

## Organic Carbon Case Narrative

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### Colorado Oil & Gas Conservation Commission TBAL

Work Order Number: 1309158

1. This report consists of 1 water sample.
2. The sample was received cool and intact by ALS on 09/12/13.
3. The sample had been correctly preserved for the requested analysis.
4. The sample was prepared for analysis based on Methods for the Chemical Analysis of Waters and Wastes (MCAWW), May 1994 procedures.
5. The samples were analyzed following MCAWW procedures for the current revision of the following SOP and method:

<u>Analyte</u>	<u>Method</u>	<u>SOP #</u>
TOC (Total Organic Carbon)	415.1	670

6. All standards and solutions were used within their recommended shelf life.
7. The sample was prepared and analyzed within the established hold time for TOC analysis.

All in house quality control procedures were followed, as described below.

8. General quality control procedures.
  - n A preparation (method) blank, laboratory control sample (LCS), and laboratory control sample duplicate (LCSD) were prepared and analyzed with the samples in this preparation batch. There were not more than 20 samples in this preparation batch.



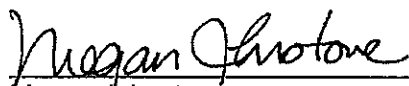
- The method blank associated with this batch was below the reporting limit for the requested analyte. This indicates that no contaminants were introduced to the samples during preparation and analysis.
- The LCS and LCSD were within the acceptance limits for TOC analysis.
- All continuing calibration verifications (CCV) associated with this batch were within the acceptance criteria for the requested analyte. This indicates a valid calibration and stable instrument conditions.

9. Matrix specific quality control procedures.

Per method requirements, matrix QC was performed for this analysis. Since a sample from this Order Number was not the selected quality control (QC) sample, matrix specific QC results are not included in this report.

10. Sample dilutions were not required for the requested analysis.

The data contained in the following report have been reviewed and approved by the personnel listed below. In addition, ALS certifies that the analyses reported herein are true, complete and correct within the limits of the methods employed.



Megan Johnstone  
Organics Primary Data Reviewer

9/19/13

Date



Organics Final Data Reviewer

9/19/13

Date



### **Data Reporting Qualifiers**

The following qualifiers are used by the laboratory when reporting results of inorganic analyses.

- Concentration qualifier -- If the analyte was analyzed for but not detected a "U" is entered.
- QC qualifier -- Specified entries and their meanings are as follows:
  - N - Spiked sample recovery not within control limits.
  - \* - Duplicate analysis (relative percent difference) not within control limits.
  - B - The method blank for the analysis contained the analyte of interest above the reporting limit.



## **Chain of Custody**

# ALS Environmental -- FC

## Sample Number(s) Cross-Reference Table

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**OrderNum:** 1309158

**Client Name:** Colorado Oil & Gas Conservation Commission

**Client Project Name:** TBAL

**Client Project Number:**

**Client PO Number:** PHA 14-22

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Client Sample Number	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
752831 Szwaja	1309158-1		WATER	11-Sep-13	9:20





ALS Environmental - Fort Collins  
CONDITION OF SAMPLE UPON RECEIPT FORM

Client: COGCC

Workorder No: 1309158

Project Manager: ARW

Initials: LAS

Date: 9/12/13

1. Does this project require any special handling in addition to standard ALS procedures?		YES <input checked="" type="radio"/> NO <input checked="" type="radio"/>
2. Are custody seals on shipping containers intact?	NONE	YES <input checked="" type="radio"/> NO <input type="radio"/>
3. Are Custody seals on sample containers intact?	<del>NONE</del>	YES <input checked="" type="radio"/> NO <input type="radio"/>
4. Is there a COC (Chain-of-Custody) present or other representative documents?		YES <input checked="" type="radio"/> NO <input type="radio"/>
5. Are the COC and bottle labels complete and legible?		YES <input checked="" type="radio"/> NO <input type="radio"/>
6. Is the COC in agreement with samples received? (IDs, dates, times, no. of samples, no. of containers, matrix, requested analyses, etc.)		YES <input checked="" type="radio"/> NO <input type="radio"/>
7. Were airbills / shipping documents present and/or removable?	DROP OFF	YES <input checked="" type="radio"/> NO <input type="radio"/>
8. Are all aqueous samples requiring preservation preserved correctly? (excluding volatiles)	N/A	YES <input checked="" type="radio"/> NO <input type="radio"/>
9. Are all aqueous non-preserved samples pH 4-9?	N/A	YES <input checked="" type="radio"/> NO <input type="radio"/>
10. Is there sufficient sample for the requested analyses?		YES <input checked="" type="radio"/> NO <input type="radio"/>
11. Were all samples placed in the proper containers for the requested analyses?		YES <input checked="" type="radio"/> NO <input type="radio"/>
12. Are all samples within holding times for the requested analyses?		YES <input checked="" type="radio"/> NO <input type="radio"/>
13. Were all sample containers received intact? (not broken or leaking, etc.)		YES <input checked="" type="radio"/> NO <input type="radio"/>
14. Are all samples requiring no headspace (VOC, GRO, RSK/MEE, Rx CN/S, radon) headspace free? Size of bubble: ____ < green pea ____ > green pea	N/A	YES <input checked="" type="radio"/> NO <input type="radio"/>
15. Do any water samples contain sediment? Amount Amount of sediment: ____ dusting ____ moderate ____ heavy	N/A	YES <input type="radio"/> NO <input checked="" type="radio"/>
16. Were the samples shipped on ice?		YES <input checked="" type="radio"/> NO <input type="radio"/>
17. Were cooler temperatures measured at 0.1-6.0°C? IR gun used*: <u>#2</u> #4 RAD ONLY		YES <input checked="" type="radio"/> NO <input type="radio"/>
Cooler #: <u>1</u>		
Temperature (°C): <u>2.4</u>		
No. of custody seals on cooler: <u>1</u>		
External µR/hr reading: <u>16</u>		
Background µR/hr reading: <u>10</u> <u>11</u> <u>Lat 9/12/13</u>		
Were external µR/hr readings ≤ two times background and within DOT acceptance criteria? <input checked="" type="radio"/> YES / NO / NA (If no, see Form 008.)		

Additional Information: PROVIDE DETAILS BELOW FOR A NO RESPONSE TO ANY QUESTION ABOVE, EXCEPT #1 AND #16.

If applicable, was the client contacted? YES / NO / ☒ NA Contact: \_\_\_\_\_

Date/Time: \_\_\_\_\_

Project Manager Signature / Date: \_\_\_\_\_

\*IR Gun #2: Oakton, SN 29922500201-0066  
\*IR Gun #4: Oakton, SN 2372220101-0002

1309158

From: (719) 846-3091  
Peter Gritaudas  
Colo. Oil & Gas Cons. Comm.  
213 Corundum RD  
Trinidad, CO 81082

Origin ID: PUBA

**FedEx**  
Express



J13201306280326

SHIP TO: (970) 498-1511

Amy Wolf

ALS Laboratory Group  
225 COMMERCE DR

FORT COLLINS, CO 80524

BILL SENDER

Ship Date: 11SEP13  
ActWgt: 19.0 LB  
CAD: 4076443INET3430

Delivery Address Bar Code



Ref # Invoice #  
PO # special Project TBAL  
Dept #

1191

THU - 12 SEP 10:30A  
PRIORITY OVERNIGHT

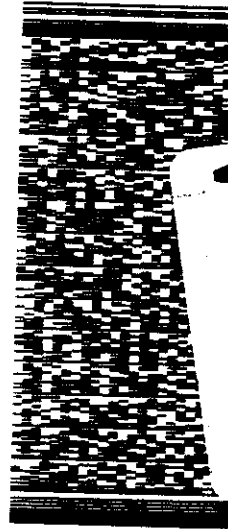
TRK# 7966 6462 0527

0201

72 FTCA 2.4 80524  
CO-US DEN



51AG102561AGE



RT 614 1 A  
0527  
09.12

FZ





## Sample Results

# Organic Carbon

Method EPA415.1

Method Blank

Lab Name: ALS Environmental -- FC

Work Order Number: 1309158

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: TBAL

Lab ID: MO130918-1MB

Sample Matrix: WATER

% Moisture: N/A

Date Collected: N/A

Date Extracted: 18-Sep-13

Date Analyzed: 18-Sep-13

Prep Method: NONE

Prep Batch: MO130918-1

QCBatchID: MO130918-1-1

Run ID: MO130918-1A

Cleanup: NONE

Basis: N/A

File Name: 09181100

Sample Aliquot: 40 ml

Final Volume: 40 ml

Result Units: MG/L

Clean DF: 1

CASNO	Target Analyte	DF	Result	RptLimit LOD/LOQ	Result Qualifier	EPA Qualifier
10-35-5	TOTAL ORGANIC CARBON	1	1	1	U	

Data Package ID: *mo1309158-1*

Date Printed: Thursday, September 19, 2013

ALS Environmental -- FC

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LIMS Version: 6.659

# Organic Carbon

## Method EPA415.1

### Sample Results

Lab Name: ALS Environmental -- FC

Work Order Number: 1309158

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: TBAL

Field ID:	752831 Szwaja	Sample Matrix:	WATER	Prep Batch:	MO130918-1	Analyst:	Steven D. White
Lab ID:	1309158-1	% Moisture:	N/A	QCBatchID:	MO130918-1-1	Sample Aliquot:	40 ML
		Date Collected:	11-Sep-13	Run ID:	MO130918-1A	Final Volume:	40 ML
		Date Extracted:	18-Sep-13	Cleanup:	NONE	Result Units:	MG/L
		Date Analyzed:	18-Sep-13	Basis:	As Received	Clean DF:	1
		Prep Method:	NONE	File Name:	09181100		

