

DATA REPORTING QUALIFIERS- INORGANIC

For reporting results, the following “ Results Qualifiers” are used:

J	Indicates the reported value was obtained from a reading that was less than the Contract Required Detection Limit (CRDL), but greater than or equal to the Instrument Detection Limit (IDL).
U	Indicates the analyte was analyzed for, but not detected.
ND	Indicates the analyte was analyzed for, but not detected
E	Indicates the reported value is estimated because of the presence of interference
M	Indicates Duplicate injection precision not met.
N	Indicates the spiked sample recovery is not within control limits.
S	Indicates the reported value was determined by the Method of Standard Addition (MSA).
*	Indicates that the duplicate analysis is not within control limits.
+	Indicates the correlation coefficient for the MSA is less than 0.995.
D	Indicates the reported value is from a secondary analysis with a dilution factor. The original analysis exceeded the calibration range.
M	Method qualifiers “P” for ICP instrument “PM” for ICP when Microwave Digestion is used “CV” for Manual Cold Vapor AA “AV” for automated Cold Vapor AA “CA” for MIDI-Distillation Spectrophotometric “AS” for Semi -Automated Spectrophotometric “C” for Manual Spectrophotometric “T” for Titrimetric “NR” for analyte not required to be analyzed
OR	Indicates the analyte’s concentration exceeds the calibrated range of the instrument for that specific analysis.
Q	Indicates the LCS did not meet the control limits requirements
H	Sample Analysis Out Of Hold Time

LAB CHRONICLE

OrderID:	P5246	OrderDate:	12/10/2024 3:15:00 PM
Client:	PARSONS Main of New York, Inc.	Project:	Con Edison Non-MGP - Atlantic Avenue
Contact:	Stephen Liberatore	Location:	L41,VOA Ref. #3 Water

LabID	ClientID	Matrix	Test	Method	Sample Date	Prep Date	Anal Date	Received
P5246-01	MW7-20241209	WATER			12/09/24 12:16			12/10/24
			Sulfate	300.0			12/11/24 13:41	
			TDS	SM2540 C			12/10/24 16:30	
P5246-01DL	MW7-20241209DL	WATER			12/09/24 12:16			12/10/24
			Sulfate	300.0			12/11/24 14:46	



SAMPLE DATA

Report of Analysis

Client:	PARSONS Main of New York, Inc.	Date Collected:	12/09/24 12:16
Project:	Con Edison Non-MGP - Atlantic Avenue	Date Received:	12/10/24
Client Sample ID:	MW7-20241209	SDG No.:	P5246
Lab Sample ID:	P5246-01	Matrix:	WATER
		% Solid:	0

Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
Sulfate	69.1	OR	1	0.032	3.00	mg/L		12/11/24 13:41	300.0
TDS	870		1	1.00	10.0	mg/L		12/10/24 16:30	SM 2540 C-15

Comments: _____

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

D = Dilution

Q = indicates LCS control criteria did not meet requirements

H = Sample Analysis Out Of Hold Time

J = Estimated Value

B = Analyte Found in Associated Method Blank

* = indicates the duplicate analysis is not within control limits.

E = Indicates the reported value is estimated because of the presence of interference.

OR = Over Range

N =Spiked sample recovery not within control limits

Report of Analysis

Client:	PARSONS Main of New York, Inc.	Date Collected:	12/09/24 12:16
Project:	Con Edison Non-MGP - Atlantic Avenue	Date Received:	12/10/24
Client Sample ID:	MW7-20241209DL	SDG No.:	P5246
Lab Sample ID:	P5246-01DL	Matrix:	WATER
		% Solid:	0

Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
Sulfate	68.2	D	5	0.16	15.0	mg/L		12/11/24 14:46	300.0

Comments:

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

D = Dilution

Q = indicates LCS control criteria did not meet requirements

H = Sample Analysis Out Of Hold Time

J = Estimated Value

B = Analyte Found in Associated Method Blank

* = indicates the duplicate analysis is not within control limits.

E = Indicates the reported value is estimated because of the presence of interference.

OR = Over Range

N =Spiked sample recovery not within control limits



QC RESULT SUMMARY

Initial and Continuing Calibration Verification

Client: PARSONS Main of New York, Inc.

SDG No.: P5246

Project: Con Edison Non-MGP - Atlantic Avenue

RunNo.: LB133881

Analyte	Units	Result	True Value	% Recovery	Acceptance Window (%R)	Analysis Date
Sample ID: ICV1						
Bromide	mg/L	10	10	100	90-110	11/18/2024
Chloride	mg/L	3	3	100	90-110	11/18/2024
Fluoride	mg/L	2	2	100	90-110	11/18/2024
Nitrite	mg/L	3	3	100	90-110	11/18/2024
Nitrate	mg/L	2.5	2.5	100	90-110	11/18/2024
Sulfate	mg/L	14.6	15	97	90-110	11/18/2024
Orthophosphate as P	mg/L	5	5	100	90-110	11/18/2024
Sample ID: CCV1						
Bromide	mg/L	10.7	10	107	90-110	12/11/2024
Chloride	mg/L	3.2	3	107	90-110	12/11/2024
Fluoride	mg/L	2.1	2	105	90-110	12/11/2024
Nitrite	mg/L	3.2	3	107	90-110	12/11/2024
Nitrate	mg/L	2.7	2.5	108	90-110	12/11/2024
Sulfate	mg/L	15.2	15	101	90-110	12/11/2024
Orthophosphate as P	mg/L	5.1	5	102	90-110	12/11/2024
Sample ID: CCV2						
Bromide	mg/L	10.7	10	107	90-110	12/11/2024
Chloride	mg/L	3.2	3	107	90-110	12/11/2024
Fluoride	mg/L	2.1	2	105	90-110	12/11/2024
Nitrite	mg/L	3.2	3	107	90-110	12/11/2024
Nitrate	mg/L	2.7	2.5	108	90-110	12/11/2024
Sulfate	mg/L	15.4	15	103	90-110	12/11/2024
Orthophosphate as P	mg/L	5.3	5	106	90-110	12/11/2024

Initial and Continuing Calibration Blank Summary

Client: PARSONS Main of New York, Inc.

SDG No.: P5246

Project: Con Edison Non-MGP - Atlantic Avenue

RunNo.: LB133881

Analyte	Units	Result	Acceptance Limits	Conc Qual	MDL	RDL	Analysis Date
Sample ID: ICB1							
Bromide	mg/L	< 1.0000	1.0000	U	0.034	2	11/18/2024
Chloride	mg/L	< 0.3000	0.3000	U	0.011	0.6	11/18/2024
Fluoride	mg/L	< 0.2000	0.2000	U	0.057	0.4	11/18/2024
Nitrite	mg/L	< 0.3000	0.3000	U	0.011	0.6	11/18/2024
Nitrate	mg/L	< 0.2500	0.2500	U	0.0034	0.5	11/18/2024
Sulfate	mg/L	< 1.5000	1.5000	U	0.032	3	11/18/2024
Orthophosphate as P	mg/L	< 0.5000	0.5000	U	0.079	1	11/18/2024
Sample ID: CCB1							
Bromide	mg/L	< 1.0000	1.0000	U	0.034	2	12/11/2024
Chloride	mg/L	< 0.3000	0.3000	U	0.011	0.6	12/11/2024
Fluoride	mg/L	< 0.2000	0.2000	U	0.057	0.4	12/11/2024
Nitrite	mg/L	< 0.3000	0.3000	U	0.011	0.6	12/11/2024
Nitrate	mg/L	< 0.2500	0.2500	U	0.0034	0.5	12/11/2024
Sulfate	mg/L	< 1.5000	1.5000	U	0.032	3	12/11/2024
Orthophosphate as P	mg/L	< 0.5000	0.5000	U	0.079	1	12/11/2024
Sample ID: CCB2							
Bromide	mg/L	< 1.0000	1.0000	U	0.034	2	12/11/2024
Chloride	mg/L	< 0.3000	0.3000	U	0.011	0.6	12/11/2024
Fluoride	mg/L	< 0.2000	0.2000	U	0.057	0.4	12/11/2024
Nitrite	mg/L	< 0.3000	0.3000	U	0.011	0.6	12/11/2024
Nitrate	mg/L	< 0.2500	0.2500	U	0.0034	0.5	12/11/2024
Sulfate	mg/L	< 1.5000	1.5000	U	0.032	3	12/11/2024
Orthophosphate as P	mg/L	< 0.5000	0.5000	U	0.079	1	12/11/2024

Preparation Blank Summary

Client: PARSONS Main of New York, Inc.

SDG No.: P5246

Project: Con Edison Non-MGP - Atlantic Avenue

Analyte	Units	Result	Acceptance Limits	Conc Qual	MDL	RDL	Analysis Date
Sample ID: LB133881BLW							
Bromide	mg/L	< 1.0000	1.0000	U	0.034	2	12/11/2024
Chloride	mg/L	< 0.3000	0.3000	U	0.011	0.6	12/11/2024
Fluoride	mg/L	< 0.2000	0.2000	U	0.057	0.4	12/11/2024
Nitrite	mg/L	< 0.3000	0.3000	U	0.011	0.6	12/11/2024
Nitrate	mg/L	0.022	0.2500	J	0.0034	0.5	12/11/2024
Sulfate	mg/L	< 1.5000	1.5000	U	0.032	3	12/11/2024
Orthophosphate as P	mg/L	< 0.5000	0.5000	U	0.079	1	12/11/2024
Sample ID: LB133890BL							
TDS	mg/L	< 5.0000	5.0000	U	1.0	10	12/10/2024

Matrix Spike Summary

Client:	PARSONS Main of New York, Inc.	SDG No.:	P5246
Project:	Con Edison Non-MGP - Atlantic Avenue	Sample ID:	P5246-01
Client ID:	MW7-20241209MS	Percent Solids for Spike Sample:	0

Analyte	Units	Acceptance Limit %R	Spiked Result	Conc. Qualifier	Sample Result	Conc. Qualifier	Spike Added	Dilution Factor	% Rec	Qual	Analysis Date
Bromide	mg/L	80-120	10.1		0.23	J	10	1	99		12/11/2024
Chloride	mg/L	80-120	390	OR	412	OR	3	1	-733	*	12/11/2024
Fluoride	mg/L	80-120	2.00		0.082	J	2	1	96		12/11/2024
Nitrite	mg/L	80-120	2.90		0.011	U	3	1	97		12/11/2024
Nitrate	mg/L	80-120	11.7	OR	9.60	OR	2.5	1	84		12/11/2024
Sulfate	mg/L	80-120	80.6	OR	69.1	OR	15	1	77	*	12/11/2024
Orthophosphate as P	mg/L	80-120	4.50		0.079	U	5	1	90		12/11/2024

Matrix Spike Summary

Client:	PARSONS Main of New York, Inc.	SDG No.:	P5246
Project:	Con Edison Non-MGP - Atlantic Avenue	Sample ID:	P5246-01
Client ID:	MW7-20241209MSD	Percent Solids for Spike Sample:	0

Analyte	Units	Acceptance Limit %R	Spiked Result	Conc. Qualifier	Sample Result	Conc. Qualifier	Spike Added	Dilution Factor	% Rec	Qual	Analysis Date
Bromide	mg/L	80-120	10.1		0.23	J	10	1	99		12/11/2024
Chloride	mg/L	80-120	390	OR	412	OR	3	1	-733	*	12/11/2024
Fluoride	mg/L	80-120	2.00		0.082	J	2	1	96		12/11/2024
Nitrite	mg/L	80-120	2.90		0.011	U	3	1	97		12/11/2024
Nitrate	mg/L	80-120	11.7	OR	9.60	OR	2.5	1	84		12/11/2024
Sulfate	mg/L	80-120	80.7	OR	69.1	OR	15	1	77	*	12/11/2024
Orthophosphate as P	mg/L	80-120	4.60		0.079	U	5	1	92		12/11/2024

Duplicate Sample Summary

Client: PARSONS Main of New York, Inc. Project: Con Edison Non-MGP - Atlantic Avenue Client ID: MW7-20241209DUP	SDG No.: P5246 Sample ID: P5246-01 Percent Solids for Spike Sample: 0
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Analyte	Units	Acceptance Limit	Sample Result	Conc. Qualifier	Duplicate Result	Conc. Qualifier	Dilution Factor	RPD/ AD	Qual	Analysis Date
TDS	mg/L	+/-5	870		905		1	3.94		12/10/2024

Duplicate Sample Summary

Client:	PARSONS Main of New York, Inc.	SDG No.:	P5246
Project:	Con Edison Non-MGP - Atlantic Avenue	Sample ID:	P5246-01
Client ID:	MW7-20241209MSD	Percent Solids for Spike Sample:	0

Analyte	Units	Acceptance Limit	Sample Result	Conc. Qualifier	Duplicate Result	Conc. Qualifier	Dilution Factor	RPD/AD	Qual	Analysis Date
Bromide	mg/L	+/-20	10.1		10.1		1	0		12/11/2024
Fluoride	mg/L	+/-20	2.00		2.00		1	0		12/11/2024
Nitrite	mg/L	+/-20	2.90		2.90		1	0		12/11/2024
Chloride	mg/L	+/-20	390	OR	390	OR	1	0		12/11/2024
Nitrate	mg/L	+/-20	11.7	OR	11.7	OR	1	0		12/11/2024
Sulfate	mg/L	+/-20	80.6	OR	80.7	OR	1	0		12/11/2024
Orthophosphate as P	mg/L	+/-20	4.50		4.60		1	2		12/11/2024

Laboratory Control Sample Summary

Client:	PARSONS Main of New York, Inc.	SDG No.:	P5246
Project:	Con Edison Non-MGP - Atlantic Avenue	Run No.:	LB133881

Analyte	Units	True Value	Result	Conc. Qualifier	% Recovery	Dilution Factor	Acceptance Limit %R	Analysis Date
Sample ID	LB133881BSW							
Bromide	mg/L	10	10.1		101	1	90-110	12/11/2024
Chloride	mg/L	3	3.00		100	1	90-110	12/11/2024
Fluoride	mg/L	2	2.00		100	1	90-110	12/11/2024
Nitrite	mg/L	3	3.00		100	1	90-110	12/11/2024
Nitrate	mg/L	2.5	2.50		100	1	90-110	12/11/2024
Sulfate	mg/L	15	14.3		95	1	90-110	12/11/2024
Orthophosphate as P	mg/L	5	4.80		96	1	90-110	12/11/2024

Laboratory Control Sample Summary

Client: PARSONS Main of New York, Inc.

