ANALYTICAL REPORT

Job Number: 280-90781-1

Job Description: Ravenna, OH - Atlas Scrap Yard

For:
Cardno TEC, Inc
1658 Cole Boulevard
Suite 190
Golden, CO 80401

Attention: Ms. Heather Miner

Approved for release.
Stephanie K Rothmeyer
Project Manager I
12/8/2016 10:16 AM

Designee for
Patrick J McEntee, Manager of Project Management
4955 Yarrow Street, Arvada, CO, 80002
(303)736-0107
patrick.mcentee@testamericainc.com
12/08/2016

The test results in this report relate only to the samples in this report and meet all requirements of NELAC, with any exceptions noted. Pursuant to NELAP, this report shall not be reproduced except in full, without the written approval of the laboratory. All questions regarding this report should be directed to the TestAmerica Denver Project Manager.

The Lab Certification ID# is 4025.

Reporting limits are adjusted for sample size used, dilutions and moisture content if applicable.

Table of Contents

Table of Contents

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
U	Undetected at the Limit of Detection.

General Chemistry

Qualifier	Qualifier Description
H	Sample was prepped or analyzed beyond the specified holding time
U	Undetected at the Limit of Detection.
J	Estimated: The analyte was positively identified; the quantitation is an estimation

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

CASE NARRATIVE

Client: Cardno TEC, Inc

Project: Ravenna, OH - Atlas Scrap Yard

Report Number: 280-90781-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT
The samples were received on 11/10/2016 at 10:00 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 5 coolers at receipt time were 0.1º C, 1.1º C, 1.3º C, 2.9º C and 4.6º C.

Due to an unusually high volume of receipts, the Hexavalent Chromium samples were not able to be located and delivered to the laboratory with sufficient time to analyze before the 24 hour holding time expired. The Hexavalent Chromium 7196A analyses were performed at 13:43pm Mountain, 15:43 Eastern time on 11/10/2016. The client was notified on 11/14/2016.

As requested by the client, the sample ID for DETmw-003-110916-GW, as listed on the chain of custody, was changed to DET-3-110916-GW.

EXPLOSIVES
Sample ASYmw-005-110916-GW (280-90781-2) was analyzed for Explosives in accordance with 8330B. The samples were prepared on 11/15/2016 and analyzed on 11/28/2016.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

HEXAVALENT CHROMIUM
Samples ASYmw-004-110916-GW (280-90781-1), ASYmw-005-110916-GW (280-90781-2) and DET-3-110916-GW (280-90781-3) were analyzed for hexavalent chromium in accordance with 7196A. The samples were analyzed on 11/10/2016.

Due to an unusually high volume of receipts, the Hexavalent Chromium samples were not able to be located and delivered to the laboratory with sufficient time to analyze before the 24 hour holding time expired. The Hexavalent Chromium 7196A analyses were performed at 13:43pm Mountain, 15:43 Eastern time on 11/10/2016. The client was notified on 11/14/2016.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

CYANIDE, TOTAL AND/OR AMENABLE
Samples ASYmw-004-110916-GW (280-90781-1) and ASYmw-005-110916-GW (280-90781-2) were analyzed for Cyanide, Total and/or Amenable in accordance with 9012B. The samples were prepared on 11/18/2016 and analyzed on 11/19/2016.

Cyanide, Total was detected in method blank MB 280-352264/4-A at a level that was above the method detection limit but below one half the reporting limit. The value should be considered an estimate, and has been flagged.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Detection Summary

Client: Cardno TEC, Inc
Project/Site: Ravenna, OH - Atlas Scrap Yard

TestAmerica Job ID: 280-90781-1

Client Sample ID: ASYmw-004-110916-GW — Lab Sample ID: 280-90781-1

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Cyanide, Total	2.3	J	10	2.0	ug/L	1		9012B	Total/NA

Client Sample ID: ASYmw-005-110916-GW — Lab Sample ID: 280-90781-2

No Detections.

Client Sample ID: DET-3-110916-GW — Lab Sample ID: 280-90781-3

No Detections.

This Detection Summary does not include radiochemical test results.

Client Sample ID: ASYmw-004-110916-GW

Lab Sample ID: 280-90781-1

Date Collected: 11/09/16 15:37
Matrix: Water
Date Received: 11/10/16 10:00

General Chemistry

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium, hexavalent	4.0	U H	20	4.0	ug/L			11/10/16 13:43	1
Cyanide, Total	**2.3**	**J**	10	2.0	ug/L		11/18/16 09:14	11/19/16 09:48	1

Client Sample ID: ASYmw-005-110916-GW

Lab Sample ID: 280-90781-2

Date Collected: 11/09/16 15:12
Matrix: Water
Date Received: 11/10/16 10:00

Method: 8330B - Nitroaromatics and Nitramines (HPLC)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
1,3,5-Trinitrobenzene	0.42	U	1.1	0.21	ug/L		11/15/16 18:55	11/28/16 18:22	1
1,3-Dinitrobenzene	0.21	U	0.42	0.094	ug/L		11/15/16 18:55	11/28/16 18:22	1
2,4,6-Trinitrotoluene	0.21	U	0.42	0.077	ug/L		11/15/16 18:55	11/28/16 18:22	1
2,4-Dinitrotoluene	0.21	U	0.42	0.089	ug/L		11/15/16 18:55	11/28/16 18:22	1
2,6-Dinitrotoluene	0.21	U	0.21	0.068	ug/L		11/15/16 18:55	11/28/16 18:22	1
2-Amino-4,6-dinitrotoluene	0.13	U	0.21	0.054	ug/L		11/15/16 18:55	11/28/16 18:22	1
2-Nitrotoluene	0.21	U	0.42	0.091	ug/L		11/15/16 18:55	11/28/16 18:22	1
3-Nitrotoluene	0.21	U	0.42	0.088	ug/L		11/15/16 18:55	11/28/16 18:22	1
4-Amino-2,6-dinitrotoluene	0.13	U	0.21	0.061	ug/L		11/15/16 18:55	11/28/16 18:22	1
4-Nitrotoluene	0.42	U	1.1	0.21	ug/L		11/15/16 18:55	11/28/16 18:22	1
HMX	0.21	U	0.42	0.093	ug/L		11/15/16 18:55	11/28/16 18:22	1
Nitrobenzene	0.21	U	0.42	0.096	ug/L		11/15/16 18:55	11/28/16 18:22	1
Nitroglycerin	2.1	U	3.2	0.98	ug/L		11/15/16 18:55	11/28/16 18:22	1
PETN	1.3	U	2.1	0.44	ug/L		11/15/16 18:55	11/28/16 18:22	1
RDX	0.13	U	0.21	0.055	ug/L		11/15/16 18:55	11/28/16 18:22	1
Tetryl	0.21	U	0.25	0.084	ug/L		11/15/16 18:55	11/28/16 18:22	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dinitrobenzene	*100*		*83 - 119*	*11/15/16 18:55*	*11/28/16 18:22*	*1*

General Chemistry

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium, hexavalent	4.0	U H	20	4.0	ug/L			11/10/16 13:43	1
Cyanide, Total	5.0	U	10	2.0	ug/L		11/18/16 09:14	11/19/16 09:18	1

Client Sample ID: DET-3-110916-GW

Lab Sample ID: 280-90781-3

Date Collected: 11/09/16 14:14
Matrix: Water
Date Received: 11/10/16 10:00

General Chemistry

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium, hexavalent	4.0	U H	20	4.0	ug/L			11/10/16 13:43	1

Default Detection Limits

Client: Cardno TEC, Inc
Project/Site: Ravenna, OH - Atlas Scrap Yard

TestAmerica Job ID: 280-90781-1

Method: 8330B - Nitroaromatics and Nitramines (HPLC)

Prep: 3535

Analyte	LOQ	DL	Units	Method
1,3,5-Trinitrobenzene	1.0	0.20	ug/L	8330B
1,3-Dinitrobenzene	0.40	0.089	ug/L	8330B
2,4,6-Trinitrotoluene	0.40	0.072	ug/L	8330B
2,4-Dinitrotoluene	0.40	0.084	ug/L	8330B
2,6-Dinitrotoluene	0.20	0.065	ug/L	8330B
2-Amino-4,6-dinitrotoluene	0.20	0.051	ug/L	8330B
2-Nitrotoluene	0.40	0.086	ug/L	8330B
3-Nitrotoluene	0.40	0.083	ug/L	8330B
4-Amino-2,6-dinitrotoluene	0.20	0.058	ug/L	8330B
4-Nitrotoluene	1.0	0.20	ug/L	8330B
HMX	0.40	0.088	ug/L	8330B
Nitrobenzene	0.40	0.091	ug/L	8330B
Nitroglycerin	3.0	0.92	ug/L	8330B
PETN	2.0	0.42	ug/L	8330B
RDX	0.20	0.052	ug/L	8330B
Tetryl	0.24	0.079	ug/L	8330B

General Chemistry

Analyte	LOQ	DL	Units	Method
Chromium, hexavalent	20	4.0	ug/L	7196A

General Chemistry

Prep: 9012B

Analyte	LOQ	DL	Units	Method
Cyanide, Total	10	2.0	ug/L	9012B

Surrogate Summary

Client: Cardno TEC, Inc
Project/Site: Ravenna, OH - Atlas Scrap Yard

TestAmerica Job ID: 280-90781-1

Method: 8330B - Nitroaromatics and Nitramines (HPLC)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)								
Lab Sample ID	Client Sample ID	12DNB1 (83-119)								
280-90781-2	ASYmw-005-110916-GW	100								
LCS 280-351635/2-A	Lab Control Sample	100								
MB 280-351635/1-A	Method Blank	100								

Surrogate Legend

12DNB = 1,2-Dinitrobenzene

Method: 8330B - Nitroaromatics and Nitramines (HPLC)

Lab Sample ID: MB 280-351635/1-A
Matrix: Water
Analysis Batch: 353340

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 351635

Analyte	MB Result	MB Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
1,3,5-Trinitrobenzene	0.40	U	1.0	0.20	ug/L		11/15/16 18:55	11/28/16 17:35	1
1,3-Dinitrobenzene	0.20	U	0.40	0.089	ug/L		11/15/16 18:55	11/28/16 17:35	1
2,4,6-Trinitrotoluene	0.20	U	0.40	0.072	ug/L		11/15/16 18:55	11/28/16 17:35	1
2,4-Dinitrotoluene	0.20	U	0.40	0.084	ug/L		11/15/16 18:55	11/28/16 17:35	1
2,6-Dinitrotoluene	0.20	U	0.20	0.065	ug/L		11/15/16 18:55	11/28/16 17:35	1
2-Amino-4,6-dinitrotoluene	0.12	U	0.20	0.051	ug/L		11/15/16 18:55	11/28/16 17:35	1
2-Nitrotoluene	0.20	U	0.40	0.086	ug/L		11/15/16 18:55	11/28/16 17:35	1
3-Nitrotoluene	0.20	U	0.40	0.083	ug/L		11/15/16 18:55	11/28/16 17:35	1
4-Amino-2,6-dinitrotoluene	0.12	U	0.20	0.058	ug/L		11/15/16 18:55	11/28/16 17:35	1
4-Nitrotoluene	0.40	U	1.0	0.20	ug/L		11/15/16 18:55	11/28/16 17:35	1
HMX	0.20	U	0.40	0.088	ug/L		11/15/16 18:55	11/28/16 17:35	1
Nitrobenzene	0.20	U	0.40	0.091	ug/L		11/15/16 18:55	11/28/16 17:35	1
Nitroglycerin	2.0	U	3.0	0.92	ug/L		11/15/16 18:55	11/28/16 17:35	1
PETN	1.2	U	2.0	0.42	ug/L		11/15/16 18:55	11/28/16 17:35	1
RDX	0.12	U	0.20	0.052	ug/L		11/15/16 18:55	11/28/16 17:35	1
Tetryl	0.20	U	0.24	0.079	ug/L		11/15/16 18:55	11/28/16 17:35	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dinitrobenzene	*100*		*83 - 119*	*11/15/16 18:55*	*11/28/16 17:35*	*1*

Lab Sample ID: LCS 280-351635/2-A
Matrix: Water
Analysis Batch: 353340

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 351635

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,3,5-Trinitrobenzene	2.00	2.01		ug/L		101	73 - 125
1,3-Dinitrobenzene	2.00	2.08		ug/L		104	78 - 120
2,4,6-Trinitrotoluene	2.00	2.17		ug/L		109	71 - 123
2,4-Dinitrotoluene	2.00	1.94		ug/L		97	78 - 120
2,6-Dinitrotoluene	2.00	1.94		ug/L		97	77 - 127
2-Amino-4,6-dinitrotoluene	2.00	1.77		ug/L		89	79 - 120
2-Nitrotoluene	2.00	1.79		ug/L		89	70 - 127
3-Nitrotoluene	2.00	1.84		ug/L		92	73 - 125
4-Amino-2,6-dinitrotoluene	2.00	1.73		ug/L		87	76 - 125
4-Nitrotoluene	2.00	1.94		ug/L		97	71 - 127
HMX	2.00	1.88		ug/L		94	65 - 135
Nitrobenzene	2.00	1.90		ug/L		95	65 - 134
Nitroglycerin	20.0	19.9		ug/L		100	74 - 127
PETN	20.0	20.4		ug/L		102	73 - 127
RDX	2.00	2.02		ug/L		101	68 - 130
Tetryl	2.00	2.00		ug/L		100	64 - 128

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dinitrobenzene	*100*		*83 - 119*

Method: 7196A - Chromium, Hexavalent

Lab Sample ID: MB 280-350822/10
Matrix: Water
Analysis Batch: 350822

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium, hexavalent	4.0	U	20	4.0	ug/L			11/10/16 12:49	1

Lab Sample ID: LCS 280-350822/8
Matrix: Water
Analysis Batch: 350822

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chromium, hexavalent	100	99.3		ug/L		99	90 - 111

Lab Sample ID: LCSD 280-350822/9
Matrix: Water
Analysis Batch: 350822

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chromium, hexavalent	100	102		ug/L		102	90 - 111	3	20

Method: 9012B - Cyanide, Total and/or Amenable

Lab Sample ID: MB 280-352144/4-A
Matrix: Water
Analysis Batch: 352272

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 352144

Analyte	MB Result	MB Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	5.0	U	10	2.0	ug/L		11/18/16 09:14	11/19/16 08:56	1

Lab Sample ID: HLCS 280-352144/1-A
Matrix: Water
Analysis Batch: 352272

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 352144

Analyte	Spike Added	HLCS Result	HLCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	400	387		ug/L		97	90 - 110

Lab Sample ID: LCS 280-352144/3-A
Matrix: Water
Analysis Batch: 352272

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 352144

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	100	98.2		ug/L		98	83 - 116

Lab Sample ID: LLCS 280-352144/2-A
Matrix: Water
Analysis Batch: 352272

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 352144

Analyte	Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	100	102		ug/L		102	44 - 167

Method: 9012B - Cyanide, Total and/or Amenable (Continued)

Lab Sample ID: MB 280-352264/4-A
Matrix: Water
Analysis Batch: 352310

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 352264

Analyte	MB Result	MB Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	4.42	J	10	2.0	ug/L		11/19/16 09:41	11/19/16 14:01	1

Lab Sample ID: HLCS 280-352264/1-A
Matrix: Water
Analysis Batch: 352310

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 352264

Analyte	Spike Added	HLCS Result	HLCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	400	378		ug/L		95	90 - 110

Lab Sample ID: LCS 280-352264/3-A
Matrix: Water
Analysis Batch: 352310

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 352264

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	100	95.0		ug/L		95	83 - 116

Lab Sample ID: LLCS 280-352264/2-A
Matrix: Water
Analysis Batch: 352310

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 352264

Analyte	Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	100	93.1		ug/L		93	44 - 167

HPLC/IC

Prep Batch: 351635

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-90781-2	ASYmw-005-110916-GW	Total/NA	Water	3535	
MB 280-351635/1-A	Method Blank	Total/NA	Water	3535	
LCS 280-351635/2-A	Lab Control Sample	Total/NA	Water	3535	

Analysis Batch: 353340

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-90781-2	ASYmw-005-110916-GW	Total/NA	Water	8330B	351635
MB 280-351635/1-A	Method Blank	Total/NA	Water	8330B	351635
LCS 280-351635/2-A	Lab Control Sample	Total/NA	Water	8330B	351635

General Chemistry

Analysis Batch: 350822

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-90781-1	ASYmw-004-110916-GW	Total/NA	Water	7196A	
280-90781-2	ASYmw-005-110916-GW	Total/NA	Water	7196A	
280-90781-3	DET-3-110916-GW	Total/NA	Water	7196A	
MB 280-350822/10	Method Blank	Total/NA	Water	7196A	
LCS 280-350822/8	Lab Control Sample	Total/NA	Water	7196A	
LCSD 280-350822/9	Lab Control Sample Dup	Total/NA	Water	7196A	

Prep Batch: 352144

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-90781-1	ASYmw-004-110916-GW	Total/NA	Water	9012B	
280-90781-2	ASYmw-005-110916-GW	Total/NA	Water	9012B	
MB 280-352144/4-A	Method Blank	Total/NA	Water	9012B	
HLCS 280-352144/1-A	Lab Control Sample	Total/NA	Water	9012B	
LCS 280-352144/3-A	Lab Control Sample	Total/NA	Water	9012B	
LLCS 280-352144/2-A	Lab Control Sample	Total/NA	Water	9012B	

Prep Batch: 352264

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 280-352264/4-A	Method Blank	Total/NA	Water	9012B	
HLCS 280-352264/1-A	Lab Control Sample	Total/NA	Water	9012B	
LCS 280-352264/3-A	Lab Control Sample	Total/NA	Water	9012B	
LLCS 280-352264/2-A	Lab Control Sample	Total/NA	Water	9012B	

Analysis Batch: 352272

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-90781-1	ASYmw-004-110916-GW	Total/NA	Water	9012B	352144
280-90781-2	ASYmw-005-110916-GW	Total/NA	Water	9012B	352144
MB 280-352144/4-A	Method Blank	Total/NA	Water	9012B	352144
HLCS 280-352144/1-A	Lab Control Sample	Total/NA	Water	9012B	352144
LCS 280-352144/3-A	Lab Control Sample	Total/NA	Water	9012B	352144
LLCS 280-352144/2-A	Lab Control Sample	Total/NA	Water	9012B	352144

Analysis Batch: 352310

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 280-352264/4-A	Method Blank	Total/NA	Water	9012B	352264
HLCS 280-352264/1-A	Lab Control Sample	Total/NA	Water	9012B	352264

General Chemistry (Continued)

Analysis Batch: 352310 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 280-352264/3-A	Lab Control Sample	Total/NA	Water	9012B	352264
LLCS 280-352264/2-A	Lab Control Sample	Total/NA	Water	9012B	352264

Lab Chronicle

Client: Cardno TEC, Inc
Project/Site: Ravenna, OH - Atlas Scrap Yard

TestAmerica Job ID: 280-90781-1

Client Sample ID: ASYmw-004-110916-GW

Lab Sample ID: 280-90781-1

Date Collected: 11/09/16 15:37
Matrix: Water
Date Received: 11/10/16 10:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	7196A		1	10 mL	10 mL	350822	11/10/16 13:43	JML	TAL DEN
Total/NA	Prep	9012B			50 mL	50 mL	352144	11/18/16 09:14	ALS	TAL DEN
Total/NA	Analysis	9012B		1	50 mL	50 mL	352272	11/19/16 09:48	JML	TAL DEN

Client Sample ID: ASYmw-005-110916-GW

Lab Sample ID: 280-90781-2

Date Collected: 11/09/16 15:12
Matrix: Water
Date Received: 11/10/16 10:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			472.2 mL	5 mL	351635	11/15/16 18:55	CDC	TAL DEN
Total/NA	Analysis	8330B		1			353340	11/28/16 18:22	DMJ	TAL DEN
Total/NA	Analysis	7196A		1	10 mL	10 mL	350822	11/10/16 13:43	JML	TAL DEN
Total/NA	Prep	9012B			50 mL	50 mL	352144	11/18/16 09:14	ALS	TAL DEN
Total/NA	Analysis	9012B		1	50 mL	50 mL	352272	11/19/16 09:18	JML	TAL DEN

Client Sample ID: DET-3-110916-GW

Lab Sample ID: 280-90781-3

Date Collected: 11/09/16 14:14
Matrix: Water
Date Received: 11/10/16 10:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	7196A		1	10 mL	10 mL	350822	11/10/16 13:43	JML	TAL DEN

Laboratory References:

TAL DEN = TestAmerica Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

Certification Summary

Client: Cardno TEC, Inc
Project/Site: Ravenna, OH - Atlas Scrap Yard

TestAmerica Job ID: 280-90781-1

Laboratory: TestAmerica Denver

Unless otherwise noted, all analytes for this laboratory were covered under each certification below.

Authority	Program	EPA Region	Certification ID	Expiration Date
A2LA	DoD ELAP		2907.01	10-31-17

Analysis Method	Prep Method	Matrix	Analyte

Method Summary

Client: Cardno TEC, Inc
Project/Site: Ravenna, OH - Atlas Scrap Yard

TestAmerica Job ID: 280-90781-1

Method	Method Description	Protocol	Laboratory
8330B	Nitroaromatics and Nitramines (HPLC)	EPA	TAL DEN
7196A	Chromium, Hexavalent	SW846	TAL DEN
9012B	Cyanide, Total and/or Amenable	EPA	TAL DEN

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL DEN = TestAmerica Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

Sample Summary

Client: Cardno TEC, Inc
Project/Site: Ravenna, OH - Atlas Scrap Yard

TestAmerica Job ID: 280-90781-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
280-90781-1	ASYmw-004-110916-GW	Water	11/09/16 15:37	11/10/16 10:00
280-90781-2	ASYmw-005-110916-GW	Water	11/09/16 15:12	11/10/16 10:00
280-90781-3	DET-3-110916-GW	Water	11/09/16 14:14	11/10/16 10:00

HPLC/IC MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-90781-1

SDG No.:

Instrument ID: CHHPLC_X3 Analysis Batch Number: 348785

Lab Sample ID: IC 280-348785/17 Client Sample ID:

Date Analyzed: 10/28/16 20:21 Lab File ID: 070-1701.D GC Column: UltraCarb5uOD ID: 4.6(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Picric acid	8.19	Split Peak	freya	10/29/16 09:35
Nitroglycerin	11.07	Baseline Smoothing	freya	10/29/16 09:29
2-Amino-4,6-dinitrotoluene	12.01	Split Peak	freya	10/29/16 09:25
2,6-Dinitrotoluene	12.16	Split Peak	freya	10/29/16 09:25
PETN	15.46	Incomplete Integration	freya	10/29/16 09:25

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-90781-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
8330 LCS_00072	03/02/17	09/14/16	Acetonitrile, Lot ACN_00182	100 mL	8330 LCSMix2_00088	1 mL	2,6-Dinitrotoluene	10 ug/mL
							2-Amino-4,6-dinitrotoluene	10 ug/mL
							2-Nitrotoluene	10 ug/mL
							3-Nitrotoluene	10 ug/mL
							4-Amino-2,6-dinitrotoluene	10 ug/mL
							4-Nitrotoluene	10 ug/mL
							Tetryl	10 ug/mL
					8330_NG_Stk_00032	1 mL	Nitroglycerin	100 ug/mL
					8330_NG_Stk_00033	1 mL	Nitroglycerin	100 ug/mL
					8330_PETN_Stk_00037	1 mL	PETN	100 ug/mL
					8330_PETN_Stk_00038	1 mL	PETN	100 ug/mL
					8330LCSMix1_00090	1 mL	1,3,5-Trinitrobenzene	10 ug/mL
							1,3-Dinitrobenzene	10 ug/mL
							2,4,6-Trinitrotoluene	10 ug/mL
							2,4-Dinitrotoluene	10 ug/mL
							HMX	10 ug/mL
							Nitrobenzene	10 ug/mL
							RDX	10 ug/mL
					8330MNXStckPS_00014	0.95 mL	MNX	10.0532 ug/mL
					PicricARestek_00074	1 mL	2,4,6-Trinitrophenol	10 ug/mL
.8330 LCSMix2_00088	03/31/17		Restek, Lot A087152		(Purchased Reagent)		2,6-Dinitrotoluene	1000 ug/mL
							2-Amino-4,6-dinitrotoluene	1000 ug/mL
							2-Nitrotoluene	1000 ug/mL
							3-Nitrotoluene	1000 ug/mL
							4-Amino-2,6-dinitrotoluene	1000 ug/mL
							4-Nitrotoluene	1000 ug/mL
							Tetryl	1000 ug/mL
.8330_NG_Stk_00032	07/03/18		Restek, Lot A0112817		(Purchased Reagent)		Nitroglycerin	5000 ug/mL
.8330_NG_Stk_00033	07/03/18		Restek, Lot A0112817		(Purchased Reagent)		Nitroglycerin	5000 ug/mL
.8330_PETN_Stk_00037	08/31/18		Restek, Lot A0113079		(Purchased Reagent)		PETN	5000 ug/mL
.8330_PETN_Stk_00038	08/31/18		Restek, Lot A0113079		(Purchased Reagent)		PETN	5000 ug/mL
.8330LCSMix1_00090	08/31/20		Restek, Lot A094176		(Purchased Reagent)		1,3,5-Trinitrobenzene	1000 ug/mL
							1,3-Dinitrobenzene	1000 ug/mL
							2,4,6-Trinitrotoluene	1000 ug/mL
							2,4-Dinitrotoluene	1000 ug/mL
							HMX	1000 ug/mL
							Nitrobenzene	1000 ug/mL
							RDX	1000 ug/mL
.8330MNXStckPS_00014	03/02/17	03/04/16	Acetonitrile, Lot ACN_00178	10 mL	8330MNXNeatPS_00014	10.7 mg	MNX	1058.23 ug/mL
..8330MNXNeatPS_00014	03/03/17		SRI International, Lot 05282007		(Purchased Reagent)		MNX	98.9 %
.PicricARestek_00074	09/27/19		Restek, Lot A0105913		(Purchased Reagent)		2,4,6-Trinitrophenol	1000 ug/mL
8330IntermStk_00041	03/02/17	09/21/16	Acetonitrile, Lot ACN_00178	5 mL	8330ICALStock_00022	1 mL	1,3,5-Trinitrobenzene	20 ug/mL
							1,3-Dinitrobenzene	20 ug/mL
							2,4,6-Trinitrotoluene	20 ug/mL
							2,4-Dinitrotoluene	20 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-90781-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							2,6-Dinitrotoluene	20 ug/mL
							2-Amino-4,6-dinitrotoluene	20 ug/mL
							2-Nitrotoluene	20 ug/mL
							3-Nitrotoluene	20 ug/mL
							4-Amino-2,6-dinitrotoluene	20 ug/mL
							4-Nitrotoluene	20 ug/mL
							HMX	20 ug/mL
							Nitrobenzene	20 ug/mL
							RDX	20 ug/mL
							Tetryl	20 ug/mL
							1,2-Dinitrobenzene	20 ug/mL
					8330NG_PS_00011	1 mL	Nitroglycerin	200 ug/mL
					8330PAStkPS_00041	1 mL	2,4,6-Trinitrophenol	20 ug/mL
					8330PETN_PS_00011	1 mL	PETN	200 ug/mL
.8330ICALStock_00022	03/02/17	05/11/16	Acetonitrile, Lot ACN_00178	10 mL	8330 Stock_TS_00005	1 mL	1,3,5-Trinitrobenzene	100 ug/mL
							1,3-Dinitrobenzene	100 ug/mL
							2,4,6-Trinitrotoluene	100 ug/mL
							2,4-Dinitrotoluene	100 ug/mL
							2,6-Dinitrotoluene	100 ug/mL
							2-Amino-4,6-dinitrotoluene	100 ug/mL
							2-Nitrotoluene	100 ug/mL
							3-Nitrotoluene	100 ug/mL
							4-Amino-2,6-dinitrotoluene	100 ug/mL
							4-Nitrotoluene	100 ug/mL
							HMX	100 ug/mL
							Nitrobenzene	100 ug/mL
							RDX	100 ug/mL
							Tetryl	100 ug/mL
					8330SurrStock_00159	1 mL	1,2-Dinitrobenzene	100 ug/mL
..8330 Stock_TS_00005	04/30/18	Ultra Scientific, Lot CM-1321			(Purchased Reagent)		1,3,5-Trinitrobenzene	1000 ug/mL
							1,3-Dinitrobenzene	1000 ug/mL
							2,4,6-Trinitrotoluene	1000 ug/mL
							2,4-Dinitrotoluene	1000 ug/mL
							2,6-Dinitrotoluene	1000 ug/mL
							2-Amino-4,6-dinitrotoluene	1000 ug/mL
							2-Nitrotoluene	1000 ug/mL
							3-Nitrotoluene	1000 ug/mL
							4-Amino-2,6-dinitrotoluene	1000 ug/mL
							4-Nitrotoluene	1000 ug/mL
							HMX	1000 ug/mL
							Nitrobenzene	1000 ug/mL
							RDX	1000 ug/mL
							Tetryl	1000 ug/mL
..8330SurrStock_00159	08/15/24	AccuStandard, Lot 214081391			(Purchased Reagent)		1,2-Dinitrobenzene	1000 ug/mL
.8330NG_PS_00011	12/03/17	Accustandard, Lot 215121015			(Purchased Reagent)		Nitroglycerin	1000 ug/mL
.8330PAStkPS_00041	12/01/17	AccuStandard, Lot 214121302			(Purchased Reagent)		2,4,6-Trinitrophenol	100 ug/mL
.8330PETN_PS_00011	06/16/17	Accustandard, Lot 215061294			(Purchased Reagent)		PETN	1000 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-90781-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
8330Surrogate_00090	03/14/17	09/14/16	Acetonitrile, Lot ACN_00193	500 mL	8330SurrStkSS_00101	1 mL	1,2-Dinitrobenzene	10 ug/mL
					8330SurrStkSS_00102	1 mL	1,2-Dinitrobenzene	10 ug/mL
					8330SurrStkSS_00109	1 mL	1,2-Dinitrobenzene	10 ug/mL
					8330SurrStkSS_00111	1 mL	1,2-Dinitrobenzene	10 ug/mL
					8330SurrStkSS_00113	1 mL	1,2-Dinitrobenzene	10 ug/mL
.8330SurrStkSS_00101	03/27/20		Restek, Lot A0109837		(Purchased Reagent)		1,2-Dinitrobenzene	1000 ug/mL
.8330SurrStkSS_00102	03/27/20		Restek, Lot A0109837		(Purchased Reagent)		1,2-Dinitrobenzene	1000 ug/mL
.8330SurrStkSS_00109	08/31/20		Restek, Lot A0109837		(Purchased Reagent)		1,2-Dinitrobenzene	1000 ug/mL
.8330SurrStkSS_00111	08/31/20		Restek, Lot A0109837		(Purchased Reagent)		1,2-Dinitrobenzene	1000 ug/mL
.8330SurrStkSS_00113	08/31/20		Restek, Lot A0109837		(Purchased Reagent)		1,2-Dinitrobenzene	1000 ug/mL
CN 10ppm_00229	11/22/16	11/15/16	2% NaOH, Lot 1% NaOH_00078	100 mg/L	CN CAL Std_00052	1 mL	Cyanide, Amenable	10 mg/L
							Cyanide, Free	10 mg/L
							Cyanide, Non-amenable	10 mg/L
							Cyanide, Total	10 mg/L
							Cyanide, Weak Acid Dissociable	10 mg/L
.CN CAL Std_00052	03/31/17		Ricca, Lot 2609C92		(Purchased Reagent)		Cyanide, Amenable	1000 mg/L
							Cyanide, Free	1000 mg/L
							Cyanide, Non-amenable	1000 mg/L
							Cyanide, Total	1000 mg/L
							Cyanide, Weak Acid Dissociable	1000 mg/L
CN CAL 1 ppm_01178	11/19/16	11/18/16	1% NaOH, Lot N/A	100 mL	CN 10ppm_00229	10 mL	Cyanide, Total	1 mg/L
.CN 10ppm_00229	11/22/16	11/15/16	2% NaOH, Lot 1% NaOH_00078	100 mg/L	CN CAL Std_00052	1 mL	Cyanide, Total	10 mg/L
..CN CAL Std_00052	03/31/17		Ricca, Lot 2609C92		(Purchased Reagent)		Cyanide, Total	1000 mg/L
CN ICV Daily_00942	11/19/16	11/18/16	1% HNO3, Lot N/A	100 mL	CN ICV Int_00408	1 mL	Cyanide, Total	0.1 mg/L
.CN ICV Int_00408	11/22/16	11/15/16	1% NaOH, Lot 1% NaOH_00078	100 mL	CN ICV Std_00038	1 mL	Cyanide, Total	10 mg/L
..CN ICV Std_00038	04/16/18		CPI, Lot 1097445		(Purchased Reagent)		Cyanide, Total	1000 mg/L
CN ICV Int_00408	11/22/16	11/15/16	1% NaOH, Lot 1% NaOH_00078	100 mL	CN ICV Std_00038	1 mL	Cyanide, Amenable	10 mg/L
							Cyanide, Free	10 mg/L
							Cyanide, Non-amenable	0 mg/L
							Cyanide, Total	10 mg/L
							Cyanide, Weak Acid Dissociable	10 mg/L
.CN ICV Std_00038	04/16/18		CPI, Lot 1097445		(Purchased Reagent)		Cyanide, Amenable	1000 mg/L
							Cyanide, Free	1000 mg/L
							Cyanide, Non-amenable	0 mg/L
							Cyanide, Total	1000 mg/L
							Cyanide, Weak Acid Dissociable	1000 mg/L
CR6 ICV int_01150	11/11/16	11/10/16	Di Water, Lot na	100 mL	Cr6 ICV Std_00017	0.1 mL	Chromium, hexavalent	1 mg/L
.Cr6 ICV Std_00017	04/30/21		Hach, Lot A6103		(Purchased Reagent)		Chromium, hexavalent	1000 mg/L
CR6 Int cal_00739	11/11/16	11/10/16	Di Water, Lot na	100 mL	CR6 Cal std_00007	0.1 mL	Chromium, hexavalent	1 mg/L
.CR6 Cal std_00007	04/30/19		ERA, Lot 040416		(Purchased Reagent)		Chromium, hexavalent	1000 mg/L
CR6 spike sou_00761	11/11/16	11/10/16	Di Water, Lot na	100 mL	Cr6 ICV Std_00017	1 mL	Chromium, hexavalent	10 mg/L

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-90781-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
.Cr6 ICV Std_00017	04/30/21	Hach, Lot A6103			(Purchased Reagent)		Chromium, hexavalent	1000 mg/L

Reagent

8330 LCS_00072

Report Date: 21-Oct-2016 15:09:52 Chrom Revision: 2.2 17-Oct-2016 09:27:18

Preliminary Report

TestAmerica Denver
LCS, Lab Control Sample Report

Pass! All Initially

Data File: \\ChromNA\Denver\ChromData\G2_LUNA\20161021-52147.b\001-0901.D
Lims ID: 8330_LCS_00072
Client ID:
Sample Type: LCS
Inject. Date: 18-Oct-2016 15:15:38 ALS Bottle#: 1 Worklist Smp#: 7
Injection Vol: 100.0 ul Dil. Factor: 1.0000
Sample Info: Phenyl:562555-2
Misc. Info.: 280-0051661-018
Operator ID: ACF Instrument ID: CHHPLC_G2_LUNA

Method: \\ChromNA\Denver\ChromData\G2_LUNA\20161021-52147.b\G2_8330_Luna.m
Limit Group: GCSV - 8330
Last Update: 21-Oct-2016 15:09:47 Calib Date: 19-Oct-2016 16:18:17
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\G2_LUNA\20161020-52093.b\010-1401.D

Column 1 : Luna-Phenyl hexyl (4.60 mm) Det: LC DAD1A, 254 nm
Process Host: XAWRK032

Compound	Amount Added	Amount Recovered	%Rec
5 HMX	1.00	0.9210	92.10
6 MNX	1.01	0.9610	95.59
4 2,4,6-Trinitrophenol	1.00	0.9517	95.17
7 RDX	1.00	0.9765	97.65
8 Nitrobenzene	1.00	0.9451	94.51
11 1,3-Dinitrobenzene	1.00	1.00	100.14
12 Nitroglycerin	10.0	9.60	96.01
13 o-Nitrotoluene	1.00	0.9621	96.21
14 p-Nitrotoluene	1.00	1.02	102.45
15 4-Amino-2,6-dinitrotoluene	1.00	0.9718	97.18
16 m-Nitrotoluene	1.00	0.9823	98.23
17 2-Amino-4,6-dinitrotoluene	1.00	0.9246	92.46
18 1,3,5-Trinitrobenzene	1.00	0.9541	95.41
19 2,6-Dinitrotoluene	1.00	0.9428	94.28
20 2,4-Dinitrotoluene	1.00	0.9585	95.85
21 Tetryl	1.00	0.9613	96.13
22 2,4,6-Trinitrotoluene	1.00	1.00	99.55
23 PETN	10.0	10.2	101.93

Report Date: 21-Oct-2016 15:10:18 Chrom Revision: 2.2 17-Oct-2016 09:27:18

Preliminary Report

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\G2_LUNA\20161021-52147.b\001-0901.D

Injection Date: 18-Oct-2016 15:15:38 Instrument ID: CHHPLC_G2_LUNA Operator ID: ACF

Lims ID: 8330_LCS_00072 Worklist Smp#: 7

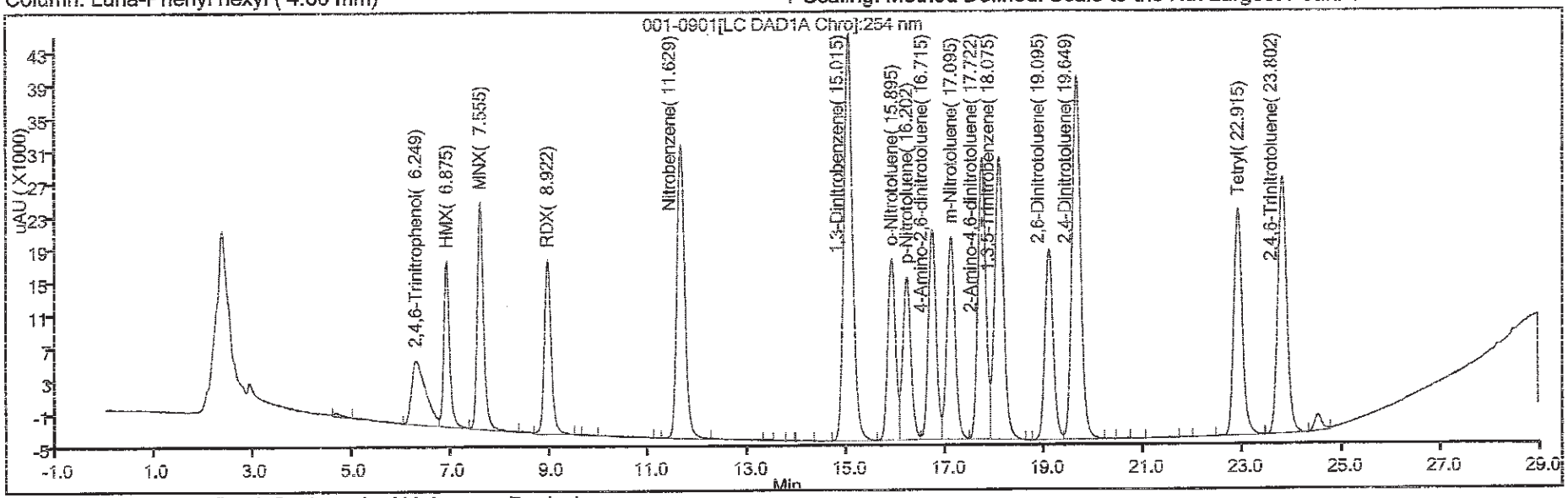
Client ID:

Injection Vol: 100.0 ul Dil. Factor: 1.0000 ALS Bottle#: 1

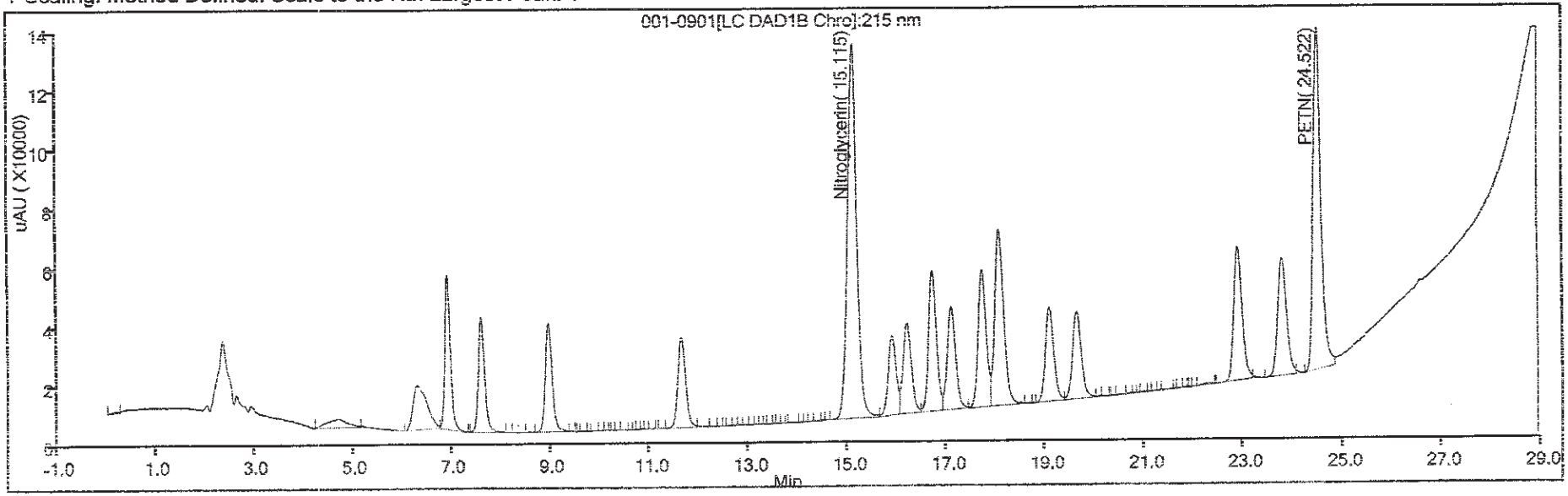
Method: G2_8330_Luna Limit Group: GCSV - 8330

Column: Luna-Phenyl hexyl (4.60 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Peak: 1



Y Scaling: Method Defined: Scale to the Nth Largest Peak: 1



Reagent

8330 LCSMix2_00088

RESTEK

110 Benner Circle
Bellefonte, PA 16823-8812
Tel: (800)356-1688
Fax: (814)353-1309

www.Restek.com

ACCREDITED
Reference Material Producer
Certificate #3222.01

ilac-MRA

ACCREDITED
Testing Laboratory
Certificate #3222.02

Certificate of Analysis

FOR LABORATORY USE ONLY-READ MSDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 31451 **Lot No.:** A087152

Description : 8330 Calibration Mix #2

8330 Calibration Std #2 1000ug/mL, Acetonitrile, 1mL/ampul *PGI BOX REQUIRED* SHIP FED EX GROUND ONLY

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : March 2017 **Storage:** 10°C or colder

C E R T I F I E D V A L U E S

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)		
1	Tetryl	1,000.0 ug/mL	+/- 5.9397	ug/mL	Gravimetric
	CAS # 479-45-8		+/- 32.2037	ug/mL	Unstressed
	Purity 99%		+/- 44.7693	ug/mL	Stressed
2	4-Amino-2,6-dinitrotoluene	999.6 ug/mL	+/- 5.9373	ug/mL	Gravimetric
	CAS # 19406-51-0		+/- 32.1908	ug/mL	Unstressed
	Purity 98%		+/- 44.7514	ug/mL	Stressed
3	2-Amino-4,6-dinitrotoluene	1,000.0 ug/mL	+/- 5.9397	ug/mL	Gravimetric
	CAS # 35572-78-2		+/- 32.2037	ug/mL	Unstressed
	Purity 99%		+/- 44.7693	ug/mL	Stressed
4	2,6-Dinitrotoluene	1,000.0 ug/mL	+/- 5.9397	ug/mL	Gravimetric
	CAS # 606-20-2		+/- 32.2037	ug/mL	Unstressed
	Purity 99%		+/- 44.7693	ug/mL	Stressed
5	2-Nitrotoluene	1,000.0 ug/mL	+/- 5.9397	ug/mL	Gravimetric
	CAS # 88-72-2		+/- 32.2037	ug/mL	Unstressed
	Purity 99%		+/- 44.7693	ug/mL	Stressed
6	4-Nitrotoluene	1,000.0 ug/mL	+/- 5.9395	ug/mL	Gravimetric
	CAS # 99-99-0		+/- 32.2029	ug/mL	Unstressed
	Purity 97%		+/- 44.7681	ug/mL	Stressed
7	3-Nitrotoluene	1,000.0 ug/mL	+/- 5.9395	ug/mL	Gravimetric
	CAS # 99-08-1		+/- 32.2029	ug/mL	Unstressed
	Purity 97%		+/- 44.7681	ug/mL	Stressed

Solvent: Acetonitrile
CAS # 75-05-8
Purity 99%

Column:
250mm x 4.6mm
Ultra C18 (cat.# 9174575)

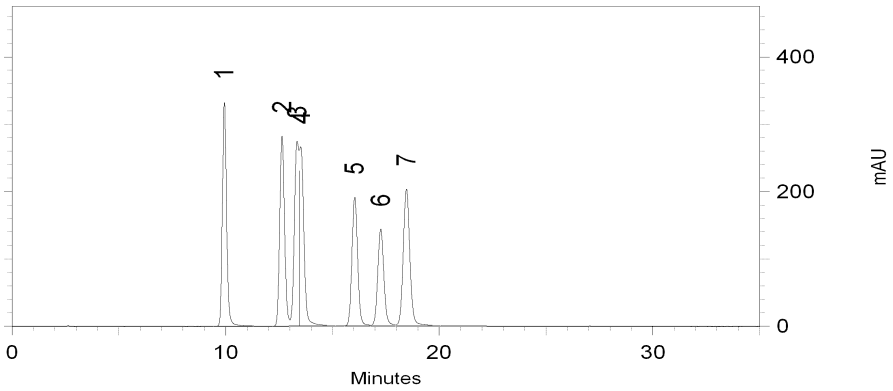
Flow Rate:
1.0 ml/min.

Mobile Phase A:
water:methanol (44:56 V/V)

Mobile Phase B:

Mobile Phase Comp

Det. Type:
Wavelength: 210 nm



Valerie N. Walters - QA Analyst

Date Passed: 06-Apr-2012 **Balance:** 1128342314

Manufactured under Restek's ISO 9001:2008 Registered Quality System Certificate #FM 80397

General Certified Reference Material Notes

Expiration Notes:

- Expiration date of the unopened ampul stored at the recommended storage condition is the last day of the month listed in the expiration date field.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO Guides 34 and 35. The certified combined stressed uncertainty value (includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ stressed} = k\sqrt{U^2_{gravimetric} + U^2_{homogeneity} + U^2_{storage\ stability} + U^2_{shipping\ stability}}$$

  k is a coverage factor of 2, which gives a level of confidence of approximately 95%.
- It is important to note that the shipping stability uncertainty was obtained under temperature extremes for specific time intervals; therefore, the certified combined stressed uncertainty value should only be applied to the product if it was stored at non-standard temperature conditions up to and including 7 days. Contact Restek Technical Service at www.restek.com/Contact-Us for use recommendations if your shipment was in-transit for more than 7 days at non-standard temperature conditions.
- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

Label Conditions	Standard Conditions	Non-Standard Conditions
25°C Nominal (Room Temperature)	< 60°C	≥ 60°C up to 7 days
10°C or colder (Refrigerate)	< 40°C	≥ 40°C up to 7 days
0°C or colder (Freezer)	< 25°C	≥ 25°C up to 7 days

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at www.restek.com/Contact-Us.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Samples should be transferred into deactivated vials for handling and storage. Restek supplies deactivated vials along with most standards packed in 2 mL ampules. Due to space constraints, Restek does not supply vials for larger volume ampules. Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31840, which includes complete instructions. Restek will also deactivate larger volume vials from our inventory as a custom ordered item. Contact your Restek sales or customer service representative for details.
- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.

Reagent

8330 Stock_TS_00005

ULTRA SCIENTIFIC
Analytical Solutions

Certificate of Analysis

ISO Guide 34 Reference Material

Product Number: NAIM-833E
Lot Number: CM-1321

Lot Issue Date: 18-Mar 2015
Expiration Date: 30-Apr 2018

Product Name: Combined Stock Solution

Description:
This Reference Material (RM) was gravimetrically prepared in accordance with ISO Guide 34 and under ULTRA Scientific's ISO 9001 registered quality system. The neat materials used for this product have been verified by ULTRA's ISO 17025 laboratory and under ULTRA's ISO Guide 34 accreditation. The analyte concentrations were verified by ULTRA's ISO 17025 accredited laboratory. For each analyte, the true value, with its uncertainty value calculated at the 95% confidence level, is reported below.

Analyte	CAS#	Analyte Lot	Calculated Value	True Value	Traceability & Method
HMX	002691-41-0	RM06237	999.9 µg/mL	1006 ± 4.1 µg/mL	CJ-4135A; LC/DAD
RDX	000121-82-4	RM05682	1000 µg/mL	998.9 ± 4.4 µg/mL	CJ-4135A; LC/DAD
1,3,5-trinitrobenzene	000099-35-4	RM06608	1000 µg/mL	969.3 ± 4.2 µg/mL	CJ-4135A; LC/DAD
m-dinitrobenzene	000099-65-0	RM04448	1001 µg/mL	932.5 ± 3.6 µg/mL	CJ-4135A; LC/DAD
nitrobenzene	000098-95-3	RM01293	1003 µg/mL	1001 ± 4.2 µg/mL	CJ-4135A; LC/DAD
2,4,6-trinitrotoluene	000118-96-7	RM06889	1003 µg/mL	1007 ± 3.4 µg/mL	CJ-4135A; LC/DAD
2,4-dinitrotoluene	000121-14-2	RM01209	1003 µg/mL	1001 ± 3.2 µg/mL	CJ-4135A; LC/DAD
tetryl	000479-45-8	RM06942	1000 µg/mL	998.3 ± 3.9 µg/mL	CK-2749; LC/DAD
2,6-dinitrotoluene	000606-20-2	NT00450	1003 µg/mL	999.0 ± 3.8 µg/mL	CK-2749; LC/DAD
2-nitrotoluene	000088-72-2	NT01996	1004 µg/mL	1003 ± 4.0 µg/mL	CK-2749; LC/DAD
3-nitrotoluene	000099-08-1	NT02212	1004 µg/mL	1003 ± 3.4 µg/mL	CK-2749; LC/DAD
4-nitrotoluene	000099-99-0	NT02096	1001 µg/mL	997.3 ± 4.0 µg/mL	CK-2749; LC/DAD
2-amino-4,6-dinitrotoluene	035572-78-2	RM04229	1002 µg/mL	982.9 ± 4.0 µg/mL	CK-2749; LC/DAD
4-amino-2,6-dinitrotoluene	019406-51-0	RM04226	1003 µg/mL	982.9 ± 4.0 µg/mL	CK-2749; LC/DAD

Solvent: acetonitrile

Storage: Store at Room Temperature (15° - 30°C)

Traceability:
Traceability has been established through an unbroken chain of comparisons, each having stated uncertainties. Comparisons are based on appropriate physical or chemical measurements, including gravimetric or volumetric dilution, where the mass or volume of a solution before and after dilution is measured. The balances used for these measurements are calibrated with weights traceable to NIST in compliance with ANSI/NCSL Z-540-1, ISO 9001, ISO 17025, and ISO Guide 34. Calibrated Class A glassware is used for volumetric measurements. Thermometers are calibrated against a NIST traceable thermometer in accordance with NIST Special Publication 819.

Estimation of Uncertainties:
The true value is reported, with its uncertainty value calculated at the 95% confidence level.

3843528
ID: 8330 Stock_TS_00005
Exp: 04/30/18 Prpd: ACF
NAIM-833E Combined Stock

3843529
ID: 8330 Stock_TS_00006
Exp: 04/30/18 Prpd: ACF
NAIM-833E Combined Stock

ANAB ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER
ANAB ACCREDITED ISO/IEC 17025 TESTING LABORATORY

ISO 9001 Registered Quality System – TUV USA

250 SMITH STREET • NORTH KINGSTOWN, RHODE ISLAND 02852 • WWW.ULTRASCI.COM

ULTRA SCIENTIFIC
Analytical Solutions

Certificate of Analysis

ISO Guide 34 Reference Material

Product Number: NAIM-833E
Lot Number: CM-1321

Lot Issue Date: 18-Mar 2015
Expiration Date: 30-Apr 2018

Homogeneity:
This RM was formulated and unitized according to an in-house procedure and is guaranteed to be homogeneous. There is no minimum sub-sample size required.

Intended Use:
This RM is intended for the preparation of working reference samples for use in routine laboratory analyses, calibration of instruments, validation of analytical methods, assessments of measurement methods and continuing calibration verification.

Instructions for Use:
Sample aliquots for analysis should be withdrawn at 20°C to 25°C immediately after opening and should be processed without delay for the true value to be valid within the stated uncertainties. Each unit contains slightly more than the stated labeled volume to facilitate transfer of the material for testing.

Should crystallization occur after refrigeration, gentle warming (<40°C) and shaking of the container is usually sufficient to re-dissolve the material. If this is unsuccessful, an ultrasonic bath may be used. Solutions containing volatile components (such as gases) should be chilled prior to opening to minimize headspace problems.

Hazards:
Refer to the Safety Data Sheet for information regarding this RM.

Expiration of Certification:
The certification of this RM is valid, within the measurement uncertainty specified, until the expiration date specified above, provided the RM is handled and stored in accordance with the instructions given in this certificate. This certification is nullified if the RM is damaged, contaminated, or otherwise modified.

Maintenance of Certification:
The real-time, long term stability of the RM may be monitored over the lifetime of the certification. If substantive changes occur that affect the certification before the expiration of this certificate, ULTRA Scientific will notify the purchaser.