CASNO	Target Analyte	Dilution Factor	Result	RptLimit\ LOD\LOQ	Result Qualifier	EPA Qualifier
10-35-5	TOTAL ORGANIC CARBON	1	1	1	U	

Data Package ID: *mo1309158-1*



## **Summary Report Forms**

# Organic Carbon

## Method EPA415.1

### Laboratory Control Sample and Laboratory Control Sample Duplicate

Lab Name: ALS Environmental -- FC

Work Order Number: 1309158

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: TBAL

Lab ID: MO130918-1LCS

Sample Matrix: WATER

% Moisture: N/A

Date Collected: N/A

Date Extracted: 09/18/2013

Date Analyzed: 09/18/2013

Prep Method: NONE

Prep Batch: MO130918-1

QCBatchID: MO130918-1-1

Run ID: MO130918-1A

Cleanup: NONE

Basis: N/A

File Name: 09181100

Sample Aliquot: 40 ml

Final Volume: 40 ml

Result Units: MG/L

Clean DF: 1

CASNO	Target Analyte	Spike Added	LCS Result	Reporting Limit	Result Qualifier	LCS % Rec.	Control Limits
10-35-5	TOTAL ORGANIC CARBON	15	15.9	1		106	85 - 115%

Lab ID: MO130918-1LCSD

Sample Matrix: WATER

% Moisture: N/A

Date Collected: N/A

Date Extracted: 09/18/2013

Date Analyzed: 09/18/2013

Prep Method: NONE

Prep Batch: MO130918-1

QCBatchID: MO130918-1-1

Run ID: MO130918-1A

Cleanup: NONE

Basis: N/A

File Name: 09181100

Sample Aliquot: 40 ml

Final Volume: 40 ml

Result Units: MG/L

Clean DF: 1

CASNO	Target Analyte	Spike Added	LCSD Result	Reporting Limit	Result Qualifier	LCSD % Rec.	RPD Limit	RPD
10-35-5	TOTAL ORGANIC CARBON	15	15.9	1		106	20	0

Data Package ID: mo1309158-1

Date Printed: Thursday, September 19, 2013

ALS Environmental -- FC

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# Prep Batch ID: MO130918-1

Start Date: 09/18/13

End Date: 09/18/13

Concentration Method: NONE

Batch Created By: sdw

Start Time: 11:07

End Time: 21:11

Extract Method: NONE

Date Created: 09/18/13

Prep Analyst: Steven D. White

Initial Volume Units: ml

Time Created: 10:59

**Comments:**

Final Volume Units: ml

Validated By: sdw

DOC / TOC analysis by EPA 415.1 (1 replicate)

Date Validated: 09/19/13

Time Validated: 10:06

QC Batch ID: MO130918-1-1

Lab ID	QC Type	Field ID	Matrix	Date Collected	Initial Wt/Vol	Final Wt/Vol	Cleanup Method	Cleanup DF	Order Number
MO130918-1	RVS	XXXXXX	WATER	XXXXXX	40	40	NONE	1	1309223
MO130918-1	MB	XXXXXX	WATER	XXXXXX	40	40	NONE	1	1309223
MO130918-1	LCS	XXXXXX	WATER	XXXXXX	40	40	NONE	1	1309223
MO130918-1	LCSD	XXXXXX	WATER	XXXXXX	40	40	NONE	1	1309223
1309223-2	MS	XXXXXX	WATER	XXXXXX	40	40	NONE	1	1309223
1309223-2	MSD	XXXXXX	WATER	XXXXXX	40	40	NONE	1	1309223
1309096-2	SMP	XXXXXX	WATER	XXXXXX	40	40	NONE	1	1309096
1309158-1	SMP	752831 Szwaja	WATER	9/11/2013	40	40	NONE	1	1309158
1309163-2	SMP	XXXXXX	WATER	XXXXXX	40	40	NONE	1	1309163
1309163-3	SMP	XXXXXX	WATER	XXXXXX	40	40	NONE	1	1309163
1309163-4	SMP	XXXXXX	WATER	XXXXXX	40	40	NONE	1	1309163
1309163-5	SMP	XXXXXX	WATER	XXXXXX	40	40	NONE	1	1309163
1309163-6	SMP	XXXXXX	WATER	XXXXXX	40	40	NONE	1	1309163
1309163-7	SMP	XXXXXX	WATER	XXXXXX	40	40	NONE	1	1309163
1309217-2	SMP	XXXXXX	WATER	XXXXXX	40	40	NONE	1	1309217
1309223-2	SMP	XXXXXX	WATER	XXXXXX	40	40	NONE	1	1309223
1309223-3	SMP	XXXXXX	WATER	XXXXXX	40	40	NONE	1	1309223
1309223-4	SMP	XXXXXX	WATER	XXXXXX	40	40	NONE	1	1309223
1309223-5	SMP	XXXXXX	WATER	XXXXXX	40	40	NONE	1	1309223
1309223-6	SMP	XXXXXX	WATER	XXXXXX	40	40	NONE	1	1309223
1309227-2	SMP	XXXXXX	WATER	XXXXXX	40	40	NONE	1	1309227
1309227-3	SMP	XXXXXX	WATER	XXXXXX	40	40	NONE	1	1309227
1309228-2	SMP	XXXXXX	WATER	XXXXXX	40	40	NONE	1	1309228
1309228-3	SMP	XXXXXX	WATER	XXXXXX	40	40	NONE	1	1309228
1309243-2	SMP	XXXXXX	WATER	XXXXXX	40	40	NONE	1	1309243
1309243-3	SMP	XXXXXX	WATER	XXXXXX	40	40	NONE	1	1309243

# TOTAL ORGANIC CARBON

Method EPA415.1

## Calibration Verifications

Lab Name: ALS Environmental -- FC

Work Order Number: 1309158

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: TBAL

Run ID: MO130918-1A

Result Units: MG/L

Lab ID	Verification Type	Date Analyzed	Time Analyzed	Spike Added	Result	Reporting Limit	Result Qualifier	% Rec.	Control Limits
ICV	Initial Calibration	10/24/2012	12:49	15	14.2	1	N/A	95	85 - 115
CCV1	Continuing Calibration	9/18/2013	11:53	10	10.2	1	N/A	102	85 - 115
CCV2	Continuing Calibration	9/18/2013	13:29	10	10.4	1	N/A	104	85 - 115

Data Package ID: *mo1309158-1*

Date Printed: Thursday, September 19, 2013

ALS Environmental -- FC

LIMS Version: 6.659

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## Raw Data



# DOC / TOC - Analysis Run Log

Calibration Date: 10/24/2012  
 Calibration Curve Filename: 10241021  
 File containing ICV for curve: 10241021  
 TOC-Talk Method Used: TOC Range 0.1 - 20 ppm C

Instrument: Phoenix 8000 # 01011007  
 SOP 670 Rev # 14  
 Analysis Date: 10/24/2012  
 Analyst: Phillip Schlueter

ppb C	ppm C	DNR	Position	Sample ID	Comment	Data Filename	Reps.	Initial Sample Volume (mL)	Final Vol. of Diluted Sample (mL)	Vol of 1000 ug/mL TOC Std Spiked* (mL)	NOTES:
283.5	0.2835	X	1	BLANK	DOC / TOC - Calibration	10241021	1	40	40	NA	Timestamp: 10/24/2012 @ 1027
-70.0	-0.0700	X	2	BLANK	DOC / TOC - Calibration	10241021	1	40	40	NA	
39.9	0.0399	X	3	BLANK	DOC / TOC - Calibration	10241021	1	40	40	NA	
-11.0	-0.0110	X	4	Blank TC Range 2	DOC / TOC - Calibration	10241021	5	40	40	NA	
-12.8	-0.0128	X	5	BLANK	DOC / TOC - Calibration	10241021	1	40	40	NA	
0.0		X	6	BLANK	DOC / TOC - Calibration	10241021	1	40	40	NA	
0.0			7	0.000001 PPM	DOC / TOC - Calibration	10241021	1	40	40	NA	
0.0			8	0.1 PPM	DOC / TOC - Calibration	10241021	1	0.1	40	NA	
0.0			9	0.5 PPM	DOC / TOC - Calibration	10241021	1	0.5	40	NA	
0.0			10	1.0 PPM	DOC / TOC - Calibration	10241021	1	1	40	NA	
0.0			11	5.0 PPM	DOC / TOC - Calibration	10241021	1	5	40	NA	
0.0			12	10 PPM	DOC / TOC - Calibration	10241021	1	10	40	NA	
0.0			13	20 PPM	DOC / TOC - Calibration	10241021	1	20	40	NA	
22.1	0.0221	X	14	BLANK	DOC / TOC - Calibration	10241021	1	40	40	NA	
24.8	0.0248	X	15	BLANK	DOC / TOC - Calibration	10241021	1	40	40	NA	
14213.0	14.2130	X	16	ICV	DOC / TOC - Calibration	10241021	1	40	40	NA	
44.0	0.0440	X	17	BLANK	DOC / TOC - Calibration	10241021	1	40	40	NA	

