ANALYTICAL REPORT

Job Number: 280-104552-1

Job Description: Ravenna, OH

For:
Cardno GS, Inc
2496 Old Ivy Road
Suite 300
Charlottesville, VA 22903

Attention: Mr. Peter Chapman

Approved for release.
Patrick J McEntee
Manager of Project Management
1/18/2018 10:50 AM

Patrick J McEntee, Manager of Project Management
4955 Yarrow Street, Arvada, CO, 80002
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01/18/2018

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.

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GENERAL CHEMISTRY

COVER PAGE
GENERAL CHEMISTRY

Lab Name: TestAmerica Denver Job Number: 280-104552-1

SDG No.:

Project: Ravenna, OH

Client Sample ID	Lab Sample ID
RQLmw-007-D-120717-GW	280-104552-1
RQLmw-008-120717-GW	280-104552-3
RQLmw-009-120717-GW	280-104552-4
RQLmw-007-120717-GW	280-104552-5
RQLmw-011-120717-GW	280-104552-6
RQLmw-016-120717-GW	280-104552-7
RQLmw-012-120717-GW	280-104552-8
RQLmw-014-120717-GW	280-104552-9
RQLmw-013-120717-GW	280-104552-10

Comments:

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: RQLmw-007-D-120717-GW
Lab Sample ID: 280-104552-1
Lab Name: TestAmerica Denver
Job No.: 280-104552-1
SDG ID.:
Matrix: Water
Date Sampled: 12/07/2017 14:50
Reporting Basis: WET
Date Received: 12/09/2017 08:50

Analyte	Result	LOQ	LOD	DL	Units	C	Q	DIL	Method
Cyanide, Total	3.5	10	5.0	2.0	ug/L	J		1	9012B

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: RQLmw-008-120717-GW
Lab Sample ID: 280-104552-3
Lab Name: TestAmerica Denver
Job No.: 280-104552-1
SDG ID.:
Matrix: Water
Date Sampled: 12/07/2017 15:05
Reporting Basis: WET
Date Received: 12/09/2017 08:50

Analyte	Result	LOQ	LOD	DL	Units	C	Q	DIL	Method
Cyanide, Total	4.1	10	5.0	2.0	ug/L	J		1	9012B

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: RQLmw-009-120717-GW
Lab Sample ID: 280-104552-4
Lab Name: TestAmerica Denver
Job No.: 280-104552-1
SDG ID.:
Matrix: Water
Date Sampled: 12/07/2017 14:48
Reporting Basis: WET
Date Received: 12/09/2017 08:50

Analyte	Result	LOQ	LOD	DL	Units	C	Q	DIL	Method
Cyanide, Total	2.5	10	5.0	2.0	ug/L	J		1	9012B

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: RQLmw-007-120717-GW
Lab Sample ID: 280-104552-5
Lab Name: TestAmerica Denver
Job No.: 280-104552-1
SDG ID.:
Matrix: Water
Date Sampled: 12/07/2017 14:50
Reporting Basis: WET
Date Received: 12/09/2017 08:50

Analyte	Result	LOQ	LOD	DL	Units	C	Q	DIL	Method
Cyanide, Total	4.5	10	5.0	2.0	ug/L	J		1	9012B

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: RQLmw-011-120717-GW
Lab Sample ID: 280-104552-6
Lab Name: TestAmerica Denver
Job No.: 280-104552-1
SDG ID.:
Matrix: Water
Date Sampled: 12/07/2017 13:51
Reporting Basis: WET
Date Received: 12/09/2017 08:50

Analyte	Result	LOQ	LOD	DL	Units	C	Q	DIL	Method
Sulfide	1900	4000	1900	790	ug/L	U		1	9034
Chloride	1100	3000	500	250	ug/L	J		1	9056A
Sulfate	69000	5000	500	230	ug/L			1	9056A
Alkalinity	140	5.0	3.2	1.1	mg/L			1	SM 2320B

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: RQLmw-016-120717-GW
Lab Sample ID: 280-104552-7
Lab Name: TestAmerica Denver
Job No.: 280-104552-1
SDG ID.:
Matrix: Water
Date Sampled: 12/07/2017 14:00
Reporting Basis: WET
Date Received: 12/09/2017 08:50

Analyte	Result	LOQ	LOD	DL	Units	C	Q	DIL	Method
Cyanide, Total	4.5	10	5.0	2.0	ug/L	J		1	9012B

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: RQLmw-012-120717-GW
Lab Sample ID: 280-104552-8
Lab Name: TestAmerica Denver
Job No.: 280-104552-1
SDG ID.:
Matrix: Water
Date Sampled: 12/07/2017 14:45
Reporting Basis: WET
Date Received: 12/09/2017 08:50

Analyte	Result	LOQ	LOD	DL	Units	C	Q	DIL	Method
Cyanide, Total	2.2	10	5.0	2.0	ug/L	J		1	9012B
Sulfide	1900	4000	1900	790	ug/L	U		1	9034
Chloride	1100	3000	500	250	ug/L	J	J1	1	9056A
Sulfate	86000	5000	500	230	ug/L			1	9056A
Alkalinity	18	5.0	3.2	1.1	mg/L			1	SM 2320B

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: RQLmw-014-120717-GW
Lab Sample ID: 280-104552-9
Lab Name: TestAmerica Denver
Job No.: 280-104552-1
SDG ID.:
Matrix: Water
Date Sampled: 12/07/2017 15:28
Reporting Basis: WET
Date Received: 12/09/2017 08:50

Analyte	Result	LOQ	LOD	DL	Units	C	Q	DIL	Method
Sulfide	1900	4000	1900	790	ug/L	U		1	9034
Chloride	3300	3000	500	250	ug/L			1	9056A
Sulfate	120000	5000	500	230	ug/L			1	9056A
Alkalinity	90	5.0	3.2	1.1	mg/L		B	1	SM 2320B

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: RQLmw-013-120717-GW
Lab Sample ID: 280-104552-10
Lab Name: TestAmerica Denver
Job No.: 280-104552-1
SDG ID.:
Matrix: Water
Date Sampled: 12/07/2017 16:07
Reporting Basis: WET
Date Received: 12/09/2017 08:50

Analyte	Result	LOQ	LOD	DL	Units	C	Q	DIL	Method
Sulfide	1900	4000	1900	790	ug/L	U		1	9034
Chloride	4600	3000	500	250	ug/L		J1	1	9056A
Sulfate	170000	10000	1000	460	ug/L		D	2	9056A
Alkalinity	3.2	5.0	3.2	1.1	mg/L	U		1	SM 2320B

2-IN
CALIBRATION QUALITY CONTROL
GENERAL CHEMISTRY

Lab Name: TestAmerica Denver Job No.: 280-104552-1

SDG No.:

Analyst: ALS Batch Start Date: 12/21/2017

Reporting Units: mg/L Analytical Batch No.: 399664

Sample Number	QC Type	Time	Analyte	Result	Spike Amount	(%) Recovery	Limits	Qual	Reagent
14	ICV	17:30	Cyanide, Total	0.100	0.100	100	90-110		CN ICV Daily_01100
15	ICB	17:31	Cyanide, Total	0.0050				U	
74	CCV	19:00	Cyanide, Total	0.209	0.200	105	90-110		CN CAL 1 ppm_01333
75	CCB	19:01	Cyanide, Total	0.0050				U	
89	CCV	19:28	Cyanide, Total	0.213	0.200	106	90-110		CN CAL 1 ppm_01333
90	CCB	19:29	Cyanide, Total	0.0050				U	
104	CCV	19:50	Cyanide, Total	0.217	0.200	109	90-110		CN CAL 1 ppm_01333
105	CCB	19:52	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.: 280-104552-1

SDG No.:

Analyst: JML Batch Start Date: 12/29/2017

Reporting Units: mg/L Analytical Batch No.: 400339

Sample Number	QC Type	Time	Analyte	Result	Spike Amount	(%) Recovery	Limits	Qual	Reagent
1	CCV	11:41	Chloride	92.6	100	93	90-110		IC LCS_01108
			Sulfate	93.3	100	93	90-110		IC LCS_01108
2	CCB	12:03	Chloride	0.424				J	
			Sulfate	0.386				J	
17	CCV	22:01	Chloride	92.6	100	93	90-110		IC LCS_01108
			Sulfate	93.8	100	94	90-110		IC LCS_01108
18	CCB	22:23	Chloride	0.419				J	
			Sulfate	0.438				J	
29	CCV	02:30	Chloride	92.7	100	93	90-110		IC LCS_01108
			Sulfate	93.8	100	94	90-110		IC LCS_01108
30	CCB	02:52	Chloride	0.384				J	
			Sulfate	0.243				J	
40	CCV	06:37	Chloride	92.2	100	92	90-110		IC LCS_01108
			Sulfate	93.2	100	93	90-110		IC LCS_01108
41	CCB	06:59	Chloride	0.420				J	
			Sulfate	0.318				J	

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.: 280-104552-1

SDG No.:

Analyst: JML Batch Start Date: 12/30/2017

Reporting Units: mg/L Analytical Batch No.: 400438

Sample Number	QC Type	Time	Analyte	Result	Spike Amount	(%) Recovery	Limits	Qual	Reagent
1	CCV	06:17	Chloride	99.1	100	99	90-110		IC LCS_01109
			Sulfate	99.4	100	99	90-110		IC LCS_01109
2	CCB	06:34	Chloride	0.50				U	
			Sulfate	0.50				U	
17	CCV	12:04	Chloride	98.3	100	98	90-110		IC LCS_01109
			Sulfate	98.8	100	99	90-110		IC LCS_01109
18	CCB	12:22	Chloride	0.50				U	
			Sulfate	0.50				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.: 280-104552-1

SDG No.:

Analyst: A1D Batch Start Date: 12/18/2017

Reporting Units: mg/L Analytical Batch No.: 399189

Sample Number	QC Type	Time	Analyte	Result	Spike Amount	(%) Recovery	Limits	Qual	Reagent
28	CCV	16:07	Alkalinity	186	200	93	90-110		Alk daily lcs 00696
29	CCB	16:14	Alkalinity	2.36				J	
42	CCV	17:52	Alkalinity	187	200	94	90-110		Alk daily lcs 00696
43	CCB	18:00	Alkalinity	2.21				J	

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.: 280-104552-1

SDG No.:

Analyst: A1D Batch Start Date: 12/21/2017

Reporting Units: mg/L Analytical Batch No.: 399626

Sample Number	QC Type	Time	Analyte	Result	Spike Amount	(%) Recovery	Limits	Qual	Reagent
16	CCV	10:58	Alkalinity	962	1000	96	90-110		Alk high lcs_00217
17	CCB	11:02	Alkalinity	2.44				J	

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.: 280-104552-1

SDG No.:

Method	Lab Sample ID	Analyte	Result	Qual	Units	LOQ	Dil
Batch ID: 399664	Date: 12/21/2017 19:09	Prep Batch: 399648	Date: 12/21/2017 15:46				
9012B	MB 280-399648/4-A	Cyanide, Total	3.48	J	ug/L	10	1
Batch ID: 398581	Date: 12/13/2017 10:55	Prep Batch: 398549	Date: 12/13/2017 08:08				
9034	MB 280-398549/1-A	Sulfide	1900	U	ug/L	4000	1
Batch ID: 400339	Date: 12/29/2017 13:32						
9056A	MB 280-400339/6	Chloride	389	J	ug/L	3000	1
9056A	MB 280-400339/6	Sulfate	321	J	ug/L	5000	1
Batch ID: 400438	Date: 12/30/2017 07:46						
9056A	MB 280-400438/6	Chloride	500	U	ug/L	3000	1
9056A	MB 280-400438/6	Sulfate	500	U	ug/L	5000	1
Batch ID: 399189	Date: 12/18/2017 16:29						
SM 2320B	MB 280-399189/31	Alkalinity	2.34	J	mg/L	5.0	1
Batch ID: 399626	Date: 12/21/2017 10:07						
SM 2320B	MB 280-399626/5	Alkalinity	2.74	J	mg/L	5.0	1

FORM III-IN

5-IN
MATRIX SPIKE SAMPLE RECOVERY
GENERAL CHEMISTRY

Lab Name: TestAmerica Denver Job No.: 280-104552-1

SDG No.:

Matrix: Water

Method	Lab Sample ID	Analyte	Result	C	Unit	Spike Amount	Pct. Rec.	Limits	RPD	RPD Limit	Q
Batch ID: 399664	Date: 12/21/2017 19:12		Prep Batch: 399648		Date: 12/21/2017 15:46						
9012B	280-104552-5	Cyanide, Total	4.5	J	ug/L						
9012B	280-104552-5 MS	Cyanide, Total	107		ug/L	100	102	83-116			
Batch ID: 398581	Date: 12/13/2017 10:55		Prep Batch: 398549		Date: 12/13/2017 08:08						
9034	280-104552-10	Sulfide	1900	U	ug/L						
9034	280-104552-10 MS	Sulfide	14000		ug/L	21500	65	50-106			
Batch ID: 400339	Date: 12/30/2017 03:37										
9056A	280-104552-8	Chloride	1100	J	ug/L						J1
9056A	280-104552-8 MS	Chloride	22100		ug/L	25000	84	87-111			J1
9056A	280-104552-8	Sulfate	86000		ug/L						
9056A	280-104552-8 MS	Sulfate	111000		ug/L	25000	104	87-112			
Batch ID: 400339	Date: 12/30/2017 05:52										
9056A	280-104552-10	Chloride	4600		ug/L						J1
9056A	280-104552-10 MS	Chloride	25500		ug/L	25000	83	87-111			J1
9056A	280-104552-10	Sulfate	170000		ug/L						J1
9056A	280-104552-10 MS	Sulfate	204000		ug/L	25000	147	87-112			J1 4

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

FORM V-IN

5-IN
MATRIX SPIKE DUPLICATE SAMPLE RECOVERY
GENERAL CHEMISTRY

Lab Name: TestAmerica Denver Job No.: 280-104552-1

SDG No.:

Matrix: Water

Method	Lab Sample ID	Analyte	Result	C	Unit	Spike Amount	Pct. Rec.	Limits	RPD	RPD Limit	Q
Batch ID: 399664 Date: 12/21/2017 19:13			Prep Batch: 399648		Date: 12/21/2017 15:46						
9012B	280-104552-5 MSD	Cyanide, Total	103		ug/L	100	98	83-116	4	20	
Batch ID: 398581 Date: 12/13/2017 10:55			Prep Batch: 398549		Date: 12/13/2017 08:08						
9034	280-104552-10 MSD	Sulfide	14400		ug/L	21500	67	50-106	3	20	
Batch ID: 400339 Date: 12/30/2017 04:00											
9056A	280-104552-8 MSD	Chloride	22500		ug/L	25000	86	87-111	2	10	J1
9056A	280-104552-8 MSD	Sulfate	112000		ug/L	25000	104	87-112	0	10	
Batch ID: 400339 Date: 12/30/2017 06:14											
9056A	280-104552-10 MSD	Chloride	26000		ug/L	25000	86	87-111	2	10	J1
9056A	280-104552-10 MSD	Sulfate	203000		ug/L	25000	145	87-112	0	10	J1 4

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

FORM V-IN

6-IN
DUPLICATE
GENERAL CHEMISTRY

Lab Name: TestAmerica Denver Job No.: 280-104552-1

SDG No.:

Matrix: Water

Method	Client Sample ID	Lab Sample ID	Analyte	Result	Unit	RPD	RPD Limit	Qual
Batch ID: 400339 Date: 12/30/2017 03:15								
9056A	RQLmw-012-120717-GW	280-104552-8	Chloride	1100	ug/L			J
9056A	RQLmw-012-120717-GW	280-104552-8 DU	Chloride	1170	ug/L	7	10	J
9056A	RQLmw-012-120717-GW	280-104552-8	Sulfate	86000	ug/L			
9056A	RQLmw-012-120717-GW	280-104552-8 DU	Sulfate	84100	ug/L	2	10	
Batch ID: 400339 Date: 12/30/2017 05:29								
9056A	RQLmw-013-120717-GW	280-104552-10	Chloride	4600	ug/L			
9056A	RQLmw-013-120717-GW	280-104552-10 DU	Chloride	4720	ug/L	2	10	
9056A	RQLmw-013-120717-GW	280-104552-10	Sulfate	170000	ug/L			
9056A	RQLmw-013-120717-GW	280-104552-10 DU	Sulfate	169000	ug/L	1	10	
Batch ID: 400438 Date: 12/30/2017 09:39								
9056A	RQLmw-013-120717-GW	280-104552-10	Chloride	4700	ug/L			J
9056A	RQLmw-013-120717-GW	280-104552-10 DU	Chloride	4650	ug/L	1	10	J D
9056A	RQLmw-013-120717-GW	280-104552-10	Sulfate	170000	ug/L			
9056A	RQLmw-013-120717-GW	280-104552-10 DU	Sulfate	171000	ug/L	1	10	D

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

FORM VI-IN

7A-IN
LAB CONTROL SAMPLE
GENERAL CHEMISTRY

Lab Name: TestAmerica Denver Job No.: 280-104552-1

SDG No.:

Matrix: Water

Method	Lab Sample ID	Analyte	Result	C	Unit	Spike Amount	Pct. Rec.	Limits	RPD	RPD Limit	Q
Batch ID: 399664	Date: 12/21/2017 19:07		Prep Batch: 399648			Date: 12/21/2017 15:46					
						LCS Source: CN ICV Int_00463					
9012B	LCS 280-399648/3-A	Cyanide, Total	103		ug/L	100	103	83-116			
Batch ID: 398581	Date: 12/13/2017 10:55		Prep Batch: 398549			Date: 12/13/2017 08:08					
						LCS Source: SFD CAL INT_01422					
9034	LCS 280-398549/2-A	Sulfide	16000		ug/L	21500	74	50-106			
Batch ID: 400339	Date: 12/29/2017 12:47										
						LCS Source: IC LCS_01108					
9056A	LCS 280-400339/4	Chloride	92700		ug/L	100000	93	87-111	0	10	
9056A	LCS 280-400339/4	Sulfate	93300		ug/L	100000	93	87-112	0	10	
Batch ID: 400438	Date: 12/30/2017 07:10										
						LCS Source: IC LCS_01109					
9056A	LCS 280-400438/4	Chloride	98700		ug/L	100000	99	87-111	0	10	
9056A	LCS 280-400438/4	Sulfate	98800		ug/L	100000	99	87-112	0	10	
Batch ID: 399189	Date: 12/18/2017 16:22										
						LCS Source: Alk daily lcs_00696					
SM 2320B	LCS 280-399189/30	Alkalinity	188		mg/L	200	94	90-110			
Batch ID: 399626	Date: 12/21/2017 10:03										
						LCS Source: Alk high lcs_00217					
SM 2320B	LCS 280-399626/4	Alkalinity	958		mg/L	1000	96	90-110			B

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.: 280-104552-1

SDG No.:

Matrix: Water

Method	Lab Sample ID	Analyte	Result	C	Unit	Spike Amount	Pct. Rec.	Limits	RPD	RPD Limit	Q
Batch ID: 400339	Date: 12/29/2017 13:10										
						LCSD Source: IC LCS_01108					
9056A	LCSD 280-400339/5	Chloride	92600		ug/L	100000	93	87-111	0	10	
9056A	LCSD 280-400339/5	Sulfate	93300		ug/L	100000	93	87-112	0	10	
Batch ID: 400438	Date: 12/30/2017 07:28										
						LCSD Source: IC LCS_01109					
9056A	LCSD 280-400438/5	Chloride	98600		ug/L	100000	99	87-111	0	10	
9056A	LCSD 280-400438/5	Sulfate	98800		ug/L	100000	99	87-112	0	10	

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.: 280-104552-1

SDG No.:

Matrix: Water

Method	Lab Sample ID	Analyte	Result	C	Unit	Spike Amount	Pct. Rec.	Limits	RPD	RPD Limit	Q
Batch ID: 399664	Date: 12/21/2017 19:06		Prep Batch: 399648			Date: 12/21/2017 15:46					
						LCS Source: CN 10ppm_00280					
9012B	LLCS 280-399648/2-A	Cyanide, Total	101		ug/L	100	101	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.: 280-104552-1

SDG No.:

Matrix: Water

Method	Lab Sample ID	Analyte	Result	C	Unit	Spike Amount	Pct. Rec.	Limits	RPD	RPD Limit	Q
Batch ID: 399664	Date: 12/21/2017 19:04		Prep Batch: 399648			Date: 12/21/2017 15:46					
						LCS Source: CN 10ppm_00280					
9012B	HLCS 280-399648/1-A	Cyanide, Total	367		ug/L	350	105	90-110			

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

FORM VIIA-IN

7A-IN
METHOD REPORTING LIMIT CHECK
GENERAL CHEMISTRY

Lab Name: TestAmerica Denver Job No.: 280-104552-1

SDG No.:

Matrix: Water

Method	Lab Sample ID	Analyte	Result	C	Unit	Spike Amount	Pct. Rec.	Limits	RPD	RPD Limit	Q
Batch ID: 400339	Date: 12/29/2017 12:25										
						LCS Source: IC CAL cl/so4_00179					
9056A	MRL 280-400339/3	Chloride	1.99	J	mg/L	2.50	80	50-150			
9056A	MRL 280-400339/3	Sulfate	2.26	J	mg/L	2.50	90	50-150			
Batch ID: 400438	Date: 12/30/2017 06:52										
						LCS Source: IC CAL cl/so4_00180					
9056A	MRL 280-400438/3	Chloride	2.21	J	mg/L	2.50	89	50-150			
9056A	MRL 280-400438/3	Sulfate	2.21	J	mg/L	2.50	88	50-150			

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: 280-104552-1

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: 280-104552-1

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: 280-104552-1

SDG Number:

Matrix: Water Instrument ID: NOEQUIP

Method: 9034 DL Date: 03/28/2011 13:37

Prep Method: 9030B

Analyte	Wavelength/ Mass	LOQ (mg/L)	DL (mg/L)
Sulfide		4	0.793

9-IN
CALIBRATION BLANK DETECTION LIMITS
GENERAL CHEMISTRY

Lab Name: TestAmerica Denver Job Number: 280-104552-1

SDG Number:

Matrix: Water Instrument ID: NOEQUIP

Method: 9034 XMDL Date: 03/28/2011 13:37

Analyte	Wavelength/ Mass	XRL (mg/L)	XMDL (mg/L)
Sulfide		4	0.793

9-IN
DETECTION LIMITS
GENERAL CHEMISTRY

Lab Name: TestAmerica Denver Job Number: 280-104552-1

SDG Number:

Matrix: Water Instrument ID: WC_IonChrom11

Method: 9056A DL Date: 02/16/2014 00:00

Analyte	Wavelength/ Mass	LOQ (mg/L)	DL (mg/L)
Chloride		3	0.254
Sulfate		5	0.232

9-IN
CALIBRATION BLANK DETECTION LIMITS
GENERAL CHEMISTRY

Lab Name: TestAmerica Denver Job Number: 280-104552-1

SDG Number:

Matrix: Water Instrument ID: WC_IonChrom11

Method: 9056A XMDL Date: 02/16/2014 00:00

Analyte	Wavelength/ Mass	XRL (mg/L)	XMDL (mg/L)
Chloride		3	0.254
Sulfate		5	0.232

9-IN
DETECTION LIMITS
GENERAL CHEMISTRY

Lab Name: TestAmerica Denver Job Number: 280-104552-1

SDG Number:

Matrix: Water Instrument ID: WC_IonChrom7

Method: 9056A DL Date: 02/16/2014 00:00

Analyte	Wavelength/ Mass	LOQ (mg/L)	DL (mg/L)
Chloride		3	0.254
Sulfate		5	0.232

9-IN
CALIBRATION BLANK DETECTION LIMITS
GENERAL CHEMISTRY

Lab Name: TestAmerica Denver Job Number: 280-104552-1

SDG Number:

Matrix: Water Instrument ID: WC_IonChrom7

Method: 9056A XMDL Date: 02/16/2014 00:00

Analyte	Wavelength/ Mass	XRL (mg/L)	XMDL (mg/L)
Chloride		3	0.254
Sulfate		5	0.232

9-IN
DETECTION LIMITS
GENERAL CHEMISTRY

Lab Name: TestAmerica Denver Job Number: 280-104552-1

SDG Number:

Matrix: Water Instrument ID: WC_AT2

Method: SM 2320B DL Date: 03/28/2011 12:06

Analyte	Wavelength/ Mass	LOQ (mg/L)	DL (mg/L)
Alkalinity		5	1.07

9-IN
CALIBRATION BLANK DETECTION LIMITS
GENERAL CHEMISTRY

Lab Name: TestAmerica Denver Job Number: 280-104552-1

SDG Number:

Matrix: Water Instrument ID: WC_AT2

Method: SM 2320B XMDL Date: 03/28/2011 12:06

Analyte	Wavelength/ Mass	XRL (mg/L)	XMDL (mg/L)
Alkalinity		5	1.07

9-IN
DETECTION LIMITS
GENERAL CHEMISTRY

Lab Name: TestAmerica Denver Job Number: 280-104552-1

SDG Number:

Matrix: Water Instrument ID: WC-AT3

Method: SM 2320B DL Date: 03/28/2011 12:06

Analyte	Wavelength/ Mass	LOQ (mg/L)	DL (mg/L)
Alkalinity		5	1.07

9-IN
CALIBRATION BLANK DETECTION LIMITS
GENERAL CHEMISTRY

Lab Name: TestAmerica Denver Job Number: 280-104552-1

SDG Number:

Matrix: Water Instrument ID: WC-AT3

Method: SM 2320B XMDL Date: 03/28/2011 12:06

Analyte	Wavelength/ Mass	XRL (mg/L)	XMDL (mg/L)
Alkalinity		5	1.07

12-IN
PREPARATION LOG
GENERAL CHEMISTRY

Lab Name: TestAmerica Denver Job No.: 280-104552-1

SDG No.:

Prep Method: 9012B

Lab Sample ID	Preparation Date	Prep Batch	Initial Weight	Initial Volume (mL)	Final Volume (mL)
HLCS 280-399648/1-A	12/21/2017 15:46	399648		50	50
LLCS 280-399648/2-A	12/21/2017 15:46	399648		50	50
LCS 280-399648/3-A	12/21/2017 15:46	399648		50	50
MB 280-399648/4-A	12/21/2017 15:46	399648		50	50
280-104552-5	12/21/2017 15:46	399648		50	50
280-104552-5 MS	12/21/2017 15:46	399648		50	50
280-104552-5 MSD	12/21/2017 15:46	399648		50	50
280-104552-1	12/21/2017 15:46	399648		50	50
280-104552-3	12/21/2017 15:46	399648		50	50
280-104552-4	12/21/2017 15:46	399648		50	50
280-104552-7	12/21/2017 15:46	399648		50	50
280-104552-8	12/21/2017 15:46	399648		50	50

12-IN
PREPARATION LOG
GENERAL CHEMISTRY

Lab Name: TestAmerica Denver Job No.: 280-104552-1

SDG No.:

Prep Method: 9030B

Lab Sample ID	Preparation Date	Prep Batch	Initial Weight	Initial Volume (mL)	Final Volume (mL)
MB 280-398549/1-A	12/13/2017 08:08	398549		50	50
LCS 280-398549/2-A	12/13/2017 08:08	398549		50	50
280-104552-6	12/13/2017 08:08	398549		50	50
280-104552-8	12/13/2017 08:08	398549		50	50
280-104552-9	12/13/2017 08:08	398549		50	50
280-104552-10	12/13/2017 08:08	398549		50	50
280-104552-10 MS	12/13/2017 08:08	398549		50	50
280-104552-10 MSD	12/13/2017 08:08	398549		50	50

13-IN
ANALYSIS RUN LOG
GENERAL CHEMISTRY

Lab Name: TestAmerica Denver Job No.: 280-104552-1

SDG No.:

Instrument ID: WC_Alp 1 Analysis Method: 9012B

Start Date: 12/21/2017 17:10 End Date: 12/21/2017 20:08

Lab Sample Id	D/F	Type	Time	Analytes
				CN
ZZZZZZ			17:10	
ZZZZZZ			17:12	
ZZZZZZ			17:13	
ZZZZZZ			17:15	
IC 280-399664/5			17:16	X
IC 280-399664/6			17:18	X
IC 280-399664/7			17:19	X
IC 280-399664/8			17:21	X
IC 280-399664/9			17:22	X
IC 280-399664/10			17:24	X
IC 280-399664/11			17:25	X
ZZZZZZ			17:27	
ZZZZZZ			17:28	
ICV 280-399664/14	1		17:30	X
ICB 280-399664/15	1		17:31	X
ZZZZZZ			17:33	
ZZZZZZ			17:34	
ZZZZZZ			17:36	
ZZZZZZ			17:37	
ZZZZZZ			17:39	
ZZZZZZ			17:40	
ZZZZZZ			17:42	
ZZZZZZ			17:43	
ZZZZZZ			17:45	
ZZZZZZ			17:46	
ZZZZZZ			17:48	
ZZZZZZ			17:49	
ZZZZZZ			17:51	
CCV 280-399664/29			17:52	
CCB 280-399664/30			17:54	
ZZZZZZ			17:55	
ZZZZZZ			17:57	
ZZZZZZ			17:58	
ZZZZZZ			18:00	
ZZZZZZ			18:01	
ZZZZZZ			18:03	
ZZZZZZ			18:04	
ZZZZZZ			18:06	
ZZZZZZ			18:07	
ZZZZZZ			18:09	
ZZZZZZ			18:10	
ZZZZZZ			18:12	

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
GENERAL CHEMISTRY

Lab Name: TestAmerica Denver Job No.: 280-104552-1

SDG No.:

Instrument ID: WC_Alp 1 Analysis Method: 9012B

Start Date: 12/21/2017 17:10 End Date: 12/21/2017 20:08

Lab Sample Id	D/F	Type	Time	Analytes
				CN
ZZZZZZ			18:13	
CCV 280-399664/44			18:15	
CCB 280-399664/45			18:16	
ZZZZZZ			18:18	
ZZZZZZ			18:19	
ZZZZZZ			18:21	
ZZZZZZ			18:22	
ZZZZZZ			18:24	
ZZZZZZ			18:25	
ZZZZZZ			18:27	
ZZZZZZ			18:28	
ZZZZZZ			18:30	
ZZZZZZ			18:31	
ZZZZZZ			18:33	
ZZZZZZ			18:34	
ZZZZZZ			18:36	
CCV 280-399664/59			18:37	
CCB 280-399664/60			18:39	
ZZZZZZ			18:40	
ZZZZZZ			18:42	
ZZZZZZ			18:43	
ZZZZZZ			18:45	
ZZZZZZ			18:46	
ZZZZZZ			18:48	
ZZZZZZ			18:49	
ZZZZZZ			18:51	
ZZZZZZ			18:52	
ZZZZZZ			18:54	
ZZZZZZ			18:55	
ZZZZZZ			18:57	
ZZZZZZ			18:58	
CCV 280-399664/74	1		19:00	X
CCB 280-399664/75	1		19:01	X
ZZZZZZ			19:03	
HLCS 280-399648/1-A	1	T	19:04	X
LLCS 280-399648/2-A	1	T	19:06	X
LCS 280-399648/3-A	1	T	19:07	X
MB 280-399648/4-A	1	T	19:09	X
280-104552-5	1	T	19:10	X
280-104552-5 MS	1	T	19:12	X
280-104552-5 MSD	1	T	19:13	X
280-104552-1	1	T	19:20	X

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
GENERAL CHEMISTRY

Lab Name: TestAmerica Denver Job No.: 280-104552-1

SDG No.:

Instrument ID: WC_Alp 1 Analysis Method: 9012B

Start Date: 12/21/2017 17:10 End Date: 12/21/2017 20:08

Lab Sample Id	D/F	Type	Time	Analytes																								
				CN																								
280-104552-3	1	T	19:22	X																								
280-104552-4	1	T	19:23	X																								
ZZZZZZ			19:25																									
ZZZZZZ			19:26																									
CCV 280-399664/89	1		19:28	X																								
CCB 280-399664/90	1		19:29	X																								
ZZZZZZ			19:31																									
280-104552-7	1	T	19:32	X																								
280-104552-8	1	T	19:34	X																								
ZZZZZZ			19:35																									
ZZZZZZ			19:37																									
ZZZZZZ			19:38																									
ZZZZZZ			19:40																									
ZZZZZZ			19:41																									
ZZZZZZ			19:43																									
ZZZZZZ			19:44																									
ZZZZZZ			19:46																									
ZZZZZZ			19:47																									
ZZZZZZ			19:49																									
CCV 280-399664/104	1		19:50	X																								
CCB 280-399664/105	1		19:52	X																								
ZZZZZZ			19:53																									
ZZZZZZ			19:55																									
ZZZZZZ			19:56																									
ZZZZZZ			19:58																									
ZZZZZZ			19:59																									
ZZZZZZ			20:01																									
ZZZZZZ			20:02																									
ZZZZZZ			20:04																									
CCV 280-399664/114			20:05																									
CCB 280-399664/115			20:07																									
ZZZZZZ			20:08																									

Prep Types:
T = Total/NA

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
GENERAL CHEMISTRY

Lab Name: TestAmerica Denver Job No.: 280-104552-1

SDG No.:

Instrument ID: NOEQUIP Analysis Method: 9034

Start Date: 12/13/2017 10:55 End Date: 12/13/2017 10:55

Lab Sample Id	D/F	Type	Time	Analytes S2
MB 280-398549/1-A	1	T	10:55	X
LCS 280-398549/2-A	1	T	10:55	X
ZZZZZZ			10:55	
ZZZZZZ			10:55	
ZZZZZZ			10:55	
ZZZZZZ			10:55	
ZZZZZZ			10:55	
ZZZZZZ			10:55	
ZZZZZZ			10:55	
ZZZZZZ			10:55	
ZZZZZZ			10:55	
280-104552-6	1	T	10:55	X
280-104552-8	1	T	10:55	X
280-104552-9	1	T	10:55	X
280-104552-10	1	T	10:55	X
280-104552-10 MS	1	T	10:55	X
280-104552-10 MSD	1	T	10:55	X
ZZZZZZ			10:55	
ZZZZZZ			10:55	
ZZZZZZ			10:55	

Prep Types:
T = Total/NA

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
GENERAL CHEMISTRY

Lab Name: TestAmerica Denver Job No.: 280-104552-1

SDG No.:

Instrument ID: WC_IonChrom11 Analysis Method: 9056A

Start Date: 12/29/2017 11:41 End Date: 12/30/2017 06:59

Lab Sample Id	D/F	Type	Time	Analytes																									
				CL-	SO4																								
CCV 280-400339/1	1		11:41	X	X																								
CCB 280-400339/2	1		12:03	X	X																								
MRL 280-400339/3	1	T	12:25	X	X																								
LCS 280-400339/4	1	T	12:47	X	X																								
LCSD 280-400339/5	1	T	13:10	X	X																								
MB 280-400339/6	1	T	13:32	X	X																								
ZZZZZZ			18:17																										
ZZZZZZ			18:39																										
ZZZZZZ			19:02																										
ZZZZZZ			19:24																										
ZZZZZZ			19:47																										
ZZZZZZ			20:09																										
ZZZZZZ			20:31																										
ZZZZZZ			20:54																										
ZZZZZZ			21:16																										
ZZZZZZ			21:39																										
CCV 280-400339/17	1		22:01	X	X																								
CCB 280-400339/18	1		22:23	X	X																								
ZZZZZZ			22:46																										
ZZZZZZ			23:08																										
ZZZZZZ			23:31																										
ZZZZZZ			23:53																										
ZZZZZZ			00:16																										
ZZZZZZ			00:38																										
ZZZZZZ			01:00																										
ZZZZZZ			01:23																										
280-104552-6	1	T	01:45	X	X																								
280-104552-8	1	T	02:08	X	X																								
CCV 280-400339/29	1		02:30	X	X																								
CCB 280-400339/30	1		02:52	X	X																								
280-104552-8 DU	1	T	03:15	X	X																								
280-104552-8 MS	1	T	03:37	X	X																								
280-104552-8 MSD	1	T	04:00	X	X																								
ZZZZZZ			04:22																										
ZZZZZZ			04:45																										
280-104552-10	1	T	05:07	X																									
280-104552-10 DU	1	T	05:29	X	X																								
280-104552-10 MS	1	T	05:52	X	X																								
280-104552-10 MSD	1	T	06:14	X	X																								
CCV 280-400339/40	1		06:37	X	X																								
CCB 280-400339/41	1		06:59	X	X																								

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
GENERAL CHEMISTRY

Lab Name: TestAmerica Denver Job No.: 280-104552-1

SDG No.:

Instrument ID: WC_IonChrom11 Analysis Method: 9056A

Start Date: 12/29/2017 11:41 End Date: 12/30/2017 06:59

Lab Sample Id	D/F	Type	Time	Analytes																								
				CL-	SO4																							

Prep Types:
T = Total/NA

13-IN
ANALYSIS RUN LOG
GENERAL CHEMISTRY

Lab Name: TestAmerica Denver Job No.: 280-104552-1

SDG No.:

Instrument ID: WC_IonChrom7 Analysis Method: 9056A

Start Date: 12/30/2017 06:17 End Date: 12/30/2017 13:33

Lab Sample Id	D/F	Type	Time	Analytes																									
				CL-	SO4																								
CCV 280-400438/1	1		06:17	X	X																								
CCB 280-400438/2	1		06:34	X	X																								
MRL 280-400438/3	1	T	06:52	X	X																								
LCS 280-400438/4	1	T	07:10	X	X																								
LCSD 280-400438/5	1	T	07:28	X	X																								
MB 280-400438/6	1	T	07:46	X	X																								
280-104552-9	1	T	09:03	X	X																								
280-104552-10	2	T	09:21		X																								
280-104552-10 DU	2	T	09:39	X	X																								
ZZZZZZ			09:57																										
ZZZZZZ			10:14																										
ZZZZZZ			10:32																										
ZZZZZZ			10:53																										
ZZZZZZ			11:10																										
ZZZZZZ			11:28																										
ZZZZZZ			11:46																										
CCV 280-400438/17	1		12:04	X	X																								
CCB 280-400438/18	1		12:22	X	X																								
ZZZZZZ			12:39																										
ZZZZZZ			12:57																										
CCV 280-400438/21			13:15																										
CCB 280-400438/22			13:33																										

Prep Types:
T = Total/NA

13-IN
ANALYSIS RUN LOG
GENERAL CHEMISTRY

Lab Name: TestAmerica Denver Job No.: 280-104552-1

SDG No.:

Instrument ID: WC_AT2 Analysis Method: SM 2320B

Start Date: 12/18/2017 12:34 End Date: 12/18/2017 18:33

Lab Sample Id	D/F	Type	Time	Analytes																								
				Alk																								
RINSE 280-399189/1			12:34																									
ZZZZZZ			12:46																									
ZZZZZZ			12:54																									
ZZZZZZ			13:01																									
ZZZZZZ			13:09																									
ZZZZZZ			13:15																									
ZZZZZZ			13:22																									
ZZZZZZ			13:29																									
ZZZZZZ			13:35																									
ZZZZZZ			13:42																									
ZZZZZZ			13:48																									
ZZZZZZ			13:55																									
ZZZZZZ			14:02																									
ZZZZZZ			14:09																									
ZZZZZZ			14:18																									
CCV1 280-399189/16			14:26																									
CCB1 280-399189/17			14:33																									
ZZZZZZ			14:42																									
ZZZZZZ			14:56																									
ZZZZZZ			15:02																									
ZZZZZZ			15:11																									
ZZZZZZ			15:18																									
ZZZZZZ			15:26																									
ZZZZZZ			15:32																									
ZZZZZZ			15:45																									
ZZZZZZ			15:53																									
ZZZZZZ			15:59																									
CCV 280-399189/28	1		16:07	X																								
CCB 280-399189/29	1		16:14	X																								
LCS 280-399189/30	1	T	16:22	X																								
MB 280-399189/31	1	T	16:29	X																								
ZZZZZZ			16:36																									
ZZZZZZ			16:43																									
ZZZZZZ			16:49																									
280-104552-10	1	T	16:53	X																								
ZZZZZZ			17:07																									
280-104552-8	1	T	17:12	X																								
280-104552-6	1	T	17:19	X																								
ZZZZZZ			17:28																									
ZZZZZZ			17:37																									
ZZZZZZ			17:45																									

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
GENERAL CHEMISTRY

Lab Name: TestAmerica Denver Job No.: 280-104552-1

SDG No.:

Instrument ID: WC_AT2 Analysis Method: SM 2320B

Start Date: 12/18/2017 12:34 End Date: 12/18/2017 18:33

Lab Sample Id	D/F	Type	Time	Analytes																								
				Alk																								
CCV 280-399189/42	1		17:52	X																								
CCB 280-399189/43	1		18:00	X																								
ZZZZZZ			18:07																									
ZZZZZZ			18:16																									
ZZZZZZ			18:25																									
ZZZZZZ			18:33																									

Prep Types:
T = Total/NA

13-IN
ANALYSIS RUN LOG
GENERAL CHEMISTRY

Lab Name: TestAmerica Denver Job No.: 280-104552-1

SDG No.:

Instrument ID: WC-AT3 Analysis Method: SM 2320B

Start Date: 12/21/2017 09:50 End Date: 12/21/2017 13:13

Lab Sample Id	D/F	Type	Time	Analytes
				Alk
RINSE 280-399626/1			09:50	
ZZZZZZ			09:53	
ZZZZZZ			09:58	
LCS 280-399626/4	1	T	10:03	X
MB 280-399626/5	1	T	10:07	X
ZZZZZZ			10:12	
ZZZZZZ			10:16	
280-104552-9	1	T	10:20	X
ZZZZZZ			10:25	
ZZZZZZ			10:29	
ZZZZZZ			10:35	
ZZZZZZ			10:39	
ZZZZZZ			10:44	
ZZZZZZ			10:48	
ZZZZZZ			10:53	
CCV 280-399626/16	1		10:58	X
CCB 280-399626/17	1		11:02	X
ZZZZZZ			11:09	
ZZZZZZ			11:17	
ZZZZZZ			11:25	
ZZZZZZ			11:31	
ZZZZZZ			11:36	
ZZZZZZ			11:43	
ZZZZZZ			11:51	
ZZZZZZ			11:57	
ZZZZZZ			12:02	
ZZZZZZ			12:06	
CCV 280-399626/28			12:11	
CCB 280-399626/29			12:15	
ZZZZZZ			12:20	
ZZZZZZ			12:23	
ZZZZZZ			12:28	
ZZZZZZ			12:33	
ZZZZZZ			12:38	
ZZZZZZ			12:42	
ZZZZZZ			12:47	
ZZZZZZ			12:51	
ZZZZZZ			12:56	
ZZZZZZ			13:00	
ZZZZZZ			13:04	
CCV 280-399626/41			13:10	

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
GENERAL CHEMISTRY

Lab Name: TestAmerica Denver Job No.: 280-104552-1

SDG No.:

Instrument ID: WC-AT3 Analysis Method: SM 2320B

Start Date: 12/21/2017 09:50 End Date: 12/21/2017 13:13

Lab Sample Id	D/F	Type	Time	Analytes																								
				Alk																								
CCB 280-399626/42			13:13																									

Prep Types:
T = Total/NA

GENERAL CHEMISTRY BATCH WORKSHEET

Lab Name: TestAmerica Denver Job No.: 280-104552-1

SDG No.:

Batch Number: 399648 Batch Start Date: 12/21/17 16:40 Batch Analyst: Schroder, Aaron L

Batch Method: 9012B Batch End Date: 12/21/17 18:10

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	DistillpHCheck	SulfideCheck	ChlorineCheck	DigestBlockPos
HLCS 280-399648/1		9012B, 9012B		50 mL	50 mL				1
LLCS 280-399648/2		9012B, 9012B		50 mL	50 mL				2
LCS 280-399648/3		9012B, 9012B		50 mL	50 mL				3
MB 280-399648/4		9012B, 9012B		50 mL	50 mL				4
280-104552-AL-5	RQLmw-007-120717-GW	9012B, 9012B	T	50 mL	50 mL	>12	N	N	5
280-104552-AL-5 MS	RQLmw-007-120717-GW	9012B, 9012B	T	50 mL	50 mL	>12	N	N	6
280-104552-AL-5 MSD	RQLmw-007-120717-GW	9012B, 9012B	T	50 mL	50 mL	>12	N	N	7
280-104552-M-1	RQLmw-007-D-120717-GW	9012B, 9012B	T	50 mL	50 mL	>12	N	N	8
280-104552-L-3	RQLmw-008-120717-GW	9012B, 9012B	T	50 mL	50 mL	>12	N	N	9
280-104552-L-4	RQLmw-009-120717-GW	9012B, 9012B	T	50 mL	50 mL	>12	N	N	10
280-104552-A-7	RQLmw-016-120717-GW	9012B, 9012B	T	50 mL	50 mL	>12	N	N	11
280-104552-B-8	RQLmw-012-120717-GW	9012B, 9012B	T	50 mL	50 mL	>12	N	N	12

Lab Sample ID	Client Sample ID	Method Chain	Basis	CN 10ppm 00280	CN ICV Int 00463				
HLCS 280-399648/1		9012B, 9012B		1.75 mL					
LLCS 280-399648/2		9012B, 9012B		0.5 mL					
LCS 280-399648/3		9012B, 9012B			0.5 mL				
MB 280-399648/4		9012B, 9012B							
280-104552-AL-5	RQLmw-007-120717-GW	9012B, 9012B	T						
280-104552-AL-5 MS	RQLmw-007-120717-GW	9012B, 9012B	T		0.5 mL				
280-104552-AL-5 MSD	RQLmw-007-120717-GW	9012B, 9012B	T		0.5 mL				
280-104552-M-1	RQLmw-007-D-120717-GW	9012B, 9012B	T						

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.: 280-104552-1

SDG No.:

Batch Number: 399648 Batch Start Date: 12/21/17 16:40 Batch Analyst: Schroder, Aaron L

Batch Method: 9012B Batch End Date: 12/21/17 18:10

Lab Sample ID	Client Sample ID	Method Chain	Basis	CN 10ppm 00280	CN ICV Int 00463				
280-104552-L-3	RQLmw-008-120717-GW	9012B, 9012B	T						
280-104552-L-4	RQLmw-009-120717-GW	9012B, 9012B	T						
280-104552-A-7	RQLmw-016-120717-GW	9012B, 9012B	T						
280-104552-B-8	RQLmw-012-120717-GW	9012B, 9012B	T						

Batch Notes	
Balance ID	M1970
Magnesium Chloride Reagent ID Number	CN Mag Chl_00075
Sodium Hydroxide ID	2% NaOH_00311
Pipette ID	T1000, 5000XX
Sulfamic Acid ID	CN Sulfamic_00085
Sulfuric Acid Reagent ID Number	H2SO4_00178

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.: 280-104552-1

SDG No.:

Batch Number: 399664 Batch Start Date: 12/21/17 17:10 Batch Analyst: Schroder, Aaron L

Batch Method: 9012B Batch End Date:

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	CN CAL 1 ppm 01333	CN ICV Daily 01100		
ICV 280-399664/14		9012B		50 mL	50 mL		50 mL		
ICB 280-399664/15		9012B		50 mL	50 mL				
CCV 280-399664/74		9012B		50 mL	50 mL	10 mL			
CCB 280-399664/75		9012B		50 mL	50 mL				
HLCS 280-399648/1-A		9012B		50 mL	50 mL				
LLCS 280-399648/2-A		9012B		50 mL	50 mL				
LCS 280-399648/3-A		9012B		50 mL	50 mL				
MB 280-399648/4-A		9012B		50 mL	50 mL				
280-104552-AL-5-A	RQLmw-007-120717-GW	9012B	T	50 mL	50 mL				
280-104552-AL-5-B MS	RQLmw-007-120717-GW	9012B	T	50 mL	50 mL				
280-104552-AL-5-C MSD	RQLmw-007-120717-GW	9012B	T	50 mL	50 mL				
280-104552-M-1-B	RQLmw-007-D-120717-GW	9012B	T	50 mL	50 mL				
280-104552-L-3-B	RQLmw-008-120717-GW	9012B	T	50 mL	50 mL				
280-104552-L-4-B	RQLmw-009-120717-GW	9012B	T	50 mL	50 mL				
CCV 280-399664/89		9012B		50 mL	50 mL	10 mL			
CCB 280-399664/90		9012B		50 mL	50 mL				
280-104552-A-7-B	RQLmw-016-120717-GW	9012B	T	50 mL	50 mL				
280-104552-B-8-C	RQLmw-012-120717-GW	9012B	T	50 mL	50 mL				
CCV 280-399664/104		9012B		50 mL	50 mL	10 mL			
CCB 280-399664/105		9012B		50 mL	50 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.: 280-104552-1

SDG No.:

Batch Number: 399664 Batch Start Date: 12/21/17 17:10 Batch Analyst: Schroder, Aaron L

Batch Method: 9012B Batch End Date:

Batch Notes	
Buffer Reagent ID Number	CN Buffer_00104
Chloramine-T ID	CN Chlor-T_00889
NaOH Lot #	1% NaOH_00307
Pipette ID	100ALS, T1000, 5000XX
Pyridine-Barbituric Acid ID	CN Pyr/Barb_00181

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.: 280-104552-1

SDG No.:

Batch Number: 398549 Batch Start Date: 12/13/17 09:00 Batch Analyst: Hirshman, Philip A

Batch Method: 9030B Batch End Date: 12/13/17 10:30

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	DistillUnitPort	Initial pH	Final pH	SFD CAL INT 01422
MB 280-398549/1		9030B, 9034		50 mL	50 mL	1		<2 SU	
LCS 280-398549/2		9030B, 9034		50 mL	50 mL	2		<2 SU	1 mL
280-104552-E-6	RQLmw-011-120717-GW	9030B, 9034	T	50 mL	50 mL	12	>12 SU	<2 SU	
280-104552-A-8	RQLmw-012-120717-GW	9030B, 9034	T	50 mL	50 mL	13	>12 SU	<2 SU	
280-104552-C-9	RQLmw-014-120717-GW	9030B, 9034	T	50 mL	50 mL	14	>12 SU	<2 SU	
280-104552-C-10	RQLmw-013-120717-GW	9030B, 9034	T	50 mL	50 mL	15	>12 SU	<2 SU	
280-104552-C-10 MS	RQLmw-013-120717-GW	9030B, 9034	T	50 mL	50 mL	16	>12 SU	<2 SU	1 mL
280-104552-C-10 MSD	RQLmw-013-120717-GW	9030B, 9034	T	50 mL	50 mL	17	>12 SU	<2 SU	1 mL

Batch Notes	
Formaldehyde ID	form_00102
Pipette ID	BMF1000, BMF5000
Sulfuric Acid Reagent ID Number	H2SO4_00178
Zinc Acetate Buffer ID	znac_00095

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.: 280-104552-1

SDG No.:

Batch Number: 398581 Batch Start Date: 12/13/17 09:00 Batch Analyst: Hirshman, Philip A

Batch Method: 9034 Batch End Date: 12/13/17 10:30

Lab Sample ID	Client Sample ID	Method Chain	Basis	FinalAmount	IodineAmount	BuretStart1	BuretStop1	TitrantVolume1	CalcMsg
MB 280-398549/1-A		9034		50 mL	1 mL	13.20 mL	14.30 mL	1.1 mL	OK
LCS 280-398549/2-A		9034		50 mL	5 mL	14.30 mL	17.30 mL	3 mL	OK
280-104552-E-6-A	RQLmw-011-120717-GW	9034	T	50 mL	1 mL	28.50 mL	29.50 mL	1 mL	OK
280-104552-A-8-A	RQLmw-012-120717-GW	9034	T	50 mL	1 mL	29.50 mL	30.50 mL	1 mL	OK
280-104552-C-9-A	RQLmw-014-120717-GW	9034	T	50 mL	1 mL	30.50 mL	31.50 mL	1 mL	OK
280-104552-C-10-A	RQLmw-013-120717-GW	9034	T	50 mL	1 mL	31.50 mL	32.55 mL	1.05 mL	OK
280-104552-C-10-B MS	RQLmw-013-120717-GW	9034	T	50 mL	4 mL	32.55 mL	34.80 mL	2.25 mL	OK
280-104552-C-10-C MSD	RQLmw-013-120717-GW	9034	T	50 mL	4 mL	34.80 mL	37.00 mL	2.2 mL	OK

Batch Notes	
HCl Concentration	1:1
Lot # of hydrochloric acid	HCl Sol_00149
Iodine Lot Number	1707H93
Iodine Vendor	Ricca
Normality of Iodine Solution	0.0250 N
Sodium Thiosulfate Reagent ID Number	Na Thio_00122
Pipette ID	BMF1000, BMF5000
Perform Calculation (0=No, 1=Yes)	1
Starch Lot Number	1709C47
Starch Vendor	Ricca
Normality of First Titrant	0.0250 N
Zinc Acetate Buffer ID	znac_00095

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.: 280-104552-1

SDG No.:

Batch Number: 393267 Batch Start Date: 10/30/17 15:27 Batch Analyst: Phan, Thu L

Batch Method: 9056A Batch End Date:

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	IC CAL cl/so4 00171	IC Cal low 00329		
STD 280-393267/2 IC		9056A		5 mL	5 mL	0.02 mL	0.02 mL		
STD 280-393267/3 IC		9056A		5 mL	5 mL	0.05 mL	0.05 mL		
STD 280-393267/4 IC		9056A		5 mL	5 mL	0.1 mL	0.1 mL		
STD 280-393267/5 IC		9056A		5 mL	5 mL	1.2 mL	0.4 mL		
STD 280-393267/6 IC		9056A		5 mL	5 mL	2.4 mL	0.8 mL		
STD 280-393267/7 IC		9056A		5 mL	5 mL	4 mL	1 mL		

Batch Notes	
Regeneration Solution ID	170533151013

Basis	Basis Description

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.: 280-104552-1

SDG No.:

Batch Number: 398535 Batch Start Date: 12/13/17 07:35 Batch Analyst: Lehman, Jeffrey M

Batch Method: 9056A Batch End Date:

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	IC CAL cl/so4 00177	IC Cal low 00337		
STD 280-398535/2 IC		9056A		5 mL	5 mL	0.02 mL	0.02 mL		
STD 280-398535/3 IC		9056A		5 mL	5 mL	0.05 mL	0.05 mL		
STD 280-398535/4 IC		9056A		5 mL	5 mL	0.1 mL	0.1 mL		
STD 280-398535/5 IC		9056A		5 mL	5 mL	1.2 mL	0.4 mL		
STD 280-398535/6 IC		9056A		5 mL	5 mL	2.4 mL	0.8 mL		
STD 280-398535/7 IC		9056A		5 mL	5 mL	4 mL	1 mL		

Batch Notes	
Eluent 1 ID	IC Eluent_00435
Pipette/Syringe/Dispenser ID	5000ICS 1000-D 100C

Basis	Basis Description

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.: 280-104552-1

SDG No.:

Batch Number: 400339 Batch Start Date: 12/29/17 11:41 Batch Analyst: Lehman, Jeffrey M

Batch Method: 9056A Batch End Date:

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	IC CAL cl/so4 00179	IC Cal low 00339	IC LCS 01108	ICMS/MSD WEEK 00507
CCV 280-400339/1		9056A		5 mL	5 mL			5 mL	
CCB 280-400339/2		9056A		5 mL	5 mL				
MRL 280-400339/3		9056A		5 mL	5 mL	0.05 mL	0.02 mL		
LCS 280-400339/4		9056A		5 mL	5 mL			5 mL	
LCSD 280-400339/5		9056A		5 mL	5 mL			5 mL	
MB 280-400339/6		9056A		5 mL	5 mL				
CCV 280-400339/17		9056A		5 mL	5 mL			5 mL	
CCB 280-400339/18		9056A		5 mL	5 mL				
280-104552-F-6	RQLmw-011-120717-GW	9056A	T	5 mL	5 mL				
280-104552-D-8	RQLmw-012-120717-GW	9056A	T	5 mL	5 mL				
CCV 280-400339/29		9056A		5 mL	5 mL			5 mL	
CCB 280-400339/30		9056A		5 mL	5 mL				
280-104552-D-8 DU	RQLmw-012-120717-GW	9056A	T	5 mL	5 mL				
280-104552-D-8 MS	RQLmw-012-120717-GW	9056A	T	5 mL	5 mL				0.05 mL
280-104552-D-8 MSD	RQLmw-012-120717-GW	9056A	T	5 mL	5 mL				0.05 mL
280-104552-D-9	RQLmw-014-120717-GW	9056A	T	5 mL	5 mL				
280-104552-D-9	RQLmw-014-120717-GW	9056A	T	5 mL	5 mL				
280-104552-D-10	RQLmw-013-120717-GW	9056A	T	5 mL	5 mL				
280-104552-D-10 DU	RQLmw-013-120717-GW	9056A	T	5 mL	5 mL				
280-104552-E-10 MS	RQLmw-013-120717-GW	9056A	T	5 mL	5 mL				0.05 mL
280-104552-I-10 MSD	RQLmw-013-120717-GW	9056A	T	5 mL	5 mL				0.05 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.: 280-104552-1

SDG No.:

Batch Number: 400339 Batch Start Date: 12/29/17 11:41 Batch Analyst: Lehman, Jeffrey M

Batch Method: 9056A Batch End Date:

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	IC CAL cl/so4 00179	IC Cal low 00339	IC LCS 01108	ICMS/MSD WEEK 00507
CCV 280-400339/40		9056A		5 mL	5 mL			5 mL	
CCB 280-400339/41		9056A		5 mL	5 mL				

Batch Notes	
Eluent 1 ID	IC 11 Eluent_00438
Pipette/Syringe/Dispenser ID	5000ICS 1000-D 100C

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.: 280-104552-1

SDG No.:

Batch Number: 400438 Batch Start Date: 12/30/17 06:17 Batch Analyst: Lehman, Jeffrey M

Batch Method: 9056A Batch End Date:

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	IC CAL cl/so4 00180	IC Cal low 00340	IC LCS 01109	ICMS/MSD WEEK 00507
CCV 280-400438/1		9056A		5 mL	5 mL			5 mL	
CCB 280-400438/2		9056A		5 mL	5 mL				
MRL 280-400438/3		9056A		5 mL	5 mL	0.05 mL	0.02 mL		
LCS 280-400438/4		9056A		5 mL	5 mL			5 mL	
LCSD 280-400438/5		9056A		5 mL	5 mL			5 mL	
MB 280-400438/6		9056A		5 mL	5 mL				
280-104552-D-9	RQLmw-014-120717-GW	9056A	T	5 mL	5 mL				
280-104552-D-10	RQLmw-013-120717-GW	9056A	T	5 mL	5 mL				
280-104552-D-10 DU	RQLmw-013-120717-GW	9056A	T	5 mL	5 mL				
280-104552-D-10 MS	RQLmw-013-120717-GW	9056A	T	5 mL	5 mL				0.05 mL
280-104552-D-10 MSD	RQLmw-013-120717-GW	9056A	T	5 mL	5 mL				0.05 mL
CCV 280-400438/17		9056A		5 mL	5 mL			5 mL	
CCB 280-400438/18		9056A		5 mL	5 mL				

Batch Notes	
Pipette/Syringe/Dispenser ID	5000ICS 1000-D 100C
Regeneration Solution ID	170533151013

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.: 280-104552-1

SDG No.:

Batch Number: 399189 Batch Start Date: 12/18/17 12:34 Batch Analyst: Duplin, Alysha 1

Batch Method: SM 2320B Batch End Date:

Lab Sample ID	Client Sample ID	Method Chain	Basis	CalcMsg	Alk daily lcs 00696				
CCV 280-399189/28		SM 2320B		InitialAmount is blank	1 mL				
CCB 280-399189/29		SM 2320B		InitialAmount is blank					
LCS 280-399189/30		SM 2320B		InitialAmount is blank	1 mL				
MB 280-399189/31		SM 2320B		InitialAmount is blank					
280-104552-I-10	RQLmw-013-120717-GW	SM 2320B	T	InitialAmount is blank					
280-104552-E-8	RQLmw-012-120717-GW	SM 2320B	T	InitialAmount is blank					
280-104552-G-6	RQLmw-011-120717-GW	SM 2320B	T	InitialAmount is blank					
CCV 280-399189/42		SM 2320B		InitialAmount is blank	1 mL				
CCB 280-399189/43		SM 2320B		InitialAmount is blank					

Batch Notes	
pH Buffer 1 ID	pH2buffer_00068
pH Buffer 2 ID	pH4buffer_00162
pH Buffer 3 ID	pH7buffer_00224
pH Buffer 4 ID	pH10buffer_00129
pH Buffer 5 ID	pH12buffer_00132
pH Buffer 6 ID	pH7buffer_00227
First End time	see attached
Sulfuric Acid Lot Number	0.02H2SO4_00229
Sulfuric Acid Vendor	Ricca
Nominal Amount Used	25 mL mL
Pipette ID	500ad1
Probe ID	PCE 86 pH 1105 sep 14
First Start time	see attached
Normality of First Titrant	0.02 N

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.: 280-104552-1

SDG No.:

Batch Number: 399189 Batch Start Date: 12/18/17 12:34 Batch Analyst: Duplin, Alysha 1

Batch Method: SM 2320B 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.: 280-104552-1

SDG No.:

Batch Number: 399626 Batch Start Date: 12/21/17 09:50 Batch Analyst: Duplin, Alysha 1

Batch Method: SM 2320B Batch End Date:

Lab Sample ID	Client Sample ID	Method Chain	Basis	CalcMsg	Alk high lcs 00217				
LCS 280-399626/4		SM 2320B		InitialAmount is blank	1 mL				
MB 280-399626/5		SM 2320B		InitialAmount is blank					
280-104552-E-9	RQLmw-014-120717-GW	SM 2320B	T	InitialAmount is blank					
CCV 280-399626/16		SM 2320B		InitialAmount is blank	1 mL				
CCB 280-399626/17		SM 2320B		InitialAmount is blank					

Batch Notes	
pH Buffer 1 ID	pH2buffer_00068
pH Buffer 2 ID	pH4buffer_00164
pH Buffer 3 ID	pH7buffer_00224
pH Buffer 4 ID	pH10buffer_00129
pH Buffer 5 ID	pH12buffer_00132
pH Buffer 6 ID	pH7buffer_00227
First End time	see attached
Sulfuric Acid Lot Number	0.1NH2SO4_00011
Sulfuric Acid Vendor	Fisher
Nominal Amount Used	10 mL mL
Pipette ID	5000ad1
Probe ID	PCE 86 pH 1105 may 16
First Start time	see attached
Normality of First Titrant	0.1 N

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	ALS
Operator ID	ALS
Platform	FS III/IV/3100
Software Rev Code	222
Data system ID	57
Result path	C:\FLOW_4\C122117.RST
Sample table path	C:\FLOW_4\c122117.tbl
Method path	C:\FLOW_4\cyanide.mth
Date acquired	21-Dec-17
Time acquired	20:13

				Cyanide, Total		
Date	Time	Cup	Name	Response	Calc [ppb]	Flags
21-Dec-17	17:10	107	Sync	239315	394.817	
21-Dec-17	17:12	0	Carryover	412	-0.370	LO
21-Dec-17	17:13	0	Carryover	45	-0.976	LO
21-Dec-17	17:15	0	Baseline	0	-1.051	BL
21-Dec-17	17:16	101	CAL 0.00 ppb	141	-0.819	LO
21-Dec-17	17:18	102	CAL 10.0 ppb	6236	9.264	
21-Dec-17	17:19	103	CAL 20.0 ppb	12215	19.155	
21-Dec-17	17:21	104	CAL 50.0 ppb	31301	50.727	
21-Dec-17	17:22	105	CAL 100 ppb	61673	100.967	
21-Dec-17	17:24	106	Cal 200 ppb	122724	201.955	
21-Dec-17	17:25	107	Cal 400 ppb	241693	398.750	
21-Dec-17	17:27	0	BLK	-221	-1.416	LO
21-Dec-17	17:28	0	Baseline	0	-1.051	BL
21-Dec-17	17:30	108	ICV 100 ppb	61213	100.205	
21-Dec-17	17:31	0	ICB	-70	-1.167	LO
21-Dec-17	17:33	0	Baseline	0	-1.051	BL
21-Dec-17	17:34	113	hlcs 280-399456/1-a	220009	362.882	
21-Dec-17	17:36	114	llcs 280-399456/2-a	61289	100.332	
21-Dec-17	17:37	115	lcs 280-399456/3-a	60978	99.818	
21-Dec-17	17:39	116	mb 280-399456/4-a	961	0.539	
21-Dec-17	17:40	117	280-104469-a-1-a	5297	7.712	
21-Dec-17	17:42	118	280-104469-a-1-b ms	60845	99.597	
21-Dec-17	17:43	119	280-104469-a-1-c msd	59810	97.886	
21-Dec-17	17:45	120	280-104495-b-7-a	1416	1.292	
21-Dec-17	17:46	121	280-104530-o-6-a	3332	4.461	
21-Dec-17	17:48	122	280-104530-o-7-a	1443	1.335	
21-Dec-17	17:49	0	BLK	35	-0.993	LO
21-Dec-17	17:51	0	baseline	0	-1.051	BL
21-Dec-17	17:52	109	CCV 200PPB	124426	204.770	
21-Dec-17	17:54	0	CCB	-111	-1.234	LO
21-Dec-17	17:55	0	Baseline	0	-1.051	BL
21-Dec-17	17:57	123	280-104530-o-8-a	4653	6.646	
21-Dec-17	17:58	124	280-104579-i-2-a	1841	1.994	
21-Dec-17	18:00	125	280-104579-i-3-a	2781	3.549	
21-Dec-17	18:01	126	280-104579-i-4-a	2509	3.099	
21-Dec-17	18:03	127	280-104579-i-5-a	3432	4.626	
21-Dec-17	18:04	128	280-104579-i-6-a	2820	3.614	
21-Dec-17	18:06	129	280-104579-i-7-a	1962	2.194	
21-Dec-17	18:07	130	280-104579-i-7-b ms	37953	61.730	
21-Dec-17	18:09	131	280-104579-i-7-c msd	54917	89.791	
21-Dec-17	18:10	132	280-104579-i-8-a	1633	1.650	
21-Dec-17	18:12	0	BLK	6	-1.041	LO
21-Dec-17	18:13	0	baseline	0	-1.051	BL
21-Dec-17	18:15	109	CCV 200PPB	126132	207.594	
21-Dec-17	18:16	0	CCB	-220	-1.415	LO
21-Dec-17	18:18	0	Baseline	0	-1.051	BL

Result path	C:\FLOW_4\C122117.RST
Sample table path	C:\FLOW_4\c122117.tbl
Method path	C:\FLOW_4\cyanide.mth
Date acquired	21-Dec-17
Time acquired	20:13

				Cyanide, Total		
Date	Time	Cup	Name	Response	Calc [ppb]	Flags
21-Dec-17	18:19	133	280-104579-i-9-a	2545	3.158	
21-Dec-17	18:21	134	280-104582-m-2-a	11113	17.331	
21-Dec-17	18:22	135	280-104588-i-1-a	2824	3.621	
21-Dec-17	18:24	136	280-104598-c-1-a	6047	8.952	
21-Dec-17	18:25	137	280-104603-c-1-a	2669	3.363	
21-Dec-17	18:27	138	280-104604-c-1-a	2226	2.631	
21-Dec-17	18:28	139	280-104621-d-1-a	7523	11.393	
21-Dec-17	18:30	140	280-104621-d-2-a	5484	8.020	
21-Dec-17	18:31	141	hlcs 280-399457/1-a	220422	363.564	
21-Dec-17	18:33	142	llcs 280-399457/2-a	61778	101.140	
21-Dec-17	18:34	0	BLK	-6	-1.061	LO
21-Dec-17	18:36	0	baseline	0	-1.051	BL
21-Dec-17	18:37	109	CCV 200PPB	126402	208.040	
21-Dec-17	18:39	0	CCB	-160	-1.316	LO
21-Dec-17	18:40	0	Baseline	0	-1.051	BL
21-Dec-17	18:42	143	lcs 280-399457/3-a	62389	102.151	
21-Dec-17	18:43	144	mb 280-399457/4-a	3261	4.342	
21-Dec-17	18:45	145	280-104672-b-1-a	497505	821.907	HI
21-Dec-17	18:46	146	280-104672-b-1-b ms	615570	1017.208	HI
21-Dec-17	18:48	147	280-104672-b-1-c msd	440067	726.896	HI
21-Dec-17	18:49	148	280-104672-a-2-a	57720	94.428	FL
21-Dec-17	18:51	149	280-104677-b-1-a	1093	0.758	FL
21-Dec-17	18:52	150	280-104692-a-1-a	487	-0.246	LO
21-Dec-17	18:54	151	280-104700-n-1-a	65405	107.139	
21-Dec-17	18:55	152	280-104733-a-5-a	20811	33.374	
21-Dec-17	18:57	0	BLK	-74	-1.173	LO
21-Dec-17	18:58	0	baseline	0	-1.051	BL
21-Dec-17	19:00	109	CCV 200PPB	127195	209.351	
21-Dec-17	19:01	0	CCB	-139	-1.281	LO
21-Dec-17	19:03	0	Baseline	0	-1.051	BL
21-Dec-17	19:04	153	hlcs 280-399648/1-a	222291	366.656	
21-Dec-17	19:06	154	llcs 280-399648/2-a	61635	100.905	
21-Dec-17	19:07	155	lcs 280-399648/3-a	63185	103.467	
21-Dec-17	19:09	156	mb 280-399648/4-a	2737	3.476	
21-Dec-17	19:10	157	280-104552-al-5-a	3375	4.532	
21-Dec-17	19:12	158	280-104552-al-5-b ms	65094	106.625	
21-Dec-17	19:13	159	280-104552-al-5-c ms	62824	102.871	
21-Dec-17	19:20	160	280-104552-m-1-b	2723	3.453	
21-Dec-17	19:22	201	280-104552-l-3-b	3099	4.075	
21-Dec-17	19:23	202	280-104552-l-4-b	2171	2.540	
21-Dec-17	19:25	0	BLK	30	-1.001	LO
21-Dec-17	19:26	0	baseline	0	-1.051	BL
21-Dec-17	19:28	109	CCV 200PPB	129190	212.651	
21-Dec-17	19:29	0	CCB	-92	-1.204	LO
21-Dec-17	19:31	0	Baseline	0	-1.051	BL
21-Dec-17	19:32	203	280-104552-a-7-b	3362	4.510	
21-Dec-17	19:34	204	280-104552-b-8-c	1945	2.166	
21-Dec-17	19:35	205	280-104221-a-1-k mdl	8321	12.714	
21-Dec-17	19:37	206	280-104221-a-1-l mdl	8203	12.517	
21-Dec-17	19:38	207	280-104221-a-1-m mdl	7880	11.984	
21-Dec-17	19:40	208	280-104221-a-1-n mdl	5361	7.817	
21-Dec-17	19:41	209	280-104221-a-1-o loq	12802	20.125	
21-Dec-17	19:43	210	280-104221-a-1-p loq	12461	19.561	
21-Dec-17	19:44	211	280-104221-a-1-q loq	14659	23.197	
21-Dec-17	19:46	212	280-104221-a-1-r loq	12170	19.080	
21-Dec-17	19:47	0	BLK	43	-0.979	LO
21-Dec-17	19:49	0	baseline	0	-1.051	BL

Result path	C:\FLOW_4\C122117.RST
Sample table path	C:\FLOW_4\c122117.tbl
Method path	C:\FLOW_4\cyanide.mth
Date acquired	21-Dec-17
Time acquired	20:13

				Cyanide, Total		
Date	Time	Cup	Name	Response	Calc [ppb]	Flags
21-Dec-17	19:50	109	CCV 200PPB	132000	217.300	
21-Dec-17	19:52	0	CCB	-153	-1.305	LO
21-Dec-17	19:53	0	Baseline	0	-1.051	BL
21-Dec-17	19:55	213	280-104672-b-1-a	98188	806.847	
21-Dec-17	19:56	214	280-104672-b-1-b ms	121930	1003.212	
21-Dec-17	19:58	215	280-104672-b-1-c msd	89620	735.981	
21-Dec-17	19:59	216	280-104672-a-2-a	60368	98.809	
21-Dec-17	20:01	217	mb 280-399648/4-a	248	-0.642	LO
21-Dec-17	20:02	0	BLK	61	-0.950	LO
21-Dec-17	20:04	0	baseline	0	-1.051	BL
21-Dec-17	20:05	109	CCV 200PPB	131256	216.069	
21-Dec-17	20:07	0	CCB	-178	-1.345	LO
21-Dec-17	20:08	0	Baseline	0	-1.051	BL

Peak Table:Cyanide, Total

File name: C:\FLOW_4\C122117.RST
Date: 21-Dec-17
Operator: ALS

Peak	Cup	Name	R	Type	Dil	Wt	Height	Calc. (ppb)	Flags
1	107	Sync	1	SYNC	1	1	239315	394.817230	
2	0	Carryover	1	CO	1	1	412	-0.369859	LO
3	0	Carryover	2	CO	1	1	45	-0.976317	LO
B	0	Baseline	1	RB	1	1	0	-1.051126	BL
5	101	CAL 0.00 ppb	1	C	1	1	141	-0.818709	LO
6	102	CAL 10.0 ppb	1	C	1	1	6236	9.264361	
7	103	CAL 20.0 ppb	1	C	1	1	12215	19.155233	
8	104	CAL 50.0 ppb	1	C	1	1	31301	50.726513	
9	105	CAL 100 ppb	1	C	1	1	61673	100.966873	
10	106	Cal 200 ppb	1	C	1	1	122724	201.955338	
11	107	Cal 400 ppb	1	C	1	1	241693	398.750427	
12	0	BLK	1	BLNK	1	1	-221	-1.415942	LO
B	0	Baseline	1	RB	1	1	0	-1.051126	BL
14	108	ICV 100 ppb	1	CCV	1	1	61213	100.205208	
15	0	ICB	1	U	1	1	-70	-1.167161	LO
B	0	Baseline	1	RB	1	1	0	-1.051126	BL
17	113	hlcs 280-399456/1-a 1		U	1	1	220009	362.881500	
18	114	llcs 280-399456/2-a 1		U	1	1	61289	100.331985	
19	115	lcs 280-399456/3-a 1		U	1	1	60978	99.817650	
20	116	mb 280-399456/4-a 1		U	1	1	961	0.538665	
21	117	280-104469-a-1-a 1		U	1	1	5297	7.711508	
22	118	280-104469-a-1-b ms 1		U	1	1	60845	99.597183	
23	119	280-104469-a-1-c msd 1		U	1	1	59810	97.885712	
24	120	280-104495-b-7-a 1		U	1	1	1416	1.291621	
25	121	280-104530-o-6-a 1		U	1	1	3332	4.460730	
26	122	280-104530-o-7-a 1		U	1	1	1443	1.335078	
27	0	BLK	1	BLNK	1	1	35	-0.993151	LO
B	0	baseline	1	RB	1	1	0	-1.051126	BL
29	109	CCV 200PPB	1	CCV	1	1	124426	204.770142	
30	0	CCB	1	U	1	1	-111	-1.234130	LO
B	0	Baseline	1	RB	1	1	0	-1.051126	BL
32	123	280-104530-o-8-a 1		U	1	1	4653	6.646384	
33	124	280-104579-i-2-a 1		U	1	1	1841	1.993683	
34	125	280-104579-i-3-a 1		U	1	1	2781	3.549018	
35	126	280-104579-i-4-a 1		U	1	1	2509	3.099433	
36	127	280-104579-i-5-a 1		U	1	1	3432	4.625532	
37	128	280-104579-i-6-a 1		U	1	1	2820	3.613681	
38	129	280-104579-i-7-a 1		U	1	1	1962	2.194463	
39	130	280-104579-i-7-b ms 1		U	1	1	37953	61.730457	
40	131	280-104579-i-7-c msd 1		U	1	1	54917	89.791191	
41	132	280-104579-i-8-a 1		U	1	1	1633	1.650142	
42	0	BLK	1	BLNK	1	1	6	-1.041483	LO
B	0	baseline	1	RB	1	1	0	-1.051126	BL
44	109	CCV 200PPB	1	CCV	1	1	126132	207.593781	
45	0	CCB	1	U	1	1	-220	-1.414758	LO
B	0	Baseline	1	RB	1	1	0	-1.051126	BL
47	133	280-104579-i-9-a 1		U	1	1	2545	3.158156	
48	134	280-104582-m-2-a 1		U	1	1	11113	17.330963	
49	135	280-104588-i-1-a 1		U	1	1	2824	3.620886	
50	136	280-104598-c-1-a 1		U	1	1	6047	8.951632	
51	137	280-104603-c-1-a 1		U	1	1	2669	3.363368	
52	138	280-104604-c-1-a 1		U	1	1	2226	2.630914	
53	139	280-104621-d-1-a 1		U	1	1	7523	11.392509	
54	140	280-104621-d-2-a 1		U	1	1	5484	8.019560	
55	141	hlcs 280-399457/1-a 1		U	1	1	220422	363.564209	
56	142	llcs 280-399457/2-a 1		U	1	1	61778	101.140152	
57	0	BLK	1	BLNK	1	1	-6	-1.061160	LO
B	0	baseline	1	RB	1	1	0	-1.051126	BL
59	109	CCV 200PPB	1	CCV	1	1	126402	208.040298	
60	0	CCB	1	U	1	1	-160	-1.315547	LO
B	0	Baseline	1	RB	1	1	0	-1.051126	BL
62	143	lcs 280-399457/3-a 1		U	1	1	62389	102.151192	
63	144	mb 280-399457/4-a 1		U	1	1	3261	4.342496	
64	145	280-104672-b-1-a 1		U	1	1	497505	821.907471	HI
65	146	280-104672-b-1-b ms 1		U	1	1	615570	1017.208191	HI
66	147	280-104672-b-1-c msd 1		U	1	1	440067	726.895813	HI
67	148	280-104672-a-2-a 1		U	1	1	57720	94.427521	FL
68	149	280-104677-b-1-a 1		U	1	1	1093	0.757605	FL
69	150	280-104692-a-1-a 1		U	1	1	487	-0.246195	LO
70	151	280-104700-n-1-a 1		U	1	1	65405	107.139389	

Peak	Cup	Name	R	Type	Dil	Wt	Height	Calc. (ppb)	Flags
71	152	280-104733-a-5-a 1 U			1	1	20811	33.373699	
72	0	BLK	1	BLNK	1	1	-74	-1.173059	LO
B	0	baseline	1	RB	1	1	0	-1.051126	BL
74	109	CCV 200PPB	1	CCV	1	1	127195	209.351288	
75	0	CCB	1	U	1	1	-139	-1.281086	LO
B	0	Baseline	1	RB	1	1	0	-1.051126	BL
77	153	hlcs 280-399648/1-a 1 U			1	1	222291	366.655792	
78	154	llcs 280-399648/2-a 1 U			1	1	61635	100.904602	
79	155	lcs 280-399648/3-a 1 U			1	1	63185	103.467422	
80	156	mb 280-399648/4-a 1 U			1	1	2737	3.476341	
81	157	280-104552-al-5-a 1 U			1	1	3375	4.532356	
82	158	280-104552-al-5-b ms 1 U			1	1	65094	106.624825	
83	159	280-104552-al-5-c ms 1 U			1	1	62824	102.870918	
84	160	280-104552-m-1-b 1 U			1	1	2723	3.453127	
85	201	280-104552-l-3-b 1 U			1	1	3099	4.075016	
86	202	280-104552-l-4-b 1 U			1	1	2171	2.539695	
87	0	BLK	1	BLNK	1	1	30	-1.001416	LO
B	0	baseline	1	RB	1	1	0	-1.051126	BL
89	109	CCV 200PPB	1	CCV	1	1	129190	212.650940	
90	0	CCB	1	U	1	1	-92	-1.203812	LO
B	0	Baseline	1	RB	1	1	0	-1.051126	BL
92	203	280-104552-a-7-b 1 U			1	1	3362	4.509840	
93	204	280-104552-b-8-c 1 U			1	1	1945	2.165655	
94	205	280-104221-a-1-k mdl 1 U			1	1	8321	12.713866	
95	206	280-104221-a-1-l mdl 1 U			1	1	8203	12.517305	
96	207	280-104221-a-1-m mdl 1 U			1	1	7880	11.984418	
97	208	280-104221-a-1-n mdl 1 U			1	1	5361	7.816844	
98	209	280-104221-a-1-o loq 1 U			1	1	12802	20.125273	
99	210	280-104221-a-1-p loq 1 U			1	1	12461	19.561163	
100	211	280-104221-a-1-q loq 1 U			1	1	14659	23.197092	
101	212	280-104221-a-1-r loq 1 U			1	1	12170	19.079826	
102	0	BLK	1	BLNK	1	1	43	-0.979488	LO
B	0	baseline	1	RB	1	1	0	-1.051126	BL
104	109	CCV 200PPB	1	CCV	1	1	132000	217.300354	
105	0	CCB	1	U	1	1	-153	-1.305027	LO
B	0	Baseline	1	RB	1	1	0	-1.051126	BL
107	213	280-104672-b-1-a 1 U			5	1	98188	806.846680	
108	214	280-104672-b-1-b ms 1 U			5	1	121930	1003.212158	
109	215	280-104672-b-1-c msd 1 U			5	1	89620	735.980896	
110	216	280-104672-a-2-a 1 U			1	1	60368	98.808540	
111	217	mb 280-399648/4-a 1 U			1	1	248	-0.641573	LO
112	0	BLK	1	BLNK	1	1	61	-0.949723	LO
B	0	baseline	1	RB	1	1	0	-1.051126	BL
114	109	CCV 200PPB	1	CCV	1	1	131256	216.068954	
115	0	CCB	1	U	1	1	-178	-1.344970	LO
B	0	Baseline	1	RB	1	1	0	-1.051126	BL

Cyanide, Total:Calibration 1: Peak 5-116

File name: C:\FLOW_4\C122117.RST
Date: 21-Dec-17
Operator: ALS

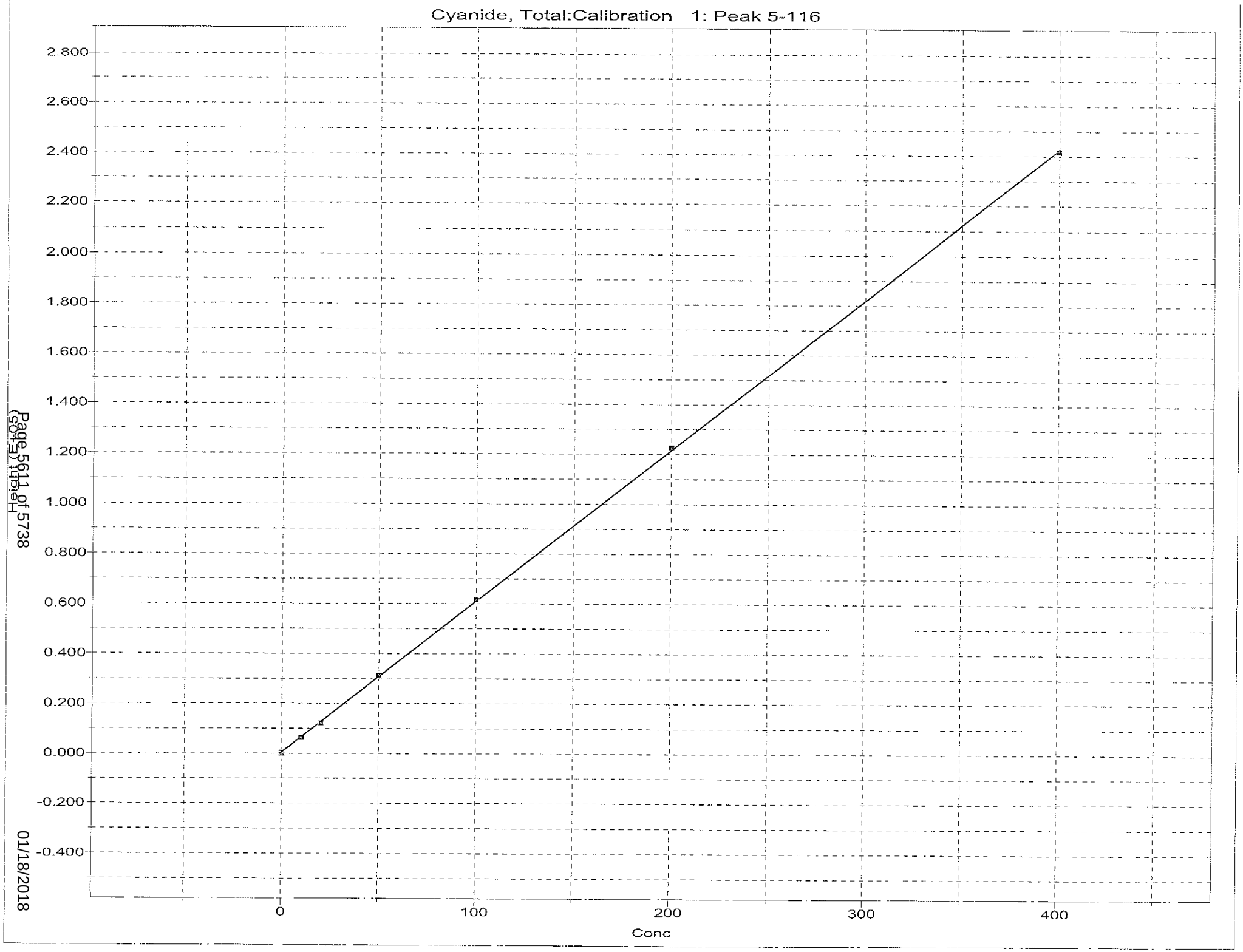
*	Name	Conc	Height
*	CAL 0.00 ppb	0.000000	140.503357
*	CAL 10.0 ppb	10.000000	6236.040527
*	CAL 20.0 ppb	20.000000	12215.386719
*	CAL 50.0 ppb	50.000000	31301.228516
*	CAL 100 ppb	100.000000	61673.128906
*	Cal 200 ppb	200.000000	122723.867188
*	Cal 400 ppb	400.000000	241692.765625

Calib Coef:
y=bx+a
a: (intercept) 6.3544e+02
b: 6.0453e+02

Corr Coef: 0.999965

Carryover: 0.172%

No Drift Peaks


Cyanide, Total:Calibration 1: Peak 5-116
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2.400
2.200
2.000
1.800
1.600
1.400
1.200
1.000
0.800
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0.200
0.000
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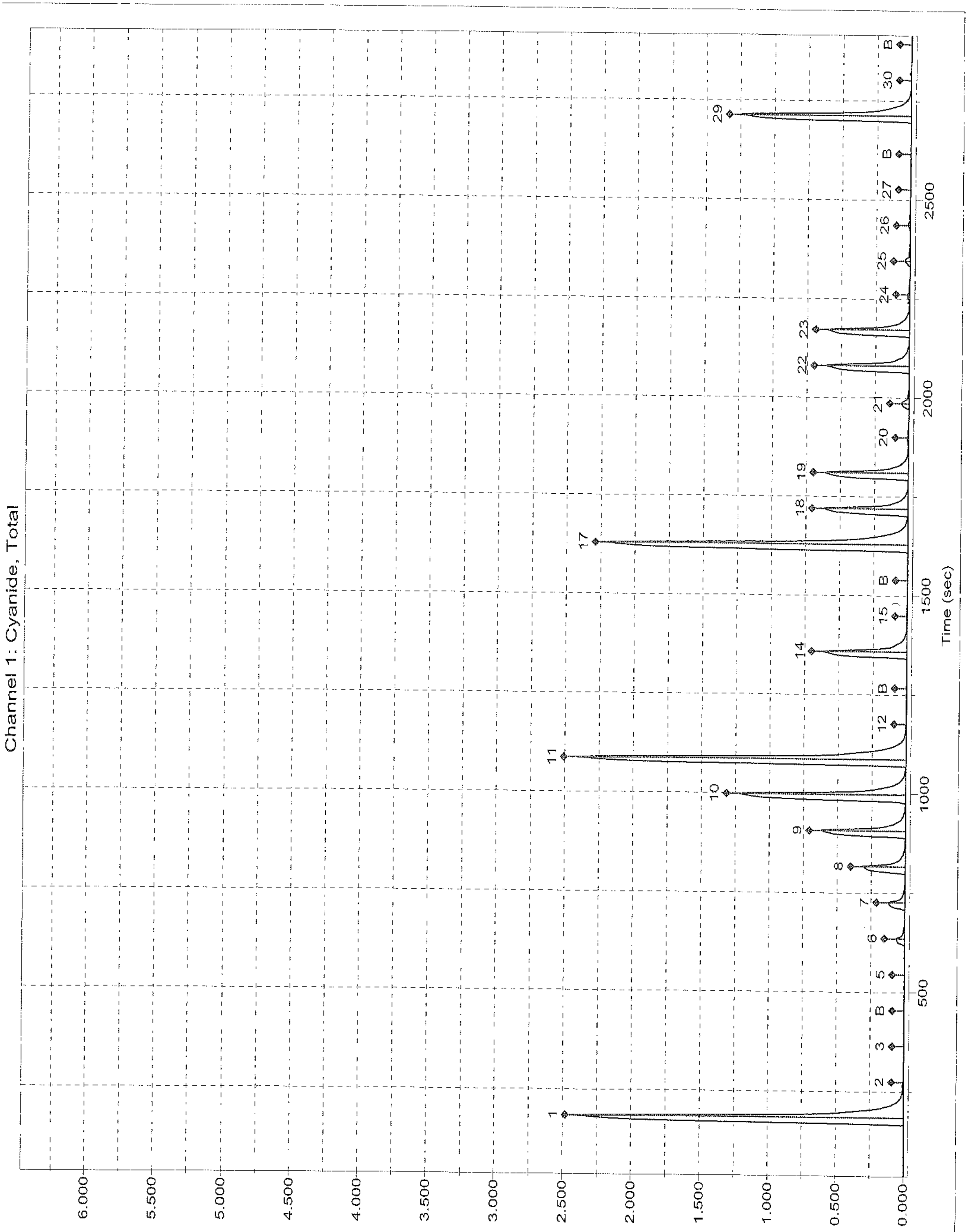
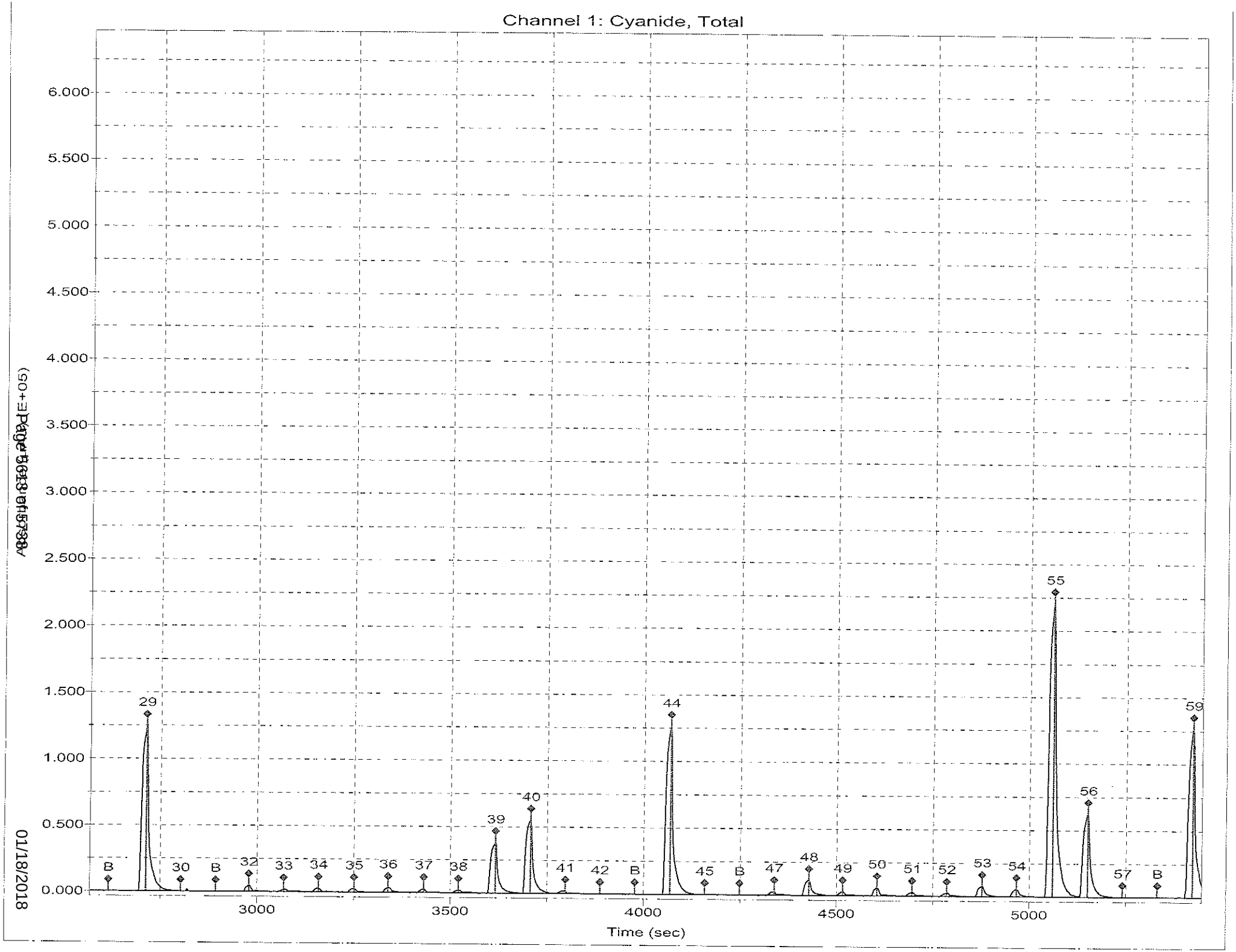
-0.400
0
100
200
300
400
Conc

01/18/2018



Channel 1: Cyanide, Total
Time (sec)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5.000
4.500
4.000
3.500
3.000
2.500
2.000
1.500
1.000
0.500
0.000
Time (sec)
3000
3500
4000
4500
5000
B
29
30
B
32
33
34
35
36
37
38
39
40
41
42
B
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B
47
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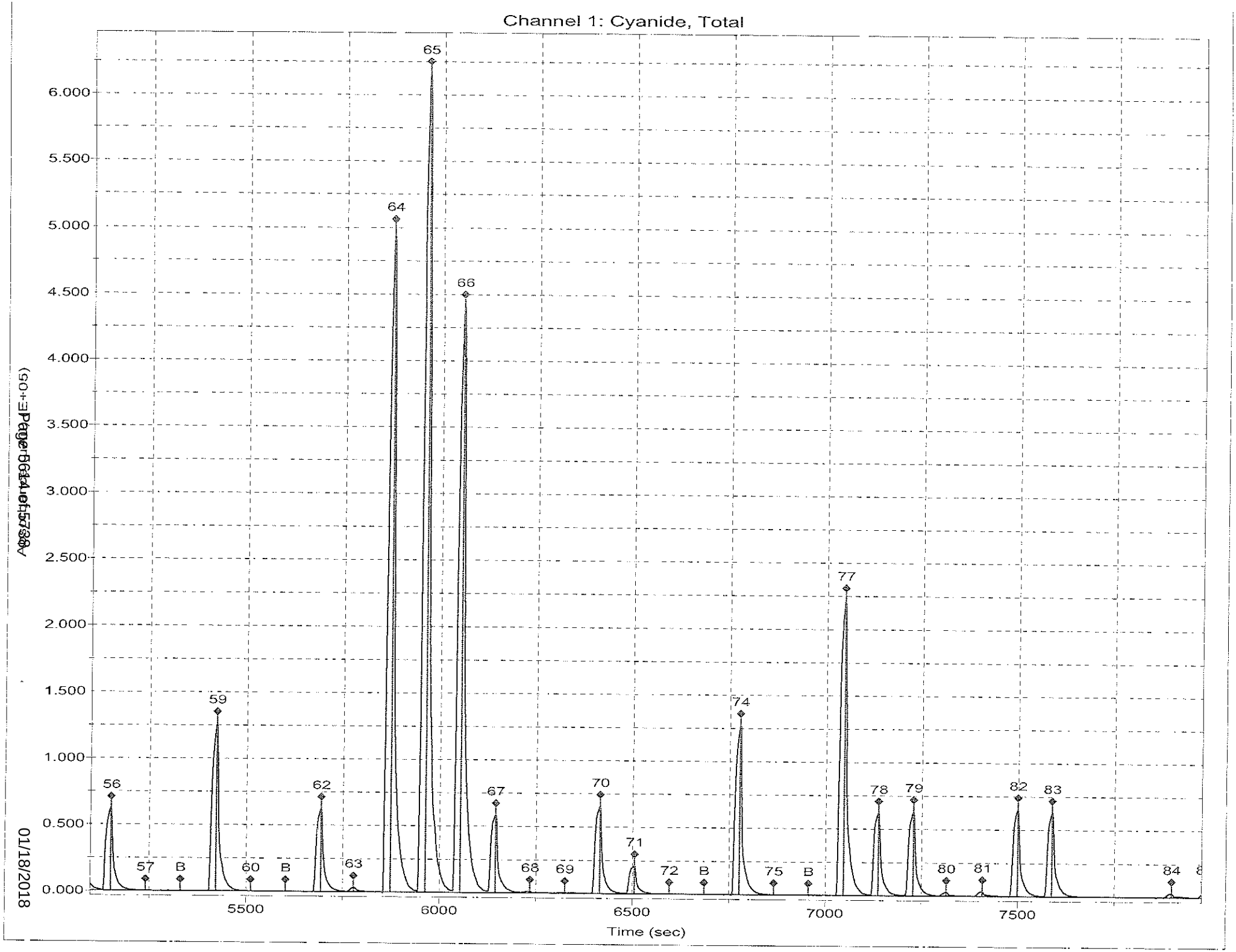
53
54
55
56
57
B
59

01/18/2018


Channel 1: Cyanide, Total
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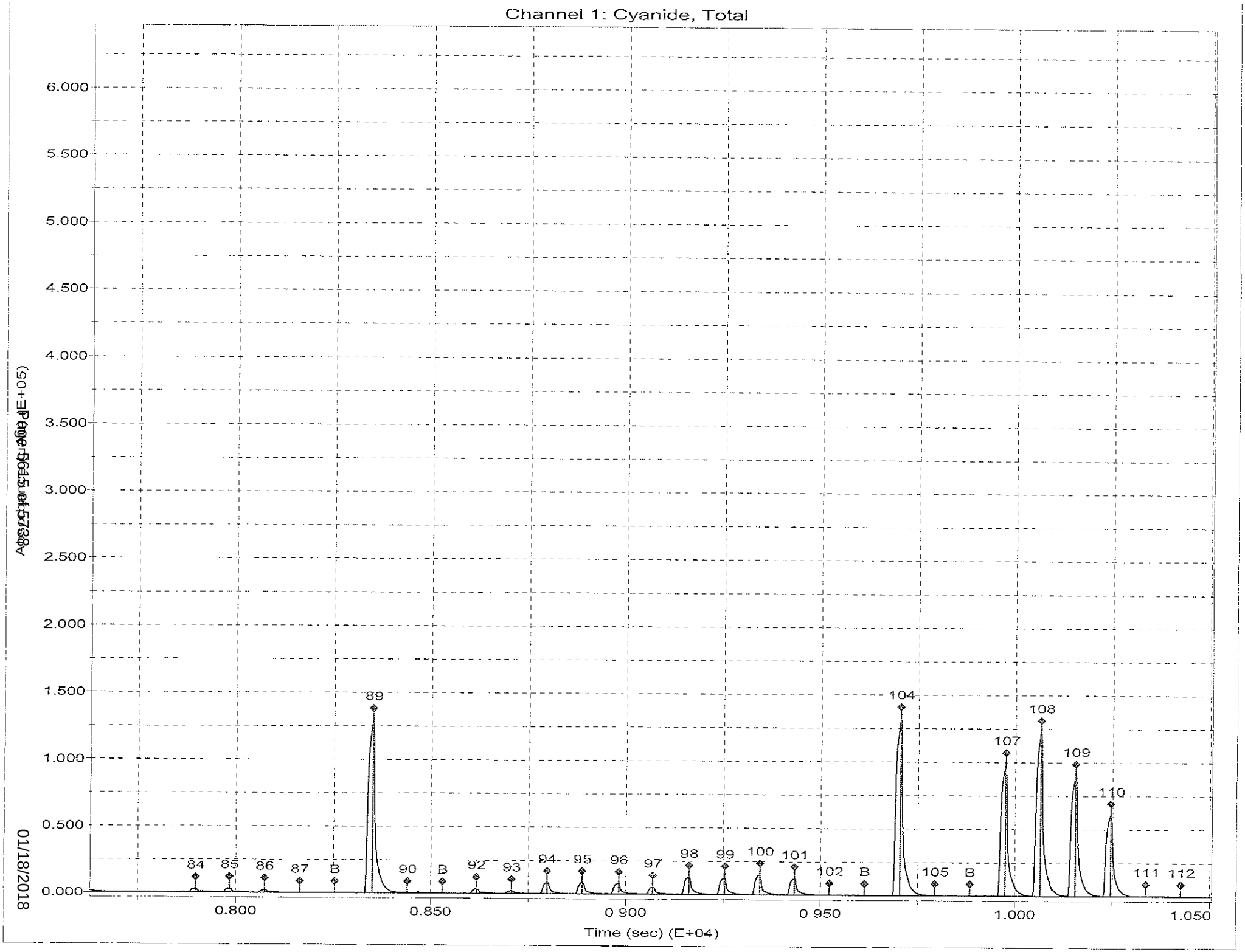
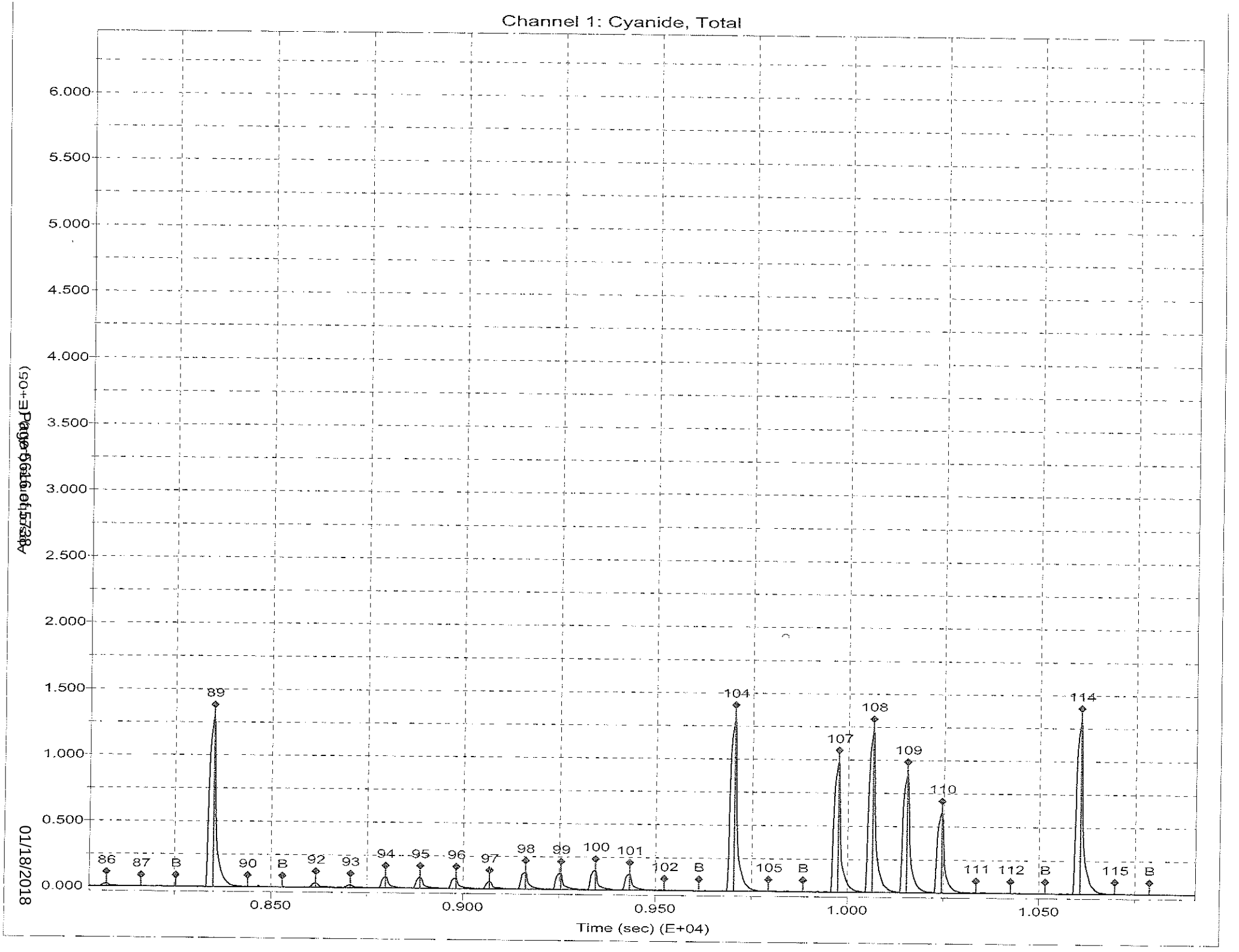
5.000
4.500
4.000
3.500
3.000
2.500
2.000
1.500
1.000
0.500
0.000
5500
6000
6500
7000
7500
Time (sec)
01/18/2018
56
57
B
59
60
B
62
63
64
65
66
67
68
69
70
71
72
B
74
75
B
77
78
79
80
81
82
83
84


Channel 1: Cyanide, Total
6.000
5.500
5.000
4.500
4.000
3.500
3.000
2.500
2.000
1.500
1.000
0.500
0.000
Absorbance (50+E-05)
01/18/2018
84
85
86
87
B
89
90
B
92
93
94
95
96
97
98
99
100
101
102
B
104
105
B
107
108
109
110
111
112
0.800
0.850
0.900
0.950
1.000
1.050
Time (sec) (E+04)


Channel 1: Cyanide, Total
6.000
5.500
5.000
4.500
4.000
3.500
3.000
2.500
2.000
1.500
1.000
0.500
0.000
Absorbance (50+E)
01/18/2018
0.850
0.900
0.950
1.000
1.050
Time (sec) (E+04)
86
87
B
89
90
B
92
93
94
95
96
97
98
99
100
101
102
B
104
105
B
107
108
109
110
111
112
B
114
115
B

*** Sample Table from Analysis ***

File name: Operator
Date: 21-Dec-17

Cup	Name	Type	R	Dil	Wt	Vial	Comment
107	Sync	SYNC	1	1	1		
0	Carryover	CO	2	1	1		
0	Baseline	RB	1	1	1		
101	CAL 0.00 ppb	C	1	1	1		
102	CAL 10.0 ppb	C	1	1	1		
103	CAL 20.0 ppb	C	1	1	1		
104	CAL 50.0 ppb	C	1	1	1		
105	CAL 100 ppb	C	1	1	1		
106	Cal 200 ppb	C	1	1	1		
107	Cal 400 ppb	C	1	1	1		
0	BLK	BLNK	1	1	1		
0	Baseline	RB	1	1	1		
108	ICV 100 ppb	CCV	1	1	1		
0	ICB	U	1	1	1		
0	Baseline	RB	1	1	1		
113	hlcs 280-399456/1-a	U	1	1	1		
114	llcs 280-399456/2-a	U	1	1	1		
115	lcs 280-399456/3-a	U	1	1	1		
116	mb 280-399456/4-a	U	1	1	1		
117	280-104469-a-1-a	U	1	1	1		
118	280-104469-a-1-b ms	U	1	1	1		
119	280-104469-a-1-c msd	U	1	1	1		
120	280-104495-b-7-a	U	1	1	1		
121	280-104530-o-6-a	U	1	1	1		
122	280-104530-o-7-a	U	1	1	1		
0	BLK	BLNK	1	1	1		
0	baseline	RB	1	1	1		
109	CCV 200PPB	CCV	1	1	1		
0	CCB	U	1	1	1		
0	Baseline	RB	1	1	1		
123	280-104530-o-8-a	U	1	1	1		
124	280-104579-i-2-a	U	1	1	1		
125	280-104579-i-3-a	U	1	1	1		
126	280-104579-i-4-a	U	1	1	1		
127	280-104579-i-5-a	U	1	1	1		
128	280-104579-i-6-a	U	1	1	1		
129	280-104579-i-7-a	U	1	1	1		
130	280-104579-i-7-b ms	U	1	1	1		
131	280-104579-i-7-c msd	U	1	1	1		
132	280-104579-i-8-a	U	1	1	1		
0	BLK	BLNK	1	1	1		
0	baseline	RB	1	1	1		
109	CCV 200PPB	CCV	1	1	1		
0	CCB	U	1	1	1		
0	Baseline	RB	1	1	1		
133	280-104579-i-9-a	U	1	1	1		
134	280-104582-m-2-a	U	1	1	1		
135	280-104588-i-1-a	U	1	1	1		
136	280-104598-c-1-a	U	1	1	1		
137	280-104603-c-1-a	U	1	1	1		
138	280-104604-c-1-a	U	1	1	1		
139	280-104621-d-1-a	U	1	1	1		
140	280-104621-d-2-a	U	1	1	1		
141	hlcs 280-399457/1-a	U	1	1	1		
142	llcs 280-399457/2-a	U	1	1	1		
0	BLK	BLNK	1	1	1		

12/21/17
ALS

Pa-/Ba-b_00481
Chlor-T_00889
Buffer_00104
1% NaOH_00307

Cup	Name	Type	R	Dil	Wt	Vial	Comment
0	baseline	RB	1	1	1		
109	CCV 200PPB	CCV	1	1	1		
0	CCB	U	1	1	1		
0	Baseline	RB	1	1	1		
143	lcs 280-399457/3-a	U	1	1	1		
144	mb 280-399457/4-a	U	1	1	1		
145	~~280-104672-b-1-a~~	U	1	1	1		
146	280-104672-b-1-b ms	U	1	1	1		12/21/17 @ 5x
147	~~280-104672-b-1-c msd~~	U	1	1	1		12/21/17 @ 5x
148	~~280-104672-a-2-a~~	U	1	1	1		12/21/17 @ 5x Follow up
149	280-104677-b-1-a	U	1	1	1		
150	280-104692-a-1-a	U	1	1	1		
151	280-104700-n-1-a	U	1	1	1		
152	280-104733-a-5-a	U	1	1	1		
0	BLK	BLNK	1	1	1		
0	baseline	RB	1	1	1		
109	CCV 200PPB	CCV	1	1	1		
0	CCB	U	1	1	1		
0	Baseline	RB	1	1	1		
153	hlcs 280-399648/1-a	U	1	1	1		
154	llcs 280-399648/2-a	U	1	1	1		
155	lcs 280-399648/3-a	U	1	1	1		
156	mb 280-399648/4-a	U	1	1	1		
157	280-104552-al-5-a	U	1	1	1		
158	280-104552-al-5-b ms	U	1	1	1		
159	280-104552-al-5-c ms	U	1	1	1		
160	280-104552-m-1-b	U	1	1	1		
201	280-104552-l-3-b	U	1	1	1		
202	280-104552-l-4-b	U	1	1	1		
0	BLK	BLNK	1	1	1		
0	baseline	RB	1	1	1		
109	CCV 200PPB	CCV	1	1	1		
0	CCB	U	1	1	1		
0	Baseline	RB	1	1	1		
203	280-104552-a-7-b	U	1	1	1		
204	280-104552-b-8-c	U	1	1	1		
205	280-104221-a-1-k mdl	U	1	1	1		
206	280-104221-a-1-l mdl	U	1	1	1		
207	280-104221-a-1-m mdl	U	1	1	1		
208	280-104221-a-1-n mdl	U	1	1	1		
209	280-104221-a-1-o loq	U	1	1	1		
210	280-104221-a-1-p loq	U	1	1	1		
211	280-104221-a-1-q loq	U	1	1	1		
212	280-104221-a-1-r loq	U	1	1	1		
0	BLK	BLNK	1	1	1		
0	baseline	RB	1	1	1		
109	CCV 200PPB	CCV	1	1	1		
0	CCB	U	1	1	1		
0	Baseline	RB	1	1	1		

213 280-104672-b-1-a 5x
214 -b ms 5x
215 -c msd 5x
216 280-104672-a-2-a 1x
217 MB 280-399648/4-a 1x

CCV
CCB

Sulfide by Titration

Analyst:	PH	SOP Information:	
Date:	12/13/2017	Number:	91
Titration Solutions		**Calibration Information**	
Solution 1:	Iodine	Source/Ver-Lot#:	INT_01422
TALS ID	Iod_00187	Prep Date:	12/4/2017
Normality:	0.025	Made By:	AS
Solution 2:	sodium thiosulfate	Concentration:	1074
TALS ID	Na Thio_00122	Expiration Date:	3/4/2018
Normality:	0.025		
	Starch Indicator		
TALS ID	Starch Ind_00044		

ICV Information	
Source/Ver-Lot#:	
Prep Date:	
Made By:	
Concentration:	#DIV/0!
Expiration Date:	

	CAL Volume	Buret Start	Buret End	mL Iodine	Final mL	Conc mg/L
CAL	5	0.00	6.60	20	6.60	1072.000
CAL	5	6.60	13.15	20	6.55	1076.000

For SM4500 S2 D colorimetric

	CAL Volume	Buret Start	Buret End	mL Iodine	Final mL	Conc mg/L
ICV					0.00	#DIV/0!
ICV					0.00	#DIV/0!

