

DATA PACKAGE GENERAL CHEMISTRY

PROJECT NAME : FT MEADE TIPTON AIRFIELD PARCEL RI - PO 0111169

WESTON SOLUTIONS

1400 Weston Way

PO Box 2653

West Chester, PA - 19380

Phone No: 610-701-7400

ORDER ID : P5022

ATTENTION : Nathan Fretz



Laboratory Certification ID # 20012



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Cover Page

Order ID : P5022

Project ID : Ft Meade Tipton Airfield Parcel RI - PO 0111169

Client : Weston Solutions

Lab Sample Number

P5022-01

Client Sample Number

TAPIAL2-SB02D-13-112424-00-T1

I certify that the data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the laboratory manager or his designee, as verified by the following signature.

Signature : _____

Date: 12/10/2024

NYDOH CERTIFICATION NO - 11376

NJDEP CERTIFICATION NO - 20012



284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

CASE NARRATIVE

Weston Solutions

Project Name: Ft Meade Tipton Airfield Parcel RI - PO 0111169

Project # N/A

Chemtech Project # P5022

Test Name: pH,TOC,Anions Group1

A. Number of Samples and Date of Receipt:

1 Solid sample was received on 11/27/2024.

B. Parameters:

According to the Chain of Custody document, the following analyses were requested: Anions Group1, Mercury, Metals ICP-TAL, METALS-TAL, pH and TOC. This data package contains results for pH,TOC,Anions Group1.

C. Analytical Techniques:

The analysis of pH was based on method 9045D, The analysis of Anions Group1 was based on method 9056A and The analysis of TOC was based on method 9060A.

D. QA/ QC Samples:

The Holding Times were met for all samples except for TAPIAL2-SB02D-13-112424-00-T1 of pH, as this sample received out of hold.

The Blank Spike met requirements for all samples.

The Duplicate analysis met criteria for all samples.

The Matrix Spike (TAPIAL2-SB02D-13-112424-00-T1MS) analysis met criteria for all samples except for Fluoride due to matrix interference.

The Matrix Spike Duplicate (TAPIAL2-SB02D-13-112424-00-T1MSD) analysis met criteria for all samples except for Fluoride due to matrix interference.

The Blank analysis did not indicate the presence of lab contamination.

The Calibration met the requirements.

E. Additional Comments:

I certify that the data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. The laboratory manager or his designee, as verified by the following signature has authorized release of the data contained in this hard copy data package.

Signature_____

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

GENERAL CHEMISTRY CONFORMANCE/NON-CONFORMANCE SUMMARY

CHEMTECH PROJECT NUMBER: P5022

MATRIX: Solid

METHOD: 9045D,9056A,9060A

	NA	NO	YES
1. Blank Contamination - If yes, list compounds and concentrations in each blank:		✓	
2. Matrix Spike Duplicate Recoveries Met Criteria		✓	
If not met, list those compounds and their recoveries which fall outside the acceptable range.			
The Blank Spike met requirements for all samples. The Matrix Spike (TAPIAL2-SB02D-13-112424-00-T1MS) analysis met criteria for all samples except for Fluoride due to matrix interference. The Matrix Spike Duplicate (TAPIAL2-SB02D-13-112424-00-T1MSD) analysis met criteria for all samples except for Fluoride due to matrix interference.			
3. Sample Duplicate Analysis Met QC Criteria			✓
If not met, list those compounds and their recoveries which fall outside the acceptable range.			
4. Digestion Holding Time Met		✓	
If not met, list number of days exceeded for each sample:			
The Holding Times were met for all samples except for TAPIAL2-SB02D-13-112424-00-T1 of pH, as this sample received out of hold.			

ADDITIONAL COMMENTS:

QA REVIEW

Date

APPENDIX A

QA REVIEW GENERAL DOCUMENTATION

Project #: P5022

Completed

For thorough review, the report must have the following:

GENERAL:

Are all original paperwork present (chain of custody, record of communication,airbill, sample management lab chronicle, login page)

✓

Check chain-of-custody for proper relinquish/return of samples

✓

Is the chain of custody signed and complete

✓

Check internal chain-of-custody for proper relinquish/return of samples /sample extracts

✓

Collect information for each project id from server. Were all requirements followed

✓

COVER PAGE:

Do numbers of samples correspond to the number of samples in the Chain of Custody on login page

✓

Do lab numbers and client Ids on cover page agree with the Chain of Custody

✓

CHAIN OF CUSTODY:

Do requested analyses on Chain of Custody agree with form I results

✓

Do requested analyses on Chain of Custody agree with the log-in page

✓

Were the correct method log-in for analysis according to the Analytical Request and Chain of Custody

✓

Were the samples received within hold time

✓

Were any problems found with the samples at arrival recorded in the Sample Management Laboratory Chronicle

✓

ANALYTICAL:

Was method requirement followed?

✓

Was client requirement followed?

✓

Does the case narrative summarize all QC failure?

✓

All runlogs and manual integration are reviewed for requirements

✓

All manual calculations and /or hand notations verified

✓

QA Review Signature: SOHIL JODHANI

Date: 12/10/2024

LAB CHRONICLE

OrderID:	P5022	OrderDate:	11/27/2024 10:42:00 AM
Client:	Weston Solutions	Project:	Ft Meade Tipton Airfield Parcel RI - PO 0111169
Contact:	Nathan Fretz	Location:	L41

LabID	ClientID	Matrix	Test	Method	Sample Date	Prep Date	Anal Date	Received
P5022-01	TAPIAL2-SB02D-13-1 12424-00-T1	SOIL			11/24/24 16:30			11/27/24
			Anions Group1	9056A			11/27/24 13:51	
			pH	9045D			12/02/24 16:00	
			TOC	9060A			12/06/24 13:55	



SAMPLE DATA

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Report of Analysis

Client:	Weston Solutions	Date Collected:	11/24/24 16:30
Project:	Ft Meade Tipton Airfield Parcel RI - PO 0111169	Date Received:	11/27/24
Client Sample ID:	TAPIAL2-SB02D-13-112424-00-T1	SDG No.:	P5022
Lab Sample ID:	P5022-01	Matrix:	SOIL
		% Solid:	92.9

Parameter	Conc.	Qua.	DF	MDL	LOD	LOQ / CRQL	Units(Dry Weight)	Prep Date	Date Ana.	Ana Met.
Bromide	21.4	U	1	0.53	21.4	42.9	mg/Kg		11/27/24 13:51	9056A
Chloride	2.40	J	1	0.10	6.40	12.9	mg/Kg		11/27/24 13:51	9056A
Fluoride	1.30	J	1	0.41	4.30	8.60	mg/Kg		11/27/24 13:51	9056A
Nitrite	6.40	U	1	0.20	6.40	12.9	mg/Kg		11/27/24 13:51	9056A
Nitrate	5.40	U	1	0.095	5.40	10.7	mg/Kg		11/27/24 13:51	9056A
Sulfate	39.2	J	1	0.65	32.2	64.3	mg/Kg		11/27/24 13:51	9056A
pH	6.17	H	1	0	0	0	pH		12/02/24 16:00	9045D
TOC	1670		1	19.8	50.0	250	mg/Kg		12/06/24 13:55	9060A

Comments: pH result reported at temperature 22.1 °C

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

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Initial and Continuing Calibration Verification

Client: Weston Solutions

SDG No.: P5022

Project: Ft Meade Tipton Airfield Parcel RI - PO 0111169

RunNo.: LB133665

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	10.4	10	104	90-110	11/27/2024
Chloride	mg/L	3.1	3	103	90-110	11/27/2024
Fluoride	mg/L	2	2	100	90-110	11/27/2024
Nitrite	mg/L	3.1	3	103	90-110	11/27/2024
Nitrate	mg/L	2.6	2.5	104	90-110	11/27/2024
Sulfate	mg/L	14.7	15	98	90-110	11/27/2024
Orthophosphate as P	mg/L	5.2	5	104	90-110	11/27/2024
Sample ID: CCV2						
Bromide	mg/L	10.4	10	104	90-110	11/27/2024
Chloride	mg/L	3.1	3	103	90-110	11/27/2024
Fluoride	mg/L	2	2	100	90-110	11/27/2024
Nitrite	mg/L	3.1	3	103	90-110	11/27/2024
Nitrate	mg/L	2.6	2.5	104	90-110	11/27/2024
Sulfate	mg/L	14.7	15	98	90-110	11/27/2024
Orthophosphate as P	mg/L	5.2	5	104	90-110	11/27/2024

Initial and Continuing Calibration Verification

Client: Weston Solutions

SDG No.: P5022

Project: Ft Meade Tipton Airfield Parcel RI - PO 0111169

RunNo.: LB133690

Analyte	Units	Result	True Value	% Recovery	Acceptance Window (%R)	Analysis Date
Sample ID: ICV pH	pH	7.00	7	100	90-110	12/02/2024
Sample ID: CCV1 pH	pH	2.01	2.00	101	90-110	12/02/2024
Sample ID: CCV2 pH	pH	12.02	12.00	100	90-110	12/02/2024

Initial and Continuing Calibration Verification

Client: Weston Solutions

SDG No.: P5022

Project: Ft Meade Tipton Airfield Parcel RI - PO 0111169

RunNo.: LB133779

Analyte	Units	Result	True Value	% Recovery	Acceptance Window (%R)	Analysis Date
Sample ID: ICV1 TOC	mg/L	934	1000	93	90-110	11/12/2024
Sample ID: CCV1 TOC	mg/L	937	1000	94	90-110	12/06/2024
Sample ID: CCV2 TOC	mg/L	999	1000	100	90-110	12/06/2024