EPT = Endpoint Timeout

Standard ID	Description	Method ID	Std. Vol. Used	Final Vol.	Exp. Date	Std. Conc.
ST120416-3	Calib. Std.	TOC Range 0.1 - 20 ppm C	NA	NA	4/16/13	40.0
ST120416-4	ICV	TOC Range 0.1 - 20 ppm C	0.6	40.0	4/16/13	1000.0
ST120416-3	RVS	TOC Range 0.1 - 20 ppm C	1.0	40.0	4/16/13	40.0
ST120914-2	CCV	TOC Range 0.1 - 20 ppm C	40.0	40.0	4/16/13	10.0
ST121009-2	LCS	TOC Range 0.1 - 20 ppm C	40.0	40.0	4/16/13	15.0
ST120416-2	*spike Std. for MS/MSD		0.4	40.0	4/16/13	1000.0
RG120916-1	12% Sodium Persulfate Reagent				4/26/13	
RG120720-1	Diluted Phosphoric Acid Reagent				7/20/13	

Double deionized water (DI) used for all dilutions and all run QC

A\* = 1,600X SERIAL DILUTION  
 1.0ml to 40mls FV = 40X  
 1.0ml to 40mls FV = 40X

B\* = 400X SERIAL DILUTION  
 0.4ml to 40mls FV = 100X  
 10ml to 40mls FV = 4X

C\* = 200X SERIAL DILUTION  
 0.4ml to 40mls FV = 100X  
 20ml to 40mls FV = 2X

Calibration Report Print Date/Time: 2012/10/24 14:54:41

Cal. Curve ID: 102412LOW  
 Created: 10/24/2012 14:47  
 Calibration Factor (m): 3.604e+05  
 Y Intercept (b): 23146  
 r-squared: 0.99916

Standard ID	Y Raw Data	X Expected ug C	Measured ug C	Message Time	Date &
0.000001 PPM	212150	0.000	0.524		10/24/2012 11:25
0.1 PPM	335074	0.400	0.866		10/24/2012 11:33
0.5 PPM	847930	2.000	2.289		10/24/2012 11:42
1.0 PPM	1516877	4.000	4.145		10/24/2012 11:51
5.0 PPM	6915190	20.000	19.125		10/24/2012 12:00
10 PPM	13897066	40.000	38.499		10/24/2012 12:11
20 PPM	29196154	80.000	80.953	Endpoint Time	10/24/2012 12:22

Sample ID	Result	Std. Dev.	RSD	Mode	ALT
BLANK	0.2835		TOC		
BLANK	-0.0700		TOC		
BLANK	0.0399		TOC		
Blank TC Range 2.....	230257...	135667..	58.92...TC	..	
BLANK	-0.0110		TOC		
BLANK	-0.0128		TOC		
0.000001 PPM.....	212150...	..	...TOC	..	
0.1 PPM	335074		TOC		
0.5 PPM	847930		TOC		
1.0 PPM.....	1516877...	..	...TOC	..	
5.0 PPM	6915189		TOC		
10 PPM	13897066		TOC		
20 PPM.....	29196156...	..	...TOC	..	
BLANK	0.0221		TOC		
BLANK	0.0248		TOC		
ICV.....	14.2130...	..	...TOC	..	
BLANK	0.0440		TOC		

Method ID	Sample Type	Vial	Timestamp	Message
=====				
TOC Range 0.1 - 20 p	Sample	1	10/24/2012 10:27	
TOC Range 0.1 - 20 p	Sample	2	10/24/2012 10:35	
TOC Range 0.1 - 20 p	Sample	3	10/24/2012 10:43	
Blank TC Range 2	Blank TC Range 2	4	10/24/2012 11:02	..
TOC Range 0.1 - 20 p	Sample	5	10/24/2012 11:09	
TOC Range 0.1 - 20 p	Sample	6	10/24/2012 11:17	
TOC Range 0.1 - 20 p	TOC Standard	7	10/24/2012 11:25	..
TOC Range 0.1 - 20 p	TOC Standard	8	10/24/2012 11:33	
TOC Range 0.1 - 20 p	TOC Standard	9	10/24/2012 11:42	
TOC Range 0.1 - 20 p	TOC Standard	10	10/24/2012 11:51	..
TOC Range 0.1 - 20 p	TOC Standard	11	10/24/2012 12:00	
TOC Range 0.1 - 20 p	TOC Standard	12	10/24/2012 12:11	
TOC Range 0.1 - 20 p	TOC Standard	13	10/24/2012 12:22	..EndpointT imeout
TOC Range 0.1 - 20 p	Sample	14	10/24/2012 12:30	
TOC Range 0.1 - 20 p	Sample	15	10/24/2012 12:38	
TOC Range 0.1 - 20 p	Sample	16	10/24/2012 12:49	..
TOC Range 0.1 - 20 p	Sample	17	10/24/2012 12:57	

=====

Sample ID: BLANK Mode: TOC  
Method: TOC Range 0.1 - 20 ppm C Filename: 10241021  
Cal. Curve: 102412LOW Timestamp: 10/24/2012 10:27  
Operator ID: pjs Sample Type:S ample

Rep #	ppm C	ug C	Raw Data Baseline	Beginning Baseline	Ending Time	Integration
1	0.2835	1.1342	519898	12.565	13.056	86

=====

Sample ID: BLANK Mode: TOC  
Method: TOC Range 0.1 - 20 ppm C Filename: 10241021  
Cal. Curve: 102412LOW Timestamp: 10/24/2012 10:35  
Operator ID: pjs Sample Type:S ample

Rep #	ppm C	ug C	Raw Data Baseline	Beginning Baseline	Ending Time	Integration
1	-0.0700	-0.2798	180540	10.726	11.223	84

=====

Sample ID: BLANK Mode: TOC  
Method: TOC Range 0.1 - 20 ppm C Filename: 10241021  
Cal. Curve: 102412LOW Timestamp: 10/24/2012 10:43  
Operator ID: pjs Sample Type:S ample

Rep #	ppm C	ug C	Raw Data Baseline	Beginning Baseline	Ending Time	Integration
1	0.0399	0.1597	286030	10.672	11.171	102

=====

Sample ID: Blank TC Range 2 Mode: TC  
Method: Blank TC Range 2 Filename: 10241021  
Cal. Curve: default Timestamp: 10/24/2012 11:02  
Operator ID: pjs Sample Type:Blank TC Range 2

Rep #	ppm C	ug C	Raw Data Baseline	Beginning Baseline	Ending Time	Integration
1		453640	11.218	11.717	121	
2		140720	11.425	11.921	95	
3		141684	11.612	12.111	94	
4		266078	11.808	12.306	137	
5		149161	12.118	12.617	96	

-----  
<<<Statistics>>> Mean: 230257 Std Dev: 135667 RSD: 58.92  
=====

Sample ID: BLANK Mode: TOC  
Method: TOC Range 0.1 - 20 ppm C Filename: 10241021  
Cal. Curve: 102412LOW Timestamp: 10/24/2012 11:09  
Operator ID: pjs Sample Type:S ample

Rep #	ppm C	ug C	Raw Data	Beginning	Ending	Integration
			Baseline	Baseline	Time	
1	-0.0110	-0.0441	175063	12.471	12.969	86

=====

Sample ID: BLANK Mode: TOC  
Method: TOC Range 0.1 - 20 ppm C Filename: 10241021  
Cal. Curve: 102412LOW Timestamp: 10/24/2012 11:17  
Operator ID: pjs Sample Type:S ample

Rep #	ppm C	ug C	Raw Data	Beginning	Ending	Integration
			Baseline	Baseline	Time	
1	-0.0128	-0.0513	173331	12.641	13.141	93

=====

Sample ID: 0.000001 PPM Mode: TOC  
Method: TOC Range 0.1 - 20 ppm C Filename: 10241021  
Cal. Curve: 102412LOW Timestamp: 10/24/2012 11:25  
Operator ID: pjs Sample Type:T OC Standard

Rep #	ppm C	ug C	Raw Data	Beginning	Ending	Integration
			Baseline	Baseline	Time	
1		212150	13.360	13.856	91	

=====

Sample ID: 0.1 PPM Mode: TOC  
Method: TOC Range 0.1 - 20 ppm C Filename: 10241021  
Cal. Curve: 102412LOW Timestamp: 10/24/2012 11:33  
Operator ID: pjs Sample Type:T OC Standard

Rep #	ppm C	ug C	Raw Data	Beginning	Ending	Integration
			Baseline	Baseline	Time	
1		335074	13.492	13.992	95	

=====

Sample ID: 0.5 PPM                      Mode: TOC  
 Method: TOC Range 0.1 - 20 ppm C      Filename: 10241021  
 Cal. Curve: 102412LOW                  Timestamp: 10/24/2012 11:42  
 Operator ID: pjs                      Sample Type:T OC Standard

Rep #	ppm C	ug C	Raw Data Baseline	Beginning Baseline	Ending Time	Integration
1		847930	13.590	14.087	113	

Sample ID: 1.0 PPM                      Mode: TOC  
 Method: TOC Range 0.1 - 20 ppm C      Filename: 10241021  
 Cal. Curve: 102412LOW                  Timestamp: 10/24/2012 11:51  
 Operator ID: pjs                      Sample Type:T OC Standard

Rep #	ppm C	ug C	Raw Data Baseline	Beginning Baseline	Ending Time	Integration
1		1516877	13.946	14.443	124	

Sample ID: 5.0 PPM                      Mode: TOC  
 Method: TOC Range 0.1 - 20 ppm C      Filename: 10241021  
 Cal. Curve: 102412LOW                  Timestamp: 10/24/2012 12:00  
 Operator ID: pjs                      Sample Type:T OC Standard