SDG No.: P5246

Project: Con Edison Non-MGP - Atlantic Avenue

Run No.: LB133890

Analyte	Units	True Value	Result	Conc. Qualifier	% Recovery	Dilution Factor	Acceptance Limit %R	Analysis Date
Sample ID	LB133890BS							
TDS	mg/L	100	94.0		94	1	90-110	12/10/2024



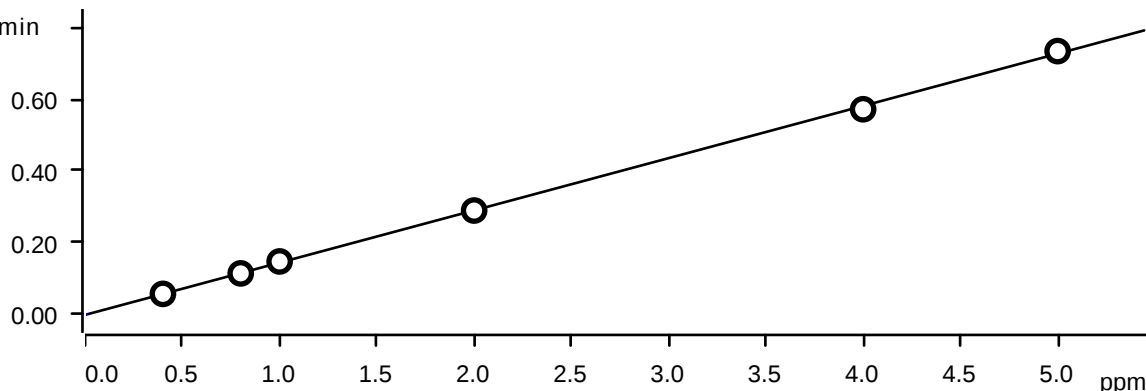
RAW DATA

Instrument I											
Method: .00.0 / 9056A											
Analyst: NF											
Con F- Con CL- Con NO2 Con BR- Con NO3Con HPO4 Con SO4											
Method name											
date time											
il wt/Fin											
Analyst											
Ident	Con F-	Con CL-	Con NO2	Con BR-	Con NO3	Con HPO4	Con SO4	Method name	date time	il wt/Fin	Analyst
STD1	0	0	0	0	0	0	0	IC1-111824	11/18/2024 11:24	10	NF/IZ
STD2	0.402	0.571	0.601	1.961	0.489	1.025	3.062	IC1-111824	11/18/2024 11:46	10	NF/IZ
STD3	0.794	1.185	1.175	3.939	0.997	1.928	6.062	IC1-111824	11/18/2024 12:07	10	NF/IZ
STD4	1.023	1.554	1.535	5.128	1.284	2.665	7.843	IC1-111824	11/18/2024 12:29	10	NF/IZ
STD5	1.997	3.009	2.993	9.997	2.488	4.96	14.679	IC1-111824	11/18/2024 12:50	10	NF/IZ
STD6	3.936	5.952	5.978	19.928	4.964	9.645	28.993	IC1-111824	11/18/2024 13:11	10	NF/IZ
STD7	5.049	7.529	7.517	25.045	6.279	12.776	37.863	IC1-111824	11/18/2024 13:33	10	NF/IZ
ICV	1.966	3.006	2.997	9.98	2.49	4.979	14.594	IC1-111824	11/18/2024 13:54	10	NF/IZ
ICB	0	0	0	0	0	0	0	IC1-111824	11/18/2024 14:16	10	NF/IZ
CCV	2.101	3.177	3.197	10.732	2.657	5.062	15.234	IC1-111824	12/11/2024 12:15	10	NF/IZ
CCB	0	0	0	0	0	0	0	IC1-111824	12/11/2024 12:36	10	NF/IZ
LB133881BLW	0	0	0	0	0.022	0	0	IC1-111824	12/11/2024 12:58	10	NF/IZ
LB133881BSW	1.982	2.981	3.004	10.082	2.487	4.826	14.274	IC1-111824	12/11/2024 13:19	10	NF/IZ
P5246-01	0.082	412.158	0	0.228	9.557	0	69.057	IC1-111824	12/11/2024 13:41	10	NF/IZ
P5246-01MS	1.993	390.137	2.946	10.071	11.678	4.549	80.614	IC1-111824	12/11/2024 14:02	10	NF/IZ
P5246-01MSD	2.031	389.852	2.936	10.095	11.68	4.611	80.664	IC1-111824	12/11/2024 14:24	10	NF/IZ
P5246-01DLX-5	0.024	69.294	0	0	1.923	0	13.642	IC1-111824	12/11/2024 14:46	10	NF/IZ
CCV	2.075	3.18	3.223	10.737	2.653	5.299	15.37	IC1-111824	12/11/2024 15:07	10	NF/IZ
CCB	0	0	0	0	0	0	0	IC1-111824	12/11/2024 15:29	10	NF/IZ

ident	Relative Error F-
STD1	0.5000
STD2	-0.7500
STD3	2.3000
STD4	-0.1500
STD5	-1.6000
STD6	0.9800
STD7	

Fluoride (Anions)

($\mu\text{S}/\text{cm}$) x min



Function: $A = -1.48773E-3 + 0.0145652 \times Q$

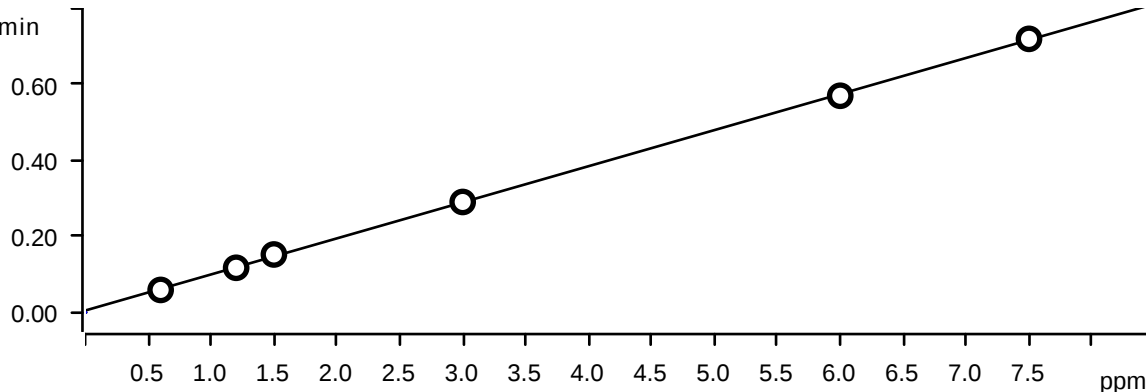
Relative standard deviation: 1.923523 %

Correlation coefficient: 0.999800

Sample type	Index	Conc.	Volume	Dilution	Sample amount	Area	Ident	Date	Used
Standard 1	1	0.000	10.0	1.0	1.0	n. d.	STD1	2024-11-18 11:24:52 UTC-5	used
Standard 2	1	0.400	10.0	1.0	1.0	0.057	STD2	2024-11-18 11:46:16 UTC-5	used
Standard 3	1	0.800	10.0	1.0	1.0	0.114	STD3	2024-11-18 12:07:40 UTC-5	used
Standard 4	1	1.000	10.0	1.0	1.0	0.147	STD4	2024-11-18 12:29:05 UTC-5	used
Standard 5	1	2.000	10.0	1.0	1.0	0.289	STD5	2024-11-18 12:50:30 UTC-5	used
Standard 6	1	4.000	10.0	1.0	1.0	0.572	STD6	2024-11-18 13:11:57 UTC-5	used
Standard 7	1	5.000	10.0	1.0	1.0	0.734	STD7	2024-11-18 13:33:24 UTC-5	used

Chloride (Anions)

($\mu\text{S}/\text{cm}$) x min



Function: $A = 4.85841E-3 + 9.50243E-3 \times Q$

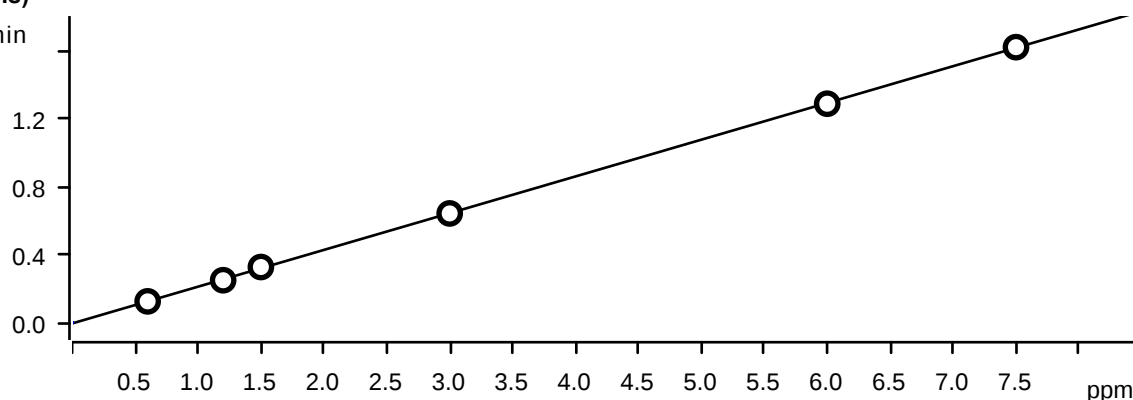
Relative standard deviation 1.265280 %

Correlation coefficient 0.999910

Sample type	Index	Conc.	Volume	Dilution	Sample amount	Area	Ident	Date	Used
Standard 1	1	0.000	10.0	1.0	1.0	n. d.	STD1	2024-11-18 11:24:52 UTC-5	used
Standard 2	1	0.600	10.0	1.0	1.0	0.059	STD2	2024-11-18 11:46:16 UTC-5	used
Standard 3	1	1.200	10.0	1.0	1.0	0.117	STD3	2024-11-18 12:07:40 UTC-5	used
Standard 4	1	1.500	10.0	1.0	1.0	0.153	STD4	2024-11-18 12:29:05 UTC-5	used
Standard 5	1	3.000	10.0	1.0	1.0	0.291	STD5	2024-11-18 12:50:30 UTC-5	used
Standard 6	1	6.000	10.0	1.0	1.0	0.570	STD6	2024-11-18 13:11:57 UTC-5	used
Standard 7	1	7.500	10.0	1.0	1.0	0.720	STD7	2024-11-18 13:33:24 UTC-5	used

Nitrite (Anions)

(μS/cm) x min

Function: $A = -5.27414E-3 + 0.0216316 \times Q$

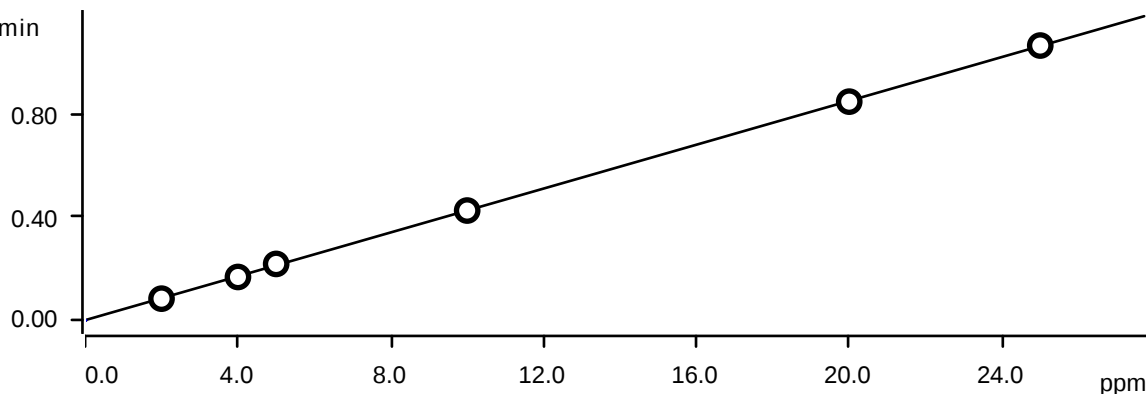
Relative standard deviation 0.783603 %

Correlation coefficient 0.999967

Sample type	Index	Conc.	Volume	Dilution	Sample amount	Area	Ident	Date	Used
Standard 1	1	0.000	10.0	1.0	1.0	n. d.	STD1	2024-11-18 11:24:52 UTC-5	used
Standard 2	1	0.600	10.0	1.0	1.0	0.125	STD2	2024-11-18 11:46:16 UTC-5	used
Standard 3	1	1.200	10.0	1.0	1.0	0.249	STD3	2024-11-18 12:07:40 UTC-5	used
Standard 4	1	1.500	10.0	1.0	1.0	0.327	STD4	2024-11-18 12:29:05 UTC-5	used
Standard 5	1	3.000	10.0	1.0	1.0	0.642	STD5	2024-11-18 12:50:30 UTC-5	used
Standard 6	1	6.000	10.0	1.0	1.0	1.288	STD6	2024-11-18 13:11:57 UTC-5	used
Standard 7	1	7.500	10.0	1.0	1.0	1.621	STD7	2024-11-18 13:33:24 UTC-5	used

Bromide (Anions)

($\mu\text{S}/\text{cm}$) x min



Function: $A = 7.64331E-4 + 4.24604E-3 \times Q$

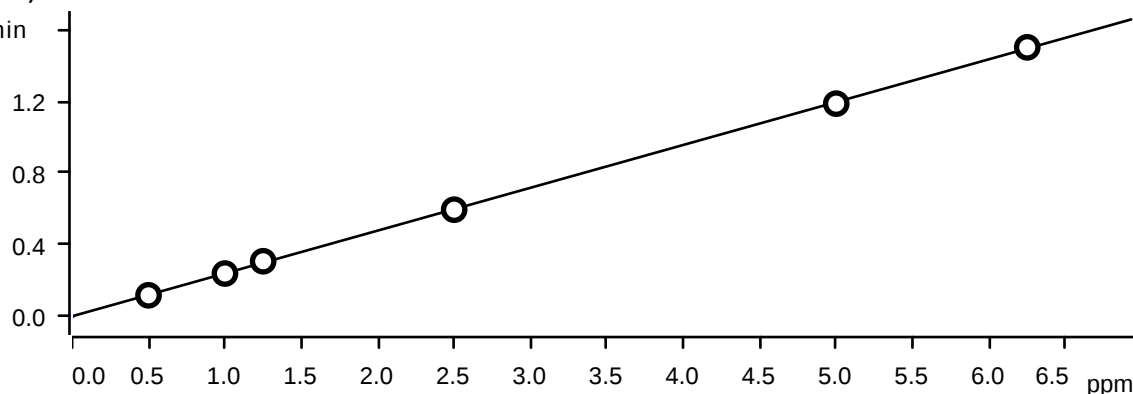
Relative standard deviation: 0.771268 %

Correlation coefficient: 0.999967

Sample type	Index	Conc.	Volume	Dilution	Sample amount	Area	Ident	Date	Used
Standard 1	1	0.000	10.0	1.0	1.0	n. d.	STD1	2024-11-18 11:24:52 UTC-5	used
Standard 2	1	2.000	10.0	1.0	1.0	0.084	STD2	2024-11-18 11:46:16 UTC-5	used
Standard 3	1	4.000	10.0	1.0	1.0	0.168	STD3	2024-11-18 12:07:40 UTC-5	used
Standard 4	1	5.000	10.0	1.0	1.0	0.219	STD4	2024-11-18 12:29:05 UTC-5	used
Standard 5	1	10.000	10.0	1.0	1.0	0.425	STD5	2024-11-18 12:50:30 UTC-5	used
Standard 6	1	20.000	10.0	1.0	1.0	0.847	STD6	2024-11-18 13:11:57 UTC-5	used
Standard 7	1	25.000	10.0	1.0	1.0	1.064	STD7	2024-11-18 13:33:24 UTC-5	used

Nitrate (Anions)

($\mu\text{S}/\text{cm}$) x min

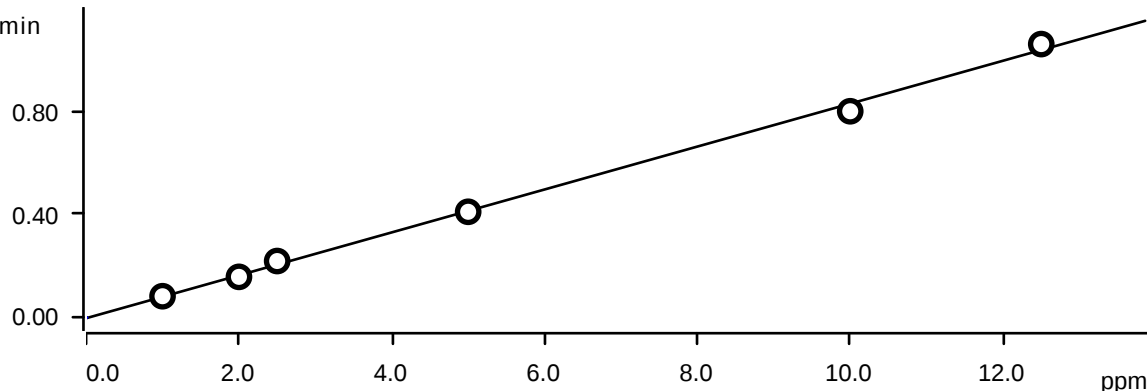


Function: $A = 1.14484E-3 + 0.0238833 \times Q$

Relative standard deviation: 1.085494 %

Correlation coefficient 0.999936

Sample type	Index	Conc.	Volume	Dilution	Sample amount	Area	Ident	Date	Used
Standard 1	1	0.000	10.0	1.0	1.0	n. d.	STD1	2024-11-18 11:24:52 UTC-5	used
Standard 2	1	0.500	10.0	1.0	1.0	0.118	STD2	2024-11-18 11:46:16 UTC-5	used
Standard 3	1	1.000	10.0	1.0	1.0	0.239	STD3	2024-11-18 12:07:40 UTC-5	used
Standard 4	1	1.250	10.0	1.0	1.0	0.308	STD4	2024-11-18 12:29:05 UTC-5	used
Standard 5	1	2.500	10.0	1.0	1.0	0.595	STD5	2024-11-18 12:50:30 UTC-5	used
Standard 6	1	5.000	10.0	1.0	1.0	1.187	STD6	2024-11-18 13:11:57 UTC-5	used
Standard 7	1	6.250	10.0	1.0	1.0	1.501	STD7	2024-11-18 13:33:24 UTC-5	used