Initial and Continuing Calibration Blank Summary

Client: Weston Solutions

SDG No.: P5022

Project: Ft Meade Tipton Airfield Parcel RI - PO 0111169

RunNo.: LB133665

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	11/27/2024
Chloride	mg/L	< 0.3000	0.3000	U	0.011	0.6	11/27/2024
Fluoride	mg/L	< 0.2000	0.2000	U	0.057	0.4	11/27/2024
Nitrite	mg/L	< 0.3000	0.3000	U	0.011	0.6	11/27/2024
Nitrate	mg/L	< 0.2500	0.2500	U	0.0034	0.5	11/27/2024
Sulfate	mg/L	< 1.5000	1.5000	U	0.032	3	11/27/2024
Orthophosphate as P	mg/L	< 0.5000	0.5000	U	0.079	1	11/27/2024
Sample ID: CCB2							
Bromide	mg/L	< 1.0000	1.0000	U	0.034	2	11/27/2024
Chloride	mg/L	< 0.3000	0.3000	U	0.011	0.6	11/27/2024
Fluoride	mg/L	< 0.2000	0.2000	U	0.057	0.4	11/27/2024
Nitrite	mg/L	< 0.3000	0.3000	U	0.011	0.6	11/27/2024
Nitrate	mg/L	< 0.2500	0.2500	U	0.0034	0.5	11/27/2024
Sulfate	mg/L	< 1.5000	1.5000	U	0.032	3	11/27/2024
Orthophosphate as P	mg/L	< 0.5000	0.5000	U	0.079	1	11/27/2024

Initial and Continuing Calibration Blank Summary

Client: Weston Solutions	SDG No.: P5022
Project: Ft Meade Tipton Airfield Parcel RI - PO 0111169	RunNo.: LB133779

Analyte	Units	Result	Acceptance Limits	Conc Qual	MDL	RDL	Analysis Date
Sample ID: ICB1 TOC	mg/L	< 125.0000	125.0000	U	22.3	250	11/12/2024
Sample ID: CCB1 TOC	mg/L	< 125.0000	125.0000	U	22.3	250	12/06/2024
Sample ID: CCB2 TOC	mg/L	< 125.0000	125.0000	U	22.3	250	12/06/2024

Preparation Blank Summary

Client: Weston Solutions

SDG No.: P5022

Project: Ft Meade Tipton Airfield Parcel RI - PO 0111169

Analyte	Units	Result	Acceptance Limits	Conc Qual	MDL	RDL	Analysis Date
Sample ID: LB133665BLS							
Bromide	mg/Kg	< 20.0000	20.0000	U	0.49	40	11/27/2024
Chloride	mg/Kg	< 6.0000	6.0000	U	0.096	12	11/27/2024
Fluoride	mg/Kg	< 4.0000	4.0000	U	0.38	8	11/27/2024
Nitrite	mg/Kg	< 6.0000	6.0000	U	0.19	12	11/27/2024
Nitrate	mg/Kg	< 5.0000	5.0000	U	0.089	10	11/27/2024
Sulfate	mg/Kg	< 30.0000	30.0000	U	0.61	60	11/27/2024
Orthophosphate as P	mg/Kg	< 10.0000	10.0000	U	0.24	20	11/27/2024
Sample ID: LB133779BLS							
TOC	mg/Kg	< 125.0000	125.0000	U	19.8	250	12/06/2024

Matrix Spike Summary

Client:	Weston Solutions	SDG No.:	P5022
Project:	Ft Meade Tipton Airfield Parcel RI - PO 0111169	Sample ID:	P5022-01
Client ID:	TAPIAL2-SB02D-13-112424-00-T1MS	Percent Solids for Spike Sample:	92.9

Analyte	Units	Acceptance Limit %R	Spiked Result	Conc. Qualifier	Sample Result	Conc. Qualifier	Spike Added	Dilution Factor	% Rec	Qual	Analysis Date
Bromide	mg/Kg	80-120	217		0.53	U	210	1	103		11/27/2024
TOC	mg/Kg	75-125	2560		1670		1000	1	89		12/06/2024
Chloride	mg/Kg	80-120	68.0		2.40	J	64.5	1	102		11/27/2024
Fluoride	mg/Kg	80-120	33.6		1.30	J	43	1	75	*	11/27/2024
Nitrite	mg/Kg	80-120	65.1		0.20	U	64.5	1	101		11/27/2024
Nitrate	mg/Kg	80-120	53.9		0.095	U	53.7	1	100		11/27/2024
Sulfate	mg/Kg	80-120	366		39.2	J	320	1	102		11/27/2024
Orthophosphate as P	mg/Kg	80-120	67.4		0.26	U	110	1	61	*	11/27/2024

Matrix Spike Summary

Client:	Weston Solutions	SDG No.:	P5022
Project:	Ft Meade Tipton Airfield Parcel RI - PO 0111169	Sample ID:	P5022-01
Client ID:	TAPIAL2-SB02D-13-112424-00-T1MSD	Percent Solids for Spike Sample:	92.9

Analyte	Units	Acceptance Limit %R	Spiked Result	Conc. Qualifier	Sample Result	Conc. Qualifier	Spike Added	Dilution Factor	% Rec	Qual	Analysis Date
Bromide	mg/Kg	80-120	216		0.53	U	210	1	103		11/27/2024
TOC	mg/Kg	75-125	2550		1670		1000	1	88		12/06/2024
Chloride	mg/Kg	80-120	67.6		2.40	J	64.5	1	101		11/27/2024
Fluoride	mg/Kg	80-120	33.1		1.30	J	43	1	74	*	11/27/2024
Nitrite	mg/Kg	80-120	65.1		0.20	U	64.5	1	101		11/27/2024
Nitrate	mg/Kg	80-120	53.7		0.095	U	53.7	1	100		11/27/2024
Sulfate	mg/Kg	80-120	365		39.2	J	320	1	102		11/27/2024
Orthophosphate as P	mg/Kg	80-120	64.5		0.26	U	110	1	59	*	11/27/2024

Duplicate Sample Summary

Client:	Weston Solutions	SDG No.:	P5022
Project:	Ft Meade Tipton Airfield Parcel RI - PO 0111169	Sample ID:	P5022-01
Client ID:	TAPIAL2-SB02D-13-112424-00-T1DUP	Percent Solids for Spike Sample:	92.9

Analyte	Units	Acceptance Limit	Sample Result	Conc. Qualifier	Duplicate Result	Conc. Qualifier	Dilution Factor	RPD/AD	Qual	Analysis Date
pH	pH	+/-20	6.17		6.18		1	0.16		12/02/2024

Duplicate Sample Summary

Client: Weston Solutions	SDG No.: P5022
Project: Ft Meade Tipton Airfield Parcel RI - PO 0111169	Sample ID: P5022-01
Client ID: TAPIAL2-SB02D-13-112424-00-T1MSD	Percent Solids for Spike Sample: 92.9

Analyte	Units	Acceptance Limit	Sample Result	Conc. Qualifier	Duplicate Result	Conc. Qualifier	Dilution Factor	RPD/AD	Qual	Analysis Date
Bromide	mg/Kg	+/-15	217		216		1	0		11/27/2024
Nitrate	mg/Kg	+/-15	53.9		53.7		1	0		11/27/2024
Nitrite	mg/Kg	+/-15	65.1		65.1		1	0		11/27/2024
Sulfate	mg/Kg	+/-15	366		365		1	0		11/27/2024
Chloride	mg/Kg	+/-15	68.0		67.6		1	1		11/27/2024
Fluoride	mg/Kg	+/-15	33.6		33.1		1	1		11/27/2024
Orthophosphate as P	mg/Kg	+/-15	67.4		64.5		1	4		11/27/2024
TOC	mg/Kg	+/-20	2560		2550		1	0		12/06/2024

Laboratory Control Sample Summary

Client:	Weston Solutions	SDG No.:	P5022
Project:	Ft Meade Tipton Airfield Parcel RI - PO 0111169	Run No.:	LB133665

Analyte	Units	True Value	Result	Conc. Qualifier	% Recovery	Dilution Factor	Acceptance Limit %R	Analysis Date
Sample ID	LB133665BSS							
Bromide	mg/Kg	200	208		104	1	90-110	11/27/2024
Chloride	mg/Kg	60	61.4		102	1	90-110	11/27/2024
Fluoride	mg/Kg	40	40.0		100	1	90-110	11/27/2024
Nitrite	mg/Kg	60	62.4		104	1	90-110	11/27/2024
Nitrate	mg/Kg	50	51.3		103	1	90-110	11/27/2024
Sulfate	mg/Kg	300	295		98	1	90-110	11/27/2024
Orthophosphate as P	mg/Kg	100	105		105	1	90-110	11/27/2024

Laboratory Control Sample Summary

Client:	Weston Solutions	SDG No.:	P5022
Project:	Ft Meade Tipton Airfield Parcel RI - PO 0111169	Run No.:	LB133779

Analyte	Units	True Value	Result	Conc. Qualifier	% Recovery	Dilution Factor	Acceptance Limit %R	Analysis Date
Sample ID	LB133779BSS							
TOC	mg/Kg	1000	962		96	1	90-110	12/06/2024



RAW DATA

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Instrument IC-1 Analyst: NF Method: 00.0 / 9056A