TestAmerica

IC Instrument Information

WL: 65695 **Inst ID:** 11 **Analysis Date:** 12/13/17 **Analyst:** ag

Rush	Job No.	Samples	Anions	QC Req	HT Exp
☐	104659	8	F Cl NO2 Br (NO3) PO4 SO4	(MS/D) #1	
☐	104682	3	F (Cl) (NO2) Br NO3 PO4 (SO4)	(MS/D) #12	
☐			F Cl NO2 Br NO3 PO4 SO4	MS/D	
☐			F Cl NO2 Br NO3 PO4 SO4	MS/D	
☐			F Cl NO2 Br NO3 PO4 SO4	MS/D	
☐			F Cl NO2 Br NO3 PO4 SO4	MS/D	
☐			F Cl NO2 Br NO3 PO4 SO4	MS/D	
☐			F Cl NO2 Br NO3 PO4 SO4	MS/D	
☐			F Cl NO2 Br NO3 PO4 SO4	MS/D	
☐			F Cl NO2 Br NO3 PO4 SO4	MS/D	
☐			F Cl NO2 Br NO3 PO4 SO4	MS/D	
☐			F Cl NO2 Br NO3 PO4 SO4	MS/D	
☐			F Cl NO2 Br NO3 PO4 SO4	MS/D	
☐			F Cl NO2 Br NO3 PO4 SO4	MS/D	

Dilutions

Job No.	Samples	Anions	Dilution	Reason
		F Cl NO2 Br NO3 PO4 SO4		
		F Cl NO2 Br NO3 PO4 SO4		
		F Cl NO2 Br NO3 PO4 SO4		
		F Cl NO2 Br NO3 PO4 SO4		
		F Cl NO2 Br NO3 PO4 SO4		
		F Cl NO2 Br NO3 PO4 SO4		
		F Cl NO2 Br NO3 PO4 SO4		
		F Cl NO2 Br NO3 PO4 SO4		
		F Cl NO2 Br NO3 PO4 SO4		

TestAmerica Laboratories
Initial Calibration Summary Report

Method: \\ChromNA\Denver\ChromData\WC_IonChrom11\20171214-65748.b\Anions_IC11.m

Instrument:	WC_IonChrom11	Lims Location:	280
Lock State:	Unlocked	Cpnd Order:	Retention Time
Integrator:	Falcon	Last Modified:	14-Dec-2017 09:33:28

No.Compounds:7

Initial Calibration Batches

Ical Batch: \\ChromNA\Denver\ChromData\WC_IonChrom11\20171213-65695.b
Inj Date : 13-Dec-2017 07:57:00, Sublist: chrom-Anions_IC11*sub1

Detector 1: 0005

	Wet - Anions				Wet - Anions 28D			
Compound	b	M1	M2	Err	b	M1	M2	Err
1 Fluoride	-266212	7283196		0.999	-266212	7283196		0.999
2 Chloride	-149115	6069017		0.995	-149115	6069017		0.995
3 Nitrite as N	-190397	9758950		1.000	-190397	9758950		1.000
4 Bromide	115631	1851122		0.999	115631	1851122		0.999
5 Nitrate as N	-245014	1121262		0.999	-245014	1121262		0.999
7 Orthophosphate as P	188013	4409302		0.999	188013	4409302		0.999
6 Sulfate	-757298	3694242		0.997	-757298	3694242		0.997

TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20171213-65695.b\0002.d
Lims ID: STD L1
Client ID:
Sample Type: IC Calib Level: 1
Inject. Date: 13-Dec-2017 07:57:00 ALS Bottle#: 0 Worklist Smp#: 2
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Sample Info: 280-0065695-002
Operator ID: Instrument ID: WC_IonChrom11
Sublist: chrom-Anions_IC11*sub1

Method: \\ChromNA\Denver\ChromData\WC_IonChrom11\20171213-65695.b\Anions_IC11.m
Limit Group: Wet - Anions 28D
Last Update: 14-Dec-2017 09:54:27 Calib Date: 13-Dec-2017 09:49:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20171213-65695.b\0007.d

Column 1 : Det: 0005
Process Host: XAWRK009

Compound	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 Fluoride	3.667	3.667	0.000	1327660	0.2000	0.2188	
2 Chloride	5.434	5.484	-0.050	7360810	1.00	1.46	
3 Nitrite as N	6.609	6.609	0.000	1909104	0.2000	0.2151	
4 Bromide	8.626	8.609	0.017	559248	0.2000	0.2396	
5 Nitrate as N	10.134	10.009	0.125	2184640	0.2000	0.2167	
7 Orthophosphate as P	13.534	13.500	0.034	1215449	0.2000	0.2330	
6 Sulfate	16.342	16.284	0.058	3803888	1.00	1.23	

Reagents:

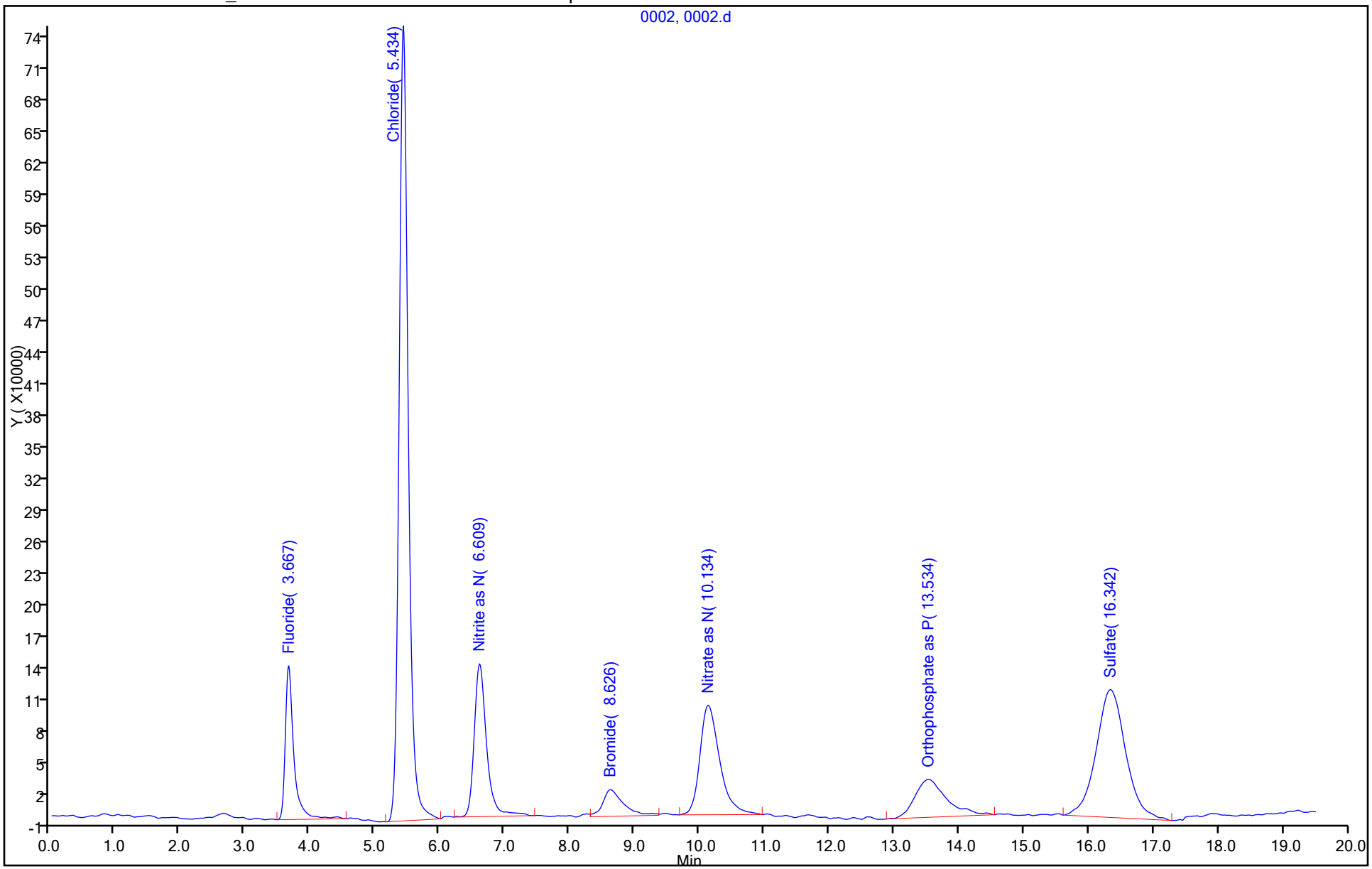
IC CAL cl/so4_00177 Amount Added: 0.02 Units: mL
IC Cal low_00337 Amount Added: 0.02 Units: mL

Report Date: 14-Dec-2017 09:54:27 Chrom Revision: 2.2 08-Dec-2017 11:41:26

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20171213-65695.b\0002.d

Injection Date:	13-Dec-2017 07:57:00	Instrument ID:	WC_IonChrom11	Operator ID:	
Lims ID:	STD L1			Worklist Smp#:	2
Client ID:					
Injection Vol:	10.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	Anions_IC11	Limit Group:	Wet - Anions 28D		



TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20171213-65695.b\0003.d
Lims ID: STD L2
Client ID:
Sample Type: IC Calib Level: 2
Inject. Date: 13-Dec-2017 08:19:00 ALS Bottle#: 0 Worklist Smp#: 3
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Sample Info: 280-0065695-003
Operator ID: Instrument ID: WC_IonChrom11
Sublist: chrom-Anions_IC11*sub1

Method: \\ChromNA\Denver\ChromData\WC_IonChrom11\20171213-65695.b\Anions_IC11.m
Limit Group: Wet - Anions 28D
Last Update: 14-Dec-2017 09:54:28 Calib Date: 13-Dec-2017 09:49:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20171213-65695.b\0007.d

Column 1 : Det: 0005
Process Host: XAWRK009

Compound	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 Fluoride	3.667	3.667	0.000	3341685	0.5000	0.4954	
2 Chloride	5.425	5.484	-0.059	11288875	2.50	2.11	
3 Nitrite as N	6.600	6.609	-0.009	4574890	0.5000	0.4883	
4 Bromide	8.600	8.609	-0.009	928026	0.5000	0.4389	
5 Nitrate as N	10.075	10.009	0.066	5272395	0.5000	0.4921	
7 Orthophosphate as P	13.534	13.500	0.034	2134840	0.5000	0.4415	
6 Sulfate	16.359	16.284	0.075	7951442	2.50	2.36	

Reagents:

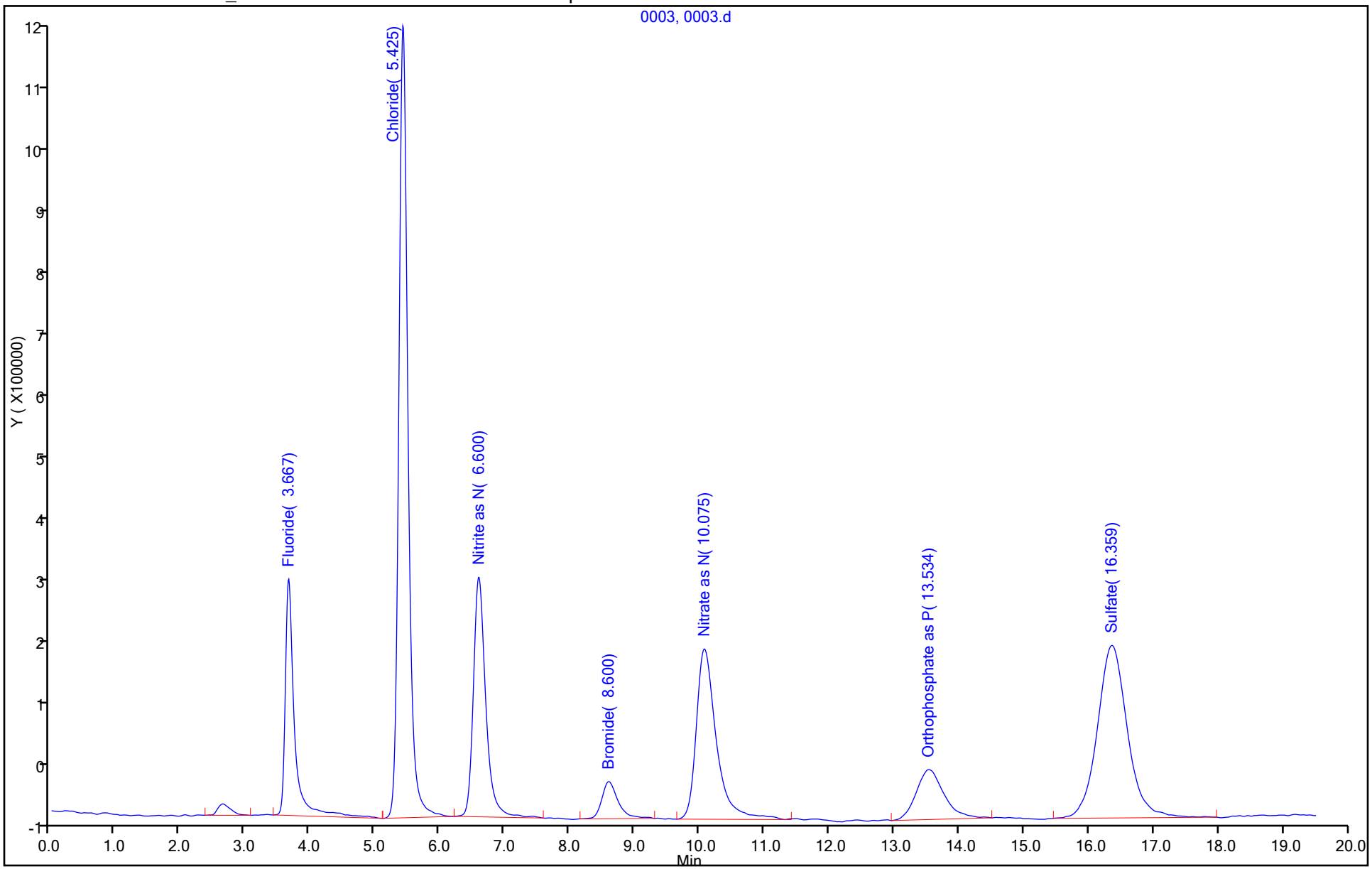
IC CAL cl/so4_00177 Amount Added: 0.05 Units: mL
IC Cal low_00337 Amount Added: 0.05 Units: mL

Report Date: 14-Dec-2017 09:54:28 Chrom Revision: 2.2 08-Dec-2017 11:41:26

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20171213-65695.b\0003.d

Injection Date:	13-Dec-2017 08:19:00	Instrument ID:	WC_IonChrom11	Operator ID:	
Lims ID:	STD L2			Worklist Smp#:	3
Client ID:					
Injection Vol:	10.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	Anions_IC11	Limit Group:	Wet - Anions 28D		



TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20171213-65695.b\0004.d
Lims ID: STD L3
Client ID:
Sample Type: IC Calib Level: 3
Inject. Date: 13-Dec-2017 08:42:00 ALS Bottle#: 0 Worklist Smp#: 4
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Sample Info: 280-0065695-004
Misc. Info.: 4 F
Operator ID: Instrument ID: WC_IonChrom11
Sublist: chrom-Anions_IC11*sub1

Method: \\ChromNA\Denver\ChromData\WC_IonChrom11\20171213-65695.b\Anions_IC11.m
Limit Group: Wet - Anions 28D
Last Update: 14-Dec-2017 09:54:29 Calib Date: 13-Dec-2017 09:49:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20171213-65695.b\0007.d

Column 1 : Det: 0005
Process Host: XAWRK009

Compound	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 Fluoride	3.667	3.667	0.000	6505939	1.00	0.9298	
2 Chloride	5.434	5.484	-0.050	21880901	5.00	3.85	
3 Nitrite as N	6.600	6.609	-0.009	9203298	1.00	0.9626	
4 Bromide	8.609	8.609	0.000	1831056	1.00	0.9267	
5 Nitrate as N	10.067	10.009	0.058	10392876	1.00	0.9487	
7 Orthophosphate as P	13.534	13.500	0.034	4349543	1.00	0.9438	
6 Sulfate	16.367	16.284	0.083	15559038	5.00	4.42	

Reagents:

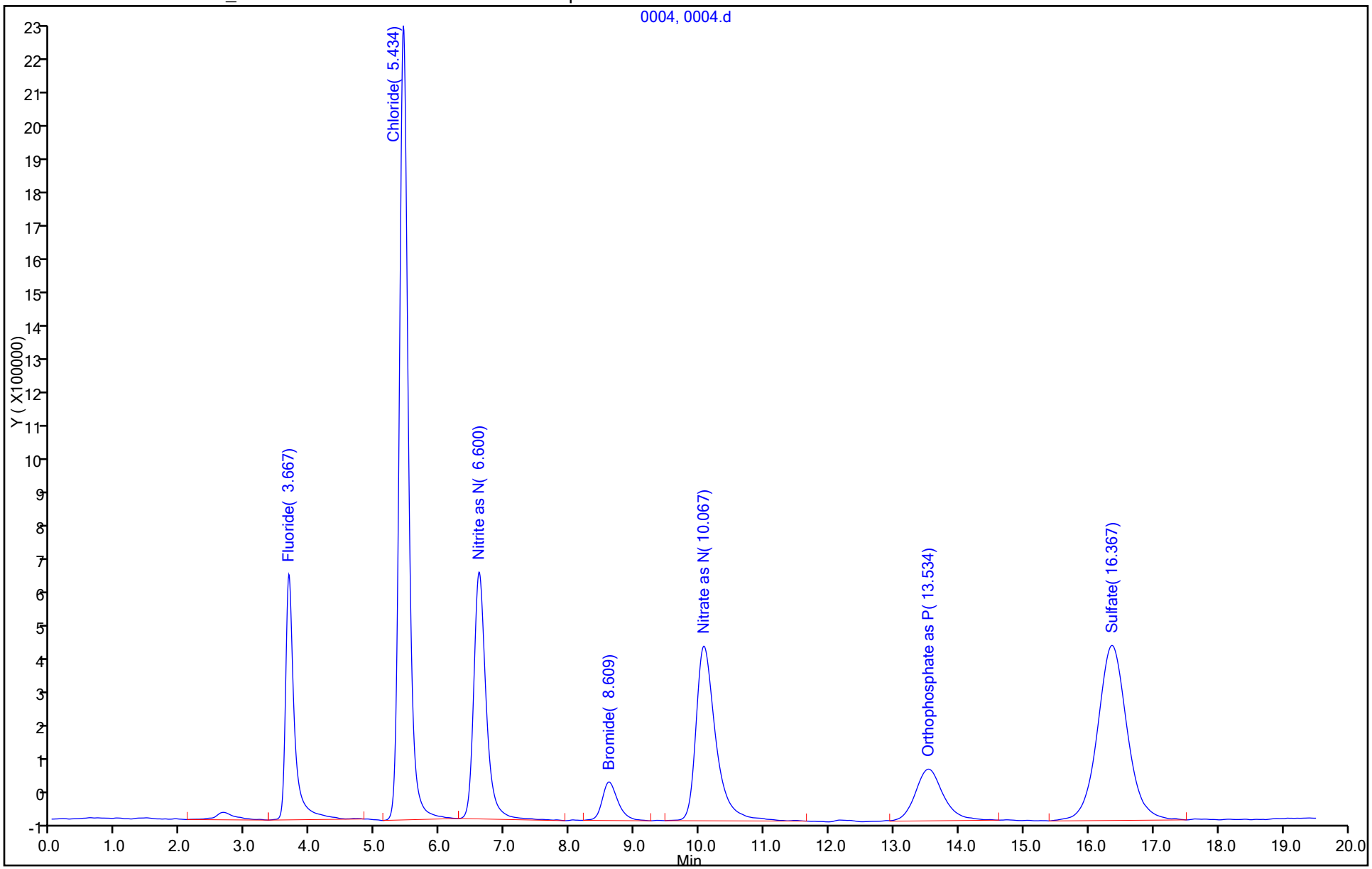
IC CAL cl/so4_00177 Amount Added: 0.10 Units: mL
IC Cal low_00337 Amount Added: 0.10 Units: mL

Report Date: 14-Dec-2017 09:54:29 Chrom Revision: 2.2 08-Dec-2017 11:41:26

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20171213-65695.b\0004.d

Injection Date:	13-Dec-2017 08:42:00	Instrument ID:	WC_IonChrom11	Operator ID:	
Lims ID:	STD L3			Worklist Smp#:	4
Client ID:					
Injection Vol:	10.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	Anions_IC11	Limit Group:	Wet - Anions 28D		



TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20171213-65695.b\0005.d
Lims ID: STD L4
Client ID:
Sample Type: IC Calib Level: 4
Inject. Date: 13-Dec-2017 09:04:00 ALS Bottle#: 0 Worklist Smp#: 5
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Sample Info: 280-0065695-005
Misc. Info.: 5 F
Operator ID: Instrument ID: WC_IonChrom11
Sublist: chrom-Anions_IC11*sub1

Method: \\ChromNA\Denver\ChromData\WC_IonChrom11\20171213-65695.b\Anions_IC11.m
Limit Group: Wet - Anions 28D
Last Update: 14-Dec-2017 09:54:29 Calib Date: 13-Dec-2017 09:49:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20171213-65695.b\0007.d

Column 1 : Det: 0005
Process Host: XAWRK009

Compound	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 Fluoride	3.667	3.667	0.000	27836759	4.00	3.86	
2 Chloride	5.459	5.459	0.000	330480036	60.0	54.7	
3 Nitrite as N	6.592	6.592	0.000	37532315	4.00	3.87	
4 Bromide	8.592	8.592	0.000	7329066	4.00	3.90	
5 Nitrate as N	10.000	10.000	0.000	42959357	4.00	3.85	
7 Orthophosphate as P	13.509	13.509	0.000	17833124	4.00	4.00	
6 Sulfate	16.317	16.317	0.000	206671710	60.0	56.1	

Reagents:

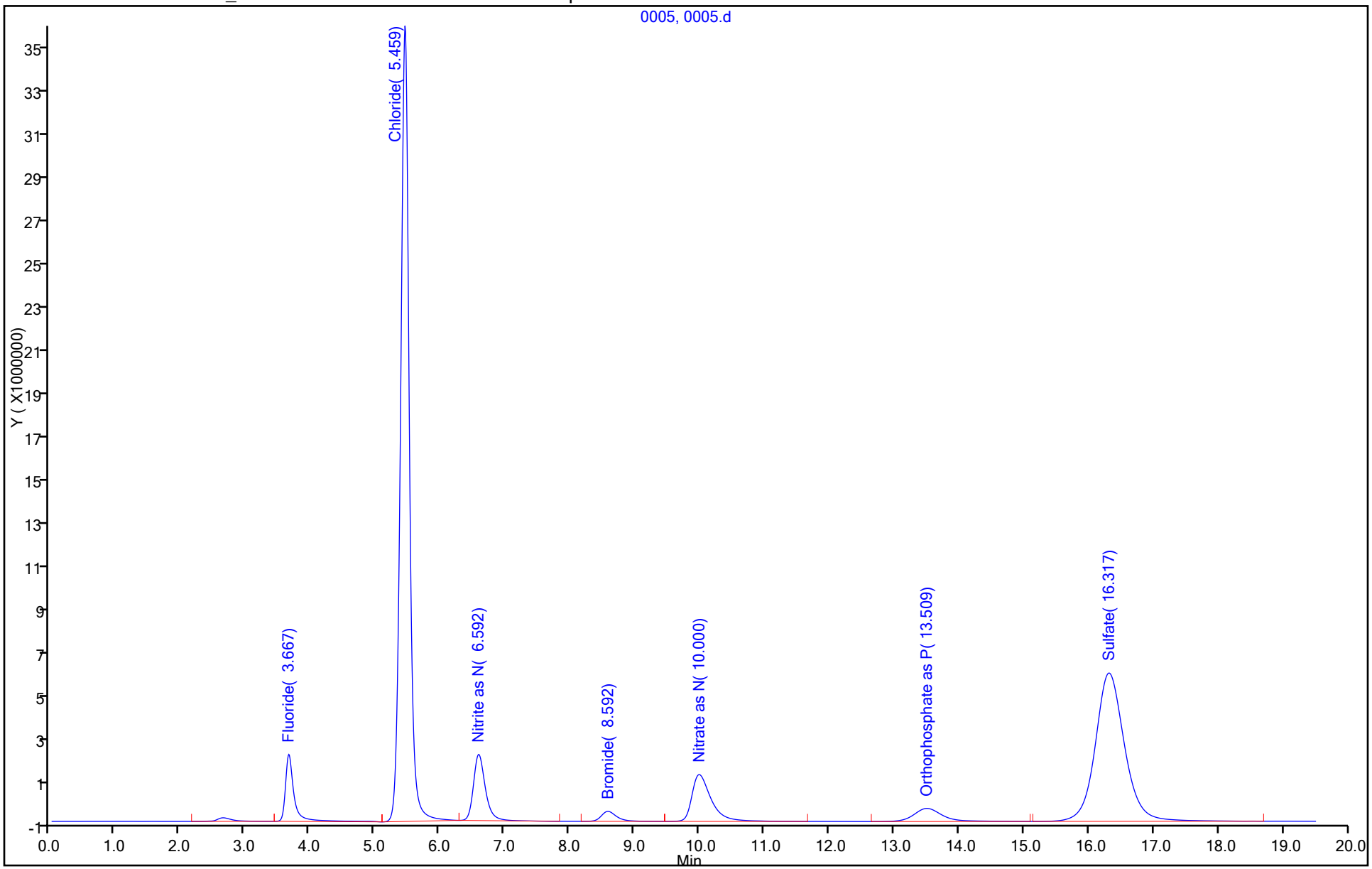
IC CAL cl/so4_00177 Amount Added: 1.20 Units: mL
IC Cal low_00337 Amount Added: 0.40 Units: mL

Report Date: 14-Dec-2017 09:54:30 Chrom Revision: 2.2 08-Dec-2017 11:41:26

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20171213-65695.b\0005.d

Injection Date:	13-Dec-2017 09:04:00	Instrument ID:	WC_IonChrom11	Operator ID:	
Lims ID:	STD L4			Worklist Smp#:	5
Client ID:					
Injection Vol:	10.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	Anions_IC11	Limit Group:	Wet - Anions 28D		



TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20171213-65695.b\0006.d
Lims ID: STD L5
Client ID:
Sample Type: IC Calib Level: 5
Inject. Date: 13-Dec-2017 09:27:00 ALS Bottle#: 0 Worklist Smp#: 6
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Sample Info: 280-0065695-006
Misc. Info.: 6 F
Operator ID: Instrument ID: WC_IonChrom11
Sublist: chrom-Anions_IC11*sub1

Method: \\ChromNA\Denver\ChromData\WC_IonChrom11\20171213-65695.b\Anions_IC11.m
Limit Group: Wet - Anions 28D
Last Update: 14-Dec-2017 09:54:30 Calib Date: 13-Dec-2017 09:49:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20171213-65695.b\0007.d

Column 1 : Det: 0005
Process Host: XAWRK009

First Level Reviewer: lehmanje Date: 13-Dec-2017 11:09:17

Compound	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 Fluoride	3.667	3.667	0.000	58239513	8.00	8.03	
2 Chloride	5.492	5.459	0.033	700111864	120.0	115.6	
3 Nitrite as N	6.592	6.592	0.000	78635829	8.00	8.08	
4 Bromide	8.559	8.592	-0.033	15171458	8.00	8.13	
5 Nitrate as N	9.925	10.000	-0.075	90102534	8.00	8.06	
7 Orthophosphate as P	13.500	13.509	-0.009	35396511	8.00	7.99	
6 Sulfate	16.284	16.317	-0.033	422052325	120.0	114.5	

Reagents:

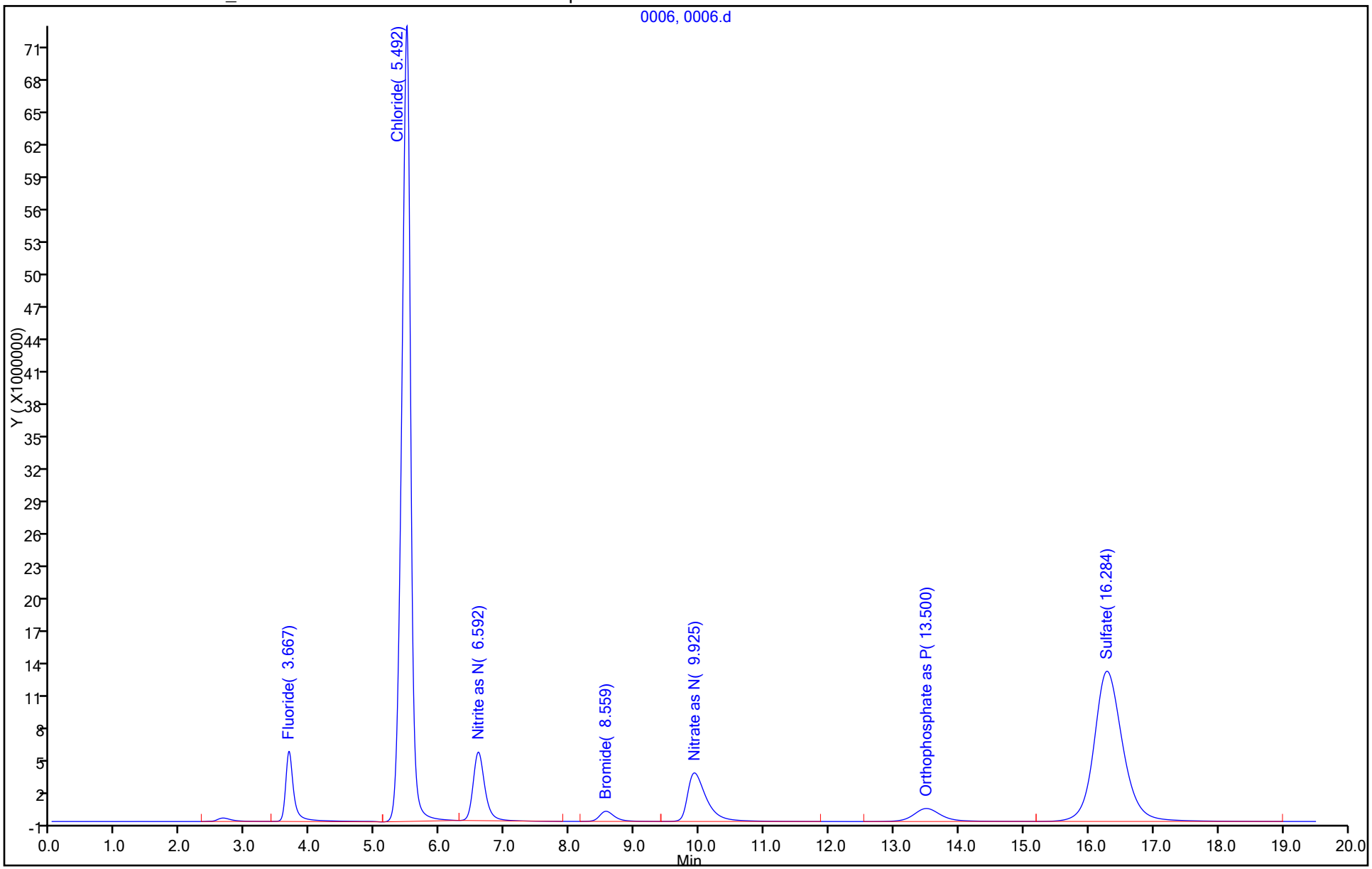
IC CAL cl/so4_00177 Amount Added: 2.40 Units: mL
IC Cal low_00337 Amount Added: 0.80 Units: mL

Report Date: 14-Dec-2017 09:54:31 Chrom Revision: 2.2 08-Dec-2017 11:41:26

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20171213-65695.b\0006.d

Injection Date:	13-Dec-2017 09:27:00	Instrument ID:	WC_IonChrom11	Operator ID:	
Lims ID:	STD L5			Worklist Smp#:	6
Client ID:					
Injection Vol:	10.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	Anions_IC11	Limit Group:	Wet - Anions 28D		



TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20171213-65695.b\0007.d
Lims ID: STD L6
Client ID:
Sample Type: IC Calib Level: 6
Inject. Date: 13-Dec-2017 09:49:00 ALS Bottle#: 0 Worklist Smp#: 7
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Sample Info: 280-0065695-007
Misc. Info.: 6773 F
Operator ID: Instrument ID: WC_IonChrom11
Sublist: chrom-Anions_IC11*sub1

Method: \\ChromNA\Denver\ChromData\WC_IonChrom11\20171213-65695.b\Anions_IC11.m
Limit Group: Wet - Anions 28D
Last Update: 14-Dec-2017 09:54:31 Calib Date: 13-Dec-2017 09:49:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20171213-65695.b\0007.d

Column 1 : Det: 0005
Process Host: XAWRK009

Compound	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 Fluoride	3.675	3.667	0.008	73762926	10.0	10.2	
2 Chloride	5.534	5.459	0.075	1277743641	200.0	210.8	
3 Nitrite as N	6.592	6.592	0.000	98289291	10.0	10.1	
4 Bromide	8.550	8.592	-0.042	18746509	10.0	10.1	
5 Nitrate as N	9.892	10.000	-0.108	113357336	10.0	10.1	
7 Orthophosphate as P	13.500	13.509	-0.009	44699067	10.0	10.1	
6 Sulfate	16.250	16.317	-0.067	774630935	200.0	209.9	

Reagents:

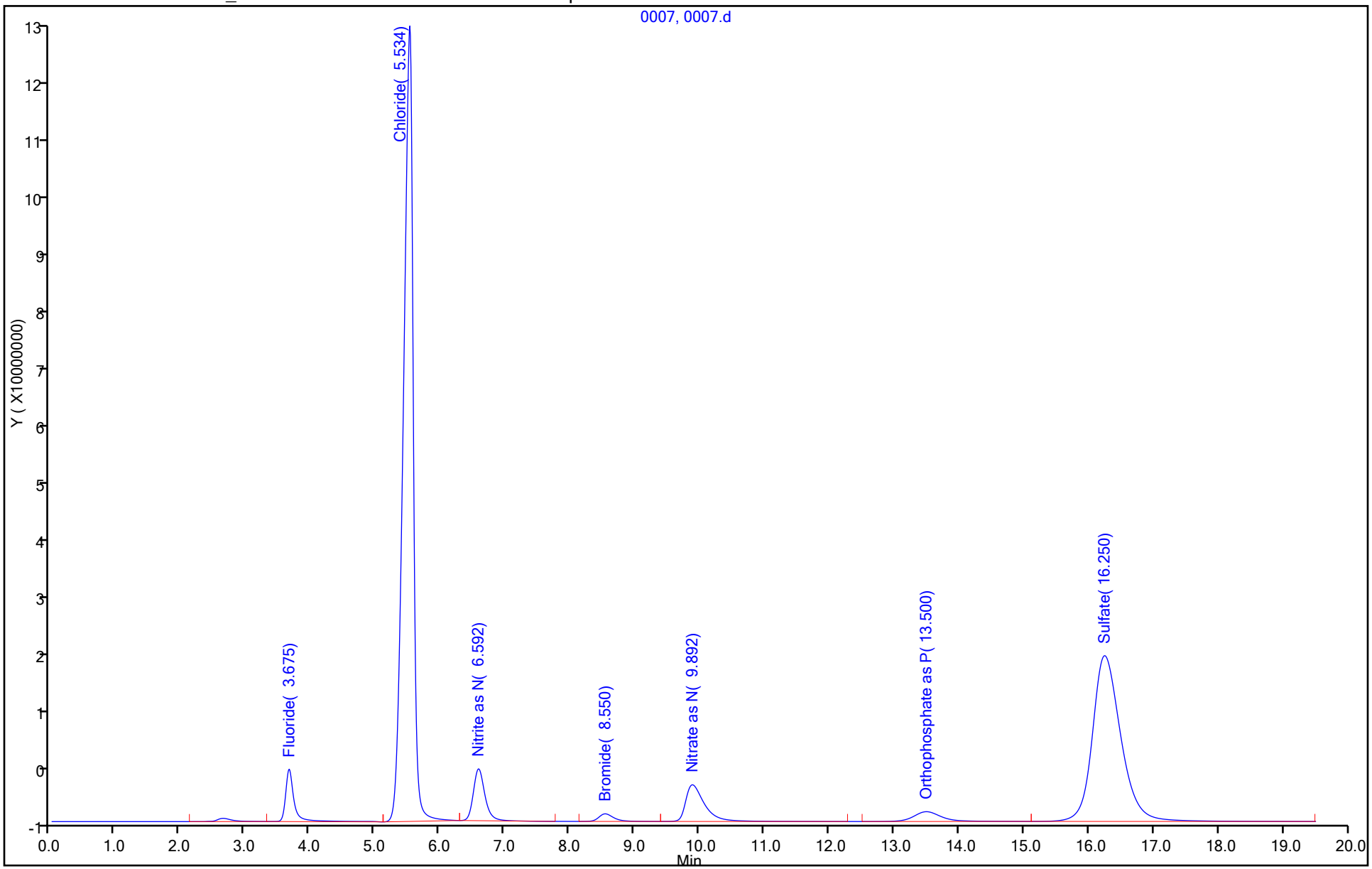
IC CAL cl/so4_00177 Amount Added: 4.00 Units: mL
IC Cal low_00337 Amount Added: 1.00 Units: mL

Report Date: 14-Dec-2017 09:54:32 Chrom Revision: 2.2 08-Dec-2017 11:41:26

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20171213-65695.b\0007.d

Injection Date:	13-Dec-2017 09:49:00	Instrument ID:	WC_IonChrom11	Operator ID:	
Lims ID:	STD L6			Worklist Smp#:	7
Client ID:					
Injection Vol:	10.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	Anions_IC11	Limit Group:	Wet - Anions 28D		



TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

IC Instrument Information

WL: 66148 **Inst ID:** 11 **Analysis Date:** 12/29/17 **Analyst:** JP

Rush	Job No.	Samples	Anions	QC Req	HT Exp
☐	105088	2	F **Cl** NO2 Br **NO3** PO4 **SO4**	MS/D	
☐	105086	1	**F** **Cl** NO2 **Br** NO3 PO4 **SO4**	MS/D	Sample expired when received
☐	105093	3	**F** **Cl** NO2 Br **NO3** PO4 **SO4**	MS/D	
☐	105090	2	F **Cl** NO2 Br **NO3** PO4 **SO4**	MS/D	
☐	105084	2	F **Cl** NO2 Br **NO3** PO4 **SO4**	MS/D	
☐	104552	4	F **Cl** NO2 Br NO3 PO4 **SO4**	**MS/D** 8 &	10
☐			F Cl NO2 Br NO3 PO4 SO4	MS/D	
☐			F Cl NO2 Br NO3 PO4 SO4	MS/D	
☐			F Cl NO2 Br NO3 PO4 SO4	MS/D	
☐			F Cl NO2 Br NO3 PO4 SO4	MS/D	
☐			F Cl NO2 Br NO3 PO4 SO4	MS/D	
☐			F Cl NO2 Br NO3 PO4 SO4	MS/D	
☐			F Cl NO2 Br NO3 PO4 SO4	MS/D	
☐			F Cl NO2 Br NO3 PO4 SO4	MS/D	

Dilutions

Job No.	Samples	Anions	Dilution	Reason
		F Cl NO2 Br NO3 PO4 SO4		
		F Cl NO2 Br NO3 PO4 SO4		
		F Cl NO2 Br NO3 PO4 SO4		
		F Cl NO2 Br NO3 PO4 SO4		
		F Cl NO2 Br NO3 PO4 SO4		
		F Cl NO2 Br NO3 PO4 SO4		
		F Cl NO2 Br NO3 PO4 SO4		
		F Cl NO2 Br NO3 PO4 SO4		
		F Cl NO2 Br NO3 PO4 SO4		

TestAmerica Laboratories
Initial Calibration Summary Report

Method: \\ChromNA\Denver\ChromData\WC_IonChrom11\20171214-65748.b\Anions_IC11.m

Instrument:	WC_IonChrom11	Lims Location:	280
Lock State:	Unlocked	Cpnd Order:	Retention Time
Integrator:	Falcon	Last Modified:	14-Dec-2017 09:33:28

No.Compounds:7

Initial Calibration Batches

Ical Batch: \\ChromNA\Denver\ChromData\WC_IonChrom11\20171213-65695.b
Inj Date : 13-Dec-2017 07:57:00, Sublist: chrom-Anions_IC11*sub1

Detector 1: 0005

	Wet - Anions				Wet - Anions 28D			
Compound	b	M1	M2	Err	b	M1	M2	Err
1 Fluoride	-266212	7283196		0.999	-266212	7283196		0.999
2 Chloride	-149115	6069017		0.995	-149115	6069017		0.995
3 Nitrite as N	-190397	9758950		1.000	-190397	9758950		1.000
4 Bromide	115631	1851122		0.999	115631	1851122		0.999
5 Nitrate as N	-245014	1121262		0.999	-245014	1121262		0.999
7 Orthophosphate as P	188013	4409302		0.999	188013	4409302		0.999
6 Sulfate	-757298	3694242		0.997	-757298	3694242		0.997

TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20171229-66148.b\0001.d
Lims ID: CCV
Client ID:
Sample Type: CCV
Inject. Date: 29-Dec-2017 11:41:00 ALS Bottle#: 0 Worklist Smp#: 1
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Sample Info: 280-0066148-001
Operator ID: Instrument ID: WC_IonChrom11
Sublist: chrom-Anions_IC11*sub1

Method: \\ChromNA\Denver\ChromData\WC_IonChrom11\20171229-66148.b\Anions_IC11.m
Limit Group: Wet - Anions 28D
Last Update: 30-Dec-2017 10:33:29 Calib Date: 13-Dec-2017 09:49:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20171213-65695.b\0007.d

Column 1 : Det: 0005
Process Host: XAWRK031

Compound	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 Fluoride	3.642	3.642	0.000	34517619	5.00	4.78	
2 Chloride	5.359	5.359	0.000	560362100	100.0	92.6	
3 Nitrite as N	6.392	6.392	0.000	46770360	5.00	4.81	
4 Bromide	8.209	8.209	0.000	9203023	5.00	4.91	
5 Nitrate as N	9.492	9.492	0.000	54085390	5.00	4.85	
7 Orthophosphate as P	13.059	13.059	0.000	21238063	5.00	4.77	
6 Sulfate	15.717	15.717	0.000	343904822	100.0	93.3	

Reagents:

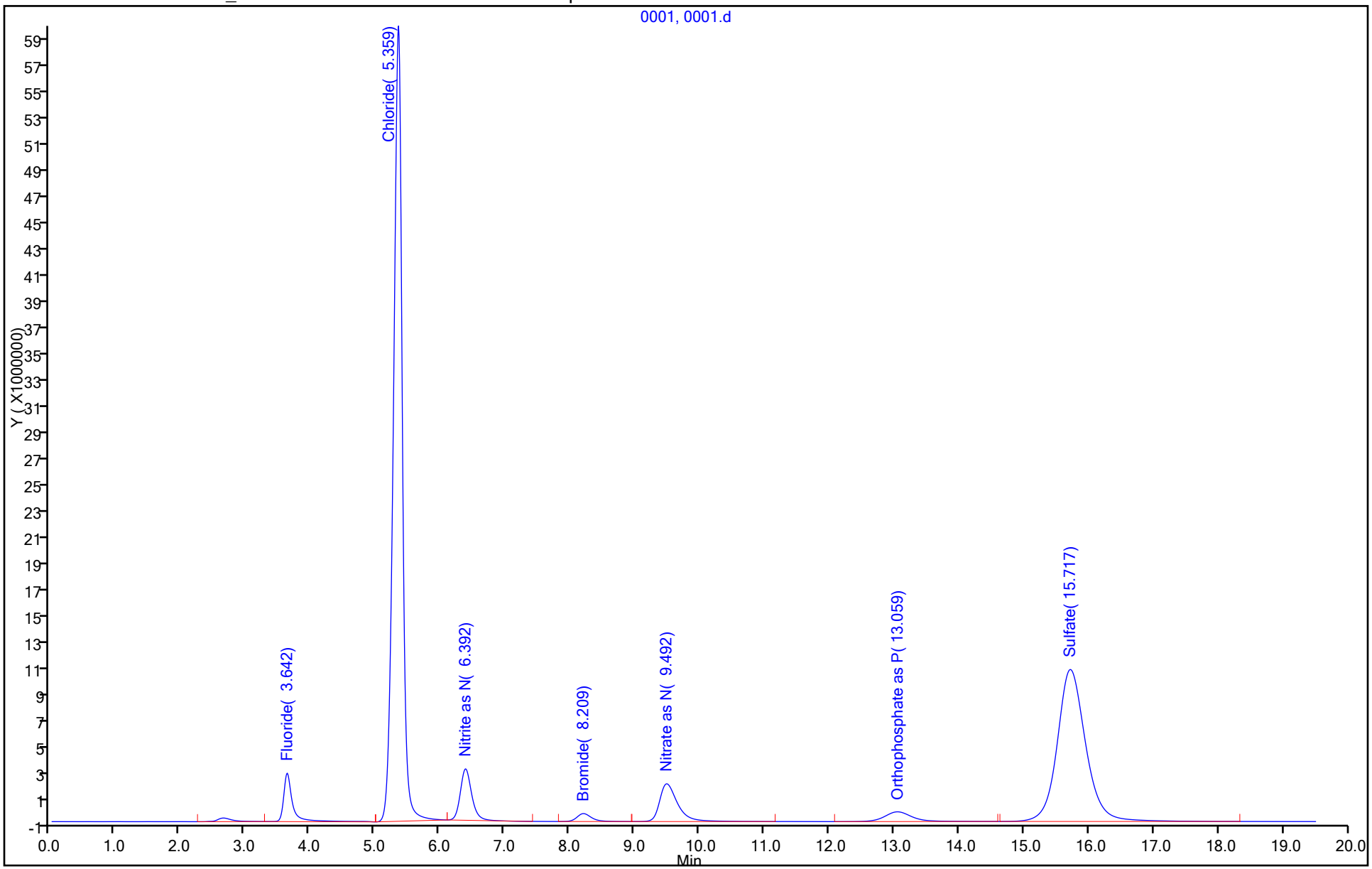
IC LCS_01108 Amount Added: 5.00 Units: mL

Report Date: 30-Dec-2017 10:33:30 Chrom Revision: 2.2 08-Dec-2017 11:41:26

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20171229-66148.b\0001.d

Injection Date:	29-Dec-2017 11:41:00	Instrument ID:	WC_IonChrom11	Operator ID:	
Lims ID:	CCV			Worklist Smp#:	1
Client ID:					
Injection Vol:	10.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	Anions_IC11	Limit Group:	Wet - Anions 28D		



TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20171229-66148.b\0002.d
Lims ID: CCB
Client ID:
Sample Type: CCB
Inject. Date: 29-Dec-2017 12:03:00 ALS Bottle#: 0 Worklist Smp#: 2
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Sample Info: 280-0066148-002
Operator ID: Instrument ID: WC_IonChrom11

Method: \\ChromNA\Denver\ChromData\WC_IonChrom11\20171229-66148.b\Anions_IC11.m
Limit Group: Wet - Anions 28D
Last Update: 30-Dec-2017 10:33:29 Calib Date: 13-Dec-2017 09:49:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20171213-65695.b\0007.d