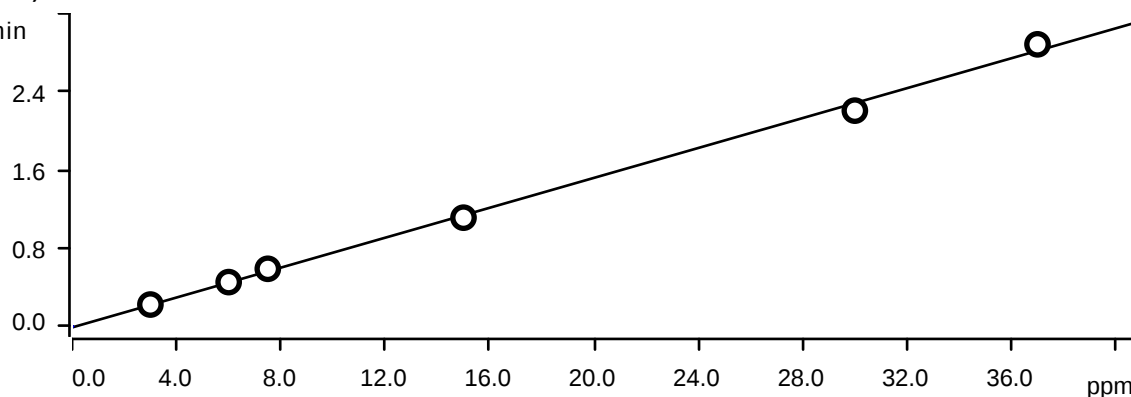
Phosphate (Anions) $(\mu\text{S}/\text{cm}) \times \text{min}$ Function: $A = -2.33576E-3 + 8.30878E-3 \times Q$

Relative standard deviation 4.444706 %

Correlation coefficient 0.998936

Sample type	Index	Conc.	Volume	Dilution	Sample amount	Area	Ident	Date	Used
Standard 1	1	0.000	10.0	1.0	1.0	n. d.	STD1	2024-11-18 11:24:52 UTC-5	used
Standard 2	1	1.000	10.0	1.0	1.0	0.083	STD2	2024-11-18 11:46:16 UTC-5	used
Standard 3	1	2.000	10.0	1.0	1.0	0.158	STD3	2024-11-18 12:07:40 UTC-5	used
Standard 4	1	2.500	10.0	1.0	1.0	0.219	STD4	2024-11-18 12:29:05 UTC-5	used
Standard 5	1	5.000	10.0	1.0	1.0	0.410	STD5	2024-11-18 12:50:30 UTC-5	used
Standard 6	1	10.000	10.0	1.0	1.0	0.799	STD6	2024-11-18 13:11:57 UTC-5	used
Standard 7	1	12.500	10.0	1.0	1.0	1.059	STD7	2024-11-18 13:33:24 UTC-5	used

Sulfate (Anions)

 $(\mu\text{S}/\text{cm}) \times \text{min}$ Function: $A = -9.71222E-3 + 7.64397E-3 \times Q$

Relative standard deviation 4.327283 %

Correlation coefficient 0.998986

Sample type	Index	Conc.	Volume	Dilution	Sample amount	Area	Ident	Date	Used
Standard 1	1	0.000	10.0	1.0	1.0	n. d.	STD1	2024-11-18 11:24:52 UTC-5	used
Standard 2	1	3.000	10.0	1.0	1.0	0.224	STD2	2024-11-18 11:46:16 UTC-5	used
Standard 3	1	6.000	10.0	1.0	1.0	0.454	STD3	2024-11-18 12:07:40 UTC-5	used
Standard 4	1	7.500	10.0	1.0	1.0	0.590	STD4	2024-11-18 12:29:05 UTC-5	used
Standard 5	1	15.000	10.0	1.0	1.0	1.112	STD5	2024-11-18 12:50:30 UTC-5	used
Standard 6	1	30.000	10.0	1.0	1.0	2.206	STD6	2024-11-18 13:11:57 UTC-5	used
Standard 7	1	37.000	10.0	1.0	1.0	2.884	STD7	2024-11-18 13:33:24 UTC-5	used

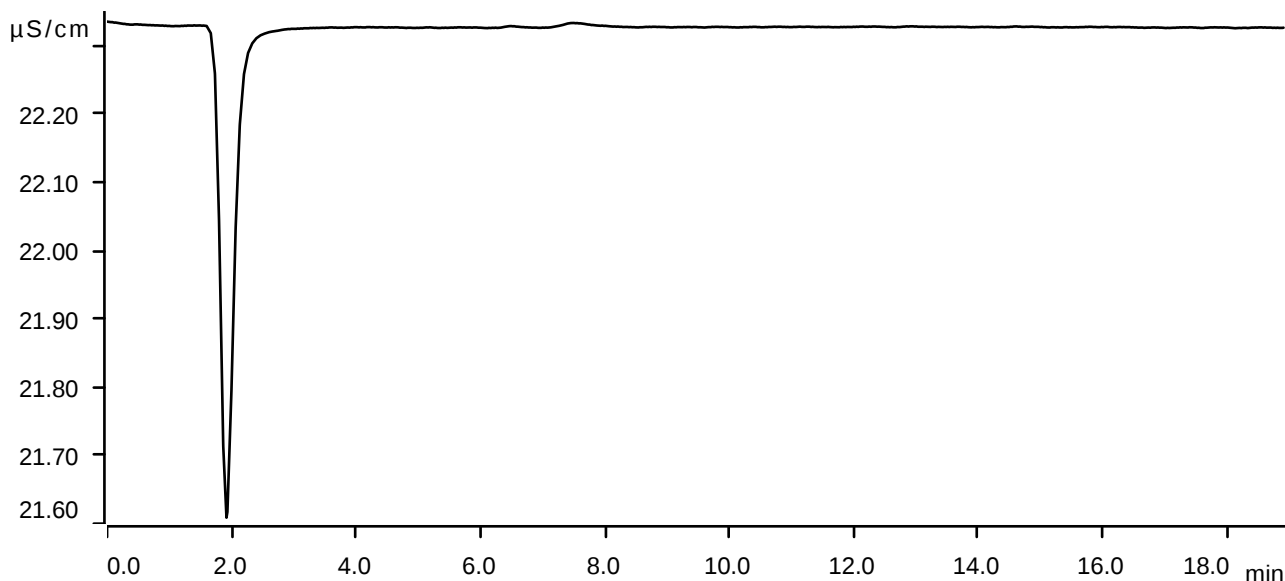
Sample data

Ident STD1
Sample type Standard 1
Determination start 2024-11-18 11:24:52 UTC-5
Method IC1-111824
Operator

Anions

Data source Conductivity detector 1 (Eco IC 1)
Channel Conductivity
Recording time 19.0 min
Integration Automatically
Column type Metrosep A Supp 19 - 150/4.0
Eluent composition not defined
Flow 0.700 mL/min
Maximum flow monitored yes
Pressure 11.60 MPa
Maximum pressure monitored yes
Temperature ---- °C

Anions



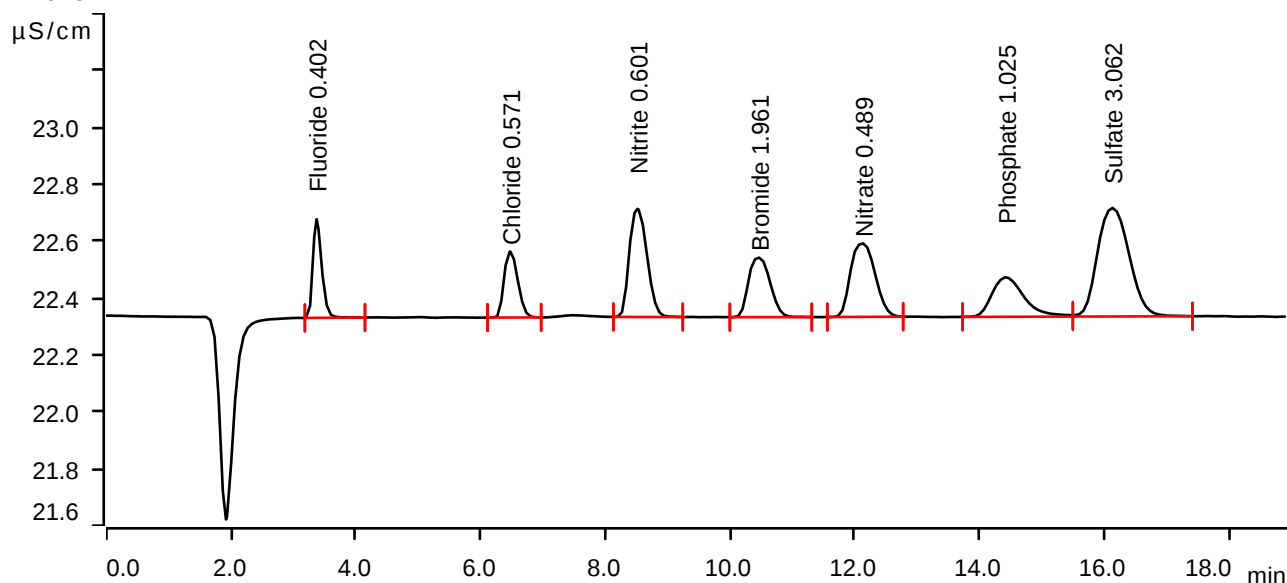
Sample data

Ident STD2
Sample type Standard 2
Determination start 2024-11-18 11:46:16 UTC-5
Method IC1-111824
Operator

Anions

Data source Conductivity detector 1 (Eco IC 1)
Channel Conductivity
Recording time 19.0 min
Integration Automatically
Column type Metrosep A Supp 19 - 150/4.0
Eluent composition not defined
Flow 0.700 mL/min
Maximum flow monitored yes
Pressure 11.54 MPa
Maximum pressure monitored yes
Temperature ---- °C

Anions



Peak number	Retention time min	Area (µS/cm) x min	Height µS/cm	Concentration ppm	Component name
1	3.372	0.0570	0.347	0.402	Fluoride
2	6.477	0.0592	0.232	0.571	Chloride
3	8.515	0.1247	0.380	0.601	Nitrite
4	10.463	0.0840	0.209	1.961	Bromide
5	12.127	0.1179	0.258	0.489	Nitrate
6	14.418	0.0829	0.139	1.025	Phosphate
7	16.130	0.2243	0.381	3.062	Sulfate

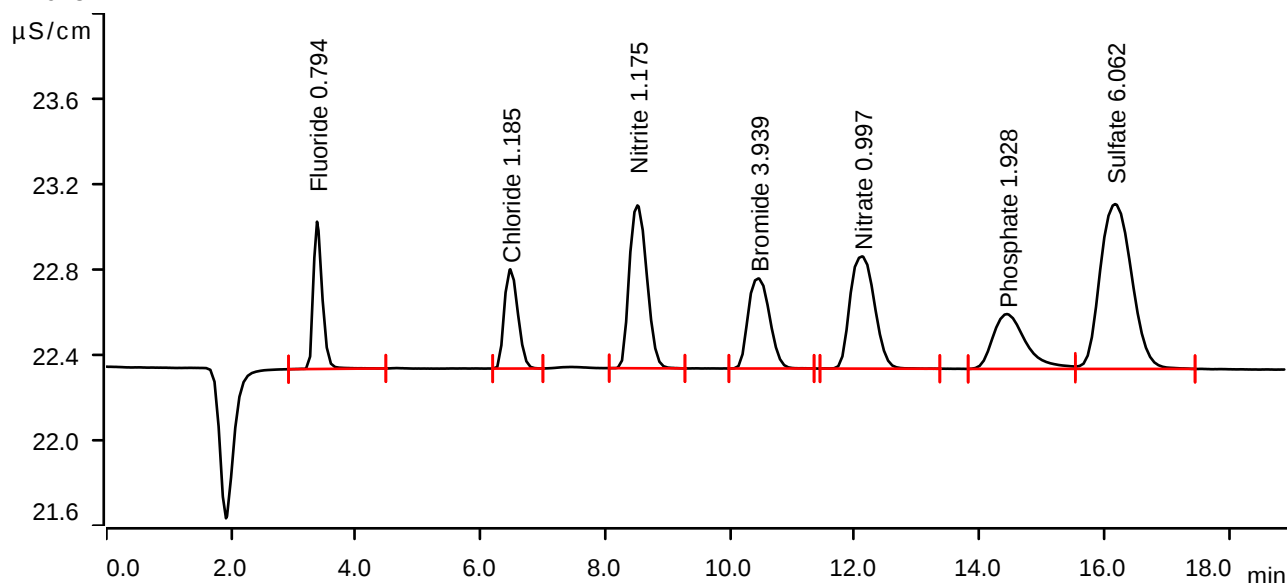
Sample data

Ident STD3
Sample type Standard 3
Determination start 2024-11-18 12:07:40 UTC-5
Method IC1-111824
Operator

Anions

Data source Conductivity detector 1 (Eco IC 1)
Channel Conductivity
Recording time 19.0 min
Integration Automatically
Column type Metrosep A Supp 19 - 150/4.0
Eluent composition not defined
Flow 0.700 mL/min
Maximum flow monitored yes
Pressure 11.37 MPa
Maximum pressure monitored yes
Temperature ---- °C

Anions



Peak number	Retention time min	Area (µS/cm) x min	Height µS/cm	Concentration ppm	Component name
1	3.378	0.1141	0.690	0.794	Fluoride
2	6.478	0.1175	0.465	1.185	Chloride
3	8.515	0.2490	0.763	1.175	Nitrite
4	10.453	0.1680	0.422	3.939	Bromide
5	12.117	0.2394	0.526	0.997	Nitrate
6	14.440	0.1579	0.257	1.928	Phosphate
7	16.173	0.4537	0.772	6.062	Sulfate

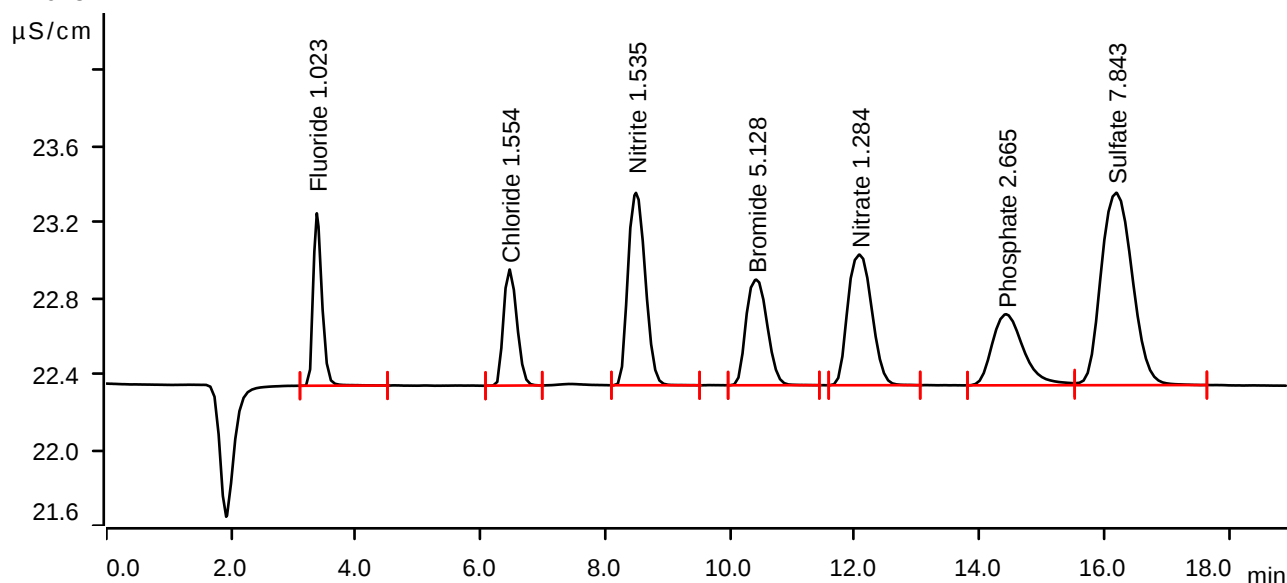
Sample data

Ident STD4
Sample type Standard 4
Determination start 2024-11-18 12:29:05 UTC-5
Method IC1-111824
Operator