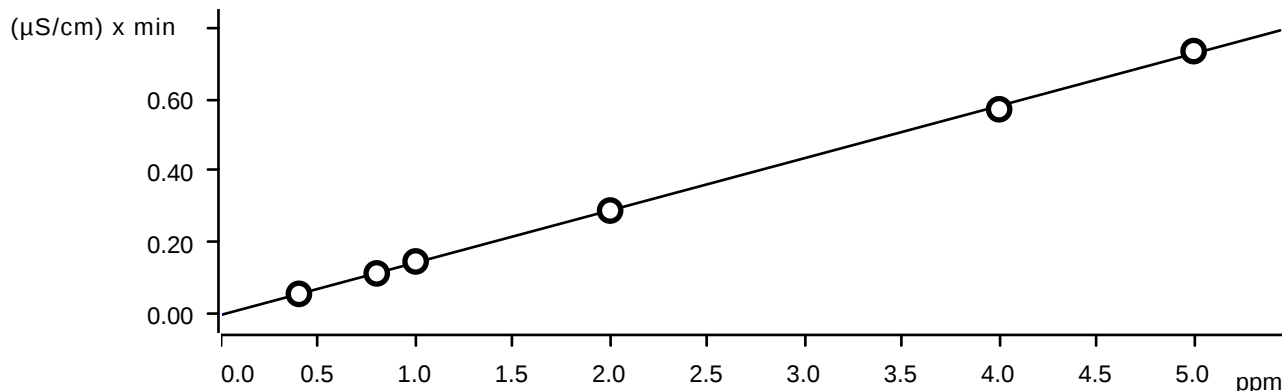
Ident	Con F-	Con CL- Con NO2	Con BR- Con NO3	Con HPO4	Con SO4	Method name	date time	Initial wt/Final Vol	Analyst
STD1	0	0	0	0	0	IC1-111824	11/18/2024 11:24	10	NF/IZ
STD2	0.402	0.571	0.601	1.961	0.489	IC1-111824	11/18/2024 11:24	10	NF/IZ
STD3	0.794	1.185	1.175	3.939	0.997	IC1-111824	11/18/2024 12:07	10	NF/IZ
STD4	1.023	1.554	1.535	5.128	1.284	IC1-111824	11/18/2024 12:29	10	NF/IZ
STD5	1.997	3.009	2.993	9.997	2.488	IC1-111824	11/18/2024 12:50	10	NF/IZ
STD6	3.936	5.952	5.978	19.928	4.964	IC1-111824	11/18/2024 13:11	10	NF/IZ
STD7	5.049	7.529	7.517	25.045	6.279	IC1-111824	11/18/2024 13:33	10	NF/IZ
ICV	1.966	3.006	2.997	9.98	2.49	IC1-111824	11/18/2024 13:54	10	NF/IZ
ICB	0	0	0	0	0	IC1-111824	11/18/2024 14:16	10	NF/IZ
CCV	2.005	3.061	3.099	10.357	2.559	IC1-111824	11/27/2024 11:26	10	NF/IZ
CCB	0	0	0	0	0	IC1-111824	11/27/2024 11:47	10	NF/IZ
LB133665BLW	0	0	0	0	0	IC1-111824	11/27/2024 12:09	5.00g/100ML	NF/IZ
LB133665BSW	2.002	3.07	3.119	10.396	2.564	IC1-111824	11/27/2024 12:30	5.00g/100ML	NF/IZ
P5022-01	0.061	0.114	0	0	0	IC1-111824	11/27/2024 13:51	5.02g/100ML	NF/IZ
P5022-01MS	1.565	3.164	3.032	10.098	2.509	IC1-111824	11/27/2024 14:12	5.01g/100ML	NF/IZ
P5022-01MSD	1.541	3.146	3.031	10.068	2.5	IC1-111824	11/27/2024 14:34	5.01g/100ML	NF/IZ
CCV	2.023	3.077	3.109	10.36	2.566	IC1-111824	11/27/2024 14:56	10	NF/IZ
CCB	0	0	0	0	0	IC1-111824	11/27/2024 15:17	10	NF/IZ

Clear table

Instrument ID: IC-2											
Analyst :			IZ		Method: 300.0 / 9056A						
ident	concentra tion F-	concentratio n CL-	concentrati on NO2	concentrati on BR-	concentrati on NO3	concentrati on HPO4	concentrati on SO4	file name	date time	Initial wt/ Final	Analyst
STD1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000 IC1-111824	11/18/2024 11:24	Final	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	4.960	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
ident	True Value F-	True Value CL-	True Value NO2	True Value BR-	True Value NO3	True Value HPO4	True Value SO4				
STD1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000				
STD2	0.4000	0.6000	0.6000	2.0000	0.5000	1.0000	3.0000				
STD3	0.8000	1.2000	1.2000	4.0000	1.0000	2.0000	6.0000				
STD4	1.0000	1.5000	1.5000	5.0000	1.2500	2.5000	7.5000				
STD5	2.0000	3.0000	3.0000	10.0000	2.5000	5.0000	15.0000				
STD6	4.0000	6.0000	6.0000	20.0000	5.0000	10.0000	30.0000				
STD7	5.0000	7.5000	7.5000	25.0000	6.2500	12.5000	37.0000				
ident	Relative Error F-	Relative Error CL-	Relative Error NO2	Relative Error BR-	Relative Error NO3	Relative Error HPO4	Relative Error SO4				
STD1											
STD2	0.5000	-4.8333	0.1667	-1.9500	-2.2000	2.5000	2.0667				
STD3	-0.7500	-1.2500	-2.0833	-1.5250	-0.3000	-3.6000	1.0333				
STD4	2.3000	3.6000	2.3333	2.5600	2.7200	6.6000	4.5733				
STD5	-0.1500	0.3000	-0.2333	-0.0300	-0.4800	-0.8000	-2.1400				
STD6	-1.6000	-0.8000	-0.3667	-0.3600	-0.7200	-3.5500	-3.3567				
STD7	0.9800	0.3867	0.2267	0.1800	0.4640	2.2080	2.3324				

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Fluoride (Anions)

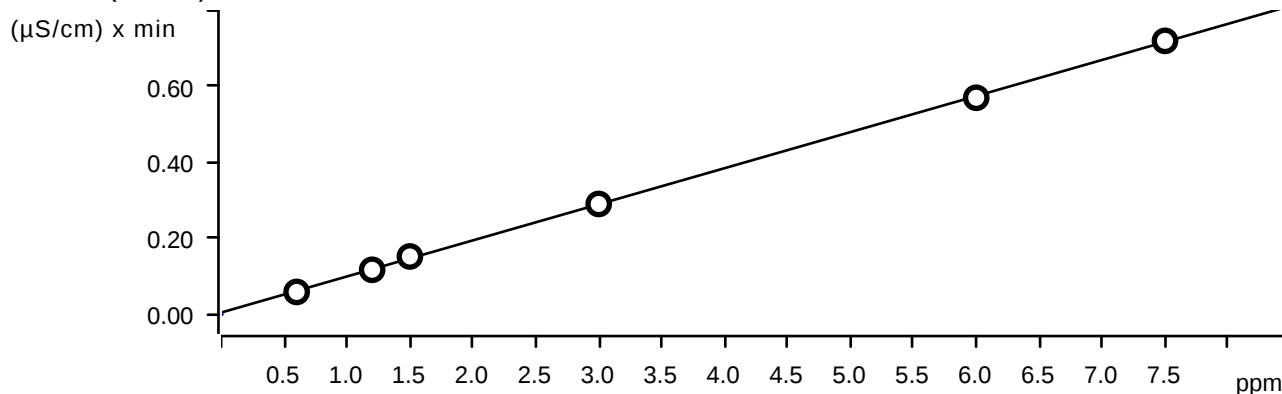
Function: $A = -1.48773\text{E-}3 + 0.0145652 \times Q$

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)

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

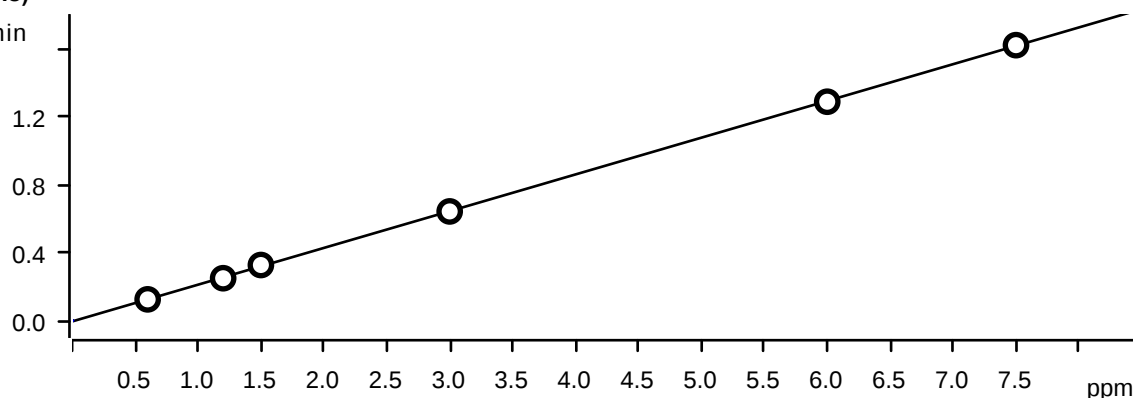
Relative standard deviation 1.265280 %

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

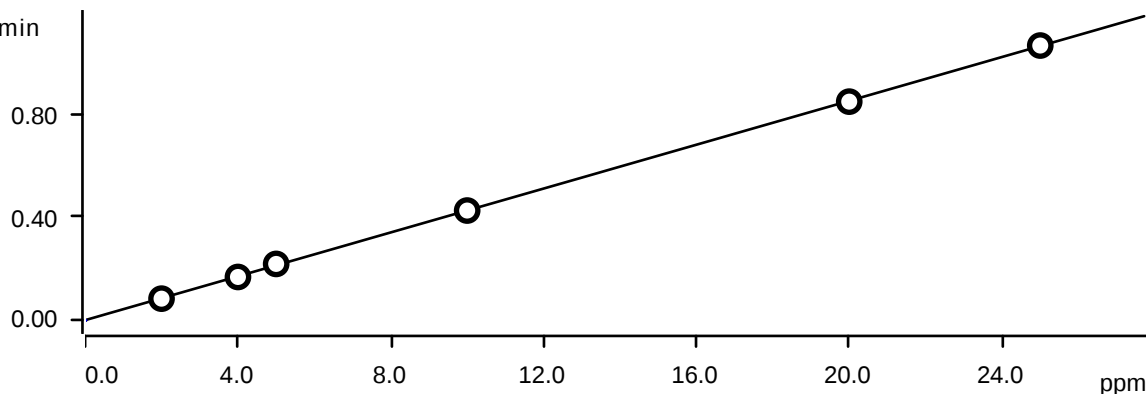
Relative standard deviation 0.783603 %

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)