Column 1 : Det: 0005
Process Host: XAWRK031

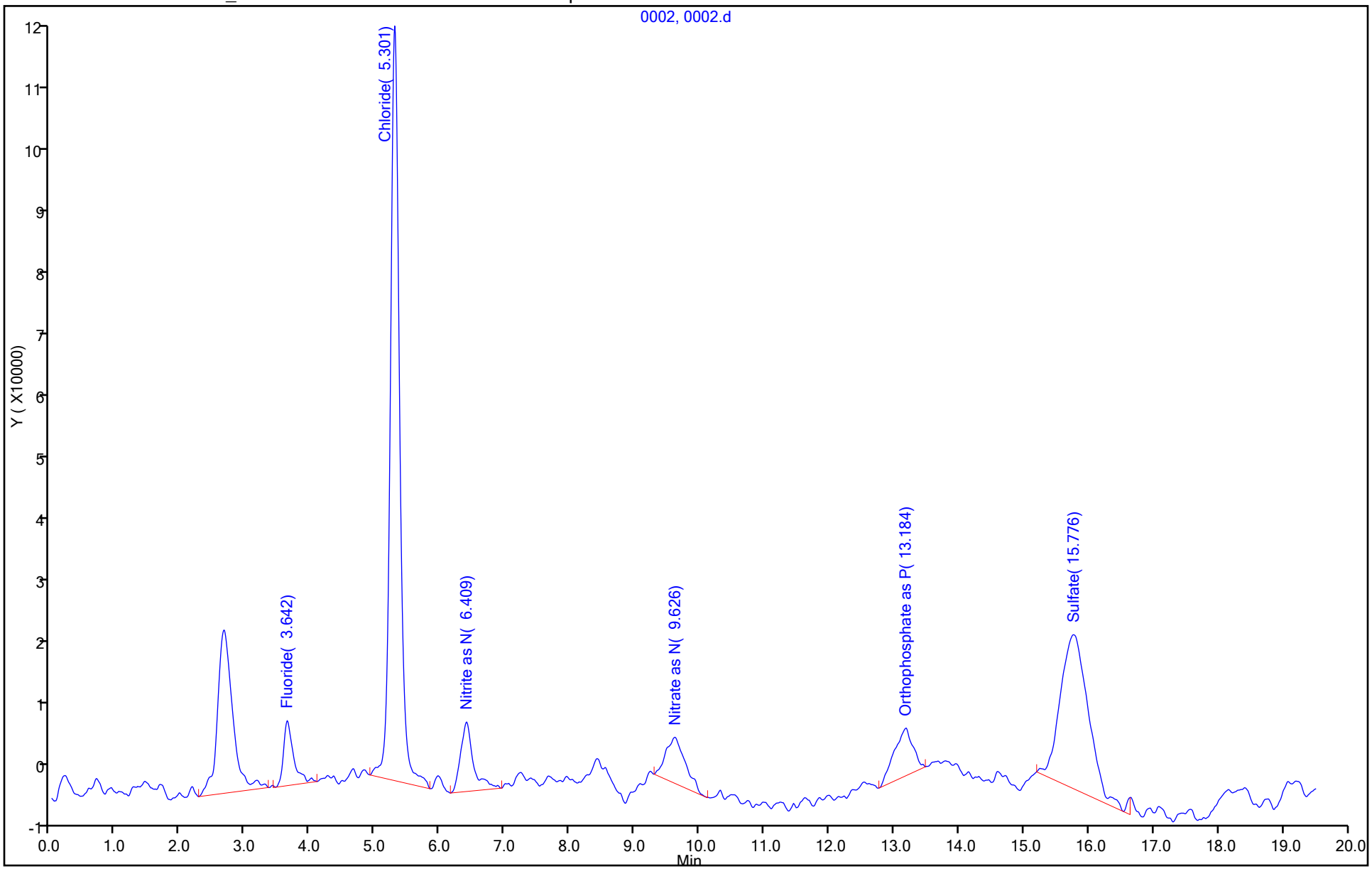
Compound	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 Fluoride	3.642	3.642	0.000	100735		0.0504	
2 Chloride	5.301	5.359	-0.058	1082222		0.4240	
3 Nitrite as N	6.409	6.392	0.017	137249		0.0336	
4 Bromide		8.209				ND	
5 Nitrate as N	9.626	9.492	0.134	138277		0.0342	
7 Orthophosphate as P	13.184	13.059	0.125	138985		-0.0111	
6 Sulfate	15.776	15.717	0.059	668697		0.3860	

Report Date: 30-Dec-2017 10:33:30 Chrom Revision: 2.2 08-Dec-2017 11:41:26

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20171229-66148.b\0002.d

Injection Date:	29-Dec-2017 12:03:00	Instrument ID:	WC_IonChrom11	Operator ID:	
Lims ID:	CCB			Worklist Smp#:	2
Client ID:					
Injection Vol:	10.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	Anions_IC11	Limit Group:	Wet - Anions 28D		



TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20171229-66148.b\0003.d
Lims ID: MRL
Client ID:
Sample Type: MRL
Inject. Date: 29-Dec-2017 12:25:00 ALS Bottle#: 0 Worklist Smp#: 3
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Sample Info: 280-0066148-003
Operator ID: Instrument ID: WC_IonChrom11

Method: \\ChromNA\Denver\ChromData\WC_IonChrom11\20171229-66148.b\Anions_IC11.m
Limit Group: Wet - Anions 28D
Last Update: 30-Dec-2017 10:33:29 Calib Date: 13-Dec-2017 09:49:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20171213-65695.b\0007.d

Column 1 : Det: 0005
Process Host: XAWRK031

Compound	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 Fluoride	3.642	3.642	0.000	1327764	0.2000	0.2189	
2 Chloride	5.300	5.359	-0.059	10590109	2.50	1.99	
3 Nitrite as N	6.384	6.392	-0.008	1823839	0.2000	0.2064	
4 Bromide	8.209	8.209	0.000	372344	0.2000	0.1387	
5 Nitrate as N	9.550	9.492	0.058	2026337	0.2000	0.2026	
7 Orthophosphate as P	13.084	13.059	0.025	952466	0.2000	0.1734	
6 Sulfate	15.775	15.717	0.058	7597505	2.50	2.26	

Reagents:

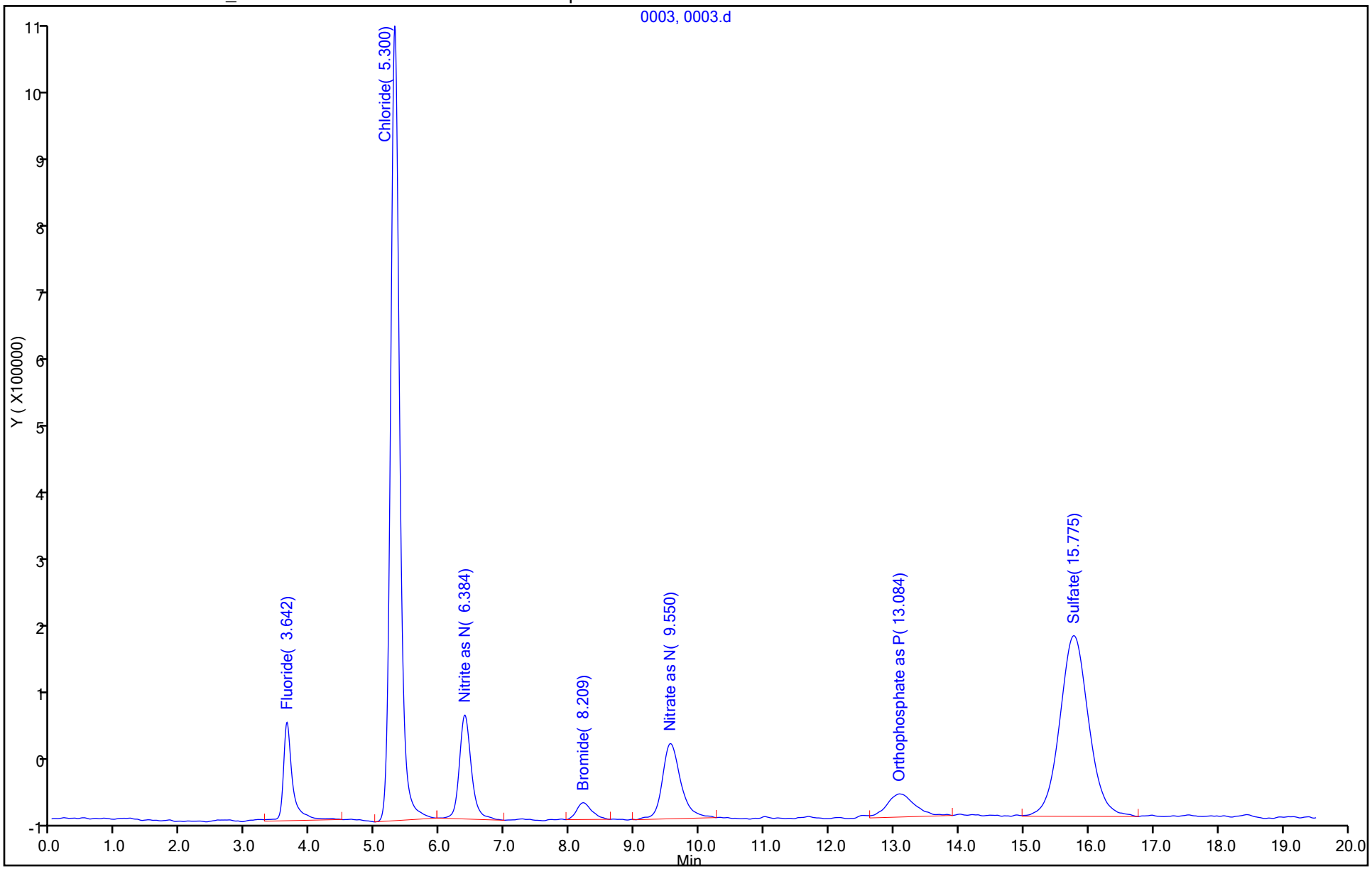
IC Cal low_00339 Amount Added: 0.02 Units: mL
IC CAL cl/so4_00179 Amount Added: 0.05 Units: mL

Report Date: 30-Dec-2017 10:33:31 Chrom Revision: 2.2 08-Dec-2017 11:41:26

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20171229-66148.b\0003.d

Injection Date:	29-Dec-2017 12:25:00	Instrument ID:	WC_IonChrom11	Operator ID:	
Lims ID:	MRL			Worklist Smp#:	3
Client ID:					
Injection Vol:	10.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	Anions_IC11	Limit Group:	Wet - Anions 28D		



TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20171229-66148.b\0004.d
Lims ID: LCS
Client ID:
Sample Type: LCS
Inject. Date: 29-Dec-2017 12:47:00 ALS Bottle#: 0 Worklist Smp#: 4
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Sample Info: 280-0066148-004
Misc. Info.: 4 F
Operator ID: Instrument ID: WC_IonChrom11

Method: \\ChromNA\Denver\ChromData\WC_IonChrom11\20171229-66148.b\Anions_IC11.m
Limit Group: Wet - Anions 28D
Last Update: 30-Dec-2017 10:33:29 Calib Date: 13-Dec-2017 09:49:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20171213-65695.b\0007.d

Column 1 : Det: 0005
Process Host: XAWRK031

Compound	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 Fluoride	3.642	3.642	0.000	34532560	5.00	4.78	
2 Chloride	5.351	5.359	-0.008	561156051	100.0	92.7	
3 Nitrite as N	6.376	6.392	-0.016	46764353	5.00	4.81	
4 Bromide	8.176	8.209	-0.033	9297564	5.00	4.96	
5 Nitrate as N	9.442	9.492	-0.050	54231662	5.00	4.86	
7 Orthophosphate as P	13.051	13.059	-0.008	21299413	5.00	4.79	
6 Sulfate	15.717	15.717	0.000	344006657	100.0	93.3	

Reagents:

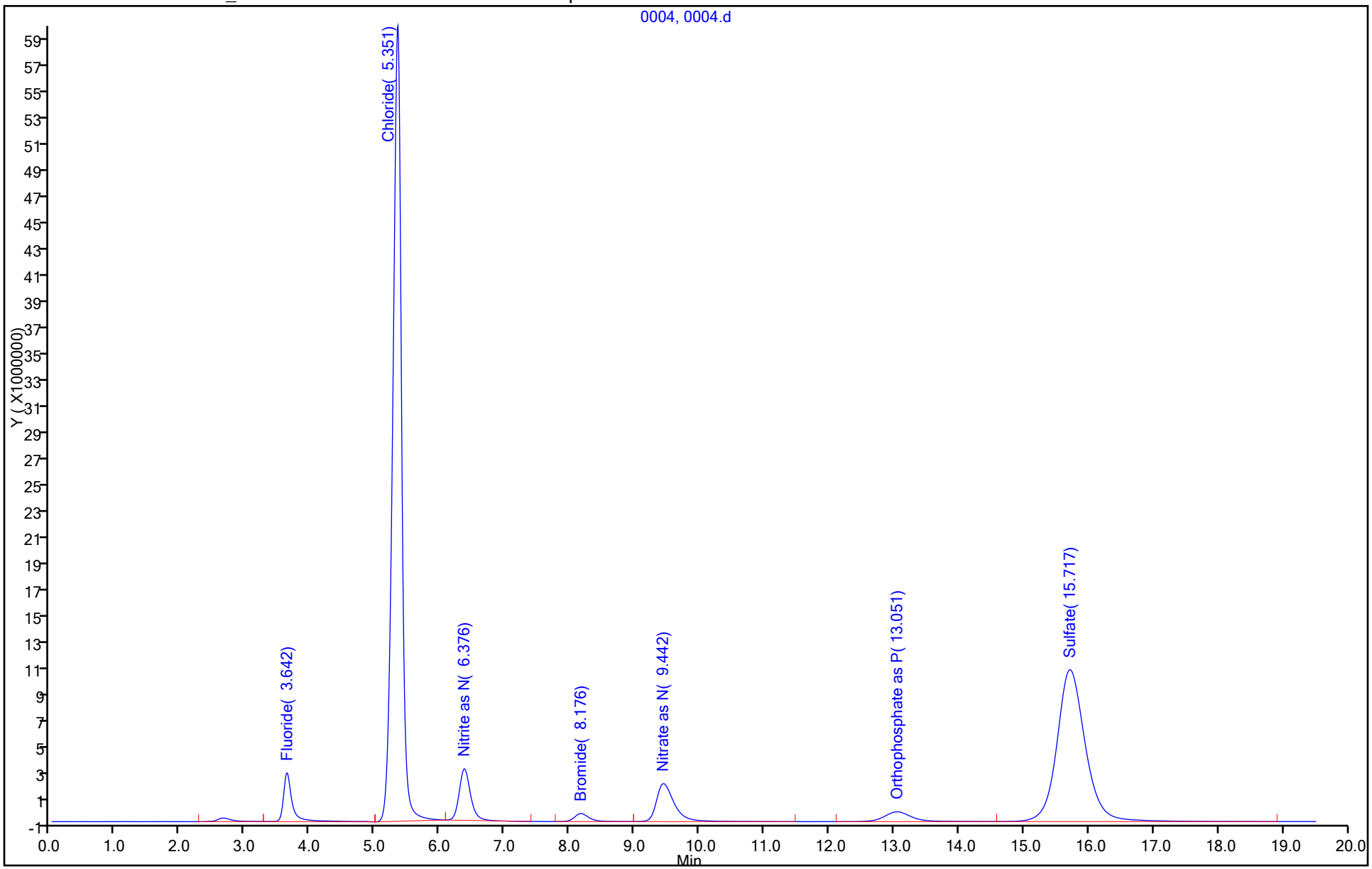
IC LCS_01108 Amount Added: 5.00 Units: mL

Report Date: 30-Dec-2017 10:33:32 Chrom Revision: 2.2 08-Dec-2017 11:41:26

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20171229-66148.b\0004.d

Injection Date:	29-Dec-2017 12:47:00	Instrument ID:	WC_IonChrom11	Operator ID:	
Lims ID:	LCS			Worklist Smp#:	4
Client ID:					
Injection Vol:	10.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	Anions_IC11	Limit Group:	Wet - Anions 28D		



TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20171229-66148.b\0005.d
Lims ID: LCSD
Client ID:
Sample Type: LCSD
Inject. Date: 29-Dec-2017 13:10:00 ALS Bottle#: 0 Worklist Smp#: 5
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Sample Info: 280-0066148-005
Misc. Info.: 5 F
Operator ID: Instrument ID: WC_IonChrom11

Method: \\ChromNA\Denver\ChromData\WC_IonChrom11\20171229-66148.b\Anions_IC11.m
Limit Group: Wet - Anions 28D
Last Update: 30-Dec-2017 10:33:29 Calib Date: 13-Dec-2017 09:49:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20171213-65695.b\0007.d

Column 1 : Det: 0005
Process Host: XAWRK031

Compound	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 Fluoride	3.642	3.642	0.000	34587966	5.00	4.79	
2 Chloride	5.342	5.359	-0.017	560370042	100.0	92.6	
3 Nitrite as N	6.367	6.392	-0.025	46775076	5.00	4.81	
4 Bromide	8.167	8.209	-0.042	9178220	5.00	4.90	
5 Nitrate as N	9.434	9.492	-0.058	53785329	5.00	4.82	
7 Orthophosphate as P	13.051	13.059	-0.008	21103495	5.00	4.74	
6 Sulfate	15.717	15.717	0.000	343737539	100.0	93.3	

Reagents:

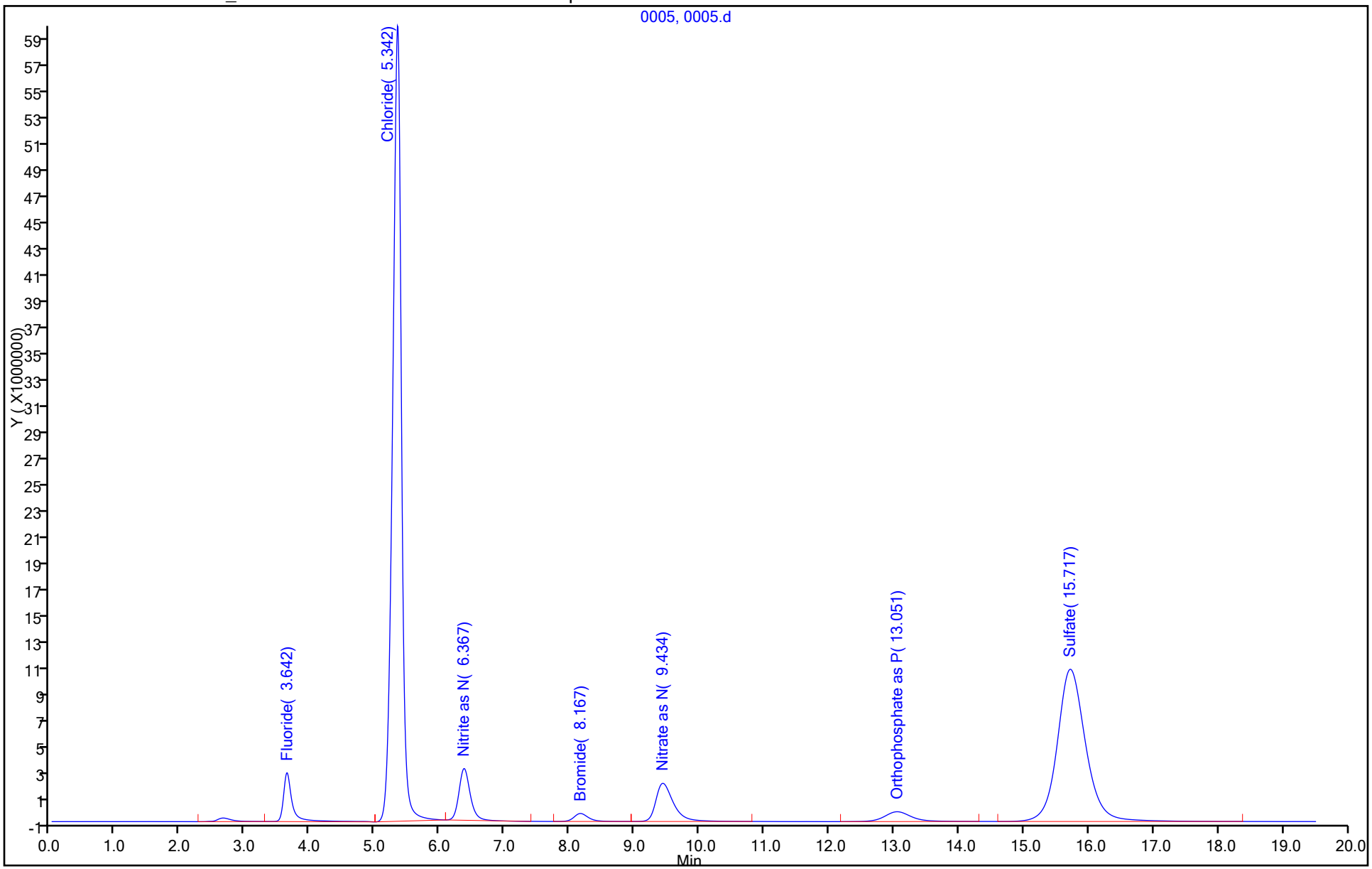
IC LCS_01108 Amount Added: 5.00 Units: mL

Report Date: 30-Dec-2017 10:33:34 Chrom Revision: 2.2 08-Dec-2017 11:41:26

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20171229-66148.b\0005.d

Injection Date:	29-Dec-2017 13:10:00	Instrument ID:	WC_IonChrom11	Operator ID:	
Lims ID:	LCSD			Worklist Smp#:	5
Client ID:					
Injection Vol:	10.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	Anions_IC11	Limit Group:	Wet - Anions 28D		



TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20171229-66148.b\0006.d
Lims ID: MB
Client ID:
Sample Type: MB
Inject. Date: 29-Dec-2017 13:32:00 ALS Bottle#: 0 Worklist Smp#: 6
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Sample Info: 280-0066148-006
Misc. Info.: 6 F
Operator ID: Instrument ID: WC_IonChrom11

Method: \\ChromNA\Denver\ChromData\WC_IonChrom11\20171229-66148.b\Anions_IC11.m
Limit Group: Wet - Anions 28D
Last Update: 30-Dec-2017 10:33:29 Calib Date: 13-Dec-2017 09:49:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20171213-65695.b\0007.d

Column 1 : Det: 0005
Process Host: XAWRK031

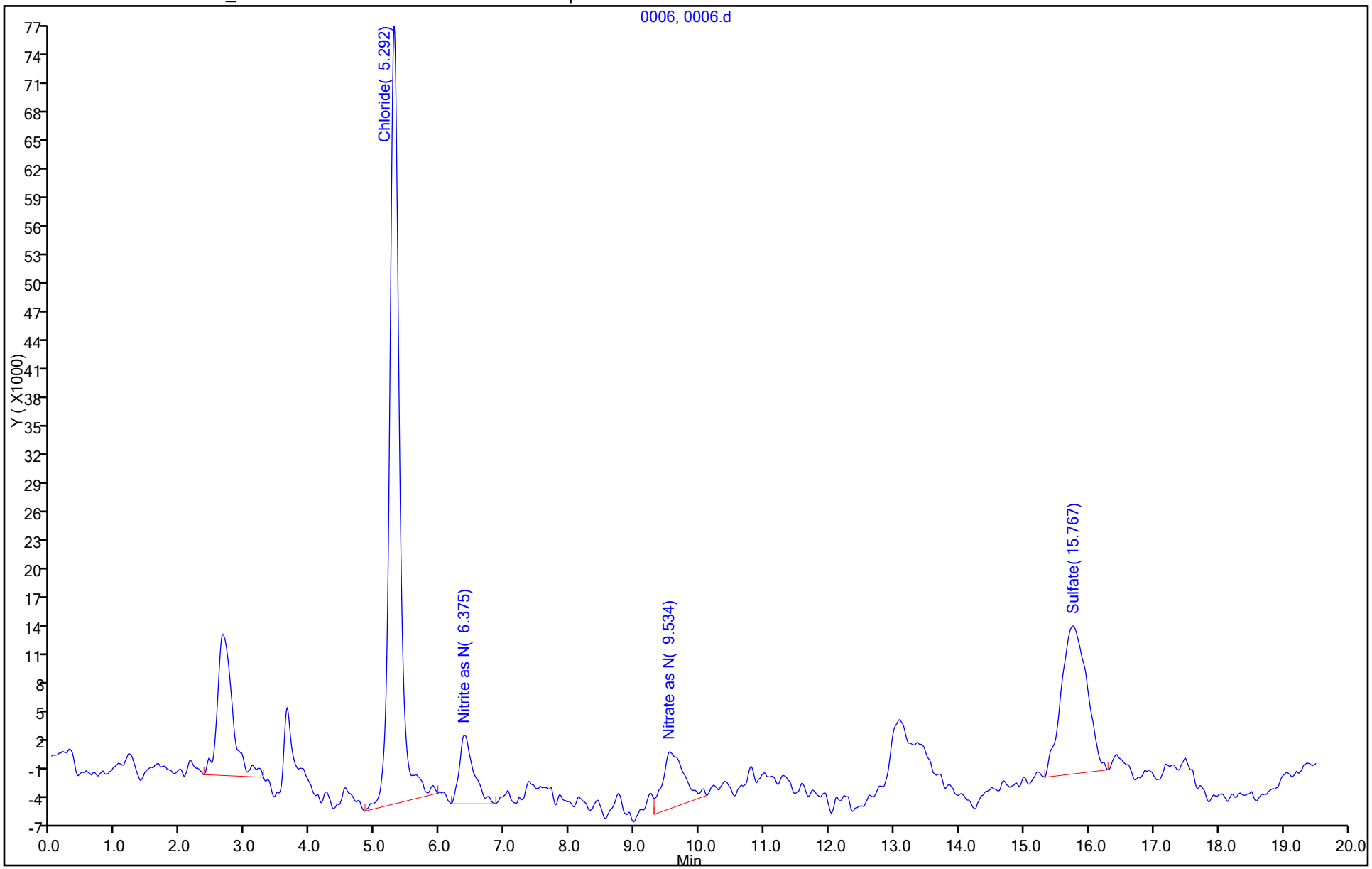
Compound	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 Fluoride		3.642				ND	
2 Chloride	5.292	5.359	-0.067	868228		0.3888	
3 Nitrite as N	6.375	6.392	-0.017	110190		0.0308	
4 Bromide		8.209				ND	
5 Nitrate as N	9.534	9.492	0.042	136114		0.0340	
7 Orthophosphate as P		13.059				ND	
6 Sulfate	15.767	15.717	0.050	426938		0.3206	

Report Date: 30-Dec-2017 10:33:35 Chrom Revision: 2.2 08-Dec-2017 11:41:26

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20171229-66148.b\0006.d

Injection Date:	29-Dec-2017 13:32:00	Instrument ID:	WC_IonChrom11	Operator ID:	
Lims ID:	MB			Worklist Smp#:	6
Client ID:					
Injection Vol:	10.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	Anions_IC11	Limit Group:	Wet - Anions 28D		



TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20171229-66148.b\0017.d
Lims ID: ccv
Client ID:
Sample Type: CCV
Inject. Date: 29-Dec-2017 22:01:00 ALS Bottle#: 0 Worklist Smp#: 17
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Sample Info: 280-0066148-017
Misc. Info.: 25335
Operator ID: Instrument ID: WC_IonChrom11
Sublist: chrom-Anions_IC11*sub1

Method: \\ChromNA\Denver\ChromData\WC_IonChrom11\20171229-66148.b\Anions_IC11.m
Limit Group: Wet - Anions 28D
Last Update: 30-Dec-2017 10:33:53 Calib Date: 13-Dec-2017 09:49:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20171213-65695.b\0007.d

Column 1 : Det: 0005
Process Host: XAWRK031

Compound	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 Fluoride	3.634	3.642	-0.008	33946430	5.00	4.70	
2 Chloride	5.392	5.359	0.033	560634295	100.0	92.6	
3 Nitrite as N	6.467	6.392	0.075	46954645	5.00	4.83	
4 Bromide	8.409	8.209	0.200	9183248	5.00	4.90	
5 Nitrate as N	9.759	9.492	0.267	54965291	5.00	4.92	
7 Orthophosphate as P	12.892	13.059	-0.167	22210178	5.00	4.99	
6 Sulfate	15.500	15.717	-0.217	345687121	100.0	93.8	

Reagents:

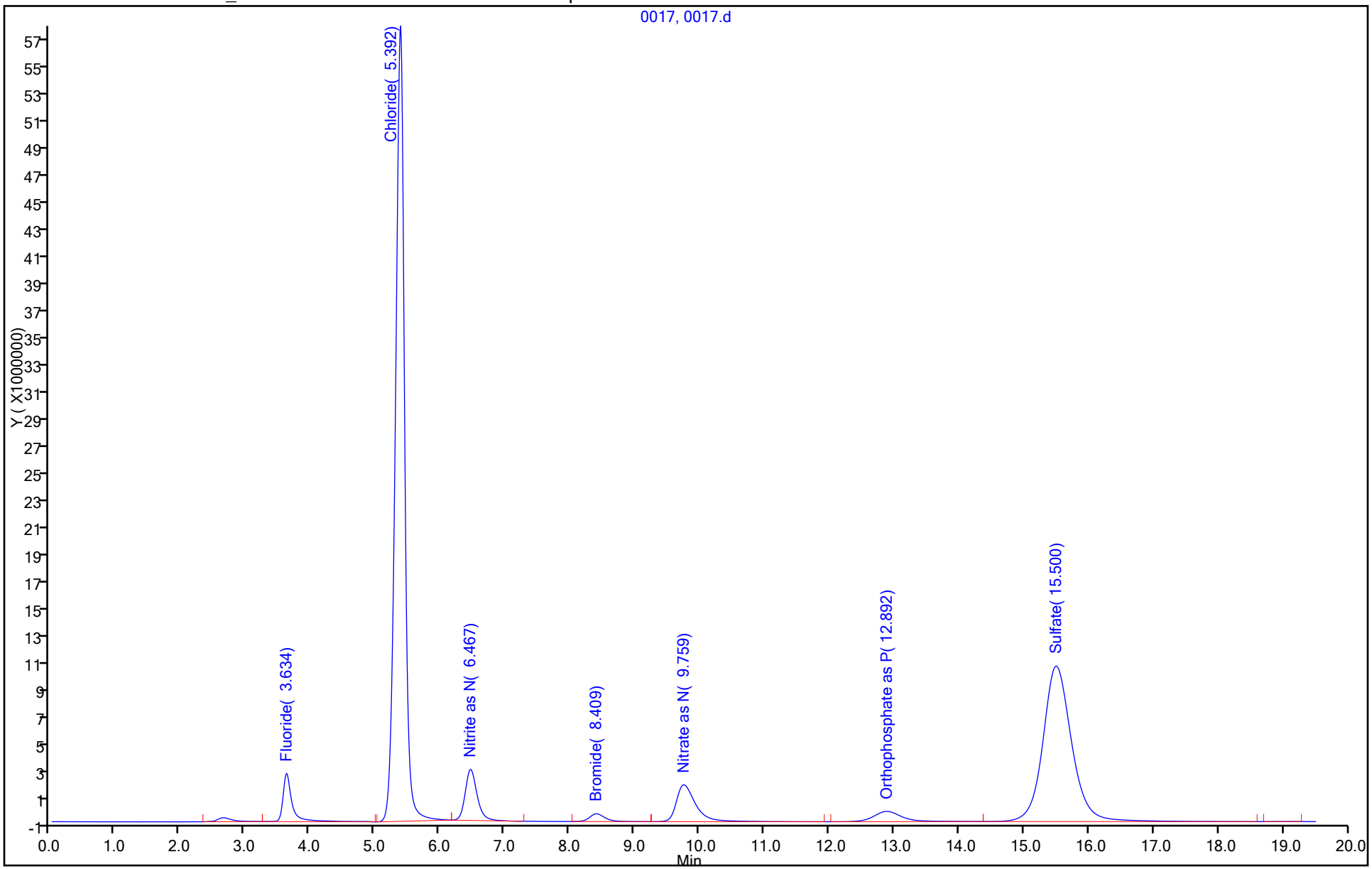
IC LCS_01108 Amount Added: 5.00 Units: mL

Report Date: 30-Dec-2017 10:33:53 Chrom Revision: 2.2 08-Dec-2017 11:41:26

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20171229-66148.b\0017.d

Injection Date:	29-Dec-2017 22:01:00	Instrument ID:	WC_IonChrom11	Operator ID:	
Lims ID:	ccv			Worklist Smp#:	17
Client ID:					
Injection Vol:	10.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	Anions_IC11	Limit Group:	Wet - Anions 28D		



TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20171229-66148.b\0018.d
Lims ID: ccb
Client ID:
Sample Type: CCB
Inject. Date: 29-Dec-2017 22:23:00 ALS Bottle#: 0 Worklist Smp#: 18
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Sample Info: 280-0066148-018
Misc. Info.: 27068
Operator ID: Instrument ID: WC_IonChrom11

Method: \\ChromNA\Denver\ChromData\WC_IonChrom11\20171229-66148.b\Anions_IC11.m
Limit Group: Wet - Anions 28D
Last Update: 30-Dec-2017 10:33:53 Calib Date: 13-Dec-2017 09:49:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20171213-65695.b\0007.d

Column 1 : Det: 0005
Process Host: XAWRK031

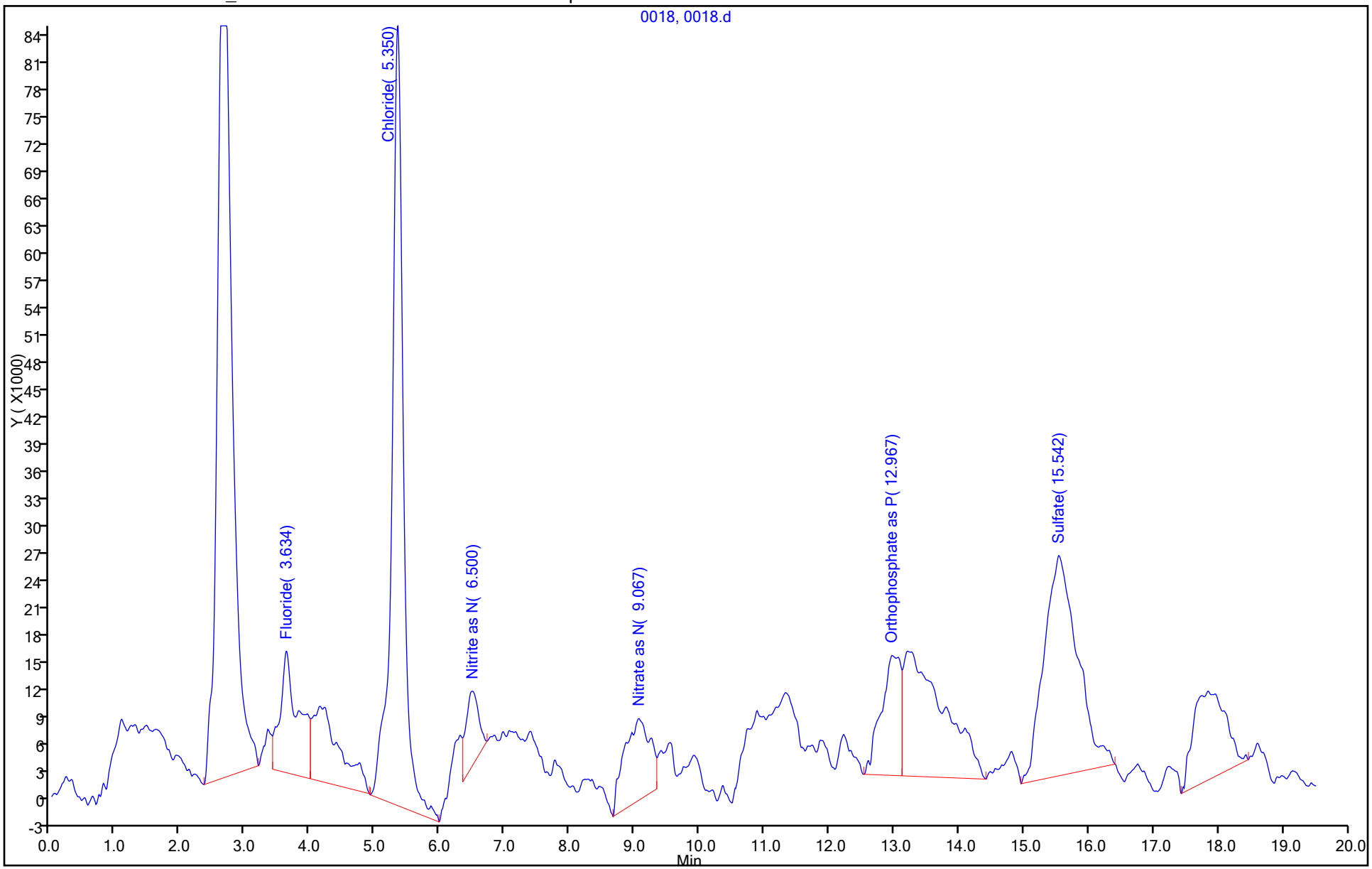
Compound	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 Fluoride	3.634	3.642	-0.008	261715		0.0725	
2 Chloride	5.350	5.359	-0.009	1052699		0.4192	
3 Nitrite as N	6.500	6.392	0.108	110833		0.0309	
4 Bromide		8.209				ND	
5 Nitrate as N	9.067	9.492	-0.425	249089		0.0441	
7 Orthophosphate as P	12.967	13.059	-0.092	272350		0.0191	
6 Sulfate	15.542	15.717	-0.175	861507		0.4382	

Report Date: 30-Dec-2017 10:33:55 Chrom Revision: 2.2 08-Dec-2017 11:41:26

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20171229-66148.b\0018.d

Injection Date:	29-Dec-2017 22:23:00	Instrument ID:	WC_IonChrom11	Operator ID:	
Lims ID:	ccb			Worklist Smp#:	18
Client ID:					
Injection Vol:	10.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	Anions_IC11	Limit Group:	Wet - Anions 28D		



TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20171229-66148.b\0027.d
Lims ID: 280-104552-F-6
Client ID: RQLmw-011-120717-GW
Sample Type: Client
Inject. Date: 30-Dec-2017 01:45:00 ALS Bottle#: 0 Worklist Smp#: 27
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Sample Info: 280-0066148-027
Misc. Info.: 5307 286
Operator ID: Instrument ID: WC_IonChrom11

Method: \\ChromNA\Denver\ChromData\WC_IonChrom11\20171229-66148.b\Anions_IC11.m
Limit Group: Wet - Anions 28D
Last Update: 30-Dec-2017 10:34:37 Calib Date: 13-Dec-2017 09:49:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20171213-65695.b\0007.d

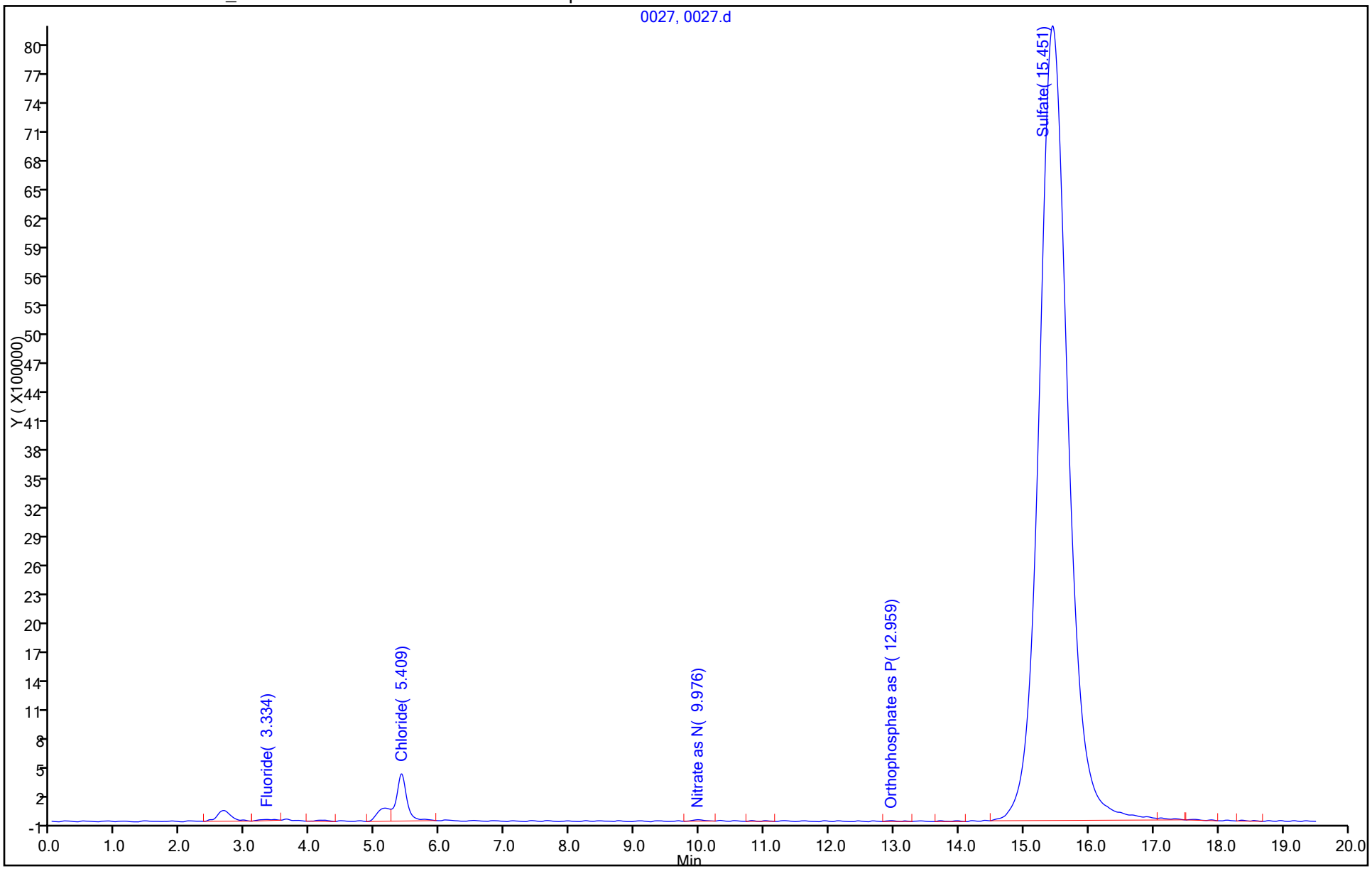
Column 1 : Det: 0005
Process Host: XAWRK024

Compound	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	OnCol Amt ug/ml	Flags
1 Fluoride	3.334	3.642	-0.308	208638	0.0652	
2 Chloride	5.409	5.359	0.050	5410413	1.14	
3 Nitrite as N		6.392			ND	
4 Bromide		8.209			ND	
5 Nitrate as N	9.976	9.492	0.484	188583	0.0387	
7 Orthophosphate as P	12.959	13.059	-0.100	123332	-0.0147	
6 Sulfate	15.451	15.717	-0.266	252629750	68.6	

Report Date: 30-Dec-2017 11:02:56 Chrom Revision: 2.2 08-Dec-2017 11:41:26

TestAmerica Denver

Data File:	\\ChromNA\Denver\ChromData\WC_IonChrom11\20171229-66148.b\0027.d				
Injection Date:	30-Dec-2017 01:45:00	Instrument ID:	WC_IonChrom11	Operator ID:	
Lims ID:	280-104552-F-6	Lab Sample ID:	280-104552-6	Worklist Smp#:	27
Client ID:	RQLmw-011-120717-GW				
Injection Vol:	10.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	Anions_IC11	Limit Group:	Wet - Anions 28D		



TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20171229-66148.b\0028.d
Lims ID: 280-104552-D-8
Client ID: RQLmw-012-120717-GW
Sample Type: Client
Inject. Date: 30-Dec-2017 02:08:00 ALS Bottle#: 0 Worklist Smp#: 28
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Sample Info: 280-0066148-028
Misc. Info.: 18228 164F
Operator ID: Instrument ID: WC_IonChrom11

Method: \\ChromNA\Denver\ChromData\WC_IonChrom11\20171229-66148.b\Anions_IC11.m
Limit Group: Wet - Anions 28D
Last Update: 30-Dec-2017 10:34:37 Calib Date: 13-Dec-2017 09:49:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20171213-65695.b\0007.d

Column 1 : Det: 0005
Process Host: XAWRK024

First Level Reviewer: lehmanje Date: 30-Dec-2017 10:33:19

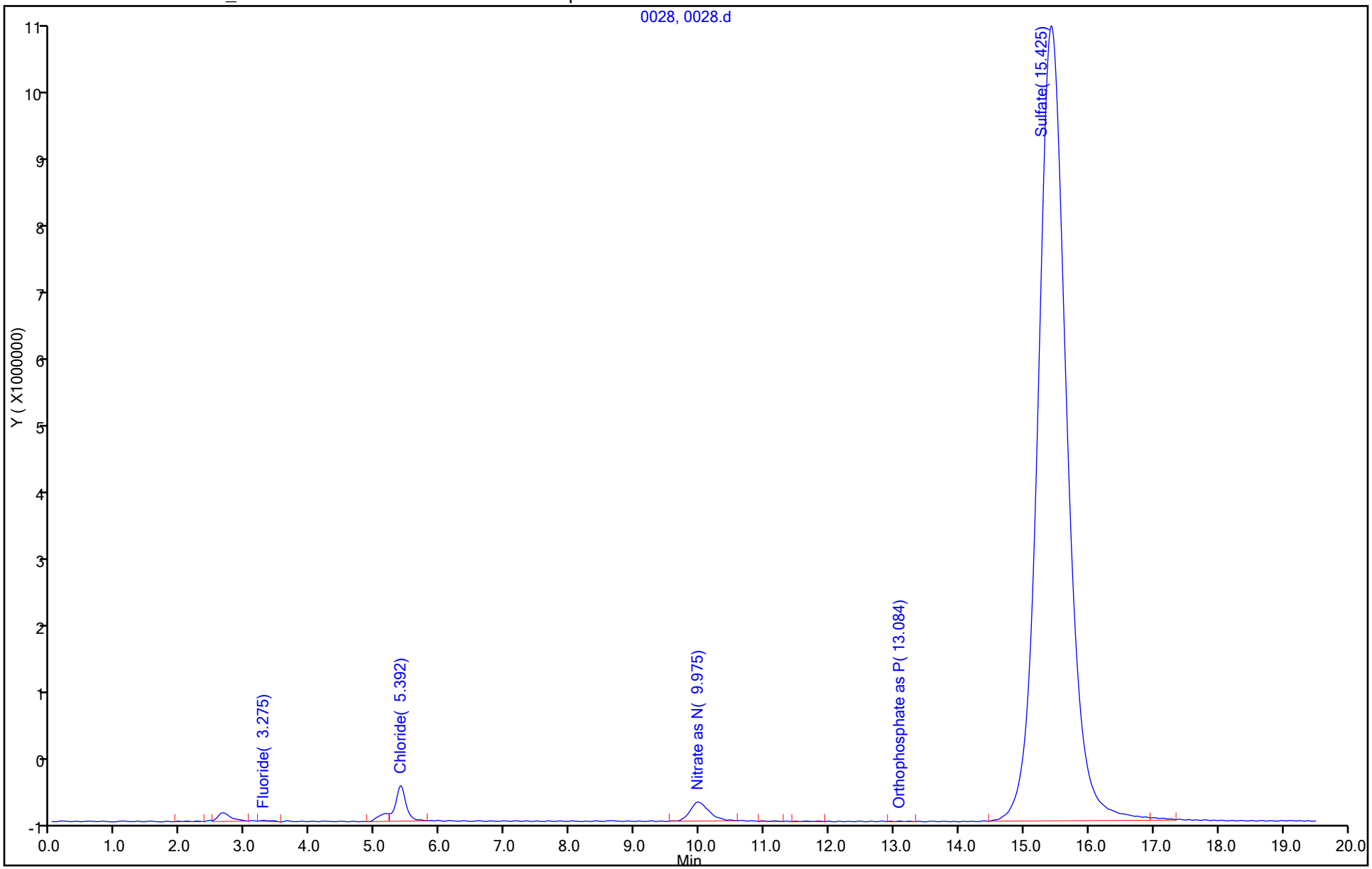
Compound	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	OnCol Amt ug/ml	Flags
1 Fluoride	3.275	3.642	-0.367	182852	0.0617	
2 Chloride	5.392	5.359	0.033	5099200	1.09	
3 Nitrite as N		6.392			ND	
4 Bromide		8.209			ND	
5 Nitrate as N	9.975	9.492	0.483	4953732	0.4637	
7 Orthophosphate as P	13.084	13.059	0.025	105765	-0.0187	
6 Sulfate	15.425	15.717	-0.292	315257909	85.5	

Report Date: 30-Dec-2017 11:02:57 Chrom Revision: 2.2 08-Dec-2017 11:41:26

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20171229-66148.b\0028.d

Injection Date:	30-Dec-2017 02:08:00	Instrument ID:	WC_IonChrom11	Operator ID:	
Lims ID:	280-104552-D-8	Lab Sample ID:	280-104552-8	Worklist Smp#:	28
Client ID:	RQLmw-012-120717-GW				
Injection Vol:	10.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	Anions_IC11	Limit Group:	Wet - Anions 28D		



TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20171229-66148.b\0029.d
Lims ID: ccv
Client ID:
Sample Type: CCV
Inject. Date: 30-Dec-2017 02:30:00 ALS Bottle#: 0 Worklist Smp#: 29
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Sample Info: 280-0066148-029
Misc. Info.: 11981
Operator ID: Instrument ID: WC_IonChrom11
Sublist: chrom-Anions_IC11*sub1

Method: \\ChromNA\Denver\ChromData\WC_IonChrom11\20171229-66148.b\Anions_IC11.m
Limit Group: Wet - Anions 28D
Last Update: 30-Dec-2017 11:02:58 Calib Date: 13-Dec-2017 09:49:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20171213-65695.b\0007.d

Column 1 : Det: 0005
Process Host: XAWRK024

First Level Reviewer: lehmanje Date: 30-Dec-2017 10:34:37

Compound	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 Fluoride	3.634	3.642	-0.008	32492518	5.00	4.50	
2 Chloride	5.409	5.359	0.050	560871330	100.0	92.7	
3 Nitrite as N	6.517	6.392	0.125	47393928	5.00	4.88	
4 Bromide	8.509	8.209	0.300	9253906	5.00	4.94	
5 Nitrate as N	9.892	9.492	0.400	54292291	5.00	4.86	
7 Orthophosphate as P	12.817	13.059	-0.242	21052875	5.00	4.73	
6 Sulfate	15.417	15.717	-0.300	345941208	100.0	93.8	

Reagents:

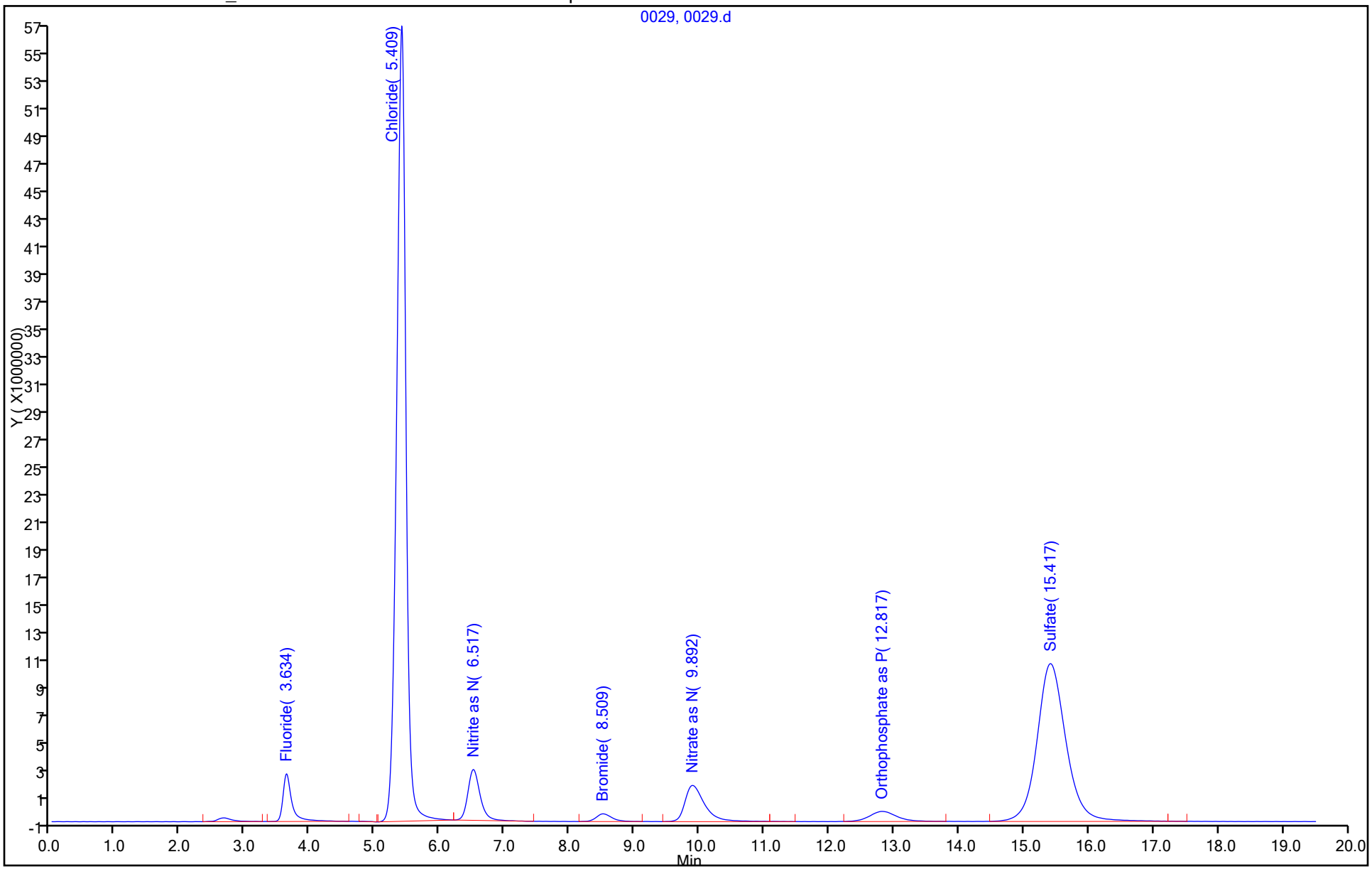
IC LCS_01108 Amount Added: 5.00 Units: mL

Report Date: 30-Dec-2017 11:02:59 Chrom Revision: 2.2 08-Dec-2017 11:41:26

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20171229-66148.b\0029.d

Injection Date:	30-Dec-2017 02:30:00	Instrument ID:	WC_IonChrom11	Operator ID:	
Lims ID:	ccv			Worklist Smp#:	29
Client ID:					
Injection Vol:	10.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	Anions_IC11	Limit Group:	Wet - Anions 28D		



TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20171229-66148.b\0030.d
Lims ID: ccb
Client ID:
Sample Type: CCB
Inject. Date: 30-Dec-2017 02:52:00 ALS Bottle#: 0 Worklist Smp#: 30
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Sample Info: 280-0066148-030
Misc. Info.: 20198
Operator ID: Instrument ID: WC_IonChrom11