Peter A. King, Ph.D.
VP, Technical Operations

Daniel J. Lamendola
Director of QA/RA

ANAB ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

ANAB ACCREDITED ISO 17025 TESTING LABORATORY

250 SMITH STREET • NORTH KINGSTOWN, RHODE ISLAND 02852 • WWW.ULTRASCI.COM

Reagent

8330_NG_Stk_00032

110 Benner Circle
Bellefonte, PA 16823-8812
Tel: (800)356-1688
Fax: (814)353-1309

www.restek.com

CERTIFIED REFERENCE MATERIAL

ISO Guide 34 Accredited
Reference Material Producer
Certificate #3222.01

ISO/IEC 17025 Accredited
Testing Laboratory
Certificate #3222.02

Certificate of Composition

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 568871 **Lot No.:** A0112817

Description : Custom Nitroglycerin Standard

Custom Nitroglycerin Standard 5000 µg/mL, Acetonitrile, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : July 31, 2018 **Storage:** 10°C or colder

C E R T I F I E D V A L U E S

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)		
1	Nitroglycerin	5,016.0 µg/mL	+/- 46.6461	µg/mL	Gravimetric
	CAS # 55-63-0 (Lot 150612JLM)		+/- 272.0989	µg/mL	Unstressed
	Purity 99%		+/- 295.4680	µg/mL	Stressed

Solvent: Acetonitrile
CAS # 75-05-8
Purity 99%

Column:
250mm x 4.6mm
Ultra C18 (cat.# 9174575)

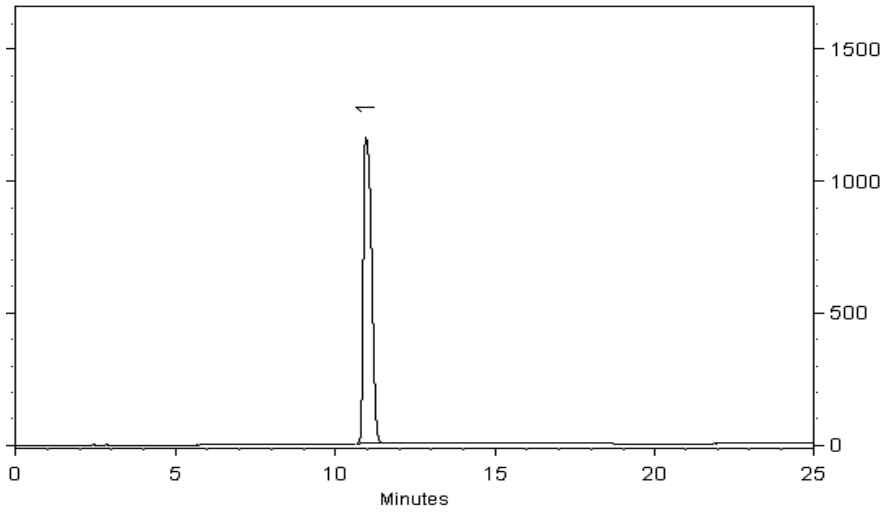
Flow Rate:
1.0 ml/min.

Mobile Phase A:
water:methanol (44:56 V/V)

Mobile Phase B:

Mobile Phase Composition:

Det. Type:
Wavelength: 210 nm



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Cathleen Soltis - Mix Technician

Date Mixed: 24-Jul-2015 **Balance:** 1128360905

Jennifer L. Pollino - QC Analyst

Date Passed: 29-Jul-2015

REVIEWED
By Amanda Miller at 8:29 am, Jul 29, 2015

Manufactured under Restek's ISO 9001:2008 Registered Quality System Certificate #FM 80397

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO Guides 34 and 35. The certified combined stressed uncertainty value (includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ stressed} = k\sqrt{U^2_{gravimetric} + U^2_{homogeneity} + U^2_{storage\ stability} + U^2_{shipping\ stability}}$$

  k is a coverage factor of 2, which gives a level of confidence of approximately 95%.
- It is important to note that the shipping stability uncertainty was obtained under temperature extremes for specific time intervals; therefore, the certified combined stressed uncertainty value should only be applied to the product if it was stored at non-standard temperature conditions up to and including 7 days. Contact Restek Technical Service at www.restek.com/Contact-Us for use recommendations if your shipment was in-transit for more than 7 days at non-standard temperature conditions.
- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

Label Conditions	Standard Conditions	Non-Standard Conditions
25°C Nominal (Room Temperature)	< 60°C	≥ 60°C up to 7 days
10°C or colder (Refrigerate)	< 40°C	≥ 40°C up to 7 days
0°C or colder (Freezer)	< 25°C	≥ 25°C up to 7 days

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at www.restek.com/Contact-Us.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Samples should be transferred into deactivated vials for handling and storage. Restek supplies deactivated vials along with most standards packed in 2 mL ampules. Due to space constraints, Restek does not supply vials for larger volume ampules. Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions. Restek will also deactivate larger volume vials from our inventory as a custom ordered item. Contact your Restek sales or customer service representative for details.
- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.

Reagent

8330_NG_Stk_00033

110 Benner Circle
Bellefonte, PA 16823-8812
Tel: (800)356-1688
Fax: (814)353-1309

www.restek.com

CERTIFIED REFERENCE MATERIAL

ISO Guide 34 Accredited
Reference Material Producer
Certificate #3222.01

ISO/IEC 17025 Accredited
Testing Laboratory
Certificate #3222.02

Certificate of Composition

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 568871 **Lot No.:** A0112817

Description : Custom Nitroglycerin Standard

Custom Nitroglycerin Standard 5000 µg/mL, Acetonitrile, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : July 31, 2018 **Storage:** 10°C or colder

C E R T I F I E D V A L U E S

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)	
1	Nitroglycerin	5,016.0 µg/mL	+/- 46.6461 µg/mL	Gravimetric
	CAS # 55-63-0 (Lot 150612JLM)		+/- 272.0989 µg/mL	Unstressed
	Purity 99%		+/- 295.4680 µg/mL	Stressed

Solvent: Acetonitrile
CAS # 75-05-8
Purity 99%

Column:
250mm x 4.6mm
Ultra C18 (cat.# 9174575)

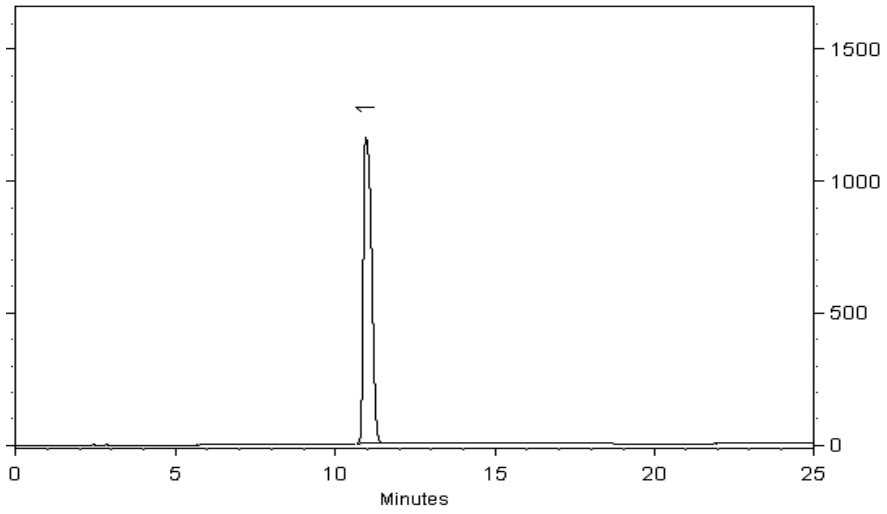
Flow Rate:
1.0 ml/min.

Mobile Phase A:
water:methanol (44:56 V/V)

Mobile Phase B:

Mobile Phase Composition:

Det. Type:
Wavelength: 210 nm



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Cathleen Soltis - Mix Technician

Date Mixed: 24-Jul-2015 **Balance:** 1128360905

Jennifer L. Pollino - QC Analyst

Date Passed: 29-Jul-2015

REVIEWED
By Amanda Miller at 8:29 am, Jul 29, 2015

Manufactured under Restek's ISO 9001:2008 Registered Quality System Certificate #FM 80397

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO Guides 34 and 35. The certified combined stressed uncertainty value (includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ stressed} = k\sqrt{U^2_{gravimetric} + U^2_{homogeneity} + U^2_{storage\ stability} + U^2_{shipping\ stability}}$$

  k is a coverage factor of 2, which gives a level of confidence of approximately 95%.
- It is important to note that the shipping stability uncertainty was obtained under temperature extremes for specific time intervals; therefore, the certified combined stressed uncertainty value should only be applied to the product if it was stored at non-standard temperature conditions up to and including 7 days. Contact Restek Technical Service at www.restek.com/Contact-Us for use recommendations if your shipment was in-transit for more than 7 days at non-standard temperature conditions.
- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

Label Conditions	Standard Conditions	Non-Standard Conditions
25°C Nominal (Room Temperature)	< 60°C	≥ 60°C up to 7 days
10°C or colder (Refrigerate)	< 40°C	≥ 40°C up to 7 days
0°C or colder (Freezer)	< 25°C	≥ 25°C up to 7 days

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at www.restek.com/Contact-Us.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Samples should be transferred into deactivated vials for handling and storage. Restek supplies deactivated vials along with most standards packed in 2 mL ampules. Due to space constraints, Restek does not supply vials for larger volume ampules. Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions. Restek will also deactivate larger volume vials from our inventory as a custom ordered item. Contact your Restek sales or customer service representative for details.
- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.

Reagent

8330_PETN_Stk_00037

110 Benner Circle
Bellefonte, PA 16823-8812
Tel: (800)356-1688
Fax: (814)353-1309

www.restek.com

CERTIFIED REFERENCE MATERIAL

ACCREDITED
ISO Guide 34 Accredited
Reference Material Producer
Certificate #3222.01

ACCREDITED
ISO/IEC 17025 Accredited
Testing Laboratory
Certificate #3222.02

Certificate of Composition

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 568872 **Lot No.:** A0113079

Description : Custom PETN Standard

Custom PETN Standard 5,000µg/mL, Acetonitrile, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : August 31, 2018 **Storage:** 10°C or colder

C E R T I F I E D V A L U E S

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)	
1	PETN	5,020.0 µg/mL	+/- 46.6833 µg/mL	Gravimetric
	CAS # 78-11-5 (Lot 051108JLM)		+/- 272.3159 µg/mL	Unstressed
	Purity 99%		+/- 295.7036 µg/mL	Stressed

Solvent: Acetonitrile
CAS # 75-05-8
Purity 99%

Column:
250mm x 4.6mm
Ultra C18 (cat.# 9174575)

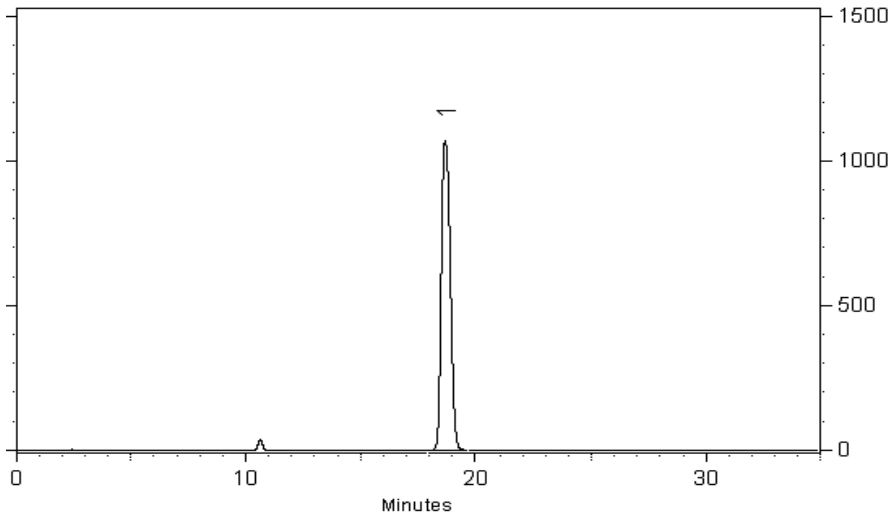
Flow Rate:
1.0 ml/min.

Mobile Phase A:
water:methanol (44:56 V/V)

Mobile Phase B:

Mobile Phase Composition:

Det. Type:
Wavelength: 210 nm



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Cheryl Graham - Mix Technician

Date Mixed: 05-Aug-2015 **Balance:** B345965662

Diane Shaffer - QAAnalyst

Date Passed: 10-Aug-2015

REVIEWED
By jbreon at 1:48 pm, Aug 10, 2015

Manufactured under Restek's ISO 9001:2008 Registered Quality System Certificate #FM 80397

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO Guides 34 and 35. The certified combined stressed uncertainty value (includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ stressed} = k\sqrt{U^2_{gravimetric} + U^2_{homogeneity} + U^2_{storage\ stability} + U^2_{shipping\ stability}}$$

  k is a coverage factor of 2, which gives a level of confidence of approximately 95%.
- It is important to note that the shipping stability uncertainty was obtained under temperature extremes for specific time intervals; therefore, the certified combined stressed uncertainty value should only be applied to the product if it was stored at non-standard temperature conditions up to and including 7 days. Contact Restek Technical Service at www.restek.com/Contact-Us for use recommendations if your shipment was in-transit for more than 7 days at non-standard temperature conditions.
- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

Label Conditions	Standard Conditions	Non-Standard Conditions
25°C Nominal (Room Temperature)	< 60°C	≥ 60°C up to 7 days
10°C or colder (Refrigerate)	< 40°C	≥ 40°C up to 7 days
0°C or colder (Freezer)	< 25°C	≥ 25°C up to 7 days

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at www.restek.com/Contact-Us.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Samples should be transferred into deactivated vials for handling and storage. Restek supplies deactivated vials along with most standards packed in 2 mL ampules. Due to space constraints, Restek does not supply vials for larger volume ampules. Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions. Restek will also deactivate larger volume vials from our inventory as a custom ordered item. Contact your Restek sales or customer service representative for details.
- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.

Reagent

8330_PETN_Stk_00038

110 Benner Circle
Bellefonte, PA 16823-8812
Tel: (800)356-1688
Fax: (814)353-1309

www.restek.com

CERTIFIED REFERENCE MATERIAL

ACCREDITED
ISO Guide 34 Accredited
Reference Material Producer
Certificate #3222.01

ACCREDITED
ISO/IEC 17025 Accredited
Testing Laboratory
Certificate #3222.02

Certificate of Composition

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 568872 **Lot No.:** A0113079

Description : Custom PETN Standard

Custom PETN Standard 5,000µg/mL, Acetonitrile, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : August 31, 2018 **Storage:** 10°C or colder

C E R T I F I E D V A L U E S

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)	
1	PETN	5,020.0 µg/mL	+/- 46.6833 µg/mL	Gravimetric
	CAS # 78-11-5 (Lot 051108JLM)		+/- 272.3159 µg/mL	Unstressed
	Purity 99%		+/- 295.7036 µg/mL	Stressed

Solvent: Acetonitrile
CAS # 75-05-8
Purity 99%

Column:
250mm x 4.6mm
Ultra C18 (cat.# 9174575)

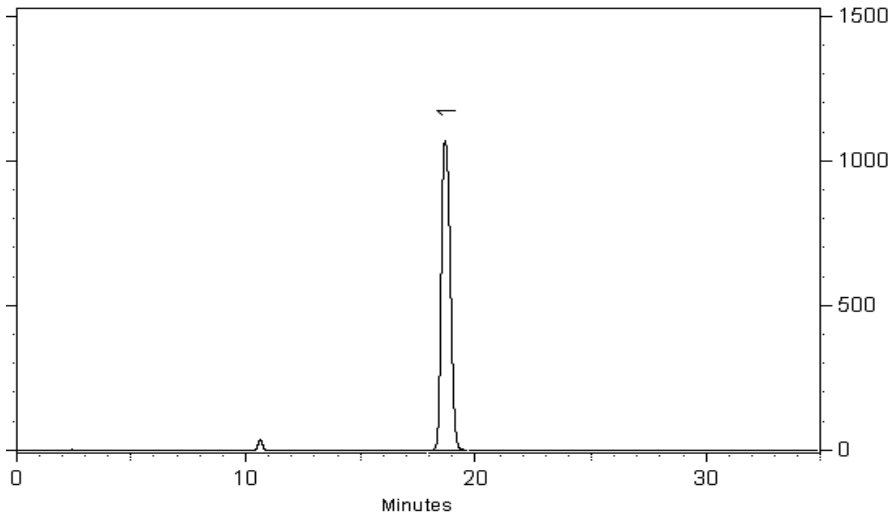
Flow Rate:
1.0 ml/min.

Mobile Phase A:
water:methanol (44:56 V/V)

Mobile Phase B:

Mobile Phase Composition:

Det. Type:
Wavelength: 210 nm



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Cheryl Graham - Mix Technician

Date Mixed: 05-Aug-2015 **Balance:** B345965662

Diane Shaffer - QAAnalyst

Date Passed: 10-Aug-2015

REVIEWED
By jbreon at 1:48 pm, Aug 10, 2015

Manufactured under Restek's ISO 9001:2008 Registered Quality System Certificate #FM 80397

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO Guides 34 and 35. The certified combined stressed uncertainty value (includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ stressed} = k\sqrt{U^2_{gravimetric} + U^2_{homogeneity} + U^2_{storage\ stability} + U^2_{shipping\ stability}}$$

  k is a coverage factor of 2, which gives a level of confidence of approximately 95%.
- It is important to note that the shipping stability uncertainty was obtained under temperature extremes for specific time intervals; therefore, the certified combined stressed uncertainty value should only be applied to the product if it was stored at non-standard temperature conditions up to and including 7 days. Contact Restek Technical Service at www.restek.com/Contact-Us for use recommendations if your shipment was in-transit for more than 7 days at non-standard temperature conditions.
- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

Label Conditions	Standard Conditions	Non-Standard Conditions
25°C Nominal (Room Temperature)	< 60°C	≥ 60°C up to 7 days
10°C or colder (Refrigerate)	< 40°C	≥ 40°C up to 7 days
0°C or colder (Freezer)	< 25°C	≥ 25°C up to 7 days

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at www.restek.com/Contact-Us.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Samples should be transferred into deactivated vials for handling and storage. Restek supplies deactivated vials along with most standards packed in 2 mL ampules. Due to space constraints, Restek does not supply vials for larger volume ampules. Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions. Restek will also deactivate larger volume vials from our inventory as a custom ordered item. Contact your Restek sales or customer service representative for details.
- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.

Reagent

8330LCSMix1_00090

RESTEK®
110 Benner Circle
Bellefonte, PA 16823-8812
Tel: (800)356-1688
Fax: (814)353-1309

www.restek.com

CERTIFIED REFERENCE MATERIAL

Certificate of Analysis

ACCREDITED
ISO Guide 34 Accredited
Reference Material Producer
Certificate #3222.01

ilac-MRA

ACCREDITED
ISO/IEC 17025 Accredited
Testing Laboratory
Certificate #3222.02

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 31450 **Lot No.:** A0113652

Description : 8330 Calibration Mix #1

8330 Calibration Std #1 1000µg/mL, Acetonitrile, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : August 31, 2020 **Storage:** 10°C or colder

CERTIFIED VALUES

Elution Order	Compound		Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)		
1	HMX		1,004.5 µg/mL	+/- 5.9664	µg/mL	Gravimetric
	CAS # 2691-41-0	(Lot 111005JLM)		+/- 54.0142	µg/mL	Unstressed
	Purity 98%			+/- 58.7320	µg/mL	Stressed
2	RDX		1,001.0 µg/mL	+/- 5.9456	µg/mL	Gravimetric
	CAS # 121-82-4	(Lot 080228JLM)		+/- 53.8260	µg/mL	Unstressed
	Purity 99%			+/- 58.5274	µg/mL	Stressed
3	1,3,5-Trinitrobenzene		1,004.0 µg/mL	+/- 5.9635	µg/mL	Gravimetric
	CAS # 99-35-4	(Lot UNVVB)		+/- 53.9873	µg/mL	Unstressed
	Purity 99%			+/- 58.7028	µg/mL	Stressed
4	1,3-Dinitrobenzene		1,002.0 µg/mL	+/- 5.9516	µg/mL	Gravimetric
	CAS # 99-65-0	(Lot BCBB1436V)		+/- 53.8797	µg/mL	Unstressed
	Purity 99%			+/- 58.5858	µg/mL	Stressed
5	Nitrobenzene		1,002.0 µg/mL	+/- 5.9516	µg/mL	Gravimetric
	CAS # 98-95-3	(Lot SHBF2348V)		+/- 53.8797	µg/mL	Unstressed
	Purity 99%			+/- 58.5858	µg/mL	Stressed
6	2,4,6-Trinitrotoluene		1,002.0 µg/mL	+/- 5.9516	µg/mL	Gravimetric
	CAS # 118-96-7	(Lot 2554100)		+/- 53.8797	µg/mL	Unstressed
	Purity 99%			+/- 58.5858	µg/mL	Stressed
7	2,4-Dinitrotoluene		1,002.0 µg/mL	+/- 5.9516	µg/mL	Gravimetric
	CAS # 121-14-2	(Lot MKAA0690V)		+/- 53.8797	µg/mL	Unstressed
	Purity 99%			+/- 58.5858	µg/mL	Stressed

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO Guides 34 and 35. The certified combined stressed uncertainty value (includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ stressed} = k\sqrt{U^2_{gravimetric} + U^2_{homogeneity} + U^2_{storage\ stability} + U^2_{shipping\ stability}}$$

  k is a coverage factor of 2, which gives a level of confidence of approximately 95%.
- It is important to note that the shipping stability uncertainty was obtained under temperature extremes for specific time intervals; therefore, the certified combined stressed uncertainty value should only be applied to the product if it was stored at non-standard temperature conditions up to and including 7 days. Contact Restek Technical Service at www.restek.com/Contact-Us for use recommendations if your shipment was in-transit for more than 7 days at non-standard temperature conditions.
- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

Label Conditions	Standard Conditions	Non-Standard Conditions
25°C Nominal (Room Temperature)	< 60°C	≥ 60°C up to 7 days
10°C or colder (Refrigerate)	< 40°C	≥ 40°C up to 7 days
0°C or colder (Freezer)	< 25°C	≥ 25°C up to 7 days

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at www.restek.com/Contact-Us.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Samples should be transferred into deactivated vials for handling and storage. Restek supplies deactivated vials along with most standards packed in 2 mL ampules. Due to space constraints, Restek does not supply vials for larger volume ampules. Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions. Restek will also deactivate larger volume vials from our inventory as a custom ordered item. Contact your Restek sales or customer service representative for details.
- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.

Reagent

8330MNXNeatPS_00014

TestAmerica Denver
4955Yarrow Street
Arvada, CO 80002

March 10, 2015

Att'n: LC/MS

Dear LC/MS

Enclosed please find one (1) 10-mg sample of 1-nitroso=3,5-dinitro-1,3,5-triazacyclohexane (MNX) as requested viae-mail under Purchase Order 2601686. This material is 98.9% pure with 0.49% RDX based on chromatographic analysis. I hope this information helps you.

If you have any questions regarding this material, please don't hesitate to contact me.

Sincerely,

Ronald Spanggord

Ronald J. Spanggord, Ph.D.
Assoc. Dept. Director
Chemical Sciences and Technology Department
(650) 859-3822 (phone)
(650) 859-4321 (Fax)

Reagent

8330NG_PS_00011

125 Market Street
New Haven, CT 06513
USA

AccuStandard® Inc.

Tel (203)786-5290
Fax (203)786-5287
www.AccuStandard.com

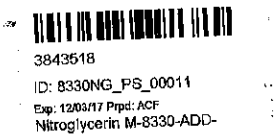
CERTIFICATE OF ANALYSIS

Catalog No: M-8330-ADD-1-10X
Description: Nitroglycerin
Lot: 215121015
Solvent: Ethanol (97%)
Methanol (3%)
Hazards: **HIGHLY FLAMMABLE** - *Refer to SDS for safety info*

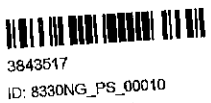
Danger 2

Date Certified: Dec 3, 2015
Expiration: Dec 3, 2017
Sample Size: 1 mL
Components: 1
Storage Condition: Refrig (0-5 °C)
Included on ISO/IEC 17025 Scope of Accreditation: Yes
Included on ISO Guide 34 Scope of Accreditation: Yes

Component	CAS #	Purity % (HPLC)	Prepared Concentration[1] (µg/mL)	Certified Analyte Concentration[2] (µg/mL)
Nitroglycerin	55-63-0	99.4	1003	997



3843518
ID: 8330NG_PS_00011
Exp: 12/03/17 Prpd: ACF
Nitroglycerin M-8330-ADD-



3843517
ID: 8330NG_PS_00010
Exp: 12/03/17 Prpd: ACF
Nitroglycerin M-8330-ADD-

A product with a suffix (-1A, -2B, etc. or -01, -02, etc.) on its lot number has had its expiration date extended and is identical to the same lot number without the suffix.

[1] All weights are traceable through NIST, Test No. 822-275872-11

[2] Certified Analyte Concentration = Purity x Prepared Concentration. The Uncertainty associated with the gravimetric values reported on this certificate is ±0.24%. The CRM Uncertainty calculated for this product is ±5%. These values are the expanded uncertainty and represent an estimated standard deviation equal to the positive square root of the total variation of the uncertainty of components. A normal distribution is assumed and a coverage factor of K=2 is chosen using approximately a 95% confidence level.

Labels and certificates follow U.S. Conventions in reporting numerical values: A comma (,) is used to separate units of one-thousand or greater. A period (.) is used as a decimal place marker.

See reverse side for additional information

Certified By: _____
Larry Decker, Organic QC Manager

For use in routine laboratory analysis.

AccuStandard is accredited to ISO Guide 34, ISO/IEC 17025 and certified to ISO 9001

Reagent

8330PAStkPS_00041

125 Market Street
New Haven, CT 06513
USA

AccuStandard® Inc.

Tel (203)786-5290
Fax (203)786-5287
www.AccuStandard.com

CERTIFICATE OF ANALYSIS

Catalog No: M-8330-ADD-3
Description: Picric acid
Lot: 214121302-01
Solvent: Acetonitrile (50%)
Methanol (50%)
Hazards: **HIGHLY FLAMMABLE** - *Refer to SDS for safety info*

Danger 2

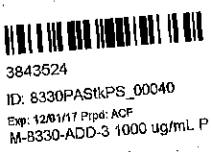
Date Certified: Dec 1, 2015
Expiration: Dec 1, 2017
Sample Size: 1 mL
Components: 1

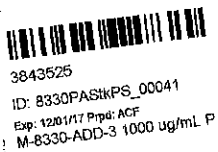
Storage Condition: Ambient (>5 °C)

Included on ISO/IEC 17025 Scope of Accreditation: Yes

Included on ISO Guide 34 Scope of Accreditation: Yes

Component	CAS #	Purity % (HPLC)	Prepared Concentration[1] (µg/mL)	Certified Analyte Concentration[2] (µg/mL)
Picric acid	88-89-1	99.1	100.1	99.2





A product with a suffix (-1A, -2B, etc. or -01, -02, etc.) on its lot number has had its expiration date extended and is identical to the same lot number without the suffix.

[1] All weights are traceable through NIST, Test No. 822-275872-11

[2] Certified Analyte Concentration = Purity x Prepared Concentration. The Uncertainty associated with the gravimetric values reported on this certificate is ±0.24%. The CRM Uncertainty calculated for this product is ±5%. These values are the expanded uncertainty and represent an estimated standard deviation equal to the positive square root of the total variation of the uncertainty of components. A normal distribution is assumed and a coverage factor of K=2 is chosen using approximately a 95% confidence level.

Labels and certificates follow U.S. Conventions in reporting numerical values: A comma (,) is used to separate units of one-thousand or greater. A period (.) is used as a decimal place marker.

See reverse side for additional information

Certified By:
Larry Decker, Organic QC Manager

For use in routine laboratory analysis.

AccuStandard is accredited to ISO Guide 34, ISO/IEC 17025 and certified to ISO 9001

OR-ORG/INO-001
Rev. 7/11

Reagent

8330PETN_PS_00011

125 Market Street
New Haven, CT 06513
USA

AccuStandard® Inc.

Tel (203)786-5290
Fax (203)786-5287
www.AccuStandard.com

CERTIFICATE OF ANALYSIS

Catalog No: M-8330-ADD-2-10X
Description: PETN in Methanol
Lot: 215061294
Solvent: Methanol
Hazards: HIGHLY FLAMMABLE - *Refer to SDS for safety info*

Danger 2

Date Certified: Jun 16, 2015
Expiration: Jun 16, 2017
Sample Size: 1 mL
Components: 1
Storage Condition: Refrig (0-5 °C)

Included on ISO/IEC 17025 Scope of Accreditation: Yes

Included on ISO Guide 34 Scope of Accreditation: Yes

Component	CAS #	Purity % (HPLC)	Prepared Concentration[1] (µg/mL)	Certified Analyte Concentration[2] (µg/mL)
PETN	78-11-5	99.4	1001	995

3843522
ID: 8330PETN_PS_00010
Exp: 06/16/17 Prpd: ACF
Accustandard M-8330-ADD-2

3843523
ID: 8330PETN_PS_00011
Exp: 06/16/17 Prpd: ACF
Accustandard M-8330-ADD-2

A product with a suffix (-1A, -2B, etc. or -01, -02, etc.) on its lot number has had its expiration date extended and is identical to the same lot number without the suffix.

[1] All weights are traceable through NIST, Test No. 822-275872-11

[2] Certified Analyte Concentration = Purity X Prepared Concentration. The Uncertainty associated with the gravimetric values reported on this certificate is ±0.24%. The CRM Uncertainty calculated for this product is ±5%. These values are the expanded uncertainty and represent an estimated standard deviation equal to the positive square root of the total variation of the uncertainty of components. A normal distribution is assumed and a coverage factor of K=2 is chosen using approximately a 95% confidence level.

Labels and certificates follow U.S. Conventions in reporting numerical values:
A comma (,) is used to separate units of one-thousand or greater.
A period (.) is used as a decimal place marker.

See reverse side for additional information

Certified By: _____
Larry Decker, Organic QC Manager

For use in routine laboratory analysis.

Reagent

8330Surrogate_00090

Report Date: 22-Sep-2016 11:05:52 Chrom Revision: 2.2 08-Sep-2016 14:45:52

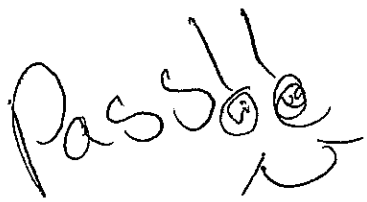
Preliminary Report

TestAmerica Denver

Recovery Report

Data File:	\\ChromNA\Denver\ChromData\X4_C18\20160921-51107.b\09210006.D				
Lims ID:	8330Surrogate00090				
Client ID:					
Sample Type:	Client				
Inject. Date:	21-Sep-2016 15:39:17	ALS Bottle#:	6	Worklist Smp#:	6
Injection Vol:	100.0 ul	Dil. Factor:	1.0000		
Sample Info:	8330Surrogate00090				
Misc. Info.:	280-0051107-006				
Operator ID:	ACF	Instrument ID:	CHHPLCX4_C18		
Method:	\\ChromNA\Denver\ChromData\X4_C18\20160921-51107.b\8330_X4.m				
Limit Group:	GCSV - 8330				
Last Update:	22-Sep-2016 10:50:53	Calib Date:	30-Aug-2016 22:16:09		
Integrator:	Falcon				
Quant Method:	External Standard	Quant By:	Initial Calibration		
Last ICal File:	\\ChromNA\Denver\ChromData\X4_C18\20160901-50506.b\21.D				
Column 1 :	UltraCarb5uODS (20) (4.60 mm)		Det: LC DAD1B, 254 nm		
Process Host:	XAWRK047				

Compound	Amount Added	Amount Recovered	% Rec.
E 8 1,2-Dinitrobenzene	1.00	0.9839	98.39



Report Date: 22-Sep-2016 11:11:11 Chrom Revision: 2.2 06-Sep-2016 14:45:52

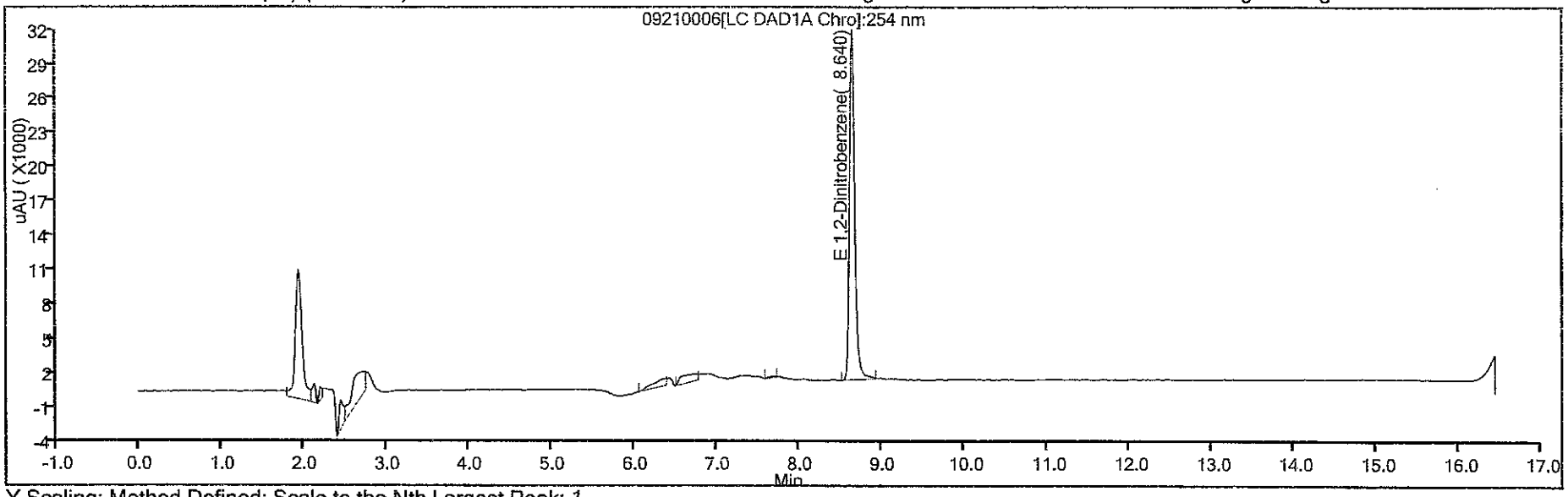
Preliminary Report

TestAmerica Denver

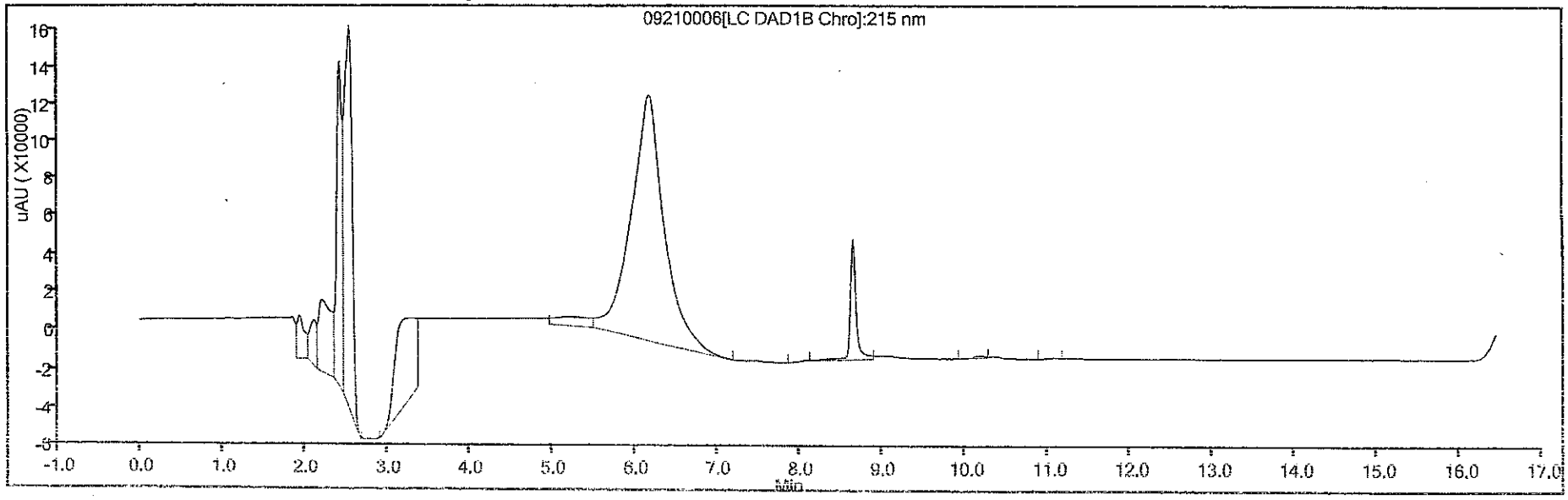
Data File:	\\ChromNA\Denver\ChromData\X4_C18\20160921-51107.b\09210006.D				
Injection Date:	21-Sep-2016 15:39:17	Instrument ID:	CHHPLCX4_C18	Operator ID:	ACF
Lims ID:	8330Surrogate00090	Lab Sample ID:	Client 280-343153/6-A	Worklist Smp#:	6
Client ID:					
Injection Vol:	100.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	6
Method:	8330_X4	Limit Group:	GCSV - 8330		

Column: UltraCarb5uODS (20) (4.60 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Y Scaling: Method Defined: Scale to the Nth Largest Peak: 1



Reagent

8330SurrStkSS_00101

RESTEK®
110 Benner Circle
Bellefonte, PA 16823-8812
Tel: (800)356-1688
Fax: (814)353-1309

www.restek.com

CERTIFIED REFERENCE MATERIAL

Certificate of Analysis

ACCREDITED
ISO Guide 34 Accredited
Reference Material Producer
Certificate #3222.01

ACCREDITED
ISO/IEC 17025 Accredited
Testing Laboratory
Certificate #3222.02

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 31453 **Lot No.:** A0109837

Description : 8330 Surrogate Mix

8330 Surrogate Std 1, 2-Dinitrobenzene 1000µg/mL, Methanol, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : March 31, 2020 **Storage:** 10°C or colder

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)		
1	1,2-Dinitrobenzene	1,001.0 µg/mL	+/- 5.9456	µg/mL	Gravimetric
	CAS # 528-29-0 (Lot MKBK2313V)		+/- 11.3531	µg/mL	Unstressed
	Purity 99%		+/- 13.0457	µg/mL	Stressed

Solvent: Methanol
CAS # 67-56-1
Purity 99%

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO Guides 34 and 35. The certified combined stressed uncertainty value (includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ stressed} = k\sqrt{U^2_{gravimetric} + U^2_{homogeneity} + U^2_{storage\ stability} + U^2_{shipping\ stability}}$$

k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

- It is important to note that the shipping stability uncertainty was obtained under temperature extremes for specific time intervals; therefore, the certified combined stressed uncertainty value should only be applied to the product if it was stored at non-standard temperature conditions up to and including 7 days. Contact Restek Technical Service at www.restek.com/Contact-Us for use recommendations if your shipment was in-transit for more than 7 days at non-standard temperature conditions.
- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

Label Conditions	Standard Conditions	Non-Standard Conditions
25°C Nominal (Room Temperature)	< 60°C	≥ 60°C up to 7 days
10°C or colder (Refrigerate)	< 40°C	≥ 40°C up to 7 days
0°C or colder (Freezer)	< 25°C	≥ 25°C up to 7 days

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at www.restek.com/Contact-Us.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Samples should be transferred into deactivated vials for handling and storage. Restek supplies deactivated vials along with most standards packed in 2 mL ampules. Due to space constraints, Restek does not supply vials for larger volume ampules. Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions. Restek will also deactivate larger volume vials from our inventory as a custom ordered item. Contact your Restek sales or customer service representative for details.
- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.

Reagent

8330SurrStkSS_00102

RESTEK®
110 Benner Circle
Bellefonte, PA 16823-8812
Tel: (800)356-1688
Fax: (814)353-1309

www.restek.com

CERTIFIED REFERENCE MATERIAL

Certificate of Analysis

ACCREDITED
ISO Guide 34 Accredited
Reference Material Producer
Certificate #3222.01

ACCREDITED
ISO/IEC 17025 Accredited
Testing Laboratory
Certificate #3222.02

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 31453 **Lot No.:** A0109837

Description : 8330 Surrogate Mix

8330 Surrogate Std 1, 2-Dinitrobenzene 1000µg/mL, Methanol, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : March 31, 2020 **Storage:** 10°C or colder

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)		
1	1,2-Dinitrobenzene	1,001.0 µg/mL	+/- 5.9456	µg/mL	Gravimetric
	CAS # 528-29-0 (Lot MKBK2313V)		+/- 11.3531	µg/mL	Unstressed
	Purity 99%		+/- 13.0457	µg/mL	Stressed

Solvent: Methanol
CAS # 67-56-1
Purity 99%

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO Guides 34 and 35. The certified combined stressed uncertainty value (includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ stressed} = k\sqrt{U^2_{gravimetric} + U^2_{homogeneity} + U^2_{storage\ stability} + U^2_{shipping\ stability}}$$

k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

- It is important to note that the shipping stability uncertainty was obtained under temperature extremes for specific time intervals; therefore, the certified combined stressed uncertainty value should only be applied to the product if it was stored at non-standard temperature conditions up to and including 7 days. Contact Restek Technical Service at www.restek.com/Contact-Us for use recommendations if your shipment was in-transit for more than 7 days at non-standard temperature conditions.
- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

Label Conditions	Standard Conditions	Non-Standard Conditions
25°C Nominal (Room Temperature)	< 60°C	≥ 60°C up to 7 days
10°C or colder (Refrigerate)	< 40°C	≥ 40°C up to 7 days
0°C or colder (Freezer)	< 25°C	≥ 25°C up to 7 days

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at www.restek.com/Contact-Us.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Samples should be transferred into deactivated vials for handling and storage. Restek supplies deactivated vials along with most standards packed in 2 mL ampules. Due to space constraints, Restek does not supply vials for larger volume ampules. Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions. Restek will also deactivate larger volume vials from our inventory as a custom ordered item. Contact your Restek sales or customer service representative for details.
- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.

Reagent

8330SurrStkSS_00109

RESTEK®
110 Benner Circle
Bellefonte, PA 16823-8812
Tel: (800)356-1688
Fax: (814)353-1309

www.restek.com

CERTIFIED REFERENCE MATERIAL

Certificate of Analysis

ACCREDITED
ISO Guide 34 Accredited
Reference Material Producer
Certificate #3222.01

ACCREDITED
ISO/IEC 17025 Accredited
Testing Laboratory
Certificate #3222.02

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 31453 **Lot No.:** A0113066

Description : 8330 Surrogate Mix

8330 Surrogate Std 1, 2-Dinitrobenzene 1000µg/mL, Methanol, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : August 31, 2020 **Storage:** 10°C or colder

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)		
1	1,2-Dinitrobenzene **CAS #** 528-29-0 **Purity** 99% (Lot MKBK2313V)	1,002.0 µg/mL	+/- 5.9516	µg/mL	Gravimetric
			+/- 11.3644	µg/mL	Unstressed
			+/- 13.0587	µg/mL	Stressed

Solvent: Methanol
CAS # 67-56-1
Purity 99%

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO Guides 34 and 35. The certified combined stressed uncertainty value (includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ stressed} = k\sqrt{U^2_{gravimetric} + U^2_{homogeneity} + U^2_{storage\ stability} + U^2_{shipping\ stability}}$$

  k is a coverage factor of 2, which gives a level of confidence of approximately 95%.
- It is important to note that the shipping stability uncertainty was obtained under temperature extremes for specific time intervals; therefore, the certified combined stressed uncertainty value should only be applied to the product if it was stored at non-standard temperature conditions up to and including 7 days. Contact Restek Technical Service at www.restek.com/Contact-Us for use recommendations if your shipment was in-transit for more than 7 days at non-standard temperature conditions.
- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

Label Conditions	Standard Conditions	Non-Standard Conditions
25°C Nominal (Room Temperature)	< 60°C	≥ 60°C up to 7 days
10°C or colder (Refrigerate)	< 40°C	≥ 40°C up to 7 days
0°C or colder (Freezer)	< 25°C	≥ 25°C up to 7 days

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at www.restek.com/Contact-Us.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Samples should be transferred into deactivated vials for handling and storage. Restek supplies deactivated vials along with most standards packed in 2 mL ampules. Due to space constraints, Restek does not supply vials for larger volume ampules. Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions. Restek will also deactivate larger volume vials from our inventory as a custom ordered item. Contact your Restek sales or customer service representative for details.
- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.

Reagent

8330SurrStkSS_00111

RESTEK® CERTIFIED REFERENCE MATERIAL

110 Benner Circle
Bellefonte, PA 16823-8812
Tel: (800)356-1688
Fax: (814)353-1309

www.restek.com

Certificate of Analysis

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 31453 **Lot No.:** A0113066

Description : 8330 Surrogate Mix

8330 Surrogate Std 1, 2-Dinitrobenzene 1000µg/mL, Methanol, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : August 31, 2020 **Storage:** 10°C or colder

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)		
1	1,2-Dinitrobenzene **CAS #** 528-29-0 **Purity** 99% (Lot MKBK2313V)	1,002.0 µg/mL	+/- 5.9516 +/- 11.3644 +/- 13.0587	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed

Solvent: Methanol
CAS # 67-56-1
Purity 99%

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO Guides 34 and 35. The certified combined stressed uncertainty value (includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ stressed} = k\sqrt{U^2_{gravimetric} + U^2_{homogeneity} + U^2_{storage\ stability} + U^2_{shipping\ stability}}$$

k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

- It is important to note that the shipping stability uncertainty was obtained under temperature extremes for specific time intervals; therefore, the certified combined stressed uncertainty value should only be applied to the product if it was stored at non-standard temperature conditions up to and including 7 days. Contact Restek Technical Service at www.restek.com/Contact-Us for use recommendations if your shipment was in-transit for more than 7 days at non-standard temperature conditions.
- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

Label Conditions	Standard Conditions	Non-Standard Conditions
25°C Nominal (Room Temperature)	< 60°C	≥ 60°C up to 7 days
10°C or colder (Refrigerate)	< 40°C	≥ 40°C up to 7 days
0°C or colder (Freezer)	< 25°C	≥ 25°C up to 7 days

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at www.restek.com/Contact-Us.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Samples should be transferred into deactivated vials for handling and storage. Restek supplies deactivated vials along with most standards packed in 2 mL ampules. Due to space constraints, Restek does not supply vials for larger volume ampules. Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions. Restek will also deactivate larger volume vials from our inventory as a custom ordered item. Contact your Restek sales or customer service representative for details.
- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.

Reagent

8330SurrStkSS_00113

RESTEK®
110 Benner Circle
Bellefonte, PA 16823-8812
Tel: (800)356-1688
Fax: (814)353-1309

www.restek.com

CERTIFIED REFERENCE MATERIAL

ACCREDITED
ISO Guide 34 Accredited
Reference Material Producer
Certificate #3222.01

Certificate of Analysis

ilac-MRA

ACCREDITED
ISO/IEC 17025 Accredited
Testing Laboratory
Certificate #3222.02

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 31453 **Lot No.:** A0113066

Description : 8330 Surrogate Mix

8330 Surrogate Std 1, 2-Dinitrobenzene 1000µg/mL, Methanol, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : August 31, 2020 **Storage:** 10°C or colder

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)		
1	1,2-Dinitrobenzene **CAS #** 528-29-0 **Purity** 99% (Lot MKBK2313V)	1,002.0 µg/mL	+/- 5.9516 µg/mL +/- 11.3644 µg/mL +/- 13.0587 µg/mL		Gravimetric Unstressed Stressed

Solvent: Methanol
CAS # 67-56-1
Purity 99%

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO Guides 34 and 35. The certified combined stressed uncertainty value (includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ stressed} = k\sqrt{U^2_{gravimetric} + U^2_{homogeneity} + U^2_{storage\ stability} + U^2_{shipping\ stability}}$$

  k is a coverage factor of 2, which gives a level of confidence of approximately 95%.
- It is important to note that the shipping stability uncertainty was obtained under temperature extremes for specific time intervals; therefore, the certified combined stressed uncertainty value should only be applied to the product if it was stored at non-standard temperature conditions up to and including 7 days. Contact Restek Technical Service at www.restek.com/Contact-Us for use recommendations if your shipment was in-transit for more than 7 days at non-standard temperature conditions.
- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

Label Conditions	Standard Conditions	Non-Standard Conditions
25°C Nominal (Room Temperature)	< 60°C	≥ 60°C up to 7 days
10°C or colder (Refrigerate)	< 40°C	≥ 40°C up to 7 days
0°C or colder (Freezer)	< 25°C	≥ 25°C up to 7 days

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at www.restek.com/Contact-Us.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Samples should be transferred into deactivated vials for handling and storage. Restek supplies deactivated vials along with most standards packed in 2 mL ampules. Due to space constraints, Restek does not supply vials for larger volume ampules. Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions. Restek will also deactivate larger volume vials from our inventory as a custom ordered item. Contact your Restek sales or customer service representative for details.
- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.

Reagent

8330SurrStock_00159

125 Market Street
New Haven, CT 06513
USA

AccuStandard® Inc.

Tel (203)786-5290
Fax (203)786-5287
www.AccuStandard.com

CERTIFICATE OF ANALYSIS

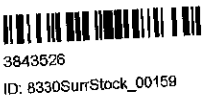
Catalog No: M-8330-SS
Description: 1,2-Dinitrobenzene Standard
Lot: 214081391
Solvent: Methanol
Hazards: HIGHLY FLAMMABLE - *Refer to SDS for safety info*

Danger 2

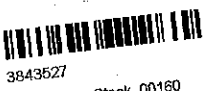
Date Certified: Aug 15, 2014
Expiration: Aug 15, 2024
Sample Size: 1 mL
Components: 1
Storage Condition: Ambient (>5 °C)

Included on ISO/IEC 17025 Scope of Accreditation: Yes
Included on ISO Guide 34 Scope of Accreditation: Yes

Component	CAS #	Purity % (GC/FID)	Prepared Concentration[1] (µg/mL)	Certified Analyte Concentration[2] (µg/mL)
1,2-Dinitrobenzene	528-29-0	100.0	1002	1002



3843526
ID: 8330SurrStock_00159
Exp: 08/15/24 Prpd: ACF
M-8330-SS 1000ug/ml AccuS



3843527
ID: 8330SurrStock_00160
Exp: 08/15/24 Prpd: ACF
M-8330-SS 1000ug/ml AccuS

A product with a suffix (-1A, -2B, etc. or -01, -02, etc.) on its lot number has had its expiration date extended and is identical to the same lot number without the suffix.

[1] All weights are traceable through NIST, Test No. 822-275872-11

[2] Certified Analyte Concentration = Purity X Prepared Concentration. The Uncertainty associated with the gravimetric values reported on this certificate is ±0.24%. The CRM Uncertainty calculated for this product is ±5%. These values are the expanded uncertainty and represent an estimated standard deviation equal to the positive square root of the total variation of the uncertainty of components. A normal distribution is assumed and a coverage factor of K=2 is chosen using approximately a 95% confidence level.

Labels and certificates follow U.S. Conventions in reporting numerical values:
A comma (,) is used to separate units of one-thousand or greater.
A period (.) is used as a decimal place marker.

See reverse side for additional information

Certified By:
Larry Decker, Organic QC Manager

Page 1 of 1 - Rev. 1

For use in routine laboratory analysis.

Reagent

CN CAL Std_00052

RICCA CHEMICAL COMPANY®

Arlington, TX 76012
Pocomoke City, MD 21851
Batesville, IN 47006
http://www.riccachemical.com
1-888-GO-RICCA
customerservice@riccachemical.com

Certificate of Analysis

Cyanide Standard, 1000 ppm CN

Lot Number: 2609C92 **Product Number:** 2543

Manufacture Date: SEP 22, 2016
Expiration Date: MAR 2017

This standard is prepared using accurate volumetric techniques from material that has been assayed against Silver Nitrate solution certified traceable to NIST Standard Reference Material 999. The certified value reported is the prepared value based upon the method of preparation of the material. The uncertainty in the prepared value is the combined uncertainty based on the stability of the assayed Potassium Cyanide, and the uncertainty in the mass and volume measurements.
Use 0.16% (w/v) (0.04 N) Sodium Hydroxide or 0.225 % (w/v) (0.04 N) Potassium Hydroxide to make dilutions of this standard. Restandardize weekly if extreme accuracy is required.

Name	CAS#	Grade
Water	7732-18-5	ACS/ASTM/USP/EP
Potassium Cyanide	151-50-8	ACS
Sodium Hydroxide	1310-73-2	Reagent

Test	Specification	Result
Appearance	Colorless liquid	Passed
Cyanide (CN)	995-1005 ppm	1000 ppm

Specification	Reference
Stock Standard Cyanide Solution	APHA (4500-CN- F)
Stock Cyanide Solution	APHA (4500-CN- E)
Stock Cyanide Solution	APHA (4500-CN- K)
Stock Cyanide Solution	APHA (4500-CN- H)
Cyanide Reference Solution (1000 mg/L)	EPA (SW-846) (7.3.3.2)
Cyanide Calibration Stock Solution (1,000 mg/L CN-)	EPA (SW-846) (9213)
Stock Cyanide Solution	EPA (335.3)
Stock Cyanide Solution	EPA (335.2)
Cyanide Solution Stock	ASTM (D 4282)
Simple Cyanide Solution, Stock (1.0 g/L CN)	ASTM (D 4374)

Volumetric glassware complies with Class A tolerance requirements of ASTM E 288 and NIST Circular 434; it is calibrated before first use and recalibrated regularly in accordance with ASTM E 542 and NIST Procedure NBSIR 74-461. Balances are calibrated regularly with weights certified traceable to the NIST national mass standard. Thermometers and temperature probes are calibrated before first use and recalibrated regularly with a thermometer traceable to NIST standards. All products are prepared according to master documents that assure manufacture according to validated methods. Batch records document raw material traceability and production and testing history for each lot manufactured.

Part Number	Size / Package Type	Shelf Life (Unopened Container)
2543-4	120 mL amber poly	6 months

Recommended Storage: 2°C - 8°C (36°F - 46°F)

Katie Schnur
Quality Control Manager

This Certificate of Analysis is designed to comply with ISO Guide 31 "Reference Materials -- Contents of Certificates and Labels."

Reagent

CN ICV Std_00038

USA

5580 Skylane Boulevard P: 707.525.5788
Santa Rosa, CA 95403 P: 800.878.7654
F: 707.545.7901

Europe

P.O. Box 2704 P: +31 20 638 05 97
1000 CS Amsterdam F: +31 20 420 28 36
The Netherlands

Certificate of Analysis

Rev 0

Comment:

Catalog No:	Lot No:	Expiration Date:	Matrix:	Description:
Z-G34-4400-IC9M	1097445	16-Apr-2018	0.179% NaOH	ISO Guide 34 - Cyanide, 100 mL 1,000 mg/L in H_2O

Additional Information:

Date Received: _____

Container: 4 oz (125 mL) Narrow Mouth, HDPE

Certified Values:

The certified value is based on gravimetric and volumetric preparation of this CRM. This CRM has been confirmed by inductively coupled plasma optical emission spectrometry (ICP-OES) using an internally developed method against an independent source which is directly traceable to the NIST SRM's listed below.
The uncertainty value is calculated for a 95% confidence interval with a *k* value of 2.