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



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

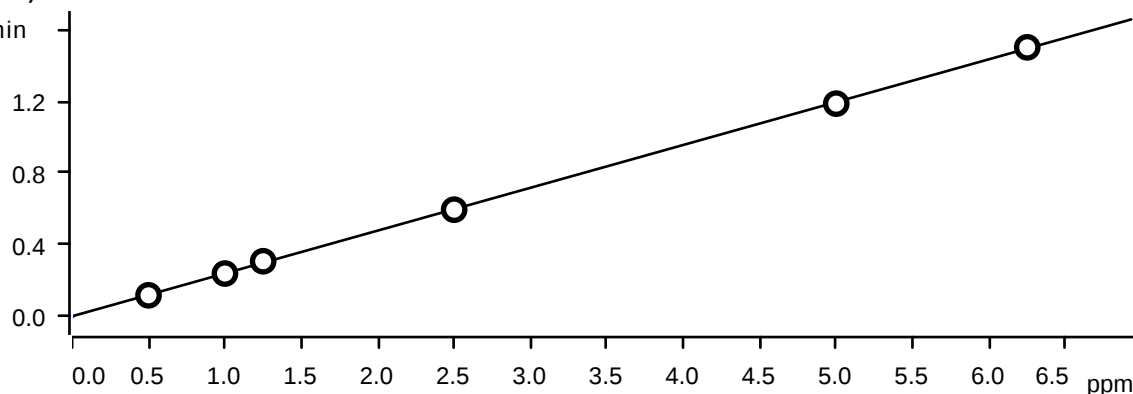
Relative standard deviation: 0.771268 %

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)

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



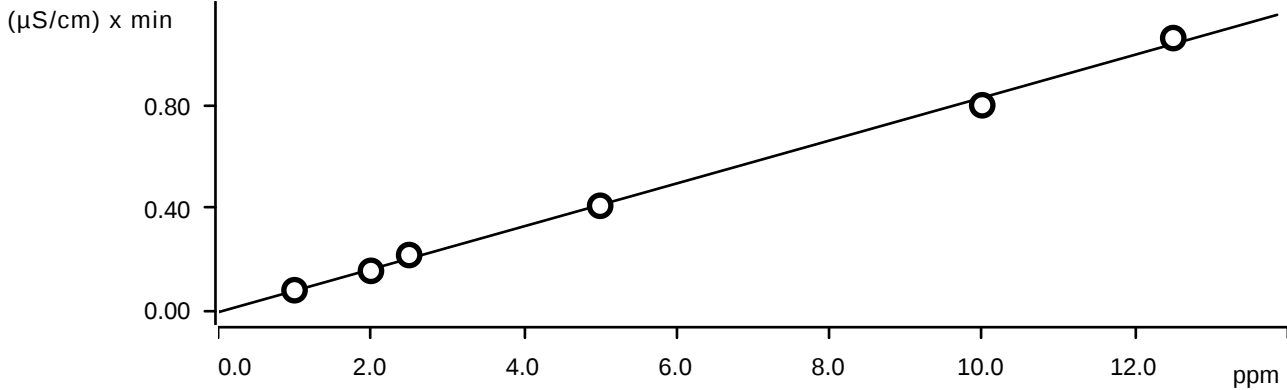
Function: $A = 1.14484E-3 + 0.0238833 \times Q$

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)



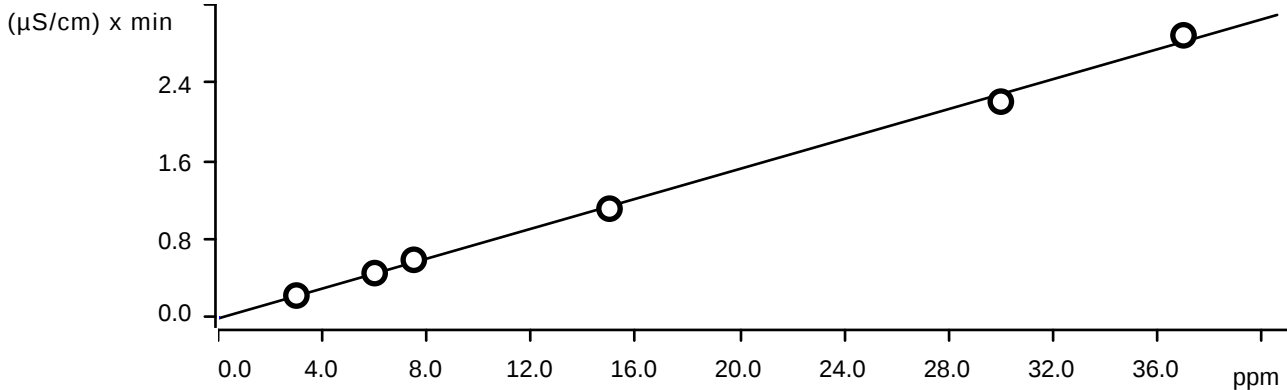
Function: $A = -2.33576E-3 + 8.30878E-3 \times Q$

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)