Anions

Data source Conductivity detector 1 (Eco IC 1)
Channel Conductivity
Recording time 19.0 min
Integration Automatically
Column type Metrosep A Supp 19 - 150/4.0
Eluent composition not defined
Flow 0.700 mL/min
Maximum flow monitored yes
Pressure 11.32 MPa
Maximum pressure monitored yes
Temperature ---- °C

Anions



Peak number	Retention time min	Area (µS/cm) x min	Height µS/cm	Concentration ppm	Component name
1	3.375	0.1475	0.909	1.023	Fluoride
2	6.465	0.1525	0.612	1.554	Chloride
3	8.493	0.3268	1.014	1.535	Nitrite
4	10.420	0.2185	0.557	5.128	Bromide
5	12.077	0.3078	0.689	1.284	Nitrate
6	14.427	0.2191	0.375	2.665	Phosphate
7	16.192	0.5898	1.014	7.843	Sulfate

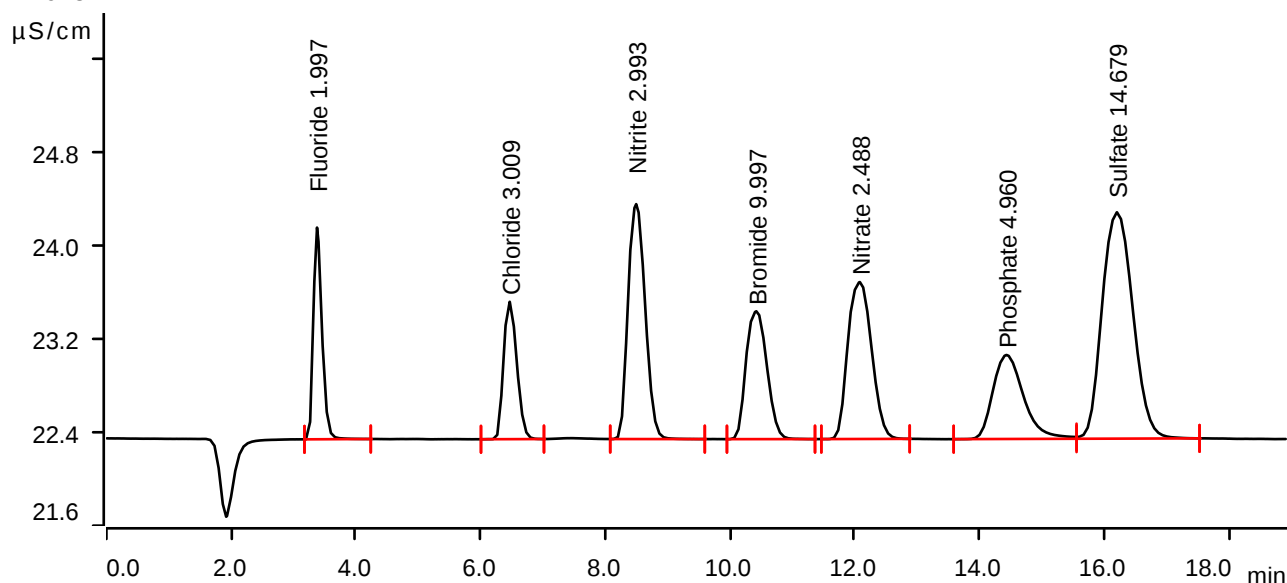
Sample data

Ident STD5
Sample type Standard 5
Determination start 2024-11-18 12:50:30 UTC-5
Method IC1-111824
Operator

Anions

Data source Conductivity detector 1 (Eco IC 1)
Channel Conductivity
Recording time 19.0 min
Integration Automatically
Column type Metrosep A Supp 19 - 150/4.0
Eluent composition not defined
Flow 0.700 mL/min
Maximum flow monitored yes
Pressure 11.26 MPa
Maximum pressure monitored yes
Temperature ---- °C

Anions



Peak number	Retention time min	Area (µS/cm) x min	Height µS/cm	Concentration ppm	Component name
1	3.378	0.2894	1.819	1.997	Fluoride
2	6.467	0.2908	1.180	3.009	Chloride
3	8.495	0.6422	2.018	2.993	Nitrite
4	10.422	0.4253	1.098	9.997	Bromide
5	12.082	0.5953	1.348	2.488	Nitrate
6	14.432	0.4098	0.722	4.960	Phosphate
7	16.203	1.1123	1.944	14.679	Sulfate

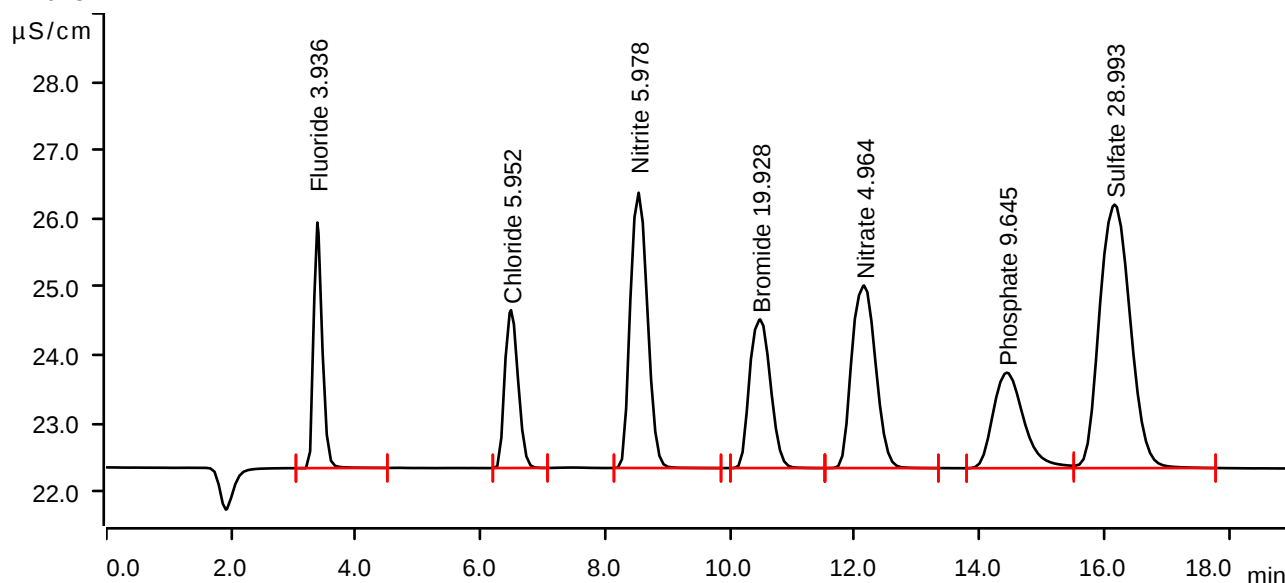
Sample data

Ident STD6
Sample type Standard 6
Determination start 2024-11-18 13:11:57 UTC-5
Method IC1-111824
Operator

Anions

Data source Conductivity detector 1 (Eco IC 1)
Channel Conductivity
Recording time 19.0 min
Integration Automatically
Column type Metrosep A Supp 19 - 150/4.0
Eluent composition not defined
Flow 0.700 mL/min
Maximum flow monitored yes
Pressure 11.37 MPa
Maximum pressure monitored yes
Temperature ---- °C

Anions



Peak number	Retention time min	Area (µS/cm) x min	Height µS/cm	Concentration ppm	Component name
1	3.383	0.5717	3.596	3.936	Fluoride
2	6.488	0.5704	2.311	5.952	Chloride
3	8.533	1.2879	4.031	5.978	Nitrite
4	10.483	0.8469	2.176	19.928	Bromide
5	12.148	1.1866	2.673	4.964	Nitrate
6	14.438	0.7991	1.399	9.645	Phosphate
7	16.165	2.2065	3.859	28.993	Sulfate

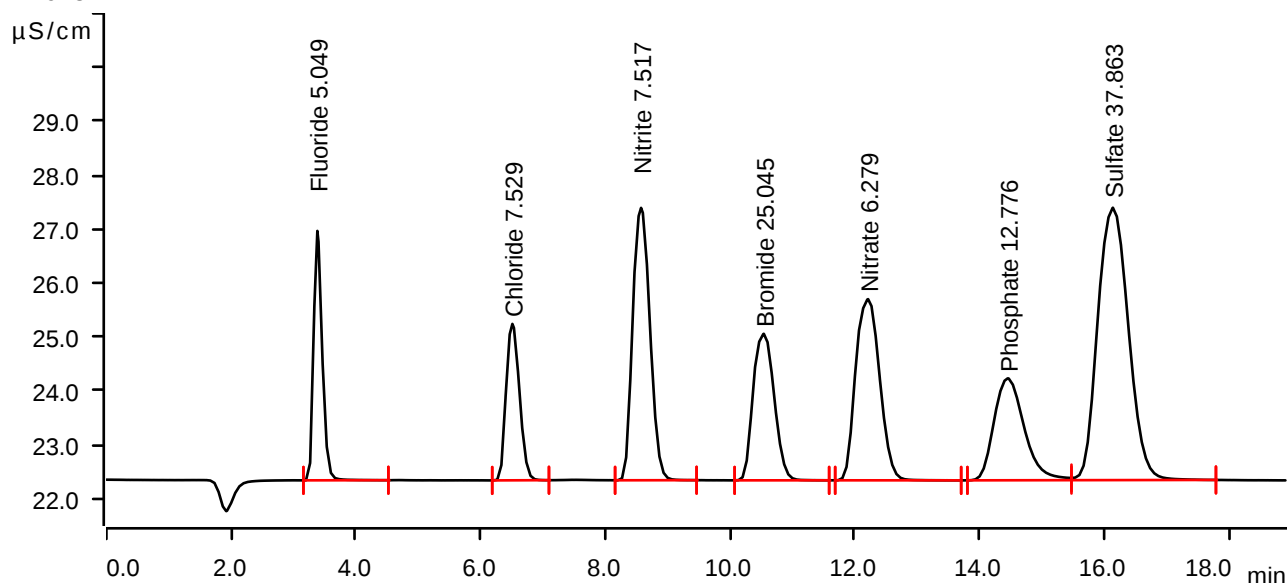
Sample data

Ident STD7
Sample type Standard 7
Determination start 2024-11-18 13:33:24 UTC-5
Method IC1-111824
Operator

Anions

Data source Conductivity detector 1 (Eco IC 1)
Channel Conductivity
Recording time 19.0 min
Integration Automatically
Column type Metrosep A Supp 19 - 150/4.0
Eluent composition not defined
Flow 0.700 mL/min
Maximum flow monitored yes
Pressure 11.54 MPa
Maximum pressure monitored yes
Temperature ---- °C

Anions



Peak number	Retention time min	Area (µS/cm) x min	Height µS/cm	Concentration ppm	Component name
1	3.383	0.7339	4.626	5.049	Fluoride
2	6.510	0.7203	2.901	7.529	Chloride
3	8.573	1.6208	5.052	7.517	Nitrite
4	10.542	1.0642	2.717	25.045	Bromide
5	12.213	1.5007	3.361	6.279	Nitrate
6	14.452	1.0592	1.891	12.776	Phosphate
7	16.138	2.8845	5.052	37.863	Sulfate

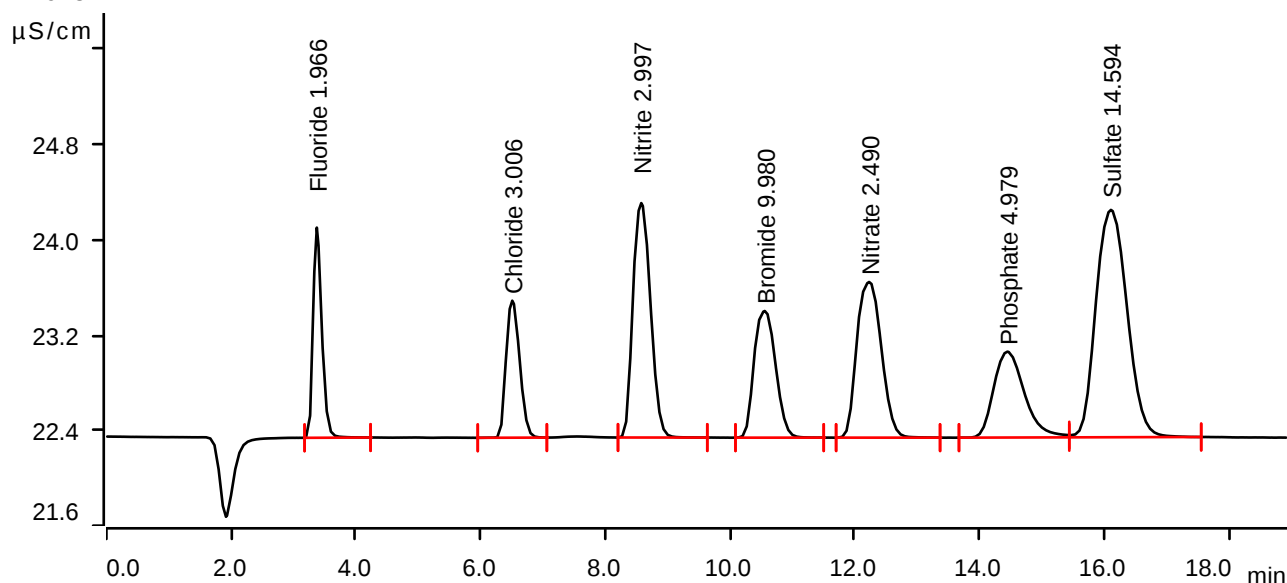
Sample data

Ident ICV
Sample type Check standard 1
Determination start 2024-11-18 13:54:44 UTC-5
Method IC1-111824
Operator

Anions

Data source Conductivity detector 1 (Eco IC 1)
Channel Conductivity
Recording time 19.0 min
Integration Automatically
Column type Metrosep A Supp 19 - 150/4.0
Eluent composition not defined
Flow 0.700 mL/min
Maximum flow monitored yes
Pressure 11.66 MPa
Maximum pressure monitored yes
Temperature ---- °C

Anions



Peak number	Retention time	Area	Height	Concentration	Component name
	min	(µS/cm) x min	µS/cm	ppm	
1	3.375	0.2848	1.764	1.966	Fluoride
2	6.508	0.2905	1.150	3.006	Chloride
3	8.577	0.6430	1.968	2.997	Nitrite
4	10.557	0.4245	1.063	9.980	Bromide
5	12.230	0.5959	1.307	2.490	Nitrate
6	14.447	0.4114	0.721	4.979	Phosphate
7	16.107	1.1058	1.909	14.594	Sulfate

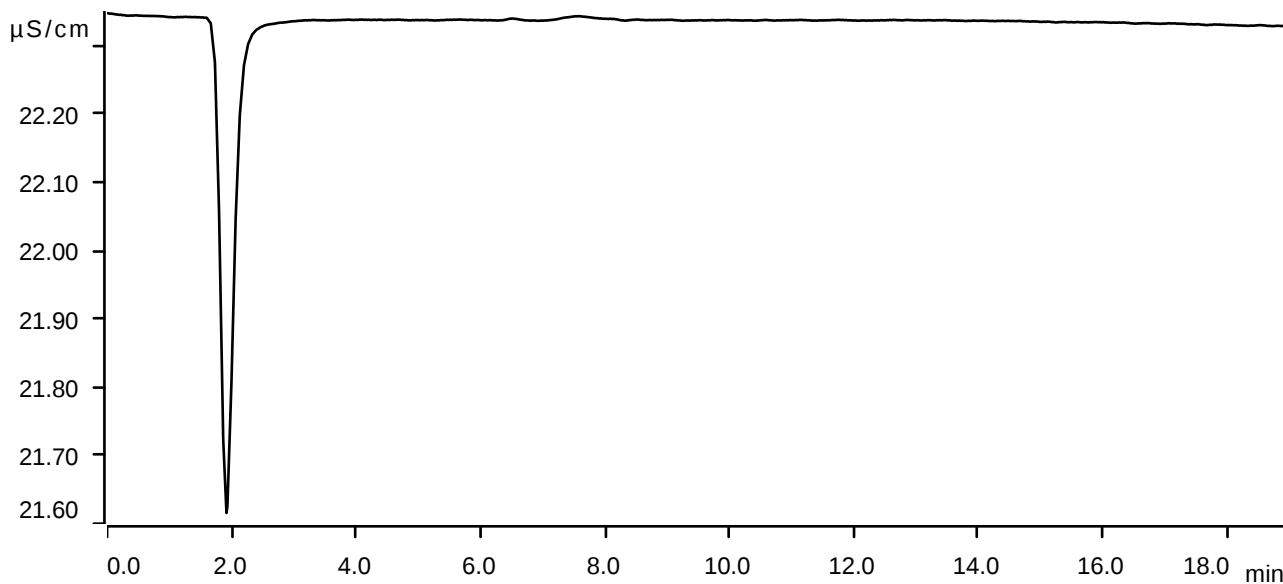
Sample data

Ident ICB
Sample type Sample
Determination start 2024-11-18 14:16:12 UTC-5
Method IC1-111824
Operator