Element	Symbol	CAS No	SRM No	NIST Lot No	Source Lot No	Purity %	Concentration mg/L	Uncertainty ± mg/L
Cyanide	CN	151-50-8	N/A	N/A	363.24.3S	98	1000	3.5

CPI INTERNATIONAL

USA

5580 Skylane Boulevard P: 707.525.5788
Santa Rosa, CA 95403 P: 800.878.7654
F: 707.545.7901

Europe

P.O. Box 2704 P: +31 20 638 05 97
1000 CS Amsterdam F: +31 20 420 28 36
The Netherlands

Certificate of Analysis

Rev 0

Comment:

Catalog No:	Lot No:	Expiration Date:	Matrix:	Description:
Z-G34-4400-IC9M	1097445	16-Apr-2018	0.179% NaOH	ISO Guide 34 - Cyanide, 100 mL 1,000 mg/L in H_2O

Calculation of Uncertainty

The following equations are used to calculate the value of the expanded uncertainty:
$U=ku_c$ U=Expanded Uncertainty, k= the coverage factor at the 95% confidence level, k=2, u_c = the combined uncertainty
$u_c=\sqrt{\sum u_i^2}$ where u_i are the individual uncertainty components for raw material, transportation, homogeneity, and shelf life.

Expiration Information:

The Stability of this product is based upon rigorous short term and long term testing of the solution for the certified value. These tests include the effect of temperature and packaging on the product. This standard is guaranteed until the expiration date listed above.

Accreditation:

This standard was manufactured by an ISO 17025 Chemical Testing Lab (Certificate number 3031.01) and ISO Guide 34 Reference Material Producer (RMP) Certificate number 3031.02 accredited by The American Association of Laboratory Accreditation (A2LA). Manufacturer's Quality System audited and registered by NSF-ISR to ISO 9001:2008 (Certificate number IZ391-IS4).

Manufactured By:

Carrie Bibbins
Chemist
Manufacture Date: 10/13/2016

Certified By:

Christy Lane
Chemist
Certified Date: 10/13/2016

Released By:

Mark Filla
Chemist
Original Issue Date: 10/13/2016

Reagent

CR6 Cal std_00007

ERA

A Waters Company

Certificate of Analysis

PRODUCT:	1000 mg/L Hexavalent Chromium
CATALOG NUMBER:	019
LOT NUMBER:	040416
ISSUE DATE:	April 14, 2016
REVISION DATE:	Original
STARTING MATERIAL:	Potassium Dichromate ($K_2Cr_2O_7$)
CERTIFIED CONCENTRATION[1]:	1000 mg/L
UNCERTAINTY[2]:	0.6%
MATRIX:	18 megohm deionized water
DENSITY:	1.0001 ± 0.0008 g/mL at 21.5°C and 758 mm Hg
TRACEABILITY[3]:	101%
NIST/SRM:	SRM 136f Potassium Dichromate
VERIFICATION METHOD:	Spectrophotometry
STORAGE:	Store at 20-25°C

1. The **Certified Concentration** is the actual made-to concentration confirmed by ERA analytical verification.

2. The stated **Uncertainty** is the total propagated uncertainty at the 95% confidence interval. The uncertainty is based on the preparation and internal analytical verification of the product by ERA, multiplied by a coverage factor which is equal to the student t factor at a 95% confidence interval at n-1 degrees of freedom. The uncertainty applies to the product as supplied and does not take into account any required or optional dilutions and/or preparations the laboratory may perform while using this product.

3. Traceability Recovery = ((% Recovery certified standard)/(% Recovery NIST SRM))*100.

   The traceability data shown were compiled by analyzing the ERA standards or their associated stock solutions against the applicable NIST SRMs.

This standard **expires 4/2019**. The certified values are monitored and purchasers will be notified of any significant changes resulting in recertification or withdrawal of this certified reference material during the period of validity of this certificate.

This product is intended to be used as either a calibration standard or a quality control check of the entire analytical process for the analytes/matrix included in the standard.

If you have any questions or need technical assistance, please call ERA technical assistance at 1-800-372-0122 or email to info@eraqc.com

Certifying Officer: Brian Miller

ISO/IEC GUIDE 34:2009

ACCREDITED

REFERENCE MATERIAL PRODUCER
CERTIFICATE NO. 1539.03

ISO/IEC 17025:2005

ACCREDITED

CHEMICAL TESTING LABORATORY
CERTIFICATE NO. 1539.02

16341 Table Mtn Pkwy, Golden, CO 80403 800-372-0122 fax: 303-421-0159 www.eraqc.com

Reagent

Cr6 ICV Std_00017

Certificate of Analysis List

For request number 806710

Catalog Number Entered	Lot Number Entered	Related Catalog Number	Related Lot Code	Description
1466442 1000	6103	N/A	N/A	Chromium Reference Standard Solution

Total Enclosures: 1

HACH COMPANY

P.O.Box 389
Loveland, CO 80539
(970) 669-3050

An ISO 9001 Certified Company

Certificate of Analysis

COMMODITY:**Chromium Reference Standard Solution 1000**
COMMODITY NUMBER: **14664-42** MANUFACTURE DATE: **4/12/2016** DATE OF ANALYSIS: **4/12/2016**
LOT NUMBER: **A6103**

TEST	*SPECIFICATIONS*	*RESULTS*
Hexavalent Chromium Concentration	995 to 1005 ppm	1000.0 ppm
pH of the solution	12 to 14	12.4

The expiration date is Apr 2021

The item 1466442 is traceable to NIST standards SRM 136f Potassium Dichromate LOT N/A.

Certified by _____

Scott Als
Analytical Services Chemist

Reagent

PicricARestek_00074

RESTEK®
110 Benner Circle
Bellefonte, PA 16823-8812
Tel: (800)356-1688
Fax: (814)353-1309

www.restek.com

CERTIFIED REFERENCE MATERIAL

ACCREDITED
ISO Guide 34 Accredited
Reference Material Producer
Certificate #3222.01

Certificate of Analysis

ilac-MRA

ACCREDITED
ISO/IEC 17025 Accredited
Testing Laboratory
Certificate #3222.02

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 31499 **Lot No.:** A0105913

Description : Picric Acid Standard

1000µg/mL, Methanol, 1mL/ampul *PGI BOX REQUIRED* SHIP FED EX GROUND ONLY

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : September 30, 2019 **Storage:** 10°C or colder

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)		
1	Picric Acid	1,002.0 µg/mL	+/- 5.9516	µg/mL	Gravimetric
	CAS # 88-89-1 (Lot 06130CU)		+/- 53.8797	µg/mL	Unstressed
	Purity 99%		+/- 58.5858	µg/mL	Stressed

Solvent: Methanol
CAS # 67-56-1
Purity 99%

Specific Reference Material Notes:
This is a derivatized analysis.

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO Guides 34 and 35. The certified combined stressed uncertainty value (includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ stressed} = k\sqrt{U^2_{gravimetric} + U^2_{homogeneity} + U^2_{storage\ stability} + U^2_{shipping\ stability}}$$

  k is a coverage factor of 2, which gives a level of confidence of approximately 95%.
- It is important to note that the shipping stability uncertainty was obtained under temperature extremes for specific time intervals; therefore, the certified combined stressed uncertainty value should only be applied to the product if it was stored at non-standard temperature conditions up to and including 7 days. Contact Restek Technical Service at www.restek.com/Contact-Us for use recommendations if your shipment was in-transit for more than 7 days at non-standard temperature conditions.
- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

Label Conditions	Standard Conditions	Non-Standard Conditions
25°C Nominal (Room Temperature)	< 60°C	≥ 60°C up to 7 days
10°C or colder (Refrigerate)	< 40°C	≥ 40°C up to 7 days
0°C or colder (Freezer)	< 25°C	≥ 25°C up to 7 days

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at www.restek.com/Contact-Us.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Samples should be transferred into deactivated vials for handling and storage. Restek supplies deactivated vials along with most standards packed in 2 mL ampules. Due to space constraints, Restek does not supply vials for larger volume ampules. Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31840, which includes complete instructions. Restek will also deactivate larger volume vials from our inventory as a custom ordered item. Contact your Restek sales or customer service representative for details.
- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.

8330B_DOD5

Nitroaromatics and Nitramines (HPLC)

FORM II
HPLC/IC SURROGATE RECOVERY

Lab Name: TestAmerica Denver Job No.: 280-90781-1

SDG No.:

Matrix: Water Level: Low

GC Column (1): UltraCarb5u ID: 4.6 (mm)

Client Sample ID	Lab Sample ID	12DNB1 #
ASYmw-005-110916-GW	280-90781-2	100
	MB 280-351635/1-A	100
	LCS 280-351635/2-A	100

	QC LIMITS
12DNB = 1,2-Dinitrobenzene	83-119

Column to be used to flag recovery values

FORM II 8330B

FORM III
HPLC/IC LAB CONTROL SAMPLE RECOVERY

Lab Name: TestAmerica Denver Job No.: 280-90781-1

SDG No.:

Matrix: Water Level: Low Lab File ID: 11281610.D

Lab ID: LCS 280-351635/2-A Client ID:

COMPOUND	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC	QC LIMITS REC	#
1,3,5-Trinitrobenzene	2.00	2.01	101	73-125	
1,3-Dinitrobenzene	2.00	2.08	104	78-120	
2,4,6-Trinitrotoluene	2.00	2.17	109	71-123	
2,4-Dinitrotoluene	2.00	1.94	97	78-120	
2,6-Dinitrotoluene	2.00	1.94	97	77-127	
2-Amino-4,6-dinitrotoluene	2.00	1.77	89	79-120	
2-Nitrotoluene	2.00	1.79	89	70-127	
3-Nitrotoluene	2.00	1.84	92	73-125	
4-Amino-2,6-dinitrotoluene	2.00	1.73	87	76-125	
4-Nitrotoluene	2.00	1.94	97	71-127	
HMX	2.00	1.88	94	65-135	
Nitrobenzene	2.00	1.90	95	65-134	
Nitroglycerin	20.0	19.9	100	74-127	
PETN	20.0	20.4	102	73-127	
RDX	2.00	2.02	101	68-130	
Tetryl	2.00	2.00	100	64-128	

Column to be used to flag recovery and RPD values

FORM III 8330B

FORM IV
HPLC/IC METHOD BLANK SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-90781-1

SDG No.:

Lab Sample ID: MB 280-351635/1-A

Matrix: Water Date Extracted: 11/15/2016 18:55

Lab File ID:(1) 11281609.D Lab File ID:(2)

Date Analyzed:(1) 11/28/2016 17:35 Date Analyzed:(2)

Instrument ID:(1) CHHPLC_X3 Instrument ID:(2)

GC Column:(1) UltraCarb5uO ID: 4.6(mm) GC Column:(2) ID:

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	DATE ANALYZED 1	DATE ANALYZED 2
	LCS 280-351635/2-A	11/28/2016 17:58	
ASYmw-005-110916-GW	280-90781-2	11/28/2016 18:22	

FORM I
HPLC/IC ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver | Job No.: 280-90781-1

SDG No.:

Client Sample ID: ASYmw-005-110916-GW | Lab Sample ID: 280-90781-2

Matrix: Water | Lab File ID: 11281611.D

Analysis Method: 8330B | Date Collected: 11/09/2016 15:12

Extraction Method: 3535 | Date Extracted: 11/15/2016 18:55

Sample wt/vol: 472.2(mL) | Date Analyzed: 11/28/2016 18:22

Con. Extract Vol.: 5(mL) | Dilution Factor: 1

Injection Volume: 100(uL) | GC Column: UltraCarb5uODS ID: 4.6(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 353340 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
99-35-4	1,3,5-Trinitrobenzene	0.42	U	1.1	0.42	0.21
99-65-0	1,3-Dinitrobenzene	0.21	U	0.42	0.21	0.094
118-96-7	2,4,6-Trinitrotoluene	0.21	U	0.42	0.21	0.077
121-14-2	2,4-Dinitrotoluene	0.21	U	0.42	0.21	0.089
606-20-2	2,6-Dinitrotoluene	0.21	U	0.21	0.21	0.068
35572-78-2	2-Amino-4,6-dinitrotoluene	0.13	U	0.21	0.13	0.054
88-72-2	2-Nitrotoluene	0.21	U	0.42	0.21	0.091
99-08-1	3-Nitrotoluene	0.21	U	0.42	0.21	0.088
19406-51-0	4-Amino-2,6-dinitrotoluene	0.13	U	0.21	0.13	0.061
99-99-0	4-Nitrotoluene	0.42	U	1.1	0.42	0.21
2691-41-0	HMX	0.21	U	0.42	0.21	0.093
98-95-3	Nitrobenzene	0.21	U	0.42	0.21	0.096
55-63-0	Nitroglycerin	2.1	U	3.2	2.1	0.98
78-11-5	PETN	1.3	U	2.1	1.3	0.44
121-82-4	RDX	0.13	U	0.21	0.13	0.055
479-45-8	Tetryl	0.21	U	0.25	0.21	0.084

CAS NO.	SURROGATE	%REC	Q	LIMITS
528-29-0	1,2-Dinitrobenzene	100		83-119

TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\CHHPLC_X\20161128-53609.b\11281611.D
Lims ID: 280-90781-B-2-A
Client ID: ASYmw-005-110916-GW
Sample Type: Client
Inject. Date: 28-Nov-2016 18:22:06 ALS Bottle#: 6 Worklist Smp#: 11
Injection Vol: 100.0 ul Dil. Factor: 1.0000
Sample Info: 280-90781-B-2-A
Misc. Info.: 280-0053609-011
Operator ID: dmj Instrument ID: CHHPLC_X3

Method: \\ChromNA\Denver\ChromData\CHHPLC_X\20161128-53609.b\8330_X3.m
Limit Group: GCSV - 8330
Last Update: 02-Dec-2016 20:40:18 Calib Date: 28-Oct-2016 23:49:21
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\CHHPLC_X\20161029-52455.b\079-2601.D

Column 1 : UltraCarb5uODS (20) (4.60 mm) Det: LC DAD1B, 254 nm
Process Host: XAWRK023

First Level Reviewer: jonsrudd Date: 02-Dec-2016 19:29:32

	Compound	Det	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	OnCol Amt ug/mL	Flags
	2 HMX	1		6.718			ND	
	5 RDX	1		7.884			ND	
$	7 1,2-Dinitrobenzene	1	8.935	8.931	0.004	28302	0.2009	
	8 1,3,5-Trinitrobenzene	1		9.071			ND	
	9 1,3-Dinitrobenzene	1		9.744			ND	
	11 Nitrobenzene	1		10.138			ND	
	12 Tetryl	1		10.518			ND	
	13 Nitroglycerin	2		11.031			ND	
	14 2,4,6-Trinitrotoluene	1		11.471			ND	
	15 4-Amino-2,6-dinitrotoluene	1		11.678			ND	
	16 2-Amino-4,6-dinitrotoluene	1		11.958			ND	
	17 2,6-Dinitrotoluene	1		12.104			ND	
	18 2,4-Dinitrotoluene	1		12.291			ND	
	19 o-Nitrotoluene	1		13.138			ND	
	20 p-Nitrotoluene	1		13.584			ND	
	21 m-Nitrotoluene	1		14.198			ND	
	22 PETN	2		15.364			ND	

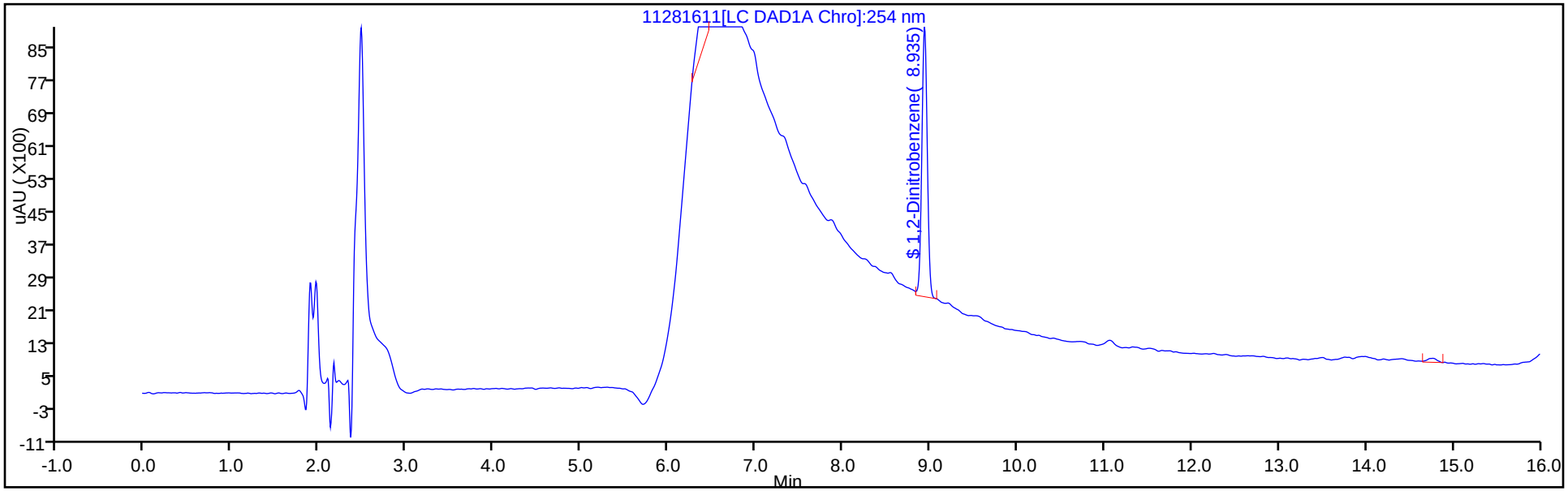
Report Date: 02-Dec-2016 20:40:21 Chrom Revision: 2.2 14-Nov-2016 08:15:18

TestAmerica Denver

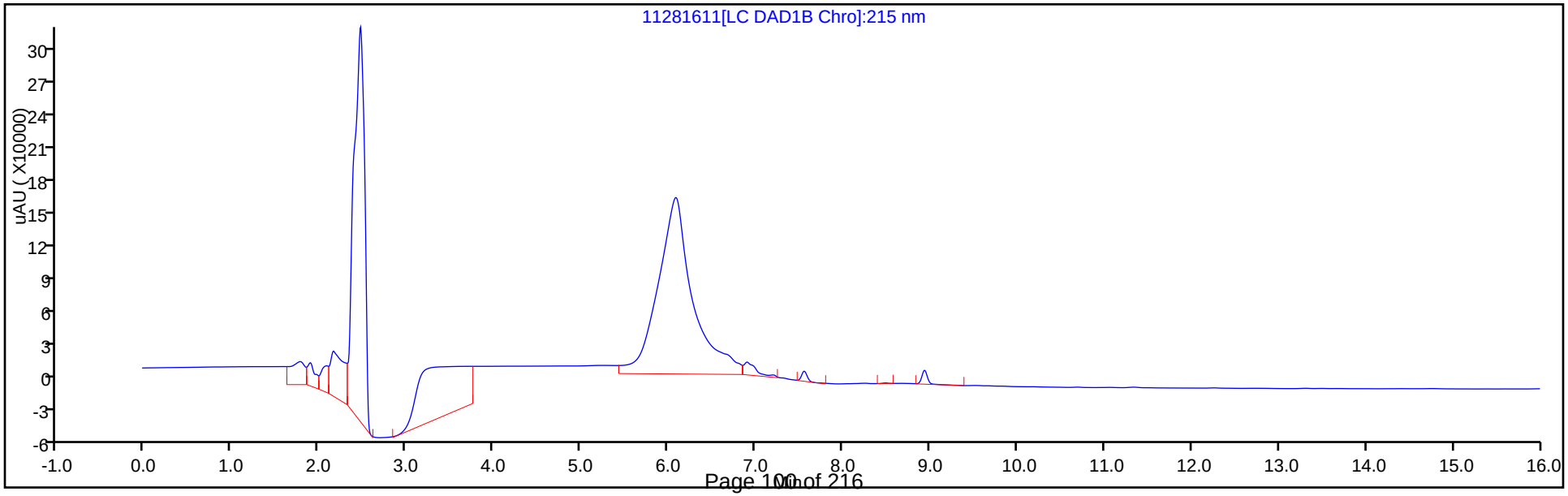
Data File: \\ChromNA\Denver\ChromData\CHHPLC_X\20161128-53609.b\11281611.D

Injection Date:	28-Nov-2016 18:22:06	Instrument ID:	CHHPLC_X3	Operator ID:	dmj
Lims ID:	280-90781-B-2-A	Lab Sample ID:	280-90781-2	Worklist Smp#:	11
Client ID:	ASYmw-005-110916-GW				
Injection Vol:	100.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	6
Method:	8330_X3	Limit Group:	GCSV - 8330		

Column: UltraCarb5uODS (20) (4.60 mm) Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



TestAmerica Denver
Recovery Report

Data File: \\ChromNA\Denver\ChromData\CHHPLC_X\20161128-53609.b\11281611.D
Lims ID: 280-90781-B-2-A
Client ID: ASYmw-005-110916-GW
Sample Type: Client
Inject. Date: 28-Nov-2016 18:22:06 ALS Bottle#: 6 Worklist Smp#: 11
Injection Vol: 100.0 ul Dil. Factor: 1.0000
Sample Info: 280-90781-B-2-A
Misc. Info.: 280-0053609-011
Operator ID: dmj Instrument ID: CHHPLC_X3

Method: \\ChromNA\Denver\ChromData\CHHPLC_X\20161128-53609.b\8330_X3.m
Limit Group: GCSV - 8330
Last Update: 02-Dec-2016 20:40:18 Calib Date: 28-Oct-2016 23:49:21
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\CHHPLC_X\20161029-52455.b\079-2601.D

Column 1 : UltraCarb5uODS (20) (4.60 mm) Det: LC DAD1B, 254 nm
Process Host: XAWRK023

First Level Reviewer: jonsrudd Date: 02-Dec-2016 19:29:32

Compound	Amount Added	Amount Recovered	% Rec.
$ 7 1,2-Dinitrobenzene	0.2000	0.2009	100.47

FORM VI
HPLC/IC BY EXTERNAL STANDARD - INITIAL CALIBRATION DATA
RETENTION TIME SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-90781-1 Analy Batch No.: 348785

SDG No.:

Instrument ID: CHHPLC_X3 GC Column: UltraCarb5u ID: 4.6(mm) Heated Purge: (Y/N) N

Calibration Start Date: 10/28/2016 17:40 Calibration End Date: 10/28/2016 20:21 Calibration ID: 27419

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 280-348785/17	070-1701.D
Level 2	IC 280-348785/16	069-1601.D
Level 3	IC 280-348785/15	068-1501.D
Level 4	IC 280-348785/14	067-1401.D
Level 5	IC 280-348785/13	066-1301.D
Level 6	IC 280-348785/12	065-1201.D
Level 7	IC 280-348785/11	064-1101.D
Level 8	IC 280-348785/10	063-1001.D

ANALYTE	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5	LVL 6	LVL 7	LVL 8			RT WINDOW	AVG RT
HMX	6.704	6.703	6.707	6.709	6.704	6.705	6.700	6.708			6.609 - 6.809	6.705
RDX	7.870	7.863	7.867	7.869	7.857	7.872	7.853	7.875			7.769 - 7.969	7.866
Picric acid	8.190	8.170	8.174	8.169	8.144	8.145	8.113	8.095			8.069 - 8.269	8.150
1,3,5-Trinitrobenzene	9.077	9.063	9.067	9.069	9.044	9.072	9.046	9.068			8.969 - 9.169	9.063
1,3-Dinitrobenzene	9.764	9.743	9.747	9.755	9.724	9.758	9.726	9.755			9.655 - 9.855	9.747
Nitrobenzene	10.164	10.143	10.147	10.148	10.117	10.151	10.119	10.155			10.048 - 10.248	10.143
Tetryl	10.550	10.523	10.527	10.542	10.491	10.545	10.499	10.541			10.442 - 10.642	10.527
Nitroglycerin	11.070	11.043	11.047	11.055	11.004	11.058	11.006	11.055			10.955 - 11.155	11.042
2,4,6-Trinitrotoluene	11.517	11.483	11.487	11.495	11.444	11.498	11.446	11.501			11.395 - 11.595	11.484
4-Amino-2,6-dinitrotoluene	11.730	11.697	11.694	11.708	11.651	11.711	11.646	11.715			11.608 - 11.808	11.694
2-Amino-4,6-dinitrotoluene	12.010	11.977	11.981	11.995	11.931	11.998	11.926	11.995			11.895 - 12.095	11.977
2,6-Dinitrotoluene	12.157	12.117	12.121	12.135	12.071	12.138	12.073	12.141			12.035 - 12.235	12.119
2,4-Dinitrotoluene	12.344	12.303	12.307	12.322	12.257	12.325	12.253	12.328			12.222 - 12.422	12.305
2-Nitrotoluene	13.197	13.157	13.154	13.175	13.104	13.185	13.099	13.181			13.075 - 13.275	13.157
4-Nitrotoluene	13.650	13.610	13.607	13.628	13.551	13.631	13.539	13.628			13.528 - 13.728	13.606
3-Nitrotoluene	14.270	14.217	14.214	14.235	14.157	14.245	14.146	14.241			14.135 - 14.335	14.216
PETN	15.464	15.403	15.407	15.435	15.344	15.438	15.319	15.441			15.335 - 15.535	15.406
1,2-Dinitrobenzene	8.930	8.917	8.921	8.929	8.904	8.925	8.900	8.928			8.829 - 9.029	8.919

FORM VI
HPLC/IC BY EXTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: TestAmerica Denver Job No.: 280-90781-1 Analy Batch No.: 348785

SDG No.:

Instrument ID: CHHPLC_X3 GC Column: UltraCarb5u ID: 4.6(mm) Heated Purge: (Y/N) N

Calibration Start Date: 10/28/2016 17:40 Calibration End Date: 10/28/2016 20:21 Calibration ID: 27419

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 280-348785/17	070-1701.D
Level 2	IC 280-348785/16	069-1601.D
Level 3	IC 280-348785/15	068-1501.D
Level 4	IC 280-348785/14	067-1401.D
Level 5	IC 280-348785/13	066-1301.D
Level 6	IC 280-348785/12	065-1201.D
Level 7	IC 280-348785/11	064-1101.D
Level 8	IC 280-348785/10	063-1001.D

ANALYTE	CF				CURVE TYPE	COEFFICIENT			#	MIN CF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 5	LVL 2 LVL 6	LVL 3 LVL 7	LVL 4 LVL 8		B	M1	M2								
HMX	96300 91435	99300 91860	94250 92245	91440 89676	Lin2	50.7463896	92429.4473							0.9990		0.9900
RDX	122100 106668	116900 106126	111610 106661	108152 103371	Lin2	161.652312	107383.079							0.9990		0.9900
Picric acid	94300 84115	86660 83977	85120 84886	84844 82398	Lin2	104.855908	83961.3899							1.0000		0.9900
1,3,5-Trinitrobenzene	237300 226413	247800 230046	236750 229302	228516 223825	Lin2	97.2993763	230799.354							0.9990		0.9900
1,3-Dinitrobenzene	286600 290983	305300 291383	298510 292916	293328 285722	Lin2	-44.554461	293868.583							0.9990		0.9900
Nitrobenzene	193500 200278	198720 202374	205800 203479	203600 198357	Lin2	-86.760341	202274.473							1.0000		0.9900
Tetryl	184200 175170	187380 179663	181090 179879	175856 173397	Lin2	74.7274008	178277.924							0.9990		0.9900
Nitroglycerin	77470 70851	79846 70510	73823 70620	70996 67740	Lin2	750.782671	71424.5144							0.9980		0.9900
2,4,6-Trinitrotoluene	247800 199690	222460 200471	211230 201419	201424 197610	Lin2	483.722079	201838.565							0.9990		0.9900
4-Amino-2,6-dinitrotoluene	196400 153763	173120 151763	162860 152057	155944 148057	Lin2	448.395085	153936.164							0.9990		0.9900
2-Amino-4,6-dinitrotoluene	235000 208683	236360 209903	218440 213727	211612 207799	Lin2	252.623405	213290.687							0.9980		0.9900
2,6-Dinitrotoluene	155600 148418	154160 149294	155320 145859	149552 142883	Lin2	81.9555152	148708.355							0.9990		0.9900
2,4-Dinitrotoluene	309800 284148	305640 285213	297220 287229	286856 282178	Lin2	247.765906	287970.311							0.9990		0.9900
2-Nitrotoluene	137000 128460	132160 128954	135970 129607	130272 126531	Lin2	79.1356947	129741.078							1.0000		0.9900

Note: The m1 coefficient is the same as Ave CF for an Ave curve type.

FORM VI
HPLC/IC BY EXTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: TestAmerica Denver Job No.: 280-90781-1 Analy Batch No.: 348785

SDG No.:

Instrument ID: CHHPLC_X3 GC Column: UltraCarb5u ID: 4.6(mm) Heated Purge: (Y/N) N

Calibration Start Date: 10/28/2016 17:40 Calibration End Date: 10/28/2016 20:21 Calibration ID: 27419

ANALYTE	CF				CURVE TYPE	COEFFICIENT			#	MIN CF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 5	LVL 2 LVL 6	LVL 3 LVL 7	LVL 4 LVL 8		B	M1	M2								
4-Nitrotoluene	108800 110620	119000 110610	115450 110885	112060 108724	Lin2	-19.226835	112353.481							0.9990		0.9900
3-Nitrotoluene	168000 144640	159960 144946	153290 145050	147200 141684	Lin2	235.702133	146491.259							0.9990		0.9900
PETN	85170 71836	72342 72183	72482 73056	71948 70501	Lin2	1349.99266	71338.4699							1.0000		0.9900
1,2-Dinitrobenzene	154200 138160	151780 138514	145500 139797	139460 135398	Lin2	160.815233	140050.391							0.9990		0.9900

Note: The m1 coefficient is the same as Ave CF for an Ave curve type.

FORM VI
HPLC/IC BY EXTERNAL STANDARD - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Denver Job No.: 280-90781-1 Analy Batch No.: 348785

SDG No.:

Instrument ID: CHHPLC_X3 GC Column: UltraCarb5u ID: 4.6(mm) Heated Purge: (Y/N) N

Calibration Start Date: 10/28/2016 17:40 Calibration End Date: 10/28/2016 20:21 Calibration ID: 27419

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 280-348785/17	070-1701.D
Level 2	IC 280-348785/16	069-1601.D
Level 3	IC 280-348785/15	068-1501.D
Level 4	IC 280-348785/14	067-1401.D
Level 5	IC 280-348785/13	066-1301.D
Level 6	IC 280-348785/12	065-1201.D
Level 7	IC 280-348785/11	064-1101.D
Level 8	IC 280-348785/10	063-1001.D

ANALYTE	CURVE TYPE	RESPONSE					CONCENTRATION (UG/ML)				
		LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4	LVL 5
HMX	Lin2	963 64302	4965 92245	9425 224190	22860	36574	0.0100 0.700	0.0500 1.00	0.100 2.50	0.250	0.400
RDX	Lin2	1221 74288	5845 106661	11161 258428	27038	42667	0.0100 0.700	0.0500 1.00	0.100 2.50	0.250	0.400
Picric acid	Lin2	943 58784	4333 84886	8512 205996	21211	33646	0.0100 0.700	0.0500 1.00	0.100 2.50	0.250	0.400
1,3,5-Trinitrobenzene	Lin2	2373 161032	12390 229302	23675 559563	57129	90565	0.0100 0.700	0.0500 1.00	0.100 2.50	0.250	0.400
1,3-Dinitrobenzene	Lin2	2866 203968	15265 292916	29851 714304	73332	116393	0.0100 0.700	0.0500 1.00	0.100 2.50	0.250	0.400
Nitrobenzene	Lin2	1935 141662	9936 203479	20580 495892	50900	80111	0.0100 0.700	0.0500 1.00	0.100 2.50	0.250	0.400
Tetryl	Lin2	1842 125764	9369 179879	18109 433493	43964	70068	0.0100 0.700	0.0500 1.00	0.100 2.50	0.250	0.400
Nitroglycerin	Lin2	7747 493571	39923 706204	73823 1693493	177491	283404	0.100 7.00	0.500 10.0	1.00 25.0	2.50	4.00
2,4,6-Trinitrotoluene	Lin2	2478 140330	11123 201419	21123 494026	50356	79876	0.0100 0.700	0.0500 1.00	0.100 2.50	0.250	0.400
4-Amino-2,6-dinitrotoluene	Lin2	1964 106234	8656 152057	16286 370143	38986	61505	0.0100 0.700	0.0500 1.00	0.100 2.50	0.250	0.400
2-Amino-4,6-dinitrotoluene	Lin2	2350 146932	11818 213727	21844 519497	52903	83473	0.0100 0.700	0.0500 1.00	0.100 2.50	0.250	0.400
2,6-Dinitrotoluene	Lin2	1556 104506	7708 145859	15532 357207	37388	59367	0.0100 0.700	0.0500 1.00	0.100 2.50	0.250	0.400
2,4-Dinitrotoluene	Lin2	3098 199649	15282 287229	29722 705445	71714	113659	0.0100 0.700	0.0500 1.00	0.100 2.50	0.250	0.400
2-Nitrotoluene	Lin2	1370 90268	6608 129607	13597 316328	32568	51384	0.0100 0.700	0.0500 1.00	0.100 2.50	0.250	0.400
4-Nitrotoluene	Lin2	1088 77427	5950 110885	11545 271810	28015	44248	0.0100 0.700	0.0500 1.00	0.100 2.50	0.250	0.400

FORM VI
HPLC/IC BY EXTERNAL STANDARD - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Denver Job No.: 280-90781-1 Analy Batch No.: 348785

SDG No.:

Instrument ID: CHHPLC_X3 GC Column: UltraCarb5u ID: 4.6(mm) Heated Purge: (Y/N) N

Calibration Start Date: 10/28/2016 17:40 Calibration End Date: 10/28/2016 20:21 Calibration ID: 27419

ANALYTE	CURVE TYPE	RESPONSE					CONCENTRATION (UG/ML)				
		LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4	LVL 5
3-Nitrotoluene	Lin2	1680 101462	7998 145050	15329 354211	36800	57856	0.0100 0.700	0.0500 1.00	0.100 2.50	0.250	0.400
PETN	Lin2	8517 505279	36171 730560	72482 1762520	179870	287342	0.100 7.00	0.500 10.0	1.00 25.0	2.50	4.00
1,2-Dinitrobenzene	Lin2	1542 96960	7589 139797	14550 338495	34865	55264	0.0100 0.700	0.0500 1.00	0.100 2.50	0.250	0.400

Curve Type Legend:
Lin2 = Linear 1/conc^2

TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\CHHPLC_X\20161029-52455.b\063-1001.D
Lims ID: IC MAIN L8
Client ID:
Sample Type: IC Calib Level: 8
Inject. Date: 28-Oct-2016 17:40:15 ALS Bottle#: 63 Worklist Smp#: 10
Injection Vol: 100.0 ul Dil. Factor: 1.0000
Sample Info: 8330 Lv 8
Misc. Info.: 280-0051662-009
Operator ID: ACF Instrument ID: CHHPLC_X3
Sublist: chrom-8330_X3*sub11

Method: \\ChromNA\Denver\ChromData\CHHPLC_X\20161029-52455.b\8330_X3.m
Limit Group: GCSV - 8330
Last Update: 29-Oct-2016 09:47:52 Calib Date: 28-Oct-2016 20:21:37
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\CHHPLC_X\20161029-52455.b\070-1701.D

Column 1 : UltraCarb5uODS (20) (4.60 mm) Det: LC DAD1B, 254 nm
Process Host: XAWRK032

First Level Reviewer: freya Date: 29-Oct-2016 07:53:51

Compound	Det	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/mL	OnCol Amt ug/mL	Flags
2 HMX	1	6.708	6.709	-0.001	224190	2.50	2.42	
4 MNX	1	7.435	7.435	0.000	329218	2.49	2.40	
5 RDX	1	7.875	7.869	0.006	258428	2.50	2.41	
6 2,4,6-Trinitrophenol	1	8.095	8.169	-0.074	205996	2.50	2.45	
$ 7 1,2-Dinitrobenzene	1	8.928	8.929	-0.001	338495	2.50	2.42	
8 1,3,5-Trinitrobenzene	1	9.068	9.069	-0.001	559563	2.50	2.42	
9 1,3-Dinitrobenzene	1	9.755	9.755	0.000	714304	2.50	2.43	
11 Nitrobenzene	1	10.155	10.148	0.007	495892	2.50	2.45	
12 Tetryl	1	10.541	10.542	-0.001	433493	2.50	2.43	
13 Nitroglycerin	2	11.055	11.055	0.000	1693493	25.0	23.7	
14 2,4,6-Trinitrotoluene	1	11.501	11.495	0.006	494026	2.50	2.45	
15 4-Amino-2,6-dinitrotoluene	1	11.715	11.708	0.007	370143	2.50	2.40	
16 2-Amino-4,6-dinitrotoluene	1	11.995	11.995	0.000	519497	2.50	2.43	
17 2,6-Dinitrotoluene	1	12.141	12.135	0.006	357207	2.50	2.40	
18 2,4-Dinitrotoluene	1	12.328	12.322	0.006	705445	2.50	2.45	
19 o-Nitrotoluene	1	13.181	13.175	0.006	316328	2.50	2.44	
20 p-Nitrotoluene	1	13.628	13.628	0.000	271810	2.50	2.42	
21 m-Nitrotoluene	1	14.241	14.235	0.006	354211	2.50	2.42	
22 PETN	2	15.441	15.435	0.006	1762520	25.0	24.7	

Reagents:

8330IntermStk_00041 Amount Added: 0.13 Units: mL

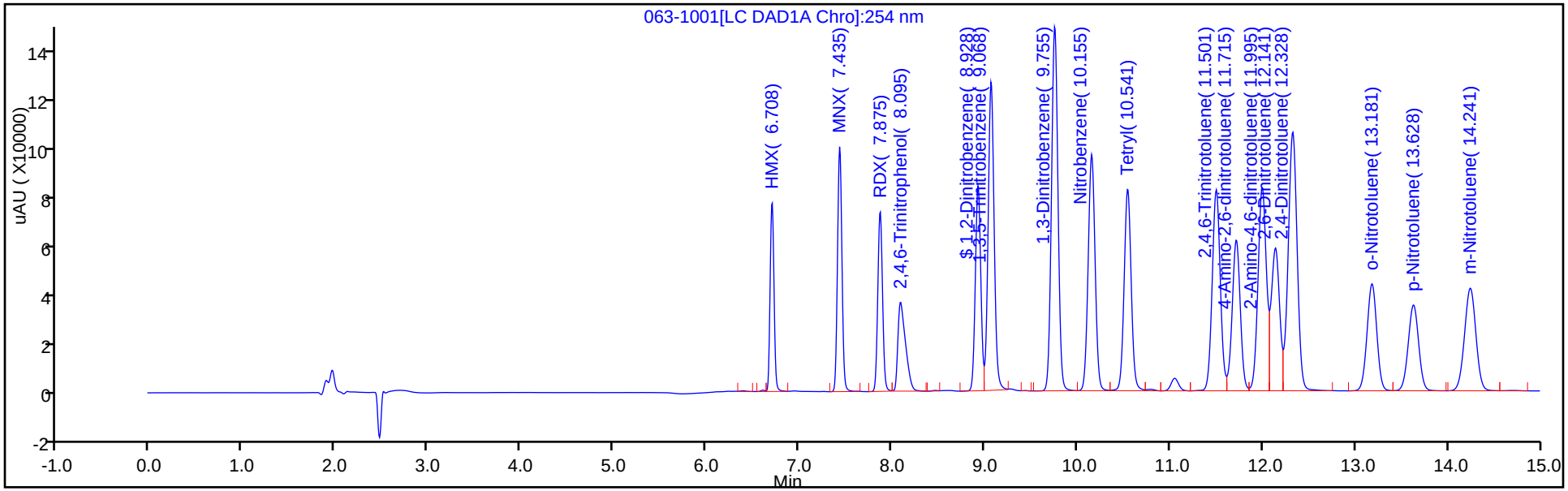
Report Date: 29-Oct-2016 09:47:53 Chrom Revision: 2.2 17-Oct-2016 09:27:18

TestAmerica Denver

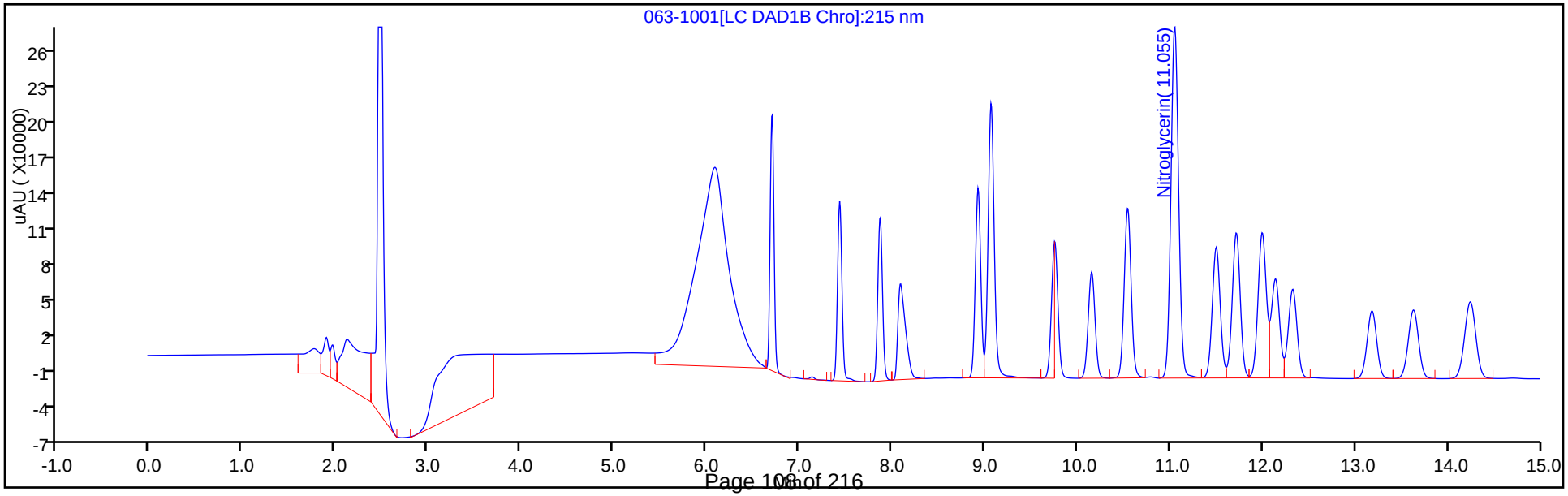
Data File: \\ChromNA\Denver\ChromData\CHHPLC_X\20161029-52455.b\063-1001.D

Injection Date:	28-Oct-2016 17:40:15	Instrument ID:	CHHPLC_X3	Operator ID:	ACF
Lims ID:	IC MAIN L8			Worklist Smp#:	10
Client ID:					
Injection Vol:	100.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	63
Method:	8330_X3	Limit Group:	GCSV - 8330		

Column: UltraCarb5uODS (20) (4.60 mm) Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\CHHPLC_X\20161029-52455.b\064-1101.D
Lims ID: IC MAIN L7
Client ID:
Sample Type: IC Calib Level: 7
Inject. Date: 28-Oct-2016 18:03:18 ALS Bottle#: 64 Worklist Smp#: 11
Injection Vol: 100.0 ul Dil. Factor: 1.0000
Sample Info: 8330 Lv 7
Misc. Info.: 280-0051662-010
Operator ID: ACF Instrument ID: CHHPLC_X3
Sublist: chrom-8330_X3*sub11

Method: \\ChromNA\Denver\ChromData\CHHPLC_X\20161029-52455.b\8330_X3.m
Limit Group: GCSV - 8330
Last Update: 29-Oct-2016 09:47:55 Calib Date: 28-Oct-2016 20:21:37
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\CHHPLC_X\20161029-52455.b\070-1701.D

Column 1 : UltraCarb5uODS (20) (4.60 mm) Det: LC DAD1B, 254 nm
Process Host: XAWRK032

First Level Reviewer: freya Date: 29-Oct-2016 07:59:37

Compound	Det	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/mL	OnCol Amt ug/mL	Flags
2 HMX	1	6.700	6.709	-0.009	92245	1.00	1.00	
4 MNX	1	7.420	7.435	-0.015	135605	0.99	0.99	
5 RDX	1	7.853	7.869	-0.016	106661	1.00	0.99	
6 2,4,6-Trinitrophenol	1	8.113	8.169	-0.056	84886	1.00	1.01	
$ 7 1,2-Dinitrobenzene	1	8.900	8.929	-0.029	139797	1.00	1.00	
8 1,3,5-Trinitrobenzene	1	9.046	9.069	-0.023	229302	1.00	0.99	
9 1,3-Dinitrobenzene	1	9.726	9.755	-0.029	292916	1.00	1.00	
11 Nitrobenzene	1	10.119	10.148	-0.029	203479	1.00	1.01	
12 Tetryl	1	10.499	10.542	-0.043	179879	1.00	1.01	
13 Nitroglycerin	2	11.006	11.055	-0.049	706204	10.0	9.88	
14 2,4,6-Trinitrotoluene	1	11.446	11.495	-0.049	201419	1.00	1.00	
15 4-Amino-2,6-dinitrotoluene	1	11.646	11.708	-0.062	152057	1.00	0.9849	
16 2-Amino-4,6-dinitrotoluene	1	11.926	11.995	-0.069	213727	1.00	1.00	
17 2,6-Dinitrotoluene	1	12.073	12.135	-0.062	145859	1.00	0.9803	
18 2,4-Dinitrotoluene	1	12.253	12.322	-0.069	287229	1.00	1.00	
19 o-Nitrotoluene	1	13.099	13.175	-0.076	129607	1.00	1.00	
20 p-Nitrotoluene	1	13.539	13.628	-0.089	110885	1.00	0.9871	
21 m-Nitrotoluene	1	14.146	14.235	-0.089	145050	1.00	0.9886	
22 PETN	2	15.319	15.435	-0.116	730560	10.0	10.2	

Reagents:

8330IntermStk_00041 Amount Added: 0.05 Units: mL

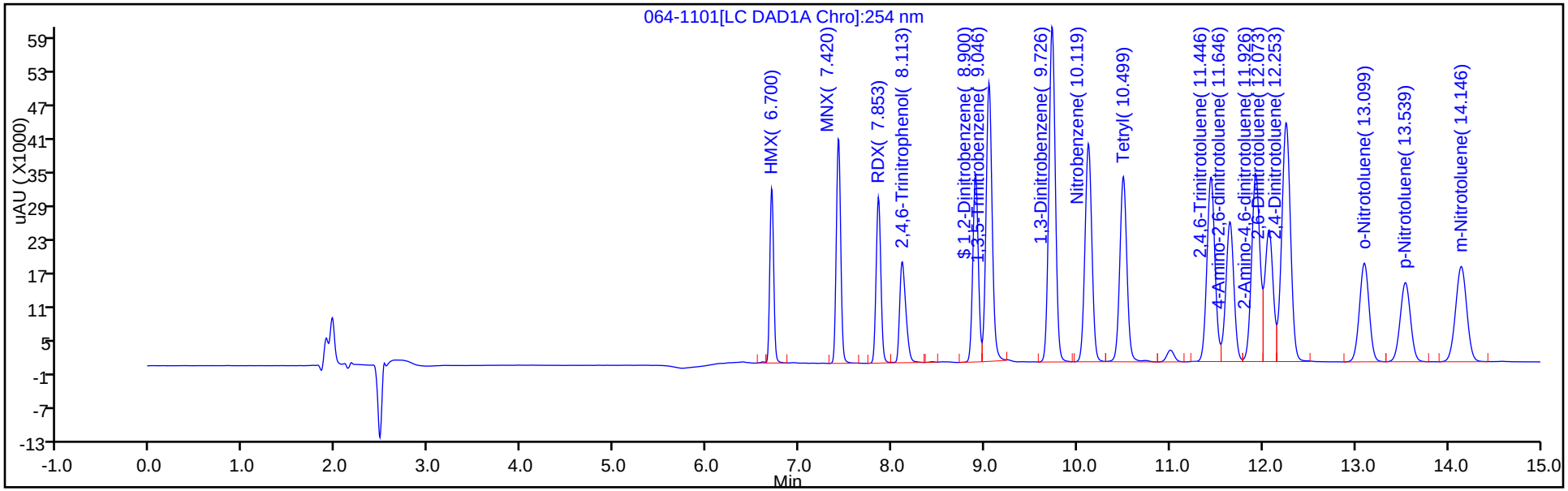
Report Date: 29-Oct-2016 09:47:56 Chrom Revision: 2.2 17-Oct-2016 09:27:18

TestAmerica Denver

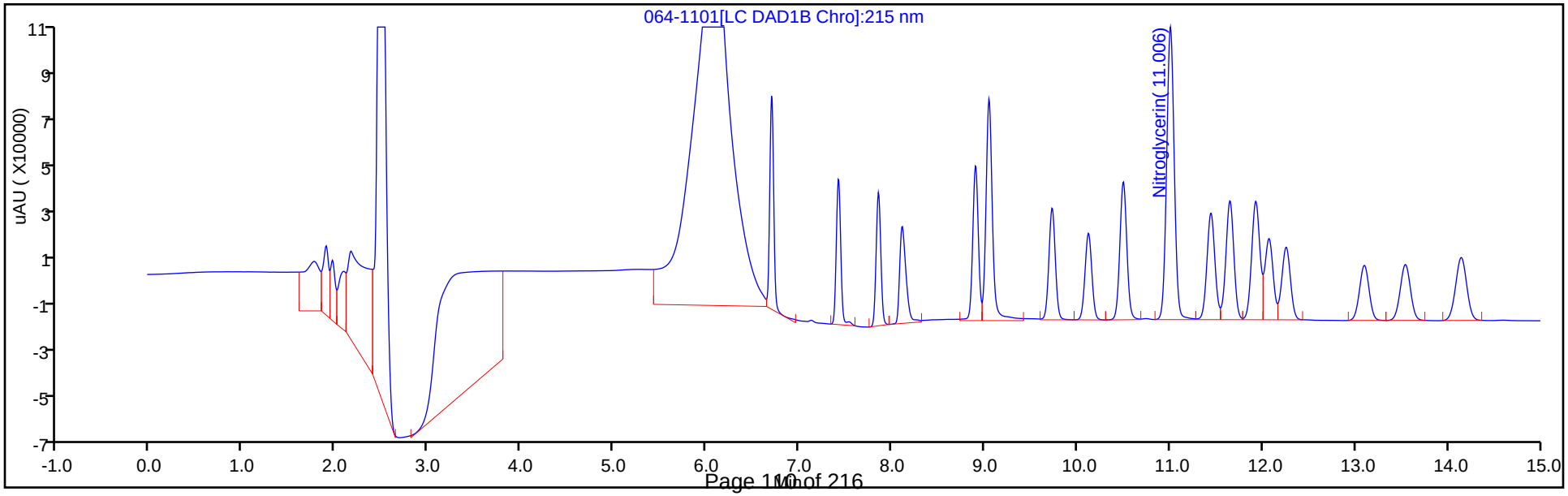
Data File: \\ChromNA\Denver\ChromData\CHHPLC_X\20161029-52455.b\064-1101.D

Injection Date:	28-Oct-2016 18:03:18	Instrument ID:	CHHPLC_X3	Operator ID:	ACF
Lims ID:	IC MAIN L7			Worklist Smp#:	11
Client ID:					
Injection Vol:	100.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	64
Method:	8330_X3	Limit Group:	GCSV - 8330		

Column: UltraCarb5uODS (20) (4.60 mm) Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\CHHPLC_X\20161029-52455.b\065-1201.D
Lims ID: IC MAIN L6
Client ID:
Sample Type: IC Calib Level: 6
Inject. Date: 28-Oct-2016 18:26:26 ALS Bottle#: 65 Worklist Smp#: 12
Injection Vol: 100.0 ul Dil. Factor: 1.0000
Sample Info: 8330 Lv 6
Misc. Info.: 280-0051662-011
Operator ID: ACF Instrument ID: CHHPLC_X3
Sublist: chrom-8330_X3*sub11

Method: \\ChromNA\Denver\ChromData\CHHPLC_X\20161029-52455.b\8330_X3.m
Limit Group: GCSV - 8330
Last Update: 29-Oct-2016 09:47:57 Calib Date: 28-Oct-2016 20:21:37
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\CHHPLC_X\20161029-52455.b\070-1701.D

Column 1 : UltraCarb5uODS (20) (4.60 mm) Det: LC DAD1B, 254 nm
Process Host: XAWRK032

First Level Reviewer: freya Date: 29-Oct-2016 07:59:44

Compound	Det	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/mL	OnCol Amt ug/mL	Flags
2 HMX	1	6.705	6.709	-0.004	64302	0.7000	0.6951	
4 MNX	1	7.438	7.435	0.003	94315	0.6963	0.6885	
5 RDX	1	7.872	7.869	0.003	74288	0.7000	0.6903	
6 2,4,6-Trinitrophenol	1	8.145	8.169	-0.024	58784	0.7000	0.6989	
$ 7 1,2-Dinitrobenzene	1	8.925	8.929	-0.004	96960	0.7000	0.6912	
8 1,3,5-Trinitrobenzene	1	9.072	9.069	0.003	161032	0.7000	0.6973	
9 1,3-Dinitrobenzene	1	9.758	9.755	0.003	203968	0.7000	0.6942	
11 Nitrobenzene	1	10.151	10.148	0.003	141662	0.7000	0.7008	
12 Tetryl	1	10.545	10.542	0.003	125764	0.7000	0.7050	
13 Nitroglycerin	2	11.058	11.055	0.003	493571	7.00	6.90	
14 2,4,6-Trinitrotoluene	1	11.498	11.495	0.003	140330	0.7000	0.6929	
15 4-Amino-2,6-dinitrotoluene	1	11.711	11.708	0.003	106234	0.7000	0.6872	
16 2-Amino-4,6-dinitrotoluene	1	11.998	11.995	0.003	146932	0.7000	0.6877	
17 2,6-Dinitrotoluene	1	12.138	12.135	0.003	104506	0.7000	0.7022	
18 2,4-Dinitrotoluene	1	12.325	12.322	0.003	199649	0.7000	0.6924	
19 o-Nitrotoluene	1	13.185	13.175	0.010	90268	0.7000	0.6951	
20 p-Nitrotoluene	1	13.631	13.628	0.003	77427	0.7000	0.6893	
21 m-Nitrotoluene	1	14.245	14.235	0.010	101462	0.7000	0.6910	
22 PETN	2	15.438	15.435	0.003	505279	7.00	7.06	

Reagents:

8330IntermStk_00041 Amount Added: 0.04 Units: mL

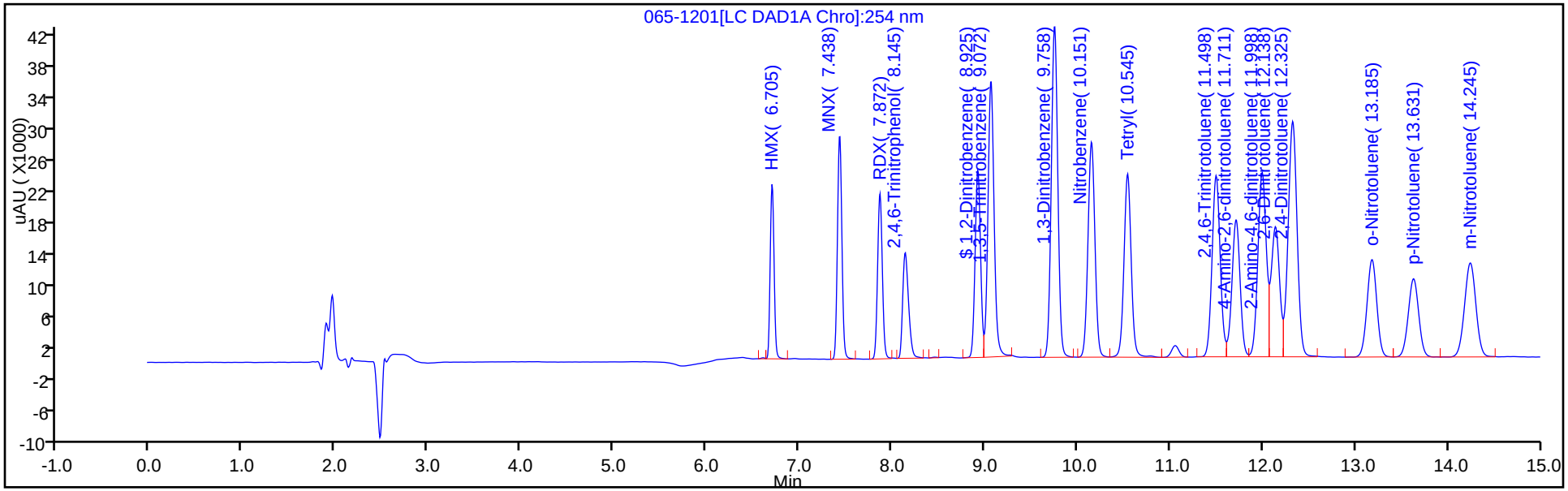
Report Date: 29-Oct-2016 09:47:59 Chrom Revision: 2.2 17-Oct-2016 09:27:18

TestAmerica Denver

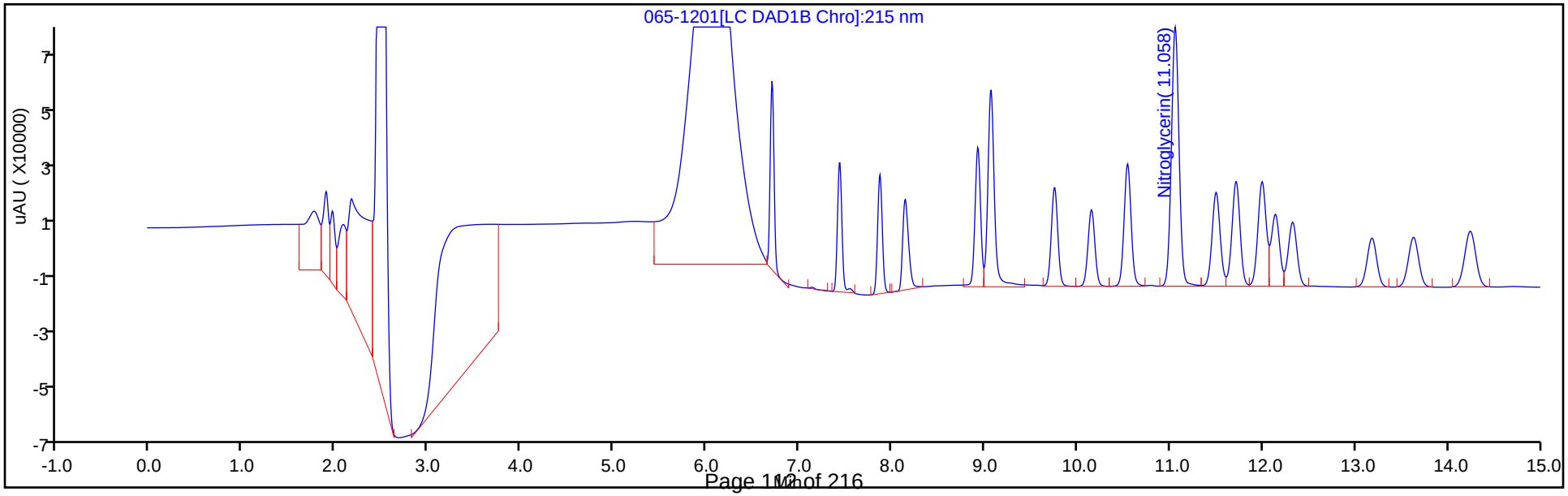
Data File: \\ChromNA\Denver\ChromData\CHHPLC_X\20161029-52455.b\065-1201.D

Injection Date:	28-Oct-2016 18:26:26	Instrument ID:	CHHPLC_X3	Operator ID:	ACF
Lims ID:	IC MAIN L6			Worklist Smp#:	12
Client ID:					
Injection Vol:	100.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	65
Method:	8330_X3	Limit Group:	GCSV - 8330		

Column: UltraCarb5uODS (20) (4.60 mm) Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\CHHPLC_X\20161029-52455.b\066-1301.D
Lims ID: IC MAIN L5
Client ID:
Sample Type: IC Calib Level: 5
Inject. Date: 28-Oct-2016 18:49:30 ALS Bottle#: 66 Worklist Smp#: 13
Injection Vol: 100.0 ul Dil. Factor: 1.0000
Sample Info: 8330 Lv 5
Misc. Info.: 280-0051662-012
Operator ID: ACF Instrument ID: CHHPLC_X3
Sublist: chrom-8330_X3*sub11

Method: \\ChromNA\Denver\ChromData\CHHPLC_X\20161029-52455.b\8330_X3.m
Limit Group: GCSV - 8330
Last Update: 29-Oct-2016 09:48:01 Calib Date: 28-Oct-2016 20:21:37
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\CHHPLC_X\20161029-52455.b\070-1701.D

Column 1 : UltraCarb5uODS (20) (4.60 mm) Det: LC DAD1B, 254 nm
Process Host: XAWRK032

First Level Reviewer: freya Date: 29-Oct-2016 07:59:49

Compound	Det	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/mL	OnCol Amt ug/mL	Flags
2 HMX	1	6.704	6.709	-0.005	36574	0.4000	0.3951	
4 MNX	1	7.431	7.435	-0.004	53893	0.3979	0.3932	
5 RDX	1	7.857	7.869	-0.012	42667	0.4000	0.3958	
6 2,4,6-Trinitrophenol	1	8.144	8.169	-0.025	33646	0.4000	0.3995	
$ 7 1,2-Dinitrobenzene	1	8.904	8.929	-0.025	55264	0.4000	0.3935	
8 1,3,5-Trinitrobenzene	1	9.044	9.069	-0.025	90565	0.4000	0.3920	
9 1,3-Dinitrobenzene	1	9.724	9.755	-0.031	116393	0.4000	0.3962	
11 Nitrobenzene	1	10.117	10.148	-0.031	80111	0.4000	0.3965	
12 Tetryl	1	10.491	10.542	-0.051	70068	0.4000	0.3926	
13 Nitroglycerin	2	11.004	11.055	-0.051	283404	4.00	3.96	
14 2,4,6-Trinitrotoluene	1	11.444	11.495	-0.051	79876	0.4000	0.3933	
15 4-Amino-2,6-dinitrotoluene	1	11.651	11.708	-0.057	61505	0.4000	0.3966	
16 2-Amino-4,6-dinitrotoluene	1	11.931	11.995	-0.064	83473	0.4000	0.3902	
17 2,6-Dinitrotoluene	1	12.071	12.135	-0.064	59367	0.4000	0.3987	
18 2,4-Dinitrotoluene	1	12.257	12.322	-0.065	113659	0.4000	0.3938	
19 o-Nitrotoluene	1	13.104	13.175	-0.071	51384	0.4000	0.3954	
20 p-Nitrotoluene	1	13.551	13.628	-0.077	44248	0.4000	0.3940	
21 m-Nitrotoluene	1	14.157	14.235	-0.078	57856	0.4000	0.3933	
22 PETN	2	15.344	15.435	-0.091	287342	4.00	4.01	

Reagents:

8330IntermStk_00041 Amount Added: 0.02 Units: mL

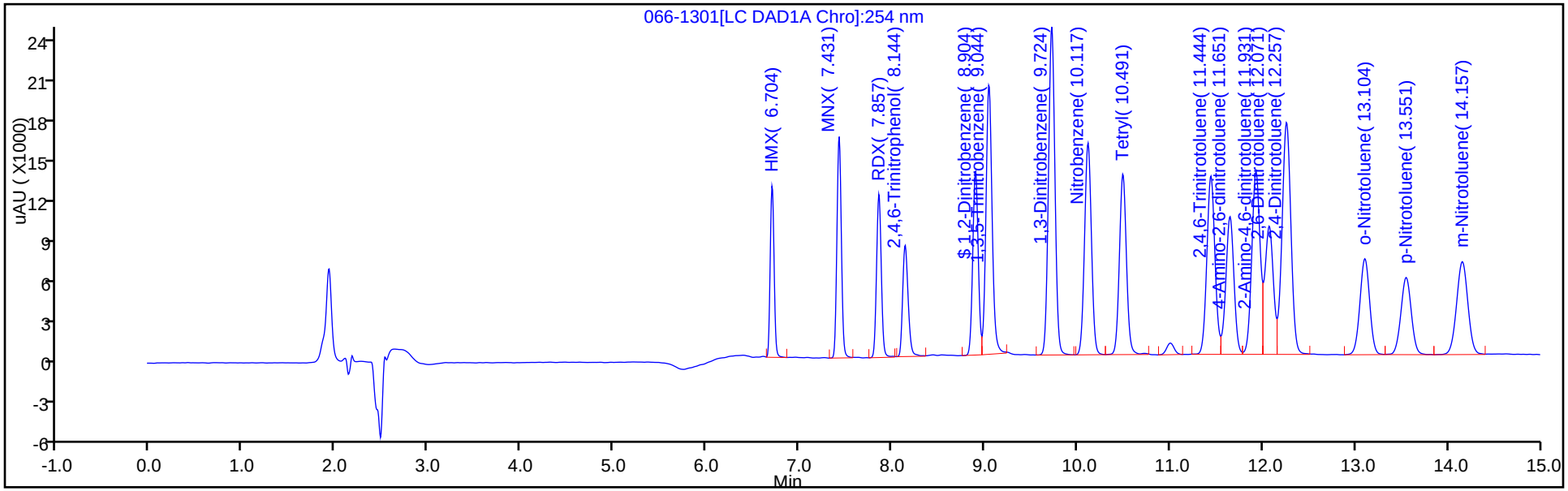
Report Date: 29-Oct-2016 09:48:03 Chrom Revision: 2.2 17-Oct-2016 09:27:18

TestAmerica Denver

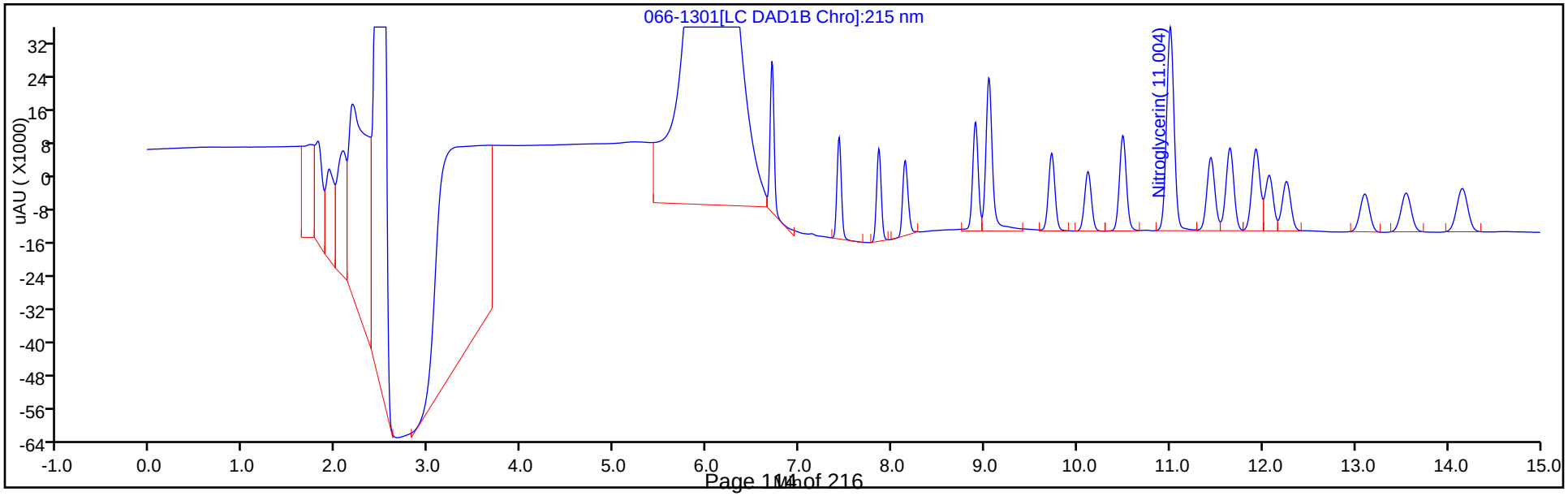
Data File: \\ChromNA\Denver\ChromData\CHHPLC_X\20161029-52455.b\066-1301.D

Injection Date:	28-Oct-2016 18:49:30	Instrument ID:	CHHPLC_X3	Operator ID:	ACF
Lims ID:	IC MAIN L5			Worklist Smp#:	13
Client ID:					
Injection Vol:	100.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	66
Method:	8330_X3	Limit Group:	GCSV - 8330		

Column: UltraCarb5uODS (20) (4.60 mm) Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Report Date: 29-Oct-2016 09:48:05 Chrom Revision: 2.2 17-Oct-2016 09:27:18

TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\CHHPLC_X\20161029-52455.b\067-1401.D
Lims ID: IC MAIN L4
Client ID:
Sample Type: IC Calib Level: 4
Inject. Date: 28-Oct-2016 19:12:34 ALS Bottle#: 67 Worklist Smp#: 14
Injection Vol: 100.0 ul Dil. Factor: 1.0000
Sample Info: 8330 Lv 4
Misc. Info.: 280-0051662-013
Operator ID: ACF Instrument ID: CHHPLC_X3
Sublist: chrom-8330_X3*sub11

Method: \\ChromNA\Denver\ChromData\CHHPLC_X\20161029-52455.b\8330_X3.m
Limit Group: GCSV - 8330
Last Update: 29-Oct-2016 09:48:05 Calib Date: 28-Oct-2016 20:21:37
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\CHHPLC_X\20161029-52455.b\070-1701.D

Column 1 : UltraCarb5uODS (20) (4.60 mm) Det: LC DAD1B, 254 nm
Process Host: XAWRK032

First Level Reviewer: freya Date: 29-Oct-2016 07:59:53

Compound	Det	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/mL	OnCol Amt ug/mL	Flags
2 HMX	1	6.709	6.709	0.000	22860	0.2500	0.2468	
4 MNX	1	7.435	7.435	0.000	33827	0.2487	0.2466	
5 RDX	1	7.869	7.869	0.000	27038	0.2500	0.2503	
6 2,4,6-Trinitrophenol	1	8.169	8.169	0.000	21211	0.2500	0.2514	
$ 7 1,2-Dinitrobenzene	1	8.929	8.929	0.000	34865	0.2500	0.2478	
8 1,3,5-Trinitrobenzene	1	9.069	9.069	0.000	57129	0.2500	0.2471	
9 1,3-Dinitrobenzene	1	9.755	9.755	0.000	73332	0.2500	0.2497	
11 Nitrobenzene	1	10.148	10.148	0.000	50900	0.2500	0.2521	
12 Tetryl	1	10.542	10.542	0.000	43964	0.2500	0.2462	
13 Nitroglycerin	2	11.055	11.055	0.000	177491	2.50	2.47	
14 2,4,6-Trinitrotoluene	1	11.495	11.495	0.000	50356	0.2500	0.2471	
15 4-Amino-2,6-dinitrotoluene	1	11.708	11.708	0.000	38986	0.2500	0.2503	
16 2-Amino-4,6-dinitrotoluene	1	11.995	11.995	0.000	52903	0.2500	0.2468	
17 2,6-Dinitrotoluene	1	12.135	12.135	0.000	37388	0.2500	0.2509	
18 2,4-Dinitrotoluene	1	12.322	12.322	0.000	71714	0.2500	0.2482	
19 o-Nitrotoluene	1	13.175	13.175	0.000	32568	0.2500	0.2504	
20 p-Nitrotoluene	1	13.628	13.628	0.000	28015	0.2500	0.2495	
21 m-Nitrotoluene	1	14.235	14.235	0.000	36800	0.2500	0.2496	
22 PETN	2	15.435	15.435	0.000	179870	2.50	2.50	

Reagents:

8330IntermStk_00041 Amount Added: 0.01 Units: mL

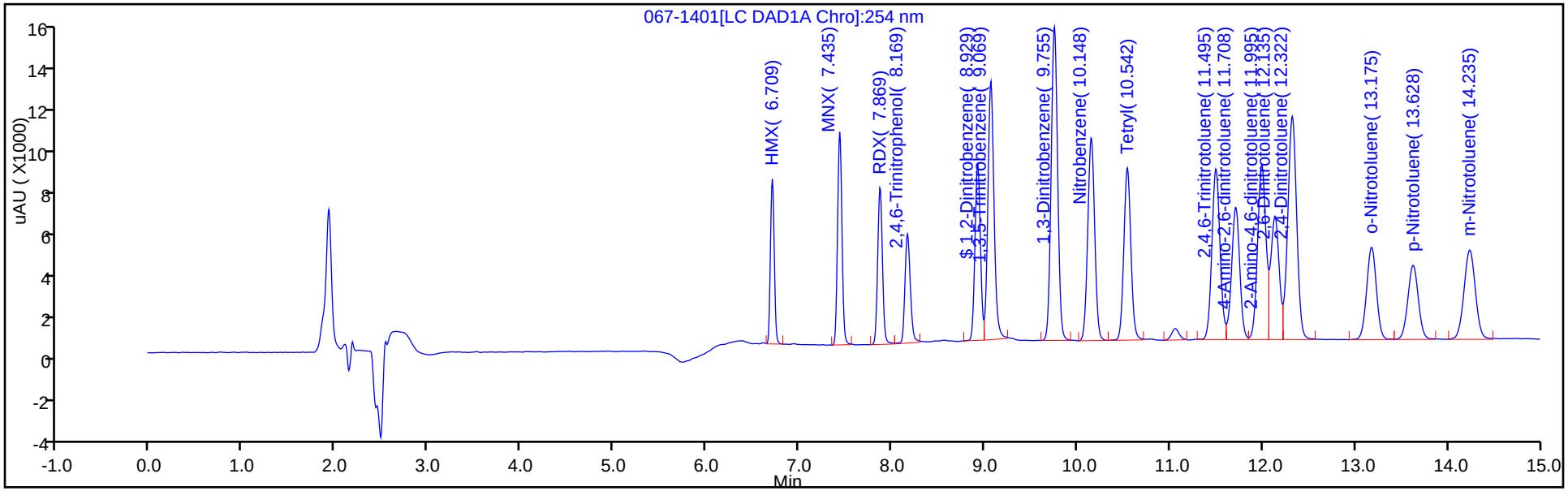
Report Date: 29-Oct-2016 09:48:05 Chrom Revision: 2.2 17-Oct-2016 09:27:18

TestAmerica Denver

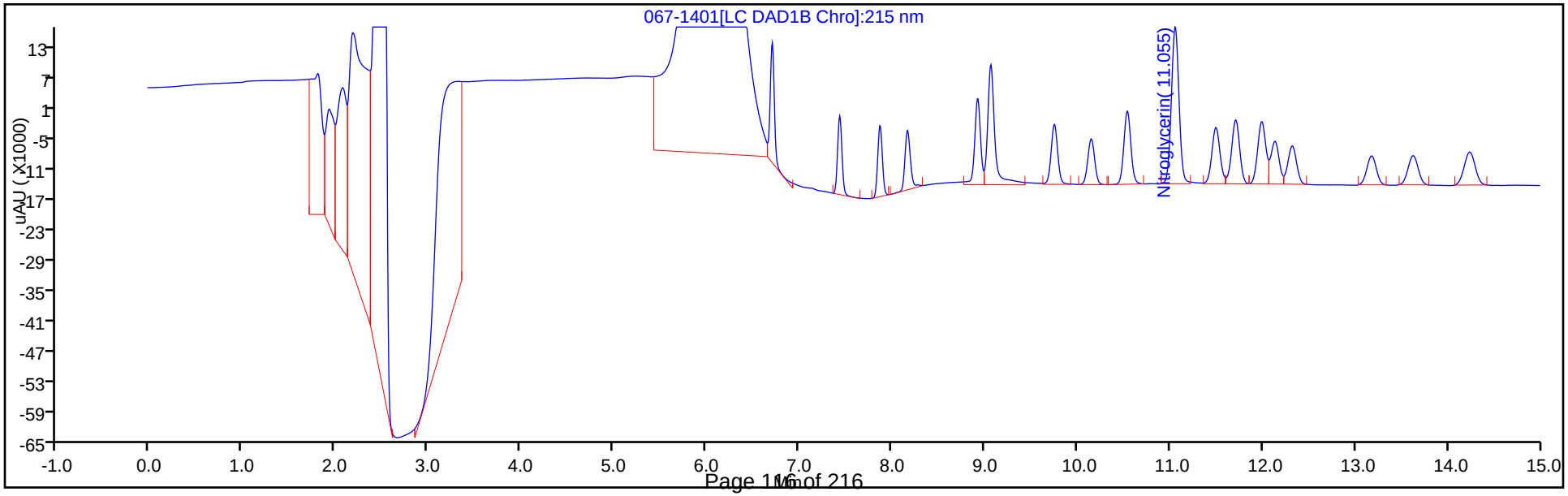
Data File: \\ChromNA\Denver\ChromData\CHHPLC_X\20161029-52455.b\067-1401.D

Injection Date:	28-Oct-2016 19:12:34	Instrument ID:	CHHPLC_X3	Operator ID:	ACF
Lims ID:	IC MAIN L4			Worklist Smp#:	14
Client ID:					
Injection Vol:	100.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	67
Method:	8330_X3	Limit Group:	GCSV - 8330		

Column: UltraCarb5uODS (20) (4.60 mm) Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\CHHPLC_X\20161029-52455.b\068-1501.D
Lims ID: IC MAIN L3
Client ID:
Sample Type: IC Calib Level: 3
Inject. Date: 28-Oct-2016 19:35:35 ALS Bottle#: 68 Worklist Smp#: 15
Injection Vol: 100.0 ul Dil. Factor: 1.0000
Sample Info: 8330 Lv 3
Misc. Info.: 280-0051662-014
Operator ID: ACF Instrument ID: CHHPLC_X3
Sublist: chrom-8330_X3*sub11

Method: \\ChromNA\Denver\ChromData\CHHPLC_X\20161029-52455.b\8330_X3.m
Limit Group: GCSV - 8330
Last Update: 29-Oct-2016 09:48:06 Calib Date: 28-Oct-2016 20:21:37
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\CHHPLC_X\20161029-52455.b\070-1701.D

Column 1 : UltraCarb5uODS (20) (4.60 mm) Det: LC DAD1B, 254 nm
Process Host: XAWRK032

First Level Reviewer: freya Date: 29-Oct-2016 08:00:00

	Compound	Det	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/mL	OnCol Amt ug/mL	Flags
	2 HMX	1	6.707	6.709	-0.002	9425	0.1000	0.1014	
	4 MNX	1	7.434	7.435	-0.001	13971	0.0995	0.1015	
	5 RDX	1	7.867	7.869	-0.002	11161	0.1000	0.1024	
	6 2,4,6-Trinitrophenol	1	8.174	8.169	0.005	8512	0.1000	0.1001	
$	7 1,2-Dinitrobenzene	1	8.921	8.929	-0.008	14550	0.1000	0.1027	
	8 1,3,5-Trinitrobenzene	1	9.067	9.069	-0.002	23675	0.1000	0.1022	
	9 1,3-Dinitrobenzene	1	9.747	9.755	-0.008	29851	0.1000	0.1017	
	11 Nitrobenzene	1	10.147	10.148	-0.001	20580	0.1000	0.1022	
	12 Tetryl	1	10.527	10.542	-0.015	18109	0.1000	0.1012	
	13 Nitroglycerin	2	11.047	11.055	-0.008	73823	1.00	1.02	
	14 2,4,6-Trinitrotoluene	1	11.487	11.495	-0.008	21123	0.1000	0.1023	
	15 4-Amino-2,6-dinitrotoluene	1	11.694	11.708	-0.014	16286	0.1000	0.1029	
	16 2-Amino-4,6-dinitrotoluene	1	11.981	11.995	-0.014	21844	0.1000	0.1012	
	17 2,6-Dinitrotoluene	1	12.121	12.135	-0.014	15532	0.1000	0.1039	
	18 2,4-Dinitrotoluene	1	12.307	12.322	-0.015	29722	0.1000	0.1024	
	19 o-Nitrotoluene	1	13.154	13.175	-0.021	13597	0.1000	0.1042	
	20 p-Nitrotoluene	1	13.607	13.628	-0.021	11545	0.1000	0.1029	
	21 m-Nitrotoluene	1	14.214	14.235	-0.021	15329	0.1000	0.1030	
	22 PETN	2	15.407	15.435	-0.028	72482	1.00	1.00	

Reagents:

8330IntermStk_00041 Amount Added: 0.01 Units: mL

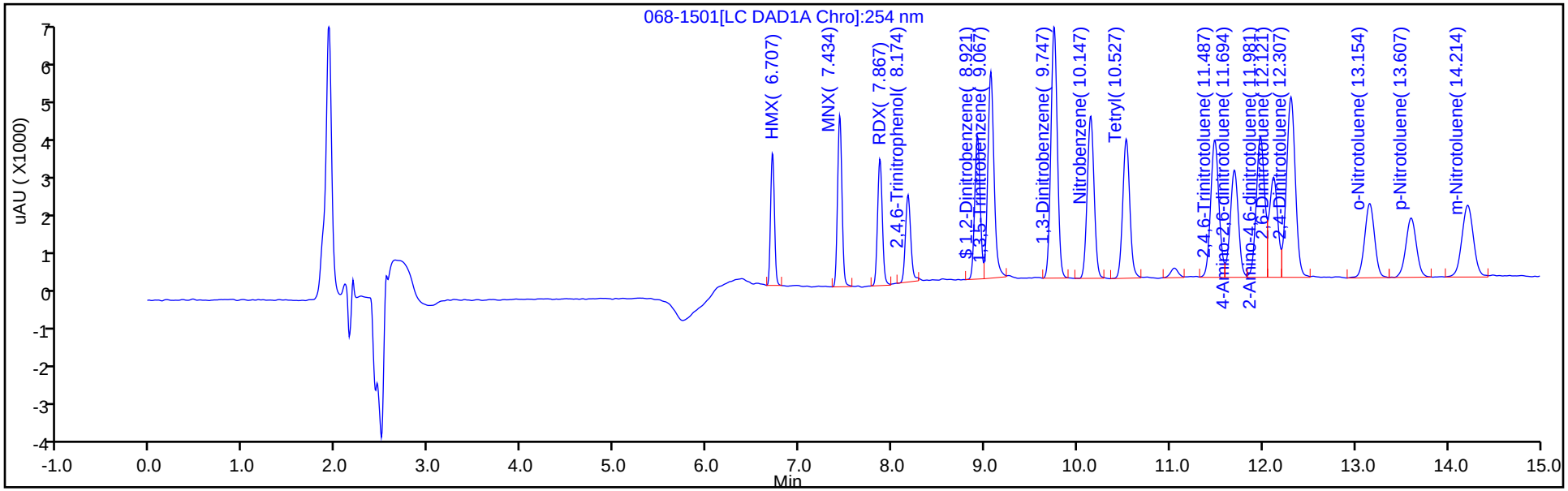
Report Date: 29-Oct-2016 09:48:07 Chrom Revision: 2.2 17-Oct-2016 09:27:18

TestAmerica Denver

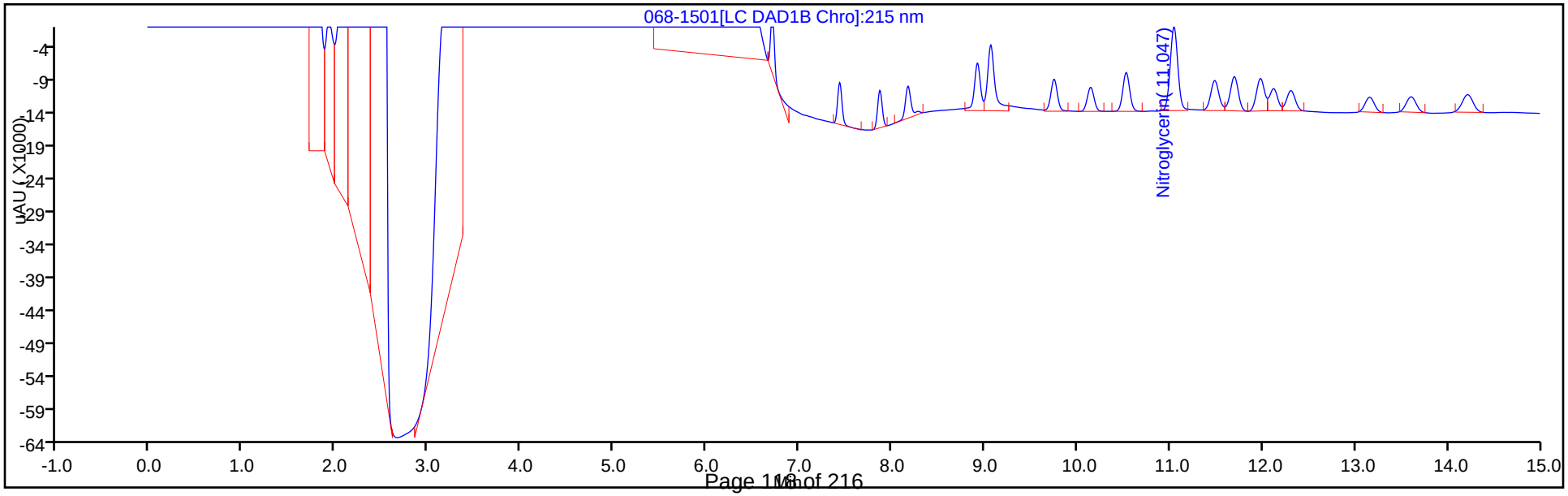
Data File: \\ChromNA\Denver\ChromData\CHHPLC_X\20161029-52455.b\068-1501.D

Injection Date:	28-Oct-2016 19:35:35	Instrument ID:	CHHPLC_X3	Operator ID:	ACF
Lims ID:	IC MAIN L3			Worklist Smp#:	15
Client ID:					
Injection Vol:	100.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	68
Method:	8330_X3	Limit Group:	GCSV - 8330		

Column: UltraCarb5uODS (20) (4.60 mm) Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\CHHPLC_X\20161029-52455.b\069-1601.D
Lims ID: IC MAIN L2
Client ID:
Sample Type: IC Calib Level: 2
Inject. Date: 28-Oct-2016 19:58:37 ALS Bottle#: 69 Worklist Smp#: 16
Injection Vol: 100.0 ul Dil. Factor: 1.0000
Sample Info: 8330 Lv 2
Misc. Info.: 280-0051662-015
Operator ID: ACF Instrument ID: CHHPLC_X3
Sublist: chrom-8330_X3*sub11

Method: \\ChromNA\Denver\ChromData\CHHPLC_X\20161029-52455.b\8330_X3.m
Limit Group: GCSV - 8330
Last Update: 29-Oct-2016 09:48:08 Calib Date: 28-Oct-2016 20:21:37
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\CHHPLC_X\20161029-52455.b\070-1701.D

Column 1 : UltraCarb5uODS (20) (4.60 mm) Det: LC DAD1B, 254 nm
Process Host: XAWRK032

First Level Reviewer: freya Date: 29-Oct-2016 08:00:06

Compound	Det	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/mL	OnCol Amt ug/mL	Flags
2 HMX	1	6.703	6.709	-0.006	4965	0.0500	0.0532	
4 MNX	1	7.430	7.435	-0.005	7310	0.0497	0.0528	
5 RDX	1	7.863	7.869	-0.006	5845	0.0500	0.0529	
6 2,4,6-Trinitrophenol	1	8.170	8.169	0.001	4333	0.0500	0.0504	
$ 7 1,2-Dinitrobenzene	1	8.917	8.929	-0.012	7589	0.0500	0.0530	
8 1,3,5-Trinitrobenzene	1	9.063	9.069	-0.006	12390	0.0500	0.0533	
9 1,3-Dinitrobenzene	1	9.743	9.755	-0.012	15265	0.0500	0.0521	
11 Nitrobenzene	1	10.143	10.148	-0.005	9936	0.0500	0.0496	
12 Tetryl	1	10.523	10.542	-0.019	9369	0.0500	0.0521	
13 Nitroglycerin	2	11.043	11.055	-0.012	39923	0.5000	0.5484	
14 2,4,6-Trinitrotoluene	1	11.483	11.495	-0.012	11123	0.0500	0.0527	
15 4-Amino-2,6-dinitrotoluene	1	11.697	11.708	-0.011	8656	0.0500	0.0533	
16 2-Amino-4,6-dinitrotoluene	1	11.977	11.995	-0.018	11818	0.0500	0.0542	
17 2,6-Dinitrotoluene	1	12.117	12.135	-0.018	7708	0.0500	0.0513	
18 2,4-Dinitrotoluene	1	12.303	12.322	-0.019	15282	0.0500	0.0522	
19 o-Nitrotoluene	1	13.157	13.175	-0.018	6608	0.0500	0.0503	
20 p-Nitrotoluene	1	13.610	13.628	-0.018	5950	0.0500	0.0531	
21 m-Nitrotoluene	1	14.217	14.235	-0.018	7998	0.0500	0.0530	
22 PETN	2	15.403	15.435	-0.032	36171	0.5000	0.4881	

Reagents:

8330IntermStk_00041 Amount Added: 0.00 Units: mL

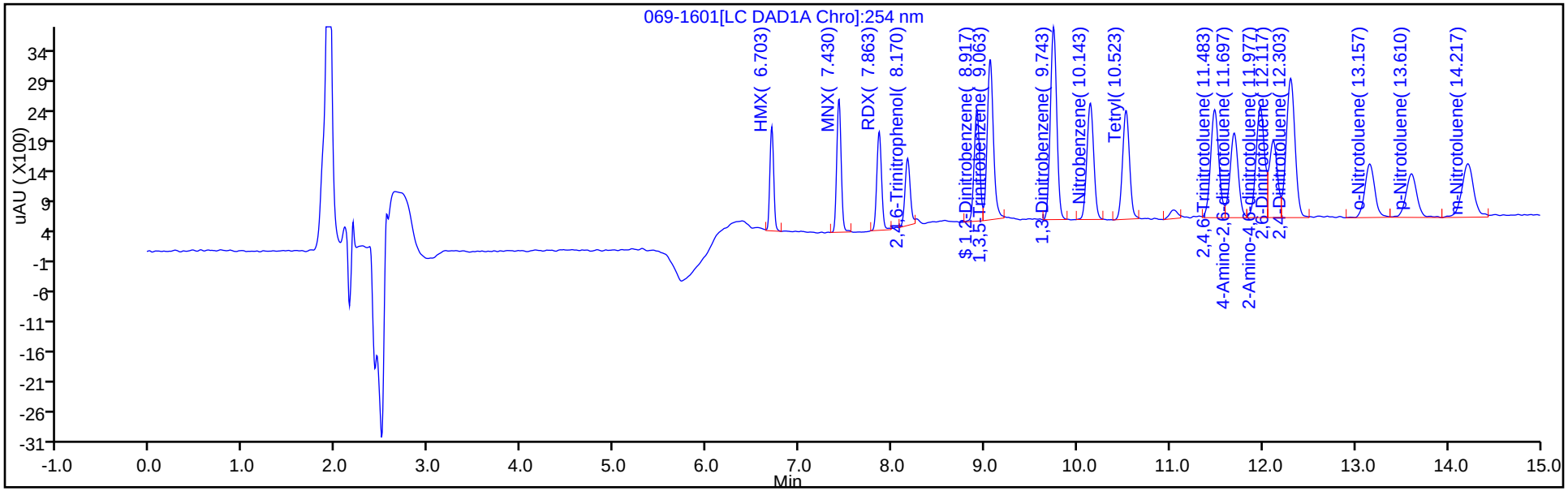
Report Date: 29-Oct-2016 09:48:09 Chrom Revision: 2.2 17-Oct-2016 09:27:18

TestAmerica Denver

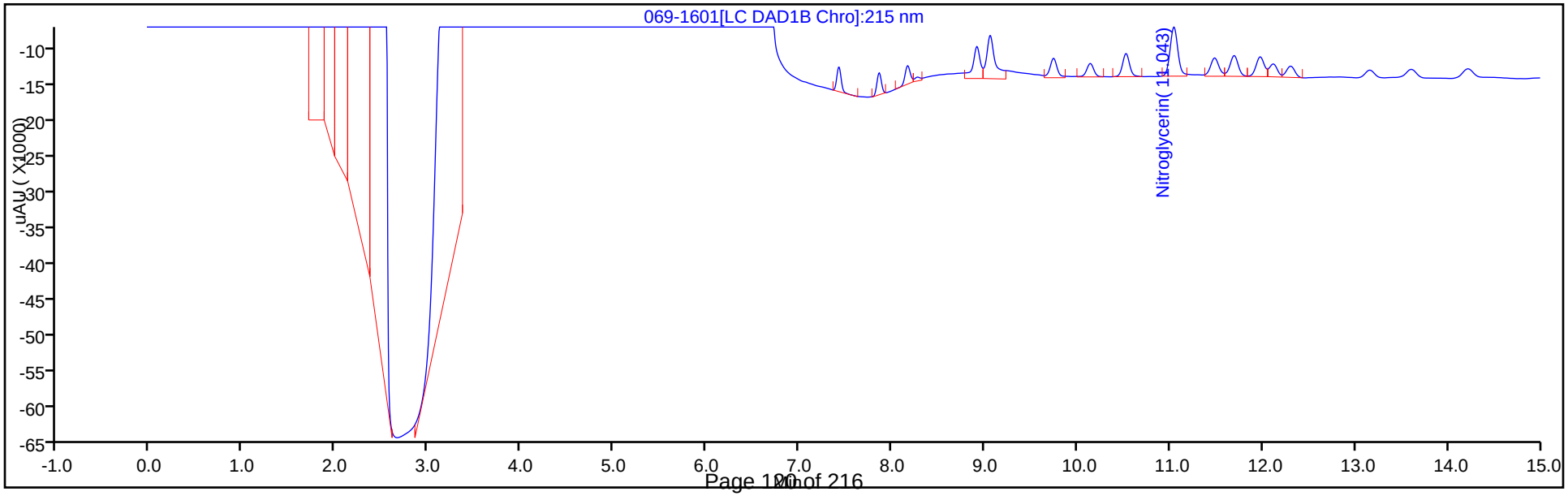
Data File: \\ChromNA\Denver\ChromData\CHHPLC_X\20161029-52455.b\069-1601.D

Injection Date:	28-Oct-2016 19:58:37	Instrument ID:	CHHPLC_X3	Operator ID:	ACF
Lims ID:	IC MAIN L2			Worklist Smp#:	16
Client ID:					
Injection Vol:	100.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	69
Method:	8330_X3	Limit Group:	GCSV - 8330		

Column: UltraCarb5uODS (20) (4.60 mm) Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\CHHPLC_X\20161029-52455.b\070-1701.D
Lims ID: IC MAIN L1
Client ID:
Sample Type: IC Calib Level: 1
Inject. Date: 28-Oct-2016 20:21:37 ALS Bottle#: 70 Worklist Smp#: 17
Injection Vol: 100.0 ul Dil. Factor: 1.0000
Sample Info: 8330 Lv 1
Misc. Info.: 280-0051662-021
Operator ID: ACF Instrument ID: CHHPLC_X3
Sublist: chrom-8330_X3*sub11

Method: \\ChromNA\Denver\ChromData\CHHPLC_X\20161029-52455.b\8330_X3.m
Limit Group: GCSV - 8330
Last Update: 29-Oct-2016 09:48:10 Calib Date: 28-Oct-2016 20:21:37
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\CHHPLC_X\20161029-52455.b\070-1701.D

Column 1 : UltraCarb5uODS (20) (4.60 mm) Det: LC DAD1B, 254 nm
Process Host: XAWRK032

First Level Reviewer: freya Date: 29-Oct-2016 08:03:10

	Compound	Det	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/mL	OnCol Amt ug/mL	Flags
	2 HMX	1	6.704	6.709	-0.005	963	0.0100	0.009870	
	4 MNX	1	7.437	7.435	0.002	1422	0.0099	0.009813	
	5 RDX	1	7.870	7.869	0.001	1221	0.0100	0.009865	
	6 2,4,6-Trinitrophenol	1	8.190	8.169	0.021	943	0.0100	0.0100	M
$	7 1,2-Dinitrobenzene	1	8.930	8.929	0.001	1542	0.0100	0.009862	
	8 1,3,5-Trinitrobenzene	1	9.077	9.069	0.008	2373	0.0100	0.009860	
	9 1,3-Dinitrobenzene	1	9.764	9.755	0.009	2866	0.0100	0.0099	
	11 Nitrobenzene	1	10.164	10.148	0.016	1935	0.0100	0.0100	
	12 Tetryl	1	10.550	10.542	0.008	1842	0.0100	0.0099	
	13 Nitroglycerin	2	11.070	11.055	0.015	7747	0.1000	0.0980	M
	14 2,4,6-Trinitrotoluene	1	11.517	11.495	0.022	2478	0.0100	0.009881	
	15 4-Amino-2,6-dinitrotoluene	1	11.730	11.708	0.022	1964	0.0100	0.009846	
	16 2-Amino-4,6-dinitrotoluene	1	12.010	11.995	0.015	2350	0.0100	0.009833	M
	17 2,6-Dinitrotoluene	1	12.157	12.135	0.022	1556	0.0100	0.0099	M
	18 2,4-Dinitrotoluene	1	12.344	12.322	0.022	3098	0.0100	0.009898	
	19 o-Nitrotoluene	1	13.197	13.175	0.022	1370	0.0100	0.0099	
	20 p-Nitrotoluene	1	13.650	13.628	0.022	1088	0.0100	0.009855	
	21 m-Nitrotoluene	1	14.270	14.235	0.035	1680	0.0100	0.009859	
	22 PETN	2	15.464	15.435	0.029	8517	0.1000	0.1005	M

QC Flag Legend

Review Flags
M - Manually Integrated

Reagents:

8330IntermStk_00041 Amount Added: 0.00 Units: mL

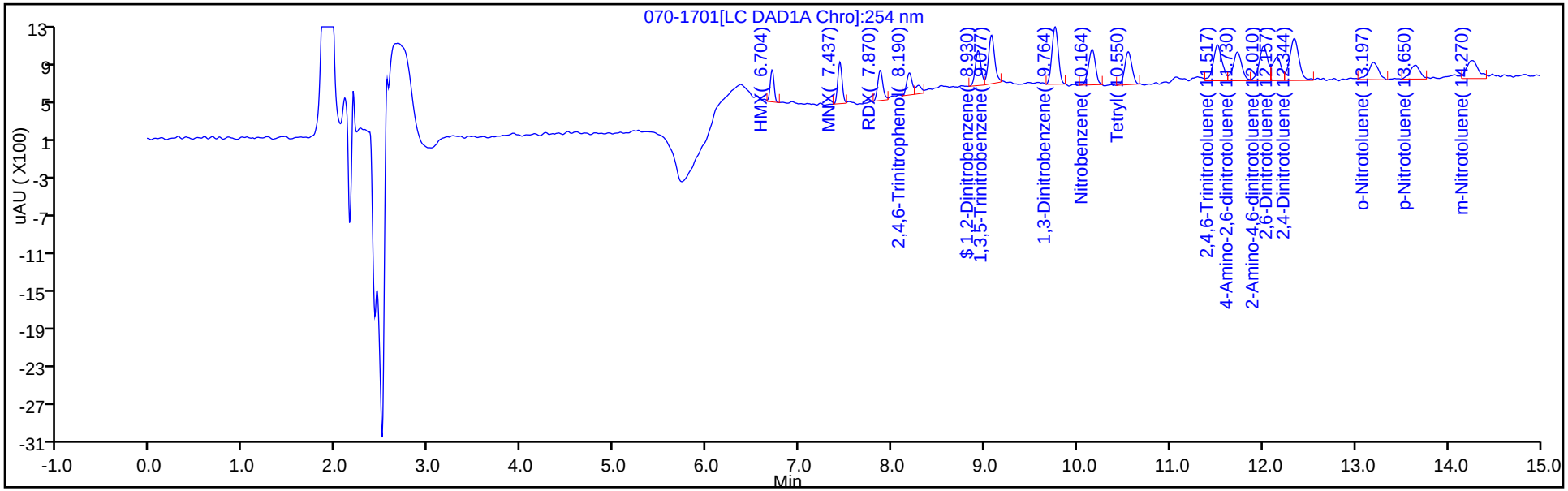
Report Date: 29-Oct-2016 09:48:11 Chrom Revision: 2.2 17-Oct-2016 09:27:18

TestAmerica Denver

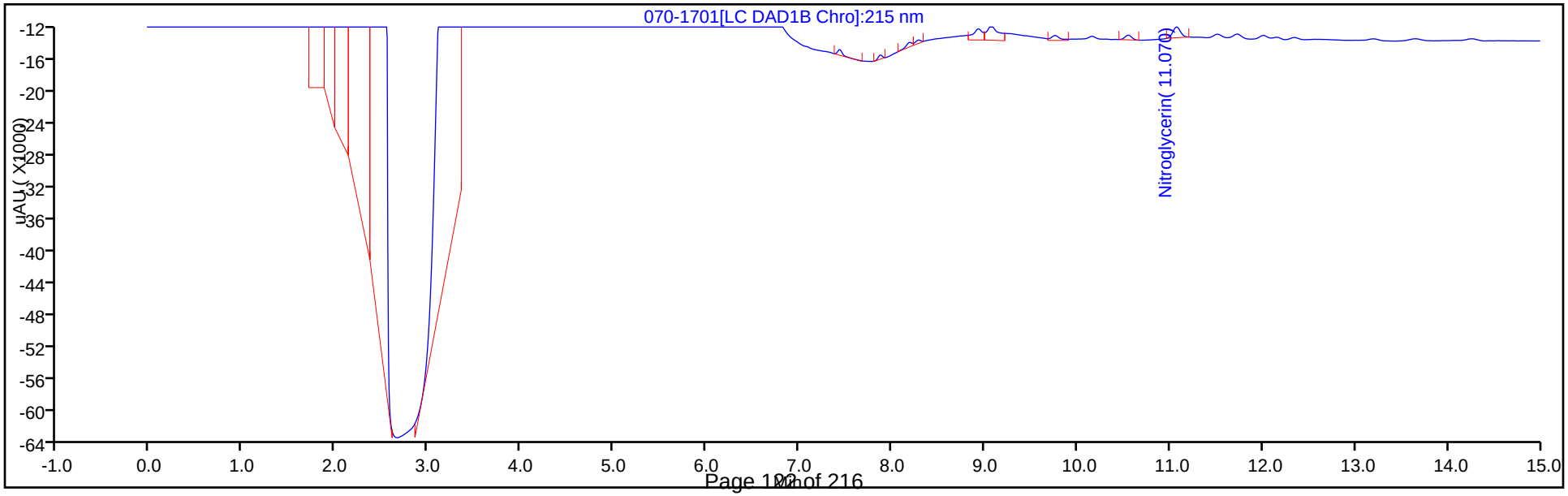
Data File: \\ChromNA\Denver\ChromData\CHHPLC_X\20161029-52455.b\070-1701.D

Injection Date:	28-Oct-2016 20:21:37	Instrument ID:	CHHPLC_X3	Operator ID:	ACF
Lims ID:	IC MAIN L1			Worklist Smp#:	17
Client ID:					
Injection Vol:	100.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	70
Method:	8330_X3	Limit Group:	GCSV - 8330		

Column: UltraCarb5uODS (20) (4.60 mm) Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Manual Integration/User Assign Peak Report

TestAmerica Denver

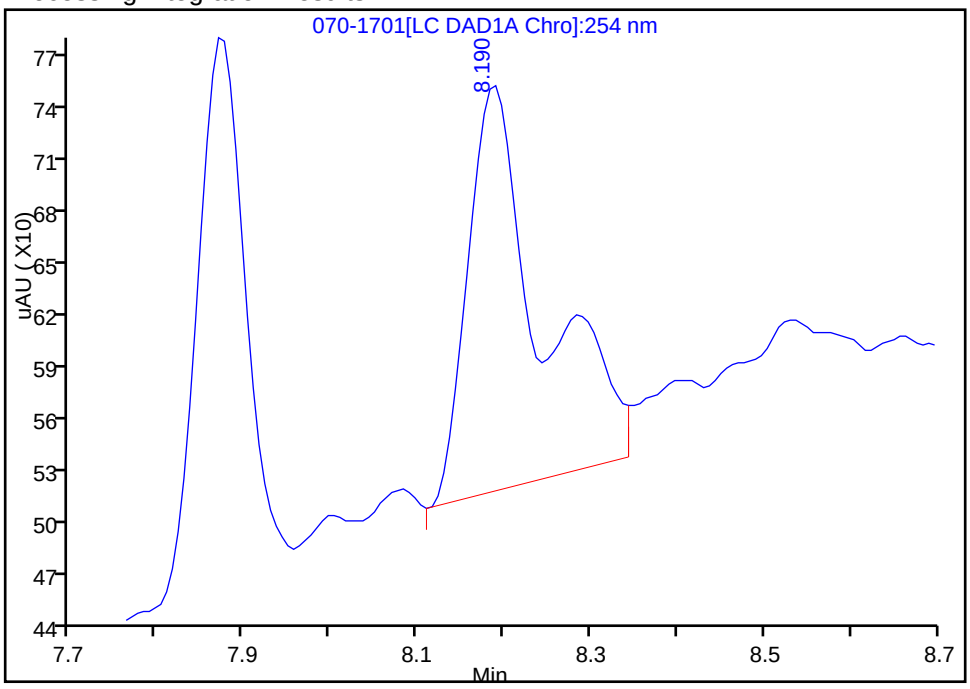
Data File: \\ChromNA\Denver\ChromData\CHHPLC_X\20161029-52455.b\070-1701.D
Injection Date: 28-Oct-2016 20:21:37 Instrument ID: CHHPLC_X3
Lims ID: IC MAIN L1
Client ID:
Operator ID: ACF ALS Bottle#: 70 Worklist Smp#: 17
Injection Vol: 100.0 ul Dil. Factor: 1.0000
Method: 8330_X3 Limit Group: GCSV - 8330
Column: UltraCarb5uODS (20) (4.60 mm) Detector LC DAD1B, 254 nm

6 2,4,6-Trinitrophenol, CAS: 88-89-1

Signal: 1

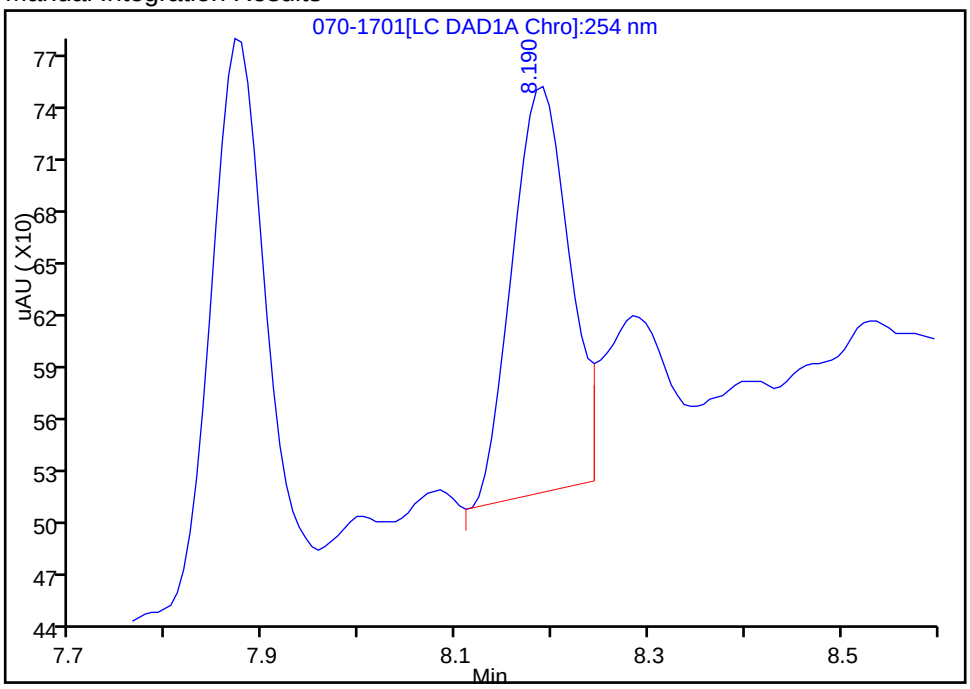
Processing Integration Results

RT: 8.19
Area: 1334
Amount: 0.010682
Amount Units: ug/mL



Manual Integration Results

RT: 8.19
Area: 943
Amount: 0.009982
Amount Units: ug/mL



Reviewer: freya, 29-Oct-2016 09:35:15
Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

TestAmerica Denver

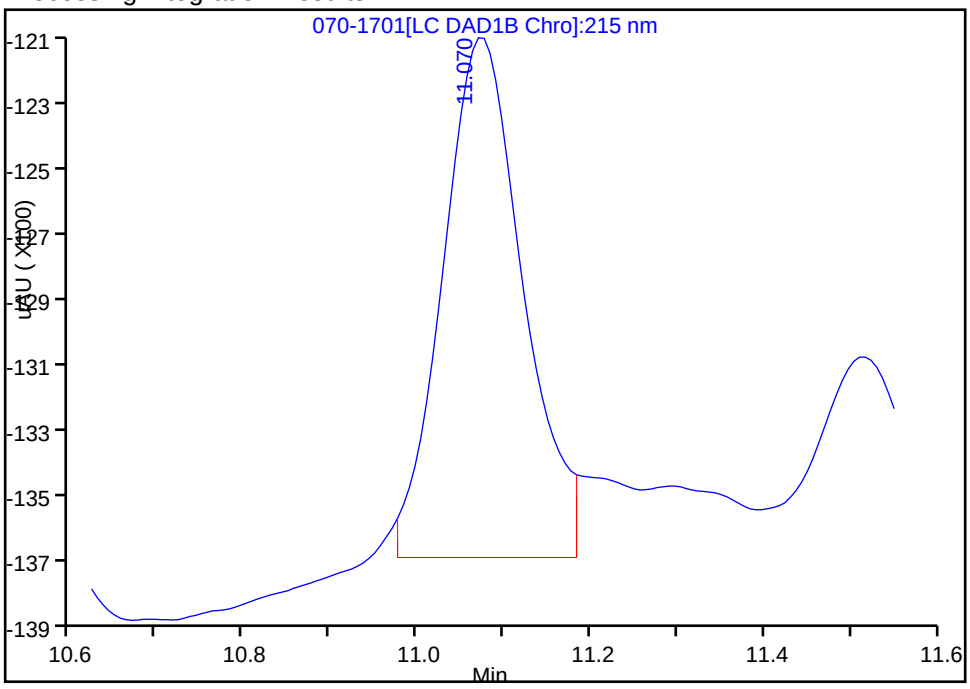
Data File: \\ChromNA\Denver\ChromData\CHHPLC_X\20161029-52455.b\070-1701.D
Injection Date: 28-Oct-2016 20:21:37 Instrument ID: CHHPLC_X3
Lims ID: IC MAIN L1
Client ID:
Operator ID: ACF ALS Bottle#: 70 Worklist Smp#: 17
Injection Vol: 100.0 ul Dil. Factor: 1.0000
Method: 8330_X3 Limit Group: GCSV - 8330
Column: Detector LC DAD1C, 215 nm