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

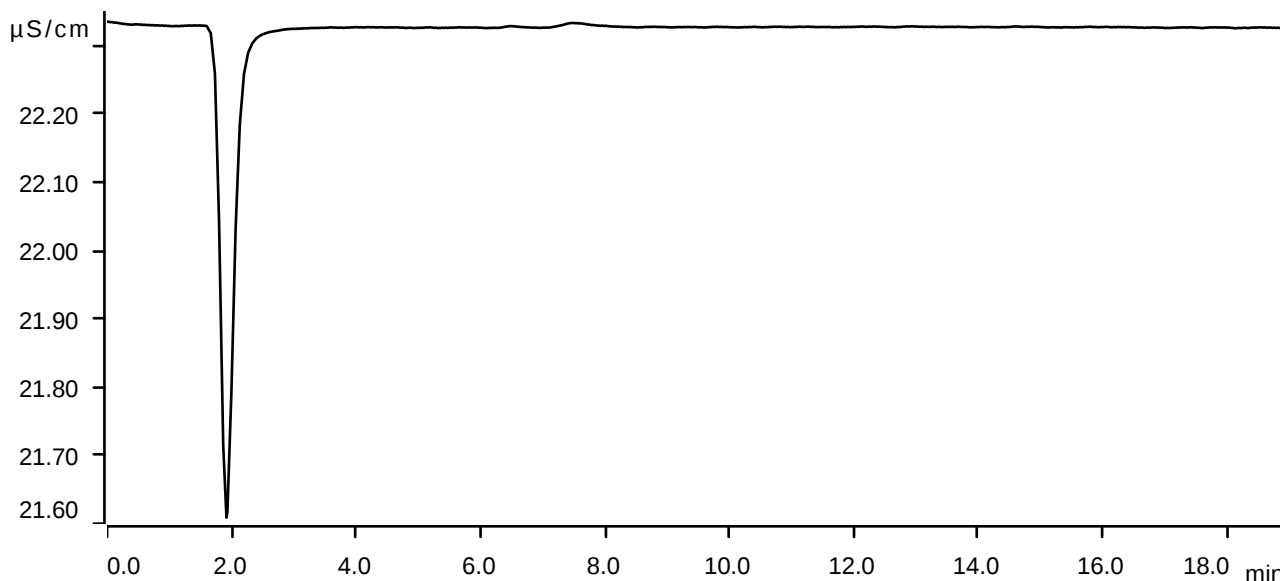
Sample data

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



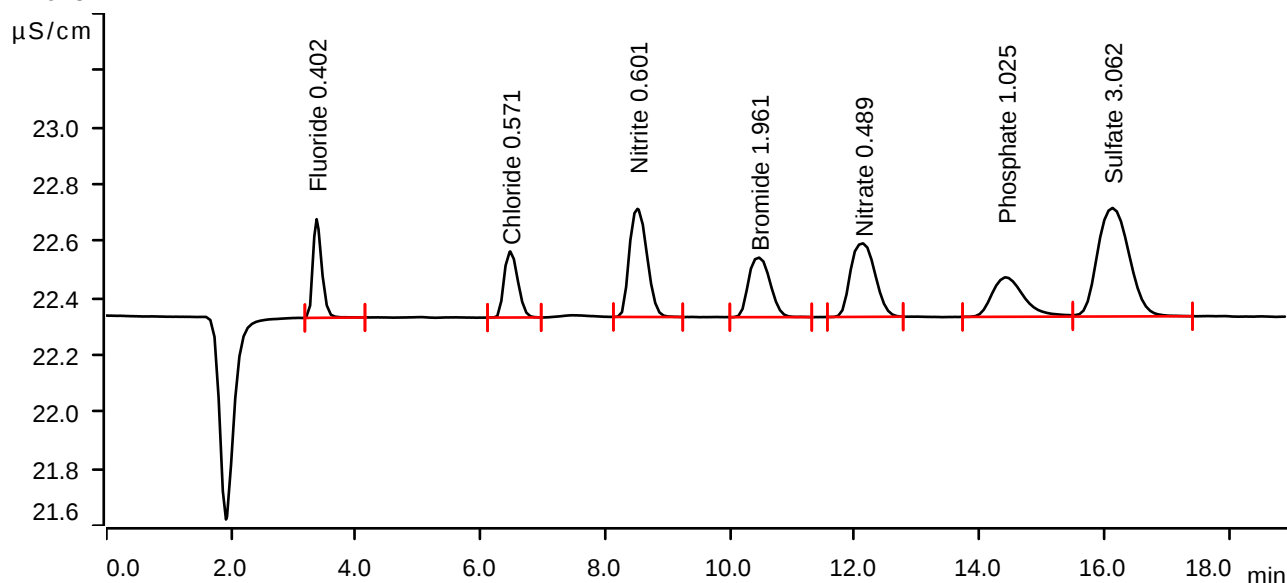
Sample data

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

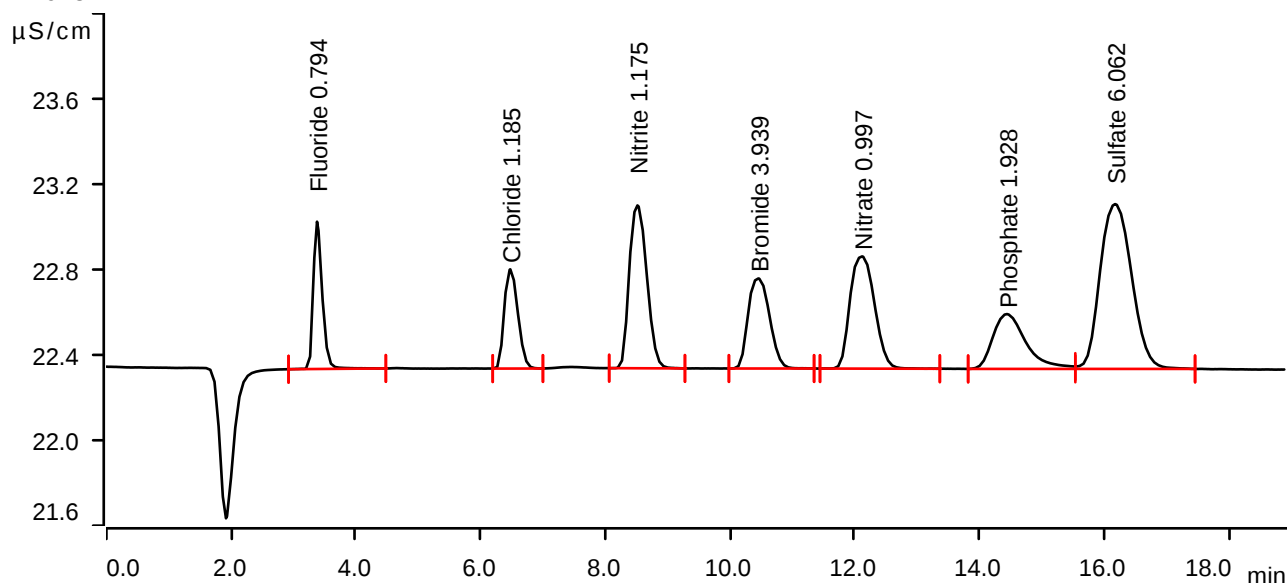
Sample data

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

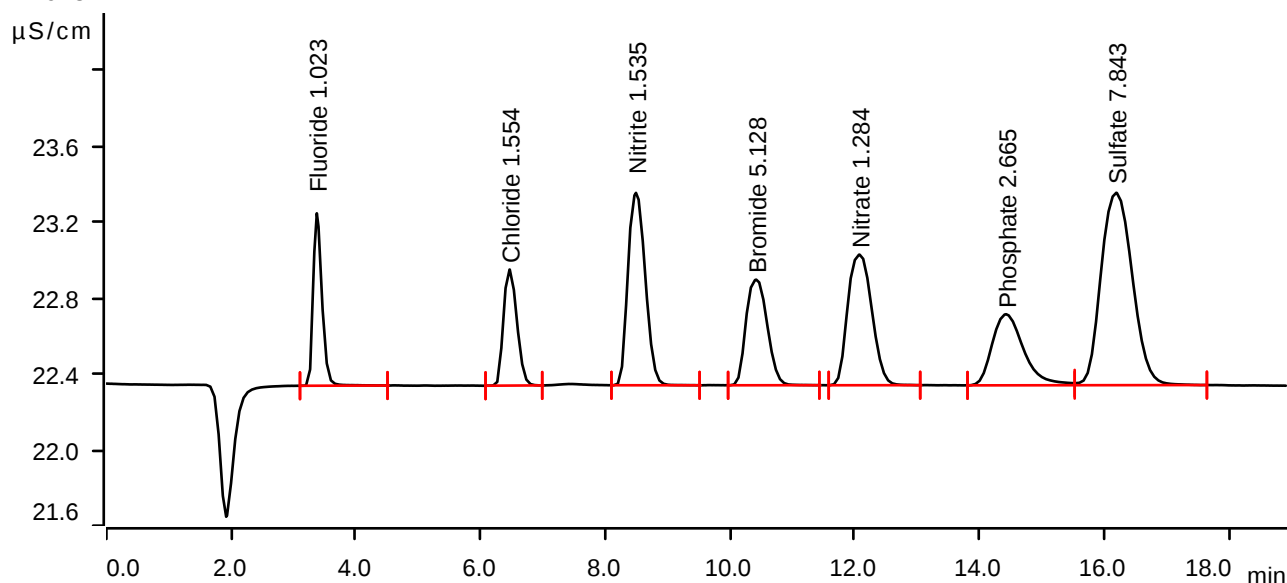
Sample data

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

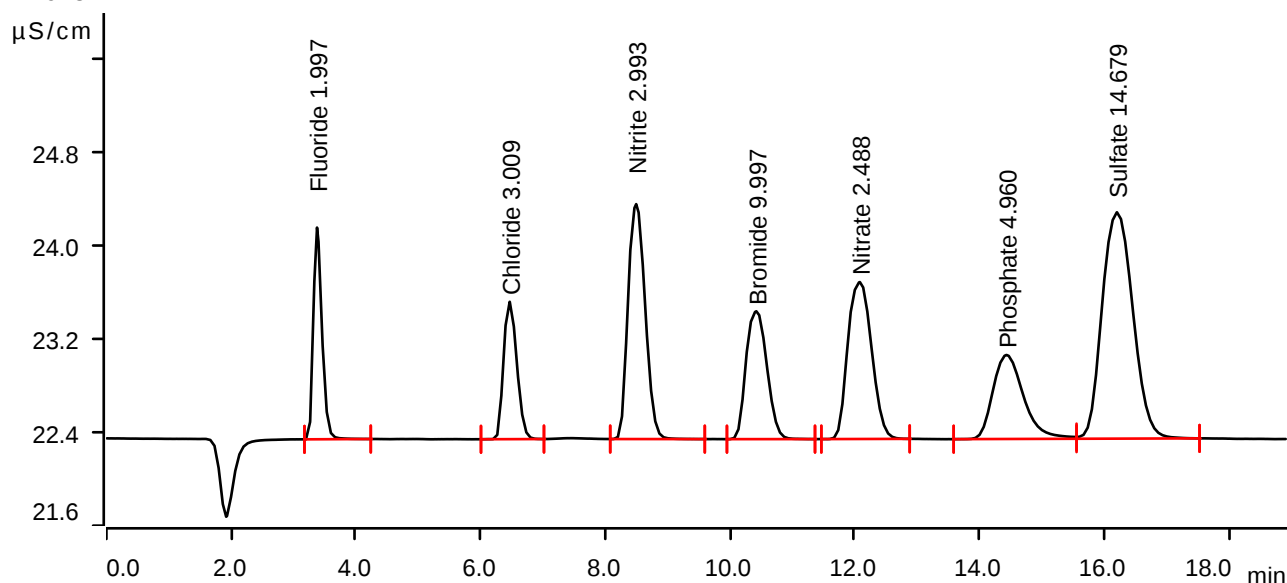
Sample data

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

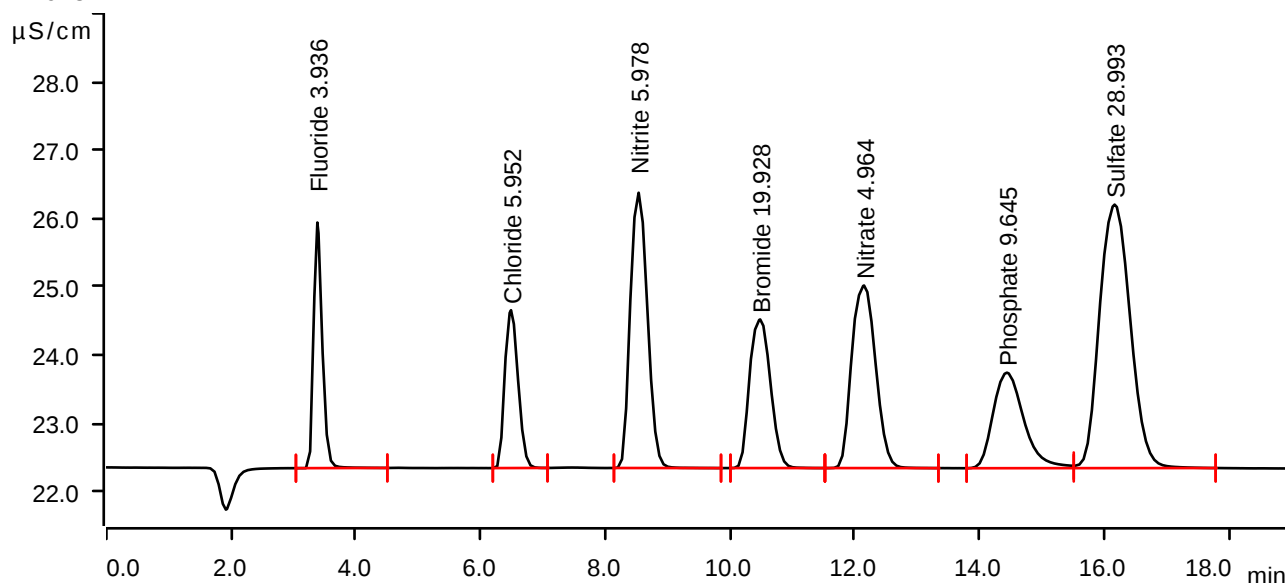
Sample data

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

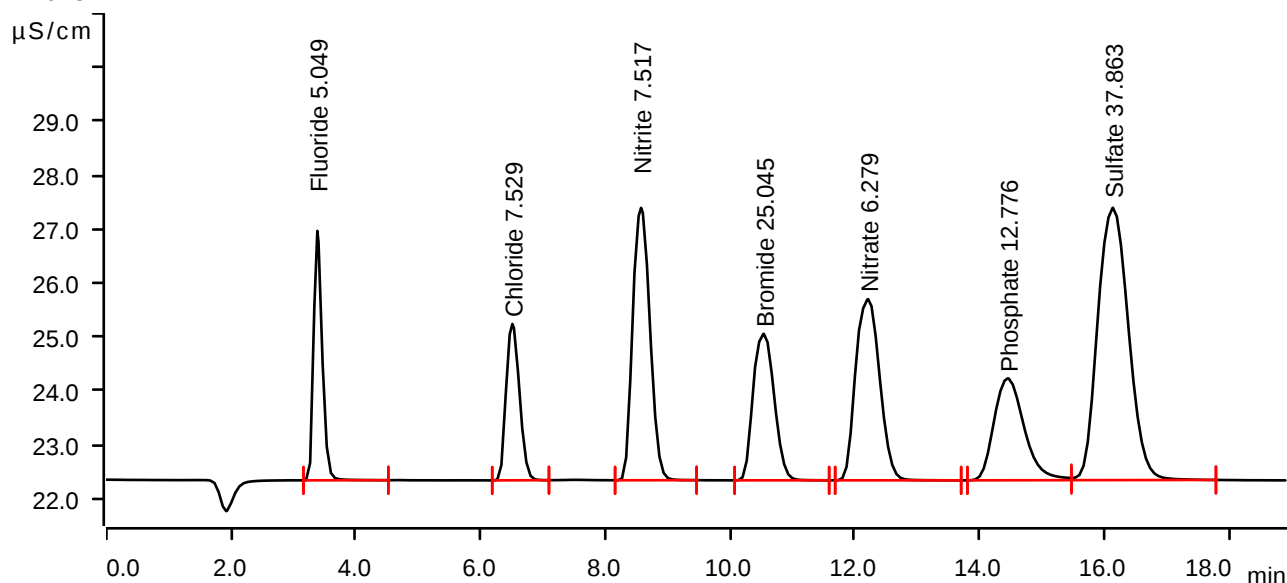
Sample data

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