Rep #	ppm C	ug C	Raw Data Baseline	Beginning Baseline	Ending Time	Integration
1		6915189	14.129	14.626	183	

Sample ID: 10 PPM                      Mode: TOC  
 Method: TOC Range 0.1 - 20 ppm C      Filename: 10241021  
 Cal. Curve: 102412LOW                  Timestamp: 10/24/2012 12:11  
 Operator ID: pjs                      Sample Type:T OC Standard

Rep #	ppm C	ug C	Raw Data Baseline	Beginning Baseline	Ending Time	Integration
1		13897066	14.329	14.828	232	

Sample ID: 20 PPM                      Mode: TOC  
 Method: TOC Range 0.1 - 20 ppm C      Filename: 10241021  
 Cal. Curve: 102412LOW                  Timestamp: 10/24/2012 12:22

Operator ID: pjs

Sample Type:T OC Standard

Rep #	ppm C	ug C	Raw Data Baseline	Beginning Baseline	Ending Time	Integration
1		29196156	14.840	15.416	251	

-----  
LastM essage: Endpoint Timeout  
=====

Sample ID: BLANK Mode: TOC  
Method: TOC Range 0.1 - 20 ppm C Filename: 10241021  
Cal. Curve: 102412LOW Timestamp: 10/24/2012 12:30  
Operator ID: pjs Sample Type:S ample

Rep #	ppm C	ug C	Raw Data Baseline	Beginning Baseline	Ending Time	Integration
1	0.0221	0.0883	217468	14.795	15.292	91

=====

Sample ID: BLANK Mode: TOC  
Method: TOC Range 0.1 - 20 ppm C Filename: 10241021  
Cal. Curve: 102412LOW Timestamp: 10/24/2012 12:38  
Operator ID: pjs Sample Type:S ample

Rep #	ppm C	ug C	Raw Data Baseline	Beginning Baseline	Ending Time	Integration
1	0.0248	0.0994	221448	15.071	15.571	90

=====

Sample ID: ICV Mode: TOC  
Method: TOC Range 0.1 - 20 ppm C Filename: 10241021  
Cal. Curve: 102412LOW Timestamp: 10/24/2012 12:49  
Operator ID: pjs Sample Type:S ample

Rep #	ppm C	ug C	Raw Data Baseline	Begin ning	Ending	Integration
1	14.2130	56.8521	20673514	15.134	15.633	221

=====

Sample ID: BLANK Mode: TOC  
Method: TOC Range 0.1 - 20 ppm C Filename: 10241021  
Cal. Curve: 102412LOW Timestamp: 10/24/2012 12:57  
Operator ID: pjs Sample Type:S ample



Rep #	ppm C	ug C	Raw Data Baseline	Beginning Baseline	Ending Time	Integration
1	0.0440	0.1760	249073	15.337	15.832	90

=====

# DOC / TOC - Analysis Run Log

Calibration Date: 10/24/2012  
 Calibration Curve Filename: 10241021  
 File containing ICV for curve: 10241021  
 TOC-Talk Method Used: TOC Range 0.1 - 20 ppm C

Instrument: Phoenix 8000 # 01011007  
 SOP 670 Rev # 14  
 Analysis 09/18/2013  
 Analyst: Steven D. White

ppb C	ppm C	DNR	Position	Sample ID	Comment	Data Filename	Reps.	Initial Sample Volume (mL)	Final Vol. of Diluted Sample (mL)	Vol of 1000 ug/mL TOC Std Spiked (mL)	NOTES:
440.4	0.4404		1	BLANK	DOC / TOC - EPA 415.1	09181100	1	40	40	NA	Timeslamp: 09/18/2013 @ 11:07
15728.8	15.7288		2	PRIME	DOC / TOC - EPA 415.1	09181100	1	40	40	NA	
162.8	0.1628		3	BLANK	DOC / TOC - EPA 415.1	09181100	1	40	40	NA	
			4	Blank TC Range 2	DOC / TOC - EPA 415.1	09181100	5	40	40	NA	
			5	CCV1	DOC / TOC - EPA 415.1	09181100	1	40	40	NA	
10219.1	10.2191		6	MO130918-1MB	DOC / TOC - EPA 415.1	09181100	1	40	40	NA	
134.0	0.1340		7	MO130918-1RVS	DOC / TOC - EPA 415.1	09181100	1	40	40	NA	
1107.7	1.1077		8	MO130918-1LCS	DOC / TOC - EPA 415.1	09181100	1	40	40	NA	
15810.8	15.8108		9	MO130918-1LCS	DOC / TOC - EPA 415.1	09181100	1	40	40	NA	
15851.3	15.8513		10	MO130918-1LCS	DOC / TOC - EPA 415.1	09181100	1	40	40	NA	
1548.9	1.5489		11	1309096-2	DOC / TOC - EPA 415.1	09181100	1	40	40	NA	
708.5	0.7085		12	1309158-1	DOC / TOC - EPA 415.1	09181100	1	40	40	NA	
1093.2	1.0932		13	1309217-2	DOC / TOC - EPA 415.1	09181100	1	40	40	NA	
8176.9	8.1769		14	1309227-2	DOC / TOC - EPA 415.1	09181100	1	40	40	NA	
771.5	0.7715		15	1309227-3	DOC / TOC - EPA 415.1	09181100	1	40	40	NA	
10447.5	10.4475		16	CCV2	DOC / TOC - EPA 415.1	09181100	1	40	40	NA	
4322.7	4.3227		17	1309228-2	DOC / TOC - EPA 415.1	09181100	1	40	40	NA	
9107.8	9.1078		18	1309228-3	DOC / TOC - EPA 415.1	09181100	1	40	40	NA	
5902.5	5.9025		19	1309243-2 200X	DOC / TOC - EPA 415.1	09181100	1	40	40	NA	
5965.1	5.9651		20	1309243-3 200X	DOC / TOC - EPA 415.1	09181100	1	40	40	NA	
47137.4	47.1374	E	21	1309163-6 40X	DOC / TOC - EPA 415.1	09181100	1	40	40	NA	
781.3	0.7813		22	1309163-2	DOC / TOC - EPA 415.1	09181100	1	40	40	NA	
4114.5	4.1145		23	1309163-4	DOC / TOC - EPA 415.1	09181100	1	40	40	NA	
16371.2	16.3712		24	1309163-5	DOC / TOC - EPA 415.1	09181100	1	40	40	NA	
8724.0	8.7240		25	CCV3	DOC / TOC - EPA 415.1	09181100	1	40	40	NA	
10723.2	10.7232		26	1309163-7	DOC / TOC - EPA 415.1	09181100	1	40	40	NA	
1042.5	1.0425		27	1309223-5	DOC / TOC - EPA 415.1	09181100	1	40	40	NA	
2490.1	2.4901		28	1309223-6	DOC / TOC - EPA 415.1	09181100	1	40	40	NA	
1830.5	1.8305		29	1309163-6 320X	DOC / TOC - EPA 415.1	09181100	1	40	40	NA	
18099.2	18.0992		30	1309223-2 320X	DOC / TOC - EPA 415.1	09181100	1	40	40	NA	
20107.9	20.1079	E	31	1309223-2MSD 320X	DOC / TOC - EPA 415.1	09181100	1	40	40	NA	
32093.8	32.0938	E	32	1309223-2MSD 320X	DOC / TOC - EPA 415.1	09181100	1	40	40	NA	
32273.9	32.2739	E	33	1309223-3 320X	DOC / TOC - EPA 415.1	09181100	1	40	40	NA	
19051.0	19.0510	E	34	1309223-4 320X	DOC / TOC - EPA 415.1	09181100	1	40	40	NA	
17231.7	17.2317		35	CCV4	DOC / TOC - EPA 415.1	09181100	1	40	40	NA	
10183.5	10.1835		36	1309223-2 800X	DOC / TOC - EPA 415.1	09181100	1	40	40	NA	
7863.9	7.8639		37	Empty Vial	DOC / TOC - EPA 415.1	09181100	1	40	40	NA	
18386.9	18.3869		38	MO130918-2MB	DOC / TOC - SW 9060	09181100	4	40	40	NA	
18413.7	18.4137		39	MO130918-2RVS	DOC / TOC - SW 9060	09181100	4	40	40	NA	
195.2	0.1952		40	MO130918-2LCS	DOC / TOC - SW 9060	09181100	4	40	40	NA	
1082.6	1.0826		41	MO130918-2LCS	DOC / TOC - SW 9060	09181100	4	40	40	NA	
16886.8	16.8868		42	1309173-7	DOC / TOC - SW 9060	09181100	4	40	40	NA	
16877.2	16.8772		43	CCV5	DOC / TOC - SW 9060	09181100	4	40	40	NA	
1389.5	1.3895		44	1309195-2	DOC / TOC - SW 9060	09181100	4	40	40	NA	
10354.2	10.3542		45	BLANK	DOC / TOC - SW 9060	09181100	4	40	40	NA	
84860.7	84.8607	E	46	CCV6	DOC / TOC - SW 9060	09181100	4	40	40	NA	
1353.0	1.3530		47	CCV7	DOC / TOC - SW 9060	09181100	4	40	40	NA	
10329.9	10.3299		48	1309195-3	DOC / TOC - SW 9060	09181100	4	40	40	NA	
60087.3	60.0873	E	49	BLANK	DOC / TOC - SW 9060	09181100	4	40	40	NA	
1517.6	1.5176		50	CCV8	DOC / TOC - SW 9060	09181100	4	40	40	NA	
10577.0	10.5770		51	CCV9	DOC / TOC - SW 9060	09181100	4	40	40	NA	