Anions

Data source Conductivity detector 1 (Eco IC 1)
Channel Conductivity
Recording time 19.0 min
Integration Automatically
Column type Metrosep A Supp 19 - 150/4.0
Eluent composition not defined
Flow 0.700 mL/min
Maximum flow monitored yes
Pressure 11.66 MPa
Maximum pressure monitored yes
Temperature ---- °C

Anions



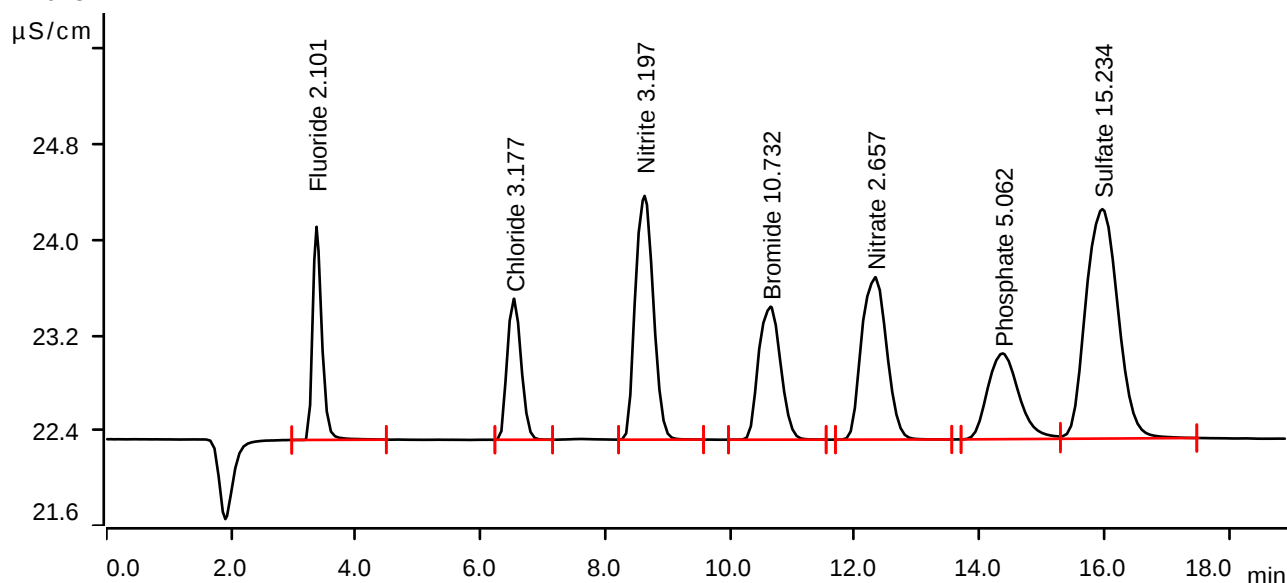
Sample data

Ident CCV
Sample type Check standard 1
Determination start 2024-12-11 12:15:17 UTC-5
Method IC1-111824
Operator

Anions

Data source Conductivity detector 1 (Eco IC 1)
Channel Conductivity
Recording time 19.0 min
Integration Automatically
Column type Metrosep A Supp 19 - 150/4.0
Eluent composition not defined
Flow 0.700 mL/min
Maximum flow monitored yes
Pressure 12.05 MPa
Maximum pressure monitored yes
Temperature ---- °C

Anions



Peak number	Retention time min	Area (µS/cm) x min	Height µS/cm	Concentration ppm	Component name
1	3.370	0.3045	1.789	2.101	Fluoride
2	6.538	0.3067	1.184	3.177	Chloride
3	8.630	0.6862	2.046	3.197	Nitrite
4	10.650	0.4565	1.117	10.732	Bromide
5	12.328	0.6357	1.363	2.657	Nitrate
6	14.372	0.4183	0.720	5.062	Phosphate
7	15.968	1.1548	1.926	15.234	Sulfate

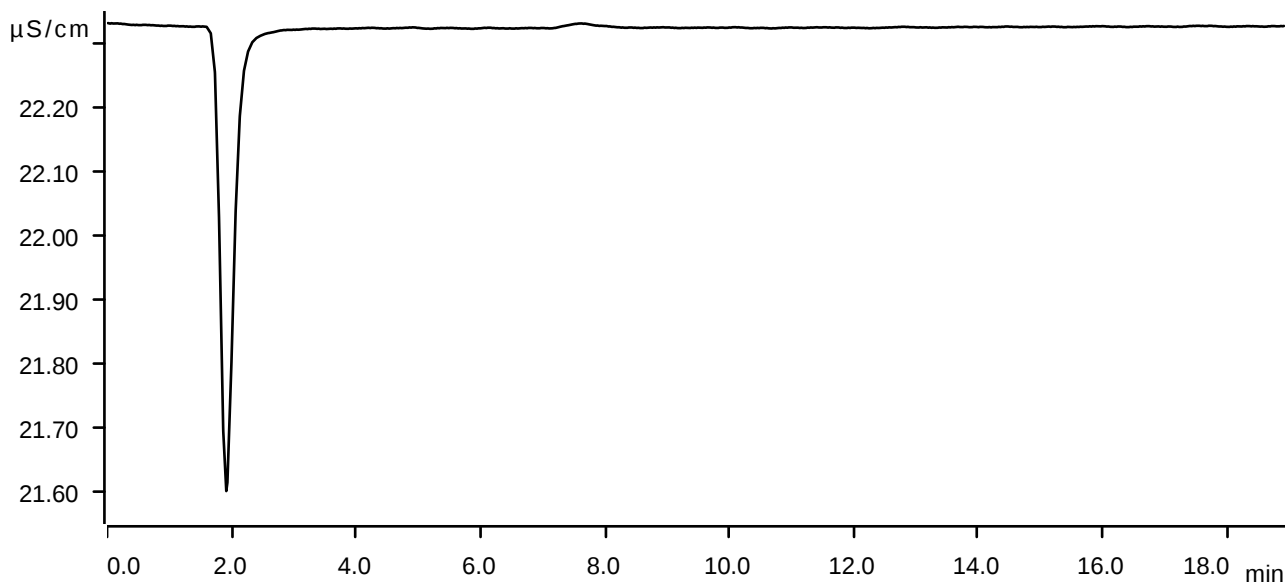
Sample data

Ident CCB
Sample type Sample
Determination start 2024-12-11 12:36:46 UTC-5
Method IC1-111824
Operator

Anions

Data source Conductivity detector 1 (Eco IC 1)
Channel Conductivity
Recording time 19.0 min
Integration Automatically
Column type Metrosep A Supp 19 - 150/4.0
Eluent composition not defined
Flow 0.700 mL/min
Maximum flow monitored yes
Pressure 11.99 MPa
Maximum pressure monitored yes
Temperature ---- °C

Anions



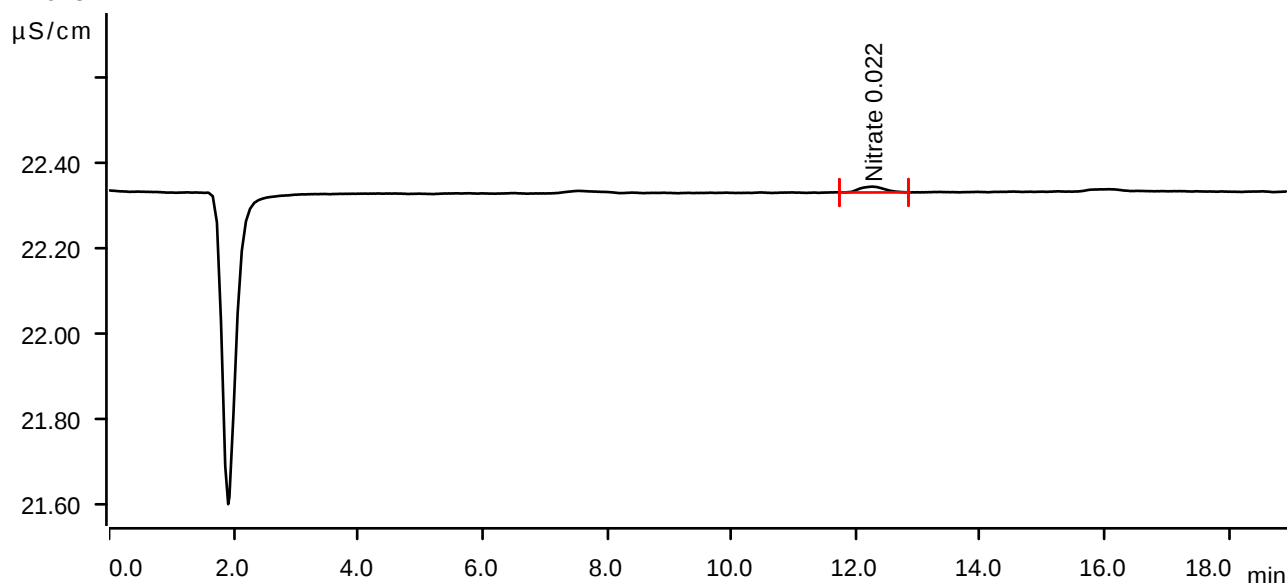
Sample data

Ident LB133881BLW
Sample type Sample
Determination start 2024-12-11 12:58:17 UTC-5
Method IC1-111824
Operator

Anions

Data source Conductivity detector 1 (Eco IC 1)
Channel Conductivity
Recording time 19.0 min
Integration Automatically
Column type Metrosep A Supp 19 - 150/4.0
Eluent composition not defined
Flow 0.700 mL/min
Maximum flow monitored yes
Pressure 11.94 MPa
Maximum pressure monitored yes
Temperature ---- °C

Anions



Peak number	Retention time	Area	Height	Concentration	Component name
	min	(µS/cm) x min	µS/cm	ppm	
1	12.262	0.0064	0.014	0.022	Nitrate

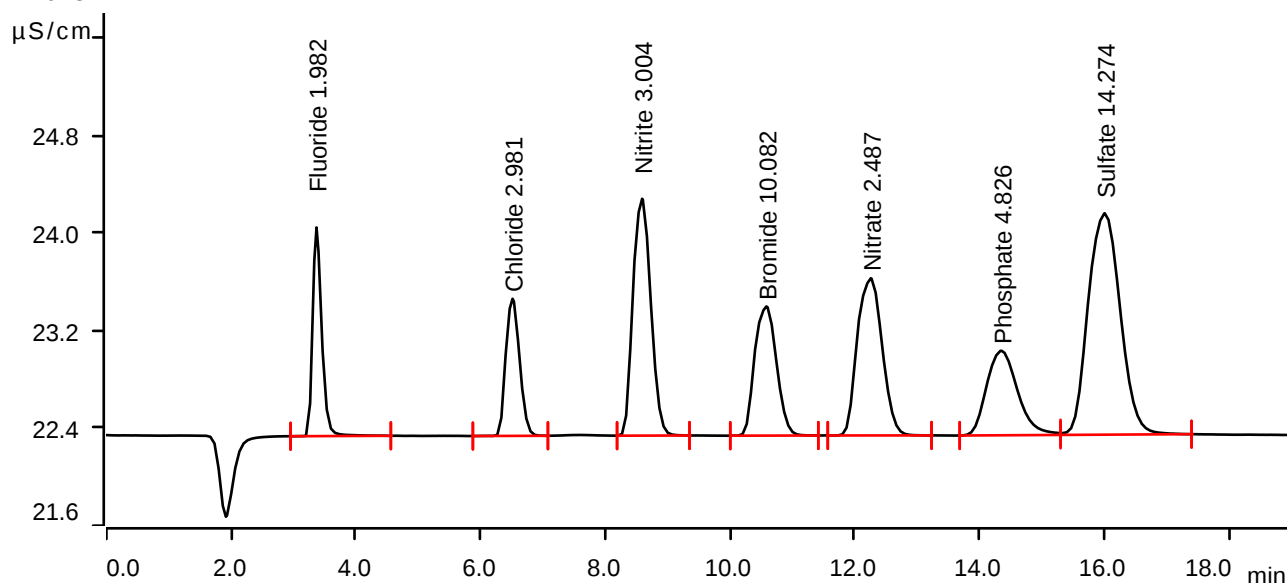
Sample data

Ident LB133881BSW
Sample type Check standard 1
Determination start 2024-12-11 13:19:48 UTC-5
Method IC1-111824
Operator

Anions

Data source Conductivity detector 1 (Eco IC 1)
Channel Conductivity
Recording time 19.0 min
Integration Automatically
Column type Metrosep A Supp 19 - 150/4.0
Eluent composition not defined
Flow 0.700 mL/min
Maximum flow monitored yes
Pressure 11.94 MPa
Maximum pressure monitored yes
Temperature ---- °C

Anions



Peak number	Retention time min	Area (µS/cm) x min	Height µS/cm	Concentration ppm	Component name
1	3.370	0.2871	1.711	1.982	Fluoride
2	6.513	0.2882	1.124	2.981	Chloride
3	8.590	0.6445	1.942	3.004	Nitrite
4	10.582	0.4288	1.059	10.082	Bromide
5	12.257	0.5952	1.289	2.487	Nitrate
6	14.352	0.3986	0.693	4.826	Phosphate
7	16.007	1.0814	1.815	14.274	Sulfate

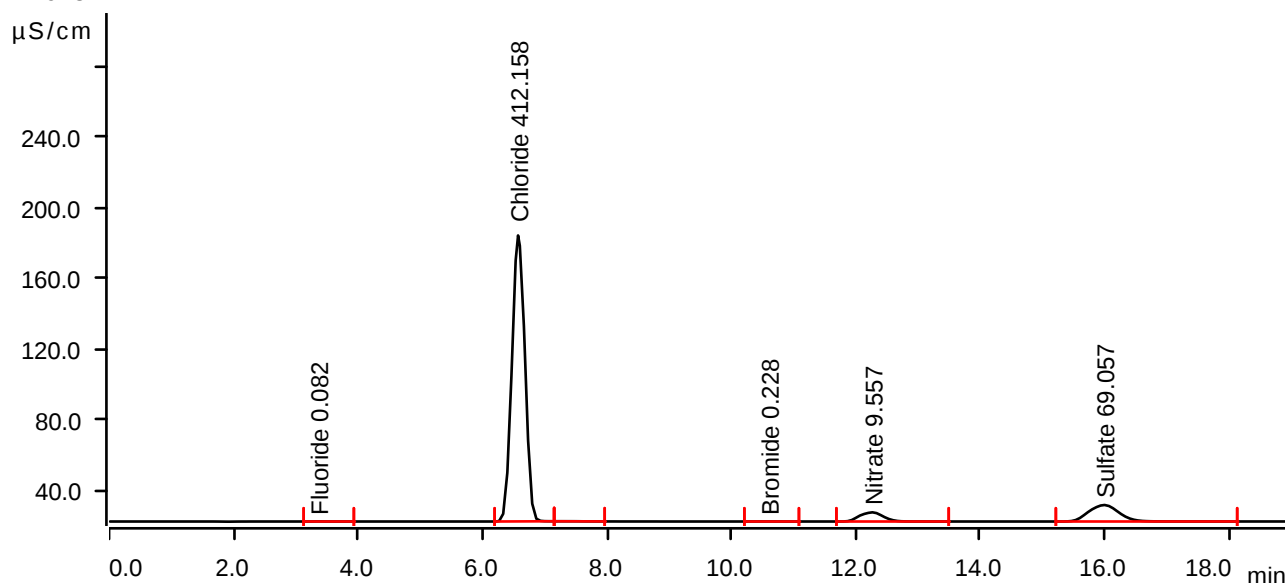
Sample data

Ident P5246-01
Sample type Sample
Determination start 2024-12-11 13:41:22 UTC-5
Method IC1-111824
Operator