Method: \\ChromNA\Denver\ChromData\WC_IonChrom11\20171229-66148.b\Anions_IC11.m
Limit Group: Wet - Anions 28D
Last Update: 30-Dec-2017 11:02:58 Calib Date: 13-Dec-2017 09:49:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20171213-65695.b\0007.d

Column 1 : Det: 0005
Process Host: XAWRK024

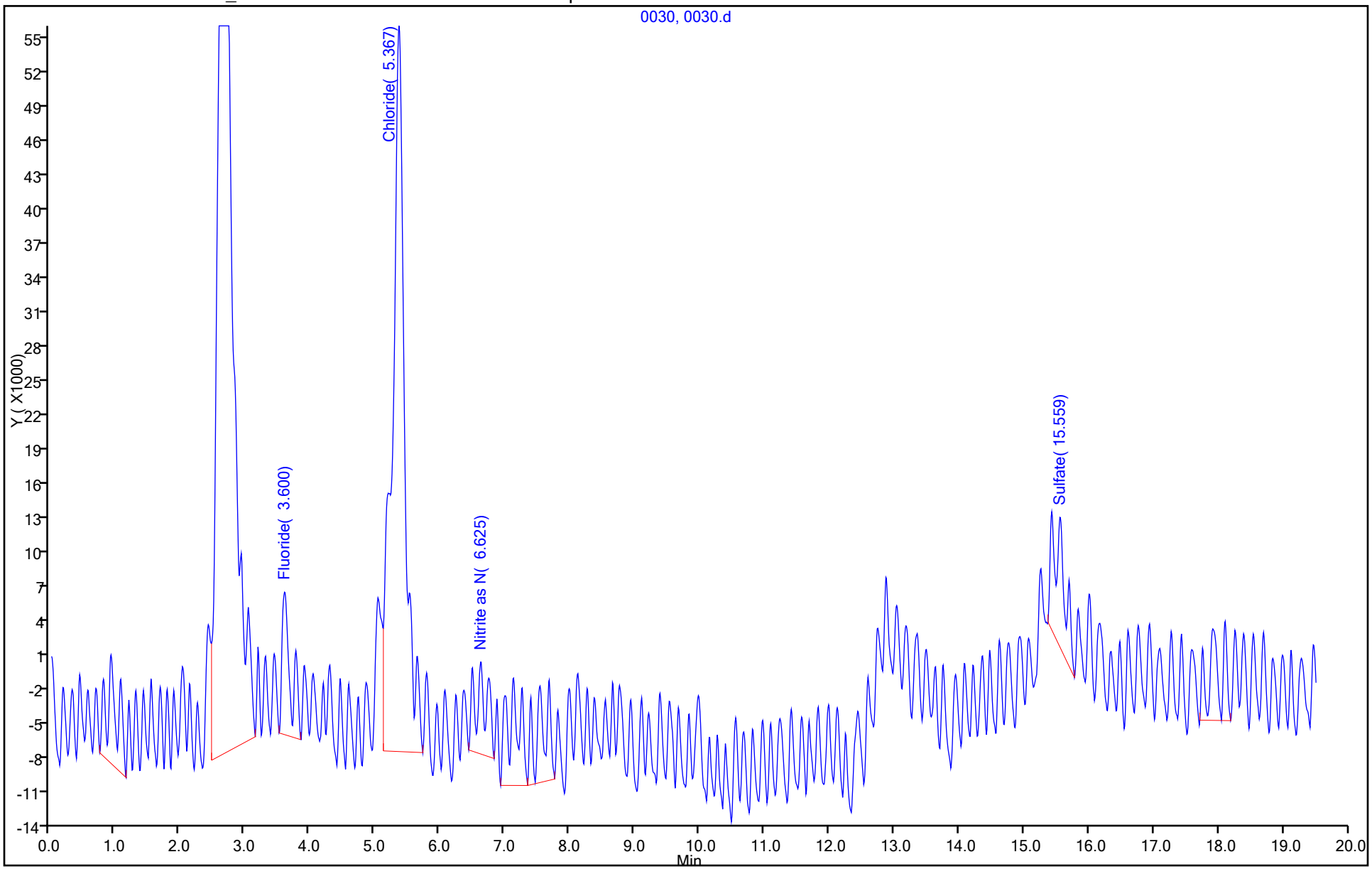
Compound	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 Fluoride	3.600	3.642	-0.042	113329		0.0521	
2 Chloride	5.367	5.359	0.008	842102		0.3845	
3 Nitrite as N	6.625	6.392	0.233	100402		0.0298	
4 Bromide		8.209				ND	
5 Nitrate as N		9.492				ND	
7 Orthophosphate as P		13.059				ND	
6 Sulfate	15.559	15.717	-0.158	142127		0.2435	

Report Date: 30-Dec-2017 11:03:02 Chrom Revision: 2.2 08-Dec-2017 11:41:26

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20171229-66148.b\0030.d

Injection Date:	30-Dec-2017 02:52:00	Instrument ID:	WC_IonChrom11	Operator ID:	
Lims ID:	ccb			Worklist Smp#:	30
Client ID:					
Injection Vol:	10.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	Anions_IC11	Limit Group:	Wet - Anions 28D		



TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20171229-66148.b\0031.d
Lims ID: 280-104552-D-8 DU
Client ID:
Sample Type: DU
Inject. Date: 30-Dec-2017 03:15:00 ALS Bottle#: 0 Worklist Smp#: 31
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Sample Info: 280-0066148-031
Misc. Info.: 11810 F
Operator ID: Instrument ID: WC_IonChrom11

Method: \\ChromNA\Denver\ChromData\WC_IonChrom11\20171229-66148.b\Anions_IC11.m
Limit Group: Wet - Anions 28D
Last Update: 30-Dec-2017 11:02:58 Calib Date: 13-Dec-2017 09:49:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20171213-65695.b\0007.d

Column 1 : Det: 0005
Process Host: XAWRK024

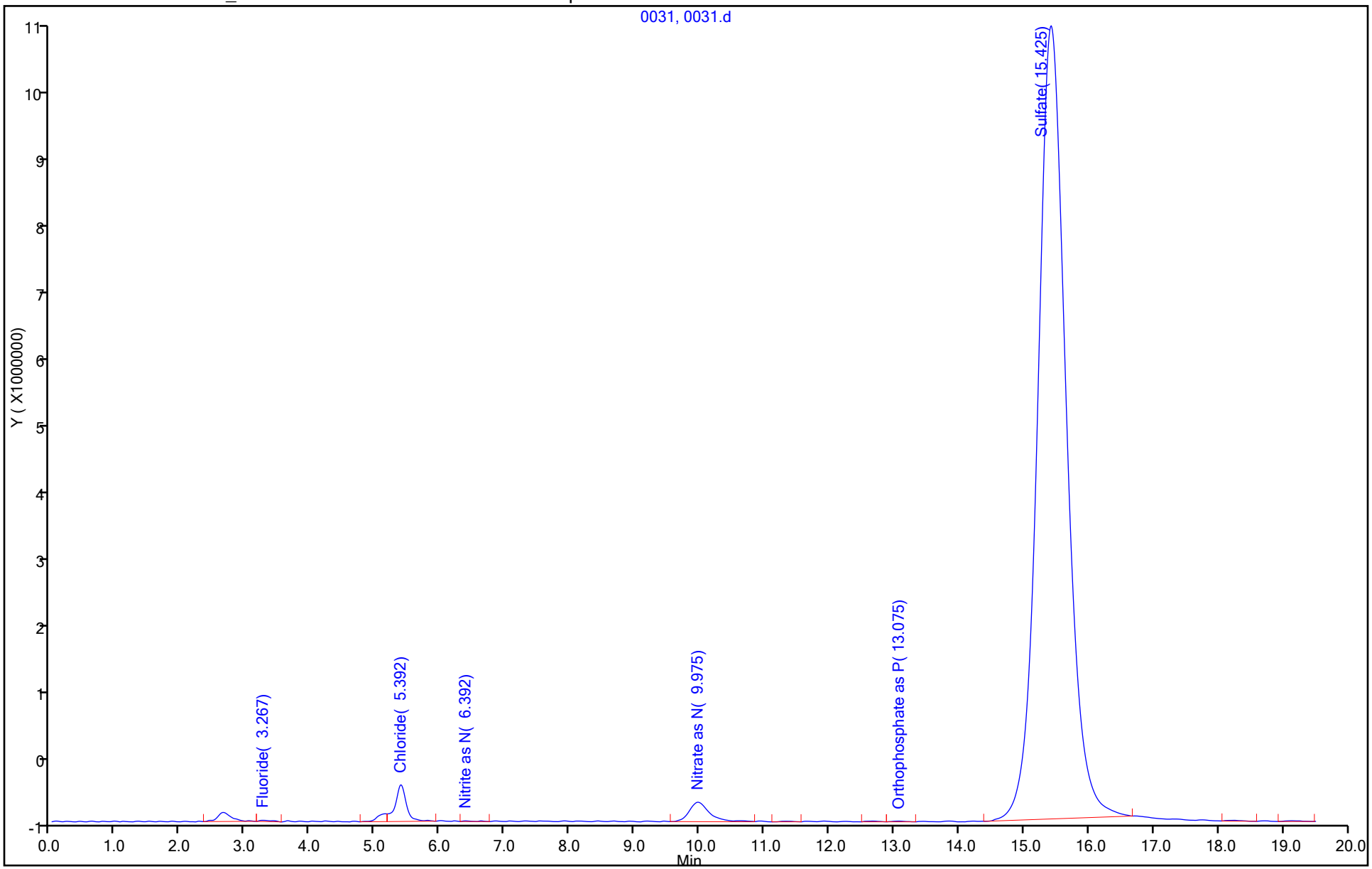
Compound	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 Fluoride	3.267	3.642	-0.375	221005		0.0669	
2 Chloride	5.392	5.359	0.033	5591781		1.17	
3 Nitrite as N	6.392	6.392	0.000	109181		0.0307	
4 Bromide		8.209				ND	
5 Nitrate as N	9.975	9.492	0.483	5457618		0.5086	
7 Orthophosphate as P	13.075	13.059	0.016	122090		-0.0150	
6 Sulfate	15.425	15.717	-0.292	310039452		84.1	

Report Date: 30-Dec-2017 11:03:03 Chrom Revision: 2.2 08-Dec-2017 11:41:26

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20171229-66148.b\0031.d

Injection Date:	30-Dec-2017 03:15:00	Instrument ID:	WC_IonChrom11	Operator ID:	
Lims ID:	280-104552-D-8 DU			Worklist Smp#:	31
Client ID:					
Injection Vol:	10.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	Anions_IC11	Limit Group:	Wet - Anions 28D		



TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20171229-66148.b\0032.d
Lims ID: 280-104552-D-8 MS
Client ID:
Sample Type: MS
Inject. Date: 30-Dec-2017 03:37:00 ALS Bottle#: 0 Worklist Smp#: 32
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Sample Info: 280-0066148-032
Misc. Info.: 17738 F
Operator ID: Instrument ID: WC_IonChrom11

Method: \\ChromNA\Denver\ChromData\WC_IonChrom11\20171229-66148.b\Anions_IC11.m
Limit Group: Wet - Anions 28D
Last Update: 30-Dec-2017 11:02:58 Calib Date: 13-Dec-2017 09:49:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20171213-65695.b\0007.d

Column 1 : Det: 0005
Process Host: XAWRK024

Compound	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 Fluoride	3.634	3.642	-0.008	33257528	5.00	4.60	
2 Chloride	5.400	5.359	0.041	132545180	25.0	22.1	
3 Nitrite as N	6.509	6.392	0.117	50235659	5.00	5.17	
4 Bromide	8.484	8.209	0.275	9664384	5.00	5.16	
5 Nitrate as N	9.842	9.492	0.350	61265425	5.00	5.49	
7 Orthophosphate as P	12.850	13.059	-0.209	34696306	5.00	7.83	
6 Sulfate	15.409	15.717	-0.308	410959709	25.0	111.4	

Reagents:

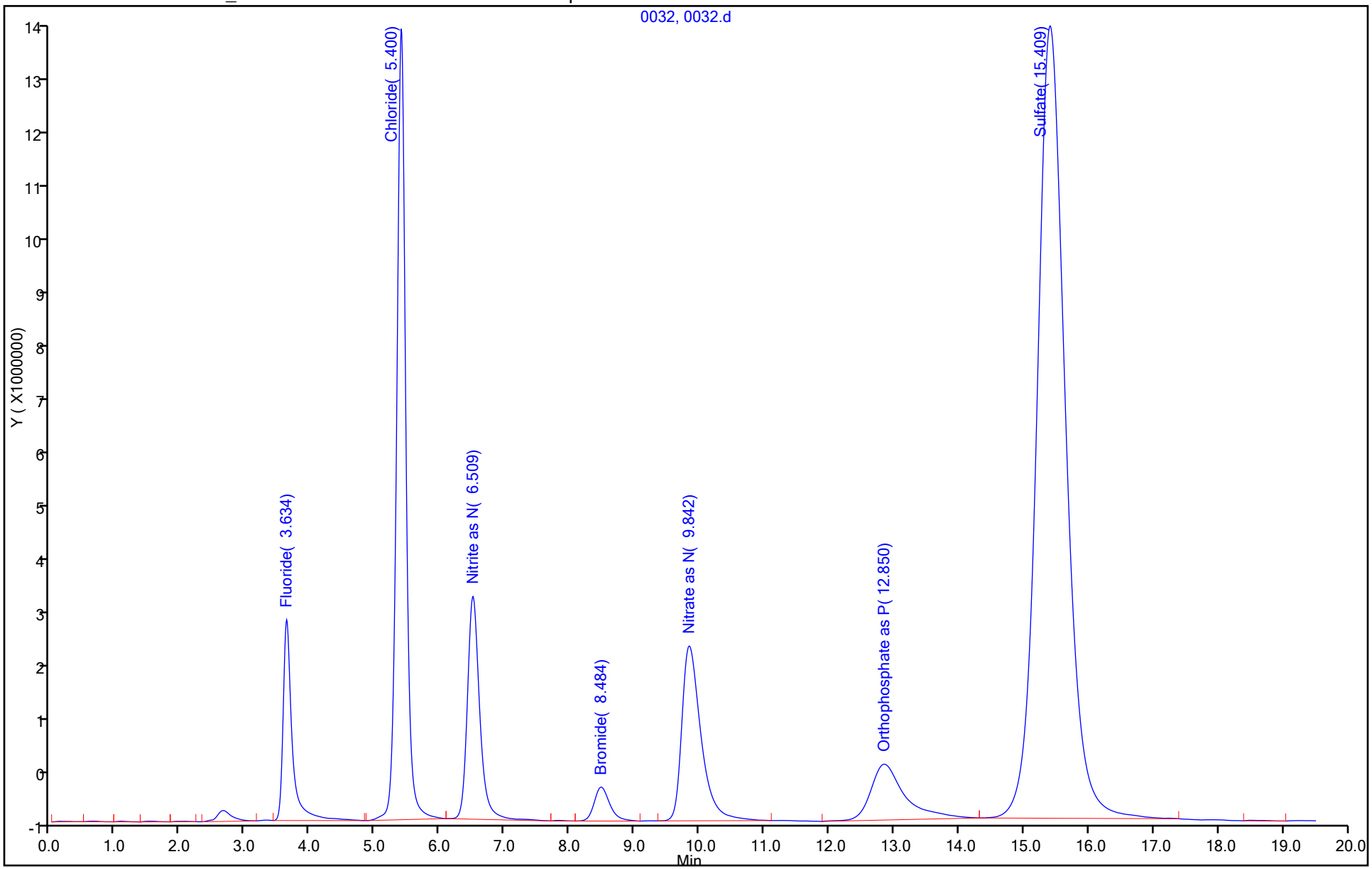
ICMS/MSD WEEK_00507 Amount Added: 0.05 Units: mL

Report Date: 30-Dec-2017 11:03:05 Chrom Revision: 2.2 08-Dec-2017 11:41:26

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20171229-66148.b\0032.d

Injection Date:	30-Dec-2017 03:37:00	Instrument ID:	WC_IonChrom11	Operator ID:	
Lims ID:	280-104552-D-8 MS			Worklist Smp#:	32
Client ID:					
Injection Vol:	10.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	Anions_IC11	Limit Group:	Wet - Anions 28D		



TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20171229-66148.b\0033.d
Lims ID: 280-104552-D-8 MSD
Client ID:
Sample Type: MSD
Inject. Date: 30-Dec-2017 04:00:00 ALS Bottle#: 0 Worklist Smp#: 33
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Sample Info: 280-0066148-033
Misc. Info.: 18152 F
Operator ID: Instrument ID: WC_IonChrom11

Method: \\ChromNA\Denver\ChromData\WC_IonChrom11\20171229-66148.b\Anions_IC11.m
Limit Group: Wet - Anions 28D
Last Update: 30-Dec-2017 10:33:53 Calib Date: 13-Dec-2017 09:49:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20171213-65695.b\0007.d

Column 1 : Det: 0005
Process Host: XAWRK031

Compound	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 Fluoride	3.634	3.642	-0.008	33286505	5.00	4.61	
2 Chloride	5.400	5.359	0.041	134869465	25.0	22.5	
3 Nitrite as N	6.500	6.392	0.108	51189410	5.00	5.26	
4 Bromide	8.475	8.209	0.266	9726546	5.00	5.19	
5 Nitrate as N	9.825	9.492	0.333	62511868	5.00	5.60	
7 Orthophosphate as P	12.859	13.059	-0.200	35250799	5.00	7.95	
6 Sulfate	15.409	15.717	-0.308	411624896	25.0	111.6	

Reagents:

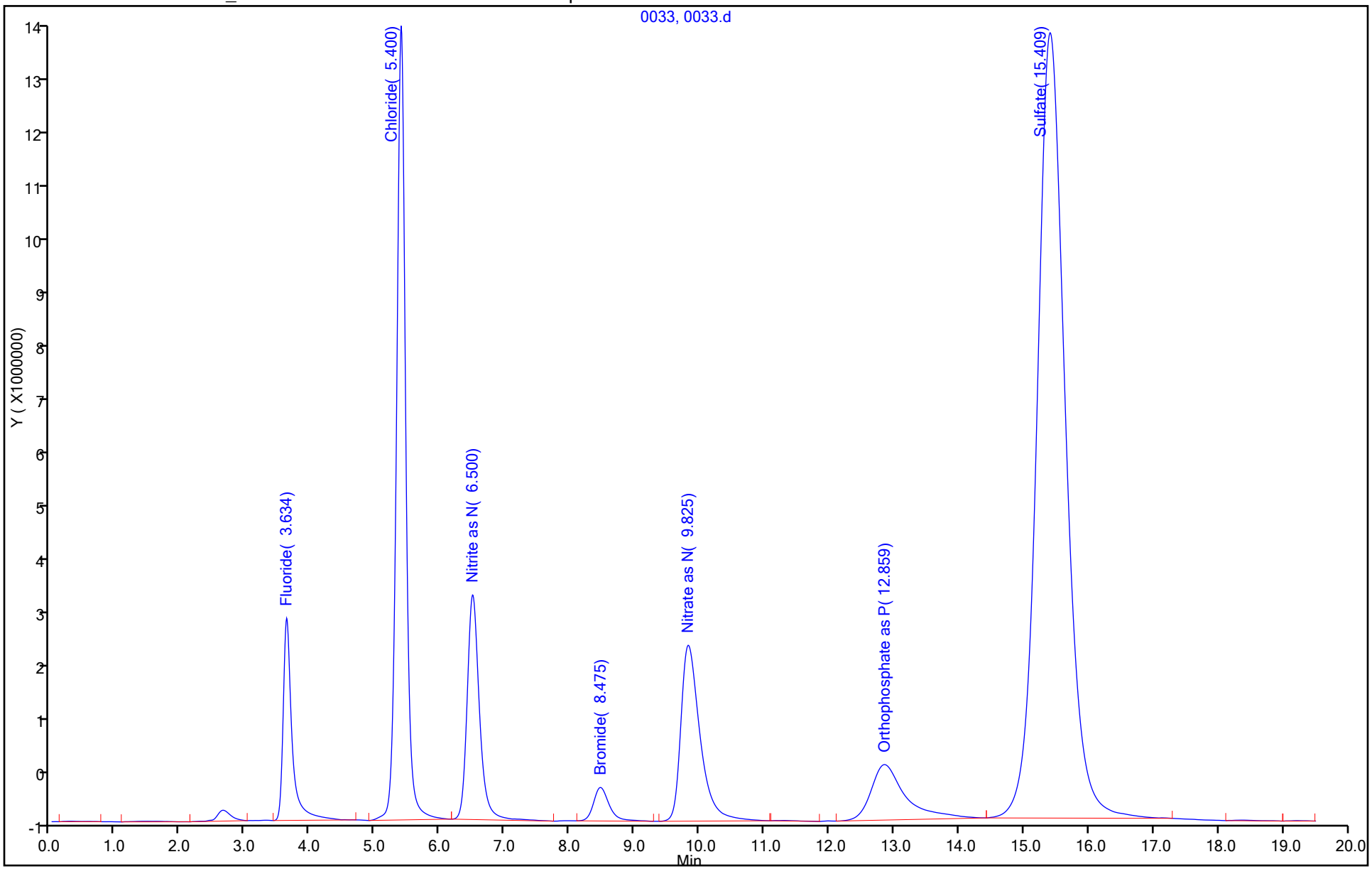
ICMS/MSD WEEK_00507 Amount Added: 0.05 Units: mL

Report Date: 30-Dec-2017 10:34:22 Chrom Revision: 2.2 08-Dec-2017 11:41:26

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20171229-66148.b\0033.d

Injection Date:	30-Dec-2017 04:00:00	Instrument ID:	WC_IonChrom11	Operator ID:	
Lims ID:	280-104552-D-8 MSD			Worklist Smp#:	33
Client ID:					
Injection Vol:	10.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	Anions_IC11	Limit Group:	Wet - Anions 28D		



TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20171229-66148.b\0036.d
Lims ID: 280-104552-D-10
Client ID: RQLmw-013-120717-GW
Sample Type: Client
Inject. Date: 30-Dec-2017 05:07:00 ALS Bottle#: 0 Worklist Smp#: 36
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Sample Info: 280-0066148-036
Misc. Info.: 16432 298F
Operator ID: Instrument ID: WC_IonChrom11

Method: \\ChromNA\Denver\ChromData\WC_IonChrom11\20171229-66148.b\Anions_IC11.m
Limit Group: Wet - Anions 28D
Last Update: 30-Dec-2017 10:33:53 Calib Date: 13-Dec-2017 09:49:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20171213-65695.b\0007.d

Column 1 : Det: 0005
Process Host: XAWRK031

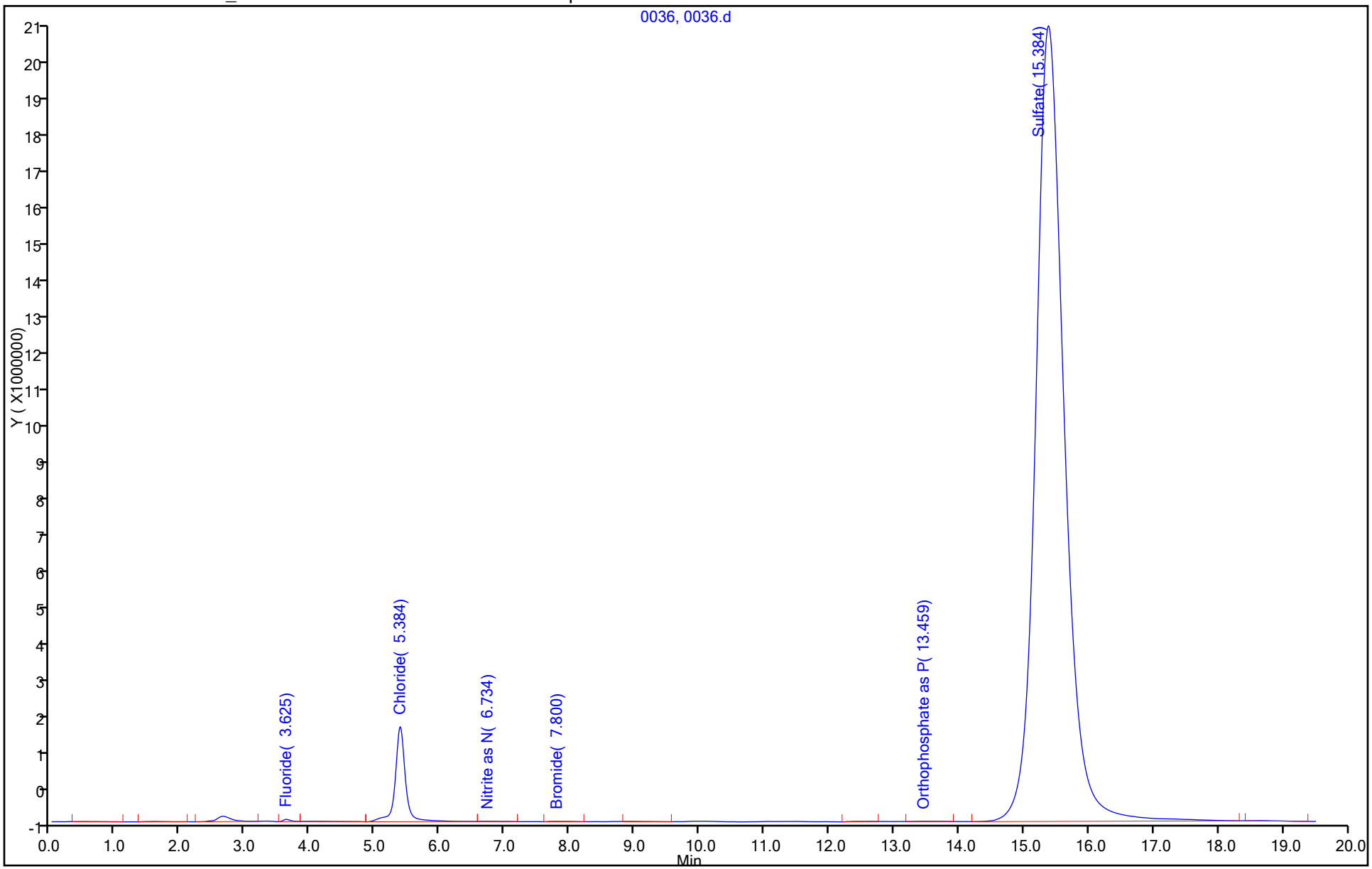
Compound	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	OnCol Amt ug/ml	Flags
1 Fluoride	3.625	3.642	-0.017	425206	0.0949	
2 Chloride	5.384	5.359	0.025	26499394	4.61	
3 Nitrite as N	6.734	6.392	0.342	147957	0.0347	
4 Bromide	7.800	8.209	-0.409	207969	0.0499	
5 Nitrate as N		9.492			ND	
7 Orthophosphate as P	13.459	13.059	0.400	176159	-0.002688	
6 Sulfate	15.384	15.717	-0.333	616889827	167.2	

Report Date: 30-Dec-2017 10:34:25 Chrom Revision: 2.2 08-Dec-2017 11:41:26

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20171229-66148.b\0036.d

Injection Date:	30-Dec-2017 05:07:00	Instrument ID:	WC_IonChrom11	Operator ID:	
Lims ID:	280-104552-D-10	Lab Sample ID:	280-104552-10	Worklist Smp#:	36
Client ID:	RQLmw-013-120717-GW				
Injection Vol:	10.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	Anions_IC11	Limit Group:	Wet - Anions 28D		



TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20171229-66148.b\0037.d
Lims ID: 280-104552-D-10 DU
Client ID:
Sample Type: DU
Inject. Date: 30-Dec-2017 05:29:00 ALS Bottle#: 0 Worklist Smp#: 37
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Sample Info: 280-0066148-037
Misc. Info.: 31482 F
Operator ID: Instrument ID: WC_IonChrom11

Method: \\ChromNA\Denver\ChromData\WC_IonChrom11\20171229-66148.b\Anions_IC11.m
Limit Group: Wet - Anions 28D
Last Update: 30-Dec-2017 10:33:53 Calib Date: 13-Dec-2017 09:49:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20171213-65695.b\0007.d

Column 1 : Det: 0005
Process Host: XAWRK031

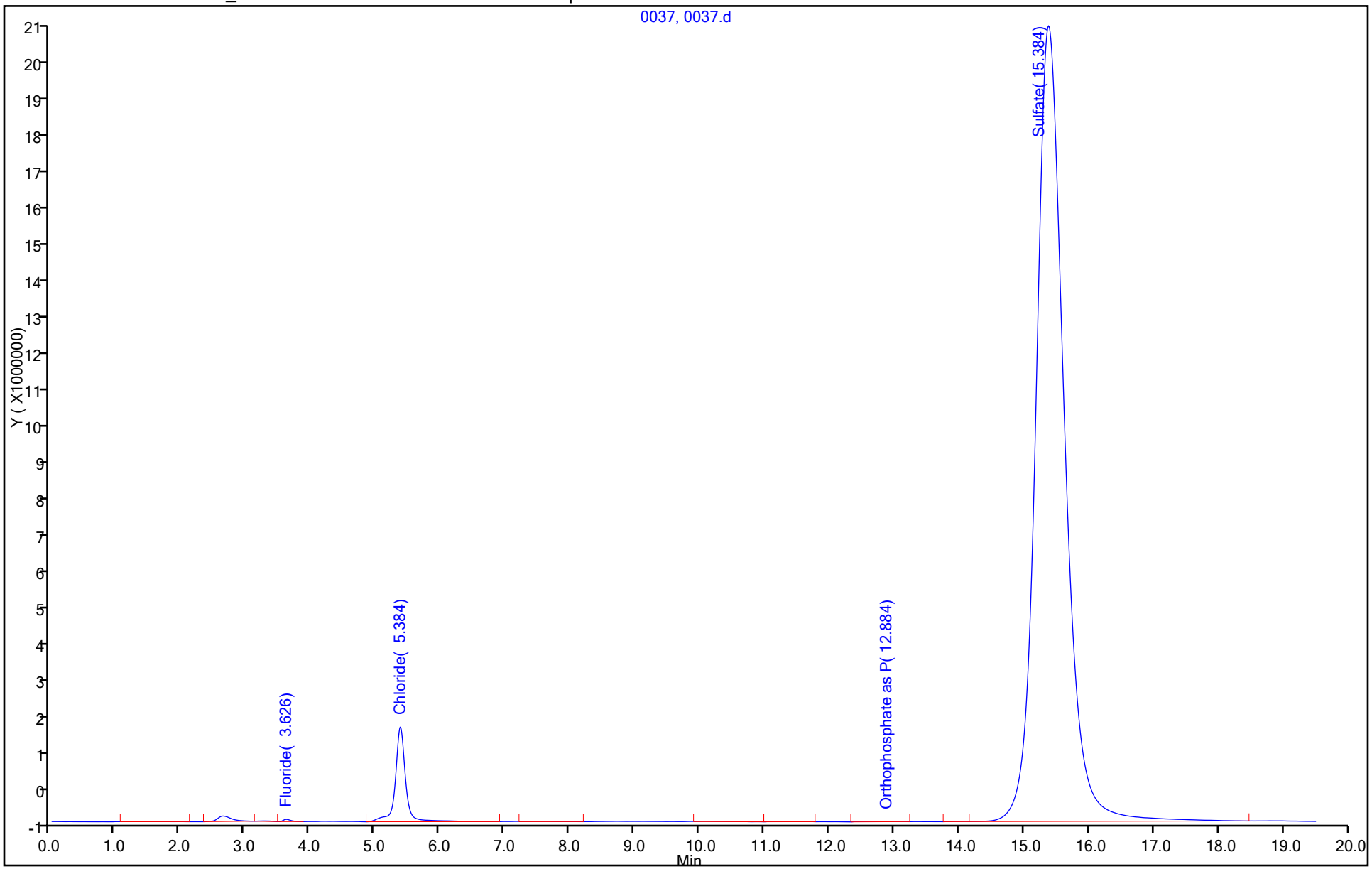
Compound	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 Fluoride	3.626	3.642	-0.016	482063		0.1027	
2 Chloride	5.384	5.359	0.025	27135975		4.72	
3 Nitrite as N		6.392				ND	
4 Bromide		8.209				ND	
5 Nitrate as N		9.492				ND	
7 Orthophosphate as P	12.884	13.059	-0.175	373715		0.0421	
6 Sulfate	15.384	15.717	-0.333	624293443		169.2	

Report Date: 30-Dec-2017 10:34:26 Chrom Revision: 2.2 08-Dec-2017 11:41:26

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20171229-66148.b\0037.d

Injection Date:	30-Dec-2017 05:29:00	Instrument ID:	WC_IonChrom11	Operator ID:	
Lims ID:	280-104552-D-10 DU			Worklist Smp#:	37
Client ID:					
Injection Vol:	10.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	Anions_IC11	Limit Group:	Wet - Anions 28D		



TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20171229-66148.b\0038.d
Lims ID: 280-104552-E-10 MS
Client ID: RQLmw-013-120717-GW
Sample Type: MS
Inject. Date: 30-Dec-2017 05:52:00 ALS Bottle#: 0 Worklist Smp#: 38
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Sample Info: 280-0066148-038
Misc. Info.: 29052 296F
Operator ID: Instrument ID: WC_IonChrom11

Method: \\ChromNA\Denver\ChromData\WC_IonChrom11\20171229-66148.b\Anions_IC11.m
Limit Group: Wet - Anions 28D
Last Update: 30-Dec-2017 10:33:53 Calib Date: 13-Dec-2017 09:49:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20171213-65695.b\0007.d

Column 1 : Det: 0005
Process Host: XAWRK031

Compound	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 Fluoride	3.634	3.642	-0.008	33659312	5.00	4.66	
2 Chloride	5.400	5.359	0.041	153040251	25.0	25.5	
3 Nitrite as N	6.492	6.392	0.100	49121683	5.00	5.05	
4 Bromide	8.442	8.209	0.233	9289477	5.00	4.96	
5 Nitrate as N	9.792	9.492	0.300	55134246	5.00	4.94	
7 Orthophosphate as P	12.842	13.059	-0.217	32904571	5.00	7.42	
6 Sulfate	15.359	15.717	-0.358	752545418	25.0	203.9	E

QC Flag Legend

Processing Flags
E - Exceeded Maximum Amount

Reagents:

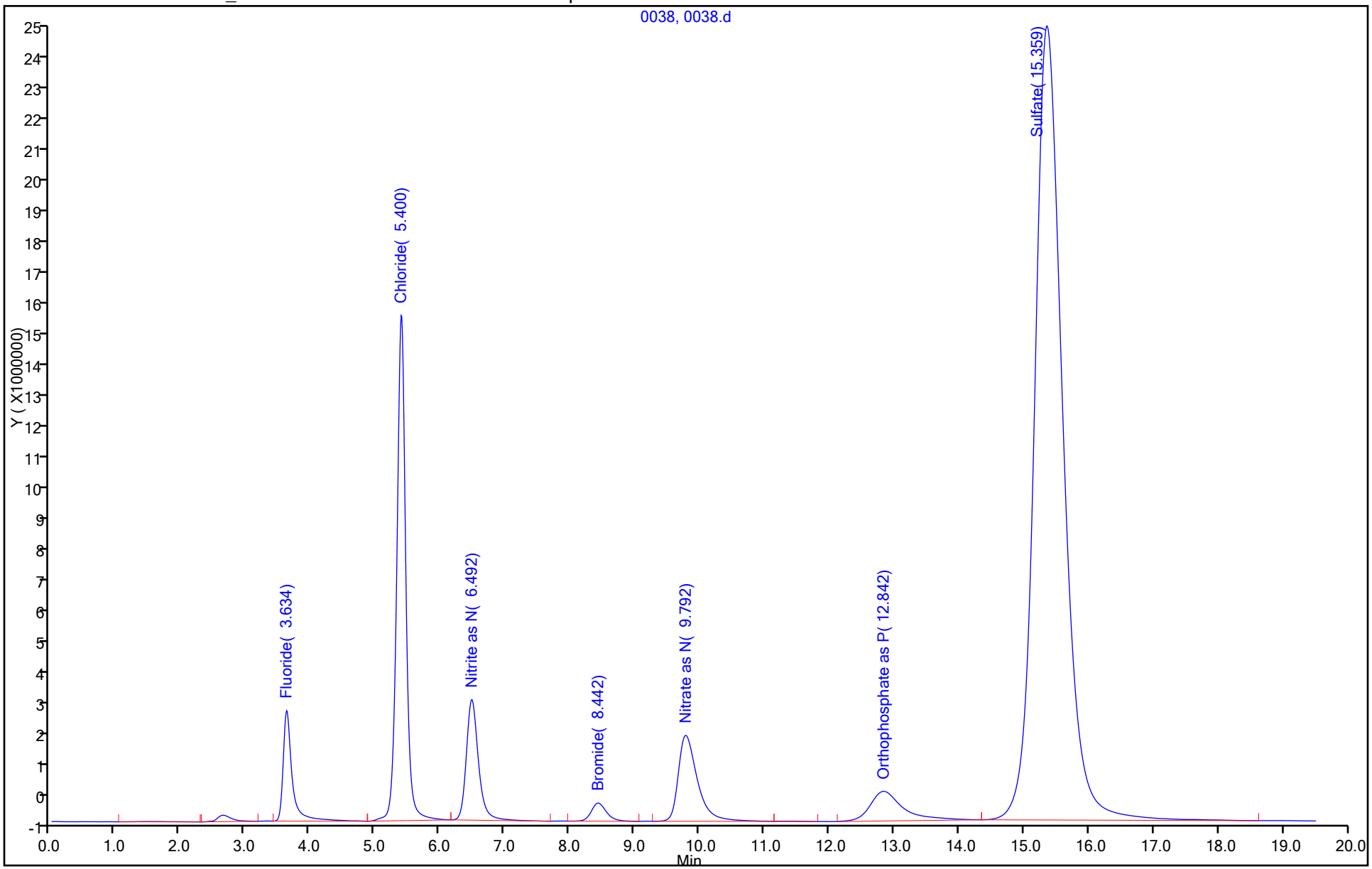
ICMS/MSD WEEK_00507 Amount Added: 0.05 Units: mL

Report Date: 30-Dec-2017 10:34:27 Chrom Revision: 2.2 08-Dec-2017 11:41:26

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20171229-66148.b\0038.d

Injection Date:	30-Dec-2017 05:52:00	Instrument ID:	WC_IonChrom11	Operator ID:	
Lims ID:	280-104552-E-10 MS			Worklist Smp#:	38
Client ID:	RQLmw-013-120717-GW				
Injection Vol:	10.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	Anions_IC11	Limit Group:	Wet - Anions 28D		



TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20171229-66148.b\0039.d
Lims ID: 280-104552-I-10 MSD
Client ID: RQLmw-013-120717-GW
Sample Type: MSD
Inject. Date: 30-Dec-2017 06:14:00 ALS Bottle#: 0 Worklist Smp#: 39
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Sample Info: 280-0066148-039
Misc. Info.: 4592 289F
Operator ID: Instrument ID: WC_IonChrom11

Method: \\ChromNA\Denver\ChromData\WC_IonChrom11\20171229-66148.b\Anions_IC11.m
Limit Group: Wet - Anions 28D
Last Update: 30-Dec-2017 10:33:53 Calib Date: 13-Dec-2017 09:49:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20171213-65695.b\0007.d

Column 1 : Det: 0005
Process Host: XAWRK031

Compound	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 Fluoride	3.634	3.642	-0.008	34510088	5.00	4.77	
2 Chloride	5.384	5.359	0.025	156432310	25.0	26.0	
3 Nitrite as N	6.475	6.392	0.083	50579492	5.00	5.20	
4 Bromide	8.425	8.209	0.216	9853380	5.00	5.26	
5 Nitrate as N	9.767	9.492	0.275	57626424	5.00	5.16	
7 Orthophosphate as P	12.850	13.059	-0.209	28385801	5.00	6.40	
6 Sulfate	15.359	15.717	-0.358	750986383	25.0	203.5	E

QC Flag Legend

Processing Flags
E - Exceeded Maximum Amount

Reagents:

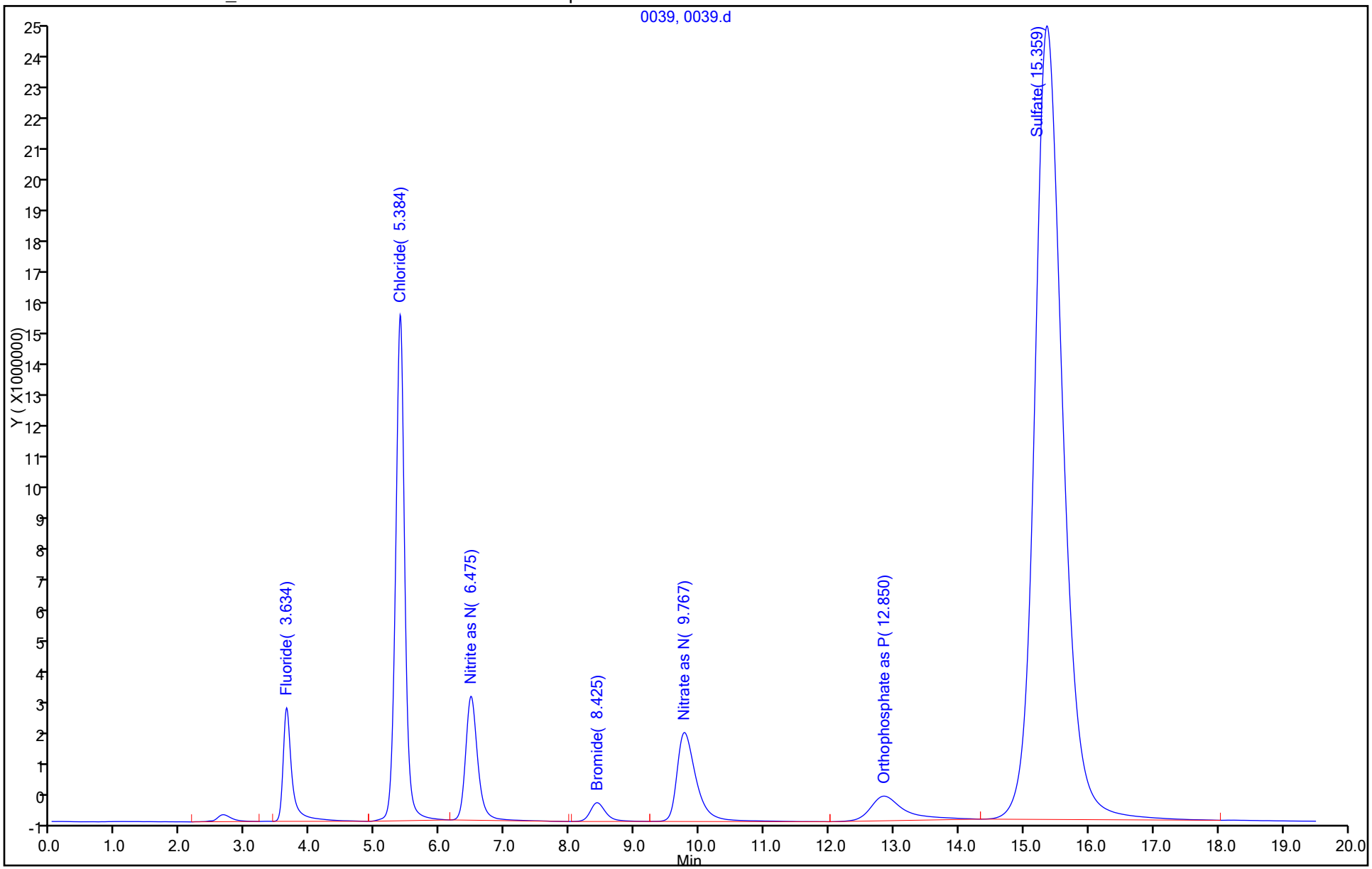
ICMS/MSD WEEK_00507 Amount Added: 0.05 Units: mL

Report Date: 30-Dec-2017 10:34:28 Chrom Revision: 2.2 08-Dec-2017 11:41:26

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20171229-66148.b\0039.d

Injection Date:	30-Dec-2017 06:14:00	Instrument ID:	WC_IonChrom11	Operator ID:	
Lims ID:	280-104552-I-10 MSD			Worklist Smp#:	39
Client ID:	RQLmw-013-120717-GW				
Injection Vol:	10.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	Anions_IC11	Limit Group:	Wet - Anions 28D		



TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20171229-66148.b\0040.d
Lims ID: ccv
Client ID:
Sample Type: CCV
Inject. Date: 30-Dec-2017 06:37:00 ALS Bottle#: 0 Worklist Smp#: 40
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Sample Info: 280-0066148-040
Misc. Info.: 11774
Operator ID: Instrument ID: WC_IonChrom11
Sublist: chrom-Anions_IC11*sub1

Method: \\ChromNA\Denver\ChromData\WC_IonChrom11\20171229-66148.b\Anions_IC11.m
Limit Group: Wet - Anions 28D
Last Update: 30-Dec-2017 10:34:30 Calib Date: 13-Dec-2017 09:49:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20171213-65695.b\0007.d

Column 1 : Det: 0005
Process Host: XAWRK031

Compound	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 Fluoride	3.626	3.642	-0.016	34409655	5.00	4.76	
2 Chloride	5.392	5.359	0.033	558030927	100.0	92.2	
3 Nitrite as N	6.476	6.392	0.084	46627035	5.00	4.80	
4 Bromide	8.426	8.209	0.217	9201451	5.00	4.91	
5 Nitrate as N	9.776	9.492	0.284	53794023	5.00	4.82	
7 Orthophosphate as P	12.809	13.059	-0.250	22976844	5.00	5.17	
6 Sulfate	15.401	15.717	-0.316	343599552	100.0	93.2	

Reagents:

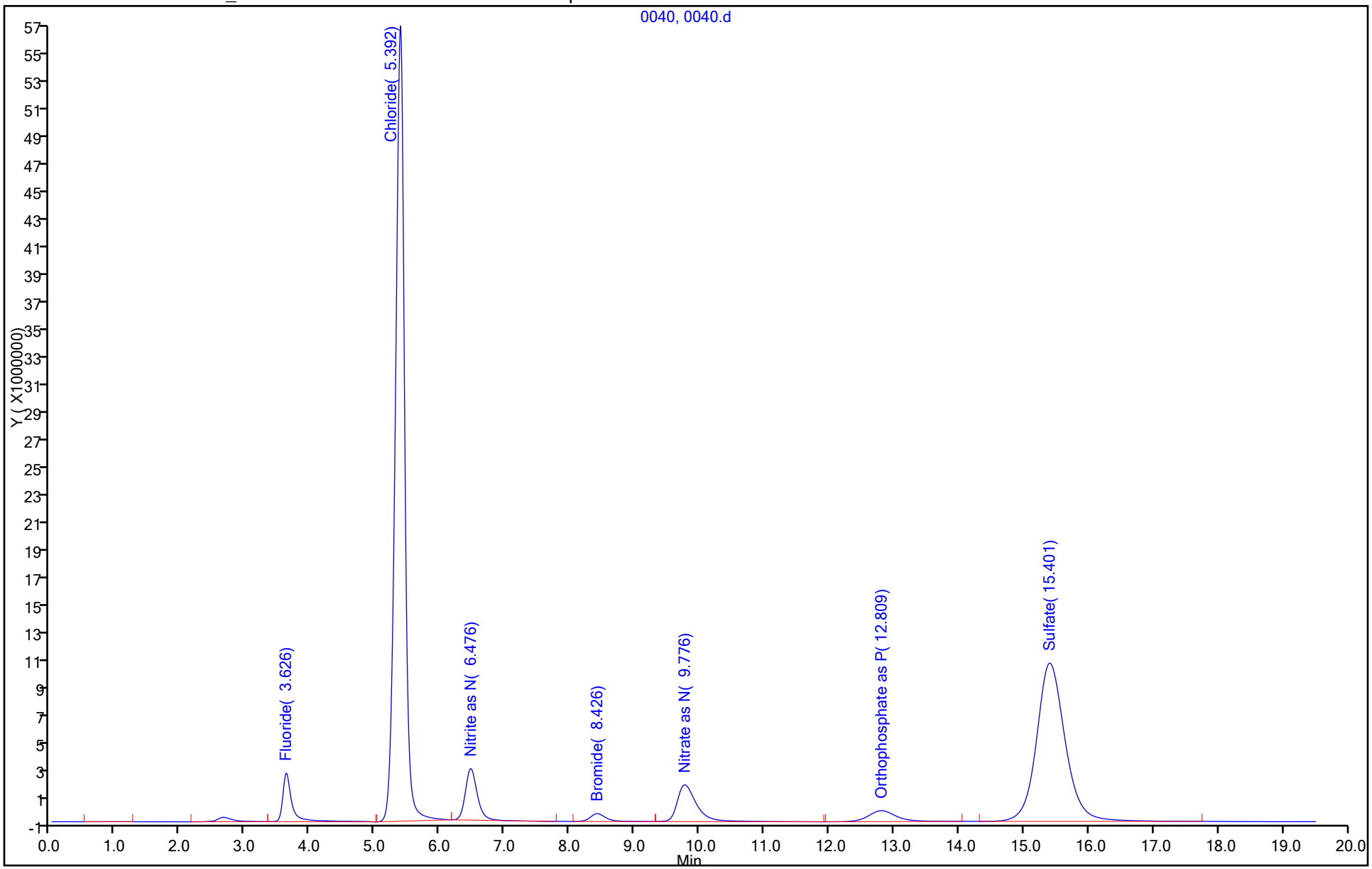
IC LCS_01108 Amount Added: 5.00 Units: mL

Report Date: 30-Dec-2017 10:34:30 Chrom Revision: 2.2 08-Dec-2017 11:41:26

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20171229-66148.b\0040.d

Injection Date:	30-Dec-2017 06:37:00	Instrument ID:	WC_IonChrom11	Operator ID:	
Lims ID:	ccv			Worklist Smp#:	40
Client ID:					
Injection Vol:	10.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	Anions_IC11	Limit Group:	Wet - Anions 28D		



TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20171229-66148.b\0041.d
Lims ID: ccb
Client ID:
Sample Type: CCB
Inject. Date: 30-Dec-2017 06:59:00 ALS Bottle#: 0 Worklist Smp#: 41
Injection Vol: 10.0 ul Dil. Factor: 1.0000
Sample Info: 280-0066148-041
Misc. Info.: 7843
Operator ID: Instrument ID: WC_IonChrom11

Method: \\ChromNA\Denver\ChromData\WC_IonChrom11\20171229-66148.b\Anions_IC11.m
Limit Group: Wet - Anions 28D
Last Update: 30-Dec-2017 10:34:30 Calib Date: 13-Dec-2017 09:49:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20171213-65695.b\0007.d

Column 1 : Det: 0005
Process Host: XAWRK031

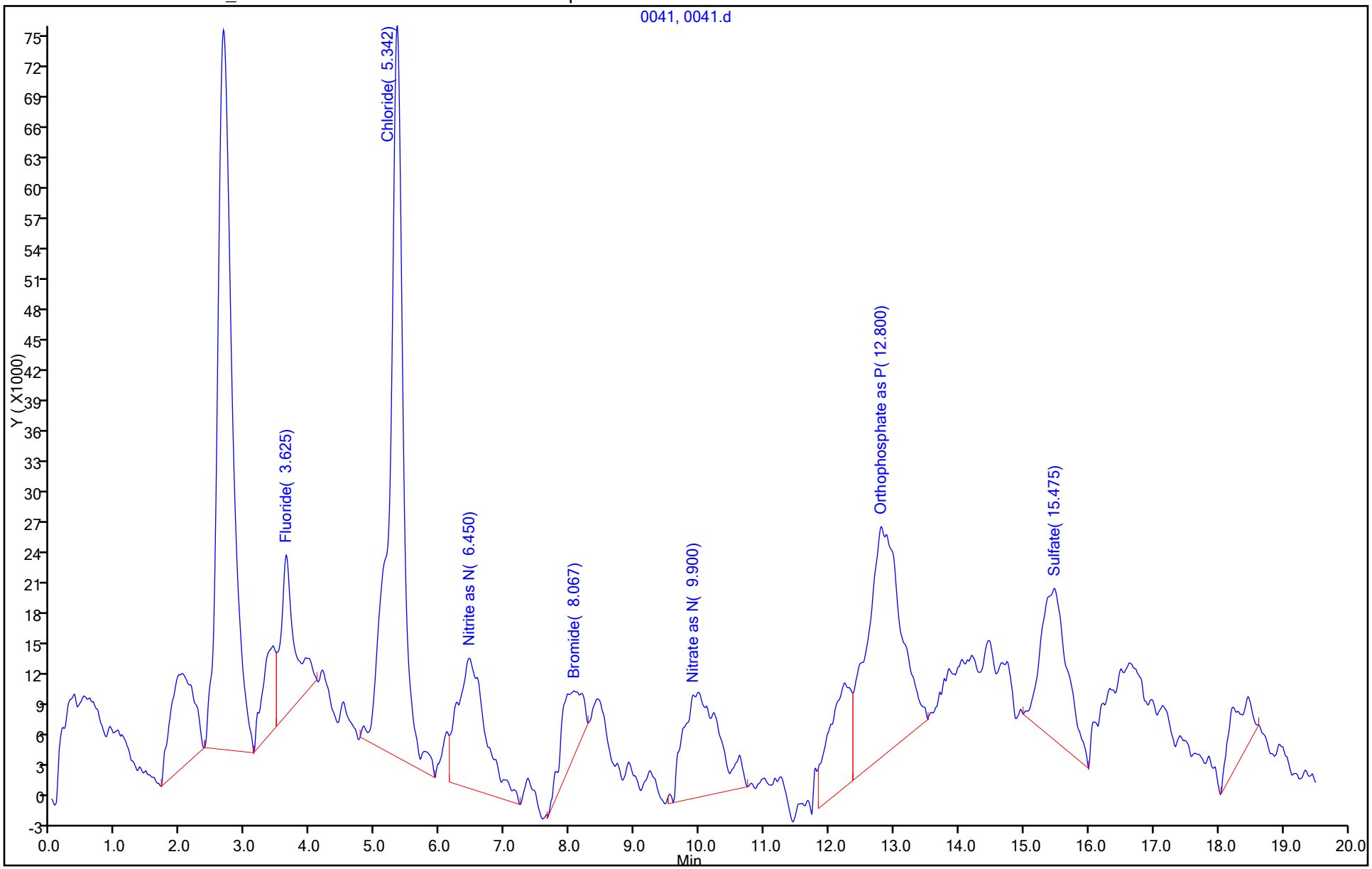
Compound	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 Fluoride	3.625	3.642	-0.017	232613		0.0685	
2 Chloride	5.342	5.359	-0.017	1056007		0.4197	
3 Nitrite as N	6.450	6.392	0.058	383872		0.0588	
4 Bromide	8.067	8.209	-0.142	157817		0.0228	
5 Nitrate as N	9.900	9.492	0.408	390122		0.0566	
7 Orthophosphate as P	12.800	13.059	-0.259	820977		0.1436	
6 Sulfate	15.475	15.717	-0.242	417333		0.3180	

Report Date: 30-Dec-2017 10:34:31 Chrom Revision: 2.2 08-Dec-2017 11:41:26

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom11\20171229-66148.b\0041.d

Injection Date:	30-Dec-2017 06:59:00	Instrument ID:	WC_IonChrom11	Operator ID:	
Lims ID:	ccb			Worklist Smp#:	41
Client ID:					
Injection Vol:	10.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	Anions_IC11	Limit Group:	Wet - Anions 28D		



New Cal 393267/66

TestAmerica

IC Instrument Information

WL: 64206 **Inst ID:** 7 **Analysis Date:** 10/30/17 **Analyst:** TL

Rush	Job No.	Samples	Anions	QC Req	HT Exp
☐	102568	2	F (Cl) NO2 Br NO3 PO4 (SO4)	MS/D	
☐	102560	10	(F) (Cl) NO2 (Br) NO3 PO4 (SO4)	(MS/D) 1 & 8	
☐			F Cl NO2 Br NO3 PO4 SO4	MS/D	
☐			F Cl NO2 Br NO3 PO4 SO4	MS/D	
☐			F Cl NO2 Br NO3 PO4 SO4	MS/D	
☐			F Cl NO2 Br NO3 PO4 SO4	MS/D	
☐			F Cl NO2 Br NO3 PO4 SO4	MS/D	
☐			F Cl NO2 Br NO3 PO4 SO4	MS/D	
☐			F Cl NO2 Br NO3 PO4 SO4	MS/D	
☐			F Cl NO2 Br NO3 PO4 SO4	MS/D	
☐			F Cl NO2 Br NO3 PO4 SO4	MS/D	
☐			F Cl NO2 Br NO3 PO4 SO4	MS/D	
☐			F Cl NO2 Br NO3 PO4 SO4	MS/D	
☐			F Cl NO2 Br NO3 PO4 SO4	MS/D	

Dilutions

Job No.	Samples	Anions	Dilution	Reason
		F Cl NO2 Br NO3 PO4 SO4		
		F Cl NO2 Br NO3 PO4 SO4		
		F Cl NO2 Br NO3 PO4 SO4		
		F Cl NO2 Br NO3 PO4 SO4		
		F Cl NO2 Br NO3 PO4 SO4		
		F Cl NO2 Br NO3 PO4 SO4		
		F Cl NO2 Br NO3 PO4 SO4		
		F Cl NO2 Br NO3 PO4 SO4		
		F Cl NO2 Br NO3 PO4 SO4		

Ion Chromatography Data Review Checklist

LIMS Batch Number: 393266/67	Worklist #: 64206	Instrument ID: IC7
Analyst/1st Reviewer/Date: TP/TP/ 10/31/17	Method (circle): (300.0) 9056 9056A DV-WC-0077	QC Type (circle): (Standard) DOD Q4 DoD Q5 QAPP_____ Other_____
Matrix (circle): (Water) Solid Leachate		

Review Items	Yes	No	NA	2nd Rev	If No, why is data reportable?
A. Calibration/Instrument Run QC					
1. Verify intermediate standards for correct concentration stated in SOP (ICAL pts at correct concentration)	—				
2. Calibrated with at least 5 standards & a blank	—				
3. Elution order of analytes in ICAL confirmed to be correct					
4. Linearity and intercept: $r \geq 0.995$ ($r^2>0.99$) & |x-intercept| < ½ RL (absolute value)	—				
5. ICV, second source: run before samples 90-110% recovery / 80-120% recovery (Hydrazine)	—				
6. CCV: 10% frequency & closing 90-110% recovery / 80-120% recovery (Hydrazine)	—				
7. ICB/CCB: run before samples, 10% freq. & closing 8. Result < ½ RL	—				
9. RL-level check standard (Anions) run before samples 50-150% Recovery	—				
10. RT Window set based on midpoint of ICAL or initial CCV?	—				
B. Client Sample and QC Sample Results					
11. Samples with results > linear range diluted and reanalyzed?			—		Comments:
12. Manual integrations done & documented appropriately? (before & after chroms, date, initial, & reason)			—		Comments:
C. Preparation/Matrix QC					
13. If samples are lab filtered are QC samples also filtered?	—				
14. Method Blank: one per preparation batch Result < 1/2 RL *If no, list blank ID & explain:*	—				☐ No analyte > RL in associated samples ☐ Sample results >10x blank ☐ Insufficient sample for reanalysis
15. LCS: one per preparation batch 90-110% recovery (routine) / Lab limits (Hydrazine) *If no, list LCS ID & explain:*	—				☐ Insufficient sample for reanalysis ☐ LCS %R > QC limits & samples < RL
16. Matrix Retention Time Spike: one per sample (Hydrazine) MS/MSD freq.: a pair per 20 samples (Hydrazine) MS/MSD and Dup freq.: a pair per 10 samples (Anions) *If no, list QC ID & explain:*	—				☐ Insufficient sample

Review Items	Yes	No	NA	2nd Rev	If No, why is data reportable?
17. MS/MSD recovery & RPD: 80-120% recovery (Anions) Lab limits (Hydrazine) 20% RPD *If no, list MS or MSD ID & explain:*	✓				☐ LCS acceptable – matrix effects ☐ Native analyte > 4x spike level ☐ Matrix effect and native analyte > 4x spike
D. Raw Data & TALS Data Entry					
18. Raw Data					
a. Unused data is clearly identified (with reason)	✓				
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	✓				
19. Run Log					
a. Unused data is clearly identified	✓				
b. All cross outs are initialed and dated	✓				
c. Analyst initials/signature provided	✓				
20. TALS Samples Tab					
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 designated (where applicable)	✓				
21. TALS Worksheet Tab is complete and correct	✓				
22. TALS Reagent Tab is complete and correct	✓				
23. TALS QC Links Tab is correct	✓				
24. TALS Sample Results Tab					
a. All unused data are marked Rejected or Accepted	✓				
b. All reported analytes are marked Primary or Secondary	✓				
25. TALS Batch Information Screen documentation is complete	✓				
26. TALS Status set to appropriate review level	✓				
E. Final Report and NCMs (2nd level review only)					
27. Were all job/project requirements met?					
28. Results for samples and QC correct on final report?					
29. Are all necessary scanned documents in TALS?					
30. NCMs reviewed for applicability, correct references to batches, grammar/typographical errors?					