A\* = 800X SERIAL DILUTION  
 1.0mL to 40mL FV = 40X  
 2.0mL to 40mL FV = 20X

B\* = 320X SERIAL DILUTION  
 1.0mL to 40mL FV = 40X  
 5.0mL to 40mL FV = 8X

C\* = 200X SERIAL DILUTION  
 1.0mL to 40mL FV = 40X  
 8.0mL to 40mL FV = 5X

Standard ID	Description	Calib. Std.	Method ID	Std. Vol. Used	Final Vol.	Exp. Date	Std. Conc.
ST120416-3	ICV	TOC Range 0.1 - 20 ppm C	09181100	NA	40.0	4/16/13	1000.0
ST130501-2	RVS	TOC Range 0.1 - 20 ppm C	09181100	4.0	40.0	5/1/14	40.0
ST130501-4	CCV	TOC Range 0.1 - 20 ppm C	09181100	4.0	40.0	5/1/14	10.0
ST130501-5	LCS	TOC Range 0.1 - 20 ppm C	09181100	4.0	40.0	5/1/14	15.0
ST130501-1	*spike Std. for MS/MSD			0.4	40.0	5/1/14	1000.0
RG130826-1	12% Sodium Persulfate Reagent					8/25/14	
RG130729-1	Diluted Phosphoric Acid Reagent					7/29/14	

Double deionized water (DI) used for all dilutions and all run QC

# DOC / TOC - QC Recovery Calculations

Analysis 09/18/2013

Analyst: Steven D. White

DNR	Sample ID	Concentration Found	Spike Concentration	Spike Recovery %	Recovery Acceptance Limit	Recovery % ok/high/low	RPD % (<20%)	RPD < 20% ok/high
	MO130918-1LCS	15.9108	15.00	106.1	85-115	OK		
	MO130918-1LCSD	15.8513	15.00	105.7	85-115	OK	0.4	OK
X	1309223-2 320X	20.1079						
X	1309223-2MS 320X	32.0938	10.00	119.9	80-120	OK		
X	1309223-2MSD 320X	32.2739	10.00	121.7	80-120	HIGH	0.6	OK
	1309223-2 800X	7.8639						
	1309223-2MS 800X	18.3869	10.00	105.2	80-120	OK		
	1309223-2MSD 800X	18.4137	10.00	105.5	80-120	OK	0.1	OK
	MO130918-2LCS	16.6888	15.00	111.3	85-115	OK		
	MO130918-2LCSD	16.8772	15.00	112.5	85-115	OK	1.1	OK
	CCV1	10.2191	10.00	102.2	85-115	OK	N/A	N/A
	CCV2	10.4475	10.00	104.5	85-115	OK	N/A	N/A
	CCV3	10.7232	10.00	107.2	85-115	OK	N/A	N/A
	CCV4	10.1835	10.00	101.8	85-115	OK	N/A	N/A
	CCV5	10.3542	10.00	103.5	85-115	OK	N/A	N/A
	CCV6	10.5329	10.00	105.3	85-115	OK	N/A	N/A
	CCV7	10.6770	10.00	106.8	85-115	OK	N/A	N/A

# DOC / TOC

## Manual Calculation Check

Analysis 09/18/2013  
Analyst: Steven D. White

BLANK Rep-3:	141,130
BLANK Rep-4:	137,553
BLANK Rep-5:	147,828
Total:	426,511
Mean:	142,170.3
CF = Calibration Factor (h):	360,371.7

MO130918-1 LCS	DOC / TOC - EPA 415.1
RD = Sample Raw Data for 4 mL:	23,077,352.0
Adjusted RD: (RD - Blanks Mean):	22,935,181.7
Adjusted RD / CF:	63.6431
TOC calc results (ppm):	15.9108
TOC reported results (ppm):	15.9108

### SW9060 CALCULATED FROM THE AVERAGE OF 4 RUNS

Run 1:	NA
Run 2:	NA
Run 3:	NA
Run 4:	NA
AVERAGE:	#DIV/0!

Sample ID	Result	Std. Dev.	RSD	Mode	ALT
BLANK	0.4404			TOC	
PRIME	15.7288			TOC	
BLANK	0.1628			TOC	
Blank TC Range 2.....	283108...	301660..	106.55...	TC	..
CCV	10.2191			TOC	
MO130918-1MB	0.1340			TOC	
MO130918-1RVS.....	1.1077...	..	...	TOC	..
MO130918-1LCS	15.9108			TOC	
MO130918-1LCSD	15.8513			TOC	
1309096-2.....	1.5489...	..	...	TOC	..
1309158-1	0.7085			TOC	
1309217-2	1.0932			TOC	
1309227-2.....	8.1769...	..	...	TOC	..
1309227-3	0.7715			TOC	
CCV	10.4475			TOC	
1309228-2.....	4.3227...	..	...	TOC	..
1309228-3	9.1078			TOC	
1309243-2 200X	5.9025			TOC	
1309243-3 200X.....	5.9651...	..	...	TOC	..
1309163-6 40X	47.1374			TOC	
1309163-2	0.7813			TOC	
1309163-3.....	4.1145...	..	...	TOC	..
1309163-4	16.3712			TOC	
1309163-5	8.7240			TOC	
CCV.....	10.7232...	..	...	TOC	..
1309163-7	1.0425			TOC	
1309223-5	2.4901			TOC	
1309223-6.....	1.8305...	..	...	TOC	..
1309163-6 320X	18.0892			TOC	
1309223-2 320X	20.1079			TOC	
1309223-2MS 320X.....	32.0938...	..	...	TOC	..
1309223-2MSD 320X	32.2739			TOC	
1309223-3 320X	19.0510			TOC	
1309223-4 320X.....	17.2317...	..	...	TOC	..
CCV	10.1835			TOC	
1309223-2 800X	7.8639			TOC	
1309223-2MS 800X.....	18.3869...	..	...	TOC	..
<del>1309223-2MSD 800X</del> <i>Emb. vial</i>	<del>-0.0646</del>			TOC	
<del>CCV</del> <i>1309223-2MSD 800X</i>	<del>18.4137</del>			TOC	
MO130918-2MB.....	0.1852...	0.0091..	4.91...	TOC	..
MO130918-2RVS	1.0626	0.0087	0.82	TOC	
MO130918-2LCS	16.6888	0.0659	0.40	TOC	
MO130918-2LCSD.....	16.8772...	0.0539..	0.32...	TOC	..
1309173-7	1.3895	0.0004	0.03	TOC	

*smf 9/19/12*

CCV	10.3542	TOC
1309195-2.....	84.8607... 4.7378..	5.58...TOC ..
BLANK	1.3530	TOC
CCV	10.5329	TOC
1309195-3.....	60.0873... 40.7650..	67.84...TOC ..
BLANK	1.5176	TOC
CCV	10.6770	TOC

Method ID	Sample Type	Vial Timestamp	Message
=====			
TOC Range 0.1 - 20 p	Sample	1 09/18/2013 11:07	
TOC Range 0.1 - 20 p	Sample	2 09/18/2013 11:17	
TOC Range 0.1 - 20 p	Sample	3 09/18/2013 11:25	
Blank TC Range 2	...Blank TC Range 2..	4..09/18/2013 11:44	..
TOC Range 0.1 - 20 p	Sample	5 09/18/2013 11:53	
TOC Range 0.1 - 20 p	Sample	6 09/18/2013 12:02	
TOC Range 0.1 - 20 p...	Sample	.. 7..09/18/2013 12:10	..
TOC Range 0.1 - 20 p	Sample	8 09/18/2013 12:20	
TOC Range 0.1 - 20 p	Sample	9 09/18/2013 12:31	
TOC Range 0.1 - 20 p...	Sample	.. 10..09/18/2013 12:40	..
TOC Range 0.1 - 20 p	Sample	11 09/18/2013 12:49	
TOC Range 0.1 - 20 p	Sample	12 09/18/2013 12:59	Endpoint Timeout
TOC Range 0.1 - 20 p...	Sample	.. 13..09/18/2013 13:10	..
TOC Range 0.1 - 20 p	Sample	14 09/18/2013 13:19	
TOC Range 0.1 - 20 p	Sample	15 09/18/2013 13:29	
TOC Range 0.1 - 20 p...	Sample	.. 16..09/18/2013 13:40	..Endpoint Timeout
TOC Range 0.1 - 20 p	Sample	17 09/18/2013 13:51	Endpoint Timeout
TOC Range 0.1 - 20 p	Sample	18 09/18/2013 14:01	Endpoint Timeout
TOC Range 0.1 - 20 p...	Sample	.. 19..09/18/2013 14:12	..Endpoint Timeout
TOC Range 0.1 - 20 p	Sample	20 09/18/2013 14:23	Endpoint Timeout
TOC Range 0.1 - 20 p	Sample	21 09/18/2013 14:32	
TOC Range 0.1 - 20 p...	Sample	.. 22..09/18/2013 14:43	..Endpoint Timeout
TOC Range 0.1 - 20 p	Sample	23 09/18/2013 14:53	Endpoint Timeout
TOC Range 0.1 - 20 p	Sample	24 09/18/2013 15:04	Endpoint Timeout
TOC Range 0.1 - 20 p...	Sample	.. 25..09/18/2013 15:15	..
TOC Range 0.1 - 20 p	Sample	26 09/18/2013 15:23	
TOC Range 0.1 - 20 p	Sample	27 09/18/2013 15:34	Endpoint Timeout
TOC Range 0.1 - 20 p...	Sample	.. 28..09/18/2013 15:45	..
TOC Range 0.1 - 20 p	Sample	29 09/18/2013 15:56	Endpoint Timeout
TOC Range 0.1 - 20 p	Sample	30 09/18/2013 16:06	Endpoint Timeout
TOC Range 0.1 - 20 p...	Sample	.. 31..09/18/2013 16:17	..Endpoint Timeout
TOC Range 0.1 - 20 p	Sample	32 09/18/2013 16:28	Endpoint Timeout
TOC Range 0.1 - 20 p	Sample	33 09/18/2013 16:39	Endpoint Timeout
TOC Range 0.1 - 20 p...	Sample	.. 34..09/18/2013 16:50	..Endpoint Timeout
TOC Range 0.1 - 20 p	Sample	35 09/18/2013 17:00	
TOC Range 0.1 - 20 p	Sample	57 09/18/2013 17:10	
TOC Range 0.1 - 20 p...	Sample	.. 58..09/18/2013 17:21	..Endpoint Timeout
TOC Range 0.1 - 20 p	Sample	58 09/18/2013 17:29	
TOC Range 0.1 - 20 p	Sample	59 09/18/2013 17:40	Endpoint Timeout
TOC Range 0.1 - 20 p...	Sample	.. 36..09/18/2013 17:59	..
TOC Range 0.1 - 20 p	Sample	37 09/18/2013 18:19	
TOC Range 0.1 - 20 p	Sample	38 09/18/2013 18:45	Endpoint Timeout
TOC Range 0.1 - 20 p...	Sample	.. 39..09/18/2013 19:13	..
TOC Range 0.1 - 20 p	Sample	40 09/18/2013 19:34	