Anions

Data source Conductivity detector 1 (Eco IC 1)
Channel Conductivity
Recording time 19.0 min
Integration Automatically
Column type Metrosep A Supp 19 - 150/4.0
Eluent composition not defined
Flow 0.700 mL/min
Maximum flow monitored yes
Pressure 12.16 MPa
Maximum pressure monitored yes
Temperature ---- °C

Anions



Peak number	Retention time min	Area (µS/cm) x min	Height µS/cm	Concentration ppm	Component name
1	3.363	0.0104	0.057	0.082	Fluoride
2	6.573	39.1699	161.913	412.158	Chloride
3	7.375	0.0206	0.052	invalid	
4	10.602	0.0105	0.027	0.228	Bromide
5	12.267	2.2837	5.193	9.557	Nitrate
6	15.993	5.2690	9.329	69.057	Sulfate

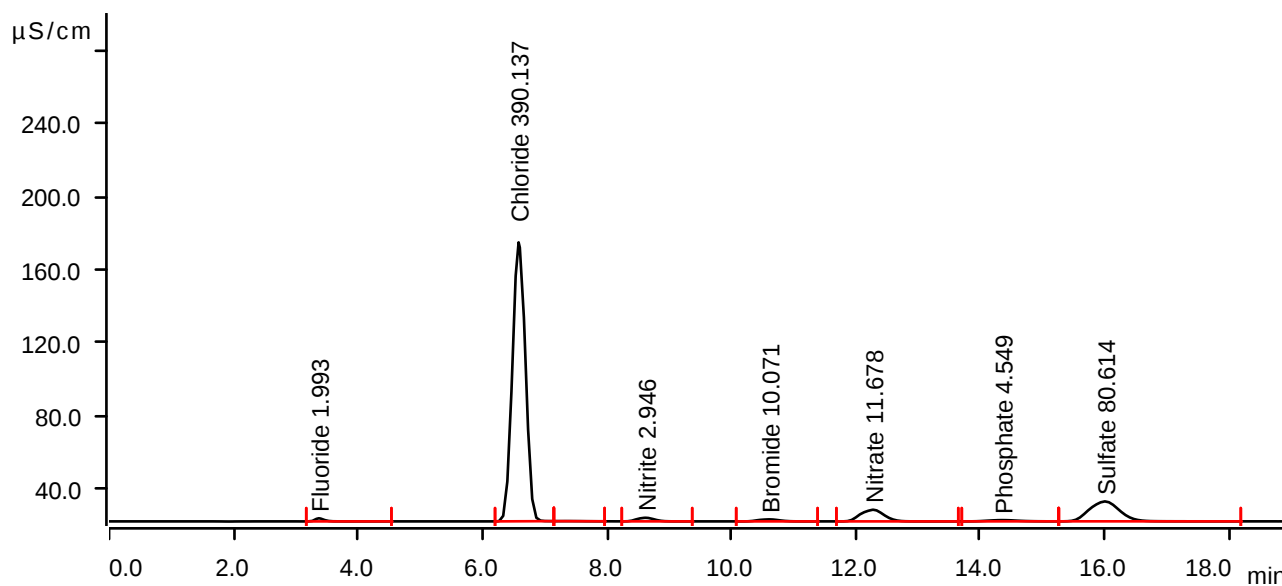
Sample data

Ident P5246-01MS
Sample type Sample
Determination start 2024-12-11 14:02:55 UTC-5
Method IC1-111824
Operator

Anions

Data source Conductivity detector 1 (Eco IC 1)
Channel Conductivity
Recording time 19.0 min
Integration Automatically
Column type Metrosep A Supp 19 - 150/4.0
Eluent composition not defined
Flow 0.700 mL/min
Maximum flow monitored yes
Pressure 11.94 MPa
Maximum pressure monitored yes
Temperature ---- °C

Anions



Peak number	Retention time min	Area (µS/cm) x min	Height µS/cm	Concentration ppm	Component name
1	3.372	0.2888	1.702	1.993	Fluoride
2	6.582	37.0774	152.481	390.137	Chloride
3	7.375	0.0218	0.055	invalid	
4	8.625	0.6320	1.956	2.946	Nitrite
5	10.613	0.4284	1.092	10.071	Bromide
6	12.282	2.7902	6.354	11.678	Nitrate
7	14.360	0.3756	0.675	4.549	Phosphate
8	16.005	6.1524	10.885	80.614	Sulfate

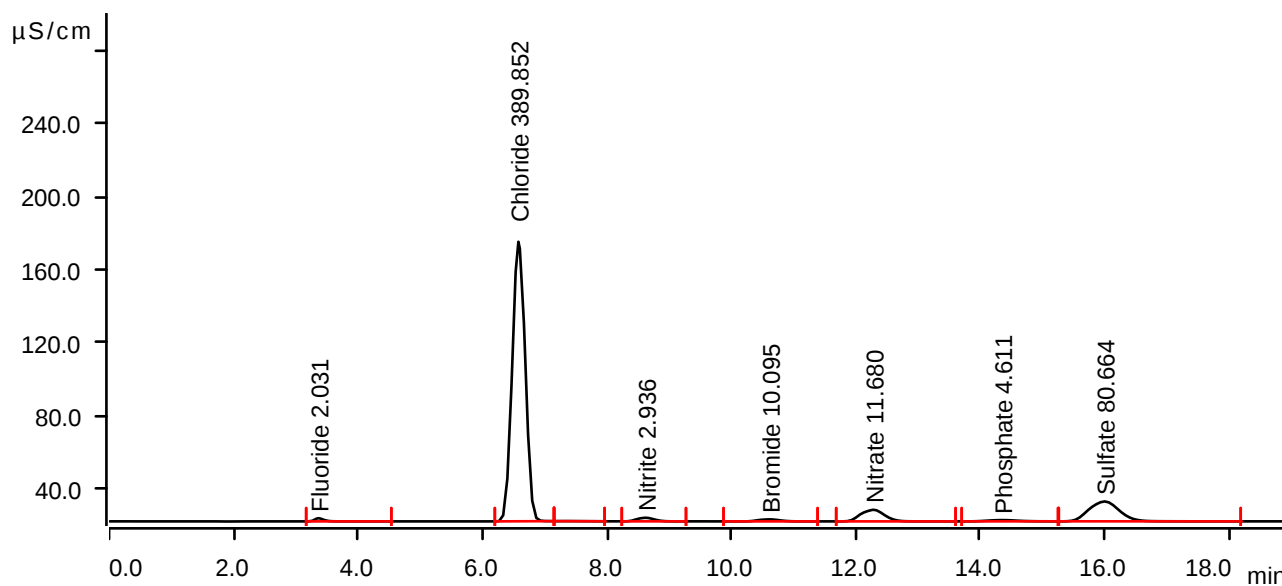
Sample data

Ident P5246-01MSD
Sample type Sample
Determination start 2024-12-11 14:24:29 UTC-5
Method IC1-111824
Operator

Anions

Data source Conductivity detector 1 (Eco IC 1)
Channel Conductivity
Recording time 19.0 min
Integration Automatically
Column type Metrosep A Supp 19 - 150/4.0
Eluent composition not defined
Flow 0.700 mL/min
Maximum flow monitored yes
Pressure 11.94 MPa
Maximum pressure monitored yes
Temperature ---- °C

Anions



Peak number	Retention time min	Area (µS/cm) x min	Height µS/cm	Concentration ppm	Component name
1	3.367	0.2943	1.738	2.031	Fluoride
2	6.578	37.0503	152.813	389.852	Chloride
3	7.377	0.0223	0.055	invalid	
4	8.625	0.6299	1.948	2.936	Nitrite
5	10.617	0.4294	1.090	10.095	Bromide
6	12.285	2.7906	6.331	11.680	Nitrate
7	14.352	0.3808	0.686	4.611	Phosphate
8	15.998	6.1562	10.875	80.664	Sulfate

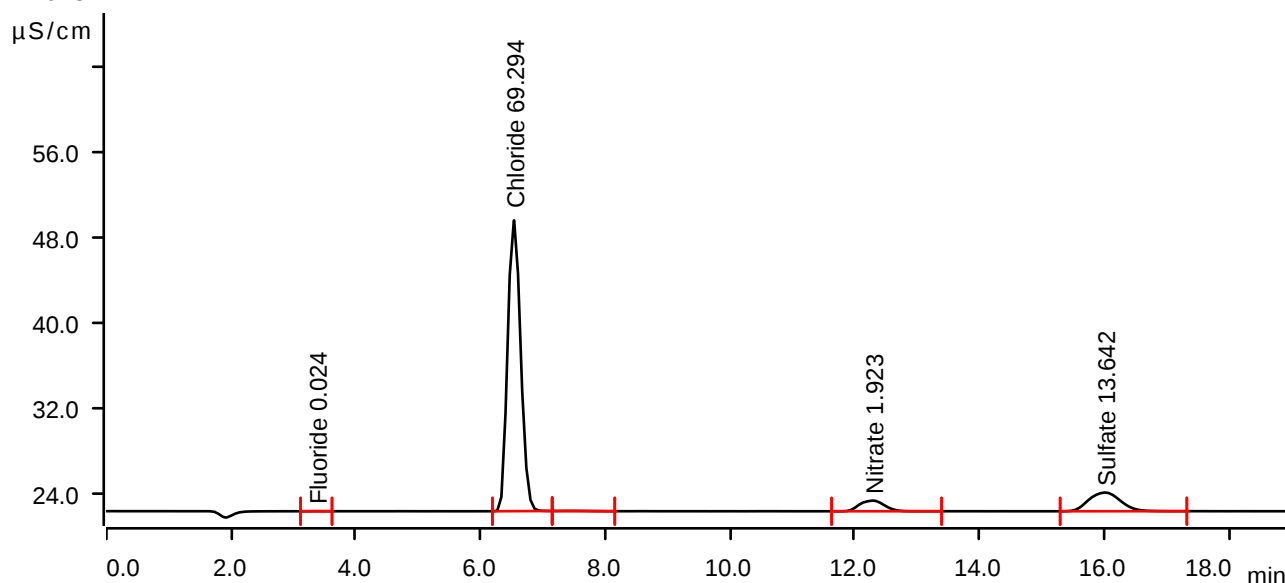
Sample data

Ident P5246-01DLX-5
Sample type Sample
Determination start 2024-12-11 14:46:03 UTC-5
Method IC1-111824
Operator

Anions

Data source Conductivity detector 1 (Eco IC 1)
Channel Conductivity
Recording time 19.0 min
Integration Automatically
Column type Metrosep A Supp 19 - 150/4.0
Eluent composition not defined
Flow 0.700 mL/min
Maximum flow monitored yes
Pressure 11.94 MPa
Maximum pressure monitored yes
Temperature ---- °C

Anions



Peak number	Retention time min	Area (µS/cm) x min	Height µS/cm	Concentration ppm	Component name
1	3.377	0.0020	0.012	0.024	Fluoride
2	6.538	6.5895	27.250	69.294	Chloride
3	7.465	0.0080	0.018	invalid	
4	12.293	0.4604	0.999	1.923	Nitrate
5	16.012	1.0331	1.752	13.642	Sulfate

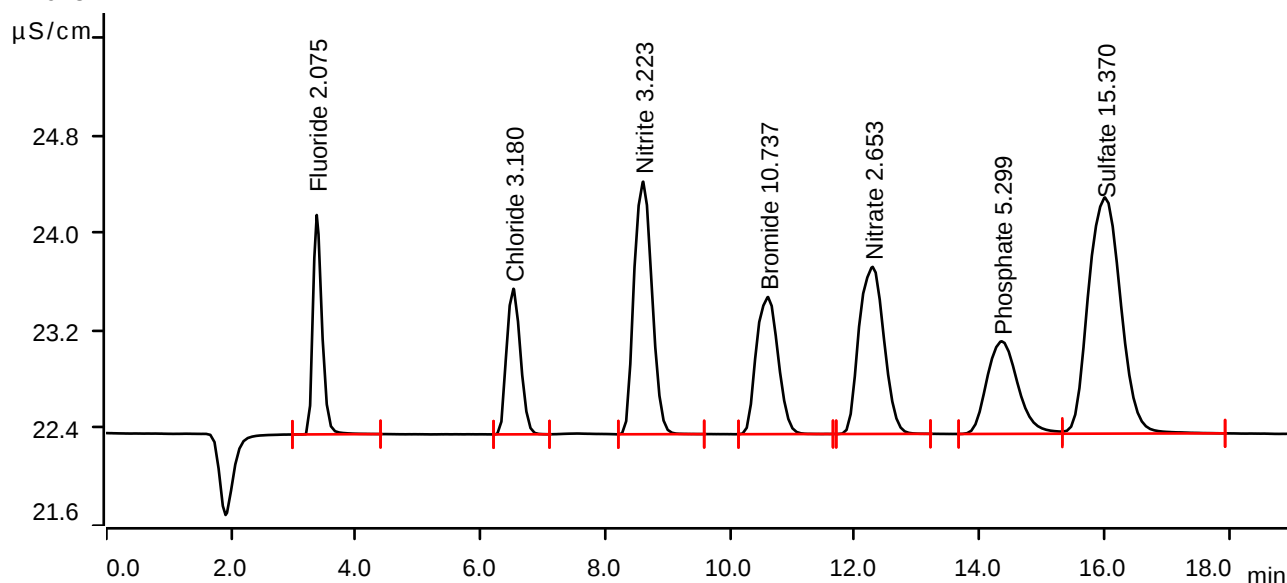
Sample data

Ident CCV
Sample type Check standard 1
Determination start 2024-12-11 15:07:37 UTC-5
Method IC1-111824
Operator

Anions

Data source Conductivity detector 1 (Eco IC 1)
Channel Conductivity
Recording time 19.0 min
Integration Automatically
Column type Metrosep A Supp 19 - 150/4.0
Eluent composition not defined
Flow 0.700 mL/min
Maximum flow monitored yes
Pressure 11.88 MPa
Maximum pressure monitored yes
Temperature ---- °C

Anions



Peak number	Retention time min	Area (µS/cm) x min	Height µS/cm	Concentration ppm	Component name
1	3.373	0.3007	1.799	2.075	Fluoride
2	6.527	0.3071	1.194	3.180	Chloride
3	8.608	0.6919	2.071	3.223	Nitrite
4	10.610	0.4567	1.124	10.737	Bromide
5	12.287	0.6347	1.370	2.653	Nitrate
6	14.355	0.4379	0.759	5.299	Phosphate
7	16.012	1.1652	1.937	15.370	Sulfate

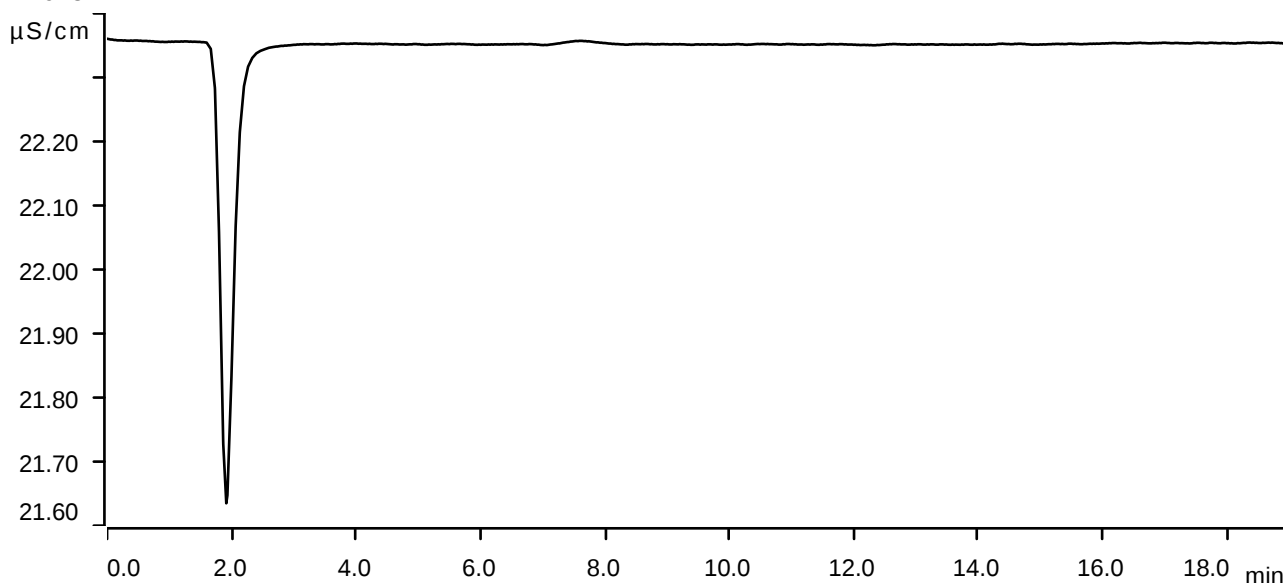
Sample data

Ident CCB
Sample type Sample
Determination start 2024-12-11 15:29:07 UTC-5
Method IC1-111824
Operator