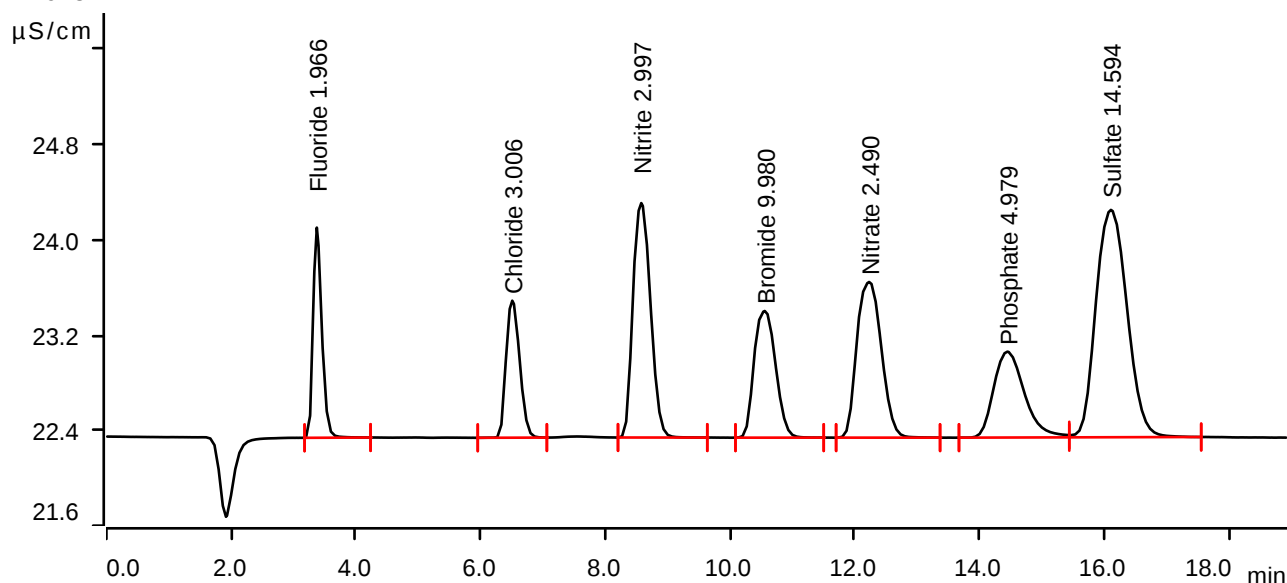
Sample data

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 min	Area (µS/cm) x min	Height µS/cm	Concentration ppm	Component name
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

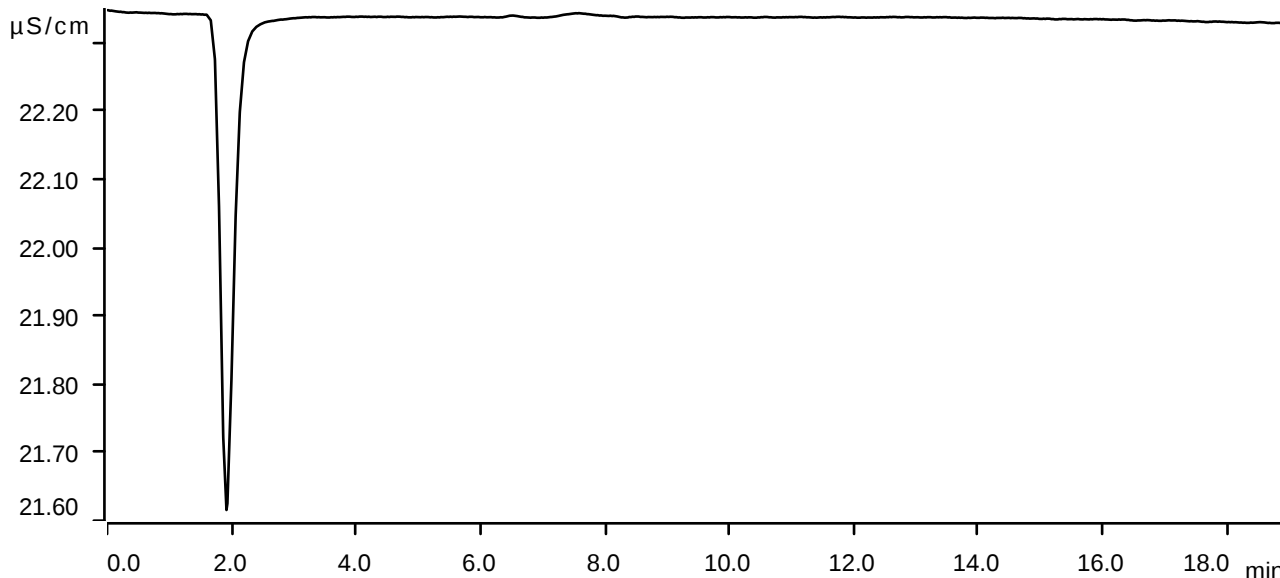
Sample data

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



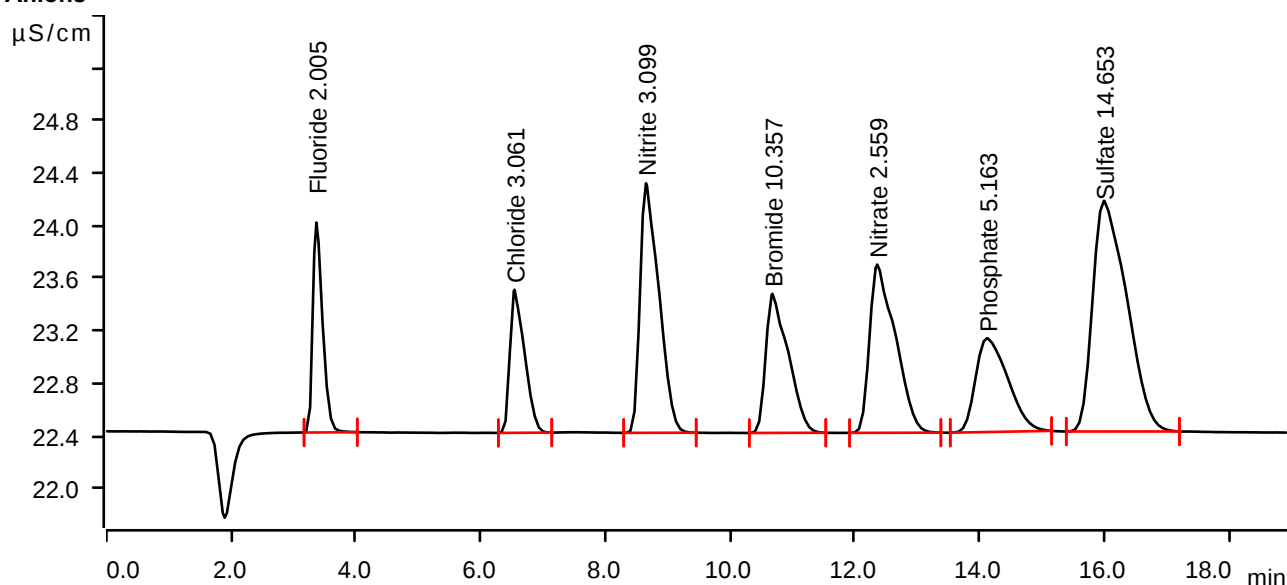
Sample data

Ident CCV
Sample type Check standard 1
Determination start 2024-11-27 11:26:27 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	3.368	0.2906	1.598	2.005	Fluoride
2	6.545	0.2957	1.089	3.061	Chloride
3	8.652	0.6650	1.900	3.099	Nitrite
4	10.680	0.4405	1.059	10.357	Bromide
5	12.360	0.6123	1.281	2.559	Nitrate
6	14.120	0.4267	0.714	5.163	Phosphate
7	15.993	1.1103	1.757	14.653	Sulfate