TOC Range 0.1 - 20 p	Sample	41	09/18/2013 19:44	
TOC Range 0.1 - 20 p...	Sample	.. 42..	09/18/2013 20:13	..Endpoint Timeout
TOC Range 0.1 - 20 p	Sample	43	09/18/2013 20:21	
TOC Range 0.1 - 20 p	Sample	44	09/18/2013 20:29	
TOC Range 0.1 - 20 p...	Sample	.. 45..	09/18/2013 20:54	..Endpoint Timeout
TOC Range 0.1 - 20 p	Sample	46	09/18/2013 21:02	
TOC Range 0.1 - 20 p	Sample	47	09/18/2013 21:11	



=====

Sample ID: BLANK Mode: TOC  
 Method: TOC Range 0.1 - 20 ppm C Filename: 09181100  
 Cal. Curve: 102412LOW Timestamp: 09/18/2013 11:07  
 Operator ID: sdw Sample Type: Sample

Rep #	ppm C	ug C	Raw Data Baseline	Beginning Baseline	Ending Time	Integration
1	0.4404	1.7618	773813	17.231	17.727	110

=====

Sample ID: PRIME Mode: TOC  
 Method: TOC Range 0.1 - 20 ppm C Filename: 09181100  
 Cal. Curve: 102412LOW Timestamp: 09/18/2013 11:17  
 Operator ID: sdw Sample Type: Sample

Rep #	ppm C	ug C	Raw Data Baseline	Beginning Baseline	Ending Time	Integration
1	15.7288	62.9151	22811736	17.313	17.811	215

=====

Sample ID: BLANK Mode: TOC  
 Method: TOC Range 0.1 - 20 ppm C Filename: 09181100  
 Cal. Curve: 102412LOW Timestamp: 09/18/2013 11:25  
 Operator ID: sdw Sample Type: Sample

Rep #	ppm C	ug C	Raw Data Baseline	Beginning Baseline	Ending Time	Integration
1	0.1628	0.6511	373534	17.488	17.987	99

=====

Sample ID: Blank TC Range 2 Mode: TC  
 Method: Blank TC Range 2 Filename: 09181100  
 Cal. Curve: default Timestamp: 09/18/2013 11:44  
 Operator ID: sdw Sample Type: Blank TC Range 2

Rep #	ppm C	ug C	Raw Data Baseline	Beginning Baseline	Ending Time	Integration
1		822359	17.158	17.658	200	
2		166671	17.354	17.852	97	
3		141130	17.322	17.819	97	
4		137553	17.422	17.921	97	
5		147828	17.457	17.955	103	

=====  
<<<Statistics>>> Mean: 283108 Std Dev: 301660 RSD: 106.55  
=====

Sample ID: CCV Mode: TOC  
Method: TOC Range 0.1 - 20 ppm C Filename: 09181100  
Cal. Curve: 102412LOW Timestamp: 09/18/2013 11:53  
Operator ID: sdw Sample Type: Sample

Rep #	ppm C	ug C	Raw Data	Beginning	Ending	Integration
			Baseline	Baseline	Time	
1	10.2191	40.8765	14872907	17.754	18.253	194

=====

Sample ID: MO130918-1MB Mode: TOC  
Method: TOC Range 0.1 - 20 ppm C Filename: 09181100  
Cal. Curve: 102412LOW Timestamp: 09/18/2013 12:02  
Operator ID: sdw Sample Type: Sample

Rep #	ppm C	ug C	Raw Data	Beginning	Ending	Integration
			Baseline	Baseline	Time	
1	0.1340	0.5362	335386	17.899	18.393	96

=====

Sample ID: MO130918-1RVS Mode: TOC  
Method: TOC Range 0.1 - 20 ppm C Filename: 09181100  
Cal. Curve: 102412LOW Timestamp: 09/18/2013 12:10  
Operator ID: sdw Sample Type: Sample

Rep #	ppm C	ug C	Raw Data	Beginning	Ending	Integration
			Baseline	Baseline	Time	
1	1.1077	4.4309	1738935	17.876	18.376	118

=====

Sample ID: MO130918-1LCS Mode: TOC  
Method: TOC Range 0.1 - 20 ppm C Filename: 09181100  
Cal. Curve: 102412LOW Timestamp: 09/18/2013 12:20  
Operator ID: sdw Sample Type: Sample

Rep #	ppm C	ug C	Raw Data	Beginning	Ending	Integration
			Baseline	Baseline	Time	
1	15.9108	63.6431	23077352	17.959	18.458	213

=====

Sample ID: MO130918-1LCSD Mode: TOC  
Method: TOC Range 0.1 - 20 ppm C Filename: 09181100  
Cal. Curve: 102412LOW Timestamp: 09/18/2013 12:31  
Operator ID: sdw Sample Type: Sample

Rep #	ppm C	ug C	Raw Data Baseline	Beginning Baseline	Ending Time	Integration
1	15.8513	63.4050	22991546	18.135	18.634	220

Sample ID: 1309096-2 Mode: TOC  
Method: TOC Range 0.1 - 20 ppm C Filename: 09181100  
Cal. Curve: 102412LOW Timestamp: 09/18/2013 12:40  
Operator ID: sdw Sample Type: Sample

Rep #	ppm C	ug C	Raw Data Baseline	Beginning Baseline	Ending Time	Integration
1	1.5489	6.1954	2374824	18.213	18.712	155

Sample ID: 1309158-1 Mode: TOC  
Method: TOC Range 0.1 - 20 ppm C Filename: 09181100  
Cal. Curve: 102412LOW Timestamp: 09/18/2013 12:49  
Operator ID: sdw Sample Type: Sample

Rep #	ppm C	ug C	Raw Data Baseline	Beginning Baseline	Ending Time	Integration
1	0.7085	2.8341	1163511	18.332	18.831	111

Sample ID: 1309217-2 Mode: TOC  
Method: TOC Range 0.1 - 20 ppm C Filename: 09181100  
Cal. Curve: 102412LOW Timestamp: 09/18/2013 12:59  
Operator ID: sdw Sample Type: Sample

Rep #	ppm C	ug C	Raw Data Baseline	Beginning Baseline	Ending Time	Integration
1	1.0932	4.3728	1718008	18.253	18.800	251

LastM essage: Endpoint Timeout

Sample ID: 1309227-2 Mode: TOC

Method: TOC Range 0.1 - 20 ppm C      Filename: 09181100  
Cal. Curve: 102412LOW      Timestamp: 09/18/2013 13:10  
Operator ID: sdw      Sample Type: Sample

Rep #	ppm C	ug C	Raw Data	Beginning	Ending	Integration
			Baseline	Baseline	Time	
1	8.1769	32.7075	11929015	18.311	18.810	214

=====

Sample ID: 1309227-3      Mode: TOC  
Method: TOC Range 0.1 - 20 ppm C      Filename: 09181100  
Cal. Curve: 102412LOW      Timestamp: 09/18/2013 13:19  
Operator ID: sdw      Sample Type: Sample

Rep #	ppm C	ug C	Raw Data	Beginning	Ending	Integration
			Baseline	Baseline	Time	
1	0.7715	3.0859	1254256	18.326	18.824	146

=====

Sample ID: CCV      Mode: TOC  
Method: TOC Range 0.1 - 20 ppm C      Filename: 09181100  
Cal. Curve: 102412LOW      Timestamp: 09/18/2013 13:29  
Operator ID: sdw      Sample Type: Sample

Rep #	ppm C	ug C	Raw Data	Beginning	Ending	Integration
			Baseline	Baseline	Time	
1	10.4475	41.7899	15202080	18.262	18.760	194

=====

Sample ID: 1309228-2      Mode: TOC  
Method: TOC Range 0.1 - 20 ppm C      Filename: 09181100  
Cal. Curve: 102412LOW      Timestamp: 09/18/2013 13:40  
Operator ID: sdw      Sample Type: Sample