Comments: _____

_____

_____

2nd Reviewer: _____ Review Date: _____

TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom7\20171030-64206.b\02.0000.d
Lims ID: std L1
Client ID:
Sample Type: IC Calib Level: 1
Inject. Date: 30-Oct-2017 15:44:00 ALS Bottle#: 0 Worklist Smp#: 2
Injection Vol: 25.0 ul Dil. Factor: 1.0000
Sample Info: 280-0064206-002
Operator ID: Instrument ID: WC_IonChrom7
Sublist: chrom-Anions_IC7*sub1

Method: \\ChromNA\Denver\ChromData\WC_IonChrom7\20171030-64206.b\Anions_IC7.m
Limit Group: Wet - Anions 28D
Last Update: 31-Oct-2017 13:01:10 Calib Date: 30-Oct-2017 17:13:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\WC_IonChrom7\20171030-64206.b\07.0000.d

Column 1 : Det: 0005
Process Host: XAWRK001

Compound	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 Fluoride	2.017	2.033	-0.016	6881106	0.2000	0.1952	
2 Chloride	3.317	3.300	0.017	24417994	1.00	1.10	
3 Nitrite as N	3.833	3.833	0.000	9262989	0.2000	0.1929	
4 Bromide	6.150	6.117	0.033	1744167	0.2000	0.2227	
5 Nitrate as N	6.675	6.550	0.125	9955640	0.2000	0.2085	
6 Sulfate	9.517	9.233	0.284	17848036	1.00	1.09	
7 Orthophosphate as P		12.008			ND	ND	

QC Flag Legend

Processing Flags
ND - Not Detected or Marked ND

Reagents:

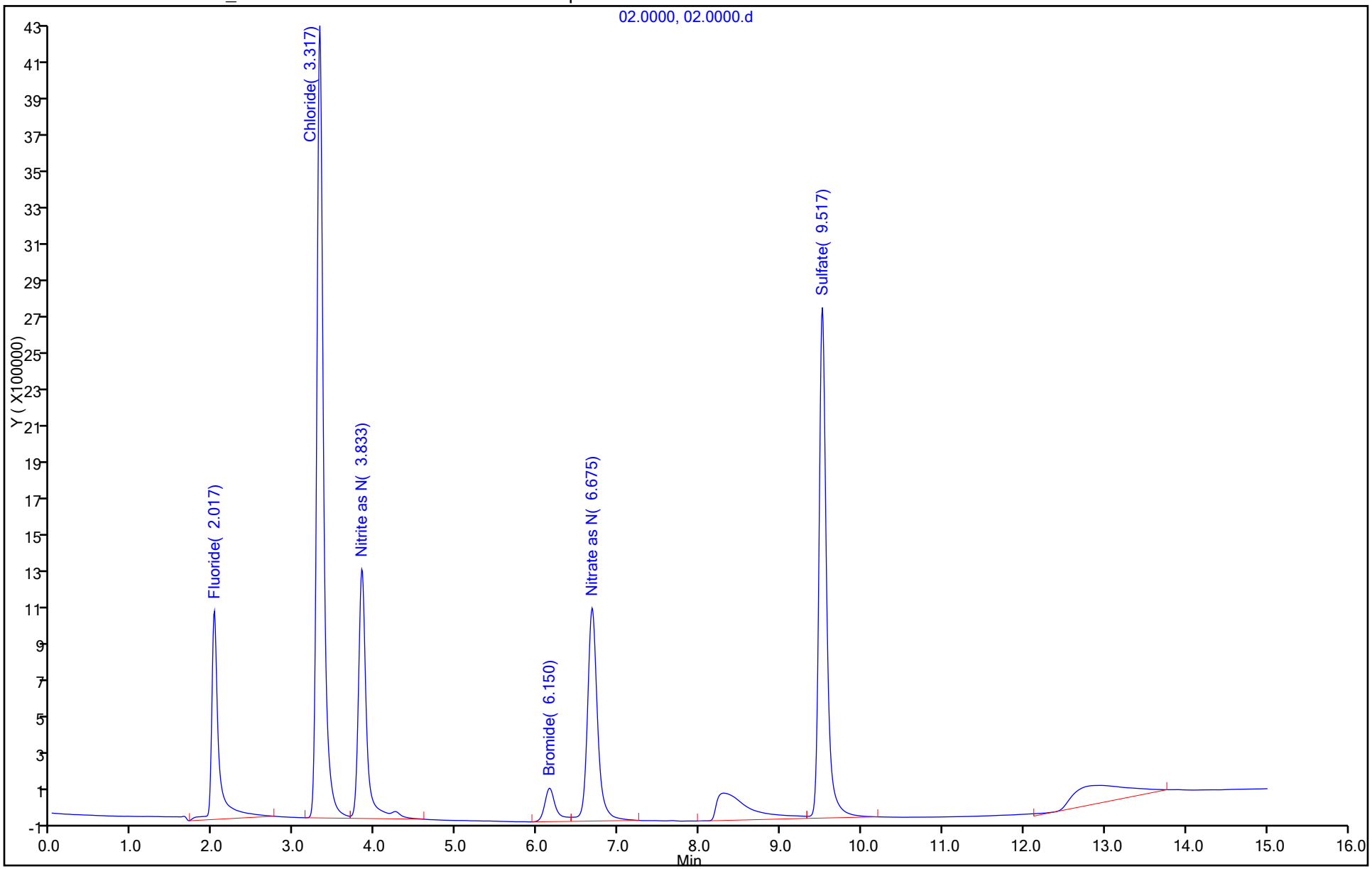
IC Cal low_00329 Amount Added: 0.02 Units: mL
IC CAL cl/so4_00171 Amount Added: 0.02 Units: mL

Report Date: 31-Oct-2017 13:01:11 Chrom Revision: 2.2 16-Aug-2017 16:24:46

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom7\20171030-64206.b\02.0000.d

Injection Date:	30-Oct-2017 15:44:00	Instrument ID:	WC_IonChrom7	Operator ID:	
Lims ID:	std L1			Worklist Smp#:	2
Client ID:					
Injection Vol:	25.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	Anions_IC7	Limit Group:	Wet - Anions 28D		



TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom7\20171030-64206.b\03.0000.d
Lims ID: std L2
Client ID:
Sample Type: IC Calib Level: 2
Inject. Date: 30-Oct-2017 16:02:00 ALS Bottle#: 0 Worklist Smp#: 3
Injection Vol: 25.0 ul Dil. Factor: 1.0000
Sample Info: 280-0064206-003
Operator ID: Instrument ID: WC_IonChrom7
Sublist: chrom-Anions_IC7*sub1

Method: \\ChromNA\Denver\ChromData\WC_IonChrom7\20171030-64206.b\Anions_IC7.m
Limit Group: Wet - Anions 28D
Last Update: 31-Oct-2017 13:01:14 Calib Date: 30-Oct-2017 17:13:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\WC_IonChrom7\20171030-64206.b\07.0000.d

Column 1 : Det: 0005
Process Host: XAWRK001

Compound	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 Fluoride	2.017	2.033	-0.016	14819642	0.5000	0.4868	
2 Chloride	3.317	3.300	0.017	45172534	2.50	2.31	
3 Nitrite as N	3.833	3.833	0.000	21500800	0.5000	0.5006	
4 Bromide	6.150	6.117	0.033	3672251	0.5000	0.4788	
5 Nitrate as N	6.667	6.550	0.117	22339251	0.5000	0.4904	
6 Sulfate	9.508	9.233	0.275	33928056	2.50	2.36	
7 Orthophosphate as P		12.008			ND	ND	

QC Flag Legend

Processing Flags
ND - Not Detected or Marked ND

Reagents:

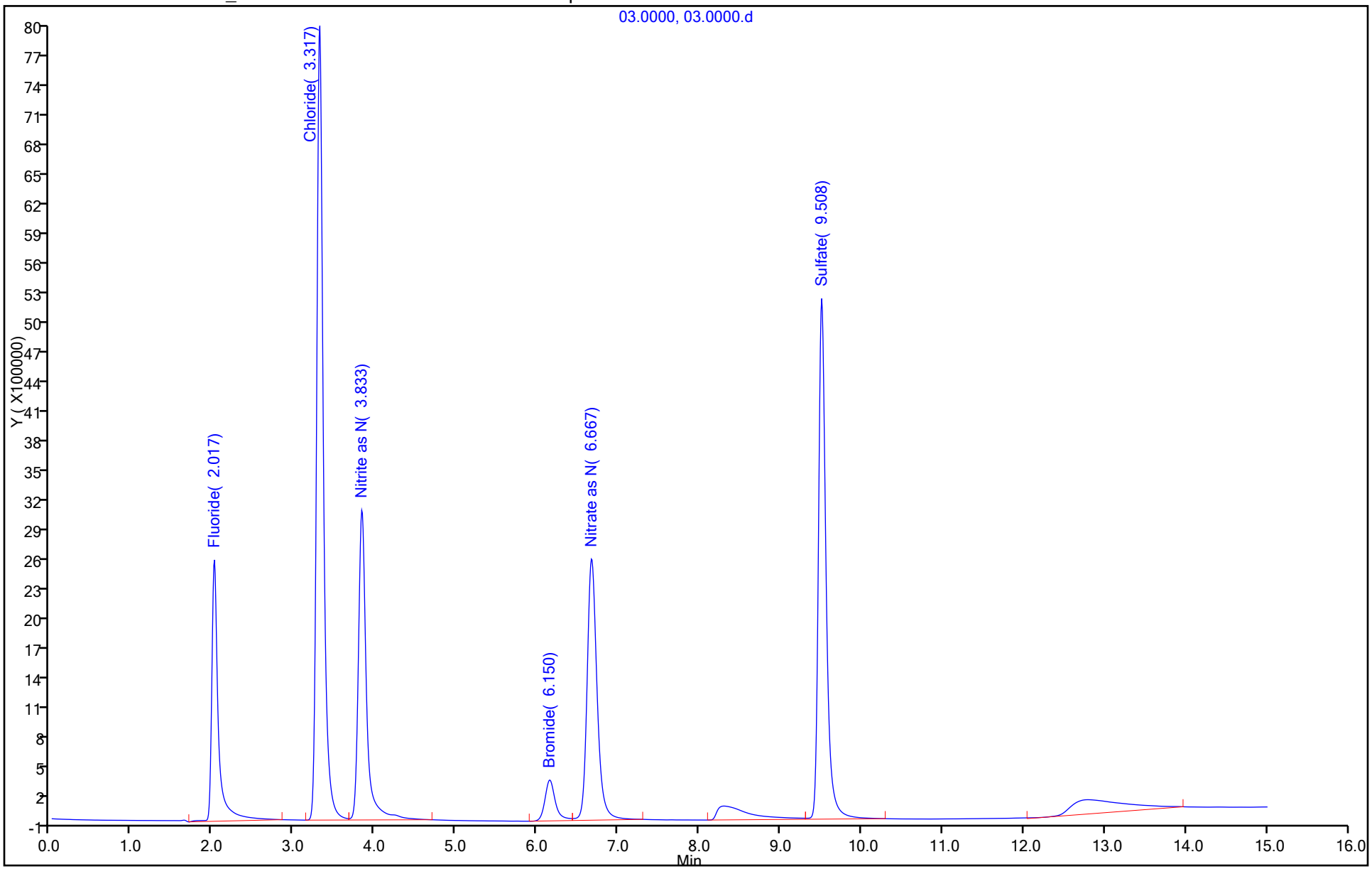
IC Cal low_00329 Amount Added: 0.05 Units: mL
IC CAL cl/so4_00171 Amount Added: 0.05 Units: mL

Report Date: 31-Oct-2017 13:01:15 Chrom Revision: 2.2 16-Aug-2017 16:24:46

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom7\20171030-64206.b\03.0000.d

Injection Date:	30-Oct-2017 16:02:00	Instrument ID:	WC_IonChrom7	Operator ID:	
Lims ID:	std L2			Worklist Smp#:	3
Client ID:					
Injection Vol:	25.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	Anions_IC7	Limit Group:	Wet - Anions 28D		



TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom7\20171030-64206.b\04.0000.d
Lims ID: std L3
Client ID:
Sample Type: IC Calib Level: 3
Inject. Date: 30-Oct-2017 16:20:00 ALS Bottle#: 0 Worklist Smp#: 4
Injection Vol: 25.0 ul Dil. Factor: 1.0000
Sample Info: 280-0064206-004
Operator ID: Instrument ID: WC_IonChrom7
Sublist: chrom-Anions_IC7*sub1

Method: \\ChromNA\Denver\ChromData\WC_IonChrom7\20171030-64206.b\Anions_IC7.m
Limit Group: Wet - Anions 28D
Last Update: 31-Oct-2017 13:01:17 Calib Date: 30-Oct-2017 17:13:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\WC_IonChrom7\20171030-64206.b\07.0000.d

Column 1 : Det: 0005
Process Host: XAWRK001

Compound	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 Fluoride	2.017	2.033	-0.016	29654091	1.00	1.03	
2 Chloride	3.308	3.300	0.008	88194373	5.00	4.80	
3 Nitrite as N	3.825	3.833	-0.008	42031612	1.00	1.02	
4 Bromide	6.142	6.117	0.025	7029205	1.00	0.9248	
5 Nitrate as N	6.642	6.550	0.092	43692438	1.00	0.9766	
6 Sulfate	9.475	9.233	0.242	64474275	5.00	4.77	
7 Orthophosphate as P		12.008			ND	ND	

QC Flag Legend

Processing Flags
ND - Not Detected or Marked ND

Reagents:

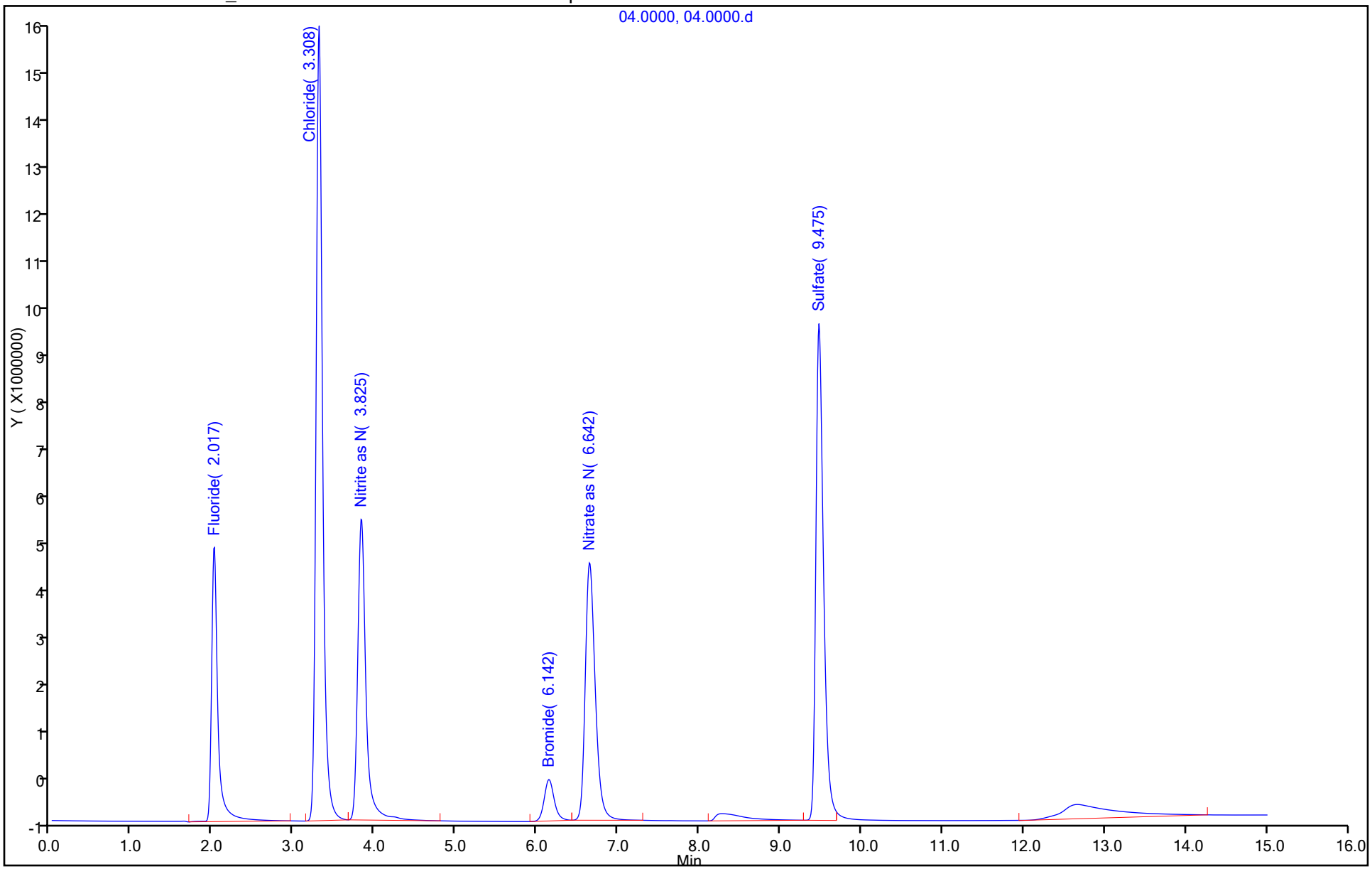
IC Cal low_00329 Amount Added: 0.10 Units: mL
IC CAL cl/so4_00171 Amount Added: 0.10 Units: mL

Report Date: 31-Oct-2017 13:01:19 Chrom Revision: 2.2 16-Aug-2017 16:24:46

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom7\20171030-64206.b\04.0000.d

Injection Date:	30-Oct-2017 16:20:00	Instrument ID:	WC_IonChrom7	Operator ID:	
Lims ID:	std L3			Worklist Smp#:	4
Client ID:					
Injection Vol:	25.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	Anions_IC7	Limit Group:	Wet - Anions 28D		



TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom7\20171030-64206.b\05.0000.d
Lims ID: std L4
Client ID:
Sample Type: IC Calib Level: 4
Inject. Date: 30-Oct-2017 16:38:00 ALS Bottle#: 0 Worklist Smp#: 5
Injection Vol: 25.0 ul Dil. Factor: 1.0000
Sample Info: 280-0064206-005
Operator ID: Instrument ID: WC_IonChrom7
Sublist: chrom-Anions_IC7*sub1

Method: \\ChromNA\Denver\ChromData\WC_IonChrom7\20171030-64206.b\Anions_IC7.m
Limit Group: Wet - Anions 28D
Last Update: 31-Oct-2017 13:01:21 Calib Date: 30-Oct-2017 17:13:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\WC_IonChrom7\20171030-64206.b\07.0000.d

Column 1 : Det: 0005
Process Host: XAWRK001

Compound	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 Fluoride	2.017	2.017	0.000	114259329	4.00	4.14	
2 Chloride	3.292	3.292	0.000	1060604953	60.0	61.2	
3 Nitrite as N	3.825	3.825	0.000	166136767	4.00	4.14	
4 Bromide	6.117	6.117	0.000	30026892	4.00	3.98	
5 Nitrate as N	6.558	6.558	0.000	176145841	4.00	3.99	
6 Sulfate	9.292	9.292	0.000	781065022	60.0	61.3	
7 Orthophosphate as P	12.058	12.058	0.000	39135028	4.00	3.99	

Reagents:

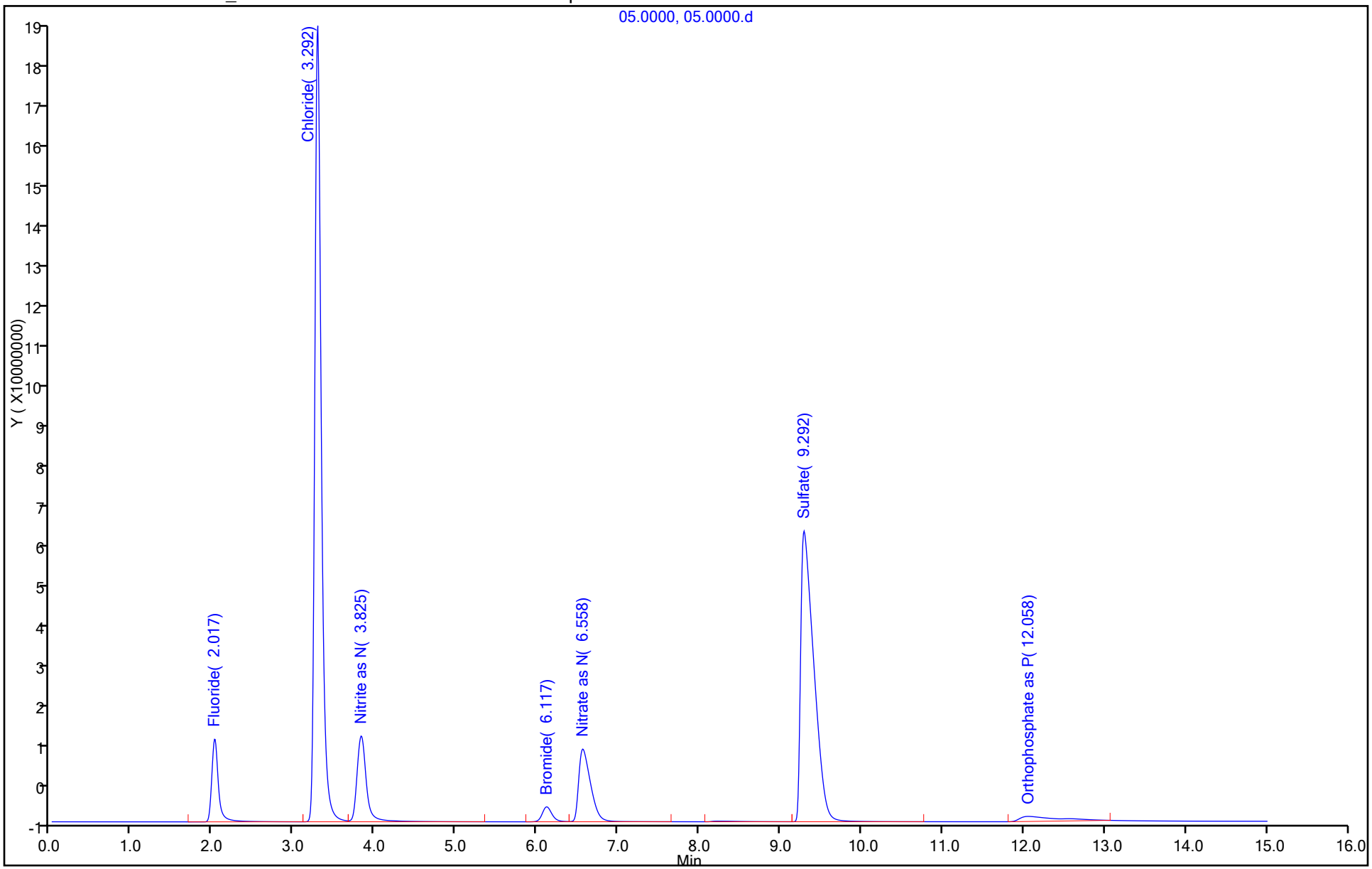
IC Cal low_00329 Amount Added: 0.40 Units: mL
IC CAL cl/so4_00171 Amount Added: 1.20 Units: mL

Report Date: 31-Oct-2017 13:01:22 Chrom Revision: 2.2 16-Aug-2017 16:24:46

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom7\20171030-64206.b\05.0000.d

Injection Date:	30-Oct-2017 16:38:00	Instrument ID:	WC_IonChrom7	Operator ID:	
Lims ID:	std L4			Worklist Smp#:	5
Client ID:					
Injection Vol:	25.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	Anions_IC7	Limit Group:	Wet - Anions 28D		



TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom7\20171030-64206.b\06.0000.d
Lims ID: std L5
Client ID:
Sample Type: IC Calib Level: 5
Inject. Date: 30-Oct-2017 16:56:00 ALS Bottle#: 0 Worklist Smp#: 6
Injection Vol: 25.0 ul Dil. Factor: 1.0000
Sample Info: 280-0064206-006
Operator ID: Instrument ID: WC_IonChrom7
Sublist: chrom-Anions_IC7*sub1

Method: \\ChromNA\Denver\ChromData\WC_IonChrom7\20171030-64206.b\Anions_IC7.m
Limit Group: Wet - Anions 28D
Last Update: 31-Oct-2017 13:01:25 Calib Date: 30-Oct-2017 17:13:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\WC_IonChrom7\20171030-64206.b\07.0000.d

Column 1 : Det: 0005
Process Host: XAWRK001

Compound	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 Fluoride	2.025	2.017	0.008	218338611	8.00	7.96	
2 Chloride	3.275	3.292	-0.017	2072462834	120.0	119.8	
3 Nitrite as N	3.817	3.825	-0.008	316939115	8.00	7.93	
4 Bromide	6.067	6.117	-0.050	60174862	8.00	7.99	
5 Nitrate as N	6.475	6.558	-0.083	350438276	8.00	7.96	
6 Sulfate	9.183	9.292	-0.109	1525558954	120.0	120.0	
7 Orthophosphate as P	11.867	12.058	-0.191	122990722	8.00	8.09	

Reagents:

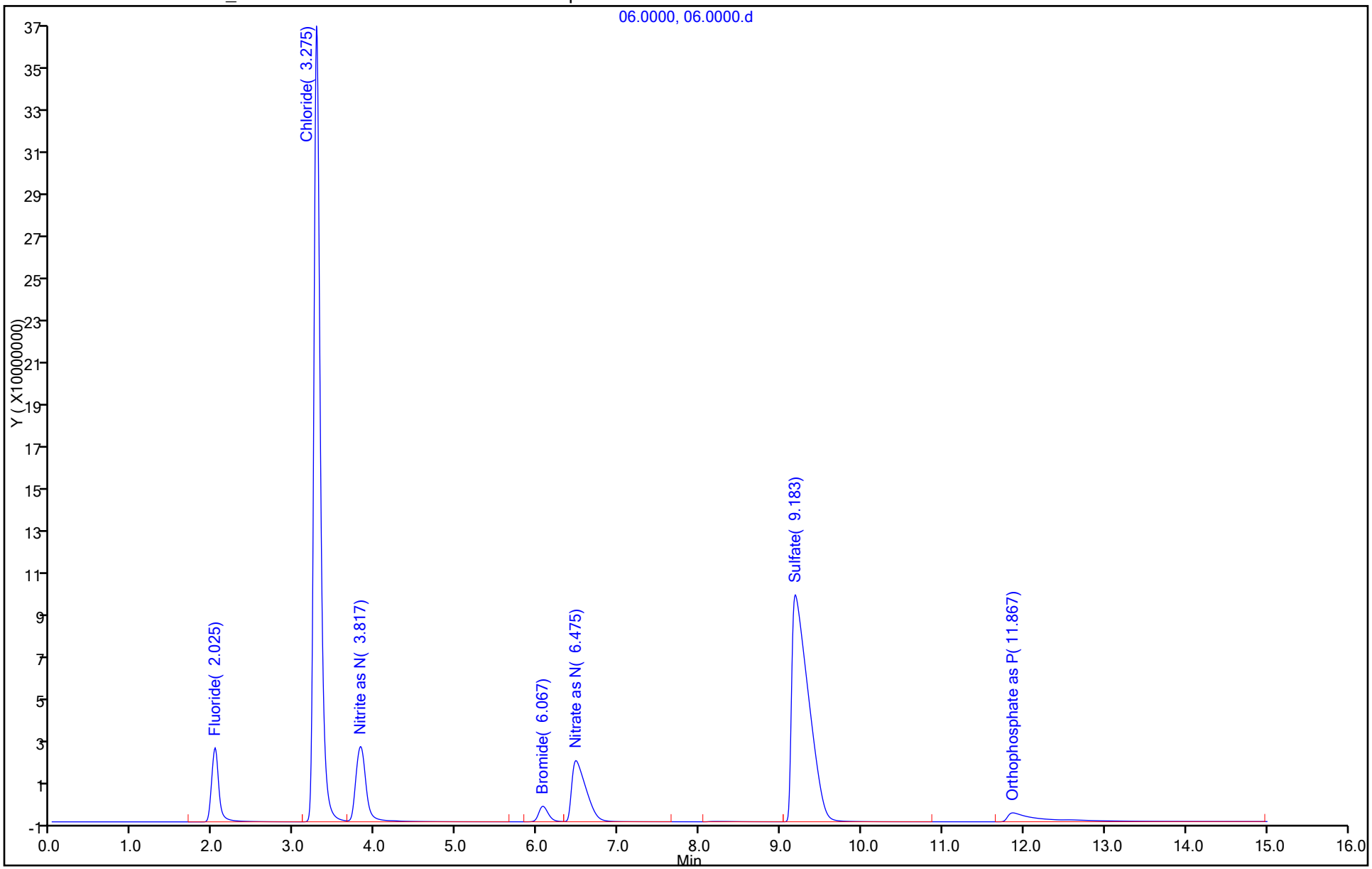
IC Cal low_00329 Amount Added: 0.80 Units: mL
IC CAL cl/so4_00171 Amount Added: 2.40 Units: mL

Report Date: 31-Oct-2017 13:01:27 Chrom Revision: 2.2 16-Aug-2017 16:24:46

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom7\20171030-64206.b\06.0000.d

Injection Date:	30-Oct-2017 16:56:00	Instrument ID:	WC_IonChrom7	Operator ID:	
Lims ID:	std L5			Worklist Smp#:	6
Client ID:					
Injection Vol:	25.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	Anions_IC7	Limit Group:	Wet - Anions 28D		



TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom7\20171030-64206.b\07.0000.d
Lims ID: std L6
Client ID:
Sample Type: IC Calib Level: 6
Inject. Date: 30-Oct-2017 17:13:00 ALS Bottle#: 0 Worklist Smp#: 7
Injection Vol: 25.0 ul Dil. Factor: 1.0000
Sample Info: 280-0064206-007
Operator ID: Instrument ID: WC_IonChrom7
Sublist: chrom-Anions_IC7*sub1

Method: \\ChromNA\Denver\ChromData\WC_IonChrom7\20171030-64206.b\Anions_IC7.m
Limit Group: Wet - Anions 28D
Last Update: 31-Oct-2017 13:01:30 Calib Date: 30-Oct-2017 17:13:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\WC_IonChrom7\20171030-64206.b\07.0000.d

Column 1 : Det: 0005
Process Host: XAWRK001

Compound	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 Fluoride	2.025	2.017	0.008	270554557	10.0	9.88	
2 Chloride	3.275	3.292	-0.017	3442676793	200.0	199.3	
3 Nitrite as N	3.817	3.825	-0.008	396473014	10.0	9.93	
4 Bromide	6.042	6.117	-0.075	76156631	10.0	10.1	
5 Nitrate as N	6.433	6.558	-0.125	443184939	10.0	10.1	
6 Sulfate	9.075	9.292	-0.217	2526447267	200.0	199.0	
7 Orthophosphate as P	11.817	12.058	-0.241	160552264	10.0	9.93	

Reagents:

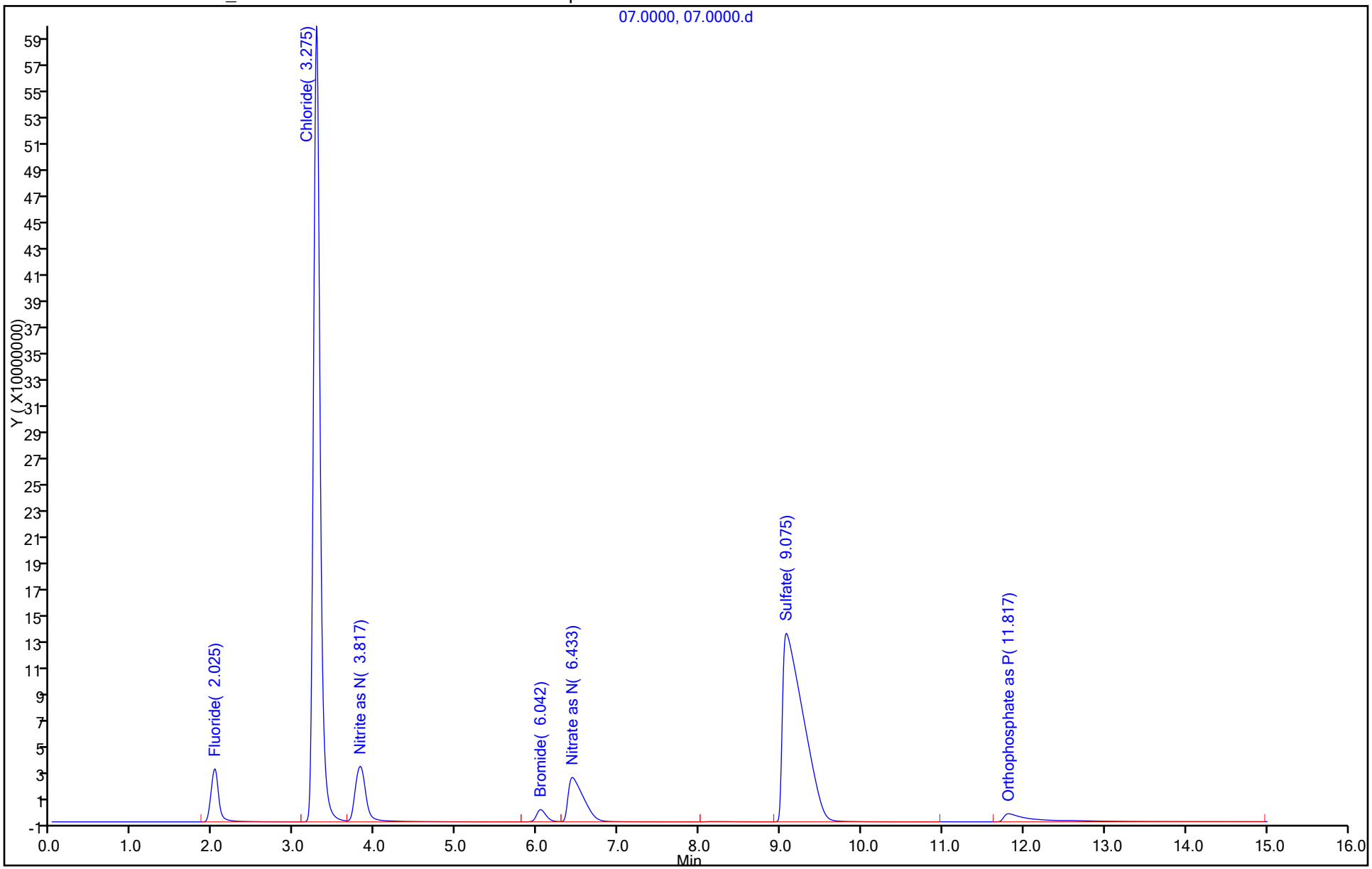
IC Cal low_00329 Amount Added: 1.00 Units: mL
IC CAL cl/so4_00171 Amount Added: 4.00 Units: mL

Report Date: 31-Oct-2017 13:01:30 Chrom Revision: 2.2 16-Aug-2017 16:24:46

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom7\20171030-64206.b\07.0000.d

Injection Date:	30-Oct-2017 17:13:00	Instrument ID:	WC_IonChrom7	Operator ID:	
Lims ID:	std L6			Worklist Smp#:	7
Client ID:					
Injection Vol:	25.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	Anions_IC7	Limit Group:	Wet - Anions 28D		



IC Instrument Information

WL: 66167 **Inst ID:** 7 **Analysis Date:** 12/30/17 **Analyst:** JWL

Rush	Job No.	Samples	Anions	QC Req	HT Exp
☐	104552	2	F Cl NO2 Br NO3 PO4 SO4	MS/D #10 ← Client	
☐	104541	1	F Cl NO2 Br NO3 PO4 SO4	MS/D	
☐	104371	1	F Cl NO2 Br NO3 PO4 SO4	MS/D #11	
☐	105105	2	F Cl NO2 Br NO3 PO4 SO4	MS/D	
☐			F Cl NO2 Br NO3 PO4 SO4	MS/D	
☐			F Cl NO2 Br NO3 PO4 SO4	MS/D	
☐			F Cl NO2 Br NO3 PO4 SO4	MS/D	
☐			F Cl NO2 Br NO3 PO4 SO4	MS/D	
☐			F Cl NO2 Br NO3 PO4 SO4	MS/D	
☐			F Cl NO2 Br NO3 PO4 SO4	MS/D	
☐			F Cl NO2 Br NO3 PO4 SO4	MS/D	
☐			F Cl NO2 Br NO3 PO4 SO4	MS/D	
☐			F Cl NO2 Br NO3 PO4 SO4	MS/D	
☐			F Cl NO2 Br NO3 PO4 SO4	MS/D	

Dilutions

Job No.	Samples	Anions	Dilution	Reason
		F Cl NO2 Br NO3 PO4 SO4		
		F Cl NO2 Br NO3 PO4 SO4		
		F Cl NO2 Br NO3 PO4 SO4		
		F Cl NO2 Br NO3 PO4 SO4		
		F Cl NO2 Br NO3 PO4 SO4		
		F Cl NO2 Br NO3 PO4 SO4		
		F Cl NO2 Br NO3 PO4 SO4		
		F Cl NO2 Br NO3 PO4 SO4		
		F Cl NO2 Br NO3 PO4 SO4		

TestAmerica Laboratories
Initial Calibration Summary Report

Method: \\ChromNA\Denver\ChromData\WC_IonChrom7\20171031-64236.b\Anions_IC7.m

Instrument:	WC_IonChrom7	Lims Location:	280
Lock State:	Unlocked	Cpnd Order:	Retention Time
Integrator:	Falcon	Last Modified:	01-Nov-2017 11:44:37

No.Compounds:7

Initial Calibration Batches

Ical Batch: \\ChromNA\Denver\ChromData\WC_IonChrom7\20171030-64206.b
Inj Date : 30-Oct-2017 15:44:00, Sublist: chrom-Anions_IC7*sub1

Detector 1: 0005

	Wet - Anions				Wet - Anions 28D			
Compound	b	M1	M2	Err	b	M1	M2	Err
1 Fluoride	1568928	2721914		1.000	1568925	2721914		1.000
2 Chloride	5394921	172488C		1.000	5394921	172488C		1.000
3 Nitrite as N	1588154	3978123		1.000	1588154	3978123		1.000
4 Bromide	67848	7527296		0.999	67848	7527296		0.999
5 Nitrate as N	799370	4392237		1.000	799370	4392237		1.000
6 Sulfate	405876S	1267688		1.000	405876S	1267688		1.000
7 Orthophosphate as P	-423116	2043695	R2, R4	).999*	-423116	2043695	R2, R4	).999*

ICalib Error Legend
R2, Missing the Required Number of Calibration Points
R4, Curve Zero Intercept is > Reporting Limit

TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom7\20171230-66167.b\01.0000.d
Lims ID: ccv
Client ID:
Sample Type: CCV
Inject. Date: 30-Dec-2017 06:17:00 ALS Bottle#: 0 Worklist Smp#: 1
Injection Vol: 25.0 ul Dil. Factor: 1.0000
Sample Info: 280-0066167-001
Operator ID: Instrument ID: WC_IonChrom7
Sublist: chrom-Anions_IC7*sub1

Method: \\ChromNA\Denver\ChromData\WC_IonChrom7\20171230-66167.b\Anions_IC7.m
Limit Group: Wet - Anions 28D
Last Update: 30-Dec-2017 13:38:23 Calib Date: 30-Oct-2017 17:13:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\WC_IonChrom7\20171030-64206.b\07.0000.d

Column 1 : Det: 0005
Process Host: XAWRK024

Compound	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 Fluoride	2.042	2.033	0.009	144733578	5.00	5.26	
2 Chloride	3.275	3.283	-0.008	1715542262	100.0	99.1	
3 Nitrite as N	3.817	3.817	0.000	214277401	5.00	5.35	
4 Bromide	6.075	6.075	0.000	38570643	5.00	5.12	
5 Nitrate as N	6.525	6.533	-0.008	223480189	5.00	5.07	
6 Sulfate	9.158	9.158	0.000	1264312186	100.0	99.4	
7 Orthophosphate as P	12.625	12.608	0.017	62852556	5.00	5.15	

Reagents:

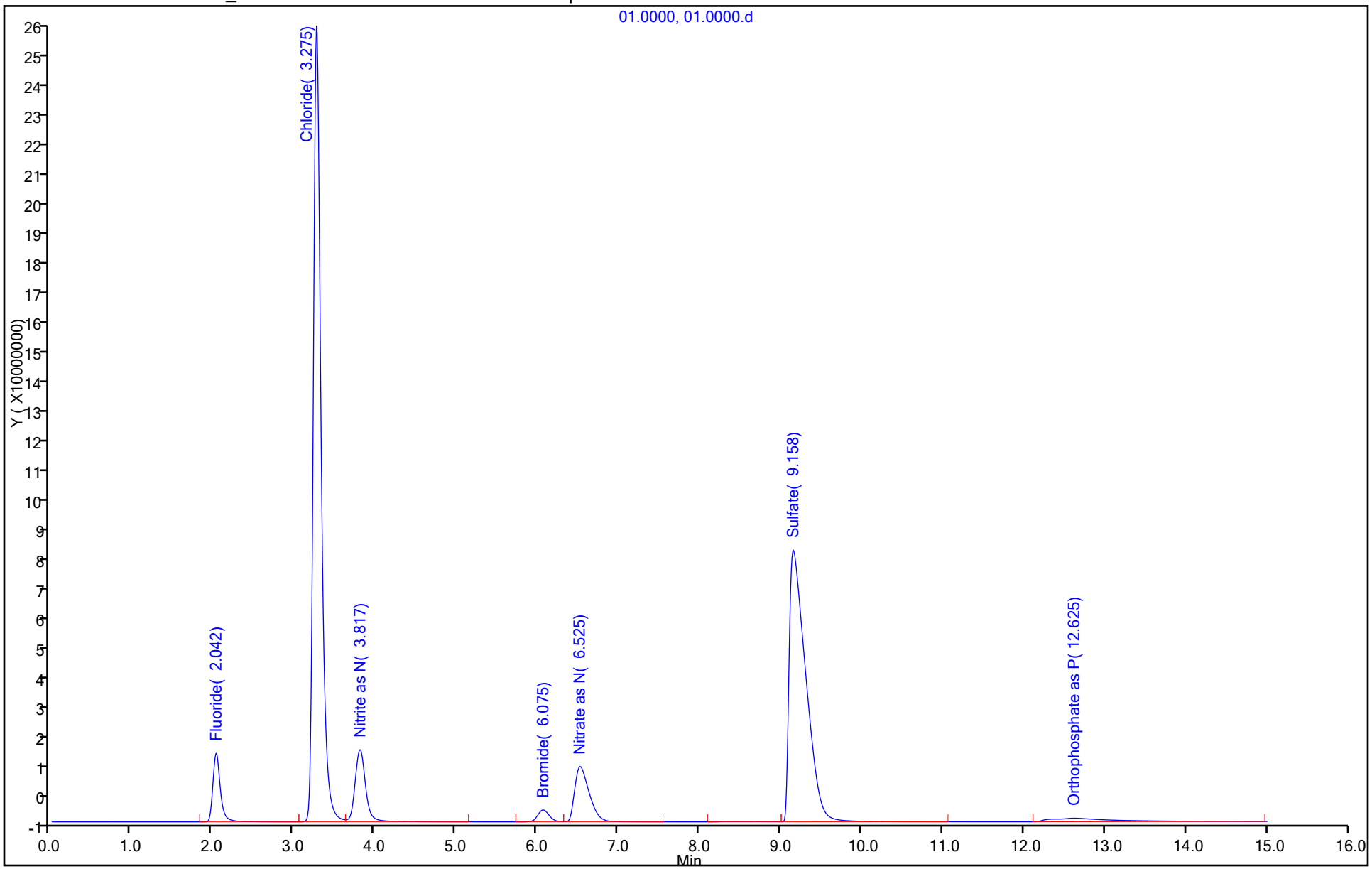
IC LCS_01109 Amount Added: 5.00 Units: mL

Report Date: 30-Dec-2017 13:38:24 Chrom Revision: 2.2 08-Dec-2017 11:41:26

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom7\20171230-66167.b\01.0000.d

Injection Date:	30-Dec-2017 06:17:00	Instrument ID:	WC_IonChrom7	Operator ID:	
Lims ID:	ccv			Worklist Smp#:	1
Client ID:					
Injection Vol:	25.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	Anions_IC7	Limit Group:	Wet - Anions 28D		



TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom7\20171230-66167.b\02.0000.d
Lims ID: ccb
Client ID:
Sample Type: CCB
Inject. Date: 30-Dec-2017 06:34:00 ALS Bottle#: 0 Worklist Smp#: 2
Injection Vol: 25.0 ul Dil. Factor: 1.0000
Sample Info: 280-0066167-002
Operator ID: Instrument ID: WC_IonChrom7

Method: \\ChromNA\Denver\ChromData\WC_IonChrom7\20171230-66167.b\Anions_IC7.m
Limit Group: Wet - Anions 28D
Last Update: 30-Dec-2017 13:38:23 Calib Date: 30-Oct-2017 17:13:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\WC_IonChrom7\20171030-64206.b\07.0000.d