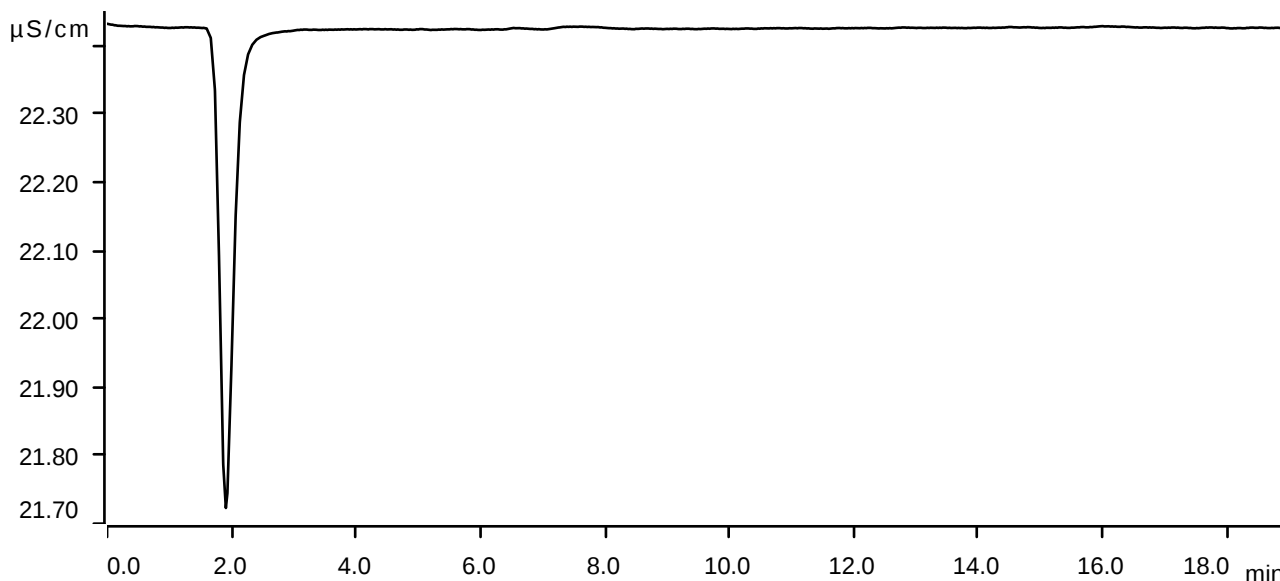
Sample data

Ident CCB
Sample type Sample
Determination start 2024-11-27 11:47:56 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



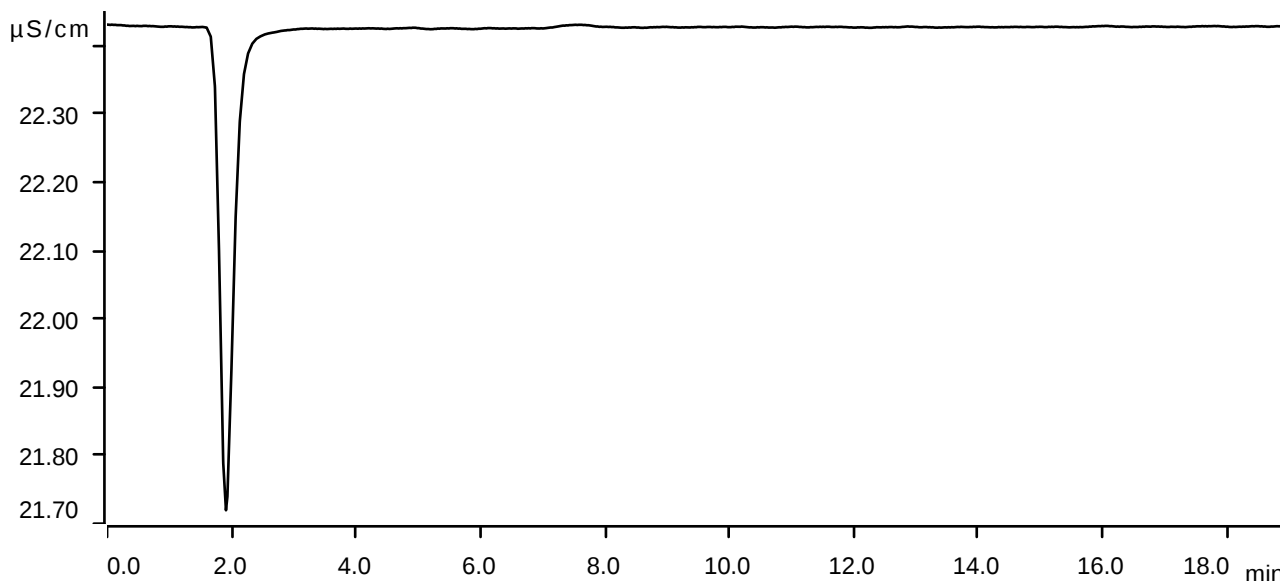
Sample data

Ident LB133665BLW
Sample type Sample
Determination start 2024-11-27 12:09:26 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



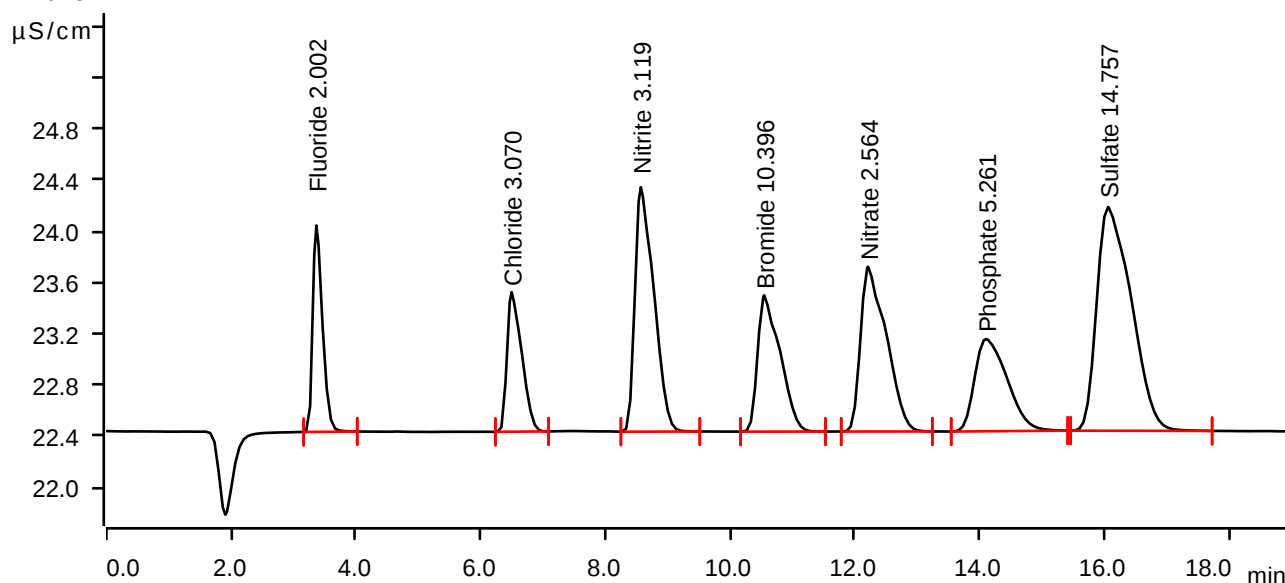
Sample data

Ident LB133665BSW
Sample type Check standard 1
Determination start 2024-11-27 12:30:57 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 11.82 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	3.368	0.2901	1.611	2.002	Fluoride
2	6.498	0.2966	1.090	3.070	Chloride
3	8.570	0.6694	1.909	3.119	Nitrite
4	10.548	0.4422	1.064	10.396	Bromide
5	12.213	0.6136	1.287	2.564	Nitrate
6	14.107	0.4348	0.721	5.261	Phosphate
7	16.060	1.1183	1.747	14.757	Sulfate

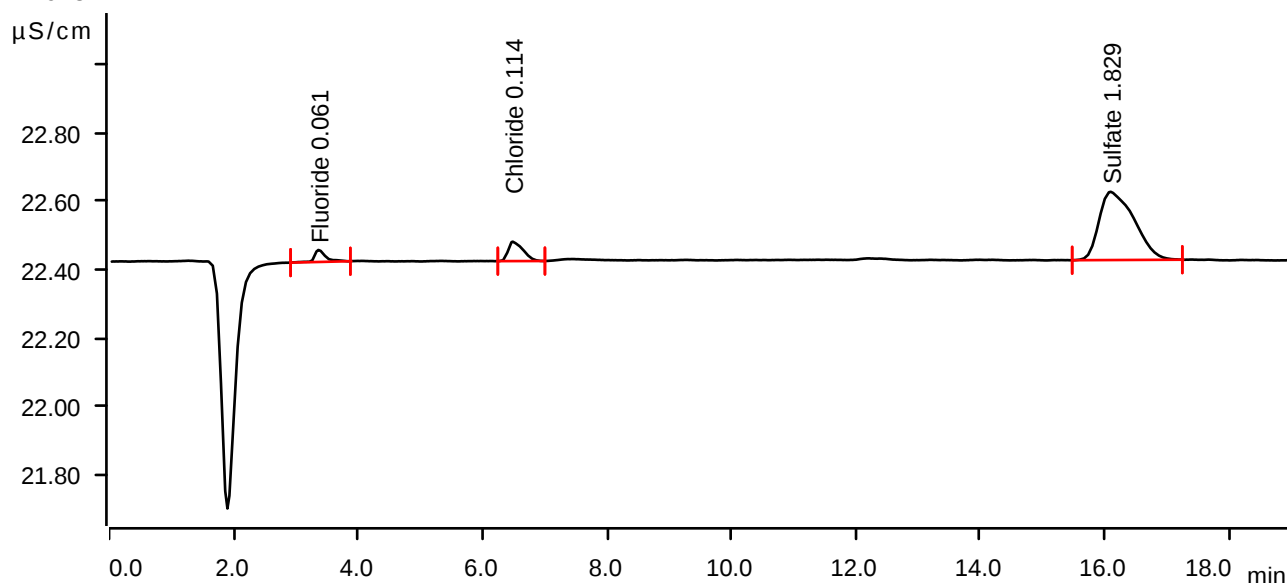
Sample data

Ident P5022-01
Sample type Sample
Determination start 2024-11-27 13:51:17 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 11.77 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	0.0074	0.035	0.061	Fluoride
2	6.487	0.0157	0.057	0.114	Chloride
3	16.097	0.1301	0.200	1.829	Sulfate