13 Nitroglycerin, CAS: 55-63-0

Signal: 1

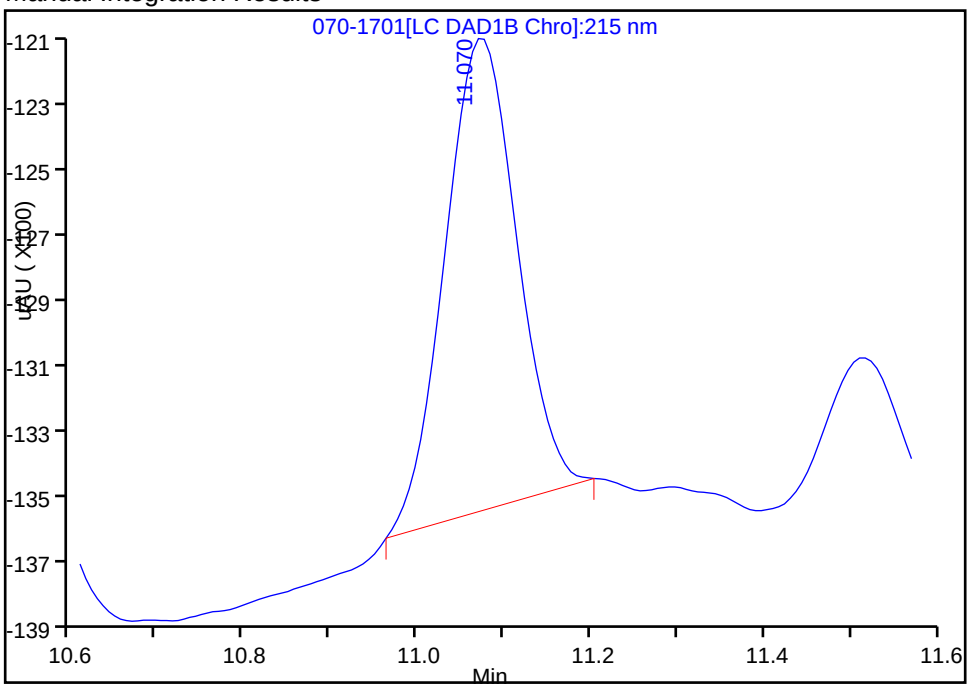
Processing Integration Results

RT: 11.07
Area: 9443
Amount: 0.122086
Amount Units: ug/mL



Manual Integration Results

RT: 11.07
Area: 7747
Amount: 0.097953
Amount Units: ug/mL



Reviewer: freya, 29-Oct-2016 09:29:26
Audit Action: Manually Integrated Audit Reason: Baseline Smoothing

Manual Integration/User Assign Peak Report

TestAmerica Denver

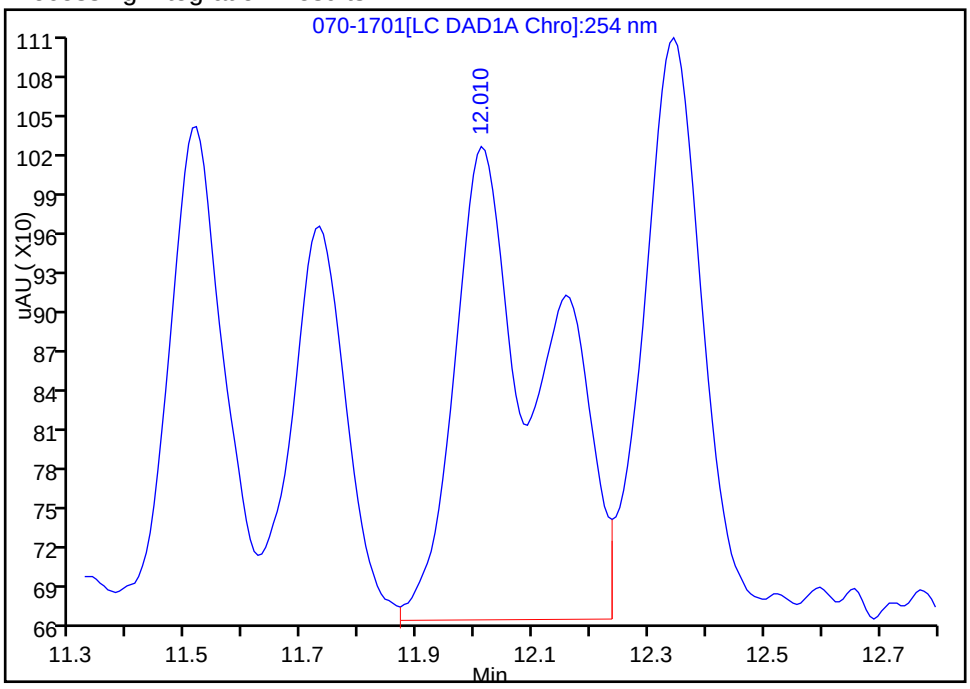
Data File: \\ChromNA\Denver\ChromData\CHHPLC_X\20161029-52455.b\070-1701.D
Injection Date: 28-Oct-2016 20:21:37 Instrument ID: CHHPLC_X3
Lims ID: IC MAIN L1
Client ID:
Operator ID: ACF ALS Bottle#: 70 Worklist Smp#: 17
Injection Vol: 100.0 ul Dil. Factor: 1.0000
Method: 8330_X3 Limit Group: GCSV - 8330
Column: UltraCarb5uODS (20) (4.60 mm) Detector LC DAD1B, 254 nm

16 2-Amino-4,6-dinitrotoluene, CAS: 35572-78-2

Signal: 1

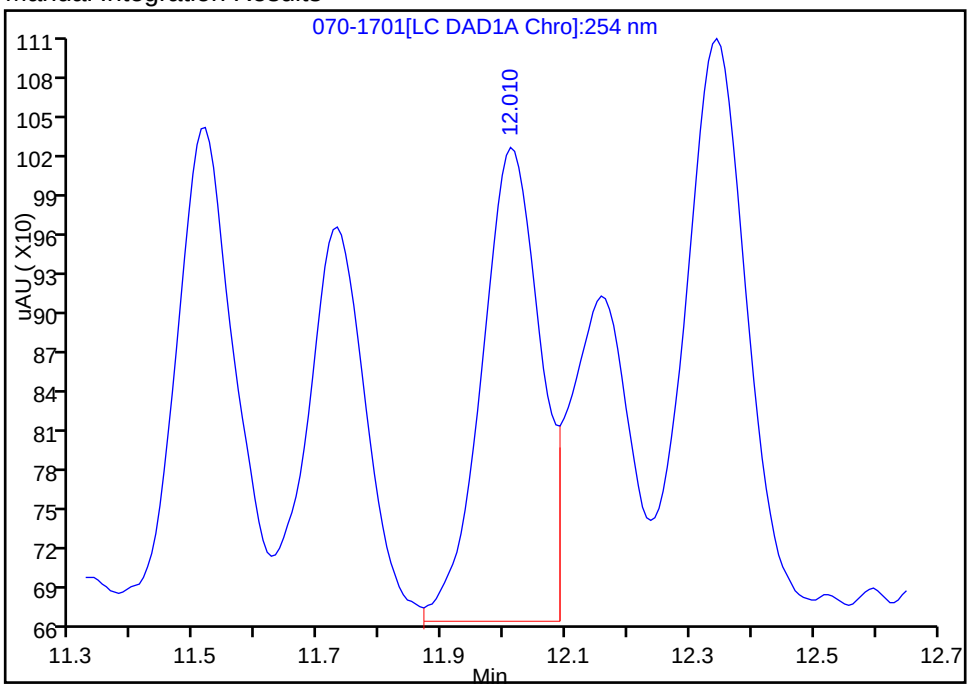
Processing Integration Results

RT: 12.01
Area: 3899
Amount: 0.015951
Amount Units: ug/mL



Manual Integration Results

RT: 12.01
Area: 2350
Amount: 0.009833
Amount Units: ug/mL



Reviewer: freya, 29-Oct-2016 09:25:51
Audit Action: Split an Integrated Peak Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

TestAmerica Denver

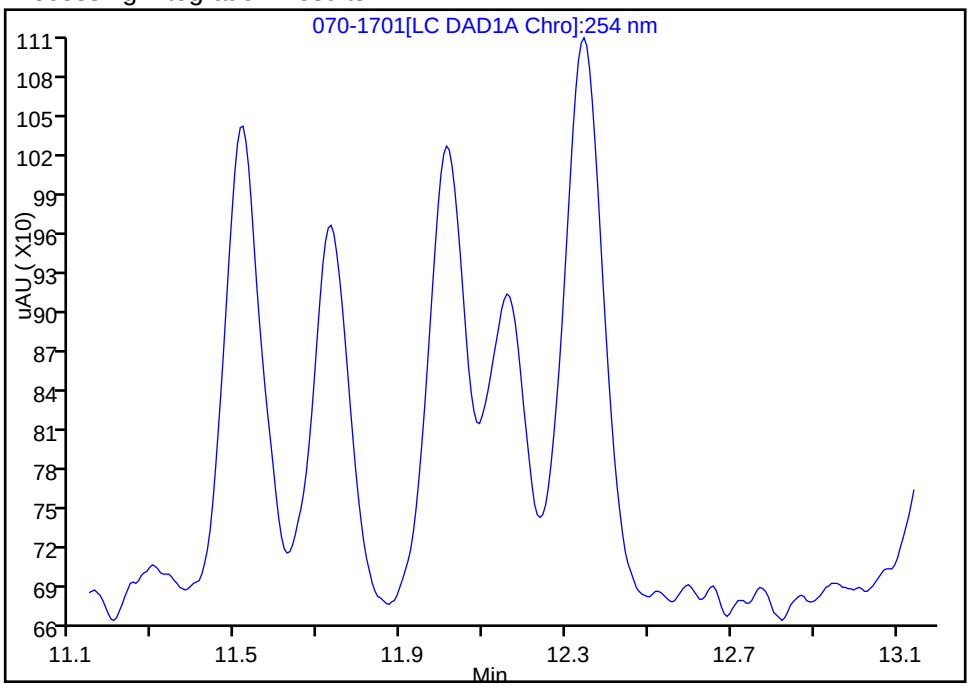
Data File: \\ChromNA\Denver\ChromData\CHHPLC_X\20161029-52455.b\070-1701.D
Injection Date: 28-Oct-2016 20:21:37 Instrument ID: CHHPLC_X3
Lims ID: IC MAIN L1
Client ID:
Operator ID: ACF ALS Bottle#: 70 Worklist Smp#: 17
Injection Vol: 100.0 ul Dil. Factor: 1.0000
Method: 8330_X3 Limit Group: GCSV - 8330
Column: UltraCarb5uODS (20) (4.60 mm) Detector LC DAD1B, 254 nm

17 2,6-Dinitrotoluene, CAS: 606-20-2

Signal: 1

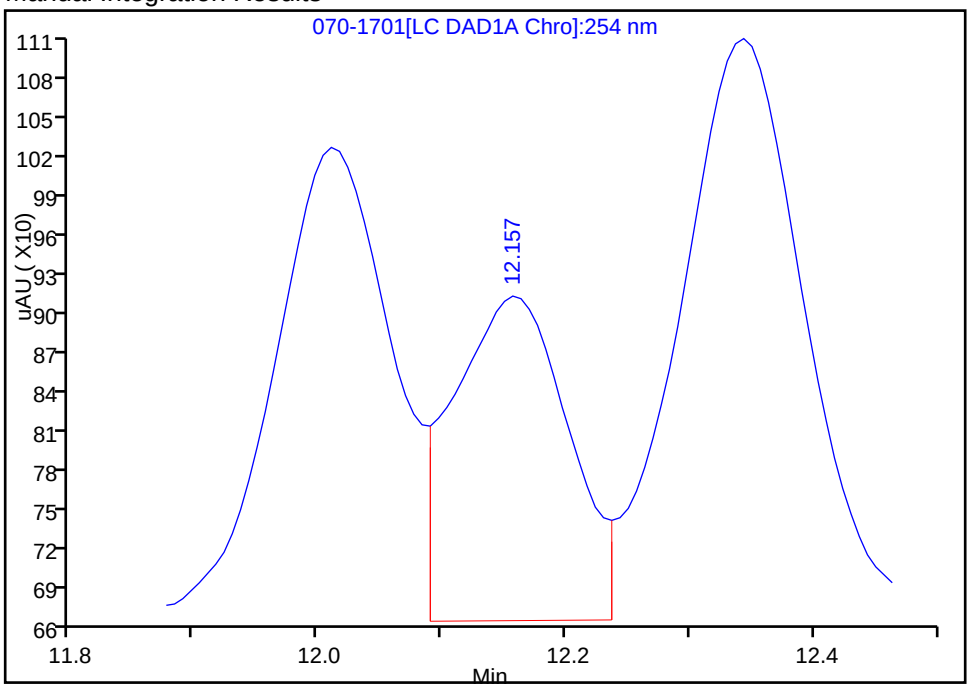
Not Detected
Expected RT: 12.14

Processing Integration Results



Manual Integration Results

RT: 12.16
Area: 1556
Amount: 0.009912
Amount Units: ug/mL



Reviewer: freya, 29-Oct-2016 09:25:51
Audit Action: Manually Integrated/Assigned Compound ID Audit Reason: Split Peak

Manual Integration/User Assign Peak Report

TestAmerica Denver

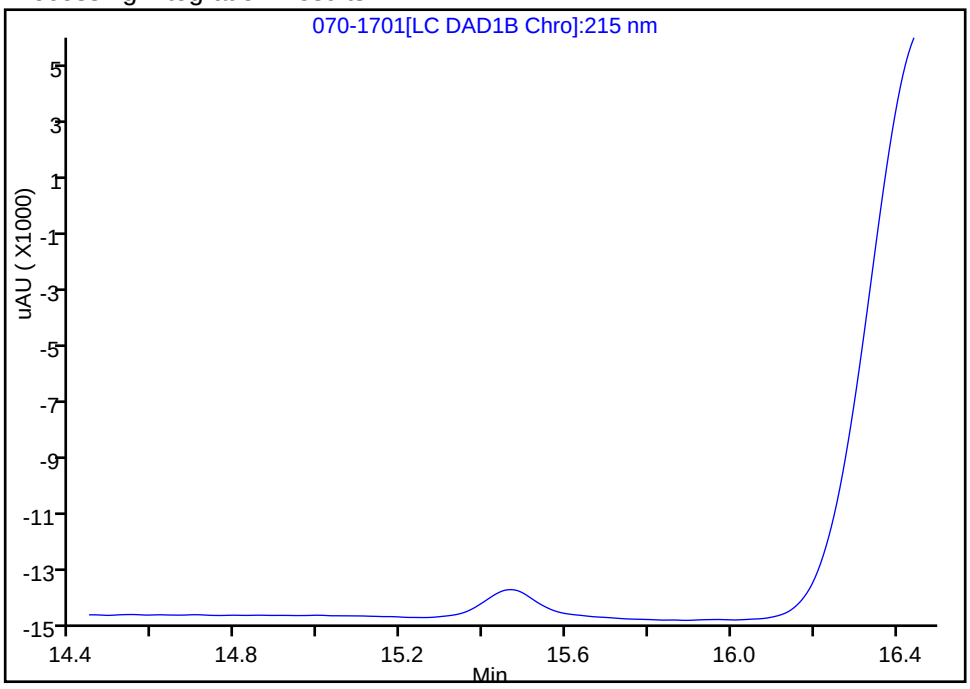
Data File: \\ChromNA\Denver\ChromData\CHHPLC_X\20161029-52455.b\070-1701.D
Injection Date: 28-Oct-2016 20:21:37 Instrument ID: CHHPLC_X3
Lims ID: IC MAIN L1
Client ID:
Operator ID: ACF ALS Bottle#: 70 Worklist Smp#: 17
Injection Vol: 100.0 ul Dil. Factor: 1.0000
Method: 8330_X3 Limit Group: GCSV - 8330
Column: Detector LC DAD1C, 215 nm

22 PETN, CAS: 78-11-5

Signal: 1

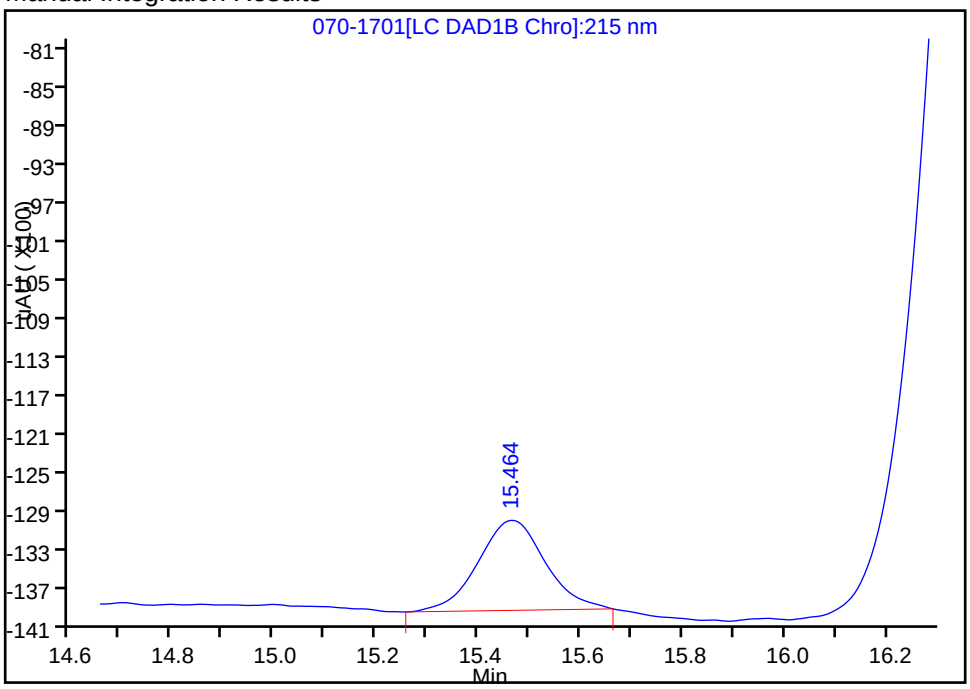
Not Detected
Expected RT: 15.44

Processing Integration Results



Manual Integration Results

RT: 15.46
Area: 8517
Amount: 0.100465
Amount Units: ug/mL



Reviewer: freya, 29-Oct-2016 09:25:51
Audit Action: Manually Integrated/Assigned Compound ID Audit Reason: Incomplete Integration

FORM VII
HPLC/IC CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Denver Job No.: 280-90781-1

SDG No.:

Lab Sample ID: ICV 280-348785/18 Calibration Date: 10/28/2016 20:44

Instrument ID: CHHPLC_X3 Calib Start Date: 10/28/2016 17:40

GC Column: UltraCarb5uODS ID: 4.60(mm) Calib End Date: 10/28/2016 20:21

Lab File ID: 071-1801.D Conc. Units: ug/mL

ANALYTE	CURVE TYPE	AVE CF	CF	MIN CF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
HMX	Lin2		81940		0.354	0.400	-11.5	20.0
RDX	Lin2		103353		0.383	0.400	-4.1	20.0
Picric acid	Lin2		83220		0.395	0.400	-1.2	20.0
1,3,5-Trinitrobenzene	Lin2		227110		0.393	0.400	-1.7	20.0
1,3-Dinitrobenzene	Lin2		301395		0.410	0.400	2.6	20.0
Nitrobenzene	Lin2		198305		0.393	0.400	-1.9	20.0
Tetryl	Lin2		175620		0.394	0.400	-1.6	20.0
Nitroglycerin	Lin2		67405		3.76	4.00	-5.9	20.0
2,4,6-Trinitrotoluene	Lin2		206903		0.408	0.400	1.9	20.0
4-Amino-2,6-dinitrotoluene	Lin2		150430		0.388	0.400	-3.0	20.0
2-Amino-4,6-dinitrotoluene	Lin2		204710		0.383	0.400	-4.3	20.0
2,6-Dinitrotoluene	Lin2		140530		0.377	0.400	-5.6	20.0
2,4-Dinitrotoluene	Lin2		280453		0.389	0.400	-2.8	20.0
2-Nitrotoluene	Lin2		125093		0.385	0.400	-3.7	20.0
4-Nitrotoluene	Lin2		111648		0.398	0.400	-0.6	20.0
3-Nitrotoluene	Lin2		145758		0.396	0.400	-0.9	20.0
PETN	Lin2		69959		3.90	4.00	-2.4	20.0
1,2-Dinitrobenzene	Lin2		138960		0.396	0.400	-1.1	20.0

FORM VII
HPLC/IC CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-90781-1

SDG No.:

Lab Sample ID: ICV 280-348785/18 Calibration Date: 10/28/2016 20:44

Instrument ID: CHHPLC_X3 Calib Start Date: 10/28/2016 17:40

GC Column: UltraCarb5uODS ID: 4.60(mm) Calib End Date: 10/28/2016 20:21

Lab File ID: 071-1801.D

Analyte	RT	RT WINDOW	
		FROM	TO
HMX	6.72	6.62	6.82
RDX	7.88	7.78	7.98
Picric acid	8.17	8.07	8.27
1,3,5-Trinitrobenzene	9.08	8.98	9.18
1,3-Dinitrobenzene	9.78	9.68	9.88
Nitrobenzene	10.18	10.08	10.28
Tetryl	10.57	10.47	10.67
Nitroglycerin	11.09	10.99	11.19
2,4,6-Trinitrotoluene	11.54	11.44	11.64
4-Amino-2,6-dinitrotoluene	11.76	11.66	11.86
2-Amino-4,6-dinitrotoluene	12.04	11.94	12.14
2,6-Dinitrotoluene	12.18	12.08	12.28
2,4-Dinitrotoluene	12.37	12.27	12.47
2-Nitrotoluene	13.23	13.13	13.33
4-Nitrotoluene	13.68	13.58	13.78
3-Nitrotoluene	14.30	14.20	14.40
PETN	15.51	15.41	15.61
1,2-Dinitrobenzene	8.94	8.84	9.04

TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\CHHPLC_X\20161029-52455.b\071-1801.D
Lims ID: ICV MAIN
Client ID:
Sample Type: ICV
Inject. Date: 28-Oct-2016 20:44:42 ALS Bottle#: 71 Worklist Smp#: 18
Injection Vol: 100.0 ul Dil. Factor: 1.0000
Sample Info: 8330 ICV
Misc. Info.: 280-0051662-007
Operator ID: ACF Instrument ID: CHHPLC_X3
Sublist:

Method: \\ChromNA\Denver\ChromData\CHHPLC_X\20161029-52455.b\8330_X3.m
Limit Group: GCSV - 8330
Last Update: 29-Oct-2016 09:48:12 Calib Date: 28-Oct-2016 20:21:37
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\CHHPLC_X\20161029-52455.b\070-1701.D

Column 1 : UltraCarb5uODS (20) (4.60 mm) Det: LC DAD1B, 254 nm
Process Host: XAWRK032

First Level Reviewer: freya Date: 29-Oct-2016 08:08:09

Compound	Det	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/mL	OnCol Amt ug/mL	Flags
2 HMX	1	6.717	6.717	0.000	32776	0.4000	0.3541	
4 MNX	1	7.451	7.451	0.000	50980	0.4021	0.3719	
5 RDX	1	7.884	7.884	0.000	41341	0.4000	0.3835	
6 2,4,6-Trinitrophenol	1	8.171	8.171	0.000	33288	0.4000	0.3952	
$ 7 1,2-Dinitrobenzene	1	8.944	8.944	0.000	55584	0.4000	0.3957	
8 1,3,5-Trinitrobenzene	1	9.084	9.084	0.000	90844	0.4000	0.3932	
9 1,3-Dinitrobenzene	1	9.777	9.777	0.000	120558	0.4000	0.4104	
11 Nitrobenzene	1	10.177	10.177	0.000	79322	0.4000	0.3926	
12 Tetryl	1	10.571	10.571	0.000	70248	0.4000	0.3936	
13 Nitroglycerin	2	11.091	11.091	0.000	269619	4.00	3.76	
14 2,4,6-Trinitrotoluene	1	11.537	11.537	0.000	82761	0.4000	0.4076	
15 4-Amino-2,6-dinitrotoluene	1	11.757	11.757	0.000	60172	0.4000	0.3880	
16 2-Amino-4,6-dinitrotoluene	1	12.037	12.037	0.000	81884	0.4000	0.3827	
17 2,6-Dinitrotoluene	1	12.184	12.184	0.000	56212	0.4000	0.3775	
18 2,4-Dinitrotoluene	1	12.371	12.371	0.000	112181	0.4000	0.3887	
19 o-Nitrotoluene	1	13.231	13.231	0.000	50037	0.4000	0.3851	
20 p-Nitrotoluene	1	13.684	13.684	0.000	44659	0.4000	0.3977	
21 m-Nitrotoluene	1	14.304	14.304	0.000	58303	0.4000	0.3964	
22 PETN	2	15.511	15.511	0.000	279835	4.00	3.90	

Reagents:

8330 LCS_00072 Amount Added: 0.04 Units: mL
8330Surrogate_00090 Amount Added: 0.04 Units: mL

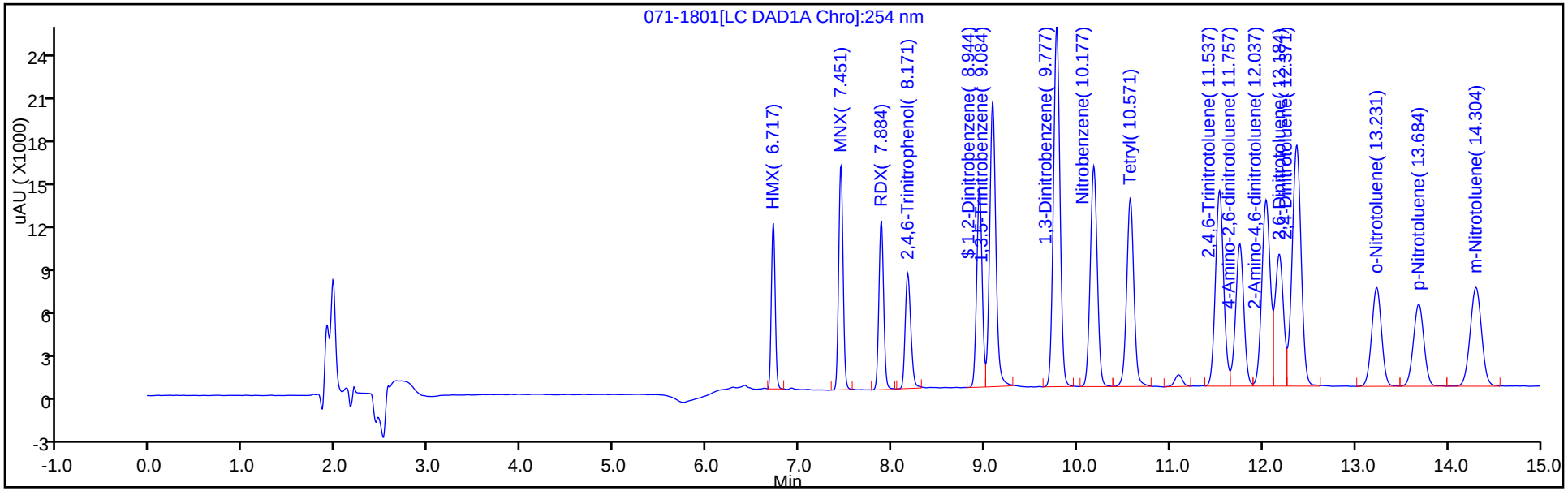
Report Date: 29-Oct-2016 09:48:12 Chrom Revision: 2.2 17-Oct-2016 09:27:18

TestAmerica Denver

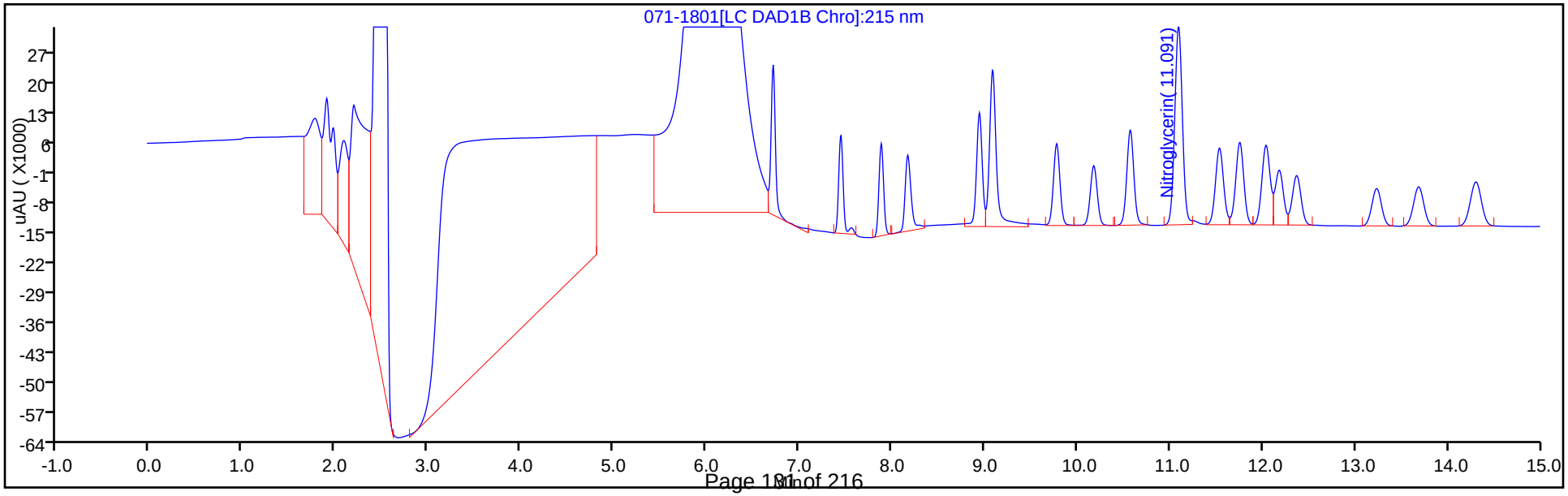
Data File: \\ChromNA\Denver\ChromData\CHHPLC_X\20161029-52455.b\071-1801.D

Injection Date:	28-Oct-2016 20:44:42	Instrument ID:	CHHPLC_X3	Operator ID:	ACF
Lims ID:	ICV MAIN			Worklist Smp#:	18
Client ID:					
Injection Vol:	100.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	71
Method:	8330_X3	Limit Group:	GCSV - 8330		

Column: UltraCarb5uODS (20) (4.60 mm) Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



FORM VII
HPLC/IC CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Denver Job No.: 280-90781-1

SDG No.:

Lab Sample ID: CCV 280-353340/7 Calibration Date: 11/28/2016 16:49

Instrument ID: CHHPLC_X3 Calib Start Date: 10/28/2016 17:40

GC Column: UltraCarb5uODS ID: 4.60(mm) Calib End Date: 10/28/2016 20:21

Lab File ID: 11281607.D Conc. Units: ug/mL

ANALYTE	CURVE TYPE	AVE CF	CF	MIN CF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
HMX	Lin2		93612		0.253	0.250	1.1	20.0
RDX	Lin2		108796		0.252	0.250	0.7	20.0
Picric acid	Lin2		85692		0.254	0.250	1.6	20.0
1,3,5-Trinitrobenzene	Lin2		233384		0.252	0.250	1.0	20.0
1,3-Dinitrobenzene	Lin2		298788		0.254	0.250	1.7	20.0
Nitrobenzene	Lin2		206572		0.256	0.250	2.3	20.0
Tetryl	Lin2		180396		0.253	0.250	1.0	20.0
Nitroglycerin	Lin2		72197		2.52	2.50	0.7	20.0
2,4,6-Trinitrotoluene	Lin2		206992		0.254	0.250	1.6	20.0
4-Amino-2,6-dinitrotoluene	Lin2		161136		0.259	0.250	3.5	20.0
2-Amino-4,6-dinitrotoluene	Lin2		221244		0.258	0.250	3.3	20.0
2,6-Dinitrotoluene	Lin2		147828		0.248	0.250	-0.8	20.0
2,4-Dinitrotoluene	Lin2		297912		0.258	0.250	3.1	20.0
2-Nitrotoluene	Lin2		132356		0.254	0.250	1.8	20.0
4-Nitrotoluene	Lin2		115544		0.257	0.250	2.9	20.0
3-Nitrotoluene	Lin2		150196		0.255	0.250	1.9	20.0
PETN	Lin2		73001		2.54	2.50	1.6	20.0
1,2-Dinitrobenzene	Lin2		141624		0.252	0.250	0.7	20.0

FORM VII
HPLC/IC CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-90781-1

SDG No.:

Lab Sample ID: CCV 280-353340/7 Calibration Date: 11/28/2016 16:49

Instrument ID: CHHPLC_X3 Calib Start Date: 10/28/2016 17:40

GC Column: UltraCarb5uODS ID: 4.60(mm) Calib End Date: 10/28/2016 20:21

Lab File ID: 11281607.D

Analyte	RT	RT WINDOW	
		FROM	TO
HMX	6.72	6.62	6.82
RDX	7.88	7.78	7.98
Picric acid	8.18	8.08	8.28
1,3,5-Trinitrobenzene	9.07	8.97	9.17
1,3-Dinitrobenzene	9.74	9.64	9.84
Nitrobenzene	10.14	10.04	10.24
Tetryl	10.52	10.42	10.62
Nitroglycerin	11.03	10.93	11.13
2,4,6-Trinitrotoluene	11.47	11.37	11.57
4-Amino-2,6-dinitrotoluene	11.68	11.58	11.78
2-Amino-4,6-dinitrotoluene	11.96	11.86	12.06
2,6-Dinitrotoluene	12.10	12.00	12.20
2,4-Dinitrotoluene	12.29	12.19	12.39
2-Nitrotoluene	13.14	13.04	13.24
4-Nitrotoluene	13.58	13.48	13.68
3-Nitrotoluene	14.20	14.10	14.30
PETN	15.36	15.26	15.46
1,2-Dinitrobenzene	8.93	8.83	9.03

TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\CHHPLC_X\20161128-53609.b\11281607.D
Lims ID: CCV MAIN L4
Client ID:
Sample Type: CCV
Inject. Date: 28-Nov-2016 16:49:12 ALS Bottle#: 2 Worklist Smp#: 7
Injection Vol: 100.0 ul Dil. Factor: 1.0000
Sample Info: CCV MAIN L4
Misc. Info.: 280-0053609-007
Operator ID: dmj Instrument ID: CHHPLC_X3
Sublist: chrom-8330_X3*sub11

Method: \\ChromNA\Denver\ChromData\CHHPLC_X\20161128-53609.b\8330_X3.m
Limit Group: GCSV - 8330
Last Update: 02-Dec-2016 20:40:15 Calib Date: 28-Oct-2016 23:49:21
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\CHHPLC_X\20161029-52455.b\079-2601.D

Column 1 : UltraCarb5uODS (20) (4.60 mm) Det: LC DAD1B, 254 nm
Process Host: XAWRK023

Compound	Det	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/mL	OnCol Amt ug/mL	Flags
2 HMX	1	6.718	6.718	0.000	23403	0.2500	0.2526	
4 MNX	1	7.444	7.444	0.000	34779	0.2487	0.2535	
5 RDX	1	7.884	7.884	0.000	27199	0.2500	0.2518	
6 2,4,6-Trinitrophenol	1	8.178	8.178	0.000	21423	0.2500	0.2539	
$ 7 1,2-Dinitrobenzene	1	8.931	8.931	0.000	35406	0.2500	0.2517	
8 1,3,5-Trinitrobenzene	1	9.071	9.071	0.000	58346	0.2500	0.2524	
9 1,3-Dinitrobenzene	1	9.744	9.744	0.000	74697	0.2500	0.2543	
11 Nitrobenzene	1	10.138	10.138	0.000	51643	0.2500	0.2557	
12 Tetryl	1	10.518	10.518	0.000	45099	0.2500	0.2526	
13 Nitroglycerin	2	11.031	11.031	0.000	180493	2.50	2.52	
14 2,4,6-Trinitrotoluene	1	11.471	11.471	0.000	51748	0.2500	0.2540	
15 4-Amino-2,6-dinitrotoluene	1	11.678	11.678	0.000	40284	0.2500	0.2588	
16 2-Amino-4,6-dinitrotoluene	1	11.958	11.958	0.000	55311	0.2500	0.2581	
17 2,6-Dinitrotoluene	1	12.104	12.104	0.000	36957	0.2500	0.2480	
18 2,4-Dinitrotoluene	1	12.291	12.291	0.000	74478	0.2500	0.2578	
19 o-Nitrotoluene	1	13.138	13.138	0.000	33089	0.2500	0.2544	
20 p-Nitrotoluene	1	13.584	13.584	0.000	28886	0.2500	0.2573	
21 m-Nitrotoluene	1	14.198	14.198	0.000	37549	0.2500	0.2547	
22 PETN	2	15.364	15.364	0.000	182502	2.50	2.54	

Reagents:

8330IntermStk_00041 Amount Added: 0.01 Units: mL

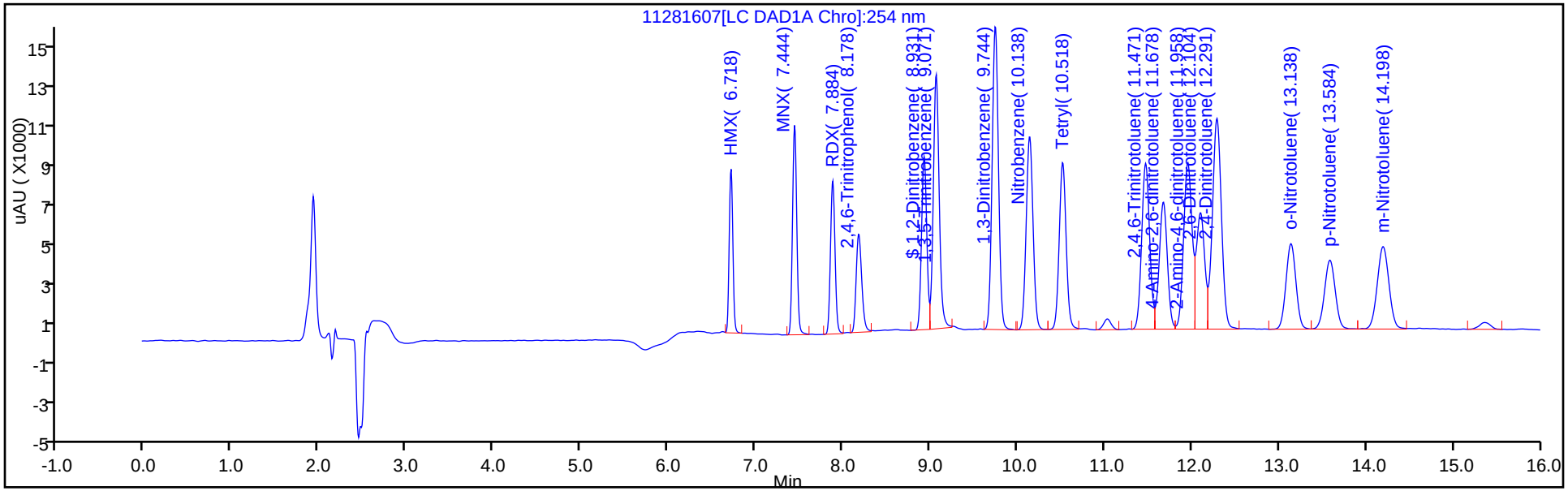
Report Date: 02-Dec-2016 20:40:16 Chrom Revision: 2.2 14-Nov-2016 08:15:18

TestAmerica Denver

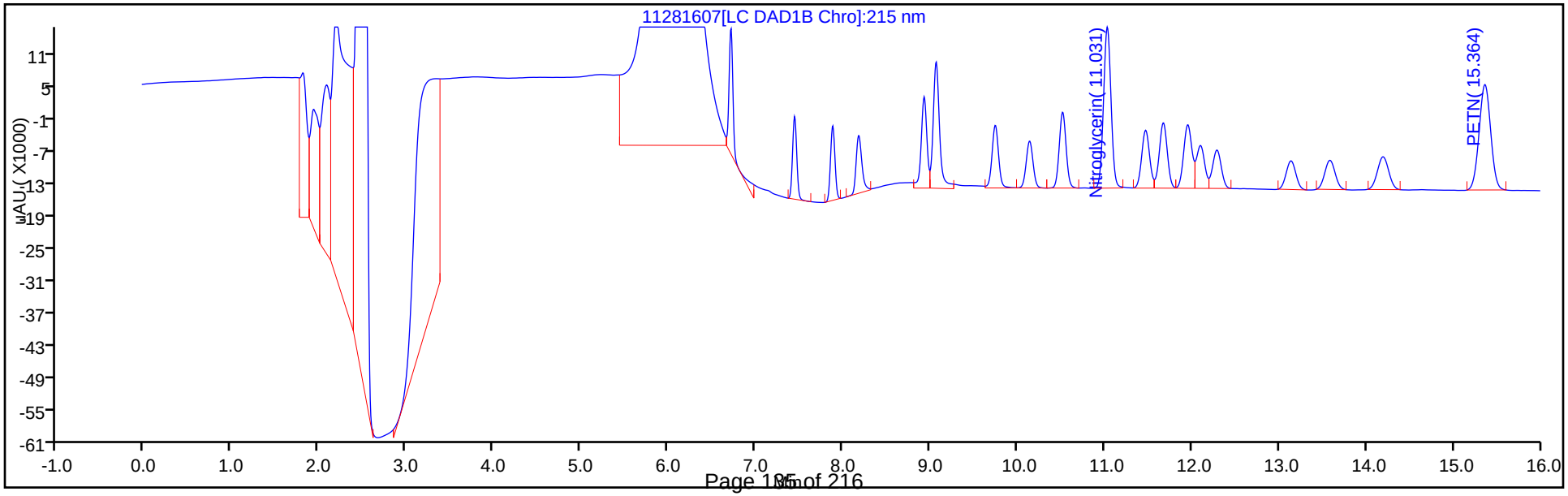
Data File: \\ChromNA\Denver\ChromData\CHHPLC_X\20161128-53609.b\11281607.D

Injection Date:	28-Nov-2016 16:49:12	Instrument ID:	CHHPLC_X3	Operator ID:	dmj
Lims ID:	CCV MAIN L4			Worklist Smp#:	7
Client ID:					
Injection Vol:	100.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	2
Method:	8330_X3	Limit Group:	GCSV - 8330		

Column: UltraCarb5uODS (20) (4.60 mm) Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



FORM VII
HPLC/IC CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Denver Job No.: 280-90781-1

SDG No.:

Lab Sample ID: CCV 280-353340/17 Calibration Date: 11/28/2016 20:41

Instrument ID: CHHPLC_X3 Calib Start Date: 10/28/2016 17:40

GC Column: UltraCarb5uODS ID: 4.60(mm) Calib End Date: 10/28/2016 20:21

Lab File ID: 11281617.D Conc. Units: ug/mL

ANALYTE	CURVE TYPE	AVE CF	CF	MIN CF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
HMX	Lin2		94080		0.254	0.250	1.6	20.0
RDX	Lin2		109260		0.253	0.250	1.1	20.0
Picric acid	Lin2		86972		0.258	0.250	3.1	20.0
1,3,5-Trinitrobenzene	Lin2		234240		0.253	0.250	1.3	20.0
1,3-Dinitrobenzene	Lin2		297264		0.253	0.250	1.2	20.0
Nitrobenzene	Lin2		204920		0.254	0.250	1.5	20.0
Tetryl	Lin2		179764		0.252	0.250	0.7	20.0
Nitroglycerin	Lin2		72687		2.53	2.50	1.3	20.0
2,4,6-Trinitrotoluene	Lin2		205616		0.252	0.250	0.9	20.0
4-Amino-2,6-dinitrotoluene	Lin2		160732		0.258	0.250	3.2	20.0
2-Amino-4,6-dinitrotoluene	Lin2		220612		0.257	0.250	3.0	20.0
2,6-Dinitrotoluene	Lin2		148204		0.249	0.250	-0.6	20.0
2,4-Dinitrotoluene	Lin2		297544		0.257	0.250	3.0	20.0
2-Nitrotoluene	Lin2		130348		0.251	0.250	0.2	20.0
4-Nitrotoluene	Lin2		112696		0.251	0.250	0.4	20.0
3-Nitrotoluene	Lin2		147784		0.251	0.250	0.2	20.0
PETN	Lin2		73001		2.54	2.50	1.6	20.0
1,2-Dinitrobenzene	Lin2		140416		0.250	0.250	-0.2	20.0

FORM VII
HPLC/IC CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-90781-1

SDG No.:

Lab Sample ID: CCV 280-353340/17 Calibration Date: 11/28/2016 20:41

Instrument ID: CHHPLC_X3 Calib Start Date: 10/28/2016 17:40

GC Column: UltraCarb5uODS ID: 4.60(mm) Calib End Date: 10/28/2016 20:21

Lab File ID: 11281617.D

Analyte	RT	RT WINDOW	
		FROM	TO
HMX	6.72	6.62	6.82
RDX	7.89	7.78	7.98
Picric acid	8.19	8.08	8.28
1,3,5-Trinitrobenzene	9.07	8.97	9.17
1,3-Dinitrobenzene	9.75	9.64	9.84
Nitrobenzene	10.15	10.04	10.24
Tetryl	10.52	10.42	10.62
Nitroglycerin	11.03	10.93	11.13
2,4,6-Trinitrotoluene	11.47	11.37	11.57
4-Amino-2,6-dinitrotoluene	11.67	11.58	11.78
2-Amino-4,6-dinitrotoluene	11.95	11.86	12.06
2,6-Dinitrotoluene	12.10	12.00	12.20
2,4-Dinitrotoluene	12.29	12.19	12.39
2-Nitrotoluene	13.13	13.04	13.24
4-Nitrotoluene	13.58	13.48	13.68
3-Nitrotoluene	14.19	14.10	14.30
PETN	15.35	15.26	15.46
1,2-Dinitrobenzene	8.93	8.83	9.03

TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\CHHPLC_X\20161128-53609.b\11281617.D
Lims ID: CCV MAIN L4
Client ID:
Sample Type: CCV
Inject. Date: 28-Nov-2016 20:41:21 ALS Bottle#: 2 Worklist Smp#: 17
Injection Vol: 100.0 ul Dil. Factor: 1.0000
Sample Info: CCV MAIN L4
Misc. Info.: 280-0053609-017
Operator ID: dmj Instrument ID: CHHPLC_X3
Sublist: chrom-8330_X3*sub11

Method: \\ChromNA\Denver\ChromData\CHHPLC_X\20161128-53609.b\8330_X3.m
Limit Group: GCSV - 8330
Last Update: 02-Dec-2016 20:40:26 Calib Date: 28-Oct-2016 23:49:21
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\CHHPLC_X\20161029-52455.b\079-2601.D

Column 1 : UltraCarb5uODS (20) (4.60 mm) Det: LC DAD1B, 254 nm
Process Host: XAWRK023

Compound	Det	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/mL	OnCol Amt ug/mL	Flags
2 HMX	1	6.721	6.718	0.003	23520	0.2500	0.2539	
4 MNX	1	7.454	7.444	0.010	34480	0.2487	0.2513	
5 RDX	1	7.888	7.884	0.004	27315	0.2500	0.2529	
6 2,4,6-Trinitrophenol	1	8.188	8.178	0.010	21743	0.2500	0.2577	
$ 7 1,2-Dinitrobenzene	1	8.934	8.931	0.003	35104	0.2500	0.2495	
8 1,3,5-Trinitrobenzene	1	9.074	9.071	0.003	58560	0.2500	0.2533	
9 1,3-Dinitrobenzene	1	9.754	9.744	0.010	74316	0.2500	0.2530	
11 Nitrobenzene	1	10.148	10.138	0.010	51230	0.2500	0.2537	
12 Tetryl	1	10.521	10.518	0.003	44941	0.2500	0.2517	
13 Nitroglycerin	2	11.034	11.031	0.003	181718	2.50	2.53	
14 2,4,6-Trinitrotoluene	1	11.468	11.471	-0.003	51404	0.2500	0.2523	
15 4-Amino-2,6-dinitrotoluene	1	11.674	11.678	-0.004	40183	0.2500	0.2581	
16 2-Amino-4,6-dinitrotoluene	1	11.954	11.958	-0.004	55153	0.2500	0.2574	
17 2,6-Dinitrotoluene	1	12.101	12.104	-0.003	37051	0.2500	0.2486	
18 2,4-Dinitrotoluene	1	12.288	12.291	-0.003	74386	0.2500	0.2575	
19 o-Nitrotoluene	1	13.134	13.138	-0.004	32587	0.2500	0.2506	
20 p-Nitrotoluene	1	13.581	13.584	-0.003	28174	0.2500	0.2509	
21 m-Nitrotoluene	1	14.194	14.198	-0.004	36946	0.2500	0.2506	
22 PETN	2	15.354	15.364	-0.010	182503	2.50	2.54	

Reagents:

8330IntermStk_00041 Amount Added: 0.01 Units: mL

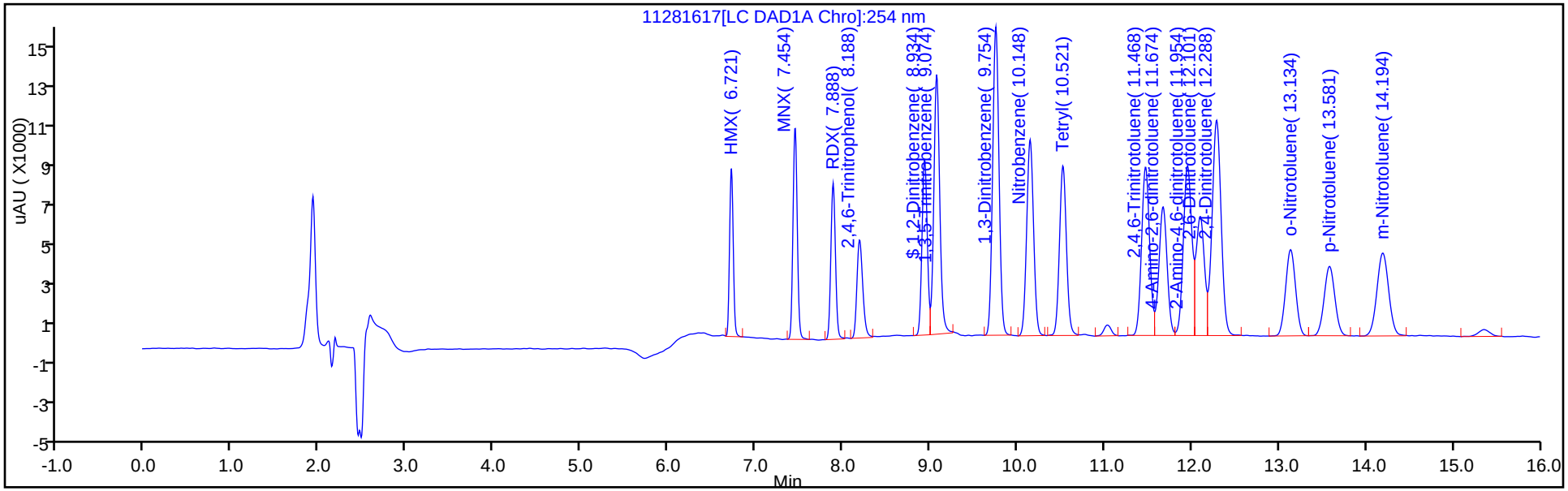
Report Date: 02-Dec-2016 20:40:26 Chrom Revision: 2.2 14-Nov-2016 08:15:18

TestAmerica Denver

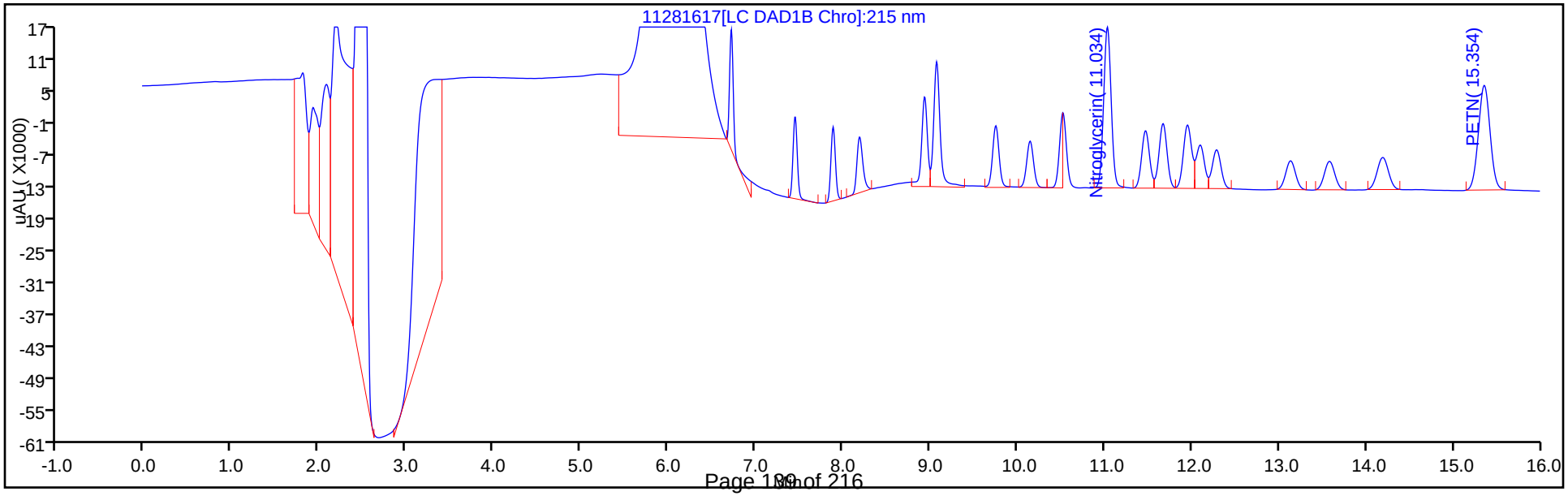
Data File: \\ChromNA\Denver\ChromData\CHHPLC_X\20161128-53609.b\11281617.D