Rep #	ppm C	ug C	Raw Data	Beginning	Ending	Integration
			BaselineB	aseline	Time	
1	4.3227	17.2909	6373321	18.286	19.434	251

-----

LastM essage: Endpoint Timeout

=====

Sample ID: 1309228-3      Mode: TOC  
Method: TOC Range 0.1 - 20 ppm C      Filename: 09181100

Cal. Curve: 102412LOW  
Operator ID: sdw

Timestamp: 09/18/2013 13:51  
Sample Type: Sample

Rep #	ppm C	ug C	Raw Data Baseline	Beginning Baseline	Ending Time	Integration
1	9.1078	36.4313	13270979	18.199	23.040	251

-----  
LastM essage: Endpoint Timeout  
=====

Sample ID: 1309243-2 200X                      Mode: TOC  
Method: TOC Range 0.1 - 20 ppm C              Filename: 09181100  
Cal. Curve: 102412LOW                      Timestamp: 09/18/2013 14:01  
Operator ID: sdw                      Sample Type: Sample

Rep #	ppm C	ug C	Raw Data Baseline	Beginning Baseline	Ending Time	Integration
1	5.9025	23.6100	8650543	18.278	21.374	251

-----  
LastM essage: Endpoint Timeout  
=====

Sample ID: 1309243-3 200X                      Mode: TOC  
Method: TOC Range 0.1 - 20 ppm C              Filename: 09181100  
Cal. Curve: 102412LOW                      Timestamp: 09/18/2013 14:12  
Operator ID: sdw                      Sample Type: Sample

Rep #	ppm C	ug C	Raw Data Baseline	Beginning Baseline	Ending Time	Integration
1	5.9651	23.8605	8740812	19.024	20.926	251

-----  
LastM essage: Endpoint Timeout  
=====

Sample ID: 1309163-6 40X                      Mode: TOC  
Method: TOC Range 0.1 - 20 ppm C              Filename: 09181100  
Cal. Curve: 102412LOW                      Timestamp: 09/18/2013 14:23  
Operator ID: sdw                      Sample Type: Sample

Rep #	ppm C	ug C	Raw Data Baseline	Beginning Baseline	Ending Time	Integration
1	47.1374	188.5495	68090088	19.069	320.702	251

-----  
LastM essage: Endpoint Timeout  
=====

Sample ID: 1309163-2 Mode: TOC  
Method: TOC Range 0.1 - 20 ppm C Filename: 09181100  
Cal. Curve: 102412LOW Timestamp: 09/18/2013 14:32  
Operator ID: sdw Sample Type: Sample

Rep #	ppm C	ug C	Raw Data Baseline	Beginning Baseline	Ending Time	Integration
1	0.7813	3.1252	1268398	21.856	22.353	102

=====

Sample ID: 1309163-3 Mode: TOC  
Method: TOC Range 0.1 - 20 ppm C Filename: 09181100  
Cal. Curve: 102412LOW Timestamp: 09/18/2013 14:43  
Operator ID: sdw Sample Type: Sample

Rep #	ppm C	ug C	Raw Data Baseline	Beginning Baseline	Ending Time	Integration
1	4.1145	16.4582	6073239	19.085	21.525	251

=====

LastM essage: Endpoint Timeout

=====

Sample ID: 1309163-4 Mode: TOC  
Method: TOC Range 0.1 - 20 ppm C Filename: 09181100  
Cal. Curve: 102412LOW Timestamp: 09/18/2013 14:53  
Operator ID: sdw Sample Type: Sample

Rep #	ppm C	ug C	Raw Data Baseline	Beginning Baseline	Ending Time	Integration
1	16.3712	65.4849	23741086	18.833	21.093	251

=====

LastM essage: Endpoint Timeout

=====

Sample ID: 1309163-5 Mode: TOC  
Method: TOC Range 0.1 - 20 ppm C Filename: 09181100  
Cal. Curve: 102412LOW Timestamp: 09/18/2013 15:04  
Operator ID: sdw Sample Type: Sample

Rep #	ppm C	ug C	Raw Data Baseline	Beginning Baseline	Ending Time	Integration
1	8.7240	34.8961	12717741	18.575	32.551	251

=====

LastM essage: Endpoint Timeout

Sample ID: CCV Mode: TOC  
Method: TOC Range 0.1 - 20 ppm C Filename: 09181100  
Cal. Curve: 102412LOW Timestamp: 09/18/2013 15:15  
Operator ID: sdw Sample Type: Sample

Rep #	ppm C	ug C	Raw Data Baseline	Beginning Baseline	Ending Time	Integration
1	10.7232	42.8928	15599521	18.509	19.007	216

Sample ID: 1309163-7 Mode: TOC  
Method: TOC Range 0.1 - 20 ppm C Filename: 09181100  
Cal. Curve: 102412LOW Timestamp: 09/18/2013 15:23  
Operator ID: sdw Sample Type: Sample

Rep #	ppm C	ug C	Raw Data Baseline	Beginning Baseline	Ending Time	Integration
1	1.0425	4.1699	1644872	18.403	18.901	127

Sample ID: 1309223-5 Mode: TOC  
Method: TOC Range 0.1 - 20 ppm C Filename: 09181100  
Cal. Curve: 102412LOW Timestamp: 09/18/2013 15:34  
Operator ID: sdw Sample Type: Sample

Rep #	ppm C	ug C	Raw Data Baseline	Beginning Baseline	Ending Time	Integration
1	2.4901	9.9605	3731655	18.362	20.539	251

LastM essage: Endpoint Timeout

Sample ID: 1309223-6 Mode: TOC  
Method: TOC Range 0.1 - 20 ppm C Filename: 09181100  
Cal. Curve: 102412LOW Timestamp: 09/18/2013 15:45  
Operator ID: sdw Sample Type: Sample

Rep #	ppm C	ug C	Raw Data Baseline	Beginning Baseline	Ending Time	Integration
1	1.8305	7.3219	2780787	18.389	18.888	226

Sample ID: 1309163-6 320X Mode: TOC  
Method: TOC Range 0.1 - 20 ppm C Filename: 09181100  
Cal. Curve: 102412LOW Timestamp: 09/18/2013 15:56  
Operator ID: sdw Sample Type: Sample

Rep #	ppm C	ug C	Raw Data Baseline	Beginning Baseline	Ending Time	Integration
1	18.0892	72.3570	26217576	18.330	19.282	251

-----  
LastM essage: Endpoint Timeout  
=====

Sample ID: 1309223-2 320X Mode: TOC  
Method: TOC Range 0.1 - 20 ppm C Filename: 09181100  
Cal. Curve: 102412LOW Timestamp: 09/18/2013 16:06  
Operator ID: sdw Sample Type: Sample

Rep #	ppm C	ug C	Raw Data Baseline	Beginning Baseline	Ending Time	Integration
1	20.1079	80.4317	29127496	18.347	19.139	251

-----  
LastM essage: Endpoint Timeout  
=====

Sample ID: 1309223-2MS 320X Mode: TOC  
Method: TOC Range 0.1 - 20 ppm C Filename: 09181100  
Cal. Curve: 102412LOW Timestamp: 09/18/2013 16:17  
Operator ID: sdw  
Sample Type: Sample

Rep #	ppm C	ug C	Raw Data Baseline	Beginning Baseline	Ending Time	Integration
1	32.0938	128.3753	46405004	18.370	19.578	252

-----  
LastM essage: Endpoint Timeout  
=====

Sample ID: 1309223-2MSD 320X Mode: TOC  
Method: TOC Range 0.1 - 20 ppm C Filename: 09181100  
Cal. Curve: 102412LOW Timestamp: 09/18/2013 16:28  
Operator ID: sdw Sample Type: Sample

Rep #	ppm C	ug C	Raw Data	Beginning	Ending	Integration
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			Baseline	Baseline	Time	
1	32.2739	129.0956	46664556	18.355	19.709	251

-----  
 LastM essage: Endpoint Timeout  
 =====

Sample ID: 1309223-3 320X                      Mode: TOC  
 Method: TOC Range 0.1 - 20 ppm C              Filename: 09181100  
 Cal. Curve: 102412LOW                      Timestamp: 09/18/2013 16:39  
 Operator ID: sdw                      Sample Type: Sample

Rep #	ppm C	ug C	Raw Data	Beginning	Ending	Integration
			Baseline	Baseline	Time	
1	19.0510	76.2040	27603926	18.387	19.067	251

-----  
 LastM essage: Endpoint Timeout  
 =====

Sample ID: 1309223-4 320X                      Mode: TOC  
 Method: TOC Range 0.1 - 20 ppm C              Filename: 09181100  
 Cal. Curve: 102412LOW                      Timestamp: 09/18/2013 16:50  
 Operator ID: sdw                      Sample Type: Sample

Rep #	ppm C	ug C	Raw Data	Beginning	Ending	Integration
			Baseline	Baseline	Time	
1	17.2317	68.9266	24981374	18.295	19.059	251

-----  
 LastM essage: Endpoint Timeout  
 =====

Sample ID: CCV                      Mode: TOC  
 Method: TOC Range 0.1 - 20 ppm C              Filename: 09181100  
 Cal. Curve: 102412LOW                      Timestamp: 09/18/2013 17:00  
 Operator ID: sdw                      Sample Type: Sample

Rep #	ppm C	ug C	Raw Data	Beginning	Ending	Integration
			Baseline	Baseline	Time	
1	10.1835	40.7338	14821487	18.307	18.806	204