Column 1 : Det: 0005
Process Host: XAWRK024

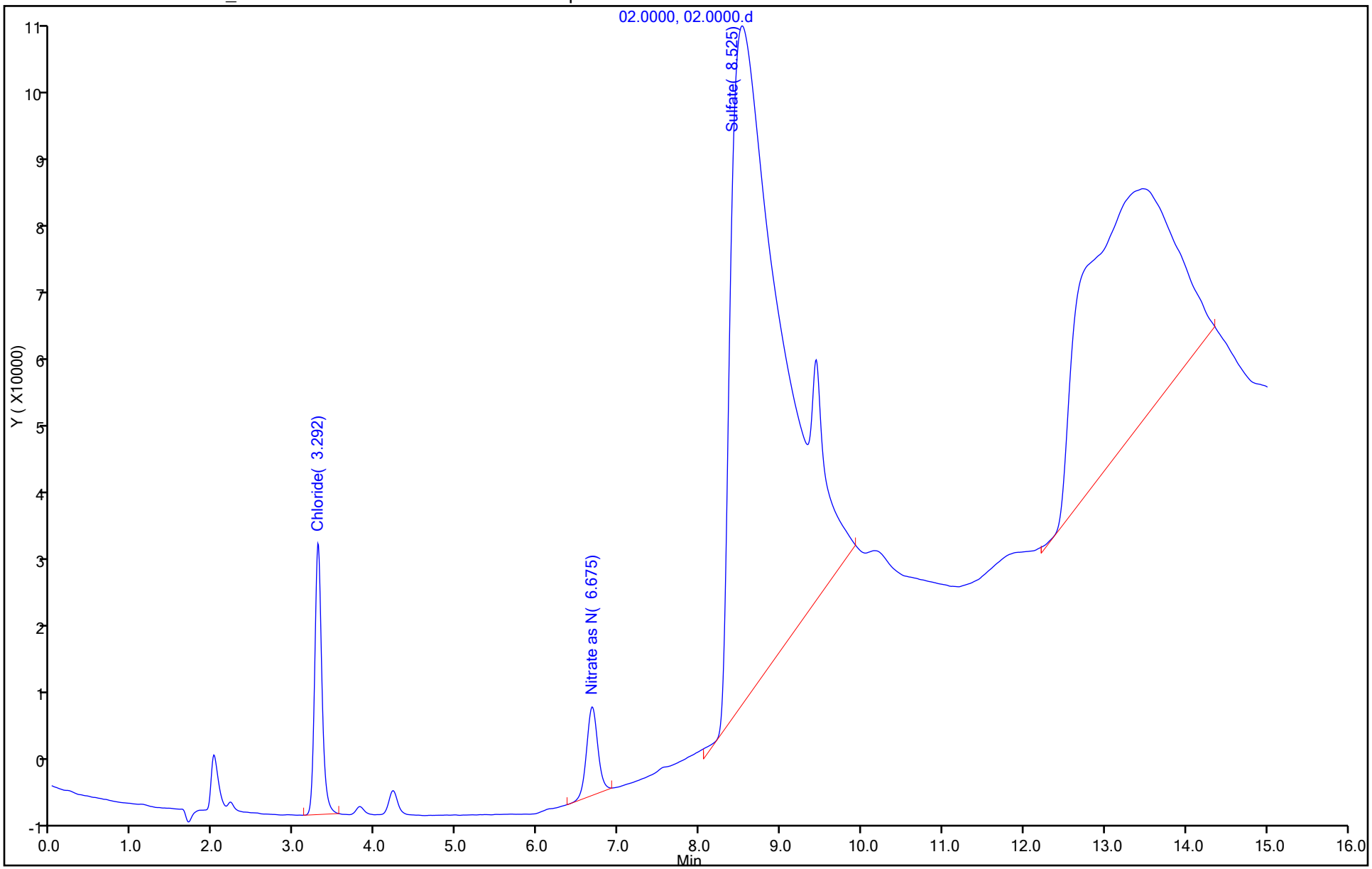
Compound	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 Fluoride		2.033				ND	
2 Chloride	3.292	3.283	0.009	227901		-0.2996	
3 Nitrite as N		3.817				ND	
4 Bromide		6.075				ND	
5 Nitrate as N	6.675	6.533	0.142	116435		-0.0155	
6 Sulfate	8.525	9.158	-0.633	3996081		-0.004945	
7 Orthophosphate as P		12.608				ND	

Report Date: 30-Dec-2017 13:38:25 Chrom Revision: 2.2 08-Dec-2017 11:41:26

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom7\20171230-66167.b\02.0000.d

Injection Date:	30-Dec-2017 06:34:00	Instrument ID:	WC_IonChrom7	Operator ID:	
Lims ID:	ccb			Worklist Smp#:	2
Client ID:					
Injection Vol:	25.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	Anions_IC7	Limit Group:	Wet - Anions 28D		



TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom7\20171230-66167.b\03.0000.d
Lims ID: mrl
Client ID:
Sample Type: MRL
Inject. Date: 30-Dec-2017 06:52:00 ALS Bottle#: 0 Worklist Smp#: 3
Injection Vol: 25.0 ul Dil. Factor: 1.0000
Sample Info: 280-0066167-003
Operator ID: Instrument ID: WC_IonChrom7

Method: \\ChromNA\Denver\ChromData\WC_IonChrom7\20171230-66167.b\Anions_IC7.m
Limit Group: Wet - Anions 28D
Last Update: 30-Dec-2017 13:38:23 Calib Date: 30-Oct-2017 17:13:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\WC_IonChrom7\20171030-64206.b\07.0000.d

Column 1 : Det: 0005
Process Host: XAWRK024

Compound	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 Fluoride	2.025	2.033	-0.008	5862168	0.2000	0.1577	
2 Chloride	3.308	3.283	0.025	43583653	2.50	2.21	
3 Nitrite as N	3.825	3.817	0.008	8401984	0.2000	0.1713	
4 Bromide	6.125	6.075	0.050	1206981	0.2000	0.1513	
5 Nitrate as N	6.675	6.533	0.142	8471069	0.2000	0.1747	
6 Sulfate	9.425	9.158	0.267	32062158	2.50	2.21	
7 Orthophosphate as P	12.825	12.608	0.217	179359	0.2000	2.08	

Reagents:

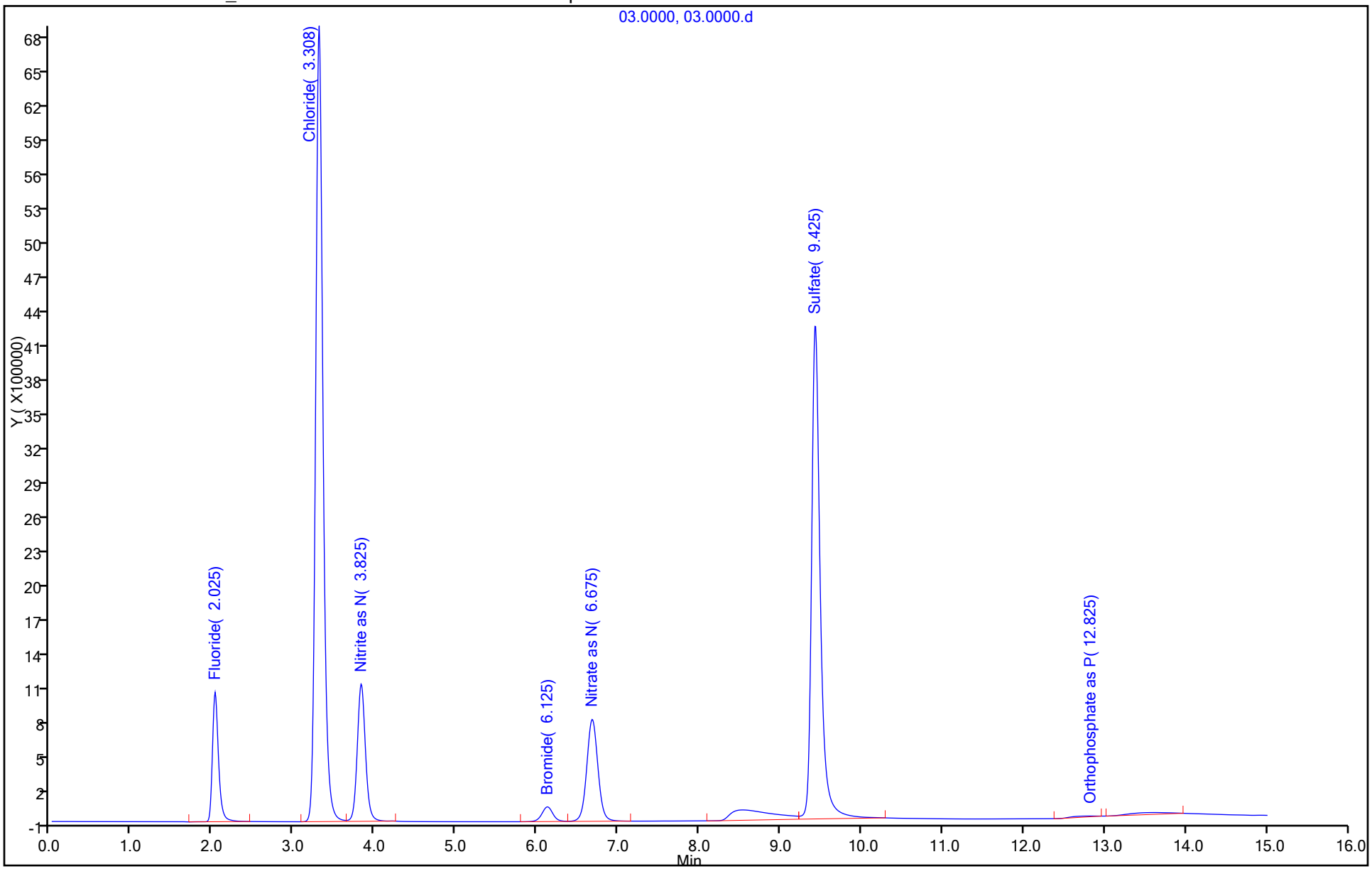
IC Cal low_00340 Amount Added: 0.02 Units: mL
IC CAL cl/so4_00180 Amount Added: 0.05 Units: mL

Report Date: 30-Dec-2017 13:38:26 Chrom Revision: 2.2 08-Dec-2017 11:41:26

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom7\20171230-66167.b\03.0000.d

Injection Date:	30-Dec-2017 06:52:00	Instrument ID:	WC_IonChrom7	Operator ID:	
Lims ID:	mrl			Worklist Smp#:	3
Client ID:					
Injection Vol:	25.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	Anions_IC7	Limit Group:	Wet - Anions 28D		



TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom7\20171230-66167.b\04.0000.d
Lims ID: lcs
Client ID:
Sample Type: LCS
Inject. Date: 30-Dec-2017 07:10:00 ALS Bottle#: 0 Worklist Smp#: 4
Injection Vol: 25.0 ul Dil. Factor: 1.0000
Sample Info: 280-0066167-004
Misc. Info.: 4 F
Operator ID: Instrument ID: WC_IonChrom7

Method: \\ChromNA\Denver\ChromData\WC_IonChrom7\20171230-66167.b\Anions_IC7.m
Limit Group: Wet - Anions 28D
Last Update: 30-Dec-2017 13:38:23 Calib Date: 30-Oct-2017 17:13:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\WC_IonChrom7\20171030-64206.b\07.0000.d

Column 1 : Det: 0005
Process Host: XAWRK024

Compound	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 Fluoride	2.033	2.033	0.000	143600640	5.00	5.22	
2 Chloride	3.275	3.283	-0.008	1707578320	100.0	98.7	
3 Nitrite as N	3.817	3.817	0.000	210896886	5.00	5.26	
4 Bromide	6.075	6.075	0.000	38292758	5.00	5.08	
5 Nitrate as N	6.533	6.533	0.000	222269241	5.00	5.04	
6 Sulfate	9.158	9.158	0.000	1256896428	100.0	98.8	
7 Orthophosphate as P	12.625	12.608	0.017	63809461	5.00	5.19	

Reagents:

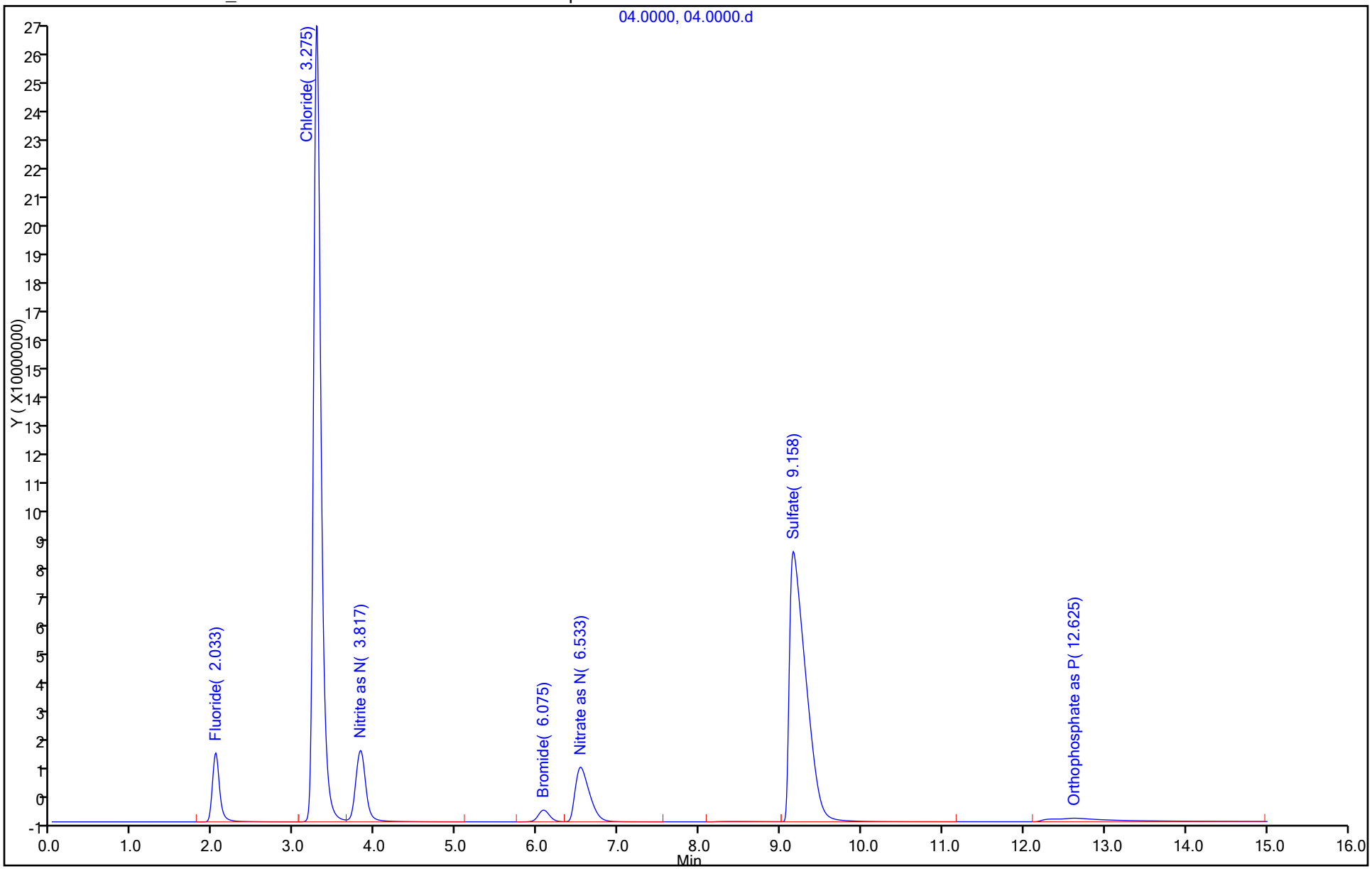
IC LCS_01109 Amount Added: 5.00 Units: mL

Report Date: 30-Dec-2017 13:38:27 Chrom Revision: 2.2 08-Dec-2017 11:41:26

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom7\20171230-66167.b\04.0000.d

Injection Date:	30-Dec-2017 07:10:00	Instrument ID:	WC_IonChrom7	Operator ID:	
Lims ID:	lcs			Worklist Smp#:	4
Client ID:					
Injection Vol:	25.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	Anions_IC7	Limit Group:	Wet - Anions 28D		



TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom7\20171230-66167.b\05.0000.d
Lims ID: lcsd
Client ID:
Sample Type: LCSD
Inject. Date: 30-Dec-2017 07:28:00 ALS Bottle#: 0 Worklist Smp#: 5
Injection Vol: 25.0 ul Dil. Factor: 1.0000
Sample Info: 280-0066167-005
Misc. Info.: 5 F
Operator ID: Instrument ID: WC_IonChrom7

Method: \\ChromNA\Denver\ChromData\WC_IonChrom7\20171230-66167.b\Anions_IC7.m
Limit Group: Wet - Anions 28D
Last Update: 30-Dec-2017 13:38:28 Calib Date: 30-Oct-2017 17:13:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\WC_IonChrom7\20171030-64206.b\07.0000.d

Column 1 : Det: 0005
Process Host: XAWRK024

Compound	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 Fluoride	2.033	2.033	0.000	143629146	5.00	5.22	
2 Chloride	3.283	3.283	0.000	1706702424	100.0	98.6	
3 Nitrite as N	3.817	3.817	0.000	211162069	5.00	5.27	
4 Bromide	6.075	6.075	0.000	38227716	5.00	5.07	
5 Nitrate as N	6.533	6.533	0.000	221917961	5.00	5.03	
6 Sulfate	9.158	9.158	0.000	1256260225	100.0	98.8	
7 Orthophosphate as P	12.608	12.608	0.000	53599885	5.00	4.69	

Reagents:

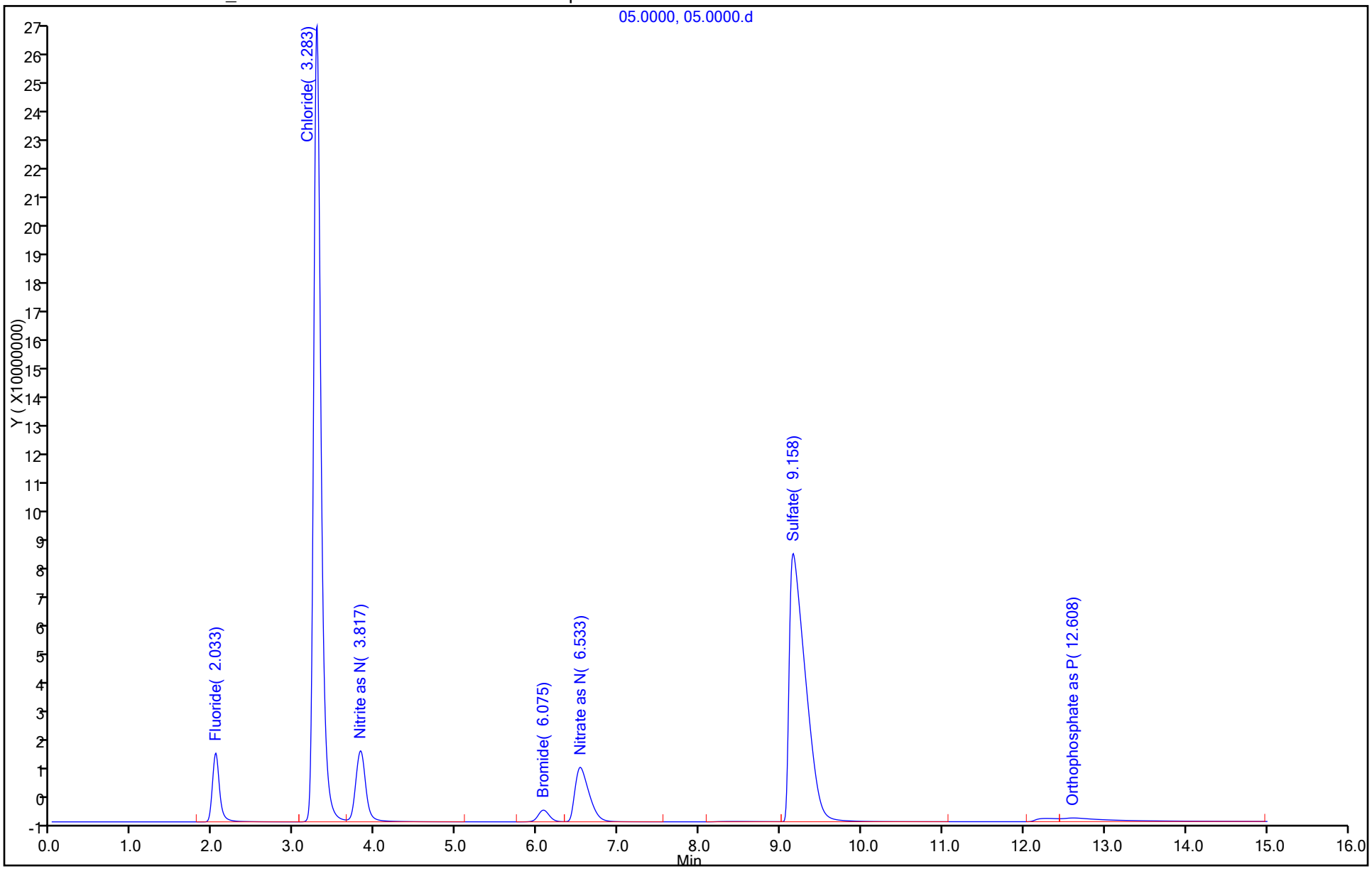
IC LCS_01109 Amount Added: 5.00 Units: mL

Report Date: 30-Dec-2017 13:38:28 Chrom Revision: 2.2 08-Dec-2017 11:41:26

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom7\20171230-66167.b\05.0000.d

Injection Date:	30-Dec-2017 07:28:00	Instrument ID:	WC_IonChrom7	Operator ID:	
Lims ID:	lcsd			Worklist Smp#:	5
Client ID:					
Injection Vol:	25.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	Anions_IC7	Limit Group:	Wet - Anions 28D		



TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom7\20171230-66167.b\06.0000.d
Lims ID: mb
Client ID:
Sample Type: MB
Inject. Date: 30-Dec-2017 07:46:00 ALS Bottle#: 0 Worklist Smp#: 6
Injection Vol: 25.0 ul Dil. Factor: 1.0000
Sample Info: 280-0066167-006
Misc. Info.: 6 F
Operator ID: Instrument ID: WC_IonChrom7

Method: \\ChromNA\Denver\ChromData\WC_IonChrom7\20171230-66167.b\Anions_IC7.m
Limit Group: Wet - Anions 28D
Last Update: 30-Dec-2017 13:38:28 Calib Date: 30-Oct-2017 17:13:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\WC_IonChrom7\20171030-64206.b\07.0000.d

Column 1 : Det: 0005
Process Host: XAWRK024

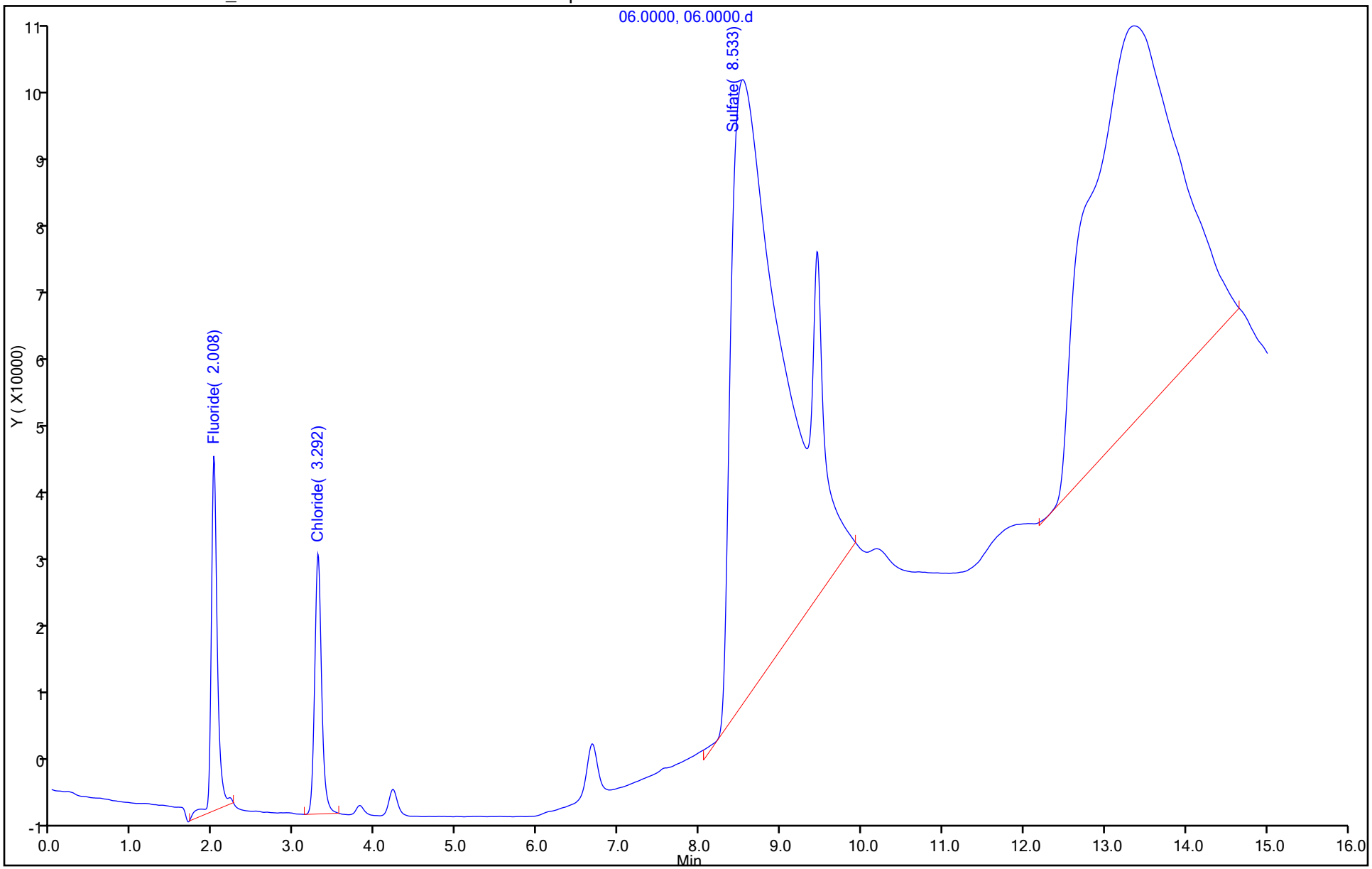
Compound	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 Fluoride	2.008	2.033	-0.025	268924		-0.0478	
2 Chloride	3.292	3.283	0.009	221618		-0.2999	
3 Nitrite as N		3.817				ND	
4 Bromide		6.075				ND	
5 Nitrate as N		6.533				ND	
6 Sulfate	8.533	9.158	-0.625	4026550		-0.002542	
7 Orthophosphate as P		12.608				ND	

Report Date: 30-Dec-2017 13:38:29 Chrom Revision: 2.2 08-Dec-2017 11:41:26

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom7\20171230-66167.b\06.0000.d

Injection Date:	30-Dec-2017 07:46:00	Instrument ID:	WC_IonChrom7	Operator ID:	
Lims ID:	mb			Worklist Smp#:	6
Client ID:					
Injection Vol:	25.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	Anions_IC7	Limit Group:	Wet - Anions 28D		



TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom7\20171230-66167.b\07.0000.d
Lims ID: 280-104552-D-9
Client ID: RQLmw-014-120717-GW
Sample Type: Client
Inject. Date: 30-Dec-2017 09:03:00 ALS Bottle#: 0 Worklist Smp#: 7
Injection Vol: 25.0 ul Dil. Factor: 1.0000
Sample Info: 280-0066167-007
Misc. Info.: 18417 F
Operator ID: Instrument ID: WC_IonChrom7

Method: \\ChromNA\Denver\ChromData\WC_IonChrom7\20171230-66167.b\Anions_IC7.m
Limit Group: Wet - Anions 28D
Last Update: 30-Dec-2017 13:38:28 Calib Date: 30-Oct-2017 17:13:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\WC_IonChrom7\20171030-64206.b\07.0000.d

Column 1 : Det: 0005
Process Host: XAWRK024

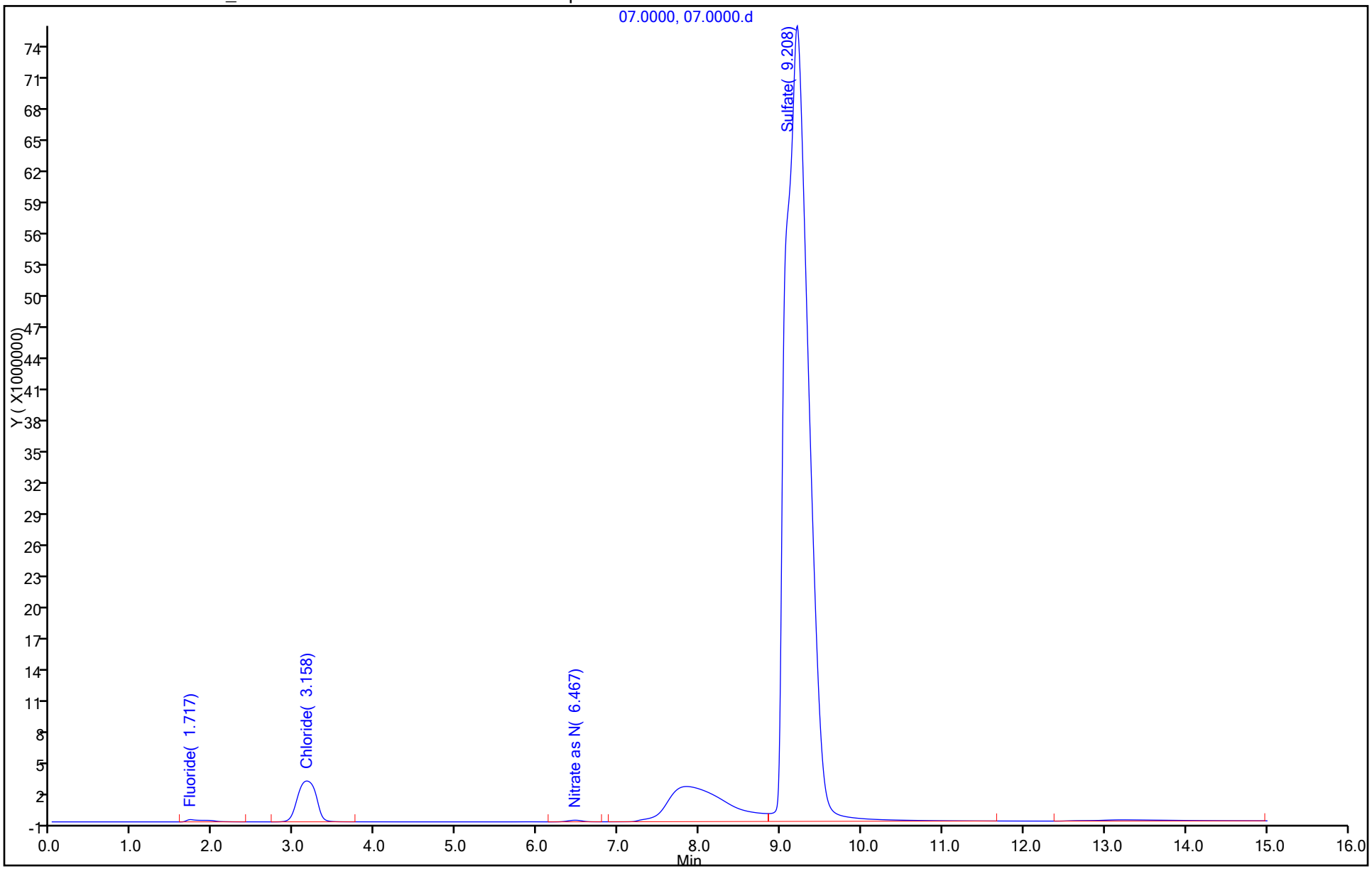
Compound	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	OnCol Amt ug/ml	Flags
1 Fluoride	1.717	2.033	-0.316	3772069	0.0809	
2 Chloride	3.158	3.283	-0.125	62417787	3.31	
3 Nitrite as N		3.817			ND	
4 Bromide		6.075			ND	
5 Nitrate as N	6.467	6.533	-0.066	1857805	0.0241	
6 Sulfate	9.208	9.158	0.050	1490438001	117.3	
7 Orthophosphate as P		12.608			ND	

Report Date: 30-Dec-2017 13:38:29 Chrom Revision: 2.2 08-Dec-2017 11:41:26

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom7\20171230-66167.b\07.0000.d

Injection Date:	30-Dec-2017 09:03:00	Instrument ID:	WC_IonChrom7	Operator ID:	
Lims ID:	280-104552-D-9	Lab Sample ID:	280-104552-9	Worklist Smp#:	7
Client ID:	RQLmw-014-120717-GW				
Injection Vol:	25.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	Anions_IC7	Limit Group:	Wet - Anions 28D		



TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom7\20171230-66167.b\08.0000.d
Lims ID: 280-104552-D-10
Client ID: RQLmw-013-120717-GW
Sample Type: Client
Inject. Date: 30-Dec-2017 09:21:00 ALS Bottle#: 0 Worklist Smp#: 8
Injection Vol: 25.0 ul Dil. Factor: 2.0000
Sample Info: 280-0066167-008
Misc. Info.: 23842 F
Operator ID: Instrument ID: WC_IonChrom7

Method: \\ChromNA\Denver\ChromData\WC_IonChrom7\20171230-66167.b\Anions_IC7.m
Limit Group: Wet - Anions 28D
Last Update: 30-Dec-2017 13:38:28 Calib Date: 30-Oct-2017 17:13:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\WC_IonChrom7\20171030-64206.b\07.0000.d

Column 1 : Det: 0005
Process Host: XAWRK024

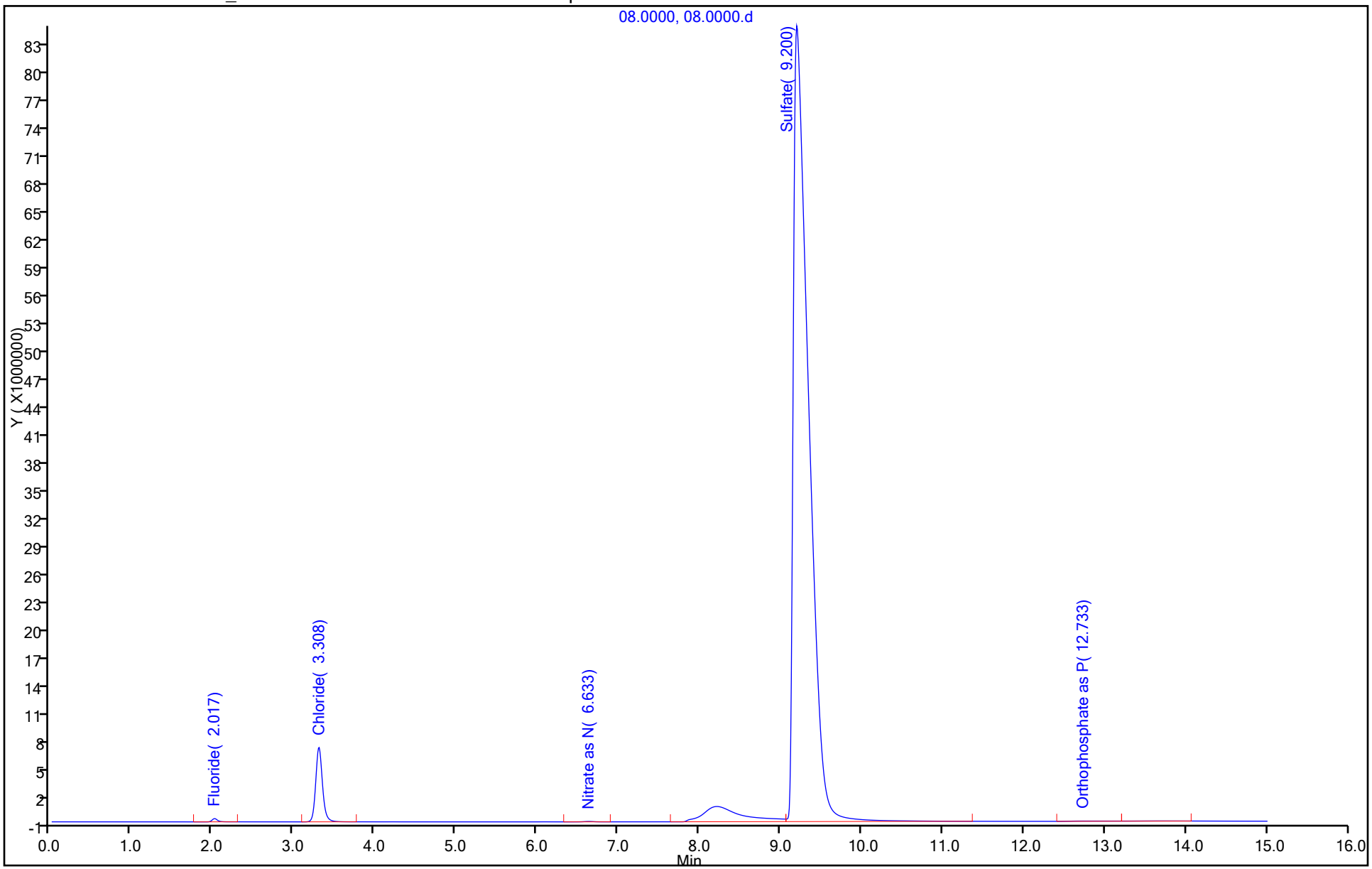
Compound	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	OnCol Amt ug/ml	Flags
1 Fluoride	2.017	2.033	-0.016	1630871	0.002276	
2 Chloride	3.308	3.283	0.025	45930887	2.35	
3 Nitrite as N		3.817			ND	
4 Bromide		6.075			ND	
5 Nitrate as N	6.633	6.533	0.100	339509	-0.0105	
6 Sulfate	9.200	9.158	0.042	1102715551	86.7	
7 Orthophosphate as P	12.733	12.608	0.125	790839	2.11	

Report Date: 30-Dec-2017 13:38:31 Chrom Revision: 2.2 08-Dec-2017 11:41:26

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom7\20171230-66167.b\08.0000.d

Injection Date:	30-Dec-2017 09:21:00	Instrument ID:	WC_IonChrom7	Operator ID:	
Lims ID:	280-104552-D-10	Lab Sample ID:	280-104552-10	Worklist Smp#:	8
Client ID:	RQLmw-013-120717-GW				
Injection Vol:	25.0 ul	Dil. Factor:	2.0000	ALS Bottle#:	0
Method:	Anions_IC7	Limit Group:	Wet - Anions 28D		



TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom7\20171230-66167.b\09.0000.d
Lims ID: 280-104552-D-10 DU
Client ID:
Sample Type: DU
Inject. Date: 30-Dec-2017 09:39:00 ALS Bottle#: 0 Worklist Smp#: 9
Injection Vol: 25.0 ul Dil. Factor: 2.0000
Sample Info: 280-0066167-009
Misc. Info.: 1075 F
Operator ID: Instrument ID: WC_IonChrom7

Method: \\ChromNA\Denver\ChromData\WC_IonChrom7\20171230-66167.b\Anions_IC7.m
Limit Group: Wet - Anions 28D
Last Update: 30-Dec-2017 13:38:28 Calib Date: 30-Oct-2017 17:13:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\WC_IonChrom7\20171030-64206.b\07.0000.d

Column 1 : Det: 0005
Process Host: XAWRK024

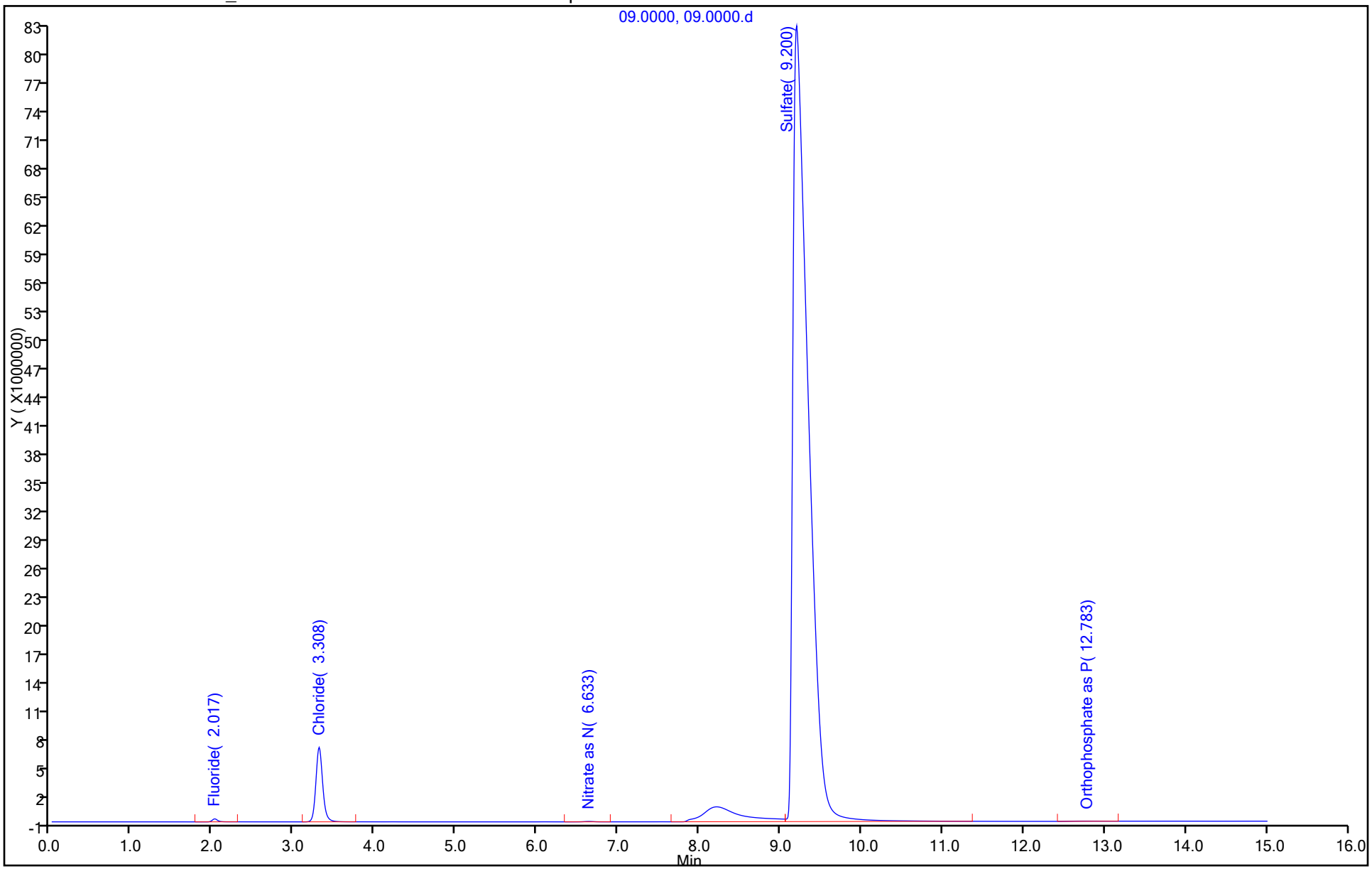
Compound	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 Fluoride	2.017	2.033	-0.016	1463612		-0.003869	
2 Chloride	3.308	3.283	0.025	45494166		2.32	
3 Nitrite as N		3.817				ND	
4 Bromide		6.075				ND	
5 Nitrate as N	6.633	6.533	0.100	337640		-0.0105	
6 Sulfate	9.200	9.158	0.042	1087445252		85.5	
7 Orthophosphate as P	12.783	12.608	0.175	468802		2.09	

Report Date: 30-Dec-2017 13:38:31 Chrom Revision: 2.2 08-Dec-2017 11:41:26

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom7\20171230-66167.b\09.0000.d

Injection Date:	30-Dec-2017 09:39:00	Instrument ID:	WC_IonChrom7	Operator ID:	
Lims ID:	280-104552-D-10 DU			Worklist Smp#:	9
Client ID:					
Injection Vol:	25.0 ul	Dil. Factor:	2.0000	ALS Bottle#:	0
Method:	Anions_IC7	Limit Group:	Wet - Anions 28D		



TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom7\20171230-66167.b\17.0000.d
Lims ID: ccv
Client ID:
Sample Type: CCV
Inject. Date: 30-Dec-2017 12:04:00 ALS Bottle#: 0 Worklist Smp#: 17
Injection Vol: 25.0 ul Dil. Factor: 1.0000
Sample Info: 280-0066167-017
Misc. Info.: 21947 F
Operator ID: Instrument ID: WC_IonChrom7
Sublist: chrom-Anions_IC7*sub1

Method: \\ChromNA\Denver\ChromData\WC_IonChrom7\20171230-66167.b\Anions_IC7.m
Limit Group: Wet - Anions 28D
Last Update: 30-Dec-2017 13:38:36 Calib Date: 30-Oct-2017 17:13:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\WC_IonChrom7\20171030-64206.b\07.0000.d

Column 1 : Det: 0005
Process Host: XAWRK024

Compound	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 Fluoride	2.033	2.033	0.000	143044907	5.00	5.20	
2 Chloride	3.283	3.283	0.000	1701641151	100.0	98.3	
3 Nitrite as N	3.825	3.817	0.008	210234318	5.00	5.24	
4 Bromide	6.067	6.075	-0.008	38228570	5.00	5.07	
5 Nitrate as N	6.517	6.533	-0.016	222028512	5.00	5.04	
6 Sulfate	9.192	9.158	0.034	1256845421	100.0	98.8	
7 Orthophosphate as P	12.633	12.608	0.025	66640658	5.00	5.33	

Reagents:

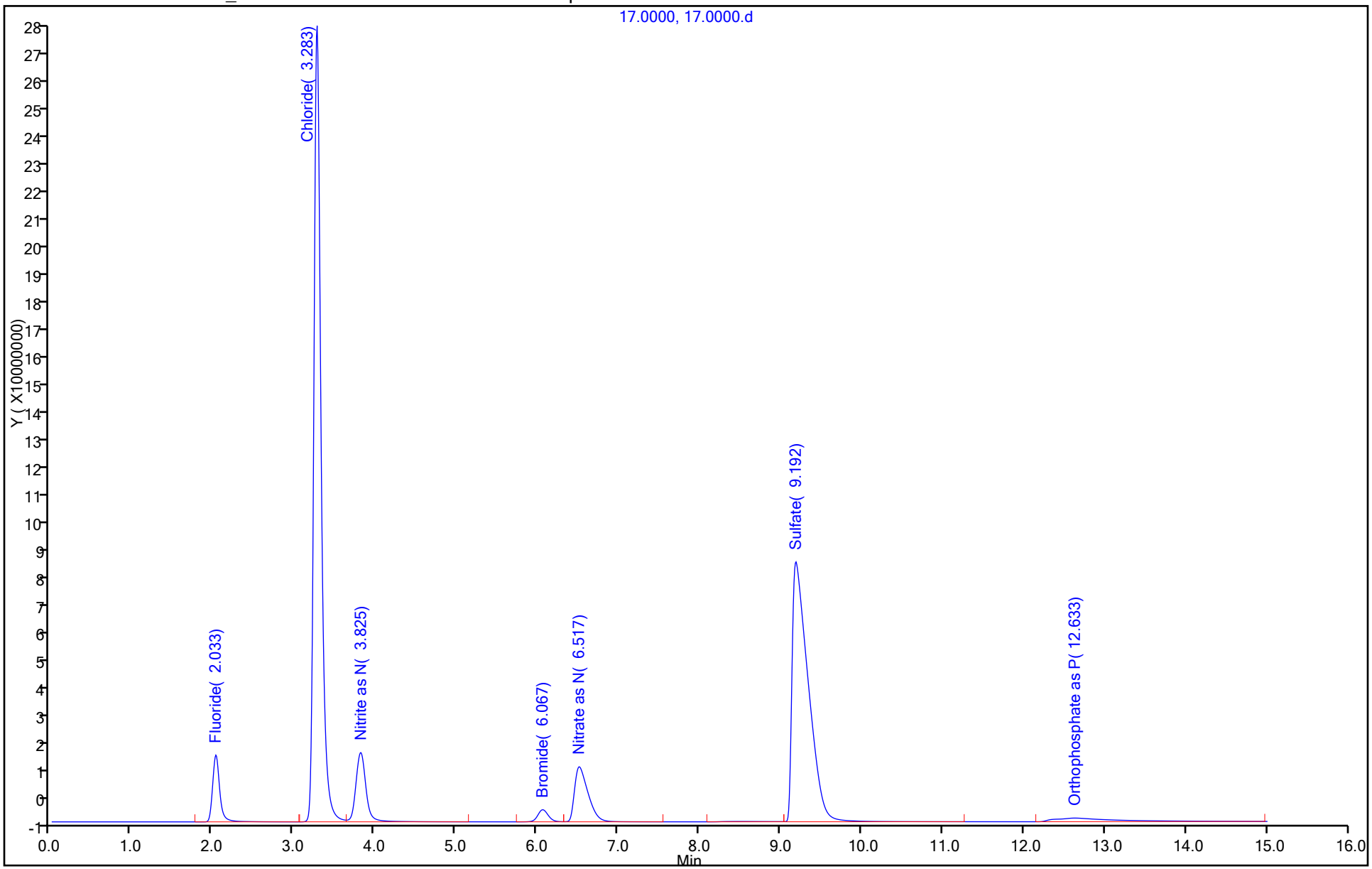
IC LCS_01109 Amount Added: 5.00 Units: mL

Report Date: 30-Dec-2017 13:38:36 Chrom Revision: 2.2 08-Dec-2017 11:41:26

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom7\20171230-66167.b\17.0000.d

Injection Date:	30-Dec-2017 12:04:00	Instrument ID:	WC_IonChrom7	Operator ID:	
Lims ID:	ccv			Worklist Smp#:	17
Client ID:					
Injection Vol:	25.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	Anions_IC7	Limit Group:	Wet - Anions 28D		



TestAmerica Denver
Target Compound Quantitation Report

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom7\20171230-66167.b\18.0000.d
Lims ID: ccb
Client ID:
Sample Type: CCB
Inject. Date: 30-Dec-2017 12:22:00 ALS Bottle#: 0 Worklist Smp#: 18
Injection Vol: 25.0 ul Dil. Factor: 1.0000
Sample Info: 280-0066167-018
Misc. Info.: 18487 F
Operator ID: Instrument ID: WC_IonChrom7

Method: \\ChromNA\Denver\ChromData\WC_IonChrom7\20171230-66167.b\Anions_IC7.m
Limit Group: Wet - Anions 28D
Last Update: 30-Dec-2017 13:38:36 Calib Date: 30-Oct-2017 17:13:00
Integrator: Falcon
Quant Method: External Standard Quant By: Initial Calibration
Last ICal File: \\ChromNA\Denver\ChromData\WC_IonChrom7\20171030-64206.b\07.0000.d

Column 1 : Det: 0005
Process Host: XAWRK024

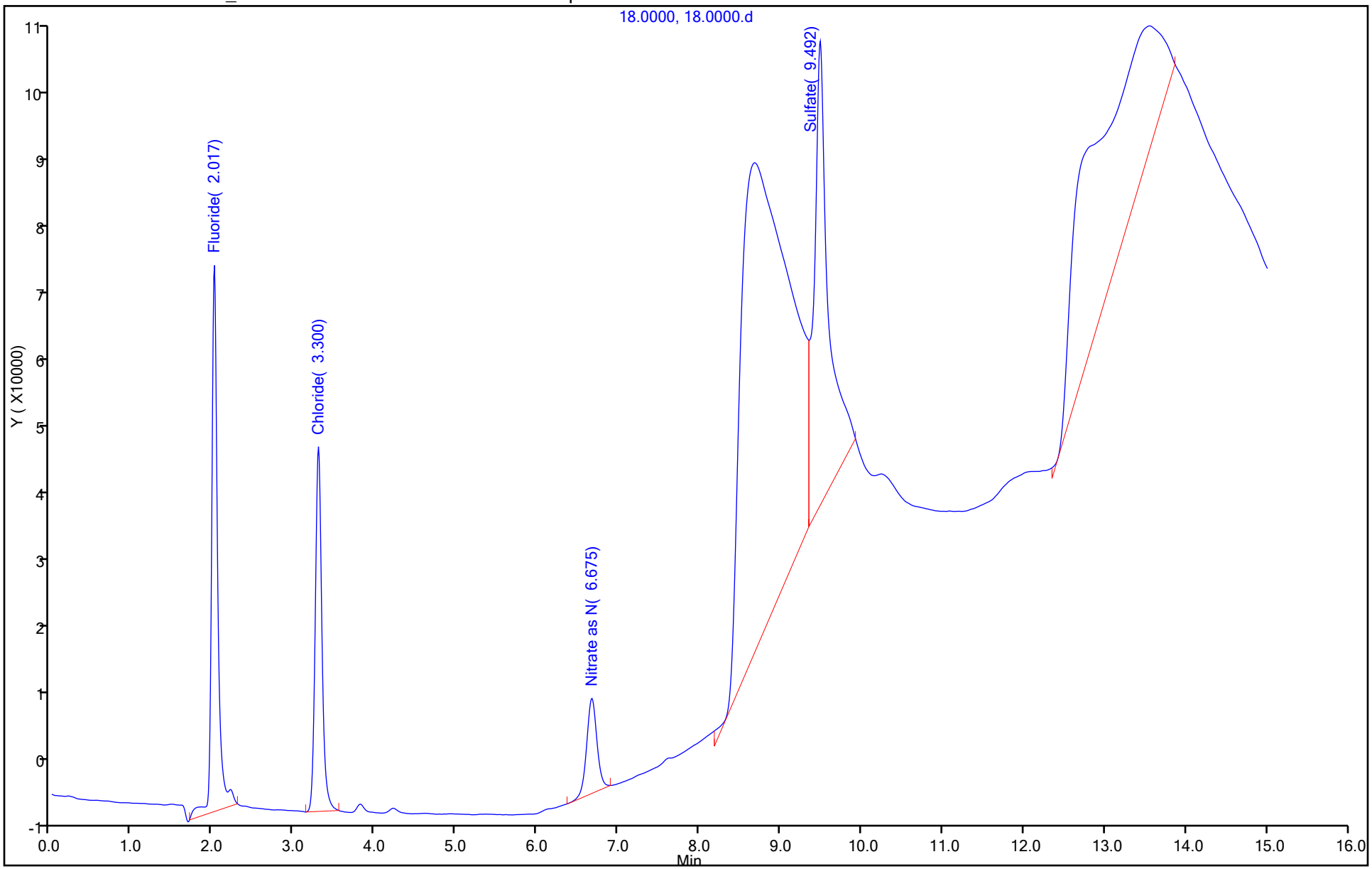
Compound	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 Fluoride	2.017	2.033	-0.016	374494		-0.0439	
2 Chloride	3.300	3.283	0.017	272826		-0.2970	
3 Nitrite as N		3.817				ND	
4 Bromide		6.075				ND	
5 Nitrate as N	6.675	6.533	0.142	110708		-0.0157	
6 Sulfate	9.492	9.158	0.334	749829		-0.2610	
7 Orthophosphate as P		12.608				ND	