Anions

Data source Conductivity detector 1 (Eco IC 1)
Channel Conductivity
Recording time 19.0 min
Integration Automatically
Column type Metrosep A Supp 19 - 150/4.0
Eluent composition not defined
Flow 0.700 mL/min
Maximum flow monitored yes
Pressure 11.88 MPa
Maximum pressure monitored yes
Temperature ---- °C

Anions



TOTAL Dissolved Solids - SM2540C

Run Number: LB133890

Date: 12/11/2024

SUPERVISOR: Iwona

ANALYST: Niha

BalanceID: WC SC-6

Filter ID: 17416528

EMPTY DISH				EMPTY DISH				OvenID:	WC OVEN-1	Thermo ID:	WET OVEN#1
TEMP IN:	103 °C	12/10/2024	11:00	TEMP OUT:	104 °C	12/10/2024	12:00				
TEMP1 IN:	103 °C	12/10/2024	12:30	TEMP1 OUT:	103 °C	12/10/2024	13:30	OvenID1:	WC OVEN-1	Thermo ID1:	WET OVEN#1
TEMP2 IN:	103 °C	12/10/2024	16:30	TEMP2 OUT:	103 °C	12/11/2024	09:30	OvenID2:	WC OVEN-2	Thermo ID2:	WET OVEN#2
TEMP3 IN:	180 °C	12/11/2024	10:00	TEMP3 OUT:	180 °C	12/11/2024	12:00	OvenID3:	WC OVEN-2	Thermo ID3:	WET OVEN#2

Dish #	Lab ID	Client ID	Empty Dish Weight (g)	Final Empty Dish Weight (g)	Sample Volume (ml)	1st Empty Dish+Sample weight after 1.5hr drying @180(±2) °C (g)	2nd Empty Dish+Sample weight after 1.5hr drying @180(±2) °C (g)	Final Empty Dish+Sample weight after 1.5hr drying @180(±2) °C (g)	Weight (g)	Result mg/L
1	LB133890BL	LB133890BL	90.7861	90.7861	100	90.7861	90.7861	90.7861	0.0000	0
2	LB133890BS	LB133890BS	91.4321	91.4321	100	91.4415	91.4415	91.4415	0.0094	94
3	P5246-01	MW7-20241209	91.6142	91.6142	100	91.7012	91.7012	91.7012	0.0870	870
4	P5246-01DUP	MW7-20241209DUP	90.2997	90.2997	100	90.3902	90.3902	90.3902	0.0905	905

A = Sample Volume (ml)
 B = Empty Dish Weight (g)
 C = 2nd Empty Dish + Sample weight after 1.5 hr drying @180(±2) °C(g)
 D = Weight (g)

Weight (g) =	C - B
Result mg/L =	$\frac{D}{A} * 1000 * 1000$

LB133890

WORKLIST(Hardcopy Internal Chain)

WorkList Name : TDS-12102024

WorkList ID : 186197

Department : Wet-Chemistry

Date : 12-10-2024 15:48:08

Sample	Customer Sample	Matrix	Test	Preservative	Customer	Raw Sample Storage Location	Collect Date	Method
P5246-01	MW7-20241209	Water	TDS	Cool 4 deg C	PARS02	L41	12/09/2024	SM2540 C

Date/Time 12.10.2024 16:00
Raw Sample Received by: NFWC
Raw Sample Relinquished by: JH CCCC

Date/Time 12.10.2024 17:00
Raw Sample Received by: JH AOC
Raw Sample Relinquished by: NFWC

Instrument ID: IC-2

Daily Analysis Runlog For Sequence/QC Batch ID # LB133881

Review By	Niha	Review On	12/12/2024 5:02:44 PM
Supervise By	Iwona	Supervise On	12/13/2024 10:15:22 AM
SubDirectory	LB133881	Test	Sulfate
STD. NAME	STD REF.#		
ICAL Standard	WP110752,WP110753,WP110754,WP110755,WP110756,WP110757,WP110758		
ICV Standard	WP110759		
CCV Standard	WP111055		
ICSA Standard	N/A		
CRI Standard	N/A		
LCS Standard	WP111056		
Chk Standard	WP110760,WP110761		

Sr#	SampleId	ClientID	QcType	Date	Comment	Operator	Status
1	STD1	STD1	CAL1	11/18/24 11:24	All standards, samples, and	NF/IZ	OK
2	STD2	STD2	CAL2	11/18/24 11:46	QC are filtered through	NF/IZ	OK
3	STD3	STD3	CAL3	11/18/24 12:07	0.45um, filter lot W3160	NF/IZ	OK
4	STD4	STD4	CAL4	11/18/24 12:29		NF/IZ	OK
5	STD5	STD5	CAL5	11/18/24 12:50		NF/IZ	OK
6	STD6	STD6	CAL6	11/18/24 13:11		NF/IZ	OK
7	STD7	STD7	CAL7	11/18/24 13:33		NF/IZ	OK
8	ICV1	ICV1	ICV	11/18/24 13:54		NF/IZ	OK
9	ICB1	ICB1	ICB	11/18/24 14:16		NF/IZ	OK
10	CCV1	CCV1	CCV	12/11/24 12:15		NF/IZ	OK
11	CCB1	CCB1	CCB	12/11/24 12:36		NF/IZ	OK
12	LB133881BLW	LB133881BLW	MB	12/11/24 12:58		NF/IZ	OK
13	LB133881BSW	LB133881BSW	LCS	12/11/24 13:19		NF/IZ	OK
14	P5246-01	MW7-20241209	SAM	12/11/24 13:41		NF/IZ	OK
15	P5246-01MS	MW7-20241209MS	MS	12/11/24 14:02	9.5ml of sample, 0.5mL W3091	NF/IZ	OK
16	P5246-01MSD	MW7-20241209MSD	MSD	12/11/24 14:24	9.5ml of sample, 0.5mL W3091	NF/IZ	OK
17	P5246-01DL	MW7-20241209DL	SAM	12/11/24 14:46		NF/IZ	OK
18	CCV2	CCV2	CCV	12/11/24 15:07		NF/IZ	OK

Instrument ID: IC-2

Daily Analysis Runlog For Sequence/QC Batch ID # LB133881

Review By	Niha	Review On	12/12/2024 5:02:44 PM
Supervise By	Iwona	Supervise On	12/13/2024 10:15:22 AM
SubDirectory	LB133881	Test	Sulfate
STD. NAME	STD REF.#		
ICAL Standard	WP110752,WP110753,WP110754,WP110755,WP110756,WP110757,WP110758		
ICV Standard	WP110759		
CCV Standard	WP111055		
ICSA Standard	N/A		
CRI Standard	N/A		
LCS Standard	WP111056		
Chk Standard	WP110760,WP110761		

19	CCB2	CCB2	CCB	12/11/24 15:29		NF/IZ	OK
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Instrument ID: WC SC-3

Daily Analysis Runlog For Sequence/QC Batch ID # LB133890

Review By	Niha	Review On	12/11/2024 2:01:25 PM
Supervise By	Iwona	Supervise On	12/11/2024 2:05:23 PM
SubDirectory	LB133890	Test	TDS
STD. NAME	STD REF.#		
ICAL Standard	N/A		
ICV Standard	N/A		
CCV Standard	N/A		
ICSA Standard	N/A		
CRI Standard	N/A		
LCS Standard	N/A		
Chk Standard	N/A		

Sr#	SampleId	ClientID	QcType	Date	Comment	Operator	Status
1	LB133890BL	LB133890BL	MB	12/10/24 16:30		Niha	OK
2	LB133890BS	LB133890BS	LCS	12/10/24 16:30		Niha	OK
3	P5246-01	MW7-20241209	SAM	12/10/24 16:30		Niha	OK
4	P5246-01DUP	MW7-20241209DUP	DUP	12/10/24 16:30		Niha	OK

Prep Standard - Chemical Standard Summary

Order ID : P5246

Test : Sulfate,TDS

Prepbatch ID :

Sequence ID/Qc Batch ID: LB133881, LB133890,

Standard ID :

WP110259, WP110752, WP110753, WP110754, WP110755, WP110756, WP110757, WP110758, WP110759, WP110760, WP
110761, WP111055, WP111056,

Chemical ID :

M5673, W2647, W3058, W3062, W3063, W3112,



<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
4035	IC ELUENT CONCENTRATE FOR IC-1	WP110259	10/16/2024	04/16/2025	Iwona Zarych	WETCHEM_SCALE_5 (WCS-5)	None	Jignesh Parikh 10/17/2024
<u>FROM</u> 2.10000gram of W2647 + 84.75000gram of W3058 + 913.15000ml of W3112 = Final Quantity: 1000.000 ml								

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipettelD</u>	<u>Supervised By</u>
2487	Anions 300/9056 calibration standard 1	WP110752	11/18/2024	11/19/2024	Niha Farheen Shaik	None	None	Iwona Zarych 11/19/2024
<u>FROM</u> 10.00000ml of W3112 = Final Quantity: 10.000 ml								



<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
24	Anions 300/9056 calibration standard 2	WP110753	11/18/2024	11/19/2024	Niha Farheen Shaik	None	WETCHEM_FIPETTE_3 (WC)	Iwona Zarych 11/19/2024
<u>FROM</u> 0.20000ml of W3063 + 9.80000ml of W3112 = Final Quantity: 10.000 ml								

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
25	Anions 300/9056 calibration standard 3	WP110754	11/18/2024	11/19/2024	Niha Farheen Shaik	None	WETCHEM_FIPETTE_3 (WC)	Iwona Zarych 11/19/2024
<u>FROM</u> 0.40000ml of W3063 + 9.60000ml of W3112 = Final Quantity: 10.000 ml								

Wet Chemistry STANDARD PREPARATION LOG

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
26	Anions 300/9056 calibration standard 4	WP110755	11/18/2024	11/19/2024	Niha Farheen Shaik	None	WETCHEM_FIPETTE_3 (WC)	Iwona Zarych 11/19/2024
FROM 0.50000ml of W3063 + 9.50000ml of W3112 = Final Quantity: 10.000 ml								

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
3680	Anions 300/9056 calibration standard 5-CCV	WP110756	11/18/2024	11/19/2024	Niha Farheen Shaik	None	None	Iwona Zarych 11/19/2024
FROM 45.00000ml of W3112 + 5.00000ml of W3063 = Final Quantity: 50.000 ml								

Wet Chemistry STANDARD PREPARATION LOG

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
3679	Anions 300/9056 calibration standard 6	WP110757	11/18/2024	11/19/2024	Niha Farheen Shaik	None	None	Iwona Zarych 11/19/2024

FROM 2.00000ml of W3063 + 8.00000ml of W3112 = Final Quantity: 10.000 ml

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
3681	Anions 300/9056 calibration standard 7	WP110758	11/18/2024	11/19/2024	Niha Farheen Shaik	None	None	Iwona Zarych 11/19/2024

FROM 2.50000ml of W3063 + 7.50000ml of W3112 = Final Quantity: 10.000 ml

Wet Chemistry STANDARD PREPARATION LOG

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
3233	Anions 300/9056 ICV-LCS std	WP110759	11/18/2024	11/19/2024	Niha Farheen Shaik	None	None	Iwona Zarych 11/19/2024

FROM 45.00000ml of W3112 + 5.00000ml of W3062 = Final Quantity: 50.000 ml

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
4036	IC ELUENT FOR IC-1	WP110760	11/18/2024	12/18/2024	Niha Farheen Shaik	None	None	Iwona Zarych 11/19/2024

FROM 1980.00000ml of W3112 + 20.00000ml of WP110259 = Final Quantity: 2000.000 ml

Wet Chemistry STANDARD PREPARATION LOG

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
4037	IC H2SO4 FOR IC-1	WP110761	11/18/2024	12/18/2024	Niha Farheen Shaik	None	None	Iwona Zarych
								11/19/2024

FROM 5.60000ml of M5673 + 994.40000ml of W3112 = Final Quantity: 1000.000 ml

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
3680	Anions 300/9056 calibration standard 5-CCV	WP111055	12/11/2024	12/12/2024	Niha Farheen Shaik	None	None	Iwona Zarych
								12/12/2024

FROM 45.00000ml of W3112 + 5.00000ml of W3063 = Final Quantity: 50.000 ml



<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
3233	Anions 300/9056 ICV-LCS std	WP111056	12/11/2024	12/12/2024	Niha Farheen Shaik	None	None	Iwona Zarych 12/12/2024
<u>FROM</u> 45.00000ml of W3112 + 5.00000ml of W3062 = Final Quantity: 50.000 ml								

CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	BA-9673-33 / Sulfuric Acid, Instra-Analyzed (cs/6c2.5L)	23D2462010	03/20/2028	09/21/2023 / mohan	09/05/2023 / mohan	M5673

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
PCI Scientific Supply, Inc.	J3506-5 / SODIUM BICARBONATE, PWD, ACS, 2.5KG	0000240594	06/03/2026	02/24/2020 / AMANDEEP	01/20/2020 / apatel	W2647

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
PCI Scientific Supply, Inc.	EM-SX0395-3 / SODIUM CARBONATE ANHYDR 2.5KG	2023012653	10/19/2028	09/03/2024 / jignesh	10/19/2023 / lwona	W3058

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Inorganic Ventures	300-CAL-A-500ML / 300.0 Calibration Standard, 500 ml	T2-MEB716667	02/12/2025	02/12/2024 / lwona	10/30/2023 / lwona	W3062

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Inorganic Ventures	300-CAL-A-500ML / 300.0 Calibration Standard, 500 ml	U2-MEB735684	04/09/2025	04/09/2024 / lwona	11/16/2023 / lwona	W3063

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	DIW / DI Water	Daily Lab-Certified	07/03/2029	07/03/2024 / lwona	07/03/2024 / lwona	W3112

Sodium Bicarbonate, Powder
BAKER ANALYZED® A.C.S. Reagent

(sodium hydrogen carbonate)



Material No.: 3506-05
Batch No.: 0000240594
Manufactured Date: 2019/06/05
Retest Date: 2026/06/03
Revision No: 1

Certificate of Analysis

Meets ACS Reagent Chemical Requirements,

Test	Specification	Result
Assay (NaHCO ₃) (dried basis)	99.7 – 100.3 %	100.1
Insoluble Matter	<= 0.015 %	< 0.002
Chloride (Cl)	<= 0.003 %	0.003
Phosphate (PO ₄)	<= 0.001 %	0.001
Sulfur Compounds (as SO ₄)	<= 0.003 %	0.003
Calcium (Ca)	<= 0.02 %	0.02
Trace Impurities – Iron (Fe)	<= 0.001 %	0.001
Magnesium (Mg)	<= 0.005 %	0.005
Potassium (K)	<= 0.005 %	0.005
Ammonium (NH ₄)	<= 5 ppm	5
Trace Impurities – ACS – Heavy Metals (as Pb)	<= 5 ppm	5

For Laboratory, Research or Manufacturing Use
Meets Reagent Specifications for testing USP/NF monographs

Country of Origin: US
Packaging Site: Paris Mfg Ctr & DC

James Ethier
Jamie Ethier
Vice President Global Quality

For questions on this Certificate of Analysis please contact Technical Services at 855.282.6867 or +1.610.386.1700
Avantor Performance Materials, LLC
100 Matsonford Rd, Suite 200, Radnor, PA 19087. U.S.A. Phone: 610.386.1700

Certificate Of Analysis



W 3058

Re. 10/19/23 12

Date of Release: 1/27/2023

Name: **Sodium Carbonate, Anhydrous**

Powder, ACS

Item No: **SX0395 All Sizes**

Lot / Batch No: **2023012653**

Country of Origin: **India**

Item	Specifications	Analysis
Assay (calculated on dried substance)	99.5% min.	100.2%
Calcium (Ca)	0.03% max.	0.004%
Chloride (Cl)	0.001% max.	<0.001%
Color	White	Passes Test
Form	Powder	Passes Test
Heavy metals (by ICP-OES)	5 ppm max.	<5 ppm
Insoluble Matter	0.01% max.	0.003%
Iron (Fe)	5 ppm max.	<5 ppm
Loss on heating at 285C	1.0% max.	0.1%
Magnesium (Mg)	0.005% max.	0.0008%
Phosphate (PO ₄)	0.001% max.	<0.001%
Potassium (K)	0.005% max.	0.003%
Silica (SiO ₂)	0.005% max.	<0.005%
Sulfur compounds (as SO ₄)	0.003% max.	<0.003%

Joe Schoellkopf

Quality Control Manager

This document has been produced electronically and is valid without a signature.