Injection Date:	28-Nov-2016 20:41:21	Instrument ID:	CHHPLC_X3	Operator ID:	dmj
Lims ID:	CCV MAIN L4			Worklist Smp#:	17
Client ID:					
Injection Vol:	100.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	2
Method:	8330_X3	Limit Group:	GCSV - 8330		

Column: UltraCarb5uODS (20) (4.60 mm) Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



FORM VII
HPLC/IC CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Denver Job No.: 280-90781-1

SDG No.:

Lab Sample ID: CCV 280-353340/29 Calibration Date: 11/29/2016 01:20

Instrument ID: CHHPLC_X3 Calib Start Date: 10/28/2016 17:40

GC Column: UltraCarb5uODS ID: 4.60(mm) Calib End Date: 10/28/2016 20:21

Lab File ID: 11281629.D Conc. Units: ug/mL

ANALYTE	CURVE TYPE	AVE CF	CF	MIN CF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
HMX	Lin2		94336		0.255	0.250	1.8	20.0
RDX	Lin2		109348		0.253	0.250	1.2	20.0
Picric acid	Lin2		86328		0.256	0.250	2.3	20.0
1,3,5-Trinitrobenzene	Lin2		233312		0.252	0.250	0.9	20.0
1,3-Dinitrobenzene	Lin2		299472		0.255	0.250	2.0	20.0
Nitrobenzene	Lin2		202968		0.251	0.250	0.5	20.0
Tetryl	Lin2		179880		0.252	0.250	0.7	20.0
Nitroglycerin	Lin2		72456		2.53	2.50	1.0	20.0
2,4,6-Trinitrotoluene	Lin2		206044		0.253	0.250	1.1	20.0
4-Amino-2,6-dinitrotoluene	Lin2		161164		0.259	0.250	3.5	20.0
2-Amino-4,6-dinitrotoluene	Lin2		218572		0.255	0.250	2.0	20.0
2,6-Dinitrotoluene	Lin2		152132		0.255	0.250	2.1	20.0
2,4-Dinitrotoluene	Lin2		295664		0.256	0.250	2.3	20.0
2-Nitrotoluene	Lin2		130152		0.250	0.250	0.0	20.0
4-Nitrotoluene	Lin2		114556		0.255	0.250	2.0	20.0
3-Nitrotoluene	Lin2		147800		0.251	0.250	0.2	20.0
PETN	Lin2		72491		2.52	2.50	0.9	20.0
1,2-Dinitrobenzene	Lin2		142608		0.253	0.250	1.4	20.0

FORM VII
HPLC/IC CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-90781-1

SDG No.:

Lab Sample ID: CCV 280-353340/29 Calibration Date: 11/29/2016 01:20

Instrument ID: CHHPLC_X3 Calib Start Date: 10/28/2016 17:40

GC Column: UltraCarb5uODS ID: 4.60(mm) Calib End Date: 10/28/2016 20:21

Lab File ID: 11281629.D

Analyte	RT	RT WINDOW	
		FROM	TO
HMX	6.73	6.62	6.82
RDX	7.91	7.78	7.98
Picric acid	8.21	8.08	8.28
1,3,5-Trinitrobenzene	9.10	8.97	9.17
1,3-Dinitrobenzene	9.79	9.64	9.84
Nitrobenzene	10.19	10.04	10.24
Tetryl	10.58	10.42	10.62
Nitroglycerin	11.09	10.93	11.13
2,4,6-Trinitrotoluene	11.54	11.37	11.57
4-Amino-2,6-dinitrotoluene	11.75	11.58	11.78
2-Amino-4,6-dinitrotoluene	12.03	11.86	12.06
2,6-Dinitrotoluene	12.18	12.00	12.20
2,4-Dinitrotoluene	12.37	12.19	12.39
2-Nitrotoluene	13.23	13.04	13.24
4-Nitrotoluene	13.69	13.48	13.68
3-Nitrotoluene	14.31	14.10	14.30
PETN	15.50	15.26	15.46
1,2-Dinitrobenzene	8.97	8.83	9.03

TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\CHHPLC_X\20161128-53609.b\11281629.D
Lims ID: CCV MAIN L4
Client ID:
Sample Type: CCV
Inject. Date: 29-Nov-2016 01:20:03 ALS Bottle#: 2 Worklist Smp#: 29
Injection Vol: 100.0 ul Dil. Factor: 1.0000
Sample Info: CCV MAIN L4
Misc. Info.: 280-0053609-029
Operator ID: dmj Instrument ID: CHHPLC_X3
Sublist: chrom-8330_X3*sub11

Method: \\ChromNA\Denver\ChromData\CHHPLC_X\20161128-53609.b\8330_X3.m
Limit Group: GCSV - 8330
Last Update: 02-Dec-2016 20:40:36 Calib Date: 28-Oct-2016 23:49:21
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\CHHPLC_X\20161029-52455.b\079-2601.D

Column 1 : UltraCarb5uODS (20) (4.60 mm) Det: LC DAD1B, 254 nm
Process Host: XAWRK023

First Level Reviewer: jonsrudd Date: 02-Dec-2016 19:40:17

Compound	Det	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/mL	OnCol Amt ug/mL	Flags
2 HMX	1	6.732	6.718	0.014	23584	0.2500	0.2546	
4 MNX	1	7.465	7.444	0.021	34456	0.2487	0.2512	
5 RDX	1	7.905	7.884	0.021	27337	0.2500	0.2531	
6 2,4,6-Trinitrophenol	1	8.212	8.178	0.034	21582	0.2500	0.2558	
$ 7 1,2-Dinitrobenzene	1	8.965	8.931	0.034	35652	0.2500	0.2534	
8 1,3,5-Trinitrobenzene	1	9.099	9.071	0.028	58328	0.2500	0.2523	
9 1,3-Dinitrobenzene	1	9.785	9.744	0.041	74868	0.2500	0.2549	
11 Nitrobenzene	1	10.185	10.138	0.047	50742	0.2500	0.2513	
12 Tetryl	1	10.578	10.518	0.060	44970	0.2500	0.2518	
13 Nitroglycerin	2	11.092	11.031	0.061	181141	2.50	2.53	
14 2,4,6-Trinitrotoluene	1	11.538	11.471	0.067	51511	0.2500	0.2528	
15 4-Amino-2,6-dinitrotoluene	1	11.745	11.678	0.067	40291	0.2500	0.2588	
16 2-Amino-4,6-dinitrotoluene	1	12.032	11.958	0.074	54643	0.2500	0.2550	
17 2,6-Dinitrotoluene	1	12.178	12.104	0.074	38033	0.2500	0.2552	
18 2,4-Dinitrotoluene	1	12.365	12.291	0.074	73916	0.2500	0.2558	
19 o-Nitrotoluene	1	13.232	13.138	0.094	32538	0.2500	0.2502	
20 p-Nitrotoluene	1	13.692	13.584	0.108	28639	0.2500	0.2551	
21 m-Nitrotoluene	1	14.312	14.198	0.114	36950	0.2500	0.2506	
22 PETN	2	15.498	15.364	0.134	181228	2.50	2.52	

Reagents:

8330IntermStk_00041 Amount Added: 0.01 Units: mL

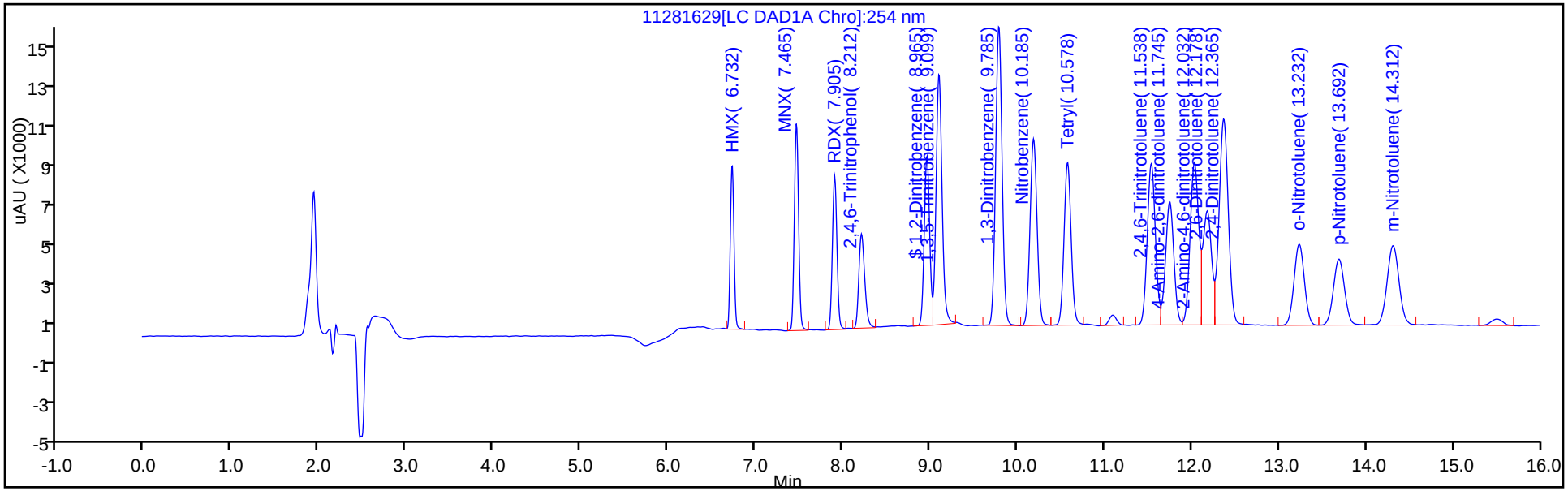
Report Date: 02-Dec-2016 20:40:36 Chrom Revision: 2.2 14-Nov-2016 08:15:18

TestAmerica Denver

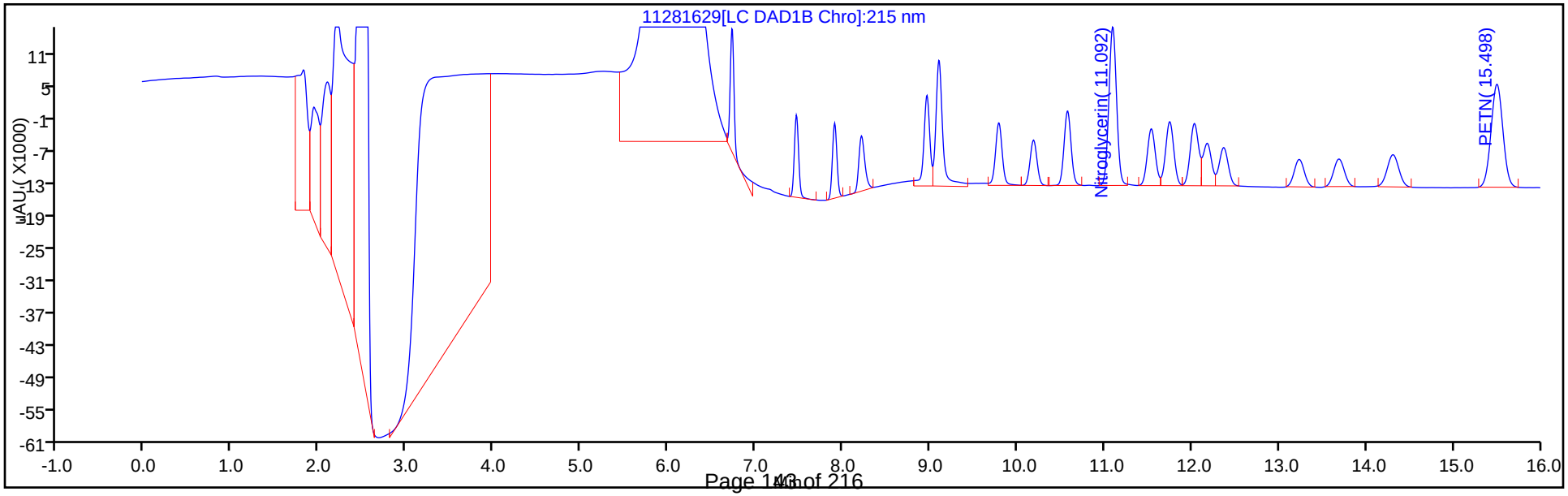
Data File: \\ChromNA\Denver\ChromData\CHHPLC_X\20161128-53609.b\11281629.D

Injection Date:	29-Nov-2016 01:20:03	Instrument ID:	CHHPLC_X3	Operator ID:	dmj
Lims ID:	CCV MAIN L4			Worklist Smp#:	29
Client ID:					
Injection Vol:	100.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	2
Method:	8330_X3	Limit Group:	GCSV - 8330		

Column: UltraCarb5uODS (20) (4.60 mm) Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



FORM I
HPLC/IC ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver | Job No.: 280-90781-1

SDG No.:

Client Sample ID: | Lab Sample ID: MB 280-351635/1-A

Matrix: Water | Lab File ID: 11281609.D

Analysis Method: 8330B | Date Collected:

Extraction Method: 3535 | Date Extracted: 11/15/2016 18:55

Sample wt/vol: 500(mL) | Date Analyzed: 11/28/2016 17:35

Con. Extract Vol.: 5(mL) | Dilution Factor: 1

Injection Volume: 100(uL) | GC Column: UltraCarb5uODS ID: 4.6(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 353340 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
99-35-4	1,3,5-Trinitrobenzene	0.40	U	1.0	0.40	0.20
99-65-0	1,3-Dinitrobenzene	0.20	U	0.40	0.20	0.089
118-96-7	2,4,6-Trinitrotoluene	0.20	U	0.40	0.20	0.072
121-14-2	2,4-Dinitrotoluene	0.20	U	0.40	0.20	0.084
606-20-2	2,6-Dinitrotoluene	0.20	U	0.20	0.20	0.065
35572-78-2	2-Amino-4,6-dinitrotoluene	0.12	U	0.20	0.12	0.051
88-72-2	2-Nitrotoluene	0.20	U	0.40	0.20	0.086
99-08-1	3-Nitrotoluene	0.20	U	0.40	0.20	0.083
19406-51-0	4-Amino-2,6-dinitrotoluene	0.12	U	0.20	0.12	0.058
99-99-0	4-Nitrotoluene	0.40	U	1.0	0.40	0.20
2691-41-0	HMX	0.20	U	0.40	0.20	0.088
98-95-3	Nitrobenzene	0.20	U	0.40	0.20	0.091
55-63-0	Nitroglycerin	2.0	U	3.0	2.0	0.92
78-11-5	PETN	1.2	U	2.0	1.2	0.42
121-82-4	RDX	0.12	U	0.20	0.12	0.052
479-45-8	Tetryl	0.20	U	0.24	0.20	0.079

CAS NO.	SURROGATE	%REC	Q	LIMITS
528-29-0	1,2-Dinitrobenzene	100		83-119

TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\CHHPLC_X\20161128-53609.b\11281609.D
Lims ID: MB 280-351635/1-A
Client ID:
Sample Type: MB
Inject. Date: 28-Nov-2016 17:35:38 ALS Bottle#: 4 Worklist Smp#: 9
Injection Vol: 100.0 ul Dil. Factor: 1.0000
Sample Info: MB 280-351635/1-
Misc. Info.: 280-0053609-009
Operator ID: dmj Instrument ID: CHHPLC_X3

Method: \\ChromNA\Denver\ChromData\CHHPLC_X\20161128-53609.b\8330_X3.m
Limit Group: GCSV - 8330
Last Update: 02-Dec-2016 20:40:18 Calib Date: 28-Oct-2016 23:49:21
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\CHHPLC_X\20161029-52455.b\079-2601.D

Column 1 : UltraCarb5uODS (20) (4.60 mm) Det: LC DAD1B, 254 nm
Process Host: XAWRK023

First Level Reviewer: jonsrudd Date: 02-Dec-2016 19:29:03

	Compound	Det	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/mL	OnCol Amt ug/mL	Flags
	1 2,6-diamino-4-nitrotoluene	1		6.567				ND	
	2 HMX	1		6.718				ND	
	3 2,4-diamino-6-nitrotoluene	1		6.773				ND	
	4 MNX	1		7.444				ND	
	5 RDX	1		7.884				ND	
	6 2,4,6-Trinitrophenol	1		8.178				ND	
$	7 1,2-Dinitrobenzene	1	8.939	8.931	0.008	28288	0.2000	0.2008	
	8 1,3,5-Trinitrobenzene	1		9.071				ND	
	9 1,3-Dinitrobenzene	1		9.744				ND	
	11 Nitrobenzene	1		10.138				ND	
	10 3,5-Dinitroaniline	1		10.407				ND	
	12 Tetryl	1		10.518				ND	
	13 Nitroglycerin	2	11.066	11.031	0.035	7298		0.0917	
	14 2,4,6-Trinitrotoluene	1		11.471				ND	
	15 4-Amino-2,6-dinitrotoluene	1		11.678				ND	
	16 2-Amino-4,6-dinitrotoluene	1		11.958				ND	
	17 2,6-Dinitrotoluene	1		12.104				ND	
	18 2,4-Dinitrotoluene	1		12.291				ND	
	19 o-Nitrotoluene	1		13.138				ND	
	20 p-Nitrotoluene	1		13.584				ND	
	21 m-Nitrotoluene	1		14.198				ND	
	22 PETN	2		15.364				ND	

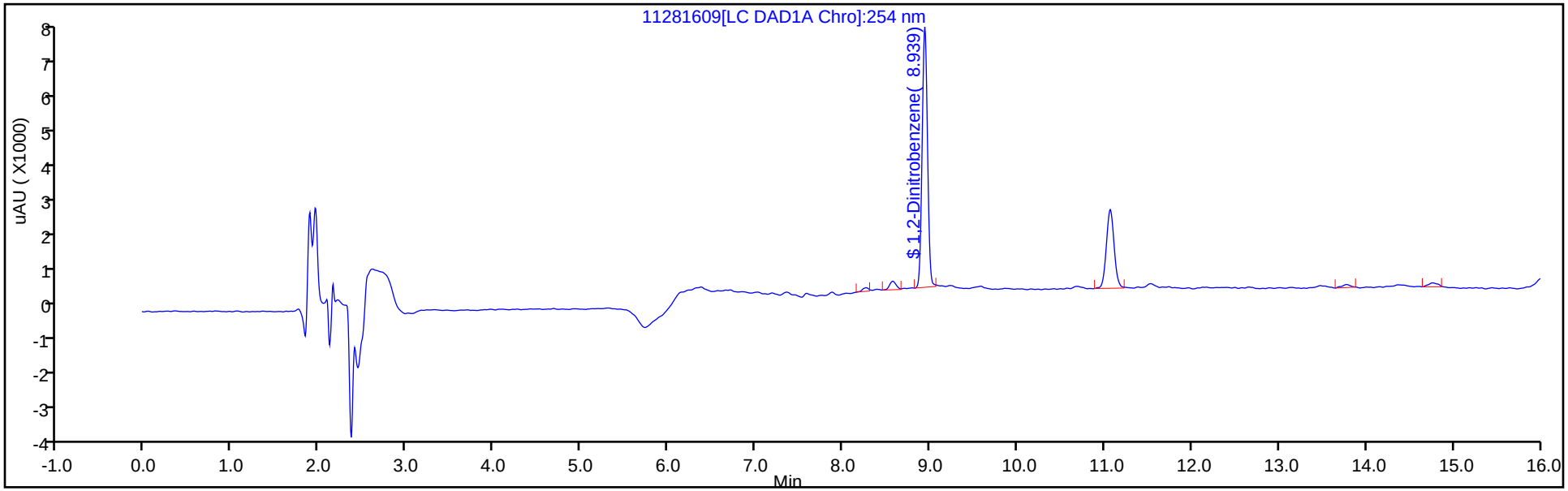
Report Date: 02-Dec-2016 20:40:19 Chrom Revision: 2.2 14-Nov-2016 08:15:18

TestAmerica Denver

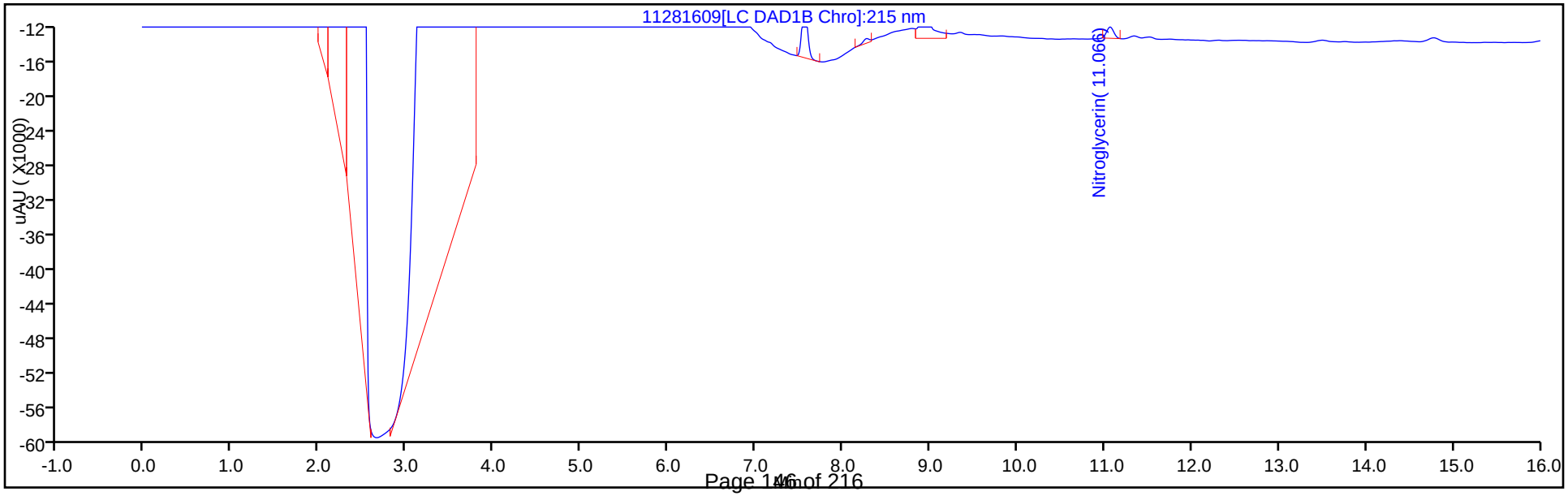
Data File: \\ChromNA\Denver\ChromData\CHHPLC_X\20161128-53609.b\11281609.D

Injection Date:	28-Nov-2016 17:35:38	Instrument ID:	CHHPLC_X3	Operator ID:	dmj
Lims ID:	MB 280-351635/1-A			Worklist Smp#:	9
Client ID:					
Injection Vol:	100.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	4
Method:	8330_X3	Limit Group:	GCSV - 8330		

Column: UltraCarb5uODS (20) (4.60 mm) Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



TestAmerica Denver
Recovery Report

Data File: \\ChromNA\Denver\ChromData\CHHPLC_X\20161128-53609.b\11281609.D
Lims ID: MB 280-351635/1-A
Client ID:
Sample Type: MB
Inject. Date: 28-Nov-2016 17:35:38 ALS Bottle#: 4 Worklist Smp#: 9
Injection Vol: 100.0 ul Dil. Factor: 1.0000
Sample Info: MB 280-351635/1-
Misc. Info.: 280-0053609-009
Operator ID: dmj Instrument ID: CHHPLC_X3

Method: \\ChromNA\Denver\ChromData\CHHPLC_X\20161128-53609.b\8330_X3.m
Limit Group: GCSV - 8330
Last Update: 02-Dec-2016 20:40:18 Calib Date: 28-Oct-2016 23:49:21
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\CHHPLC_X\20161029-52455.b\079-2601.D

Column 1 : UltraCarb5uODS (20) (4.60 mm) Det: LC DAD1B, 254 nm
Process Host: XAWRK023

First Level Reviewer: jonsrudd Date: 02-Dec-2016 19:29:03

Compound	Amount Added	Amount Recovered	% Rec.
$ 7 1,2-Dinitrobenzene	0.2000	0.2008	100.42

FORM I
HPLC/IC ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver | Job No.: 280-90781-1

SDG No.:

Client Sample ID: | Lab Sample ID: LCS 280-351635/2-A

Matrix: Water | Lab File ID: 11281610.D

Analysis Method: 8330B | Date Collected:

Extraction Method: 3535 | Date Extracted: 11/15/2016 18:55

Sample wt/vol: 500(mL) | Date Analyzed: 11/28/2016 17:58

Con. Extract Vol.: 5(mL) | Dilution Factor: 1

Injection Volume: 100(uL) | GC Column: UltraCarb5uODS ID: 4.6(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 353340 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
99-35-4	1,3,5-Trinitrobenzene	2.01		1.0	0.40	0.20
99-65-0	1,3-Dinitrobenzene	2.08		0.40	0.20	0.089
118-96-7	2,4,6-Trinitrotoluene	2.17		0.40	0.20	0.072
121-14-2	2,4-Dinitrotoluene	1.94		0.40	0.20	0.084
606-20-2	2,6-Dinitrotoluene	1.94		0.20	0.20	0.065
35572-78-2	2-Amino-4,6-dinitrotoluene	1.77		0.20	0.12	0.051
88-72-2	2-Nitrotoluene	1.79		0.40	0.20	0.086
99-08-1	3-Nitrotoluene	1.84		0.40	0.20	0.083
19406-51-0	4-Amino-2,6-dinitrotoluene	1.73		0.20	0.12	0.058
99-99-0	4-Nitrotoluene	1.94		1.0	0.40	0.20
2691-41-0	HMX	1.88		0.40	0.20	0.088
98-95-3	Nitrobenzene	1.90		0.40	0.20	0.091
55-63-0	Nitroglycerin	19.9		3.0	2.0	0.92
78-11-5	PETN	20.4		2.0	1.2	0.42
121-82-4	RDX	2.02		0.20	0.12	0.052
479-45-8	Tetryl	2.00		0.24	0.20	0.079

CAS NO.	SURROGATE	%REC	Q	LIMITS
528-29-0	1,2-Dinitrobenzene	100		83-119

TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\CHHPLC_X\20161128-53609.b\11281610.D
Lims ID: LCS 280-351635/2-A
Client ID:
Sample Type: LCS
Inject. Date: 28-Nov-2016 17:58:49 ALS Bottle#: 5 Worklist Smp#: 10
Injection Vol: 100.0 ul Dil. Factor: 1.0000
Sample Info: LCS 280-351635/2
Misc. Info.: 280-0053609-010
Operator ID: dmj Instrument ID: CHHPLC_X3

Method: \\ChromNA\Denver\ChromData\CHHPLC_X\20161128-53609.b\8330_X3.m
Limit Group: GCSV - 8330
Last Update: 02-Dec-2016 20:40:18 Calib Date: 28-Oct-2016 23:49:21
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\CHHPLC_X\20161029-52455.b\079-2601.D

Column 1 : UltraCarb5uODS (20) (4.60 mm) Det: LC DAD1B, 254 nm
Process Host: XAWRK023

	Compound	Det	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/mL	OnCol Amt ug/mL	Flags
	2 HMX	1	6.717	6.718	-0.001	17407	0.2000	0.1878	
	4 MNX	1	7.450	7.444	0.006	26279	0.2011	0.1914	
	5 RDX	1	7.890	7.884	0.006	21862	0.2000	0.2021	
	6 2,4,6-Trinitrophenol	1	8.183	8.178	0.005	17671	0.2000	0.2092	
$	7 1,2-Dinitrobenzene	1	8.943	8.931	0.012	28211	0.2000	0.2003	
	8 1,3,5-Trinitrobenzene	1	9.083	9.071	0.012	46501	0.2000	0.2011	
	9 1,3-Dinitrobenzene	1	9.763	9.744	0.019	60976	0.2000	0.2076	
	11 Nitrobenzene	1	10.157	10.138	0.019	38299	0.2000	0.1898	
	12 Tetryl	1	10.537	10.518	0.019	35681	0.2000	0.1997	
	13 Nitroglycerin	2	11.050	11.031	0.019	142897	2.00	1.99	
	14 2,4,6-Trinitrotoluene	1	11.490	11.471	0.019	44336	0.2000	0.2173	
	15 4-Amino-2,6-dinitrotoluene	1	11.697	11.678	0.019	27122	0.2000	0.1733	
	16 2-Amino-4,6-dinitrotoluene	1	11.977	11.958	0.019	38076	0.2000	0.1773	
	17 2,6-Dinitrotoluene	1	12.123	12.104	0.019	28983	0.2000	0.1943	
	18 2,4-Dinitrotoluene	1	12.310	12.291	0.019	56117	0.2000	0.1940	
	19 o-Nitrotoluene	1	13.163	13.138	0.025	23250	0.2000	0.1786	
	20 p-Nitrotoluene	1	13.610	13.584	0.026	21722	0.2000	0.1935	
	21 m-Nitrotoluene	1	14.223	14.198	0.025	27180	0.2000	0.1839	
	22 PETN	2	15.403	15.364	0.039	146999	2.00	2.04	

Report Date: 02-Dec-2016 20:40:20 Chrom Revision: 2.2 14-Nov-2016 08:15:18

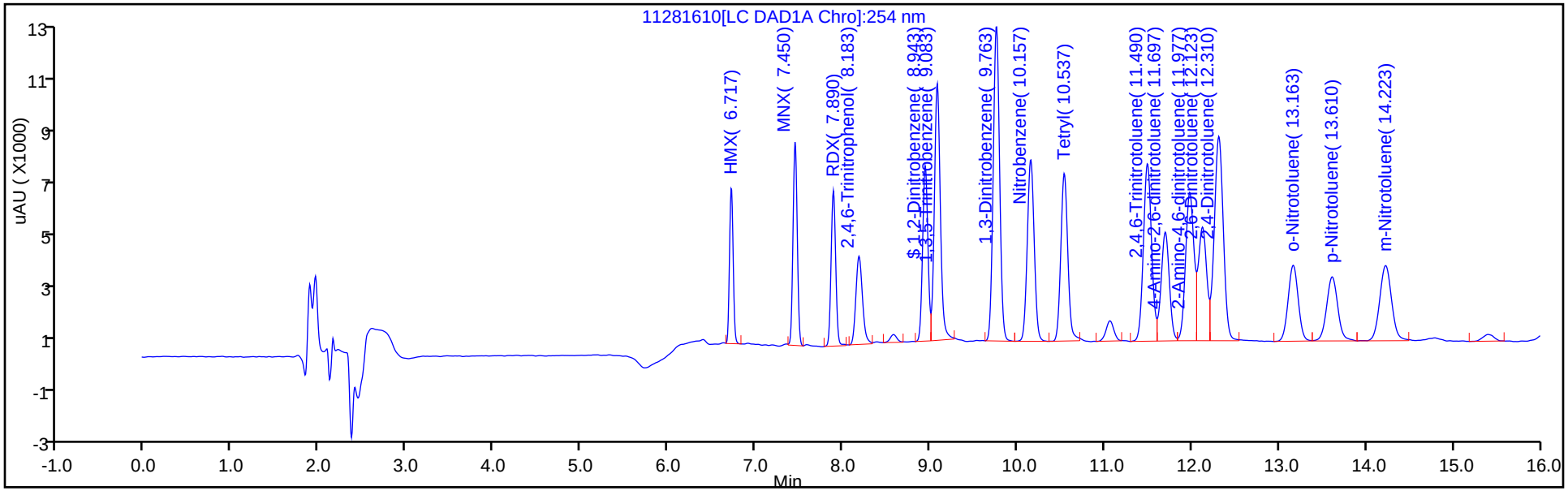
TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\CHHPLC_X\20161128-53609.b\11281610.D

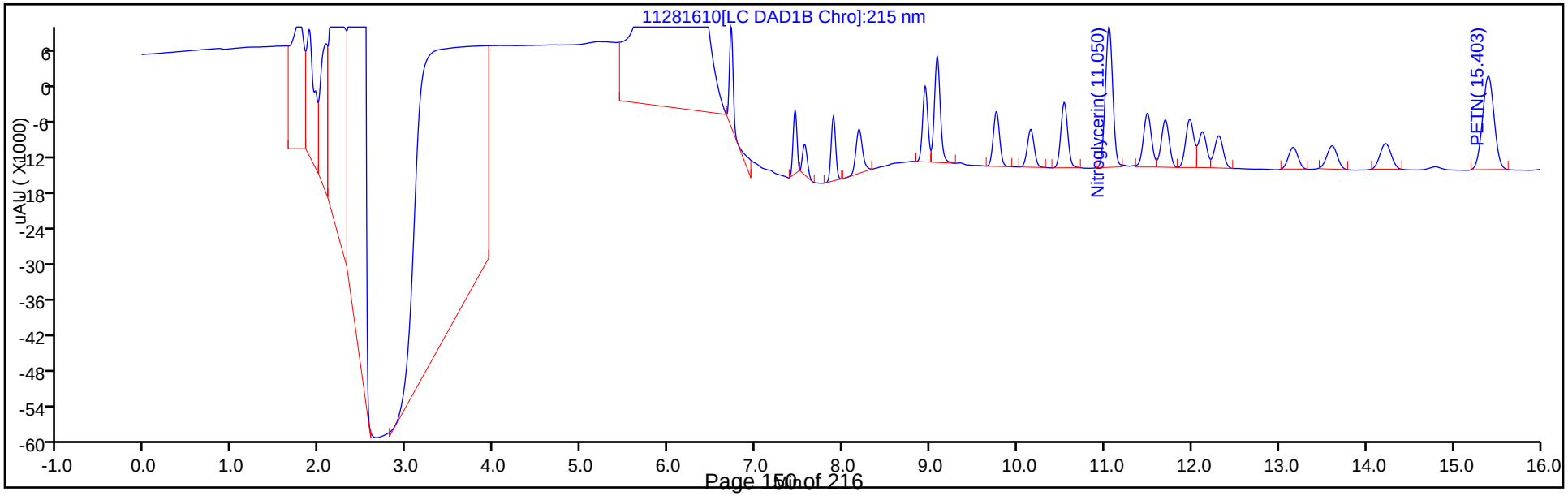
Injection Date:	28-Nov-2016 17:58:49	Instrument ID:	CHHPLC_X3	Operator ID:	dmj
Lims ID:	LCS 280-351635/2-A			Worklist Smp#:	10
Client ID:					
Injection Vol:	100.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	5
Method:	8330_X3	Limit Group:	GCSV - 8330		

Column: UltraCarb5uODS (20) (4.60 mm)

Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



Y Scaling: Method Defined: Scale to the Nth Largest Target: 1



TestAmerica Denver
Recovery Report

Data File:	\\ChromNA\Denver\ChromData\CHHPLC_X\20161128-53609.b\11281610.D				
Lims ID:	LCS 280-351635/2-A				
Client ID:					
Sample Type:	LCS				
Inject. Date:	28-Nov-2016 17:58:49	ALS Bottle#:	5	Worklist Smp#:	10
Injection Vol:	100.0 ul	Dil. Factor:	1.0000		
Sample Info:	LCS 280-351635/2				
Misc. Info.:	280-0053609-010				
Operator ID:	dmj	Instrument ID:	CHHPLC_X3		
Method:	\\ChromNA\Denver\ChromData\CHHPLC_X\20161128-53609.b\8330_X3.m				
Limit Group:	GCSV - 8330				
Last Update:	02-Dec-2016 20:40:18	Calib Date:	28-Oct-2016 23:49:21		
Integrator:	Falcon				
Quant Method:	External Standard	Quant By:	Initial Calibration		
Last ICal File:	\\ChromNA\Denver\ChromData\CHHPLC_X\20161029-52455.b\079-2601.D				
Column 1 :	UltraCarb5uODS (20) (4.60 mm)		Det: LC DAD1B, 254 nm		
Process Host:	XAWRK023				

Compound	Amount Added	Amount Recovered	% Rec.
$ 7 1,2-Dinitrobenzene	0.2000	0.2003	100.14

HPLC/IC ANALYSIS RUN LOG

Lab Name: TestAmerica Denver Job No.: 280-90781-1

SDG No.:

Instrument ID: CHHPLC_X3 Start Date: 10/28/2016 17:40

Analysis Batch Number: 348785 End Date: 10/29/2016 00:12

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
IC 280-348785/10		10/28/2016 17:40	1	063-1001.D	UltraCarb5uODS 4.6(mm)
IC 280-348785/11		10/28/2016 18:03	1	064-1101.D	UltraCarb5uODS 4.6(mm)
IC 280-348785/12		10/28/2016 18:26	1	065-1201.D	UltraCarb5uODS 4.6(mm)
IC 280-348785/13		10/28/2016 18:49	1	066-1301.D	UltraCarb5uODS 4.6(mm)
IC 280-348785/14		10/28/2016 19:12	1	067-1401.D	UltraCarb5uODS 4.6(mm)
IC 280-348785/15		10/28/2016 19:35	1	068-1501.D	UltraCarb5uODS 4.6(mm)
IC 280-348785/16		10/28/2016 19:58	1	069-1601.D	UltraCarb5uODS 4.6(mm)
IC 280-348785/17		10/28/2016 20:21	1	070-1701.D	UltraCarb5uODS 4.6(mm)
ICV 280-348785/18		10/28/2016 20:44	1	071-1801.D	UltraCarb5uODS 4.6(mm)
IC 280-348785/19		10/28/2016 21:07	1		UltraCarb5uODS 4.6(mm)
IC 280-348785/20		10/28/2016 21:30	1		UltraCarb5uODS 4.6(mm)
IC 280-348785/21		10/28/2016 21:53	1		UltraCarb5uODS 4.6(mm)
IC 280-348785/22		10/28/2016 22:17	1		UltraCarb5uODS 4.6(mm)
IC 280-348785/23		10/28/2016 22:40	1		UltraCarb5uODS 4.6(mm)
IC 280-348785/24		10/28/2016 23:03	1		UltraCarb5uODS 4.6(mm)
IC 280-348785/25		10/28/2016 23:26	1		UltraCarb5uODS 4.6(mm)
IC 280-348785/26		10/28/2016 23:49	1		UltraCarb5uODS 4.6(mm)
ICV 280-348785/27		10/29/2016 00:12	1		UltraCarb5uODS 4.6(mm)

HPLC/IC ANALYSIS RUN LOG

Lab Name: TestAmerica Denver Job No.: 280-90781-1

SDG No.:

Instrument ID: CHHPLC_X3 Start Date: 11/28/2016 16:49

Analysis Batch Number: 353340 End Date: 11/29/2016 01:20

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 280-353340/7		11/28/2016 16:49	1	11281607.D	UltraCarb5uODS 4.6(mm)
CCV 280-353340/8		11/28/2016 17:12	1		UltraCarb5uODS 4.6(mm)
MB 280-351635/1-A		11/28/2016 17:35	1	11281609.D	UltraCarb5uODS 4.6(mm)
LCS 280-351635/2-A		11/28/2016 17:58	1	11281610.D	UltraCarb5uODS 4.6(mm)
280-90781-2		11/28/2016 18:22	1	11281611.D	UltraCarb5uODS 4.6(mm)
ZZZZZ		11/28/2016 18:45	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		11/28/2016 19:08	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		11/28/2016 19:31	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		11/28/2016 19:54	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		11/28/2016 20:18	1		UltraCarb5uODS 4.6(mm)
CCV 280-353340/17		11/28/2016 20:41	1	11281617.D	UltraCarb5uODS 4.6(mm)
CCV 280-353340/18		11/28/2016 21:04	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		11/28/2016 21:27	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		11/28/2016 21:50	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		11/28/2016 22:14	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		11/28/2016 22:37	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		11/28/2016 23:00	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		11/28/2016 23:23	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		11/28/2016 23:47	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		11/29/2016 00:10	1		UltraCarb5uODS 4.6(mm)
ZZZZZ		11/29/2016 00:33	1		UltraCarb5uODS 4.6(mm)
CCV 280-353340/28		11/29/2016 00:56	1		UltraCarb5uODS 4.6(mm)
CCV 280-353340/29		11/29/2016 01:20	1	11281629.D	UltraCarb5uODS 4.6(mm)

HPLC/IC BATCH WORKSHEET

Lab Name: TestAmerica Denver Job No.: 280-90781-1

SDG No.:

Batch Number: 351635 Batch Start Date: 11/15/16 18:55 Batch Analyst: Cokley, Cheyana D

Batch Method: 3535 Batch End Date: 11/15/16 20:40

Lab Sample ID	Client Sample ID	Method Chain	Basis	GrossWeight	TareWeight	InitialAmount	FinalAmount	8330 LCS 00072	8330Surrogate 00090
MB 280-351635/1		3535, 8330B				500 mL	5 mL		0.1 mL
LCS 280-351635/2		3535, 8330B				500 mL	5 mL	0.1 mL	0.1 mL
280-90781-B-2	ASYmw-005-110916-GW	3535, 8330B	T	732.1 g	259.9 g	472.2 mL	5 mL		0.1 mL

Batch Notes	
Acid ID	0.1%AAinACN_00099
Acid Name	Acetic Acid in ACN
Balance ID	24950441
Batch Comment	Reviewer: nA MeCL2-Cycl_00310, NaCl:168648 DNA not in analyte list
First End time	11.15.16@2010
H2O ID	ELGA
Pipette ID	Eia, EXP-1
Reagent ID	CaCL2
Reagent Lot Number	CaCL2_00050
Solvent Lot #	ACN_00198
Solvent Name	Acetonitrile
SOP Number	DV-OP-0017
SPE Cartridge Type	Sep-Pak Porapak RDX
Solid Phase Extraction Disk ID	004436152A
First Start time	11.15.16@1907

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

GENERAL CHEMISTRY

COVER PAGE
GENERAL CHEMISTRY

Lab Name: TestAmerica Denver Job Number: 280-90781-1

SDG No.:

Project: Ravenna, OH - Atlas Scrap Yard

Client Sample ID	Lab Sample ID
ASYmw-004-110916-GW	280-90781-1
ASYmw-005-110916-GW	280-90781-2
DET-3-110916-GW	280-90781-3

Comments:

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: ASYmw-004-110916-GW
Lab Sample ID: 280-90781-1
Lab Name: TestAmerica Denver
Job No.: 280-90781-1
SDG ID.:
Matrix: Water
Date Sampled: 11/09/2016 15:37
Reporting Basis: WET
Date Received: 11/10/2016 10:00

Analyte	Result	LOQ	LOD	DL	Units	C	Q	DIL	Method
Cyanide, Total	2.3	10	5.0	2.0	ug/L	J		1	9012B
Chromium, hexavalent	4.0	20	4.0	4.0	ug/L	U	H	1	7196A

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: ASYmw-005-110916-GW
Lab Sample ID: 280-90781-2
Lab Name: TestAmerica Denver
Job No.: 280-90781-1
SDG ID.:
Matrix: Water
Date Sampled: 11/09/2016 15:12
Reporting Basis: WET
Date Received: 11/10/2016 10:00

Analyte	Result	LOQ	LOD	DL	Units	C	Q	DIL	Method
Cyanide, Total	5.0	10	5.0	2.0	ug/L	U		1	9012B
Chromium, hexavalent	4.0	20	4.0	4.0	ug/L	U	H	1	7196A

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: DET-3-110916-GW
Lab Sample ID: 280-90781-3
Lab Name: TestAmerica Denver
Job No.: 280-90781-1
SDG ID.:
Matrix: Water
Date Sampled: 11/09/2016 14:14
Reporting Basis: WET
Date Received: 11/10/2016 10:00

Analyte	Result	LOQ	LOD	DL	Units	C	Q	DIL	Method
Chromium, hexavalent	4.0	20	4.0	4.0	ug/L	U	H	1	7196A

2-IN
CALIBRATION QUALITY CONTROL
GENERAL CHEMISTRY

Lab Name: TestAmerica Denver Job No.: 280-90781-1

SDG No.:

Analyst: JML Batch Start Date: 11/19/2016

Reporting Units: mg/L Analytical Batch No.: 352272

Sample Number	QC Type	Time	Analyte	Result	Spike Amount	(%) Recovery	Limits	Qual	Reagent
14	ICV	08:47	Cyanide, Total	0.0952	0.100	95	90-110		CN ICV Daily_00942
15	ICB	08:48	Cyanide, Total	0.0050				U	
29	CCV	09:09	Cyanide, Total	0.201	0.200	101	90-110		CN CAL 1 ppm_01178
30	CCB	09:11	Cyanide, Total	0.0050				U	
44	CCV	09:32	Cyanide, Total	0.192	0.200	96	90-110		CN CAL 1 ppm_01178
45	CCB	09:33	Cyanide, Total	0.0050				U	
58	CCV	09:53	Cyanide, Total	0.194	0.200	97	90-110		CN CAL 1 ppm_01178
59	CCB	09:58	Cyanide, Total	0.0050				U	

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM II-IN

2-IN
CALIBRATION QUALITY CONTROL
GENERAL CHEMISTRY

Lab Name: TestAmerica Denver Job No.: 280-90781-1

SDG No.:

Analyst: JML Batch Start Date: 11/19/2016

Reporting Units: mg/L Analytical Batch No.: 352310

Sample Number	QC Type	Time	Analyte	Result	Spike Amount	(%) Recovery	Limits	Qual	Reagent
14	ICV	13:20	Cyanide, Total	0.0947	0.100	95	90-110		CN ICV Daily_00942
15	ICB	13:22	Cyanide, Total	0.0050				U	
29	CCV	13:43	Cyanide, Total	0.201	0.200	101	90-110		CN CAL 1 ppm_01178
30	CCB	13:44	Cyanide, Total	0.0050				U	
44	CCV	14:05	Cyanide, Total	0.197	0.200	99	90-110		CN CAL 1 ppm_01178
45	CCB	14:07	Cyanide, Total	0.0050				U	
59	CCV	14:28	Cyanide, Total	0.202	0.200	101	90-110		CN CAL 1 ppm_01178
60	CCB	14:29	Cyanide, Total	0.0050				U	
74	CCV	14:50	Cyanide, Total	0.201	0.200	101	90-110		CN CAL 1 ppm_01178
75	CCB	14:52	Cyanide, Total	0.0050				U	

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM II-IN

2-IN
CALIBRATION QUALITY CONTROL
GENERAL CHEMISTRY

Lab Name: TestAmerica Denver Job No.: 280-90781-1

SDG No.:

Analyst: JML Batch Start Date: 11/10/2016

Reporting Units: mg/L Analytical Batch No.: 350822

Sample Number	QC Type	Time	Analyte	Result	Spike Amount	(%) Recovery	Limits	Qual	Reagent
6	ICV	12:49	Chromium, hexavalent	0.0500	0.0500	100	90-110		CR6 ICV int_01150
7	ICB	12:49	Chromium, hexavalent	0.0040				U	
15	CCV	12:49	Chromium, hexavalent	0.0993	0.100	99	90-110		CR6 ICV int_01150
16	CCB	12:49	Chromium, hexavalent	0.0040				U	
23	CCV	13:43	Chromium, hexavalent	0.0959	0.100	96	90-110		CR6 ICV int_01150
24	CCB	13:43	Chromium, hexavalent	0.0040				U	

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM II-IN

3-IN
METHOD BLANK
GENERAL CHEMISTRY

Lab Name: TestAmerica Denver Job No.: 280-90781-1

SDG No.:

Method	Lab Sample ID	Analyte	Result	Qual	Units	LOQ	Dil
Batch ID: 350822	Date: 11/10/2016 12:49						
7196A	MB 280-350822/10	Chromium, hexavalent	4.0	U	ug/L	20	1
Batch ID: 352272	Date: 11/19/2016 08:56	Prep Batch: 352144	Date: 11/18/2016 09:14				
9012B	MB 280-352144/4-A	Cyanide, Total	5.0	U	ug/L	10	1
Batch ID: 352310	Date: 11/19/2016 14:01	Prep Batch: 352264	Date: 11/19/2016 09:41				
9012B	MB 280-352264/4-A	Cyanide, Total	4.42	J	ug/L	10	1

FORM III-IN

7A-IN
LAB CONTROL SAMPLE
GENERAL CHEMISTRY

Lab Name: TestAmerica Denver Job No.: 280-90781-1

SDG No.:

Matrix: Water

Method	Lab Sample ID	Analyte	Result	C	Unit	Spike Amount	Pct. Rec.	Limits	RPD	RPD Limit	Q
Batch ID: 350822	Date: 11/10/2016 12:49										
						LCS Source: CR6 spike sou_00761					
7196A	LCS 280-350822/8	Chromium, hexavalent	99.3		ug/L	100	99	90-111	3	20	
Batch ID: 352272	Date: 11/19/2016 08:54	Prep Batch: 352144	Date: 11/18/2016 09:14								
						LCS Source: CN ICV Int_00408					
9012B	LCS 280-352144/3-A	Cyanide, Total	98.2		ug/L	100	98	83-116			
Batch ID: 352310	Date: 11/19/2016 13:59	Prep Batch: 352264	Date: 11/19/2016 09:41								
						LCS Source: CN ICV Int_00408					
9012B	LCS 280-352264/3-A	Cyanide, Total	95.0		ug/L	100	95	83-116			

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VIIA-IN

7A-IN
LAB CONTROL SAMPLE DUPLICATE
GENERAL CHEMISTRY

Lab Name: TestAmerica Denver Job No.: 280-90781-1

SDG No.:

Matrix: Water

Method	Lab Sample ID	Analyte	Result	C	Unit	Spike Amount	Pct. Rec.	Limits	RPD	RPD Limit	Q
Batch ID: 350822	Date: 11/10/2016 12:49										
						LCSD Source: CR6 spike sou_00761					
7196A	LCSD 280-350822/9	Chromium, hexavalent	102		ug/L	100	102	90-111	3	20	

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VIIA-IN

7A-IN
LOW LEVEL CONTROL SAMPLE
GENERAL CHEMISTRY

Lab Name: TestAmerica Denver Job No.: 280-90781-1

SDG No.:

Matrix: Water

Method	Lab Sample ID	Analyte	Result	C	Unit	Spike Amount	Pct. Rec.	Limits	RPD	RPD Limit	Q
Batch ID: 352272	Date: 11/19/2016 08:53		Prep Batch: 352144			Date: 11/18/2016 09:14					
						LCS Source: CN 10ppm_00229					
9012B	LLCS 280-352144/2-A	Cyanide, Total	102		ug/L	100	102	44-167			
Batch ID: 352310	Date: 11/19/2016 13:58		Prep Batch: 352264			Date: 11/19/2016 09:41					
						LCS Source: CN 10ppm_00229					
9012B	LLCS 280-352264/2-A	Cyanide, Total	93.1		ug/L	100	93	44-167			

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VIIA-IN

7A-IN
HIGH LEVEL CONTROL SAMPLE
GENERAL CHEMISTRY

Lab Name: TestAmerica Denver Job No.: 280-90781-1

SDG No.:

Matrix: Water

Method	Lab Sample ID	Analyte	Result	C	Unit	Spike Amount	Pct. Rec.	Limits	RPD	RPD Limit	Q
Batch ID: 352272	Date: 11/19/2016 08:51		Prep Batch: 352144			Date: 11/18/2016 09:14					
						LCS Source: CN 10ppm_00229					
9012B	HLCS 280-352144/1-A	Cyanide, Total	387		ug/L	400	97	90-110			
Batch ID: 352310	Date: 11/19/2016 13:56		Prep Batch: 352264			Date: 11/19/2016 09:41					
						LCS Source: CN 10ppm_00229					
9012B	HLCS 280-352264/1-A	Cyanide, Total	378		ug/L	400	95	90-110			

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VIIA-IN

9-IN
DETECTION LIMITS
GENERAL CHEMISTRY

Lab Name: TestAmerica Denver Job Number: 280-90781-1

SDG Number:

Matrix: Water Instrument ID: WC_Alp 1

Method: 9012B DL Date: 02/16/2014 00:00

Prep Method: 9012B

Analyte	Wavelength/ Mass	LOQ (mg/L)	DL (mg/L)
Cyanide, Total		0.01	0.002

9-IN
CALIBRATION BLANK DETECTION LIMITS
GENERAL CHEMISTRY

Lab Name: TestAmerica Denver Job Number: 280-90781-1

SDG Number:

Matrix: Water Instrument ID: WC_Alp 1

Method: 9012B XMDL Date: 02/16/2014 00:00

Analyte	Wavelength/ Mass	XRL (mg/L)	XMDL (mg/L)
Cyanide, Total		0.01	0.002

9-IN
DETECTION LIMITS
GENERAL CHEMISTRY

Lab Name: TestAmerica Denver Job Number: 280-90781-1

SDG Number:

Matrix: Water Instrument ID: WC_HSPEC_7196

Method: 7196A DL Date: 02/16/2014 00:00

Analyte	Wavelength/ Mass	LOQ (mg/L)	DL (mg/L)
Chromium, hexavalent		0.02	0.004

9-IN
CALIBRATION BLANK DETECTION LIMITS
GENERAL CHEMISTRY

Lab Name: TestAmerica Denver Job Number: 280-90781-1

SDG Number:

Matrix: Water Instrument ID: WC_HSPEC_7196

Method: 7196A XMDL Date: 05/16/2013 14:49

Analyte	Wavelength/ Mass	XRL (mg/L)	XMDL (mg/L)
Chromium, hexavalent		0.02	0.004

12-IN
PREPARATION LOG
GENERAL CHEMISTRY

Lab Name: TestAmerica Denver Job No.: 280-90781-1

SDG No.:

Prep Method: 9012B

Lab Sample ID	Preparation Date	Prep Batch	Initial Weight	Initial Volume (mL)	Final Volume (mL)
HLCS 280-352144/1-A	11/18/2016 09:14	352144		50	50
LLCS 280-352144/2-A	11/18/2016 09:14	352144		50	50
LCS 280-352144/3-A	11/18/2016 09:14	352144		50	50
MB 280-352144/4-A	11/18/2016 09:14	352144		50	50
280-90781-1	11/18/2016 09:14	352144		50	50
280-90781-2	11/18/2016 09:14	352144		50	50

12-IN
PREPARATION LOG
GENERAL CHEMISTRY

Lab Name: TestAmerica Denver Job No.: 280-90781-1

SDG No.:

Prep Method: 9012B

Lab Sample ID	Preparation Date	Prep Batch	Initial Weight	Initial Volume (mL)	Final Volume (mL)
HLCS 280-352264/1-A	11/19/2016 09:41	352264		50	50
LLCS 280-352264/2-A	11/19/2016 09:41	352264		50	50
LCS 280-352264/3-A	11/19/2016 09:41	352264		50	50
MB 280-352264/4-A	11/19/2016 09:41	352264		50	50

13-IN
ANALYSIS RUN LOG
GENERAL CHEMISTRY

Lab Name: TestAmerica Denver Job No.: 280-90781-1

SDG No.:

Instrument ID: WC_Alp 1 Analysis Method: 9012B

Start Date: 11/19/2016 08:27 End Date: 11/19/2016 10:00

Lab Sample Id	D/F	Type	Time	Analytes
				CN
ZZZZZZ			08:27	
ZZZZZZ			08:29	
ZZZZZZ			08:30	
ZZZZZZ			08:32	
IC 280-352272/5			08:33	X
IC 280-352272/6			08:35	X
IC 280-352272/7			08:36	X
IC 280-352272/8			08:38	X
IC 280-352272/9			08:39	X
IC 280-352272/10			08:41	X
IC 280-352272/11			08:42	X
ZZZZZZ			08:44	
ZZZZZZ			08:45	
ICV 280-352272/14	1		08:47	X
ICB 280-352272/15	1		08:48	X
ZZZZZZ			08:50	
HLCS 280-352144/1-A	2	T	08:51	X
LLCS 280-352144/2-A	1	T	08:53	X
LCS 280-352144/3-A	1	T	08:54	X
MB 280-352144/4-A	1	T	08:56	X
ZZZZZZ			08:57	
ZZZZZZ			08:59	
ZZZZZZ			09:00	
ZZZZZZ			09:02	
ZZZZZZ			09:03	
ZZZZZZ			09:05	
ZZZZZZ			09:06	
ZZZZZZ			09:08	
CCV 280-352272/29	1		09:09	X
CCB 280-352272/30	1		09:11	X
ZZZZZZ			09:12	
ZZZZZZ			09:14	
ZZZZZZ			09:15	
ZZZZZZ			09:17	
280-90781-2	1	T	09:18	X
ZZZZZZ			09:20	
ZZZZZZ			09:21	
ZZZZZZ			09:23	
ZZZZZZ			09:24	
ZZZZZZ			09:26	
ZZZZZZ			09:27	
ZZZZZZ			09:29	

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
GENERAL CHEMISTRY

Lab Name: TestAmerica Denver Job No.: 280-90781-1

SDG No.:

Instrument ID: WC_Alp 1 Analysis Method: 9012B

Start Date: 11/19/2016 08:27 End Date: 11/19/2016 10:00

Lab Sample Id	D/F	Type	Time	Analytes																								
				CN																								
ZZZZZZ			09:30																									
CCV 280-352272/44	1		09:32	X																								
CCB 280-352272/45	1		09:33	X																								
ZZZZZZ			09:35																									
ZZZZZZ			09:36																									
ZZZZZZ			09:38																									
ZZZZZZ			09:39																									
ZZZZZZ			09:41																									
ZZZZZZ			09:42																									
ZZZZZZ			09:44																									
ZZZZZZ			09:45																									
ZZZZZZ			09:47																									
280-90781-1	1	T	09:48	X																								
ZZZZZZ			09:50																									
ZZZZZZ			09:51																									
CCV 280-352272/58	1		09:53	X																								
CCB 280-352272/59	1		09:58	X																								
ZZZZZZ			10:00																									

Prep Types:
T = Total/NA

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
GENERAL CHEMISTRY

Lab Name: TestAmerica Denver Job No.: 280-90781-1

SDG No.:

Instrument ID: WC_Alp 1 Analysis Method: 9012B

Start Date: 11/19/2016 13:01 End Date: 11/19/2016 15:07

Lab Sample Id	D/F	Type	Time	Analytes																								
				CN																								
ZZZZZZ			13:01																									
ZZZZZZ			13:02																									
ZZZZZZ			13:04																									
ZZZZZZ			13:05																									
IC 280-352310/5			13:07	X																								
IC 280-352310/6			13:08	X																								
IC 280-352310/7			13:10	X																								
IC 280-352310/8			13:11	X																								
IC 280-352310/9			13:13	X																								
IC 280-352310/10			13:14	X																								
IC 280-352310/11			13:16	X																								
ZZZZZZ			13:17																									
ZZZZZZ			13:19																									
ICV 280-352310/14	1		13:20	X																								
ICB 280-352310/15	1		13:22	X																								
ZZZZZZ			13:23																									
ZZZZZZ			13:25																									
ZZZZZZ			13:26																									
ZZZZZZ			13:28																									
ZZZZZZ			13:29																									
ZZZZZZ			13:31																									
ZZZZZZ			13:32																									
ZZZZZZ			13:34																									
ZZZZZZ			13:35																									
ZZZZZZ			13:37																									
ZZZZZZ			13:38																									
ZZZZZZ			13:40																									
ZZZZZZ			13:41																									
CCV 280-352310/29	1		13:43	X																								
CCB 280-352310/30	1		13:44	X																								
ZZZZZZ			13:46																									
ZZZZZZ			13:47																									
ZZZZZZ			13:49																									
ZZZZZZ			13:50																									
ZZZZZZ			13:52																									
ZZZZZZ			13:53																									
ZZZZZZ			13:55																									
HLCS 280-352264/1-A	2	T	13:56	X																								
LLCS 280-352264/2-A	1	T	13:58	X																								
LCS 280-352264/3-A	1	T	13:59	X																								
MB 280-352264/4-A	1	T	14:01	X																								
ZZZZZZ			14:02																									

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
GENERAL CHEMISTRY

Lab Name: TestAmerica Denver Job No.: 280-90781-1

SDG No.:

Instrument ID: WC_Alp 1 Analysis Method: 9012B

Start Date: 11/19/2016 13:01 End Date: 11/19/2016 15:07

Lab Sample Id	D/F	Type	Time	Analytes
				CN
ZZZZZZ			14:04	
CCV 280-352310/44	1		14:05	X
CCB 280-352310/45	1		14:07	X
ZZZZZZ			14:08	
ZZZZZZ			14:10	
ZZZZZZ			14:11	
ZZZZZZ			14:13	
ZZZZZZ			14:14	
ZZZZZZ			14:16	
ZZZZZZ			14:17	
ZZZZZZ			14:19	
ZZZZZZ			14:20	
ZZZZZZ			14:22	
ZZZZZZ			14:23	
ZZZZZZ			14:25	
ZZZZZZ			14:26	
CCV 280-352310/59	1		14:28	X
CCB 280-352310/60	1		14:29	X
ZZZZZZ			14:31	
ZZZZZZ			14:32	
ZZZZZZ			14:34	
ZZZZZZ			14:35	
ZZZZZZ			14:37	
ZZZZZZ			14:38	
ZZZZZZ			14:40	
ZZZZZZ			14:41	
ZZZZZZ			14:43	
ZZZZZZ			14:44	
ZZZZZZ			14:46	
ZZZZZZ			14:47	
ZZZZZZ			14:49	
CCV 280-352310/74	1		14:50	X
CCB 280-352310/75	1		14:52	X
ZZZZZZ			14:53	
ZZZZZZ			14:55	
ZZZZZZ			14:56	
ZZZZZZ			14:58	
ZZZZZZ			14:59	
ZZZZZZ			15:01	
ZZZZZZ			15:02	
CCV 280-352310/83			15:04	
CCB 280-352310/84			15:05	

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
GENERAL CHEMISTRY

Lab Name: TestAmerica Denver Job No.: 280-90781-1

SDG No.:

Instrument ID: WC_Alp 1 Analysis Method: 9012B

Start Date: 11/19/2016 13:01 End Date: 11/19/2016 15:07

Lab Sample Id	D/F	Type	Time	Analytes																								
				CN																								
ZZZZZZ			15:07																									

Prep Types:
T = Total/NA

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
GENERAL CHEMISTRY

Lab Name: TestAmerica Denver Job No.: 280-90781-1

SDG No.:

Instrument ID: WC_HSPEC_7196 Analysis Method: 7196A

Start Date: 11/10/2016 12:49 End Date: 11/10/2016 13:43

Lab Sample Id	D/F	Type	Time	Analytes																								
				Cr6																								
IC 280-350822/1	1		12:49	X																								
IC 280-350822/2	1		12:49	X																								
IC 280-350822/3	1		12:49	X																								
IC 280-350822/4	1		12:49	X																								
IC 280-350822/5	1		12:49	X																								
ICV 280-350822/6	1		12:49	X																								
ICB 280-350822/7	1		12:49	X																								
LCS 280-350822/8	1	T	12:49	X																								
LCSD 280-350822/9	1	T	12:49	X																								
MB 280-350822/10	1	T	12:49	X																								
ZZZZZZ			12:49																									
ZZZZZZ			12:49																									
ZZZZZZ			12:49																									
ZZZZZZ			12:49																									
CCV 280-350822/15	1		12:49	X																								
CCB 280-350822/16	1		12:49	X																								
ZZZZZZ			13:43																									
ZZZZZZ			13:43																									
ZZZZZZ			13:43																									
280-90781-2	1	T	13:43	X																								
280-90781-3	1	T	13:43	X																								
280-90781-1	1	T	13:43	X																								
CCV 280-350822/23	1		13:43	X																								
CCB 280-350822/24	1		13:43	X																								

Prep Types:
T = Total/NA

FORM XIII-IN

GENERAL CHEMISTRY BATCH WORKSHEET

Lab Name: TestAmerica Denver Job No.: 280-90781-1

SDG No.:

Batch Number: 352144 Batch Start Date: 11/18/16 09:14 Batch Analyst: Schroder, Aaron L

Batch Method: 9012B Batch End Date:

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	DistillpHCheck	SulfideCheck	ChlorineCheck	CN 10ppm 00229
HLCS 280-352144/1		9012B, 9012B		50 mL	50 mL	>12	N	N	2 mL
LLCS 280-352144/2		9012B, 9012B		50 mL	50 mL	>12	N	N	0.5 mL
LCS 280-352144/3		9012B, 9012B		50 mL	50 mL	>12	N	N	
MB 280-352144/4		9012B, 9012B		50 mL	50 mL	>12	N	N	
280-90781-A-1	ASYmw-004-110916-GW	9012B, 9012B	T	50 mL	50 mL	>12	N	N	
280-90781-C-2	ASYmw-005-110916-GW	9012B, 9012B	T	50 mL	50 mL	>12	N	N	

Lab Sample ID	Client Sample ID	Method Chain	Basis	CN ICV Int 00408					
HLCS 280-352144/1		9012B, 9012B							
LLCS 280-352144/2		9012B, 9012B							
LCS 280-352144/3		9012B, 9012B		0.5 mL					
MB 280-352144/4		9012B, 9012B							
280-90781-A-1	ASYmw-004-110916-GW	9012B, 9012B	T						
280-90781-C-2	ASYmw-005-110916-GW	9012B, 9012B	T						

Batch Notes	
Balance ID	M19170
Magnesium Chloride Reagent ID Number	CN Mag Chl_00062
Sodium Hydroxide ID	2%NaOH_00256
Pipette ID	WC 5000ELJ WC 1000NXN
Sulfamic Acid ID	CN Sulf_00070
Sulfuric Acid Reagent ID Number	H2SO4_00154

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

GENERAL CHEMISTRY BATCH WORKSHEET

Lab Name: TestAmerica Denver Job No.: 280-90781-1

SDG No.:

Batch Number: 352264 Batch Start Date: 11/19/16 09:41 Batch Analyst: Lehman, Jeffrey M

Batch Method: 9012B Batch End Date:

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	DistillpHCheck	SulfideCheck	ChlorineCheck	CN 10ppm 00229
HLCS 280-352264/1		9012B, 9012B		50 mL	50 mL	>12	N	N	2 mL
LLCS 280-352264/2		9012B, 9012B		50 mL	50 mL	>12	N	N	0.5 mL
LCS 280-352264/3		9012B, 9012B		50 mL	50 mL	>12	N	N	
MB 280-352264/4		9012B, 9012B		50 mL	50 mL	>12	N	N	
280-90781-A-1	ASYmw-004-110916-GW	9012B, 9012B	T	50 mL	50 mL	>12	N	N	
280-90781-C-2	ASYmw-005-110916-GW	9012B, 9012B	T	50 mL	50 mL	>12	N	N	

Lab Sample ID	Client Sample ID	Method Chain	Basis	CN ICV Int 00408					
HLCS 280-352264/1		9012B, 9012B							
LLCS 280-352264/2		9012B, 9012B							
LCS 280-352264/3		9012B, 9012B		0.5 mL					
MB 280-352264/4		9012B, 9012B							
280-90781-A-1	ASYmw-004-110916-GW	9012B, 9012B	T						
280-90781-C-2	ASYmw-005-110916-GW	9012B, 9012B	T						

Batch Notes	
Balance ID	M19170
Magnesium Chloride Reagent ID Number	CN Mag Chl_00062
Sodium Hydroxide ID	2%NaOH_00256
Pipette ID	WC 5000ELJ WC 1000NXN
Sulfamic Acid ID	CN Sulf_00070
Sulfuric Acid Reagent ID Number	H2SO4_00164 H2SO4_00165

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

GENERAL CHEMISTRY BATCH WORKSHEET

Lab Name: TestAmerica Denver Job No.: 280-90781-1

SDG No.:

Batch Number: 352272 Batch Start Date: 11/19/16 08:27 Batch Analyst: Lehman, Jeffrey M

Batch Method: 9012B Batch End Date:

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	CN CAL 1 ppm 01178	CN ICV Daily 00942		
ICV 280-352272/14		9012B		50 mL	50 mL		50 mL		
ICB 280-352272/15		9012B		50 mL	50 mL				
HLCS 280-352144/1-A		9012B		50 mL	50 mL				
LLCS 280-352144/2-A		9012B		50 mL	50 mL				
LCS 280-352144/3-A		9012B		50 mL	50 mL				
MB 280-352144/4-A		9012B		50 mL	50 mL				
CCV 280-352272/29		9012B		50 mL	50 mL	10 mL			
CCB 280-352272/30		9012B		50 mL	50 mL				
280-90781-C-2-A	ASYmw-005-110916-GW	9012B	T	50 mL	50 mL				
CCV 280-352272/44		9012B		50 mL	50 mL	10 mL			
CCB 280-352272/45		9012B		50 mL	50 mL				
280-90781-A-1-A	ASYmw-004-110916-GW	9012B	T	50 mL	50 mL				
CCV 280-352272/58		9012B		50 mL	50 mL	10 mL			
CCB 280-352272/59		9012B		50 mL	50 mL				

Batch Notes	
Buffer Reagent ID Number	CN Buffer_00087
Chloramine-T ID	CN Chloro-T_00717
Pipette ID	WC 5000ELJ WC 1000NXN
Pyridine-Barbituric Acid ID	CN Pyr/Barb_00148

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

GENERAL CHEMISTRY BATCH WORKSHEET

Lab Name: TestAmerica Denver Job No.: 280-90781-1

SDG No.:

Batch Number: 352310 Batch Start Date: 11/19/16 13:01 Batch Analyst: Lehman, Jeffrey M

Batch Method: 9012B Batch End Date:

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	CN CAL 1 ppm 01178	CN ICV Daily 00942		
ICV 280-352310/14		9012B		50 mL	50 mL		50 mL		
ICB 280-352310/15		9012B		50 mL	50 mL				
CCV 280-352310/29		9012B		50 mL	50 mL	10 mL			
CCB 280-352310/30		9012B		50 mL	50 mL				
HLCS 280-352264/1-A		9012B		50 mL	50 mL				
LLCS 280-352264/2-A		9012B		50 mL	50 mL				
LCS 280-352264/3-A		9012B		50 mL	50 mL				
MB 280-352264/4-A		9012B		50 mL	50 mL				
CCV 280-352310/44		9012B		50 mL	50 mL	10 mL			
CCB 280-352310/45		9012B		50 mL	50 mL				
CCV 280-352310/59		9012B		50 mL	50 mL	10 mL			
CCB 280-352310/60		9012B		50 mL	50 mL				
280-90781-A-1-C	ASYmw-004-110916-GW	9012B	T	50 mL	50 mL				
280-90781-C-2-C	ASYmw-005-110916-GW	9012B	T	50 mL	50 mL				
CCV 280-352310/74		9012B		50 mL	50 mL	10 mL			
CCB 280-352310/75		9012B		50 mL	50 mL				

Batch Notes	
Buffer Reagent ID Number	CN Buffer_00078
Chloramine-T ID	CN Chloro-T_00717
Pipette ID	WC 5000ELJ WC 1000NXN
Pyridine-Barbituric Acid ID	CN Pyr/Barb_00148

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

GENERAL CHEMISTRY BATCH WORKSHEET

Lab Name: TestAmerica Denver Job No.: 280-90781-1

SDG No.:

Batch Number: 352310 Batch Start Date: 11/19/16 13:01 Batch Analyst: Lehman, Jeffrey M

Batch Method: 9012B Batch End Date:

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

GENERAL CHEMISTRY BATCH WORKSHEET

Lab Name: TestAmerica Denver Job No.: 280-90781-1

SDG No.:

Batch Number: 350822 Batch Start Date: 11/10/16 12:49 Batch Analyst: Lehman, Jeffrey M

Batch Method: 7196A Batch End Date:

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	ColorBlk	UnCorResp	Initial pH	Final pH
IC 280-350822/1		7196A		10 mL	10 mL				
IC 280-350822/2		7196A		10 mL	10 mL				
IC 280-350822/3		7196A		10 mL	10 mL				
IC 280-350822/4		7196A		10 mL	10 mL				
IC 280-350822/5		7196A		10 mL	10 mL				
ICV 280-350822/6		7196A		10 mL	10 mL				
ICB 280-350822/7		7196A		10 mL	10 mL				
LCS 280-350822/8		7196A		10 mL	10 mL				
LCSD 280-350822/9		7196A		10 mL	10 mL				
MB 280-350822/10		7196A		10 mL	10 mL				
CCV 280-350822/15		7196A		10 mL	10 mL				
CCB 280-350822/16		7196A		10 mL	10 mL				
280-90781-D-2	ASYmw-005-110916-GW	7196A	T	10 mL	10 mL	0.002 Absorbance	0.001 Absorbance	6 SU	1.6 SU
280-90781-A-3	DET-3-110916-GW	7196A	T	10 mL	10 mL	-0.002 Absorbance	-0.001 Absorbance	6 SU	2.0 SU
280-90781-B-1	ASYmw-004-110916-GW	7196A	T	10 mL	10 mL	0.001 Absorbance	0.000 Absorbance	6 SU	2.0 SU
CCV 280-350822/23		7196A		10 mL	10 mL				
CCB 280-350822/24		7196A		10 mL	10 mL				

Lab Sample ID	Client Sample ID	Method Chain	Basis	CR6 ICV int 01150	CR6 Int cal 00739	CR6 spike sou 00761			
IC 280-350822/1		7196A			0.1 mL				
IC 280-350822/2		7196A			0.2 mL				
IC 280-350822/3		7196A			0.5 mL				
IC 280-350822/4		7196A			1 mL				
IC 280-350822/5		7196A			2 mL				

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

GENERAL CHEMISTRY BATCH WORKSHEET

Lab Name: TestAmerica Denver Job No.: 280-90781-1

SDG No.:

Batch Number: 350822 Batch Start Date: 11/10/16 12:49 Batch Analyst: Lehman, Jeffrey M

Batch Method: 7196A Batch End Date:

Lab Sample ID	Client Sample ID	Method Chain	Basis	CR6 ICV int 01150	CR6 Int cal 00739	CR6 spike sou 00761			
ICV 280-350822/6		7196A		0.5 mL					
ICB 280-350822/7		7196A							
LCS 280-350822/8		7196A				0.1 mL			
LCSD 280-350822/9		7196A				0.1 mL			
MB 280-350822/10		7196A							
CCV 280-350822/15		7196A		1 mL					
CCB 280-350822/16		7196A							
280-90781-D-2	ASYmw-005-110916-GW	7196A	T						
280-90781-A-3	DET-3-110916-GW	7196A	T						
280-90781-B-1	ASYmw-004-110916-GW	7196A	T						
CCV 280-350822/23		7196A		1 mL					
CCB 280-350822/24		7196A							

Batch Notes	
Acid Used for pH Adjustment ID	50%H2SO4_00026
Color Reagent ID	CR^6ColorR_00264
pH Paper ID	hc689794
Pipette ID	100ix, 1000iu, 5000iu

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

Run Results Report

Facility Name
Facility Location
Department
Operator Name JML
Operator ID JML
Platform FS III/IV/3100
Software Rev Code 222
Data system ID 57

Result path C:\FLOW_4\C111916.RST
Sample table path C:\FLOW_4\c111916.tbl
Method path C:\FLOW_4\cyanide.mth
Date acquired 19-Nov-16
Time acquired 10:05

				Cyanide, Total		
Date	Time	Cup	Name	Response	Calc [ppb]	Flags
19-Nov-16	08:27	107	Sync	331362	389.679	
19-Nov-16	08:29	0	Carryover	296	-0.197	LO
19-Nov-16	08:30	0	Carryover	64	-0.470	LO
19-Nov-16	08:32	0	Baseline	0	-0.545	BL
19-Nov-16	08:33	101	CAL 0.00 ppb	210	-0.298	LO
19-Nov-16	08:35	102	CAL 10.0 ppb	9145	10.224	
19-Nov-16	08:36	103	CAL 20.0 ppb	17452	20.007	
19-Nov-16	08:38	104	CAL 50.0 ppb	43301	50.448	
19-Nov-16	08:39	105	CAL 100 ppb	85521	100.167	
19-Nov-16	08:41	106	Cal 200 ppb	169538	199.110	
19-Nov-16	08:42	107	Cal 400 ppb	340416	400.341	
19-Nov-16	08:44	0	BLK	-34	-0.586	LO
19-Nov-16	08:45	0	Baseline	0	-0.545	BL
19-Nov-16	08:47	108	ICV 100 ppb	81289	95.184	
19-Nov-16	08:48	0	ICB	54	-0.482	LO
19-Nov-16	08:50	0	Baseline	0	-0.545	BL
19-Nov-16	08:51	113	hlcs 280-352144/1-a	164576	386.532	
19-Nov-16	08:53	114	llcs 280-352144/2-a	87310	102.274	
19-Nov-16	08:54	115	lcs 280-352144/3-a	83871	98.224	
19-Nov-16	08:56	116	mb 280-352144/4-a	1249	0.926	
19-Nov-16	08:57	117	280-90775-e-1-a	1749	1.514	
19-Nov-16	08:59	118	280-90775-e-1-b ms	80853	94.670	
19-Nov-16	09:00	119	280-90775-e-1-c msd	82320	96.398	
19-Nov-16	09:02	120	280-90775-e-2-a	2708	2.644	
19-Nov-16	09:03	121	280-90775-e-3-a	3011	3.001	
19-Nov-16	09:05	122	280-90775-e-4-a	2440	2.328	
19-Nov-16	09:06	0	BLK	53	-0.482	LO
19-Nov-16	09:08	0	baseline	0	-0.545	BL
19-Nov-16	09:09	109	CCV 200PPB	171458	201.370	
19-Nov-16	09:11	0	CCB	-78	-0.637	LO
19-Nov-16	09:12	0	Baseline	0	-0.545	BL
19-Nov-16	09:14	123	280-90779-h-1-a	12324	13.968	
19-Nov-16	09:15	124	280-90779-h-3-a	2333	2.202	
19-Nov-16	09:17	125	280-90781-a-1-a	5550	5.990	
19-Nov-16	09:18	126	280-90781-c-2-a	998	0.630	
19-Nov-16	09:20	127	280-90848-c-1-a	1358	1.054	
19-Nov-16	09:21	128	280-90848-c-2-a	550	0.103	
19-Nov-16	09:23	129	280-90848-c-3-a	3803	3.934	
19-Nov-16	09:24	130	280-90848-c-4-a	9645	10.814	
19-Nov-16	09:26	131	280-90848-c-4-b ms	93463	109.520	
19-Nov-16	09:27	132	280-90848-c-4-c msd	83144	97.368	
19-Nov-16	09:29	0	BLK	-95	-0.657	LO
19-Nov-16	09:30	0	baseline	0	-0.545	BL
19-Nov-16	09:32	109	CCV 200PPB	163266	191.723	
19-Nov-16	09:33	0	CCB	-60	-0.616	LO
19-Nov-16	09:35	0	Baseline	0	-0.545	BL

Result path C:\FLOW_4\C111916.RST
Sample table path C:\FLOW_4\c111916.tbl
Method path C:\FLOW_4\cyanide.mth
Date acquired 19-Nov-16
Time acquired 10:05

				Cyanide, Total		
Date	Time	Cup	Name	Response	Calc [ppb]	Flags
19-Nov-16	09:36	133	280-90850-l-1-a	2469	2.362	
19-Nov-16	09:38	134	280-90851-h-2-a	7029	7.733	
19-Nov-16	09:39	135	280-90856-j-1-a	3141	3.154	
19-Nov-16	09:41	136	280-90856-h-2-a	1738	1.502	
19-Nov-16	09:42	137	280-90856-e-6-a	3153	3.168	
19-Nov-16	09:44	138	280-90856-h-7-a	1942	1.741	
19-Nov-16	09:45	139	280-90881-q-1-a	1400	1.104	
19-Nov-16	09:47	123	280-90779-h-1-a	3859	3.999	
19-Nov-16	09:48	125	280-90781-a-1-a	2383	2.261	
19-Nov-16	09:50	0	BLK	70	-0.462	LO
19-Nov-16	09:51	0	baseline	0	-0.545	BL
19-Nov-16	09:53	109	CCV 200PPB	165393	194.228	
19-Nov-16	09:58	0	CCB	125	-0.398	LO
19-Nov-16	10:00	0	Baseline	0	-0.545	BL

Peak Table:Cyanide, Total

File name: C:\FLOW_4\C111916.RST
Date: 19-Nov-16
Operator: JML

Peak	Cup	Name	R	Type	Dil	Wt	Height	Calc. (ppb)	Flags
1	107	Sync	1	SYNC	1	1	331362	389.679260	
2	0	Carryover	1	CO	1	1	296	-0.196762	LO
3	0	Carryover	2	CO	1	1	64	-0.470283	LO
B	0	Baseline	1	RB	1	1	0	-0.545148	BL
5	101	CAL 0.00 ppb	1	C	1	1	210	-0.297538	LO
6	102	CAL 10.0 ppb	1	C	1	1	9145	10.223804	
7	103	CAL 20.0 ppb	1	C	1	1	17452	20.007395	
8	104	CAL 50.0 ppb	1	C	1	1	43301	50.448235	
9	105	CAL 100 ppb	1	C	1	1	85521	100.167061	
10	106	Cal 200 ppb	1	C	1	1	169538	199.109589	
11	107	Cal 400 ppb	1	C	1	1	340416	400.341431	
12	0	BLK	1	BLNK	1	1	-34	-0.585688	LO
B	0	Baseline	1	RB	1	1	0	-0.545148	BL
14	108	ICV 100 ppb	1	CCV	1	1	81289	95.184196	
15	0	ICB	1	U	1	1	54	-0.482049	LO
B	0	Baseline	1	RB	1	1	0	-0.545148	BL
17	113	hlcs 280-352144/1-a	1	U	2	1	164576	386.532043	
18	114	llcs 280-352144/2-a	1	U	1	1	87310	102.274307	
19	115	lcs 280-352144/3-a	1	U	1	1	83871	98.224236	
20	116	mb 280-352144/4-a	1	U	1	1	1249	0.925770	
21	117	280-90775-e-1-a	1	U	1	1	1749	1.514032	
22	118	280-90775-e-1-b ms	1	U	1	1	80853	94.670479	
23	119	280-90775-e-1-c msd	1	U	1	1	82320	96.397949	
24	120	280-90775-e-2-a	1	U	1	1	2708	2.644004	
25	121	280-90775-e-3-a	1	U	1	1	3011	3.000917	
26	122	280-90775-e-4-a	1	U	1	1	2440	2.327754	
27	0	BLK	1	BLNK	1	1	53	-0.482267	LO
B	0	baseline	1	RB	1	1	0	-0.545148	BL
29	109	CCV 200PPB	1	CCV	1	1	171458	201.370285	
30	0	CCB	1	U	1	1	-78	-0.637101	LO
B	0	Baseline	1	RB	1	1	0	-0.545148	BL
32	123	280-90779-h-1-a	1	U	1	1	12324	13.967900	
33	124	280-90779-h-3-a	1	U	1	1	2333	2.201831	
34	125	280-90781-a-1-a	1	U	1	1	5550	5.990487	
35	126	280-90781-c-2-a	1	U	1	1	998	0.630366	
36	127	280-90848-c-1-a	1	U	1	1	1358	1.053760	
37	128	280-90848-c-2-a	1	U	1	1	550	0.102530	
38	129	280-90848-c-3-a	1	U	1	1	3803	3.933789	
39	130	280-90848-c-4-a	1	U	1	1	9645	10.813723	
40	131	280-90848-c-4-b ms	1	U	1	1	93463	109.520103	
41	132	280-90848-c-4-c msd	1	U	1	1	83144	97.367836	
42	0	BLK	1	BLNK	1	1	-95	-0.656587	LO
B	0	baseline	1	RB	1	1	0	-0.545148	BL
44	109	CCV 200PPB	1	CCV	1	1	163266	191.723297	
45	0	CCB	1	U	1	1	-60	-0.615836	LO
B	0	Baseline	1	RB	1	1	0	-0.545148	BL
47	133	280-90850-l-1-a	1	U	1	1	2469	2.361897	
48	134	280-90851-h-2-a	1	U	1	1	7029	7.732793	
49	135	280-90856-j-1-a	1	U	1	1	3141	3.154187	
50	136	280-90856-h-2-a	1	U	1	1	1738	1.501512	
51	137	280-90856-e-6-a	1	U	1	1	3153	3.168494	
52	138	280-90856-h-7-a	1	U	1	1	1942	1.741388	
53	139	280-90881-q-1-a	1	U	1	1	1400	1.103548	
54	123	280-90779-h-1-a	1	U	1	1	3859	3.999048	
55	125	280-90781-a-1-a	1	U	1	1	2383	2.261285	
56	0	BLK	1	BLNK	1	1	70	-0.462171	LO
B	0	baseline	1	RB	1	1	0	-0.545148	BL
58	109	CCV 200PPB	1	CCV	1	1	165393	194.227722	
59	0	CCB	1	U	1	1	125	-0.397684	LO
B	0	Baseline	1	RB	1	1	0	-0.545148	BL

Cyanide, Total:Calibration   1: Peak 5-60

File name: C:\FLOW_4\C111916.RST
Date: 19-Nov-16
Operator: JML

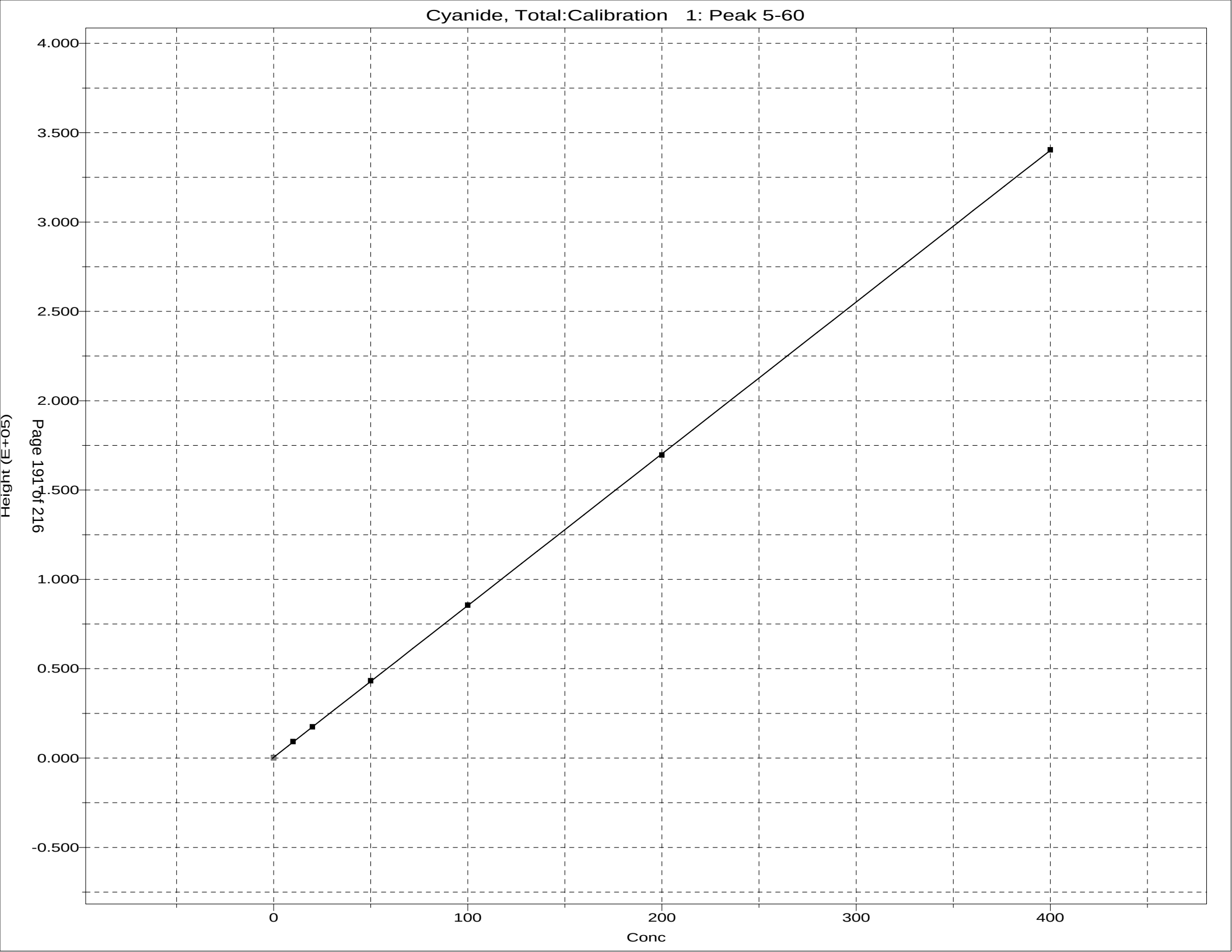
*	Name	Conc	Height
*	CAL 0.00 ppb	0.000000	210.259827
*	CAL 10.0 ppb	10.000000	9144.541992
*	CAL 20.0 ppb	20.000000	17452.357422
*	CAL 50.0 ppb	50.000000	43301.441406
*	CAL 100 ppb	100.000000	85520.578125
*	Cal 200 ppb	200.000000	169538.421875
*	Cal 400 ppb	400.000000	340416.062500

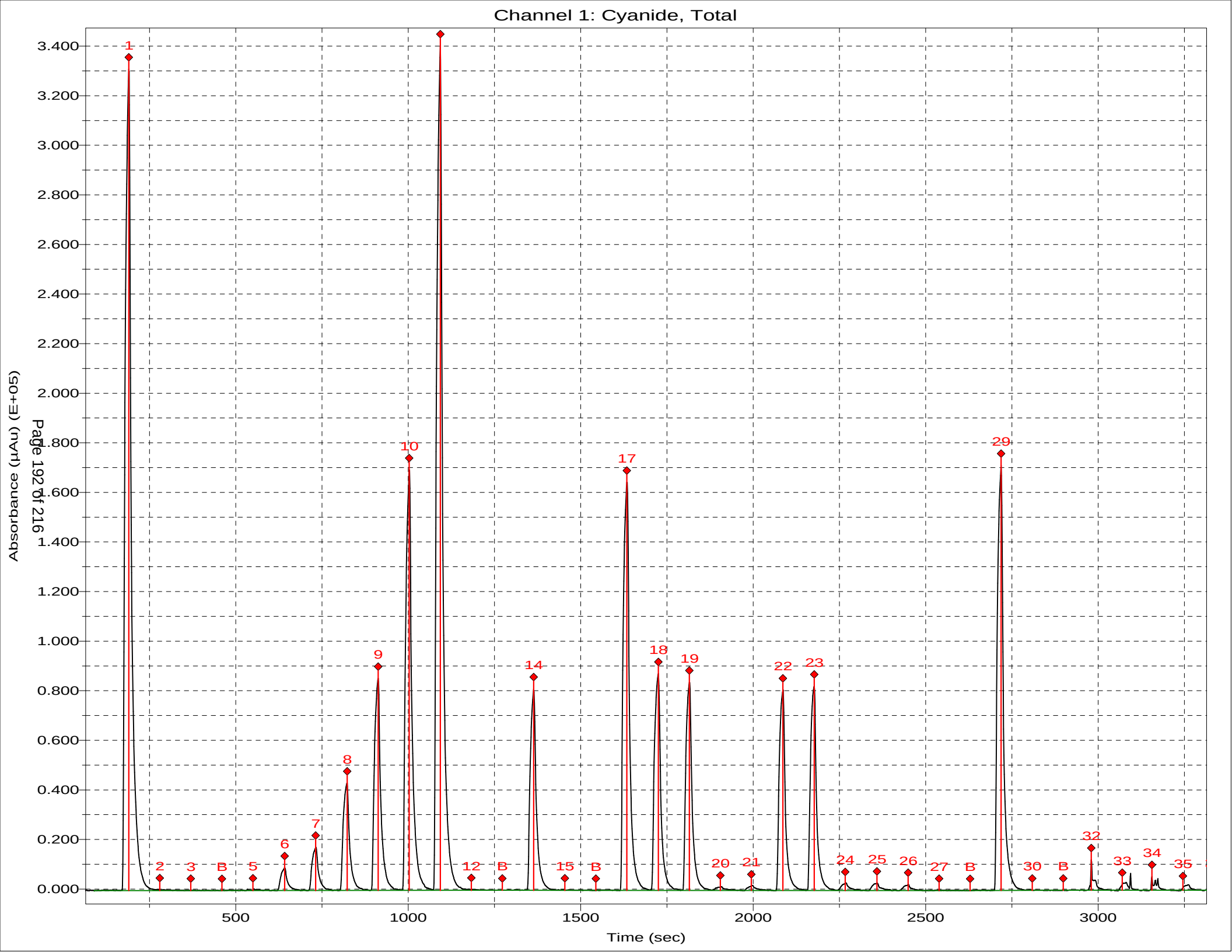
Calib Coef:
y=bx+a
a: (intercept) 4.6292e+02
b: 8.4916e+02

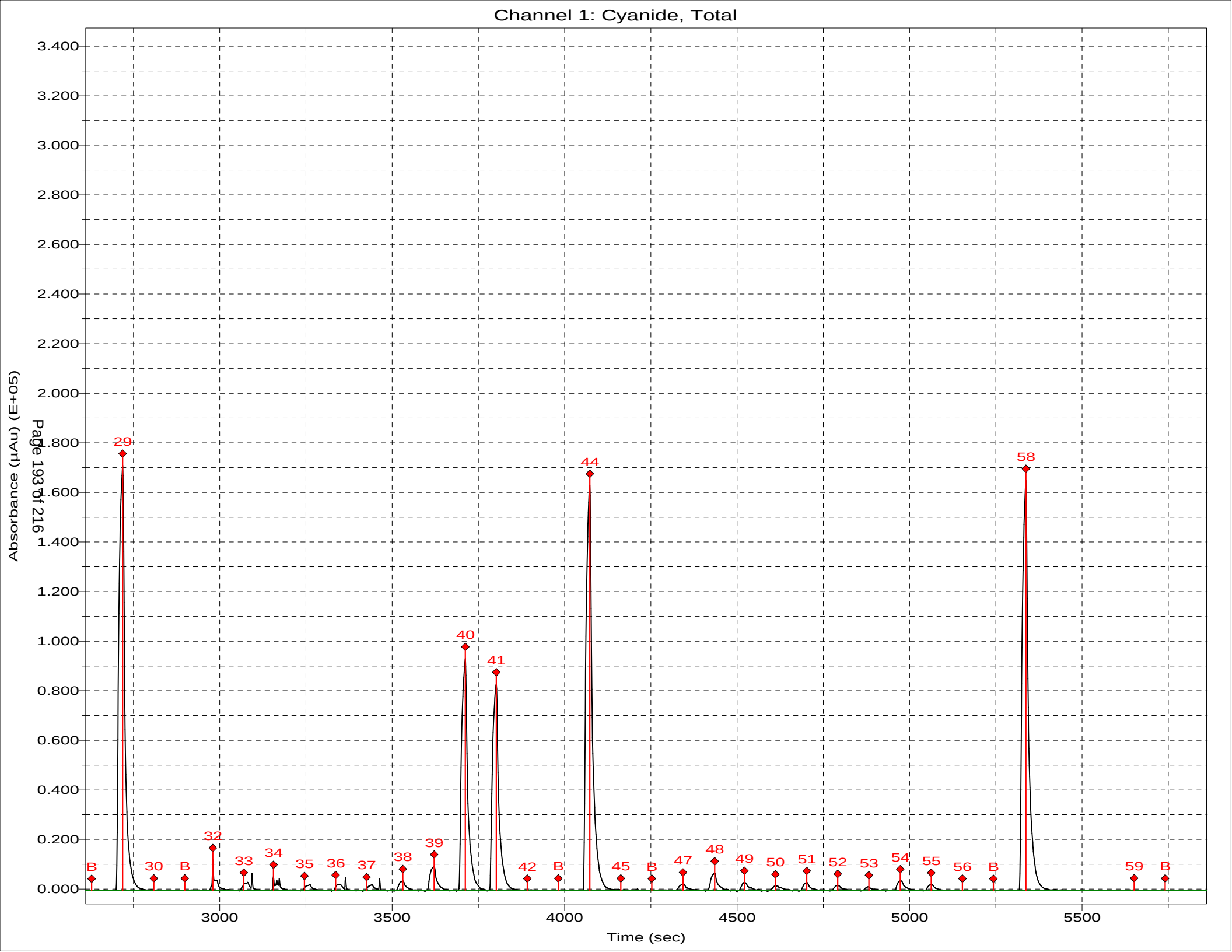
Corr Coef: 0.999995

Carryover: 0.0893%

No Drift Peaks


Cyanide, Total:Calibration 1: Peak 5-60
4.000
3.500
3.000
2.500
2.000
1.500
1.000
0.500
0.000
-0.500
Height (E+05)
0
100
200
300
400
Conc


Channel 1: Cyanide, Total
Absorbance (µAu) (E+05)
Time (sec)
3.400
3.200
3.000
2.800
2.600
2.400
2.200
2.000
1.800
1.600
1.400
1.200
1.000
0.800
0.600
0.400
0.200
0.000
500
1000
1500
2000
2500
3000
1
2
3
B
5
6
7
8
9
10
12
B
14
15
B
17
18
19
20
21
22
23
24
25
26
27
B
29
30
B
32
33
34
35


Channel 1: Cyanide, Total
Absorbance (µAu) (E+05)
Time (sec)
3.400
3.200
3.000
2.800
2.600
2.400
2.200
2.000
1.800
1.600
1.400
1.200
1.000
0.800
0.600
0.400
0.200
0.000
3000
3500
4000
4500
5000
5500
B
29
30
B
32
33
34
35
36
37
38
39
40
41
42
B
44
45
B
47
48
49
50
51
52
53
54
55
56
B
58
59
B

Run Results Report

Facility Name
Facility Location
Department
Operator Name JML
Operator ID JML
Platform FS III/IV/3100
Software Rev Code 222
Data system ID 57

Result path C:\FLOW_4\C111916A.RST
Sample table path C:\FLOW_4\c111916a.tbl
Method path C:\FLOW_4\cyanide.mth
Date acquired 19-Nov-16
Time acquired 15:12

				Cyanide, Total		
Date	Time	Cup	Name	Response	Calc [ppb]	Flags
19-Nov-16	13:01	107	Sync	331453	398.658	
19-Nov-16	13:02	0	Carryover	155	-0.001	LO
19-Nov-16	13:04	0	Carryover	3	-0.184	LO
19-Nov-16	13:05	0	Baseline	0	-0.188	BL
19-Nov-16	13:07	101	CAL 0.00 ppb	159	0.003	
19-Nov-16	13:08	102	CAL 10.0 ppb	8498	10.038	
19-Nov-16	13:10	103	CAL 20.0 ppb	16831	20.066	
19-Nov-16	13:11	104	CAL 50.0 ppb	41838	50.157	
19-Nov-16	13:13	105	CAL 100 ppb	83056	99.756	
19-Nov-16	13:14	106	Cal 200 ppb	166268	199.886	
19-Nov-16	13:16	107	Cal 400 ppb	332647	400.094	
19-Nov-16	13:17	0	BLK	34	-0.147	LO
19-Nov-16	13:19	0	Baseline	0	-0.188	BL
19-Nov-16	13:20	108	ICV 100 ppb	78826	94.666	
19-Nov-16	13:22	0	ICB	-31	-0.225	LO
19-Nov-16	13:23	0	Baseline	0	-0.188	BL
19-Nov-16	13:25	113	hlcs 280-352249/1-a	161825	389.079	
19-Nov-16	13:26	114	llcs 280-352249/2-a	81979	98.459	
19-Nov-16	13:28	115	lcs 280-352249/3-a	84901	101.975	
19-Nov-16	13:29	116	mb 280-352249/4-a	3462	3.978	
19-Nov-16	13:31	117	280-90743-e-1-a	3563	4.100	
19-Nov-16	13:32	118	280-90743-e-1-b ms	81055	97.348	
19-Nov-16	13:34	119	280-90743-e-1-c msd	78686	94.497	
19-Nov-16	13:35	120	280-90743-e-2-a	2782	3.160	
19-Nov-16	13:37	121	280-90743-f-3-a	4717	5.489	
19-Nov-16	13:38	122	280-90743-d-4-a	3683	4.245	
19-Nov-16	13:40	0	BLK	98	-0.070	LO
19-Nov-16	13:41	0	baseline	0	-0.188	BL
19-Nov-16	13:43	109	CCV 200PPB	167241	201.057	
19-Nov-16	13:44	0	CCB	6	-0.181	LO
19-Nov-16	13:46	0	Baseline	0	-0.188	BL
19-Nov-16	13:47	123	280-90882-f-1-a	3740	4.313	
19-Nov-16	13:49	124	280-90882-f-2-a	2371	2.665	
19-Nov-16	13:50	125	280-90882-f-3-a	7084	8.337	
19-Nov-16	13:52	126	280-90882-f-4-a	1782	1.957	
19-Nov-16	13:53	127	280-90882-f-5-a	3192	3.653	
19-Nov-16	13:55	128	460-122822-f-5-a	4603	5.351	
19-Nov-16	13:56	129	hlcs 280-352264/1-a	157350	378.311	
19-Nov-16	13:58	130	llcs 280-352264/2-a	77501	93.071	
19-Nov-16	13:59	131	lcs 280-352264/3-a	79143	95.047	
19-Nov-16	14:01	132	mb 280-352264/4-a	3828	4.419	
19-Nov-16	14:02	0	BLK	87	-0.083	LO
19-Nov-16	14:04	0	baseline	0	-0.188	BL
19-Nov-16	14:05	109	CCV 200PPB	163885	197.019	
19-Nov-16	14:07	0	CCB	38	-0.142	LO
19-Nov-16	14:08	0	Baseline	0	-0.188	BL

Result path C:\FLOW_4\C111916A.RST
Sample table path C:\FLOW_4\c111916a.tbl
Method path C:\FLOW_4\cyanide.mth
Date acquired 19-Nov-16
Time acquired 15:12

				Cyanide, Total		
Date	Time	Cup	Name	Response	Calc [ppb]	Flags
19-Nov-16	14:10	133	280-90785-g-1-a	3681	4.241	
19-Nov-16	14:11	134	280-90785-g-1-b ms	79464	95.433	
19-Nov-16	14:13	135	280-90785-g-1-c msd	77186	92.692	
19-Nov-16	14:14	136	280-90785-d-2-a	3941	4.555	
19-Nov-16	14:16	137	280-90785-c-4-a	4903	5.712	
19-Nov-16	14:17	138	280-90770-n-1-a	5226	6.101	
19-Nov-16	14:19	139	280-90775-e-1-d	1618	1.760	
19-Nov-16	14:20	140	280-90775-e-2-b	1941	2.148	
19-Nov-16	14:22	141	280-90775-e-3-b	3445	3.958	
19-Nov-16	14:23	142	280-90775-e-4-b	5625	6.581	
19-Nov-16	14:25	0	BLK	15	-0.170	LO
19-Nov-16	14:26	0	baseline	0	-0.188	BL
19-Nov-16	14:28	109	CCV 200PPB	167674	201.578	
19-Nov-16	14:29	0	CCB	-81	-0.285	LO
19-Nov-16	14:31	0	Baseline	0	-0.188	BL
19-Nov-16	14:32	143	280-90779-h-1-b	2825	3.211	
19-Nov-16	14:34	144	280-90779-h-3-b	5645	6.605	
19-Nov-16	14:35	145	280-90851-l-3-b	1873	2.066	
19-Nov-16	14:37	146	280-90851-ah-1-d	2098	2.336	
19-Nov-16	14:38	147	280-90851-ah-1-e ms	77378	92.923	
19-Nov-16	14:40	148	280-90851-ah-1-f msd	77099	92.587	
19-Nov-16	14:41	149	280-90781-a-1-c	9242	10.933	
19-Nov-16	14:43	150	280-90781-c-2-c	4312	5.001	
19-Nov-16	14:44	151	280-90848-c-1-c	5747	6.727	
19-Nov-16	14:46	152	280-90848-c-2-c	3515	4.043	
19-Nov-16	14:47	0	BLK	65	-0.109	LO
19-Nov-16	14:49	0	baseline	0	-0.188	BL
19-Nov-16	14:50	109	CCV 200PPB	167325	201.158	
19-Nov-16	14:52	0	CCB	115	-0.050	LO
19-Nov-16	14:53	0	Baseline	0	-0.188	BL
19-Nov-16	14:55	153	280-90848-c-3-c	2837	3.226	
19-Nov-16	14:56	154	280-90848-c-4-e	7914	9.336	
19-Nov-16	14:58	155	280-90850-l-1-c	3121	3.567	
19-Nov-16	14:59	156	460-122822-a-5-a	15935	18.987	
19-Nov-16	15:01	0	BLK	102	-0.065	LO
19-Nov-16	15:02	0	baseline	0	-0.188	BL
19-Nov-16	15:04	109	CCV 200PPB	167561	201.442	
19-Nov-16	15:05	0	CCB	55	-0.122	LO
19-Nov-16	15:07	0	Baseline	0	-0.188	BL

Peak Table:Cyanide, Total

File name: C:\FLOW_4\C111916A.RST
Date: 19-Nov-16
Operator: JML

Peak	Cup	Name	R	Type	Dil	Wt	Height	Calc. (ppb)	Flags
1	107	Sync	1	SYNC	1	1	331453	398.657837	
2	0	Carryover	1	CO	1	1	155	-0.001258	LO
3	0	Carryover	2	CO	1	1	3	-0.184268	LO
B	0	Baseline	1	RB	1	1	0	-0.187717	BL
5	101	CAL 0.00 ppb	1	C	1	1	159	0.003151	
6	102	CAL 10.0 ppb	1	C	1	1	8498	10.038074	
7	103	CAL 20.0 ppb	1	C	1	1	16831	20.066010	
8	104	CAL 50.0 ppb	1	C	1	1	41838	50.156590	
9	105	CAL 100 ppb	1	C	1	1	83056	99.756096	
10	106	Cal 200 ppb	1	C	1	1	166268	199.885941	
11	107	Cal 400 ppb	1	C	1	1	332647	400.094147	
12	0	BLK	1	BLNK	1	1	34	-0.146802	LO
B	0	Baseline	1	RB	1	1	0	-0.187717	BL
14	108	ICV 100 ppb	1	CCV	1	1	78826	94.665649	
15	0	ICB	1	U	1	1	-31	-0.224737	LO
B	0	Baseline	1	RB	1	1	0	-0.187717	BL
17	113	hlcs 280-352249/1-a 1	U		2	1	161825	389.079498	
18	114	llcs 280-352249/2-a 1	U		1	1	81979	98.459465	
19	115	lcs 280-352249/3-a 1	U		1	1	84901	101.975441	
20	116	mb 280-352249/4-a 1	U		1	1	3462	3.978431	
21	117	280-90743-e-1-a 1	U		1	1	3563	4.100121	
22	118	280-90743-e-1-b ms 1	U		1	1	81055	97.347832	
23	119	280-90743-e-1-c msd 1	U		1	1	78686	94.496712	
24	120	280-90743-e-2-a 1	U		1	1	2782	3.160371	
25	121	280-90743-f-3-a 1	U		1	1	4717	5.488591	
26	122	280-90743-d-4-a 1	U		1	1	3683	4.244647	
27	0	BLK	1	BLNK	1	1	98	-0.069965	LO
B	0	baseline	1	RB	1	1	0	-0.187717	BL
29	109	CCV 200PPB	1	CCV	1	1	167241	201.056686	
30	0	CCB	1	U	1	1	6	-0.180576	LO
B	0	Baseline	1	RB	1	1	0	-0.187717	BL
32	123	280-90882-f-1-a 1	U		1	1	3740	4.313288	
33	124	280-90882-f-2-a 1	U		1	1	2371	2.665137	
34	125	280-90882-f-3-a 1	U		1	1	7084	8.336528	
35	126	280-90882-f-4-a 1	U		1	1	1782	1.957189	
36	127	280-90882-f-5-a 1	U		1	1	3192	3.653133	
37	128	460-122822-f-5-a 1	U		1	1	4603	5.350727	
38	129	hlcs 280-352264/1-a 1	U		2	1	157350	378.311218	
39	130	llcs 280-352264/2-a 1	U		1	1	77501	93.070679	
40	131	lcs 280-352264/3-a 1	U		1	1	79143	95.046692	
41	132	mb 280-352264/4-a 1	U		1	1	3828	4.419023	
42	0	BLK	1	BLNK	1	1	87	-0.083253	LO
B	0	baseline	1	RB	1	1	0	-0.187717	BL
44	109	CCV 200PPB	1	CCV	1	1	163885	197.018539	
45	0	CCB	1	U	1	1	38	-0.141927	LO
B	0	Baseline	1	RB	1	1	0	-0.187717	BL
47	133	280-90785-g-1-a 1	U		1	1	3681	4.241416	
48	134	280-90785-g-1-b ms 1	U		1	1	79464	95.432800	
49	135	280-90785-g-1-c msd 1	U		1	1	77186	92.691536	
50	136	280-90785-d-2-a 1	U		1	1	3941	4.554942	
51	137	280-90785-c-4-a 1	U		1	1	4903	5.711684	
52	138	280-90770-n-1-a 1	U		1	1	5226	6.101090	
53	139	280-90775-e-1-d 1	U		1	1	1618	1.759542	
54	140	280-90775-e-2-b 1	U		1	1	1941	2.148349	
55	141	280-90775-e-3-b 1	U		1	1	3445	3.957629	
56	142	280-90775-e-4-b 1	U		1	1	5625	6.580688	
57	0	BLK	1	BLNK	1	1	15	-0.169510	LO
B	0	baseline	1	RB	1	1	0	-0.187717	BL
59	109	CCV 200PPB	1	CCV	1	1	167674	201.578079	
60	0	CCB	1	U	1	1	-81	-0.285145	LO
B	0	Baseline	1	RB	1	1	0	-0.187717	BL
62	143	280-90779-h-1-b 1	U		1	1	2825	3.211323	
63	144	280-90779-h-3-b 1	U		1	1	5645	6.604861	
64	145	280-90851-l-3-b 1	U		1	1	1873	2.066335	
65	146	280-90851-ah-1-d 1	U		1	1	2098	2.336395	
66	147	280-90851-ah-1-e ms 1	U		1	1	77378	92.922508	
67	148	280-90851-ah-1-f msd 1	U		1	1	77099	92.587128	
68	149	280-90781-a-1-c 1	U		1	1	9242	10.933090	
69	150	280-90781-c-2-c 1	U		1	1	4312	5.001326	
70	151	280-90848-c-1-c 1	U		1	1	5747	6.727439	