Report Date: 30-Dec-2017 13:38:37 Chrom Revision: 2.2 08-Dec-2017 11:41:26

TestAmerica Denver

Data File: \\ChromNA\Denver\ChromData\WC_IonChrom7\20171230-66167.b\18.0000.d

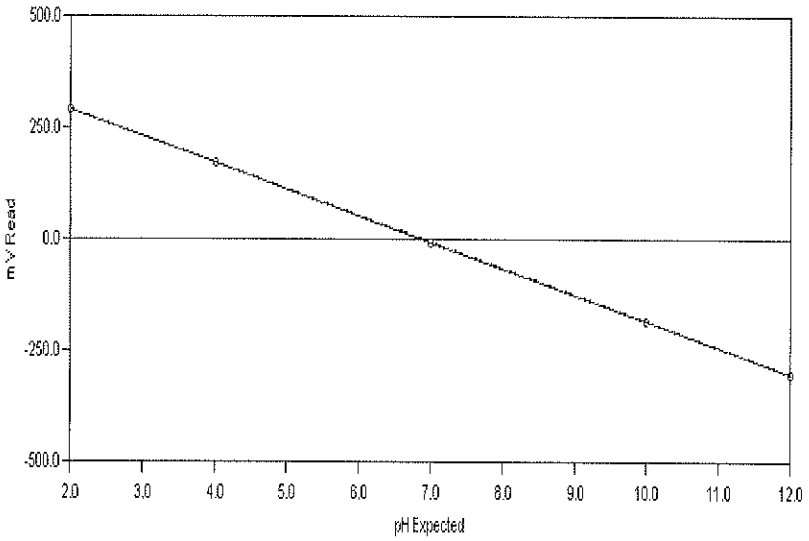
Injection Date:	30-Dec-2017 12:22:00	Instrument ID:	WC_IonChrom7	Operator ID:	
Lims ID:	ccb			Worklist Smp#:	18
Client ID:					
Injection Vol:	25.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	Anions_IC7	Limit Group:	Wet - Anions 28D		



PC-TitratION PLUS
Calibration Report

Analyst: AD AT3

Calibration Record # 1570



Calibration Settings

Calibration ID	PH	Date	12/21/2017
Channel	1	Time	8:28 AM
Probe Type	pH	Temperature	291.48 K 18.33 C
Probe ID	PH ELECTRODE	Analysis Type	Single Line Fit

Calibration Results

Slope	-59.345	CorrCoeff	1.0000
Intercept	-7.274	Equation: Y = (-59.345) X + (-7.274)	

Calibration Validity True Operator

	Result	Minimum	Maximum
Slope	-59.345	-65.00	-53.00
Intercept	-7.274	-100.00	100.00
Correlation Coefficient	1.0000	0.99	1.00

Note: "True" means the calibration was within the specified ranges
"False" means the calibration was NOT within the specified ranges

Calibration Data	Standard	Reading
	2.00	289.55
	4.00	170.28
	7.00	-6.95
	10.00	-184.69
	12.00	-304.56

PC-Titrate For Windows

Running List Report

Order Number - 20171221-3

	Schedule	Sample Id	Vial	Weight	Volume
1	PH ONLY	RINSE	1	.00	10.00
2	PH ALK HIGH	Buffer 7	2	.00	10.00
3	PH ALK HIGH	Initial Check	3	.00	10.00
4	PH ALK HIGH	HLCS	4	.00	10.00
5	PH ALK HIGH	mb	5	.00	10.00
6	PH ALK HIGH	280-104454-I-1	6	.00	10.00
7	PH ALK HIGH	du 280-104454-I-1	7	.00	10.00
8	PH ALK HIGH	280-104552-E-9	8	.00	10.00
9	PH ALK HIGH	280-104591-A-1	9	.00	10.00
10	PH ALK HIGH	280-104623-H-8	10	.00	10.00
11	PH ALK HIGH	280-104623-F-7	11	.00	10.00
12	PH ALK HIGH	280-104639-A-8	12	.00	10.00
13	PH ALK HIGH	280-104639-A-9	13	.00	10.00
14	PH ALK HIGH	280-104709-A-4	14	.00	10.00
15	PH ALK HIGH	280-104709-A-3	15	.00	10.00
16	PH ALK HIGH	ccv	16	.00	10.00
17	PH ALK HIGH	ccb	17	.00	10.00
18	PH ALK HIGH	280-104759-A-7	18	.00	10.00
19	PH ALK HIGH	280-104759-A-5	19	.00	10.00
20	PH ALK HIGH	280-104759-A-3	20	.00	10.00
21	PH ALK HIGH	280-104759-A-1	21	.00	10.00
22	PH ALK HIGH	280-104759-A-8	22	.00	10.00
23	PH ALK HIGH	280-104759-A-6	23	.00	10.00
24	PH ALK HIGH	280-104759-A-4	24	.00	10.00
25	PH ALK HIGH	280-104759-A-2	25	.00	10.00
26	PH ALK HIGH	280-104798-A-1	26	.00	10.00
27	PH ALK HIGH	280-104907-B-1	27	.00	10.00
28	PH ALK HIGH	ccv	28	.00	10.00
29	PH ALK HIGH	ccb	29	.00	10.00
30	PH ALK HIGH	lcs	30	.00	10.00
31	PH ALK HIGH	mb	31	.00	10.00
32	PH ALK HIGH	280-104891-D-7	32	.00	10.00
33	PH ALK HIGH	du 280-104891-D-7	33	.00	10.00
34	PH ALK HIGH	280-104891-D-8	34	.00	10.00
35	PH ALK HIGH	280-104891-D-6	35	.00	10.00
36	PH ALK HIGH	280-104891-D-5	36	.00	10.00
37	PH ALK HIGH	280-104891-D-4	37	.00	10.00
38	PH ALK HIGH	280-104891-D-3	38	.00	10.00
39	PH ALK HIGH	280-104891-D-2	39	.00	10.00
40	PH ALK HIGH	280-104891-D-1	40	.00	10.00

Running List Report

Order Number - 20171221-3

	Schedule	Sample Id	Vial	Weight	Volume
41	PH ALK HIGH	ccv	41	.00	10.00
42	PH ALK HIGH	ccb	42	.00	10.00

Test America
Water Analysis Report

Analyst:_____

Run Number 5842 **Order Number** 20171221-8

SampleID	RunDate	RunTime	Temp	cond (uS)	pH	pH2	pH3	Acid	palk-ppm	talk-ppm	bcarb-ppm	carb-ppm	hydr-ppm	(mL) @ 8.3	(mL) @ 4.5	(mL) @ 4.2	Conc (N)
RINSE	12/21/2017	9:50 AM	18.08	-1.00	6.38	-1.00	-1.00	-1.00	-1.00	-1.00	-1.00	-1.00	-1.00	-1.00	-1.00	-1.00	-1.00
Buffer 7	12/21/2017	9:53 AM	18.01	-1.00	6.99	-1.00	-1.00	-1.00	.00	1,533.04	1,533.04	.00	.00	.00	3.07	-1.00	.10
Initial Check	12/21/2017	9:58 AM	17.86	-1.00	10.98	-1.00	-1.00	-1.00	544.25	958.60	.00	828.69	129.91	1.09	1.92	-1.00	.10
HLCS	12/21/2017	10:03 AM	17.80	-1.00	10.96	-1.00	-1.00	-1.00	544.09	958.09	.00	828.00	130.08	1.09	1.92	-1.00	.10
mb	12/21/2017	10:07 AM	17.73	-1.00	5.83	-1.00	-1.00	-1.00	.00	2.74	2.74	.00	.00	.00	.01	.01	.10
280-104454-I-1	12/21/2017	10:12 AM	17.70	-1.00	7.62	-1.00	-1.00	-1.00	.00	2,452.12	2,452.12	.00	.00	.00	4.90	-1.00	.10
du 280-104454-I-1	12/21/2017	10:16 AM	17.60	-1.00	7.58	-1.00	-1.00	-1.00	.00	2,467.66	2,467.66	.00	.00	.00	4.94	-1.00	.10
280-104552-E-9	12/21/2017	10:20 AM	17.51	-1.00	6.65	-1.00	-1.00	-1.00	.00	90.18	90.18	.00	.00	.00	.18	-1.00	.10
280-104591-A-1	12/21/2017	10:25 AM	17.57	-1.00	8.09	-1.00	-1.00	-1.00	.00	1,486.94	1,486.94	.00	.00	.00	2.97	-1.00	.10
280-104623-H-8	12/21/2017	10:29 AM	17.66	-1.00	7.81	-1.00	-1.00	-1.00	.00	1,012.15	1,012.15	.00	.00	.00	2.02	-1.00	.10
280-104623-F-7	12/21/2017	10:35 AM	17.88	-1.00	7.43	-1.00	-1.00	-1.00	.00	1,256.62	1,256.62	.00	.00	.00	2.51	-1.00	.10
280-104639-A-8	12/21/2017	10:39 AM	18.01	-1.00	7.59	-1.00	-1.00	-1.00	.00	2,172.22	2,172.22	.00	.00	.00	4.34	-1.00	.10
280-104639-A-9	12/21/2017	10:44 AM	17.93	-1.00	7.60	-1.00	-1.00	-1.00	.00	2,179.97	2,179.97	.00	.00	.00	4.36	-1.00	.10
280-104709-A-4	12/21/2017	10:48 AM	17.99	-1.00	7.59	-1.00	-1.00	-1.00	.00	2,005.27	2,005.27	.00	.00	.00	4.01	-1.00	.10
280-104709-A-3	12/21/2017	10:53 AM	18.15	-1.00	7.63	-1.00	-1.00	-1.00	.00	2,932.54	2,932.54	.00	.00	.00	5.87	-1.00	.10
ccv	12/21/2017	10:58 AM	18.33	-1.00	10.88	-1.00	-1.00	-1.00	541.37	961.89	.00	841.04	120.85	1.08	1.92	-1.00	.10
ccb	12/21/2017	11:02 AM	18.49	-1.00	5.85	-1.00	-1.00	-1.00	.00	2.44	2.44	.00	.00	.00	.01	.01	.10
280-104759-A-7	12/21/2017	11:09 AM	18.50	-1.00	7.94	-1.00	-1.00	-1.00	.00	10,057.39	10,057.39	.00	.00	.00	20.11	-1.00	.10
280-104759-A-5	12/21/2017	11:17 AM	18.52	-1.00	8.01	-1.00	-1.00	-1.00	.00	.00	.00	.00	.00	.00	.00	.00	.10
280-104759-A-3	12/21/2017	11:25 AM	18.62	-1.00	7.98	-1.00	-1.00	-1.00	.00	12,603.31	12,603.31	.00	.00	.00	25.21	-1.00	.10
280-104759-A-1	12/21/2017	11:31 AM	18.53	-1.00	7.65	-1.00	-1.00	-1.00	.00	6,642.01	6,642.01	.00	.00	.00	13.28	-1.00	.10
280-104759-A-8	12/21/2017	11:36 AM	18.52	-1.00	7.73	-1.00	-1.00	-1.00	.00	3,788.25	3,788.25	.00	.00	.00	7.58	-1.00	.10
280-104759-A-6	12/21/2017	11:43 AM	18.57	-1.00	7.96	-1.00	-1.00	-1.00	.00	11,666.09	11,666.09	.00	.00	.00	23.33	-1.00	.10
280-104759-A-4	12/21/2017	11:51 AM	18.78	-1.00	7.88	-1.00	-1.00	-1.00	.00	10,923.61	10,923.61	.00	.00	.00	21.85	-1.00	.10
280-104759-A-2	12/21/2017	11:57 AM	18.81	-1.00	7.76	-1.00	-1.00	-1.00	.00	9,183.66	9,183.66	.00	.00	.00	18.37	-1.00	.10
280-104798-A-1	12/21/2017	12:02 PM	18.68	-1.00	7.51	-1.00	-1.00	-1.00	.00	2,510.56	2,510.56	.00	.00	.00	5.02	-1.00	.10
280-104907-B-1	12/21/2017	12:06 PM	18.42	-1.00	9.07	-1.00	-1.00	-1.00	126.84	621.91	368.23	253.68	.00	.25	1.24	-1.00	.10

Run Number 5842 **Order Number** 20171221-8

SampleID	RunDate	RunTime	Temp	cond (uS)	pH	pH2	pH3	Acid	palk-ppm	talk-ppm	bcarb-ppm	carb-ppm	hydr-ppm	(mL) @ 8.3	(mL) @ 4.5	(mL) @ 4.2	Conc (N)
ccv	12/21/2017	12:11 PM	18.42	-1.00	10.92	-1.00	-1.00	-1.00	542.51	959.46	.00	833.89	125.57	1.09	1.92	-1.00	.10
ccb	12/21/2017	12:15 PM	18.48	-1.00	6.28	-1.00	-1.00	-1.00	.00	4.48	4.48	.00	.00	.00	.01	.01	.10
lcs	12/21/2017	12:20 PM	18.53	-1.00	10.93	-1.00	-1.00	-1.00	541.23	952.10	.00	821.76	130.35	1.08	1.90	-1.00	.10
mb	12/21/2017	12:23 PM	18.73	-1.00	6.03	-1.00	-1.00	-1.00	.00	4.49	4.49	.00	.00	.00	.01	.01	.10
280-104891-D-7	12/21/2017	12:28 PM	18.71	-1.00	7.56	-1.00	-1.00	-1.00	.00	1,561.21	1,561.21	.00	.00	.00	3.12	-1.00	.10
du 280-104891-D-7	12/21/2017	12:33 PM	18.62	-1.00	7.53	-1.00	-1.00	-1.00	.00	1,603.62	1,603.62	.00	.00	.00	3.21	-1.00	.10
280-104891-D-8	12/21/2017	12:38 PM	18.49	-1.00	7.34	-1.00	-1.00	-1.00	.00	1,154.50	1,154.50	.00	.00	.00	2.31	-1.00	.10
280-104891-D-6	12/21/2017	12:42 PM	18.45	-1.00	7.37	-1.00	-1.00	-1.00	.00	1,252.75	1,252.75	.00	.00	.00	2.51	-1.00	.10
280-104891-D-5	12/21/2017	12:47 PM	18.49	-1.00	7.85	-1.00	-1.00	-1.00	.00	1,234.06	1,234.06	.00	.00	.00	2.47	-1.00	.10
280-104891-D-4	12/21/2017	12:51 PM	18.52	-1.00	7.61	-1.00	-1.00	-1.00	.00	1,315.65	1,315.65	.00	.00	.00	2.63	-1.00	.10
280-104891-D-3	12/21/2017	12:56 PM	18.68	-1.00	7.63	-1.00	-1.00	-1.00	.00	1,777.34	1,777.34	.00	.00	.00	3.55	-1.00	.10
280-104891-D-2	12/21/2017	1:00 PM	18.77	-1.00	7.67	-1.00	-1.00	-1.00	.00	1,238.37	1,238.37	.00	.00	.00	2.48	-1.00	.10
280-104891-D-1	12/21/2017	1:04 PM	18.68	-1.00	7.41	-1.00	-1.00	-1.00	.00	1,149.07	1,149.07	.00	.00	.00	2.30	-1.00	.10
ccv	12/21/2017	1:10 PM	18.63	-1.00	10.83	-1.00	-1.00	-1.00	537.77	963.63	.00	851.73	111.90	1.08	1.93	-1.00	.10
ccb	12/21/2017	1:13 PM	18.66	-1.00	5.92	-1.00	-1.00	-1.00	.00	2.84	2.84	.00	.00	.00	.01	.01	.10

TestAmerica *Denver*

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THE LEADER IN ENVIRONMENTAL TESTING

Titration Data Review Checklist

LIMS Batch Number: 399626	Method (circle one):	QC Type (circle):
Analyst/1st Reviewer: AD	2310B (2320B) 2340C	(Standard) DoD QAPP Other
Date: 12/21/17	4500 S2 F 4500 SO3 B 9030B/9034	
Matrix (circle): (Water) Solid	(Automated) or Manual (circle one)	Instrument ID (circle one if applicable): AT2 (AT3)

Review Items	Yes	No	2nd Rev	If No, why is data reportable?
A. Sample Storage and Pretreatment				
1. Is sample pH verified and documented prior to analysis? (if required)	NA		✓	
2. For samples requiring pH adjustment is the amount of acid/base used documented?	NA		✓	If no, list details:
3. Are samples analyzed within the required hold time?	✓		✓	NCM:
4. Pre-treatment reagents used to remove interferences are documented.	NA		✓	
B. Calibration / Instrument				
5. Was the normality of the titrant verified and found acceptable?	NA		✓	Comments:
6. For potentiometric titration, the pH meter is calibrated with 5 buffers bracketing range of samples and QC.	✓		✓	Comments:
7. Calibration standards are analyzed at the beginning and end of the analytical sequence and after every 10 sample analyses. (samples/dilutions/reanalyses).	✓		✓	Comments:
8. Calibrations standards (ICV/CCV) are within 90-110% recovery.	✓		✓	
C. Sample and Batch QC				
9. Blanks are analyzed at the beginning, end and after every 10 sample analyses in the sequence.	✓		✓	
10. Results of blank analyses (MB, ICB, CCB) are < ½ RL (<RL for alkalinity unless DoD)	✓		✓	□ No analyte > ½ RL in associated samples □ Sample results >10x blank
11. A standard from a second source (SRM, CRM, LCS) is included in the analytical sequence.	✓		✓	
12. The recovery of the 2nd source material falls within 90-110% or manufacturer's limits.	✓		✓	
13. Samples analyses are bracketing by acceptable CCV/CCBs.	✓		✓	□ No analyte > RL in associated samples □ Sample results >10x blank □ Sample results qualified
14. MS/MSD analyzed at required frequency and recoveries within limits. (If recoveries out of limits, verify not due to lab error) (Required for 2340C, 4500 S2 F, 9030B/9034)	NA		✓	□ Non-conformance (NCM) added □ Sample results >4X spike conc.
15. Duplicate analyzed at required frequency and RPD within limits. (Required for 2310B, 2320B, 4500 SO3 B)	✓		✓	□ Non-conformance (NCM) added □ Sample results ND or <2X RL

Review Items	Yes	No	2nd Rev	If No, why is data reportable?
16. Are all MS/MSD RPDs <50%? Note: Excessive RPDs (>50%) require evaluation, correction or explanation.	NA		✓	□ Non-conformance (NCM) added
D. Raw Data & TALS Data Entry				
17. Raw Data				
a. Unused data is clearly identified with reason	✓		✓	
b. All crossed out data is 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. 100% of manual calculations are verified.	✓		✓	
18. TALS Samples Tab				
a. LIMS Sample IDs / Containers are correct	✓		✓	
b. Method and matrix are correct	✓		✓	
c. Date and time match raw data	✓		✓	
d. Dilutions are correct	NA		✓	
e. Correct suffix designated (where applicable)	✓		✓	
19. TALS Worksheet Tab is complete and correct	✓		✓	
20. TALS Reagent Tab is complete and correct	✓		✓	
21. TALS QC Links Tab is correct	✓		✓	
22. TALS Sample Results Tab			✓	
a. All unused data are marked Rejected or Accepted	✓		✓	
b. All reported analytes are marked Primary or Secondary	✓		✓	
c. Data manually transcribed from benchsheet into TALS verified 100% including significant figures SM 4500 SO3 B).	✓		✓	
d. TALS Batch Information Screen documentation is complete	✓		✓	
e. TALS Status set to appropriate review level	✓		✓	
E. Final Report and NCMs (2nd level review only)				
f. Were all job/project requirements met?			✓	
g. Results for samples and QC correct on final report?			✓	
h. Are all necessary scanned documents in TALS?			✓	
i. NCMs reviewed for applicability, correct references to batches, grammar/typographical errors?			✓	

Comments: _____

_____

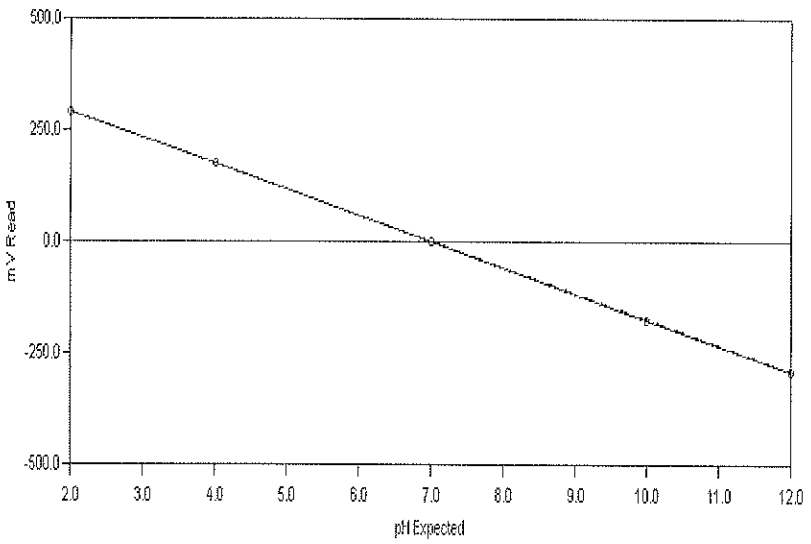
_____

2nd Reviewer: _____ **Review Date:** 12/22/17

PC-TitratION PLUS
Calibration Report

Analyst: AD A T2

Calibration Record # 1151



Calibration Settings

Calibration ID	PH	Date	12/18/2017	
Channel	1	Time	11:15 AM	
Probe Type	pH	Temperature	293.89 K	20.74 C
Probe ID	PH ELECTRODE	Analysis Type	Single Line Fit	

Calibration Results

Slope	-58.271	CorrCoeff	1.0000
Intercept	1.048	Equation: Y = (-58.271) X + (1.048)	

Calibration Validity True Operator

	Result	Minimum	Maximum
Slope	-58.271	-65.00	-53.00
Intercept	1.048	-100.00	100.00
Correlation Coefficient	1.0000	1.00	1.00

Note: "True" means the calibration was within the specified ranges
"False" means the calibration was NOT within the specified ranges

Calibration Data	Standard	Reading
	2.00	292.84
	4.00	175.41
	7.00	1.22
	10.00	-174.56
	12.00	-289.67

PC-Titrate For Windows

Running List Report

Order Number - 20171218-2

	Schedule	Sample Id	Vial	Weight	Volume
1	PH ALKALINITY	Rinse	1	.00	25.00
2	PH ALKALINITY	Buffer 7	2	.00	25.00
3	PH ALKALINITY	Initial check	3	.00	25.00
4	PH ALKALINITY	LCS	4	.00	25.00
5	PH ALKALINITY	MB	5	.00	25.00
6	PH ALKALINITY	680-146353-H-4	6	.00	25.00
7	PH ALKALINITY	du 680-146353-H-4	7	.00	25.00
8	PH ALKALINITY	280-104383-E-1	8	.00	25.00
9	PH ALKALINITY	280-104383-E-2	9	.00	25.00
10	PH ALKALINITY	280-104383-E-3	10	.00	25.00
11	PH ALKALINITY	280-104382-I-7	11	.00	25.00
12	PH ALKALINITY	280-104382-I-8	12	.00	25.00
13	PH ALKALINITY	280-104382-I-6	13	.00	25.00
14	PH ALKALINITY	280-104422-C-4	14	.00	25.00
15	PH ALKALINITY	280-104422-C-3	15	.00	25.00
16	PH ALKALINITY	CCV1	16	.00	25.00
17	PH ALKALINITY	CCB1	17	.00	25.00
18	PH ALKALINITY	280-104422-C-2	18	.00	25.00
19	PH ALKALINITY	280-104422-C-1	19	.00	25.00
20	PH ALKALINITY	280-104351-C-2	20	.00	25.00
21	PH ALKALINITY	280-104460-A-5	21	.00	25.00
22	PH ALKALINITY	280-104460-A-1	22	.00	25.00
23	PH ALKALINITY	280-104460-A-2	23	.00	25.00
24	PH ALKALINITY	280-104455-D-1	24	.00	25.00
25	PH ALKALINITY	280-104454-I-1	25	.00	25.00
26	PH ALKALINITY	280-104453-D-4	26	.00	25.00
27	PH ALKALINITY	280-104463-P-1	27	.00	25.00
28	PH ALKALINITY	ccv	28	.00	25.00
29	PH ALKALINITY	ccb	29	.00	25.00
30	PH ALKALINITY	LCS	30	.00	25.00
31	PH ALKALINITY	MB	31	.00	25.00
32	PH ALKALINITY	280-104483-F-11	32	.00	25.00
33	PH ALKALINITY	du 280-104483-F-11	33	.00	25.00
34	PH ALKALINITY	280-104483-P-3	34	.00	25.00
35	PH ALKALINITY	280-104552-I-10	35	.00	25.00
36	PH ALKALINITY	280-104552-D-9	36	.00	25.00
37	PH ALKALINITY	280-104552-E-8	37	.00	25.00
38	PH ALKALINITY	280-104552-G-6	38	.00	25.00
39	PH ALKALINITY	280-104464-A-7	39	.00	25.00
40	PH ALKALINITY	280-104464-A-6	40	.00	25.00

Running List Report

Order Number - 20171218-2

	Schedule	Sample Id	Vial	Weight	Volume
41	PH ALKALINITY	280-104464-A-4	41	.00	25.00
42	PH ALKALINITY	ccv	42	.00	25.00
43	PH ALKALINITY	CCB	43	.00	25.00
44	PH ALKALINITY	280-104464-A-2	44	.00	25.00
45	PH ALKALINITY	280-104464-A-5	45	.00	25.00
46	PH ALKALINITY	280-104464-A-3	46	.00	25.00
47	PH ALKALINITY	280-104464-A-1	47	.00	25.00
48	PH ALKALINITY	280-104466-G-4	48	.00	25.00
49	PH ALKALINITY	280-104466-G-2	49	.00	25.00
50	PH ALKALINITY	280-104466-G-1	50	.00	25.00
51	PH ALKALINITY	280-104466-U-3	51	.00	25.00
52	PH ALKALINITY	280-104466-G-6	52	.00	25.00
53	PH ALKALINITY	ccv	53	.00	25.00
54	PH ALKALINITY	ccb	54	.00	25.00

Test America

Water Analysis Historical Data Report

Run Number 3834 **Order Number** 20171218-2

SampleID	RunDate	RunTime	Temp	cond (uS)	pH	pH2	pH3	Acid	palk ppm	talk ppm	bcarb ppm	carb ppm	hydr ppm	mL @8.3	mL @4.5	mL @4.2	tcon
Rinse	12/18/2017	12:34 PM	21.80	-1.00	9.55	-1.00	-1.00	-1.00	9.19	16.44	.00	14.50	1.94	.23	.46	.51	.02
Buffer 7	12/18/2017	12:46 PM	21.47	-1.00	6.99	-1.00	-1.00	-1.00	.00	.00	.00	.00	.00	.00	.00	.00	.02
Initial check	12/18/2017	12:54 PM	21.44	-1.00	10.58	-1.00	-1.00	-1.00	89.50	187.20	8.20	179.00	.00	2.24	4.68	-1.00	.02
LCS	12/18/2017	1:01 PM	21.09	-1.00	10.65	-1.00	-1.00	-1.00	96.05	190.36	.00	188.63	1.73	2.40	4.76	-1.00	.02
MB	12/18/2017	1:09 PM	20.54	-1.00	9.58	-1.00	-1.00	-1.00	1.27	3.36	.83	2.53	.00	.03	.13	.18	.02
680-146353-H-4	12/18/2017	1:15 PM	19.73	-1.00	7.31	-1.00	-1.00	-1.00	.00	129.58	129.58	.00	.00	.00	3.24	-1.00	.02
du	12/18/2017	1:22 PM	18.93	-1.00	7.25	-1.00	-1.00	-1.00	.00	132.45	132.45	.00	.00	.00	3.31	-1.00	.02
280-104383-E-1	12/18/2017	1:29 PM	18.38	-1.00	8.15	-1.00	-1.00	-1.00	.00	224.98	224.98	.00	.00	.00	5.62	-1.00	.02
280-104383-E-2	12/18/2017	1:35 PM	18.27	-1.00	7.77	-1.00	-1.00	-1.00	.00	133.85	133.85	.00	.00	.00	3.35	-1.00	.02
280-104383-E-3	12/18/2017	1:42 PM	18.22	-1.00	8.24	-1.00	-1.00	-1.00	.00	153.36	153.36	.00	.00	.00	3.83	-1.00	.02
280-104382-I-7	12/18/2017	1:48 PM	18.19	-1.00	8.19	-1.00	-1.00	-1.00	.00	112.49	112.49	.00	.00	.00	2.81	-1.00	.02
280-104382-I-8	12/18/2017	1:55 PM	18.37	-1.00	8.24	-1.00	-1.00	-1.00	.00	172.27	172.27	.00	.00	.00	4.31	-1.00	.02
280-104382-I-6	12/18/2017	2:02 PM	19.10	-1.00	8.19	-1.00	-1.00	-1.00	.00	122.21	122.21	.00	.00	.00	3.06	-1.00	.02
280-104422-C-4	12/18/2017	2:09 PM	19.13	-1.00	8.03	-1.00	-1.00	-1.00	.00	285.99	285.99	.00	.00	.00	7.15	-1.00	.02
280-104422-C-3	12/18/2017	2:18 PM	18.68	-1.00	8.40	-1.00	-1.00	-1.00	14.85	515.72	486.02	29.70	.00	.37	12.89	-1.00	.02
CCV1	12/18/2017	2:26 PM	18.72	-1.00	10.63	-1.00	-1.00	-1.00	95.39	194.34	3.56	190.78	.00	2.38	4.86	-1.00	.02
CCB1	12/18/2017	2:33 PM	18.53	-1.00	9.17	-1.00	-1.00	-1.00	.51	2.12	1.11	1.02	.00	.01	.09	.14	.02
280-104422-C-2	12/18/2017	2:42 PM	18.27	-1.00	8.20	-1.00	-1.00	-1.00	.00	522.98	522.98	.00	.00	.00	13.07	-1.00	.02
280-104422-C-1	12/18/2017	2:56 PM	18.53	-1.00	8.43	-1.00	-1.00	-1.00	32.70	947.26	881.87	65.40	.00	.82	23.68	-1.00	.02
280-104351-C-2	12/18/2017	3:02 PM	19.48	-1.00	7.86	-1.00	-1.00	-1.00	.00	102.49	102.49	.00	.00	.00	2.56	-1.00	.02
280-104460-A-5	12/18/2017	3:11 PM	19.80	-1.00	7.74	-1.00	-1.00	-1.00	.00	437.26	437.26	.00	.00	.00	10.93	-1.00	.02
280-104460-A-1	12/18/2017	3:18 PM	19.31	-1.00	7.84	-1.00	-1.00	-1.00	.00	325.20	325.20	.00	.00	.00	8.13	-1.00	.02
280-104460-A-2	12/18/2017	3:26 PM	18.96	-1.00	7.94	-1.00	-1.00	-1.00	.00	290.99	290.99	.00	.00	.00	7.27	-1.00	.02
280-104455-D-1	12/18/2017	3:32 PM	18.69	-1.00	7.47	-1.00	-1.00	-1.00	.00	62.63	62.63	.00	.00	.00	1.57	-1.00	.02
280-104454-I-1	12/18/2017	3:45 PM	18.54	-1.00	7.55	-1.00	-1.00	-1.00	.00	.00	.00	.00	.00	.00	.00	.00	.02
280-104453-D-4	12/18/2017	3:53 PM	19.07	-1.00	6.51	-1.00	-1.00	-1.00	.00	221.72	221.72	.00	.00	.00	5.54	-1.00	.02
280-104463-P-1	12/18/2017	3:59 PM	19.79	-1.00	8.08	-1.00	-1.00	-1.00	.00	103.80	103.80	.00	.00	.00	2.59	-1.00	.02
ccv	12/18/2017	4:07 PM	20.67	-1.00	10.53	-1.00	-1.00	-1.00	88.00	186.08	10.09	176.00	.00	2.20	4.65	-1.00	.02
ccb	12/18/2017	4:14 PM	20.33	-1.00	9.20	-1.00	-1.00	-1.00	.53	2.36	1.29	1.07	.00	.01	.10	.15	.02
LCS	12/18/2017	4:22 PM	19.87	-1.00	10.56	-1.00	-1.00	-1.00	90.82	188.25	6.61	181.64	.00	2.27	4.71	-1.00	.02
MB	12/18/2017	4:29 PM	19.65	-1.00	9.21	-1.00	-1.00	-1.00	.53	2.34	1.28	1.06	.00	.01	.10	.14	.02
280-104483-F-11	12/18/2017	4:36 PM	19.60	-1.00	8.61	-1.00	-1.00	-1.00	5.26	117.28	106.76	10.52	.00	.13	2.93	-1.00	.02
du	12/18/2017	4:43 PM	19.89	-1.00	8.63	-1.00	-1.00	-1.00	5.53	117.22	106.16	11.05	.00	.14	2.93	-1.00	.02
280-104483-P-3	12/18/2017	4:49 PM	20.54	-1.00	6.20	-1.00	-1.00	-1.00	.00	7.25	7.25	.00	.00	.00	.23	.27	.02
280-104552-I-10	12/18/2017	4:53 PM	21.24	-1.00	4.38	-1.00	-1.00	-1.00	.00	-1.53	-1.53	.00	.00	.00	.00	.04	.02
280-104552-D-9	12/18/2017	5:07 PM	20.58	-1.00	12.65	-1.00	-1.00	-1.00	.00	.00	.00	.00	.00	.00	.00	.00	.02
280-104552-E-8	12/18/2017	5:12 PM	20.37	-1.00	6.42	-1.00	-1.00	-1.00	.00	17.69	17.69	.00	.00	.00	.50	.56	.02
280-104552-G-6	12/18/2017	5:19 PM	20.07	-1.00	7.23	-1.00	-1.00	-1.00	.00	139.96	139.96	.00	.00	.00	3.50	-1.00	.02
280-104464-A-7	12/18/2017	5:28 PM	20.00	-1.00	7.85	-1.00	-1.00	-1.00	.00	516.99	516.99	.00	.00	.00	12.92	-1.00	.02
280-104464-A-6	12/18/2017	5:37 PM	20.26	-1.00	7.90	-1.00	-1.00	-1.00	.00	472.56	472.56	.00	.00	.00	11.81	-1.00	.02
280-104464-A-4	12/18/2017	5:45 PM	20.76	-1.00	7.97	-1.00	-1.00	-1.00	.00	337.70	337.70	.00	.00	.00	8.44	-1.00	.02
ccv	12/18/2017	5:52 PM	21.50	-1.00	10.42	-1.00	-1.00	-1.00	83.76	187.47	19.96	167.52	.00	2.09	4.69	-1.00	.02

Run Number 3834 **Order Number** 20171218-2

SampleID	RunDate	RunTime	Temp	cond (uS)	pH	pH2	pH3	Acid	palk ppm	talk ppm	bcarb ppm	carb ppm	hydr ppm	mL @8.3	mL @4.5	mL @4.2	tcon
CCB	12/18/2017	6:00 PM	21.08	-1.00	8.62	-1.00	-1.00	-1.00	.03	2.21	2.15	.06	.00	.00	.10	.14	.02
280-104464-A-2	12/18/2017	6:07 PM	20.72	-1.00	7.83	-1.00	-1.00	-1.00	.00	291.53	291.53	.00	.00	.00	7.29	-1.00	.02
280-104464-A-5	12/18/2017	6:16 PM	20.55	-1.00	7.98	-1.00	-1.00	-1.00	.00	443.87	443.87	.00	.00	.00	11.10	-1.00	.02
280-104464-A-3	12/18/2017	6:25 PM	20.58	-1.00	7.77	-1.00	-1.00	-1.00	.00	529.70	529.70	.00	.00	.00	13.24	-1.00	.02
280-104464-A-1	12/18/2017	6:33 PM	20.70	-1.00	8.00	-1.00	-1.00	-1.00	.00	299.72	299.72	.00	.00	.00	7.49	-1.00	.02

Test America

Water Analysis Report

Analyst:_____

Run Number 3837 **Order Number** 20171219-2

SampleID	RunDate	RunTime	Temp	cond (uS)	pH	pH2	pH3	Acid	palk-ppm	talk-ppm	bcarb-ppm	carb-ppm	hydr-ppm	(mL) @ 8.3	(mL) @ 4.5	(mL) @ 4.2	Conc (N)
Rinse	12/19/2017	8:43 AM	20.36	-1.00	6.47	-1.00	-1.00	-1.00	.00	3.78	3.78	.00	.00	.00	.15	.20	.02
Buffer 7	12/19/2017	8:55 AM	20.36	-1.00	7.01	-1.00	-1.00	-1.00	.00	.00	.00	.00	.00	.00	.00	.00	.02
Initial check	12/19/2017	9:02 AM	20.54	-1.00	9.83	-1.00	-1.00	-1.00	52.49	194.77	89.80	104.97	.00	1.31	4.87	-1.00	.02
LCS	12/19/2017	9:08 AM	20.41	-1.00	9.89	-1.00	-1.00	-1.00	58.25	195.39	78.90	116.49	.00	1.46	4.88	-1.00	.02
MB	12/19/2017	9:16 AM	20.40	-1.00	7.57	-1.00	-1.00	-1.00	.00	2.14	2.14	.00	.00	.00	.10	.14	.02
280-104464-A-2	12/19/2017	9:23 AM	20.34	-1.00	8.33	-1.00	-1.00	-1.00	3.33	146.75	140.09	6.66	.00	.08	3.67	-1.00	.02
280-104464-A-5	12/19/2017	9:30 AM	20.19	-1.00	8.41	-1.00	-1.00	-1.00	10.46	257.40	236.48	20.92	.00	.26	6.43	-1.00	.02
280-104464-A-3	12/19/2017	9:37 AM	20.31	-1.00	8.29	-1.00	-1.00	-1.00	3.71	262.34	254.92	7.43	.00	.09	6.56	-1.00	.02
280-104464-A-1	12/19/2017	9:44 AM	20.29	-1.00	8.43	-1.00	-1.00	-1.00	5.02	158.32	148.27	10.05	.00	.13	3.96	-1.00	.02
280-104466-G-4	12/19/2017	9:49 AM	20.38	-1.00	8.07	-1.00	-1.00	-1.00	.00	136.14	136.14	.00	.00	.00	3.40	-1.00	.02
280-104466-G-2	12/19/2017	9:58 AM	20.56	-1.00	8.31	-1.00	-1.00	-1.00	2.09	326.36	322.19	4.18	.00	.05	8.16	-1.00	.02
280-104466-G-1	12/19/2017	10:05 AM	20.51	-1.00	8.32	-1.00	-1.00	-1.00	1.91	268.83	265.02	3.81	.00	.05	6.72	-1.00	.02
280-104466-U-3	12/19/2017	10:12 AM	20.43	-1.00	8.09	-1.00	-1.00	-1.00	.00	193.73	193.73	.00	.00	.00	4.84	-1.00	.02
280-104466-G-6	12/19/2017	10:19 AM	20.37	-1.00	8.13	-1.00	-1.00	-1.00	.00	221.88	221.88	.00	.00	.00	5.55	-1.00	.02
ccv	12/19/2017	10:26 AM	20.47	-1.00	10.11	-1.00	-1.00	-1.00	69.59	199.75	60.57	139.17	.00	1.74	4.99	-1.00	.02
ccb	12/19/2017	10:33 AM	20.55	-1.00	6.99	-1.00	-1.00	-1.00	.00	1.51	1.51	.00	.00	.00	.08	.13	.02

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Titration Data Review Checklist

LIMS Batch Number: 399189	Method (circle one):	QC Type (circle):
Analyst/1st Reviewer: AD	2310B (2320B) 2340C	(Standard) DoD QAPP Other
Date: 12/19/17	4500 S2 F 4500 SO3 B 9030B/9034	
Matrix (circle): (Water) Solid	(Automated) or Manual (circle one)	Instrument ID (circle one if applicable):
		(AT2) AT3

Review Items	Yes	No	2nd Rev	If No, why is data reportable?
A. Sample Storage and Pretreatment				
1. Is sample pH verified and documented prior to analysis? (if required)	NA		✓	
2. For samples requiring pH adjustment is the amount of acid/base used documented?	NA		✓	If no, list details:
3. Are samples analyzed within the required hold time?	✓		✓	NCM:
4. Pre-treatment reagents used to remove interferences are documented.	NA		✓	
B. Calibration / Instrument				
5. Was the normality of the titrant verified and found acceptable?	NA		✓	Comments:
6. For potentiometric titration, the pH meter is calibrated with 5 buffers bracketing range of samples and QC.	✓		✓	Comments:
7. Calibration standards are analyzed at the beginning and end of the analytical sequence and after every 10 sample analyses. (samples/dilutions/reanalyses).	✓		✓	Comments:
8. Calibrations standards (ICV/CCV) are within 90-110% recovery.	✓		✓	
C. Sample and Batch QC				
9. Blanks are analyzed at the beginning, end and after every 10 sample analyses in the sequence.	✓		✓	
10. Results of blank analyses (MB, ICB, CCB) are < ½ RL (<RL for alkalinity unless DoD)	✓		✓	□ No analyte > ½ RL in associated samples ☑ Sample results >10x blank
11. A standard from a second source (SRM, CRM, LCS) is included in the analytical sequence.	✓		✓	
12. The recovery of the 2nd source material falls within 90-110% or manufacturer's limits.	✓		✓	
13. Samples analyses are bracketing by acceptable CCV/CCBs.	✓		✓	□ No analyte > RL in associated samples □ Sample results >10x blank □ Sample results qualified
14. MS/MSD analyzed at required frequency and recoveries within limits. (If recoveries out of limits, verify not due to lab error) (Required for 2340C, 4500 S2 F, 9030B/9034)	NA		✓	□ Non-conformance (NCM) added □ Sample results >4X spike conc.
15. Duplicate analyzed at required frequency and RPD within limits. (Required for 2310B, 2320B, 4500 SO3 B)	–		✓	□ Non-conformance (NCM) added □ Sample results ND or <2X RL

Review Items	Yes	No	2nd Rev	If No, why is data reportable?
16. Are all MS/MSD RPDs <50%? Note: Excessive RPDs (>50%) require evaluation, correction or explanation.	NA		✓	□ Non-conformance (NCM) added
D. Raw Data & TALS Data Entry				
17. Raw Data				
a. Unused data is clearly identified with reason	✓		✓	
b. All crossed out data is 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. 100% of manual calculations are verified.	✓		✓	
18. TALS Samples Tab				
a. LIMS Sample IDs / Containers are correct	✓		✓	
b. Method and matrix are correct	✓		✓	
c. Date and time match raw data	✓		✓	
d. Dilutions are correct	NA		✓	
e. Correct suffix designated (where applicable)	✓		✓	
19. TALS Worksheet Tab is complete and correct	✓		✓	
20. TALS Reagent Tab is complete and correct	✓		✓	
21. TALS QC Links Tab is correct	✓		✓	
22. TALS Sample Results Tab				
a. All unused data are marked Rejected or Accepted	✓		✓	
b. All reported analytes are marked Primary or Secondary	✓		✓	
c. Data manually transcribed from benchsheet into TALS verified 100% including significant figures SM 4500 SO3 B).	✓		✓	
d. TALS Batch Information Screen documentation is complete	✓		✓	
e. TALS Status set to appropriate review level	✓		✓	
E. Final Report and NCMs (2nd level review only)				
f. Were all job/project requirements met?			✓	
g. Results for samples and QC correct on final report?			✓	
h. Are all necessary scanned documents in TALS?			✓	
i. NCMs reviewed for applicability, correct references to batches, grammar/typographical errors?			✓	

Comments: _____

_____

_____

2nd Reviewer: _____ **Review Date:** 12/19/17

Shipping and Receiving Documents

TestAmerica Denver
4955 Yarrow Street
Arvada, CO 80002
Phone (303) 736-0100 Fax (303) 431-7171

Chain of Custody Record

VOC cooler

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Client Information	Sampler: JC	Lab PM: McEntee, Patrick J	Carrier Tracking No(s):	COC No:
Client Contact: Elizabeth Busby	Phone: 303 941 6689	E-Mail: patrick.mcentee@testamericainc.com		Page: Page:
Company: Cardno TEC, Inc				Job #:

Address: 1658 Cole Boulevard Suite 190	Due Date Requested:
City: Golden	TAT Requested (days): 20 Business days
State, Zip: CO, 80401	
Phone: 303-273-0231	PO #: 0091979
Email: Elizabeth.Busby@cardno-gs.com	WO #: 076003.009.007
Project Name: Ravenna, OH - Load Line 3	TestAmerica Project #: 28014271
Site:	SSOW#:

Analysis Requested

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)

Other:

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)	8270D - SVOCs List 4 (Phthalates)	8330B - Explosives / Propellants	8081B - Pesticides (LVI)	9012B - Total Cyanide	6010C/6020A/7470A - Total Metals	7196A - Hexavalent Chromium (SHORT HOLD - 24 HR)	6860 - Perchlorate	8270D-SIM PAHs (LVI)	6010C - Phosphorus	8260B-VOCs	8270D-SVOCs List 3	8082A-PCBs	Total Number of containers	Special Instructions/Note:
			Preservation Code:				N	N	N	B	D	N	N							
RQLmw-007-D-120717-GW	12/7/17	1450	G	W	N	N		2	2	1	1			2	1	3	2	2	16	7196A - Hexavalent Chromium = 24 HR HOLD TIME
TB-120817	12/8/17	0800	G	W	N	N										2			2	
RQLmw-008-120717-GW	12/7/17	1505	G	W	N	N										2			2	
RQLmw-009-120717-GW	12/7/17	1448	G	W	N	N										3			3	
RQLmw-007-120717-GW	12/7/17	1450	G	W	N	Y										9			9	

280-104552 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
	12.08.17 1000	CARDNO		12/8/17 1115	TAL
	12/8/17 1600	TAL	Reed Pt	12-9-17 0850	TAL

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No.:

Cooler Temperature(s) °C and Other Remarks: 2.1, 1.6, 0.8, 2.7, 0.3, 0.8, 0.2 IR gun 1 Transfer RP

12-9-17

01/18/2018

TestAmerica Denver
4955 Yarrow Street
Arvada, CO 80002
Phone (303) 736-0100 Fax (303) 431-7171

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: DR	Lab PM: McEntee, Patrick J	Carrier Tracking No(s):	COC No:
Client Contact: Elizabeth Busby	Phone: 618-757-2010	E-Mail: patrick.mcentee@testamericainc.com		Page:
Company: Cardno TEC, Inc				Job #:
Address: 1658 Cole Boulevard Suite 190	Due Date Requested:			
City: Golden	TAT Requested (days): 20 Business Days			
State, Zip: CO 80401				
Phone: 303-273-0231	PO #: 91979			
Email: Elizabeth.Busby@cardno-gs.com	WO #: 076003.009.007			
Project Name: Ravenna, OH - Load Line 1	Project #: 28014271			
Site:	SSOW#:			

Analysis Requested

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)	8260B - VOCs	8270D - SVOCs List 1 (Nitroaromatics,Phthalates,Phenols)	8270D - SVOCs List 2 (Phthalates) 4 Phenols W	8270D_SIM - PAHs (LVI)	8082A - PCBs	8330B - Explosives / Propellants	8081B - Pesticides (LVI)	SM4500_CN_I - Free Cyanide	9012B - Total Cyanide	6010C/6020A/7470A - Total Metals	7196A - Hexavalent Chromium (SHORT HOLD - 24 HR)	2320B - Alkalinity	9056A - Anions (Chloride and Sulfate)	9034 - Sulfide	8330 - Nitroguanidine	353.2 - Nitrocellulose	6860 - Perchlorate	Total Number of containers	Special Instructions/Note:
			Preservation Code		X	X	A	N	N	N	N	N	N	B	B	D	N	N	N	C/B	N	N	N	X	
RQLMW-009-120717-GW	12/07/17	1448	G	W			B		2	2	2	2	2		1	1								12	7196A - Hexavalent Chromium = 24 HR HOLD TIME 12 Bottles

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
1	[signature]	12.08.17/1000	[illegible]	[signature]	12/8/17 1115	TAL
2	[signature]	12/8/17 1600	TAL	[signature]	12-9-17 0850	TAM
3	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:

TestAmerica Denver
4955 Yarrow Street
Arvada, CO 80002
Phone (303) 736-0100 Fax (303) 431-7171

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: DP	Lab PM: McEntee, Patrick J	Carrier Tracking No(s):	COC No:
Client Contact: Elizabeth Busby	Phone: 859 509 3157	E-Mail: patrick.mcentee@testamericainc.com		Page:
Company: Cardno TEC, Inc				Job #:
Address: 1658 Cole Boulevard Suite 190	Due Date Requested:			
City: Golden	TAT Requested (days): 20 Business Days			
State, Zip: CO 80401				
Phone: 303-273-0231	PO #: 91979			
Email: Elizabeth.Busby@cardno-gs.com	WO #: 076003.009.007			
Project Name: Ravenna, OH - Load Line 2	Project #: 28014271			
Site:	SSOW#:			

Analysis Requested

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (Wwater, Ssolid, Owaste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8260B - VOCs	8270D - SVOCs List 1 (Nitroaromatics,Phthalates,Phenols)	8270D - SVOCs List 2 (Phthalates) List 3	8270D_SIM - PAHs (LVI)	8082A - PCBs	8330B - Explosives / Propellants	8081B - Pesticides (LVI)	9012B - Total Cyanide	6010C/6020A/7470A - Total Metals	7196A - Hexavalent Chromium (SHORT HOLD - 24 HR)	8330 - Nitroguanidine	353.2 - Nitrocellulose	6860 - Perchlorate	6010C Phosphorus	Total Number of containers	Special Instructions/Note:
Preservation Code:					X	X	A	N	N	N	N	N	N	B	D	N	N	N	N	X		
ROLmw-007-120717-gw	12-7-17	1450	G	W	N	Y			X	X	X	X	X	X	X					X	3	7196A Hexavalent Chromium = 24 HR HOLD TIME MS/MSD 3 coolers

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2SO3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - ph 4-5
L - EDA	Z - other (specify)

Other:

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
1		12-08-17 1000	CARDNO		12-08-17 1115	TAL
2		12-08-17 1600	TAL		12-9-17 0850	TAL
3						

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.:

Cooler Temperature(s) °C and Other Remarks:

TestAmerica Denver
4955 Yarrow Street
Arvada, CO 80002
Phone (303) 736-0100 Fax (303) 431-7171

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: CJ	Lab PM: McEntee, Patrick J	Carrier Tracking No(s):	COC No:
Client Contact: Elizabeth Busby	Phone: 618-751-2010	E-Mail: patrick.mcentee@testamericainc.com		Page: Page:
Company: Cardno TEC, Inc				Job #:
Address: 1658 Cole Boulevard Suite 190	Due Date Requested:			
City: Golden	TAT Requested (days): 20 Business days			
State, Zip: CO, 80401				
Phone: 303-273-0231	PO #: 0091979			
Email: Elizabeth.Busby@cardno-gs.com	WO #: 076003.009.007			
Project Name: Ravenna, OH - Load Line 12	TestAmerica Project #: 28014271			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)

Other:

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)	8270D - SVOCs List 3 Phthalates	8270D_SIM - PAHs (LVI)	8330B - Explosives / Propellants	SM4500_CN_I - Free Cyanide	9012B - Total Cyanide	6010C/6020A/7470A - Total Metals	6020A - Total Arsenic Only	7196 - Hexavalent Chromium (SHORT HOLD - 24 HR)	9056A - Nitrate as N (SHORT HOLD - 48 HR)	9056A Aqueous Chloride + Sulfate	9034 Sulfide List 1	8260D SVOCs List 1	2330B Alkalinity	Total Number of containers	Special Instructions/Note:
			Preservation Code:				N	N	N	B	B	D	D	N	N						
RQLMW-011-120717-GW	12/07/17	1351	G	W				2						1		1	1	2	1	8	7196A Hexavalent Chromium = 24 HR HOLD TIME 7 Bottles
R-QL MW-006-120717-GW	12/7/17	1535	G	W	N	N	2	2	2	2	X	X	2							12	9056A Nitrate as N = 48 HR HOLD TIME

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
1	[signature]	12.08.17/10:00	Cardno	[signature]	12/8/17 1115	TAL
2	[signature]	12/8/17 1600	TAL	[signature]	12-9-17 0880	TAL
3						

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

TestAmerica Denver
4955 Yarrow Street
Arvada, CO 80002
Phone (303) 736-0100 Fax (303) 431-7171

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: JC	Lab PM: McEntee, Patrick J	Carrier Tracking No(s):	COC No:
Client Contact: Elizabeth Busby	Phone: 618-751-2010	E-Mail: patrick.mcentee@testamericainc.com		Page:
Company: Cardno TEC, Inc				Job #:
Address: 1658 Cole Boulevard Suite 190	Due Date Requested:			
City: Golden	TAT Requested (days): 20 Business Days			
State, Zip: CO 80401				
Phone: 303-273-0231	PO #: 91979			
Email: Elizabeth.Busby@cardno-gs.com	WO #: 076003.009.007			
Project Name: Ravenna, OH - Load Line 1	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 - Na2S2SO3; S - H2SO4; T - TSP Dodecahydrate; U - Acetone; V - MCAA; W - ph 4-5; Z - other (specify); Other:

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)	8260B - VOCs	8270D - SVOCs List 1 (Nitroaromatics,Phthalates,Phenols)	8270D - SVOCs List 4 (Phthalates)	8270D_SIM - PAHs (LVI)	8082A - PCBs	8330B - Explosives / Propellants	8081B - Pesticides (LVI)	SM4500_CN_I - Free Cyanide	9012B - Total Cyanide	6010C/6020A/7470A - Total Metals	7196A - Hexavalent Chromium (SHORT HOLD - 24 HR)	2320B - Alkalinity	9056A - Anions (Chloride and Sulfate)	9034 - Sulfide	8330 - Nitroguanidine	353.2 - Nitrocellulose	8330 - PentaErythritol	Total Number of containers	Special Instructions/Note:
			Preservation Code:		X	X	A	N	N	N	N	N	N	B	B	D	N	N	N	C/B	N	N	Z		
RQLmw-016-120717-GW	12.7.17	14:00	G	W											X									1	7196A - Hexavalent Chromium = 24 HR HOLD TIME
RQLmw-012-120717-GW	12.7.17	14:45	G	W										X	X			X	X	X				5	
RQLmw-014-120717-GW	12.7.17	15:28	G	W								X						X	X	X				5	5 JC
RQLmw-013-120717-GW	12.7.17	16:07	G	W		Y												X	X	X				9	

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
1		12.08.17 / 10:00	Cardno		12/8/17 1115	TAC
2		12-8-17 1600	TAC		12-9-17 0850	TAN
3						

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No.:

Cooler Temperature(s) °C and Other Remarks:

Login Sample Receipt Checklist

Client: Cardno GS, Inc

Job Number: 280-104552-1

Login Number: 104552
List Number: 1
Creator: Pottruff, Reed W

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.	False	Refer to Job Narrative for details.
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
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").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	