EMD Millipore is a division of Merck KGaA, Darmstadt, Germany

EMD Millipore Corporation

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U.S.A.

Form number: 00005624CA, Rev. 2.0

Certificate of Analysis

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Christiansburg, VA 24073 USA
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F: 540-585-3012

info@inorganicventures.com

N 3062

rec on 10/30/23
12

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).



2.0 PRODUCT DESCRIPTION

Product Code: Multi Analyte Ion Chromatography Solution
Catalog Number: 300-CAL-A
Lot Number: T2-MEB716667
Matrix: H2O
Value / Analyte(s):
150 µg/mL ea:
Sulfate,
100 µg/mL ea:
Bromide,
50 µg/mL ea:
o-Phosphate as P,
30 µg/mL ea:
Chloride, Nitrite as N,
25 µg/mL ea:
Nitrate as N,
20 µg/mL ea:
Fluoride

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Bromide, Br	100.0 ± 0.5 µg/mL	Chloride, Cl	30.00 ± 0.13 µg/mL
Fluoride, F-	20.00 ± 0.06 µg/mL	Nitrate as N, NNO3-	25.00 ± 0.09 µg/mL
Nitrite as N, NNO2-	30.00 ± 0.15 µg/mL	o-Phosphate as P, PPO4	50.00 ± 0.30 µg/mL
Sulfate, SO4	150.0 ± 0.9 µg/mL		

Density: 0.999 g/mL (measured at 20 ± 4 °C)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Br	IC Assay	3184	151130
Br	Fajans	999c	999c
Cl	IC Assay	3182	060925
Cl	Fajans	999c	999c
Cl	Calculated		See Sec. 4.2
F-	IC Assay	3183	140203
NNO3-	IC Assay	3185	050517
NNO2-	IC Assay		traceable to 40h
PPO4	IC Assay	3186	170606
SO4	IC Assay	3181	080603

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of $k = 2$.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$$X_{CRM/RM} = \sum (w_i) (X_i)$$

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$$w_i = (1/u_{char\ i}^2) / (\sum (1/(u_{char\ i}^2)))$$

$$CRM/RM \text{ Expanded Uncertainty } (z) = U_{CRM/RM} = k (u_{char}^2 + u_{bb}^2 + u_{lts}^2 + u_{ts}^2)^{1/2}$$

k = coverage factor = 2

$u_{char} = [\sum ((w_i)^2 (u_{char\ i}^2))]^{1/2}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$$X_{CRM/RM} = (X_a) (u_{char\ a})$$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

$$CRM/RM \text{ Expanded Uncertainty } (z) = U_{CRM/RM} = k (u_{char\ a}^2 + u_{bb}^2 + u_{lts}^2 + u_{ts}^2)^{1/2}$$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 CHROMATOGRAM

N/A

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit www.inorganicventures.com/TCT

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

March 17, 2022

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **March 17, 2027**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Thomas Kozikowski
Manager, Quality Control



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director



Certificate of Analysis

300 Technology Drive
Christiansburg, VA 24073 USA
inorganicventures.com

P: 800-669-6799/540-585-3030
F: 540-585-3012
info@inorganicventures.com

W3063
rec. 11/16/23 12

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).



2.0 PRODUCT DESCRIPTION

Product Code: Multi Analyte Ion Chromatography Solution
Catalog Number: 300-CAL-A
Lot Number: U2-MEB735684
Matrix: H₂O
Value / Analyte(s):
150 µg/mL ea:
Sulfate,
100 µg/mL ea:
Bromide,
50 µg/mL ea:
o-Phosphate as P,
30 µg/mL ea:
Chloride, Nitrite as N,
25 µg/mL ea:
Nitrate as N,
20 µg/mL ea:
Fluoride

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Bromide, Br	100.0 ± 0.5 µg/mL	Chloride, Cl	30.00 ± 0.14 µg/mL
Fluoride, F-	20.00 ± 0.06 µg/mL	Nitrate as N, NNO ₃ -	25.00 ± 0.09 µg/mL
Nitrite as N, NNO ₂ -	30.00 ± 0.15 µg/mL	o-Phosphate as P, PPO ₄	50.00 ± 0.18 µg/mL
Sulfate, SO ₄	150.0 ± 0.8 µg/mL		

Density: 0.999 g/mL (measured at 20 ± 4 °C)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Br	IC Assay	3184	151130
Br	Fajans	999c	999c
Cl	IC Assay	3182	190830
Cl	Fajans	999c	999c
F-	IC Assay	3183	140203
NNO3-	IC Assay	3185	170309
NNO2-	IC Assay		traceable to 40h
PPO4	IC Assay	3186	170606
SO4	IC Assay	3181	080603

- The Calculated Value is a value calculated from the weight of a starting material that has been certified directly vs. a National Institute of Standards and Technology (NIST) SRM/RM. See Sec 4.2 for balance traceability.

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of $k = 2$.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$$X_{CRM/RM} = \sum(w_i) (X_i)$$

X_i = mean of Assay Method i with standard uncertainty $u_{char i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$$w_i = (1/u_{char i}^2) / (\sum(1/u_{char i}^2))$$

$$CRM/RM \text{ Expanded Uncertainty } (z) = U_{CRM/RM} = k (u_{char}^2 + u_{bb}^2 + u_{lts}^2 + u_{ts}^2)^{1/2}$$

k = coverage factor = 2

$u_{char} = [\sum((w_i)^2 (u_{char i}^2))]^{1/2}$ where $u_{char i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$$X_{CRM/RM} = (X_a) (u_{char a})$$

X_a = mean of Assay Method A with

$u_{char a}$ = the standard uncertainty of characterization Method A

$$CRM/RM \text{ Expanded Uncertainty } (z) = U_{CRM/RM} = k (u_{char a}^2 + u_{bb}^2 + u_{lts}^2 + u_{ts}^2)^{1/2}$$

k = coverage factor = 2

$u_{char a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 CHROMATOGRAM

N/A

6.0 INTENDED USE

6.1 This standard is intended for the calibration of analytical instruments and validation of analytical methods as appropriate. This CRM may be used in connection with EPA Methods 6010, 6020 (all versions), Standard Methods 3120 B and USP <232> / ICH Q3D.

6.2 For products attaining traceability through Inorganic Ventures' Primary Certified Reference Materials (PCRM™) see the Limited License to Use PCRM™ in the Inorganic Ventures Terms and Conditions of Sale, <https://www.inorganicventures.com/terms-and-conditions-sale>. The Terms and Conditions contain information on the use of materials traceable to PCRM™ certified reference materials. This Limited License agreement is especially pertinent for laboratories accredited under ISO:17034.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.
- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.
- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.
- For more information, visit www.inorganicventures.com/TCT

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

August 10, 2023

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **August 10, 2028**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0

NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Prepared By:

Justin Dirico
Stock Processing Supervisor



Certificate Approved By:

Nicholas Plymale
Custom VSM Coordinator



Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director



Sulfuric Acid
BAKER INSTRA-ANALYZED® Reagent
For Trace Metal Analysis
Low Selenium

 **avantor**™



Material No.: 9673-33
Batch No.: 23D2462010
Manufactured Date: 2023-03-22
Retest Date: 2028-03-20
Revision No.: 0

Certificate of Analysis

Test	Specification	Result
ACS – Assay (H ₂ SO ₄)	95.0 – 98.0 %	96.1 %
Appearance	Passes Test	Passes Test
ACS – Color (APHA)	≤ 10	5
ACS – Residue after Ignition	≤ 3 ppm	< 1 ppm
ACS – Substances Reducing Permanganate (as SO ₂)	≤ 2 ppm	< 2 ppm
Ammonium (NH ₄)	≤ 1 ppm	1 ppm
Chloride (Cl)	≤ 0.1 ppm	< 0.1 ppm
Nitrate (NO ₃)	≤ 0.2 ppm	< 0.1 ppm
Phosphate (PO ₄)	≤ 0.5 ppm	< 0.1 ppm
Trace Impurities – Aluminum (Al)	≤ 30.0 ppb	< 5.0 ppb
Arsenic and Antimony (as As)	≤ 4.0 ppb	< 2.0 ppb
Trace Impurities – Boron (B)	≤ 10.0 ppb	8.5 ppb
Trace Impurities – Cadmium (Cd)	≤ 2.0 ppb	< 0.3 ppb
Trace Impurities – Chromium (Cr)	≤ 6.0 ppb	< 0.4 ppb
Trace Impurities – Cobalt (Co)	≤ 0.5 ppb	< 0.3 ppb
Trace Impurities – Copper (Cu)	≤ 1.0 ppb	< 0.1 ppb
Trace Impurities – Gold (Au)	≤ 10.0 ppb	0.5 ppb
Heavy Metals (as Pb)	≤ 500.0 ppb	< 100.0 ppb
Trace Impurities – Iron (Fe)	≤ 50.0 ppb	1.3 ppb
Trace Impurities – Lead (Pb)	≤ 0.5 ppb	< 0.5 ppb
Trace Impurities – Magnesium (Mg)	≤ 7.0 ppb	0.8 ppb
Trace Impurities – Manganese (Mn)	≤ 1.0 ppb	< 0.4 ppb
Trace Impurities – Mercury (Hg)	≤ 0.5 ppb	< 0.1 ppb
Trace Impurities – Nickel (Ni)	≤ 2.0 ppb	0.3 ppb
Trace Impurities – Potassium (K)	≤ 500.0 ppb	< 2.0 ppb
Trace Impurities – Selenium (Se)	≤ 50.0 ppb	< 0.1 ppb
Trace Impurities – Silicon (Si)	≤ 100.0 ppb	31.5 ppb
Trace Impurities – Silver (Ag)	≤ 1.0 ppb	< 0.3 ppb

>>> Continued on page 2 >>>

Sulfuric Acid
BAKER INSTRA-ANALYZED® Reagent
For Trace Metal Analysis
Low Selenium



Material No.: 9673-33
Batch No.: 23D2462010

Test	Specification	Result
Trace Impurities – Sodium (Na)	≤ 500.0 ppb	5.4 ppb
Trace Impurities – Strontium (Sr)	≤ 5.0 ppb	< 0.2 ppb
Trace Impurities – Tin (Sn)	≤ 5.0 ppb	< 0.8 ppb
Trace Impurities – Zinc (Zn)	≤ 5.0 ppb	0.4 ppb

For Laboratory, Research, or Manufacturing Use

Country of Origin: USA
Packaging Site: Phillipsburg Mfg Ctr & DC

A handwritten signature in cursive script that reads 'James Ethier'.
Jamie Ethier
Vice President Global Quality



SHIPPING DOCUMENTS

CLIENT INFORMATION

REPORT TO BE SENT TO:

COMPANY: Parsons
ADDRESS: 301 Plainfield Rd.
CITY Syracuse STATE: NY ZIP: 13212
ATTENTION: Stephen Liberatore
PHONE: 315-418-8767 FAX:

CLIENT PROJECT INFORMATION

PROJECT NAME: Con Ed Atlantic Ave
PROJECT NO.: 453957 LOCATION: Brooklyn, NY
PROJECT MANAGER: Stephen Liberatore
e-mail: stephen.liberatore@parsons.com
PHONE: 315-418-8767 FAX:

CLIENT BILLING INFORMATION

BILL TO: Parsons PO#:
ADDRESS: 301 Plainfield Rd.
CITY Syracuse STATE: NY ZIP: 13212
ATTENTION: Stephen L. PHONE: 315-418-8767

ANALYSIS

DATA TURNAROUND INFORMATION

FAX (RUSH) Standard DAYS*
HARDCOPY (DATA PACKAGE): Standard DAYS*
EDD: Standard DAYS*
*TO BE APPROVED BY CHEMTECH
STANDARD HARDCOPY TURNAROUND TIME IS 10 BUSINESS

DATA DELIVERABLE INFORMATION

☐ Level 1 (Results Only) ☐ Level 4 (QC + Full Raw Data)
☐ Level 2 (Results + QC) ☐ NJ Reduced ☐ US EPA CLP
☐ Level 3 (Results + QC) ☐ NYS ASP A ☐ NYS ASP B
+ Raw Data ☐ Other _____
☐ EDD FORMAT

VOC+TICS
Sulfate
TDS

PRESERVATIVES

COMMENTS

ALLIANCE SAMPLE ID	PROJECT SAMPLE IDENTIFICATION	SAMPLE MATRIX	SAMPLE TYPE		SAMPLE COLLECTION		# OF BOTTLES										COMMENTS ← Specify Preservatives A-HCl D-NaOH B-HNO3 E-ICE C-H2SO4 F-OTHER
			COMP	GRAB	DATE	TIME		A	E	E							
1.	MW7-20241209	GW		X	12-9-24	1216	4	X	X	X							
2.	MW Trip Blank	W		X	12-8-24		2	X									
3.																	
4.																	
5.																	
6.																	
7.																	
8.																	
9.																	
10.																	

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION INCLUDING COURIER DELIVERY

RELINQUISHED BY SAMPLER: 1. <u>Bill Chaky</u>	DATE/TIME: <u>12-09-24/5:10</u>	RECEIVED BY: <u>[Signature]</u>	Conditions of bottles or coolers at receipt: ☐ COMPLIANT ☐ NON COMPLIANT ☐ COOLER TEMP <u>3.2°C</u> °C
RELINQUISHED BY SAMPLER: 2.	DATE/TIME:	RECEIVED BY: 2.	Comments: <u>IR Benth</u>
RELINQUISHED BY SAMPLER: 3.	DATE/TIME:	RECEIVED BY: 3.	Page ____ of CLIENT: ☐ Hand Delivered ☐ Other Shipment Complete ☐ YES ☐ NO



284 Sheffield Street, Mountainside NJ 07092 (908)-789-8900 Fax : 908 789 8922

Laboratory Certification

Certified By	License No.
CAS EPA CLP Contract	68HERH20D0011
Connecticut	PH-0830
DOD ELAP (ANAB)	L2219
Maine	2024021
Maryland	296
New Hampshire	255424 Rev 1
New Jersey	20012
New York	11376
Pennsylvania	68-00548
Soil Permit	525-24-234-08441
Texas	T104704488

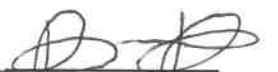
LOGIN REPORT/SAMPLE TRANSFER

Order ID : P5246	PARS02	Order Date : 12/10/2024 3:15:00 PM	Project Mgr :
Client Name : PARSONS Main of New Yc		Project Name : Con Edison Non-MGP - Atl	Report Type : Results Only
Client Contact : Stephen Liberatore		Receive DateTime : 12/10/2024 3:10:00 PM	EDD Type : Excel NY
Invoice Name : PARSONS Main of New Yc		Purchase Order :	Hard Copy Date :
Invoice Contact : Stephen Liberatore			Date Signoff :

LAB ID	CLIENT ID	MATRIX	SAMPLE DATE	SAMPLE TIME	TEST	TEST GROUP	METHOD	FAX DATE	DUE DATES
P5246-01	MW7-20241209	Water	12/09/2024	12:16					
					VOCMS Group1		8260-Low	10 Bus. Days	
P5246-02	TRIP-BLANK	Water	12/09/2024	00:00					
					VOCMS Group1		8260-Low	10 Bus. Days	

Relinquished By :

Date / Time :


12-10-24 1527

Received By :

Date / Time :


12/10/24 15:27 NEST 4

Storage Area : VOA Refridgerator Room