Peak	Cup	Name	R	Type	Dil	Wt	Height	Calc. (ppb)	Flags
71	152	280-90848-c-2-c	1	U	1	1	3515	4.042510	
72	0	BLK	1	BLNK	1	1	65	-0.109036	LO
B	0	baseline	1	RB	1	1	0	-0.187717	BL
74	109	CCV 200PPB	1	CCV	1	1	167325	201.158081	
75	0	CCB	1	U	1	1	115	-0.049901	LO
B	0	Baseline	1	RB	1	1	0	-0.187717	BL
77	153	280-90848-c-3-c	1	U	1	1	2837	3.225543	
78	154	280-90848-c-4-e	1	U	1	1	7914	9.335756	
79	155	280-90850-l-1-c	1	U	1	1	3121	3.567338	
80	156	460-122822-a-5-a	1	U	1	1	15935	18.986641	
81	0	BLK	1	BLNK	1	1	102	-0.064567	LO
B	0	baseline	1	RB	1	1	0	-0.187717	BL
83	109	CCV 200PPB	1	CCV	1	1	167561	201.442429	
84	0	CCB	1	U	1	1	55	-0.121870	LO
B	0	Baseline	1	RB	1	1	0	-0.187717	BL

Cyanide, Total:Calibration 1: Peak 5-85

File name: C:\FLOW_4\C111916A.RST
Date: 19-Nov-16
Operator: JML

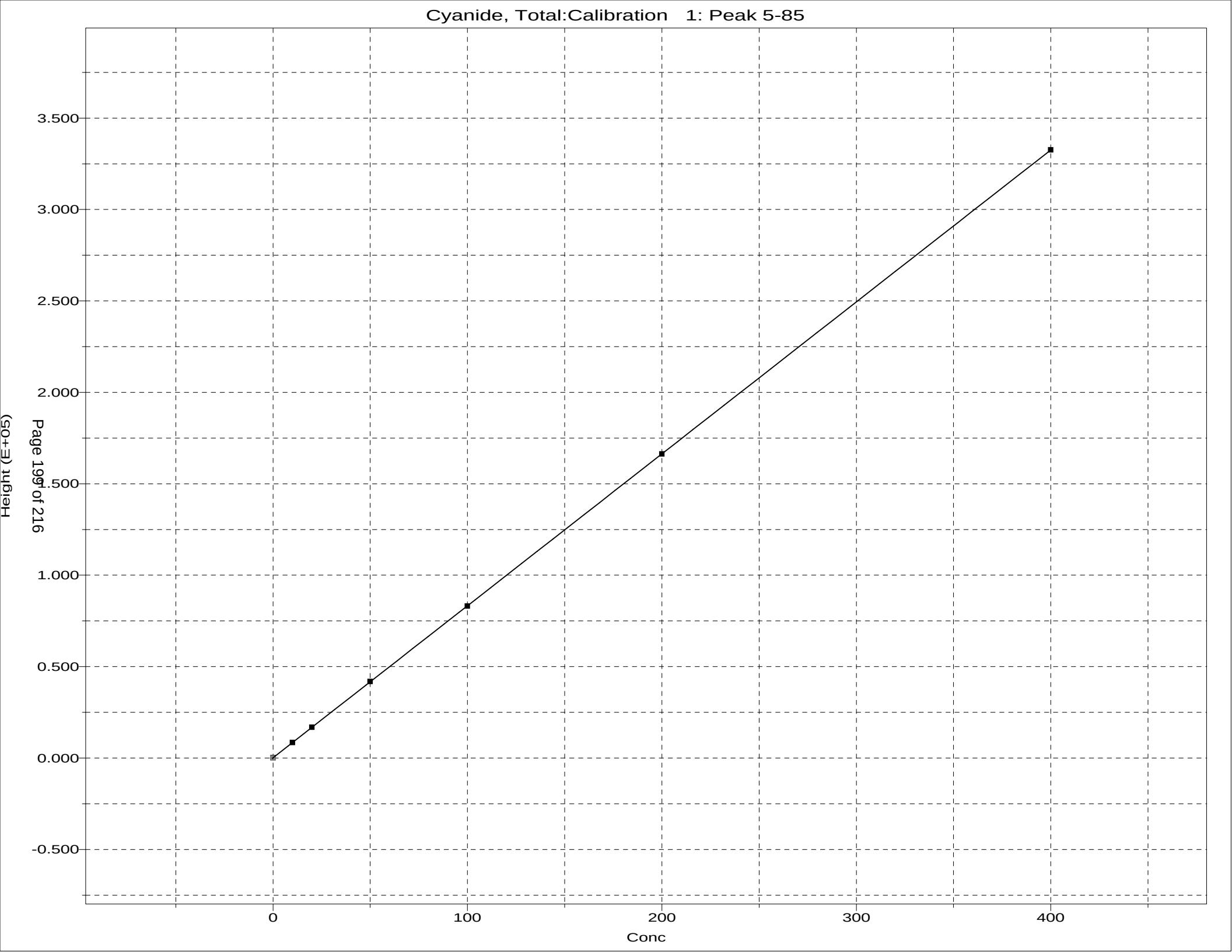
*	Name	Conc	Height
*	CAL 0.00 ppb	0.000000	158.617661
*	CAL 10.0 ppb	10.000000	8497.958008
*	CAL 20.0 ppb	20.000000	16831.492188
*	CAL 50.0 ppb	50.000000	41837.726562
*	CAL 100 ppb	100.000000	83056.492188
*	Cal 200 ppb	200.000000	166267.593750
*	Cal 400 ppb	400.000000	332647.000000

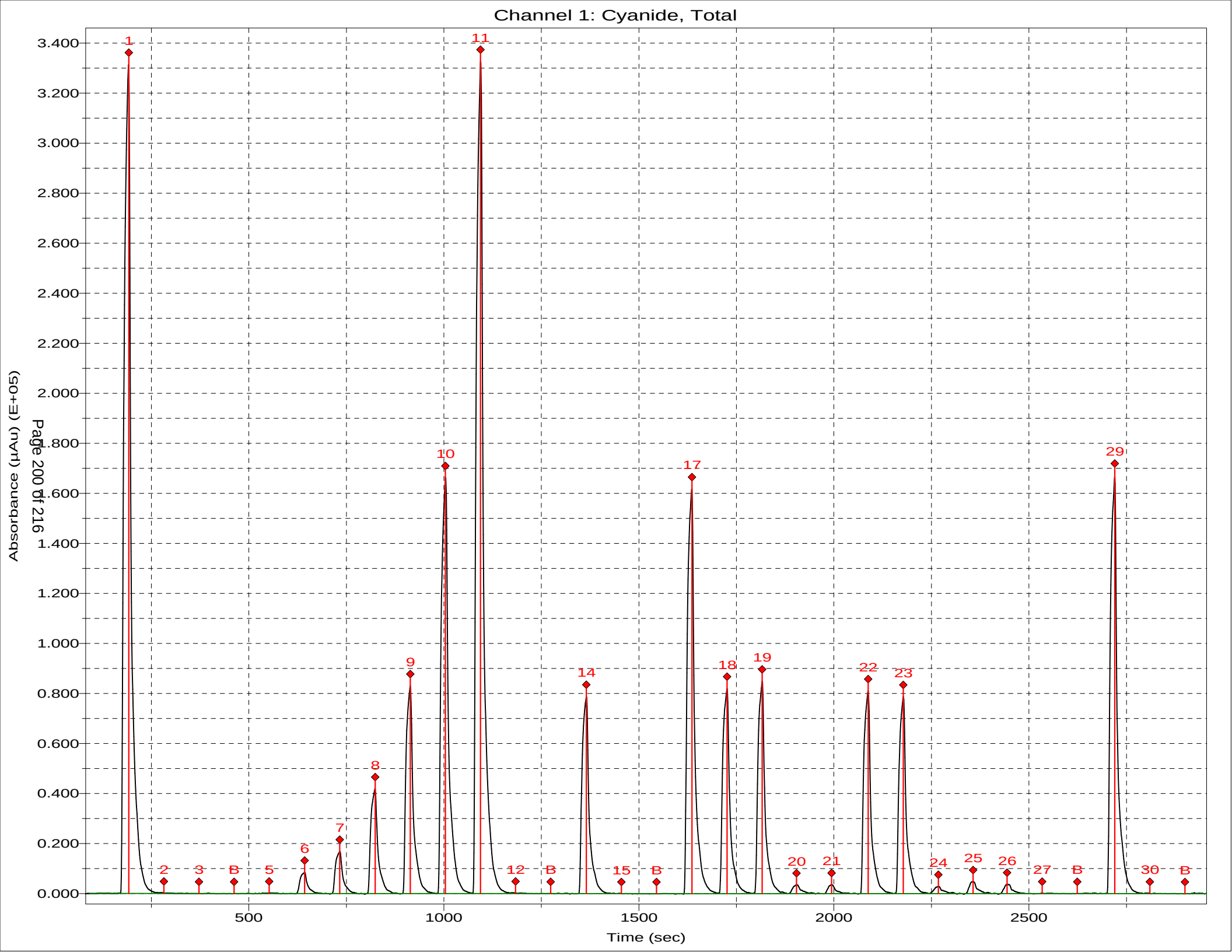
Calib Coef:
y=bx+a
a: (intercept) 1.5600e+02
b: 8.3103e+02

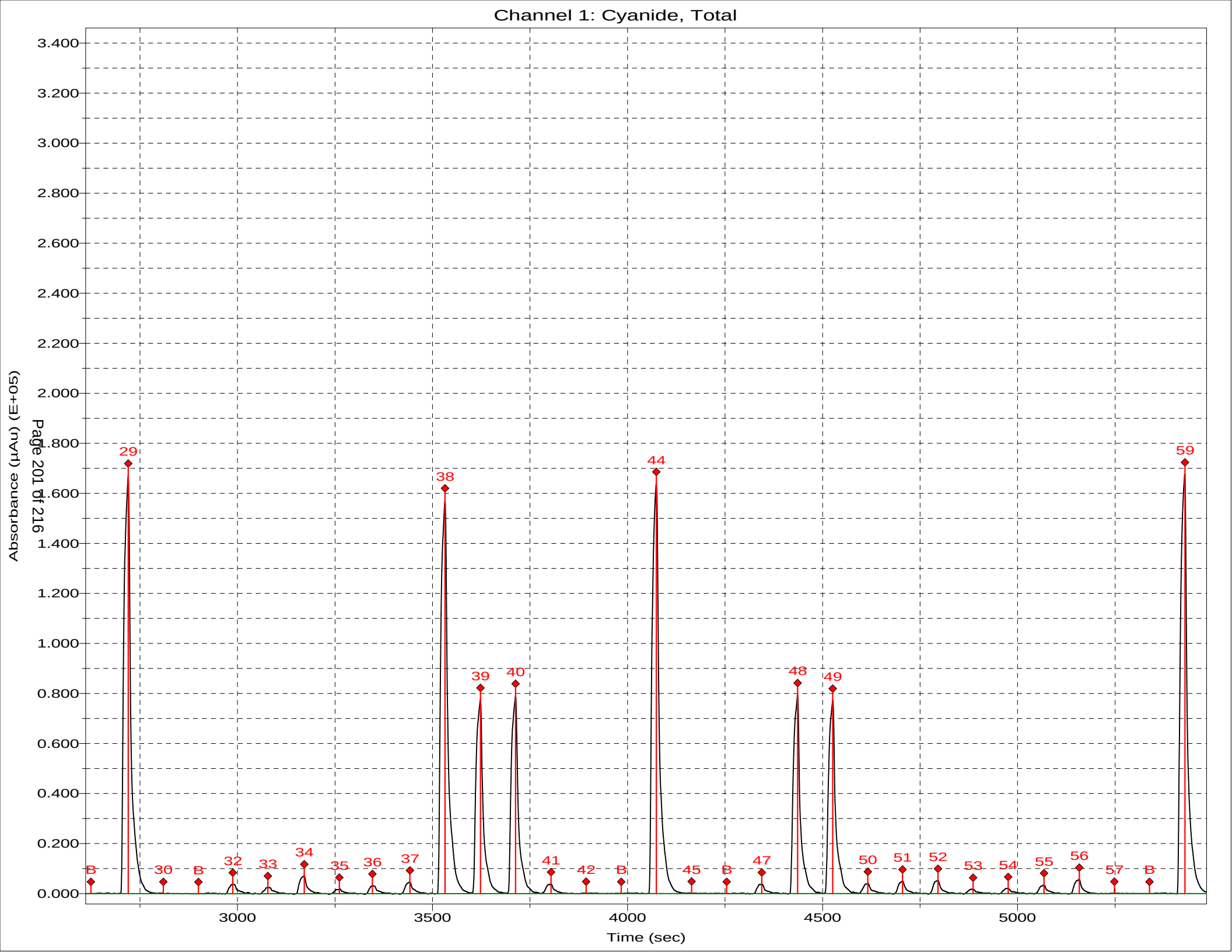
Corr Coef: 1.000000

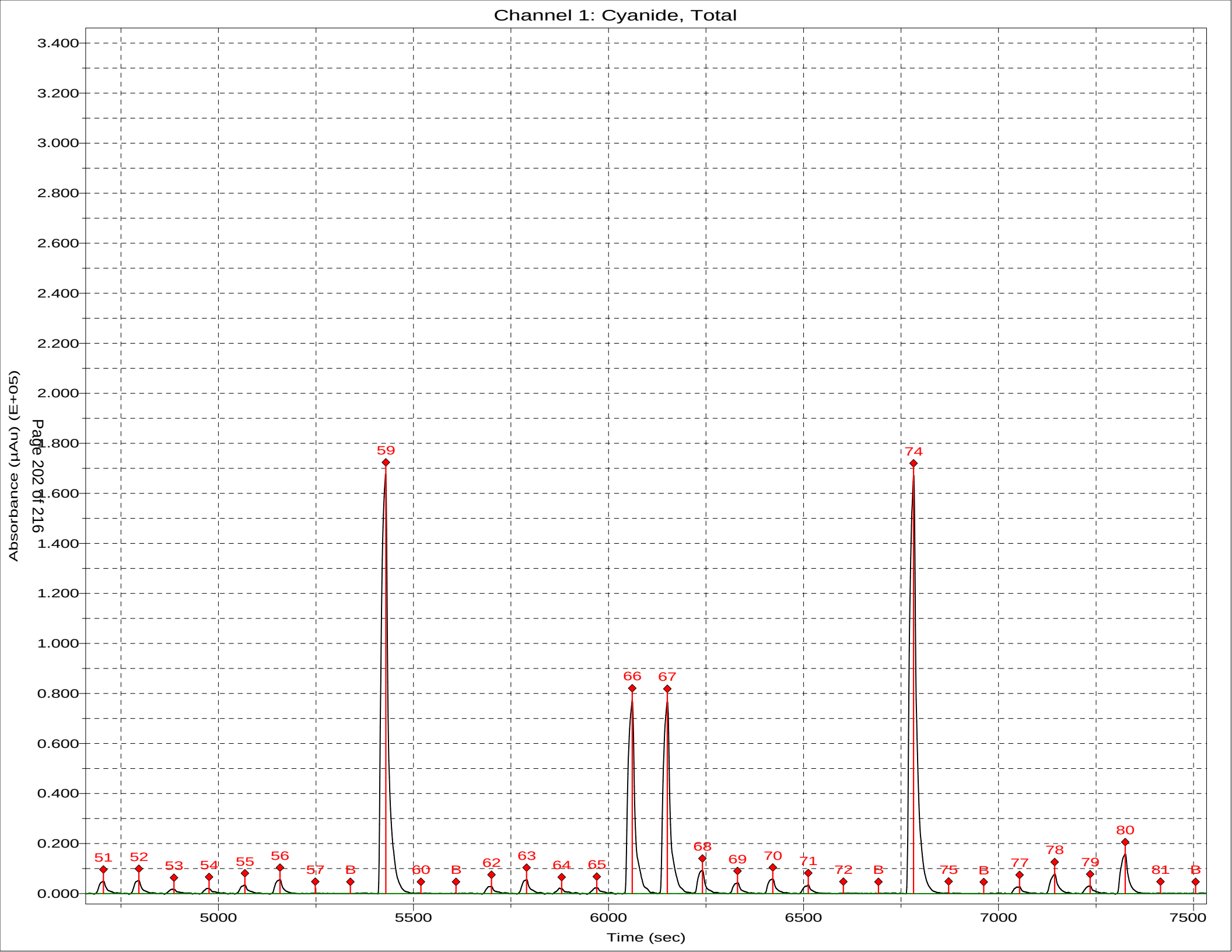
Carryover: 0.0467%

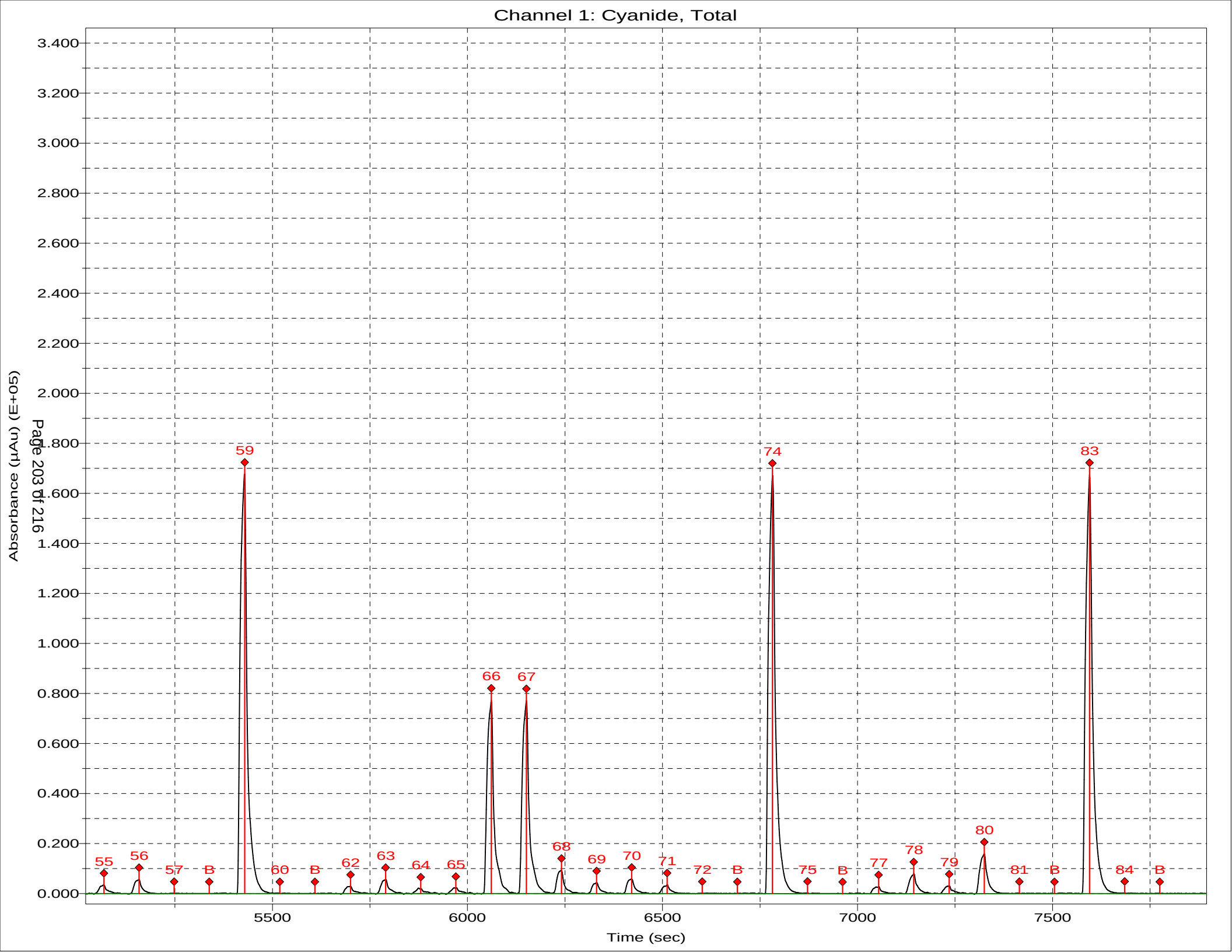
No Drift Peaks


Cyanide, Total:Calibration 1: Peak 5-85
Height (E+05)
3.500
3.000
2.500
2.000
1.500
1.000
0.500
0.000
-0.500
0
100
200
300
400
Conc


Channel 1: Cyanide, Total
Absorbance (µAu) (E+05)
Time (sec)
3.400
3.200
3.000
2.800
2.600
2.400
2.200
2.000
1.800
1.600
1.400
1.200
1.000
0.800
0.600
0.400
0.200
0.000
500
1000
1500
2000
2500
1
2
3
B
5
6
7
8
9
10
11
12
B
14
15
B
17
18
19
20
21
22
23
24
25
26
27
B
29
30
B


Channel 1: Cyanide, Total
Absorbance (µAu) (E+05)
3.400
3.200
3.000
2.800
2.600
2.400
2.200
2.000
1.800
1.600
1.400
1.200
1.000
0.800
0.600
0.400
0.200
0.000
3000
3500
4000
4500
5000
Time (sec)
Page 201 of 216
B
29
30
B
32
33
34
35
36
37
38
39
40
41
42
B
44
45
B
47
48
49
50
51
52
53
54
55
56
57
B
59


Channel 1: Cyanide, Total
Absorbance (µAu) (E+05)
3.400
3.200
3.000
2.800
2.600
2.400
2.200
2.000
1.800
1.600
1.400
1.200
1.000
0.800
0.600
0.400
0.200
0.000
5000
5500
6000
6500
7000
7500
Time (sec)
51
52
53
54
55
56
57
B
59
60
B
62
63
64
65
66
67
68
69
70
71
72
B
74
75
B
77
78
79
80
81
B

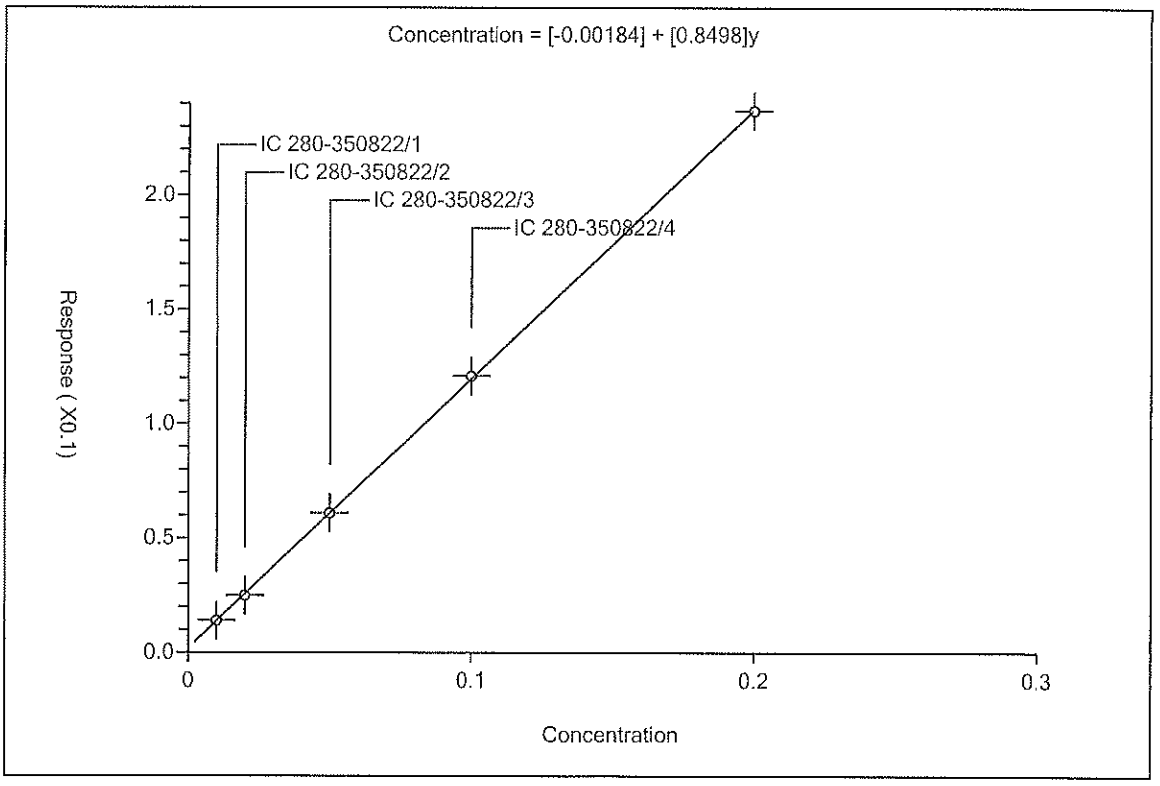

Channel 1: Cyanide, Total
Absorbance (µAu) (E+05)
3.400
3.200
3.000
2.800
2.600
2.400
2.200
2.000
1.800
1.600
1.400
1.200
1.000
0.800
0.600
0.400
0.200
0.000
5500
6000
6500
7000
7500
Time (sec)
55
56
57
B
59
60
B
62
63
64
65
66
67
68
69
70
71
72
B
74
75
B
77
78
79
80
81
B
83
84
B

Curve Type:	Linear
Weighting:	None
Origin:	None
Dependency:	Concentration
Calib Mode:	ESTD
RF Rounding:	0

Curve Coefficients	
Intercept:	-0.00184
Slope:	0.8498

Error Coefficients	
Standard Error:	0.0007119
Relative Standard Error:	1.844
Correlation Coefficient:	1.0000
Coefficient of Determination (Adjusted):	0.9999 (0.9999)

ID	Level	Concentration	Response	IS Amount	IS Response	RF	Used
1	IC 280-350822/1	0.01	0.014			1.4	Y
2	IC 280-350822/2	0.02	0.025			1.25	Y
3	IC 280-350822/3	0.05	0.061			1.22	Y
4	IC 280-350822/4	0.1	0.121			1.21	Y
5	IC 280-350822/5	0.2	0.237			1.185	Y



TALS Raw Data Report

Job Number: 280-90767-1
LIMS Batch: 350822
Equipment: WC_HSPEC_7196

Laboratory: TestAmerica Denver

RS# 6 Lab ID: **ICV 280-350822/6** Inj Date: 11/10/2016 12:49:56PM Dil: 1.0 Meth: 7196A_DOD

Analyte	Rspnse	Raw Res/Units	Final Res/Qual/Units	% Rec	Rec Lmt	% RPD	RPD Lmt
Cr (VI)	0.061	.04999780 mg/L	mg/L	100	90 110		

RS# 7 Lab ID: **ICB 280-350822/7** Inj Date: 11/10/2016 12:49:56PM Dil: 1.0 Meth: 7196A_DOD

Analyte	Rspnse	Raw Res/Units	Final Res/Qual/Units	% Rec	Rec Lmt	% RPD	RPD Lmt
Cr (VI)	0.001	00990200 mg/L	.0040 U mg/L				

RS# 8 Lab ID: **LCS 280-350822/8** Inj Date: 11/10/2016 12:49:56PM Dil: 1.0 Meth: 7196A_DOD

Analyte	Rspnse	Raw Res/Units	Final Res/Qual/Units	% Rec	Rec Lmt	% RPD	RPD Lmt
Cr (VI)	0.119	.09928620 mg/L	mg/L	99	85 115		

RS# 9 Lab ID: **LCSD 280-350822/9** Inj Date: 11/10/2016 12:49:56PM Dil: 1.0 Meth: 7196A_DOD

Analyte	Rspnse	Raw Res/Units	Final Res/Qual/Units	% Rec	Rec Lmt	% RPD	RPD Lmt
Cr (VI)	0.122	0.1018356 mg/L	mg/L	102	85 115	3	20

RS# 10 Lab ID: **MB 280-350822/10** Inj Date: 11/10/2016 12:49:56PM Dil: 1.0 Meth: 7196A_DOD

Analyte	Rspnse	Raw Res/Units	Final Res/Qual/Units	% Rec	Rec Lmt	% RPD	RPD Lmt
Cr (VI)	0.002	00140400 mg/L	.0040 U mg/L				

RS# 11 Lab ID: **280-90767-B-3** Inj Date: 11/10/2016 12:49:56PM Dil: 1.0 Meth: 7196A_DOD

Analyte	Rspnse	Raw Res/Units	Final Res/Qual/Units	% Rec	Rec Lmt	% RPD	RPD Lmt
Cr (VI)	0.1290	.10778420 mg/L	mg/L				

RS# 12 Lab ID: **280-90767-B-3 DU** Inj Date: 11/10/2016 12:49:56PM Dil: 1.0 Meth: 7196A_DOD

Analyte	Rspnse	Raw Res/Units	Final Res/Qual/Units	% Rec	Rec Lmt	% RPD	RPD Lmt
Cr (VI)	0.1300	.10863400 mg/L	mg/L			0.8	20

RS# 13 Lab ID: **280-90767-B-3 MS** Inj Date: 11/10/2016 12:49:56PM Dil: 1.0 Meth: 7196A_DOD

Analyte	Rspnse	Raw Res/Units	Final Res/Qual/Units	% Rec	Rec Lmt	% RPD	RPD Lmt
Cr (VI)	0.2490	.20976020 mg/L	mg/L	102	85 115		

RS# 14 Lab ID: **280-90767-B-3 MSD** Inj Date: 11/10/2016 12:49:56PM Dil: 1.0 Meth: 7196A_DOD

Analyte	Rspnse	Raw Res/Units	Final Res/Qual/Units	% Rec	Rec Lmt	% RPD	RPD Lmt
Cr (VI)	0.2500	.21061000 mg/L	mg/L	103	85 115	0	20

RS# 15 Lab ID: **CCV 280-350822/15** Inj Date: 11/10/2016 12:49:56PM Dil: 1.0 Meth: 7196A_DOD

Analyte	Rspnse	Raw Res/Units	Final Res/Qual/Units	% Rec	Rec Lmt	% RPD	RPD Lmt
Cr (VI)	0.119	.09928620 mg/L	mg/L	99	90 110		

RS# 16 Lab ID: **CCB 280-350822/16** Inj Date: 11/10/2016 12:49:56PM Dil: 1.0 Meth: 7196A_DOD

Analyte	Rspnse	Raw Res/Units	Final Res/Qual/Units	% Rec	Rec Lmt	% RPD	RPD Lmt
Cr (VI)	0.003	00709400 mg/L	.0040 U mg/L				

TALS Raw Data Report

Job Number: 280-90769-1
LIMS Batch: 350822
Equipment: WC_HSPEC_7196

Laboratory: TestAmerica Denver

RS# 6 Lab ID: **ICV 280-350822/6** Inj Date: 11/10/2016 12:49:56PM Dil: 1.0 Meth: 7196A_DOD

Analyte	Rspnse	Raw Res/Units	Final Res/Qual/Units	% Rec	Rec Lmt	% RPD	RPD Lmt
Cr (VI)	0.061	.04999780 mg/L	mg/L	100	90 110		

RS# 7 Lab ID: **ICB 280-350822/7** Inj Date: 11/10/2016 12:49:56PM Dil: 1.0 Meth: 7196A_DOD

Analyte	Rspnse	Raw Res/Units	Final Res/Qual/Units	% Rec	Rec Lmt	% RPD	RPD Lmt
Cr (VI)	0.001	000990200 mg/L	.0040 U mg/L				

RS# 8 Lab ID: **LCS 280-350822/8** Inj Date: 11/10/2016 12:49:56PM Dil: 1.0 Meth: 7196A_DOD

Analyte	Rspnse	Raw Res/Units	Final Res/Qual/Units	% Rec	Rec Lmt	% RPD	RPD Lmt
Cr (VI)	0.119	.09928620 mg/L	mg/L	99	85 115		

RS# 9 Lab ID: **LCSD 280-350822/9** Inj Date: 11/10/2016 12:49:56PM Dil: 1.0 Meth: 7196A_DOD

Analyte	Rspnse	Raw Res/Units	Final Res/Qual/Units	% Rec	Rec Lmt	% RPD	RPD Lmt
Cr (VI)	0.122	0.1018356 mg/L	mg/L	102	85 115	3	20

RS# 10 Lab ID: **MB 280-350822/10** Inj Date: 11/10/2016 12:49:56PM Dil: 1.0 Meth: 7196A_DOD

Analyte	Rspnse	Raw Res/Units	Final Res/Qual/Units	% Rec	Rec Lmt	% RPD	RPD Lmt
Cr (VI)	0.002	000140400 mg/L	.0040 U mg/L				

RS# 11 Lab ID: **280-90767-B-3** Inj Date: 11/10/2016 12:49:56PM Dil: 1.0 Meth: 7196A_DOD

Analyte	Rspnse	Raw Res/Units	Final Res/Qual/Units	% Rec	Rec Lmt	% RPD	RPD Lmt
Cr (VI)	0.1290	.10778420 mg/L	mg/L				

RS# 12 Lab ID: **280-90767-B-3 DU** Inj Date: 11/10/2016 12:49:56PM Dil: 1.0 Meth: 7196A_DOD

Analyte	Rspnse	Raw Res/Units	Final Res/Qual/Units	% Rec	Rec Lmt	% RPD	RPD Lmt
Cr (VI)	0.1300	.10863400 mg/L	mg/L			0.8	20

RS# 13 Lab ID: **280-90767-B-3 MS** Inj Date: 11/10/2016 12:49:56PM Dil: 1.0 Meth: 7196A_DOD

Analyte	Rspnse	Raw Res/Units	Final Res/Qual/Units	% Rec	Rec Lmt	% RPD	RPD Lmt
Cr (VI)	0.2490	.20976020 mg/L	mg/L	102	85 115		

RS# 14 Lab ID: **280-90767-B-3 MSD** Inj Date: 11/10/2016 12:49:56PM Dil: 1.0 Meth: 7196A_DOD

Analyte	Rspnse	Raw Res/Units	Final Res/Qual/Units	% Rec	Rec Lmt	% RPD	RPD Lmt
Cr (VI)	0.2500	.21061000 mg/L	mg/L	103	85 115	0	20

RS# 15 Lab ID: **CCV 280-350822/15** Inj Date: 11/10/2016 12:49:56PM Dil: 1.0 Meth: 7196A_DOD

Analyte	Rspnse	Raw Res/Units	Final Res/Qual/Units	% Rec	Rec Lmt	% RPD	RPD Lmt
Cr (VI)	0.119	.09928620 mg/L	mg/L	99	90 110		

RS# 16 Lab ID: **CCB 280-350822/16** Inj Date: 11/10/2016 12:49:56PM Dil: 1.0 Meth: 7196A_DOD

Analyte	Rspnse	Raw Res/Units	Final Res/Qual/Units	% Rec	Rec Lmt	% RPD	RPD Lmt
Cr (VI)	0.003	000709400 mg/L	.0040 U mg/L				

RS# 18 Lab ID: **280-90769-E-15** Inj Date: 11/10/2016 1:43:41PM Dil: 20 Meth: 7196A_DOD

Analyte	Rspnse	Raw Res/Units	Final Res/Qual/Units	% Rec	Rec Lmt	% RPD	RPD Lmt
Cr (VI)	0.1600	.13412800 mg/L	mg/L				

RS# 19 Lab ID: **280-90769-E-14** Inj Date: 11/10/2016 1:43:41PM Dil: 2.0 Meth: 7196A_DOD

Analyte	Rspnse	Raw Res/Units	Final Res/Qual/Units	% Rec	Rec Lmt	% RPD	RPD Lmt

Cr (VI)	0.1530	.12817940	mg/L	mg/L					

RS# 23 Lab ID: **CCV 280-350822/23** Inj Date: 11/10/2016 1:43:41PM Dil: 1.0 Meth: 7196A_DOD

Analyte	Rspnse	Raw Res/Units	Final Res/Qual/Units	% Rec	Rec Lmt	% RPD	RPD Lmt
Cr (VI)	0.115	.09588700 mg/L	mg/L	96	90 110		

RS# 24 Lab ID: **CCB 280-350822/24** Inj Date: 11/10/2016 1:43:41PM Dil: 1.0 Meth: 7196A_DOD

Analyte	Rspnse	Raw Res/Units	Final Res/Qual/Units	% Rec	Rec Lmt	% RPD	RPD Lmt
Cr (VI)	0.000	001840000 mg/L	.0040 U mg/L				

TALS Raw Data Report

Job Number: 280-90773-1
LIMS Batch: 350822
Equipment: WC_HSPEC_7196

Laboratory: TestAmerica Denver

RS# 6 Lab ID: **ICV 280-350822/6** Inj Date: 11/10/2016 12:49:56PM Dil: 1.0 Meth: 7196A_DOD

Analyte	Rspnse	Raw Res/Units	Final Res/Qual/Units	% Rec	Rec Lmt	% RPD	RPD Lmt
Cr (VI)	0.061	.04999780 mg/L	mg/L	100	90 110		

RS# 7 Lab ID: **ICB 280-350822/7** Inj Date: 11/10/2016 12:49:56PM Dil: 1.0 Meth: 7196A_DOD

Analyte	Rspnse	Raw Res/Units	Final Res/Qual/Units	% Rec	Rec Lmt	% RPD	RPD Lmt
Cr (VI)	0.001	00990200 mg/L	.0040 U mg/L				

RS# 8 Lab ID: **LCS 280-350822/8** Inj Date: 11/10/2016 12:49:56PM Dil: 1.0 Meth: 7196A_DOD

Analyte	Rspnse	Raw Res/Units	Final Res/Qual/Units	% Rec	Rec Lmt	% RPD	RPD Lmt
Cr (VI)	0.119	.09928620 mg/L	mg/L	99	85 115		

RS# 9 Lab ID: **LCSD 280-350822/9** Inj Date: 11/10/2016 12:49:56PM Dil: 1.0 Meth: 7196A_DOD

Analyte	Rspnse	Raw Res/Units	Final Res/Qual/Units	% Rec	Rec Lmt	% RPD	RPD Lmt
Cr (VI)	0.122	0.1018356 mg/L	mg/L	102	85 115	3	20

RS# 10 Lab ID: **MB 280-350822/10** Inj Date: 11/10/2016 12:49:56PM Dil: 1.0 Meth: 7196A_DOD

Analyte	Rspnse	Raw Res/Units	Final Res/Qual/Units	% Rec	Rec Lmt	% RPD	RPD Lmt
Cr (VI)	0.002	00140400 mg/L	.0040 U mg/L				

RS# 11 Lab ID: **280-90767-B-3** Inj Date: 11/10/2016 12:49:56PM Dil: 1.0 Meth: 7196A_DOD

Analyte	Rspnse	Raw Res/Units	Final Res/Qual/Units	% Rec	Rec Lmt	% RPD	RPD Lmt
Cr (VI)	0.1290	.10778420 mg/L	mg/L				

RS# 12 Lab ID: **280-90767-B-3 DU** Inj Date: 11/10/2016 12:49:56PM Dil: 1.0 Meth: 7196A_DOD

Analyte	Rspnse	Raw Res/Units	Final Res/Qual/Units	% Rec	Rec Lmt	% RPD	RPD Lmt
Cr (VI)	0.1300	.10863400 mg/L	mg/L			0.8	20

RS# 13 Lab ID: **280-90767-B-3 MS** Inj Date: 11/10/2016 12:49:56PM Dil: 1.0 Meth: 7196A_DOD

Analyte	Rspnse	Raw Res/Units	Final Res/Qual/Units	% Rec	Rec Lmt	% RPD	RPD Lmt
Cr (VI)	0.2490	.20976020 mg/L	mg/L	102	85 115		

RS# 14 Lab ID: **280-90767-B-3 MSD** Inj Date: 11/10/2016 12:49:56PM Dil: 1.0 Meth: 7196A_DOD

Analyte	Rspnse	Raw Res/Units	Final Res/Qual/Units	% Rec	Rec Lmt	% RPD	RPD Lmt
Cr (VI)	0.2500	.21061000 mg/L	mg/L	103	85 115	0	20

RS# 15 Lab ID: **CCV 280-350822/15** Inj Date: 11/10/2016 12:49:56PM Dil: 1.0 Meth: 7196A_DOD

Analyte	Rspnse	Raw Res/Units	Final Res/Qual/Units	% Rec	Rec Lmt	% RPD	RPD Lmt
Cr (VI)	0.119	.09928620 mg/L	mg/L	99	90 110		

RS# 16 Lab ID: **CCB 280-350822/16** Inj Date: 11/10/2016 12:49:56PM Dil: 1.0 Meth: 7196A_DOD

Analyte	Rspnse	Raw Res/Units	Final Res/Qual/Units	% Rec	Rec Lmt	% RPD	RPD Lmt
Cr (VI)	0.003	00709400 mg/L	.0040 U mg/L				

RS# 17 Lab ID: **280-90773-D-13** Inj Date: 11/10/2016 1:43:41PM Dil: 1.0 Meth: 7196A_DOD

Analyte	Rspnse	Raw Res/Units	Final Res/Qual/Units	% Rec	Rec Lmt	% RPD	RPD Lmt
Cr (VI)	0.1440	.12053120 mg/L	mg/L				

RS# 23 Lab ID: **CCV 280-350822/23** Inj Date: 11/10/2016 1:43:41PM Dil: 1.0 Meth: 7196A_DOD

Analyte	Rspnse	Raw Res/Units	Final Res/Qual/Units	% Rec	Rec Lmt	% RPD	RPD Lmt

Cr (VI)	0.115	.09588700	mg/L	mg/L	96	90	110

RS# 24 Lab ID: **CCB 280-350822/24** Inj Date: 11/10/2016 1:43:41PM Dil: 1.0 Meth: 7196A_DOD

Analyte	Rspnse	Raw Res/Units	Final Res/Qual/Units	% Rec	Rec Lmt	% RPD	RPD Lmt
Cr (VI)	0.000	001840000 mg/L	.0040 U mg/L				

TALS Raw Data Report

Job Number: 280-90781-1
LIMS Batch: 350822
Equipment: WC_HSPEC_7196

Laboratory: TestAmerica Denver

RS# 6 Lab ID: **ICV 280-350822/6** Inj Date: 11/10/2016 12:49:56PM Dil: 1.0 Meth: 7196A_DOD5

Analyte	Rspnse	Raw Res/Units	Final Res/Qual/Units	% Rec	Rec Lmt	% RPD	RPD Lmt
Cr (VI)	0.061	.04999780 mg/L	mg/L	100	90 110		

RS# 7 Lab ID: **ICB 280-350822/7** Inj Date: 11/10/2016 12:49:56PM Dil: 1.0 Meth: 7196A_DOD5

Analyte	Rspnse	Raw Res/Units	Final Res/Qual/Units	% Rec	Rec Lmt	% RPD	RPD Lmt
Cr (VI)	0.001	00990200 mg/L	.0040 U mg/L				

RS# 8 Lab ID: **LCS 280-350822/8** Inj Date: 11/10/2016 12:49:56PM Dil: 1.0 Meth: 7196A_DOD5

Analyte	Rspnse	Raw Res/Units	Final Res/Qual/Units	% Rec	Rec Lmt	% RPD	RPD Lmt
Cr (VI)	0.119	.09928620 mg/L	ug/L	99	90 111		

RS# 9 Lab ID: **LCSD 280-350822/9** Inj Date: 11/10/2016 12:49:56PM Dil: 1.0 Meth: 7196A_DOD5

Analyte	Rspnse	Raw Res/Units	Final Res/Qual/Units	% Rec	Rec Lmt	% RPD	RPD Lmt
Cr (VI)	0.122	0.1018356 mg/L	ug/L	102	90 111	3	20

RS# 10 Lab ID: **MB 280-350822/10** Inj Date: 11/10/2016 12:49:56PM Dil: 1.0 Meth: 7196A_DOD5

Analyte	Rspnse	Raw Res/Units	Final Res/Qual/Units	% Rec	Rec Lmt	% RPD	RPD Lmt
Cr (VI)	0.002	00140400 mg/L	4.0 U ug/L				

RS# 11 Lab ID: **280-90767-B-3** Inj Date: 11/10/2016 12:49:56PM Dil: 1.0 Meth: 7196A_DOD5

Analyte	Rspnse	Raw Res/Units	Final Res/Qual/Units	% Rec	Rec Lmt	% RPD	RPD Lmt
Cr (VI)	0.1290	.10778420 mg/L	ug/L				

RS# 12 Lab ID: **280-90767-B-3 DU** Inj Date: 11/10/2016 12:49:56PM Dil: 1.0 Meth: 7196A_DOD5

Analyte	Rspnse	Raw Res/Units	Final Res/Qual/Units	% Rec	Rec Lmt	% RPD	RPD Lmt
Cr (VI)	0.1300	.10863400 mg/L	ug/L			0.8	20

RS# 13 Lab ID: **280-90767-B-3 MS** Inj Date: 11/10/2016 12:49:56PM Dil: 1.0 Meth: 7196A_DOD5

Analyte	Rspnse	Raw Res/Units	Final Res/Qual/Units	% Rec	Rec Lmt	% RPD	RPD Lmt
Cr (VI)	0.2490	.20976020 mg/L	ug/L	102	90 111		

RS# 14 Lab ID: **280-90767-B-3 MSD** Inj Date: 11/10/2016 12:49:56PM Dil: 1.0 Meth: 7196A_DOD5

Analyte	Rspnse	Raw Res/Units	Final Res/Qual/Units	% Rec	Rec Lmt	% RPD	RPD Lmt
Cr (VI)	0.2500	.21061000 mg/L	ug/L	103	90 111	0	20

RS# 15 Lab ID: **CCV 280-350822/15** Inj Date: 11/10/2016 12:49:56PM Dil: 1.0 Meth: 7196A_DOD5

Analyte	Rspnse	Raw Res/Units	Final Res/Qual/Units	% Rec	Rec Lmt	% RPD	RPD Lmt
Cr (VI)	0.119	.09928620 mg/L	mg/L	99	90 110		

RS# 16 Lab ID: **CCB 280-350822/16** Inj Date: 11/10/2016 12:49:56PM Dil: 1.0 Meth: 7196A_DOD5

Analyte	Rspnse	Raw Res/Units	Final Res/Qual/Units	% Rec	Rec Lmt	% RPD	RPD Lmt
Cr (VI)	0.003	00709400 mg/L	.0040 U mg/L				

RS# 20 Lab ID: **280-90781-D-2** Inj Date: 11/10/2016 1:43:41PM Dil: 1.0 Meth: 7196A_DOD5

Analyte	Rspnse	Raw Res/Units	Final Res/Qual/Units	% Rec	Rec Lmt	% RPD	RPD Lmt
Cr (VI)	-0.0010	02689800 mg/L	4.0 U ug/L				

RS# 21 Lab ID: **280-90781-A-3** Inj Date: 11/10/2016 1:43:41PM Dil: 1.0 Meth: 7196A_DOD5

Analyte	Rspnse	Raw Res/Units	Final Res/Qual/Units	% Rec	Rec Lmt	% RPD	RPD Lmt

Cr (VI)	0.0010	)00990200 mg/L	4.0 U ug/L					

RS# 22 Lab ID: **280-90781-B-1** Inj Date: 11/10/2016 1:43:41PM Dil: 1.0 Meth: 7196A_DOD5

Analyte	Rspnse	Raw Res/Units	Final Res/Qual/Units	% Rec	Rec Lmt	% RPD	RPD Lmt
Cr (VI)	-0.0010	)02689800 mg/L	4.0 U ug/L				

RS# 23 Lab ID: **CCV 280-350822/23** Inj Date: 11/10/2016 1:43:41PM Dil: 1.0 Meth: 7196A_DOD5

Analyte	Rspnse	Raw Res/Units	Final Res/Qual/Units	% Rec	Rec Lmt	% RPD	RPD Lmt
Cr (VI)	0.115	.09588700 mg/L	mg/L	96	90 110		

RS# 24 Lab ID: **CCB 280-350822/24** Inj Date: 11/10/2016 1:43:41PM Dil: 1.0 Meth: 7196A_DOD5

Analyte	Rspnse	Raw Res/Units	Final Res/Qual/Units	% Rec	Rec Lmt	% RPD	RPD Lmt
Cr (VI)	0.000	)01840000 mg/L	.0040 U mg/L				

Calibration Data Review Checklist

Note: Includes all methods (except IC, CN) that utilize initial calibration)

SOP No. WC-0021		Instrument ID: Spec
LIMS Prep Batch#: NA	LIMS Analytical Batch# 350822	ICAL Batch NA
Analyst(s)/1st Reviewer/Date: JMC 11/17/16		QC Type (circle): Standard LCSD DOD Q4 (DoD Q5) QAPP_____ Other_____
Method (circle): 3500-Cr B 3500-Cr D 3500-Fe B 3500-Fe D 350.1 351.2 353.2 365.1 410.4 420.1 420.4 4500-NO_2 B 4500-S^{2-} D (7196A) 9060 5310B		
Matrix (circle): (Water) Solid Waste Leachate		Circle all that apply: (Total) Field Filtered Lab Filtered

Review Items	Yes	No	NA	2nd Rev	If No, why is data reportable? (List NCM #)
A. Calibration/Instrument Run QC					
1. Verify intermediate standards for correct concentration stated in SOP (ICAL pts at correct concentration)	/			/	
2. Number of Points: 1st order: 5 standards; 2nd order: 6 standards	/			/	
3. Linearity and intercept: r ≥ 0.995 (r^2≥0.99) |x-intercept| < ½ RL	/			/	
4. ICV, second source: run before samples 90-110% recovery	/			/	
5. CCV: 10% frequency & closing 90-110% recovery	/			/	
6. Cadmium Column Efficiency Check (353.2): 85-115% NO_2 recovery			/	/	
7. ICB: run before samples, CCB: 10% frequency, & closing Result < ½ RL (410.4 Result <RL)	/			/	
B. Client Sample and QC Sample Results					
8. Samples with results > linear range diluted and reanalyzed?	/			/	Comments:
9. On-instrument response of diluted sample is >10X |MB| on-instrument response	/			/	Comments:
C. Preparation/Matrix QC					
10. If samples are lab filtered, QC samples filtered?	/			/	
11. Method Blank: one per preparation batch Result < ½ RL (410.4 Result <RL)	/			/	*If no, list blank ID & explain:*
12. LCS: one per preparation batch 90-110% recovery Lab limits (3500-x, 4500-x, 7196A); (7196 DOD5: 90-111% recovery)	/			/	*If no, list LCS ID & explain:*
13. MS/MSD or MS/Dup frequency (Determine correct frequency by method or reference SOP) A pair per 20 samples or a pair per 10 samples Lab limits (3500-x, 4500-x, 7196A);Others (90-110%)	/			/	*If no, list QC ID & explain:*

TestAmerica Denver

Review Items	Yes	No	NA	2nd Rev	If No, why is data reportable?
D. Raw Data & TALS Data Entry					
14. Raw Data/Run Log					
a. Unused data is clearly identified and reason not used is stated	✓			✓	
b. All cross outs are initialed and dated	✓			✓	
c. Out of control QC is clearly identified	✓			✓	
d. Any data that has a qualifier is commented on with appropriate action taken	✓			✓	
e. The first page of the run includes the filename, instrument, and analyst initials/signature f. Analyst initials/signature provided	✓			✓	
15. TALS Sample List					
a. LIMS Sample IDs / Containers are correct	✓			✓	
b. Method and matrix are correct	✓			✓	
c. Date and time match raw data	✓			✓	
d. Dilutions are correct	✓			✓	
e. Correct suffix (DU, MS, MSD) designated (where applicable)	✓			✓	
16. TALS Worksheet Tab is complete and correct	✓			✓	
17. Sample pH, presence of chlorine/sulfide recorded?	✓			✓	
18. NCM written for any samples needing preservation at the bench?	✓			✓	
19. TALS Reagent Tab is complete and correct	✓			✓	
20. TALS QC Links Tab is correct	✓			✓	
21. TALS Sample Results Tab					
a. All unused data are marked Rejected or Accepted	✓			✓	
b. All reported analytes are marked Primary or Secondary	✓			✓	
22. TALS Batch Information Screen documentation is complete	✓			✓	
23. Historical Data Checker: Check historical data. Print charts for outliers. Take corrective action as appropriate	✓			✓	
24. TALS Status set to appropriate review level	✓			✓	
E. Final Report and NCMs (2nd level review only)				✓	
25. Were all job/project requirements met?				✓	
26. Results for samples and QC correct on final report?				✓	
27. Are all necessary scanned documents in TALS?				✓	
28. NCMs reviewed for applicability, correct references to batches, grammar/typographical errors?				✓	

Comments: _____

2nd Reviewer: KAm **Review Date:** 11/17/16

Shipping and Receiving Documents

TestAmerica Denver
4955 Yarrow Street
Arvada, CO 80002
Phone (303) 736-0100 Fax (303) 431-7171

Chain of Custody Record

8104815 13870
8104815 13777
8104815 13766

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: Bethany Weeder	Lab PM: McEntee, Patrick J	Carrier Tracking No(s): 8104815 13560 / 8104815 13550	COC No: 280-58520-20527.1
Client Contact: Ms. Heather Miner	Phone: 330 256-5543	E-Mail: patrick.mcentee@testamericainc.com		Page: Page 1 of 1
Company: Cardno TEC, Inc				Job #:
Address: 1658 Cole Boulevard Suite 190	Due Date Requested:			
City: Golden	TAT Requested (days):			
State, Zip: CO, 80401				
Phone:	PO #: 0091979			
Email: heather.miner@cardno-gs.com	WO #:			
Project Name: Ravenna, OH - Atlas Scrap Yard	Project #: 28014271			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)

Other:

Checked by K. Kroeker THS

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8330B_DOD5 - Explosives	Total Metals 6010C_DOD5, 6020A_DOD5, 7470A_DOD5	Cyanide 9012B	Hexavalent Chromium 7196A	Total Number of containers	Special Instructions/Note:
			Preservation Code:				N	D	B	N		
ASY mw-004-110916-GW	11/09/16	1537	G	W	N	N			X	X	2	24 HR HOLD
ASY mw-005-110916-GW	11/09/16	1512	G	W	N	N	X		X	X	4	24 HR HOLD
DET mw-003-110916-GW	11/09/16	1414	G	W	N	N				X	1	24 HR HOLD

280-90781 Chain of Custody

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by	Date/Time	Company	Received by	Date/Time	Company
Bethany Weeder	11/09/16 EST 1730	ATC	Fedex	11/09/17 EST 1730	
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
				11/10/16 1020	TAD
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:
		1.1, 0.1, 1.3, 2.9, 4.6 +0.0 IR#5 DW 11/10/16

Login Sample Receipt Checklist

Client: Cardno TEC, Inc

Job Number: 280-90781-1

Login Number: 90781
List Number: 1
Creator: White, Denise E

List Source: TestAmerica Denver

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	False	RECEIVED W/ INSUFFICIENT TIME TO PROCESS
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	