	Ammonia-N	1.15	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P300185

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1776978	Kjeldahl Nitrogen	2.17	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P300168

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1777093	NO2NO3-N	0.962	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P300310

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1776923	Total-P	1.61	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P299774

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1777254	O-Phosphate-P	4.21	Spike	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P300269

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1777102	Total Alkalinity	0.347	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
Batch ID: P300374

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1776226	TDS	7.73	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P300256

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1777102	Fluoride	0.467	Spike	P	0 - 3.7

Quality Assurance Report
Precision

Reference Method: SM 5310 B-00
Batch ID: P300235

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1776977	Organic Carbon	1.59	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

Reference Method: SM 2120 B
Run ID: A67994
Included Lab Sample IDs: 1777102

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	96.3	97.4	P/P	90 - 115

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A68007
Included Lab Sample IDs: 1777104

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.7	99.2	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A68009
Included Lab Sample IDs: 1777102

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	99.5	99.5	P/P	95 - 105

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A68089
Included Lab Sample IDs: 1777102

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	99.7	98.7	P/P	90 - 110
Sulfate	98.7	98.2	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A68145
Included Lab Sample IDs: 1777103

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

Reference Method: SM 5310 B-00
Run ID: A68174
Included Lab Sample IDs: 1777103

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	98.2	99.0	P/P	90 - 110

Quality Assurance Report
Calibration Verification

Reference Method: SM 4500 F-C-97
Run ID: A68180
Included Lab Sample IDs: 1777102

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

Reference Method: SM 2320 B-97
Run ID: A68185
Included Lab Sample IDs: 1777102

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	102	98.7	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A68219
Included Lab Sample IDs: 1777103

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

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A68230
Included Lab Sample IDs: 1777103

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	96.2	96.3	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A68273
Included Lab Sample IDs: 1777103

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	99.6	97.6	P/P	90 - 110

* Pass/Fail determinations are made for each bracketing calibration verification check.
Control limits for initial calibration checks may be different from those for continuing checks, depending on method requirements.
Where they are different, both control limits are provided.

Quality Assurance Report
Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision		
					LCS	SMP	MS
EPA 300.0 Rev. 2.1	Chloride	103	102	103		0.0024	
	Sulfate	101	99.7	98.4		0.908	
EPA 350.1 Rev. 2.0	Ammonia-N	94.3	94.0	95.4			1.15
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	96.4	86.4	90.3			2.17
EPA 353.2 Rev. 2.0	NO2NO3-N	103	99.7	101			0.962
EPA 365.1 Rev. 2.0	Total-P	103					1.61
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	100	97.6	102			4.21
SM 2320 B-97	Total Alkalinity	102				0.347	
SM 2540 C-97	TDS					7.73	
SM 4500 F-C-97	Fluoride	101	98.0	98.6			0.467
SM 5310 B-00	Organic Carbon	96.2	94.1	91.0			1.59

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1777102
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1777102
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1777102
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1777103
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1777103
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1777103
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1777103
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1777104
SM 2120 B / E31780	True Color measured at 450 nm	1777102
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	1777102
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1777102
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1777102
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1777102
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1777103

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	03/04/2016			03/04/2016 10:46	Sima Feizi	1777102
EPA 300.0 Rev. 2.1	03/04/2016			03/09/2016	Julia Storbeck	1777102
EPA 350.1 Rev. 2.0	03/04/2016			03/15/2016	Diana M. Turner	1777103
EPA 351.2 Rev. 2.0	03/04/2016	03/11/2016	Christopher Armour	03/16/2016	Rochelle Y Jackson	1777103
EPA 353.2 Rev. 2.0	03/04/2016			03/10/2016	Peter D. Kaus	1777103
EPA 365.1 Rev. 2.0	03/04/2016	03/14/2016	Lipi Saha	03/15/2016	Lipi Saha	1777103
EPA 365.1 Rev. 2.0 dissolved	03/04/2016			03/04/2016 13:12	Julia Storbeck	1777104
SM 2120 B	03/04/2016			03/04/2016 10:55	Rochelle Y Jackson	1777102
SM 2320 B-97	03/04/2016			03/13/2016	Dale L. Simmons	1777102
SM 2540 C-97	03/04/2016			03/07/2016	Yijie Li	1777102
SM 2540 D-97	03/04/2016			03/07/2016	Yijie Li	1777102
SM 4500 F-C-97	03/04/2016			03/10/2016	Dale L. Simmons	1777102
SM 5310 B-00	03/04/2016			03/10/2016	Sofia Elnemr	1777103