Sample ID: 1309223-2 800X                      Mode: TOC  
 Method: TOC Range 0.1 - 20 ppm C              Filename: 09181100  
 Cal. Curve: 102412LOW                      Timestamp: 09/18/2013 17:10  
 Operator ID: sdw                      Sample Type: Sample

Rep #	ppm C	ug C	Raw Data Baseline	Beginning Baseline	Ending Time	Integration
1	7.8639	31.4556	11477871	18.360	18.858	208

Sample ID: 1309223-2MSD 800X Mode: TOC  
 Method: TOC Range 0.1 - 20 ppm C Filename: 09181100  
 Cal. Curve: 102412LOW Timestamp: 09/18/2013 17:21  
 Operator ID: sdw Sample Type: Sample

Rep #	ppm C	ug C	Raw Data Baseline	Beginning Baseline	Ending Time	Integration
1	18.3869	73.5475	26646596	18.221	18.971	251

LastM essage: Endpoint Timeout

*Empty Vial* *sdw 9/19/13*  
 Sample ID: ~~1309223-2MSD 800X~~ Mode: TOC  
 Method: TOC Range 0.1 - 20 ppm C Filename: 09181100  
 Cal. Curve: 102412LOW Timestamp: 09/18/2013 17:29  
 Operator ID: sdw Sample Type: Sample

Rep #	ppm C	ug C	Raw Data Baseline	Beginning Baseline	Ending Time	Integration
1	-0.0646	-0.2583	49079	18.291	18.789	70

*1309223-2MSD 800X* *sdw 9/19/13*  
 Sample ID: ~~66V~~ Mode: TOC  
 Method: TOC Range 0.1 - 20 ppm C Filename: 09181100  
 Cal. Curve: 102412LOW Timestamp: 09/18/2013 17:40  
 Operator ID: sdw Sample Type: Sample

Rep #	ppm C	ug C	Raw Data Baseline	Beginning Baseline	Ending Time	Integration
1	18.4137	73.6549	26685312	18.277	18.930	251

LastM essage: Endpoint Timeout

Sample ID: MO130918-2MB Mode: TOC  
 Method: TOC Range 0.1 - 20 ppm C Filename: 09181100  
 Cal. Curve: 102412LOW Timestamp: 09/18/2013 17:59  
 Operator ID: sdw Sample Type: Sample

Rep #	ppm C	ug C	Raw Data Baseline	Beginning Baseline	Ending Time	Integration
1	0.1719	0.6875	389928	18.220	18.719	102
2	0.1871	0.7482	411815	18.169	18.667	105
3	0.1919	0.7678	418858	18.159	18.658	106
4	0.1900	0.7599	416026	18.146	18.646	103

<<<Statistics>>> Mean: 0.1852 Std Dev: 0.0091 RSD:4.91

Sample ID: MO130918-2RVS Mode: TOC  
 Method: TOC Range 0.1 - 20 ppm C Filename: 09181100  
 Cal. Curve: 102412LOW Timestamp: 09/18/2013 18:19  
 Operator ID: sdw Sample Type: Sample

Rep #	ppm C	ug C	Raw Data Baseline	Beginning Baseline	Ending Time	Integration
1	1.0553	4.2211	1663346	18.083	18.583	121
2	1.0703	4.2813	1685035	18.213	18.712	122
3	1.0549	4.2195	1662753	18.165	18.660	119
4	1.0699	4.2796	1684406	18.178	18.677	119

<<<Statistics>>> Mean: 1.0626 Std Dev: 0.0087 RSD:0.82

Sample ID: MO130918-2LCS Mode: TOC  
 Method: TOC Range 0.1 - 20 ppm C Filename: 09181100  
 Cal. Curve: 102412LOW Timestamp: 09/18/2013 18:45  
 Operator ID: sdw Sample Type: Sample

Rep #	ppm C	ug C	Raw Data Baseline	Beginning Baseline	Ending Time	Integration
1	16.6706	66.6825	24172644	18.086	18.743	251
2	16.6045	66.4178	24077276	18.382	18.876	230
3	16.7532	67.0129	24291722	18.435	18.932	209
4	16.7270	66.9082	24253976	18.434	18.933	208

Last Message: Endpoint Timeout

<<<Statistics>>> Mean: 16.6888 Std Dev: 0.0659 RSD: 0.40

Sample ID: MO130918-2LCSD Mode: TOC  
 Method: TOC Range 0.1 - 20 ppm C Filename: 09181100  
 Cal. Curve: 102412LOW Timestamp: 09/18/2013 19:13

Operator ID: sdw

Sample Type: Sample

Rep #	ppm C	ug C	Raw Data Baseline	Beginning Baseline	Ending Time	Integration
1	16.8052	67.2208	24366640	18.047	18.546	249
2	16.8666	67.4662	24455094	18.233	18.731	240
3	16.9211	67.6846	24533780	18.287	18.787	224
4	16.9159	67.6635	24526168	18.350	18.848	218

<<<Statistics>>> Mean: 16.8772 Std Dev: 0.0539 RSD: 0.32

Sample ID: 1309173-7

Mode: TOC

Method: TOC Range 0.1 - 20 ppm C Filename: 09181100

Cal. Curve: 102412LOW

Timestamp: 09/18/2013 19:34

Operator ID: sdw

Sample Type: Sample

Rep #	ppm C	ug C	Raw Data Baseline	Beginning Baseline	Ending Time	Integration
1	1.3896	5.5583	2145236	18.194	18.693	142
2	1.3901	5.5606	2146046	18.231	18.731	139
3	1.3894	5.5576	2144977	18.240	18.738	140
4	1.3891	5.5564	2144531	18.338	18.838	133

<<<Statistics>>> Mean: 1.3895 Std Dev: 0.0004 RSD: 0.03

Sample ID: CCV

Mode: TOC

Method: TOC Range 0.1 - 20 ppm C Filename: 09181100

Cal. Curve: 102412LOW

Timestamp: 09/18/2013 19:44

Operator ID: sdw

Sample Type: Sample

Rep #	ppm C	ug C	Raw Data Baseline	Beginning Baseline	Ending Time	Integration
1	10.3542	41.4169	15067640	18.260	18.758	225

Sample ID: 1309195-2

Mode: TOC

Method: TOC Range 0.1 - 20 ppm C Filename: 09181100

Cal. Curve: 102412LOW

Timestamp: 09/18/2013 20:13

Operator ID: sdw

Sample Type: Sample

Rep #	ppm C	ug C	Raw Data Baseline	Beginning Baseline	Ending Time	Integration
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1	91.5053	366.0214	132045928	18.849	569.755	251
2	80.3412	321.3649	115952992	117.939	522.625	251
3	84.3015	337.2059	121661624	115.141	527.870	251
4	83.2947	333.1789	120210432	113.107	516.270	251

LastM essage: Endpoint Timeout

<<<Statistics>>> Mean: 84.8607 Std Dev: 4.7378 RSD: 5.58

Sample ID: BLANK Mode: TOC  
 Method: TOC Range 0.1 - 20 ppm C Filename: 09181100  
 Cal. Curve: 102412LOW Timestamp: 09/18/2013 20:21  
 Operator ID: sdw Sample Type: Sample

Rep #	ppm C	ug C	Raw Data Baseline	Beginning Baseline	Ending Time	Integration
1	1.3530	5.4121	2092532	61.655	62.085	80

Sample ID: CCV Mode: TOC  
 Method: TOC Range 0.1 - 20 ppm C Filename: 09181100  
 Cal. Curve: 102412LOW Timestamp: 09/18/2013 20:29  
 Operator ID: sdw Sample Type: Sample

Rep #	ppm C	ug C	Raw Data Baseline	Beginning Baseline	Ending Time	Integration
1	10.5329	42.1315	15325172	36.131	36.621	129

Sample ID: 1309195-3 Mode: TOC  
 Method: TOC Range 0.1 - 20 ppm C Filename: 09181100  
 Cal. Curve: 102412LOW Timestamp: 09/18/2013 20:54  
 Operator ID: sdw Sample Type: Sample

Rep #	ppm C	ug C	Raw Data Baseline	Beginning Baseline	Ending Time	Integration
1	90.1090	360.4361	130033160	31.000	562.853	251
2	-0.0915	-0.3660	10276	121.018	121.417	14
3	73.1867	292.7470	105639896	149.069	527.651	251
4	77.1450	308.5800	111345664	117.121	479.045	251

LastM essage: Endpoint Timeout

<<<Statistics>>> Mean: 60.0873 Std Dev: 40.7650 RSD: 67.84

Sample ID: BLANK Mode: TOC  
Method: TOC Range 0.1 - 20 ppm C Filename: 09181100  
Cal. Curve: 102412LOW Timestamp: 09/18/2013 21:02  
Operator ID: sdw Sample Type: Sample

Rep #	ppm C	ug C	Raw Data Baseline	Beginning Baseline	Ending Time	Integration
1	1.5176	6.0705	2329801	63.139	63.627	80

=====

Sample ID: CCV Mode: TOC  
Method: TOC Range 0.1 - 20 ppm C Filename: 09181100  
Cal. Curve: 102412LOW Timestamp: 09/18/2013 21:11  
Operator ID: sdw Sample Type: Sample

Rep #	ppm C	ug C	Raw Data Baseline	Beginning Baseline	Ending Time	Integration
1	10.6770	42.7080	15532931	37.565	38.059	129

=====



## Miscellaneous