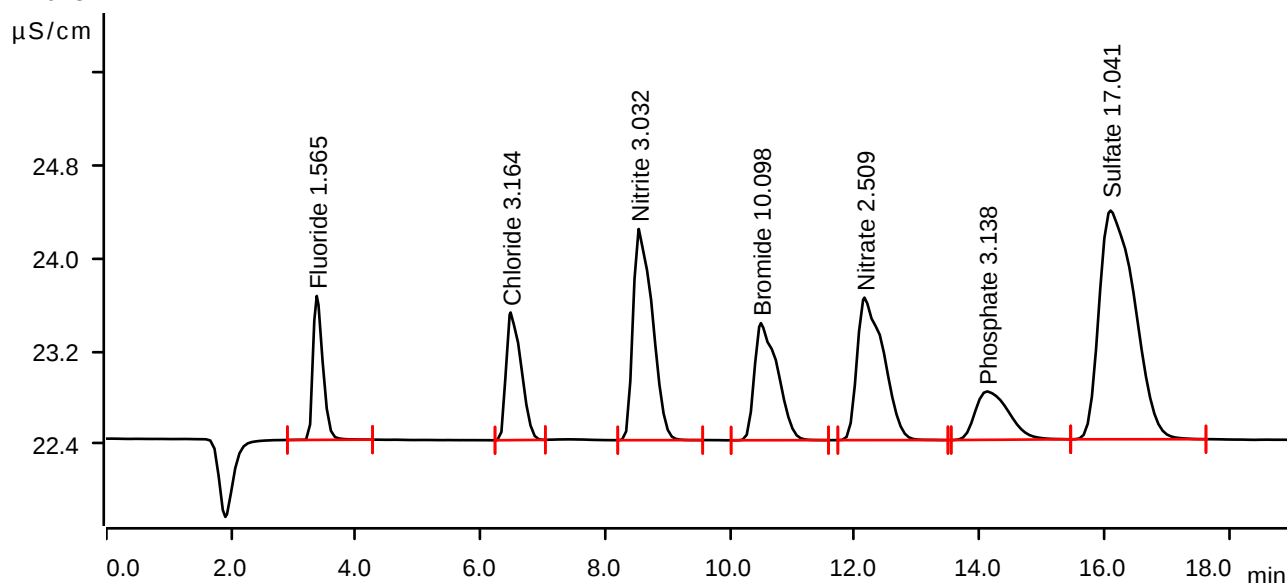
Sample data

Ident P5022-01MS
Sample type Sample
Determination start 2024-11-27 14:12:54 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 min	Area (µS/cm) x min	Height µS/cm	Concentration ppm	Component name
1	3.373	0.2265	1.237	1.565	Fluoride
2	6.482	0.3055	1.097	3.164	Chloride
3	8.537	0.6507	1.814	3.032	Nitrite
4	10.495	0.4295	1.006	10.098	Bromide
5	12.155	0.6004	1.224	2.509	Nitrate
6	14.120	0.2584	0.415	3.138	Phosphate
7	16.100	1.2929	1.964	17.041	Sulfate

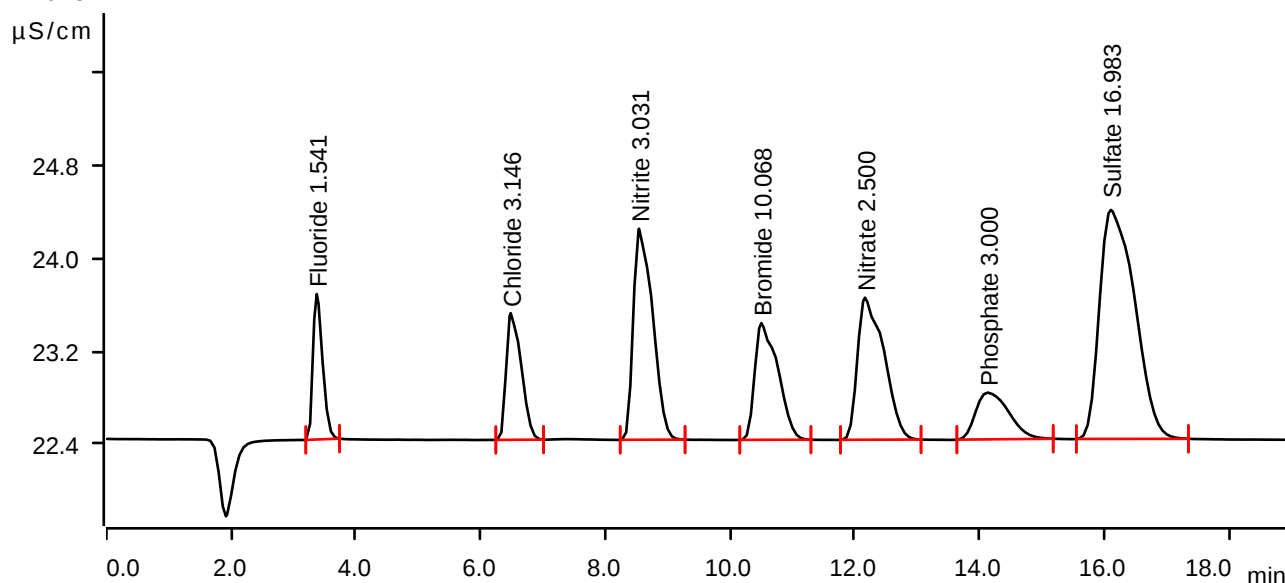
Sample data

Ident P5022-01MSD
Sample type Sample
Determination start 2024-11-27 14:34:27 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 11.71 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	0.2229	1.249	1.541	Fluoride
2	6.483	0.3038	1.088	3.146	Chloride
3	8.542	0.6504	1.813	3.031	Nitrite
4	10.502	0.4282	1.003	10.068	Bromide
5	12.163	0.5983	1.221	2.500	Nitrate
6	14.132	0.2469	0.401	3.000	Phosphate
7	16.105	1.2884	1.967	16.983	Sulfate

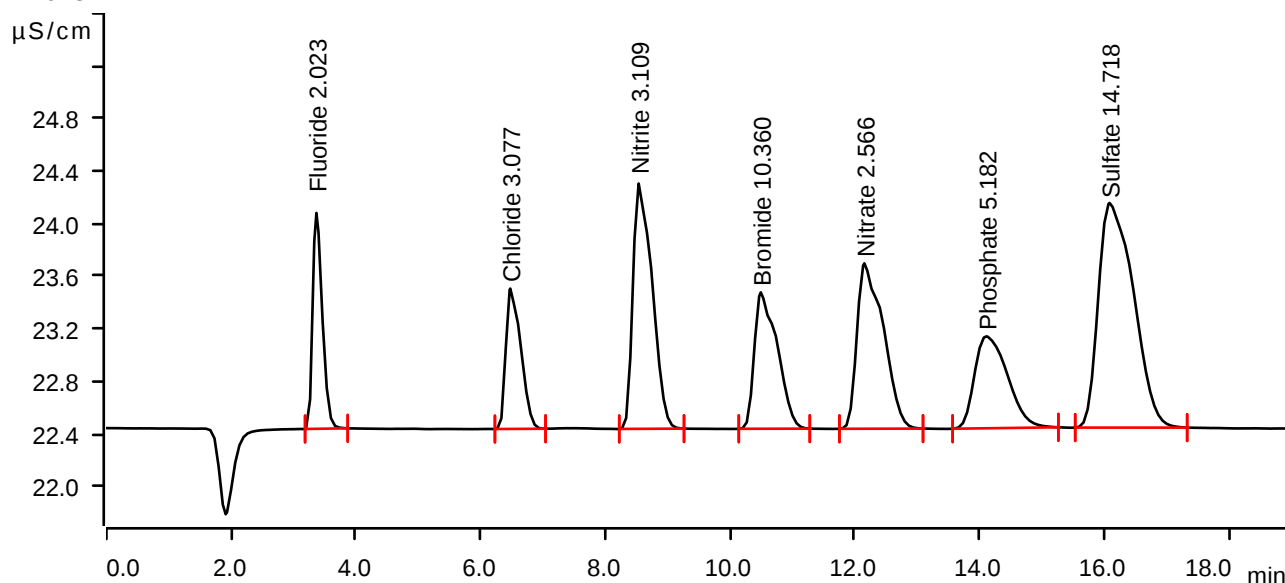
Sample data

Ident CCV
Sample type Check standard 1
Determination start 2024-11-27 14:56:01 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 11.77 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	3.368	0.2932	1.643	2.023	Fluoride
2	6.477	0.2972	1.069	3.077	Chloride
3	8.535	0.6673	1.868	3.109	Nitrite
4	10.493	0.4406	1.038	10.360	Bromide
5	12.153	0.6141	1.259	2.566	Nitrate
6	14.110	0.4283	0.700	5.182	Phosphate
7	16.085	1.1153	1.710	14.718	Sulfate

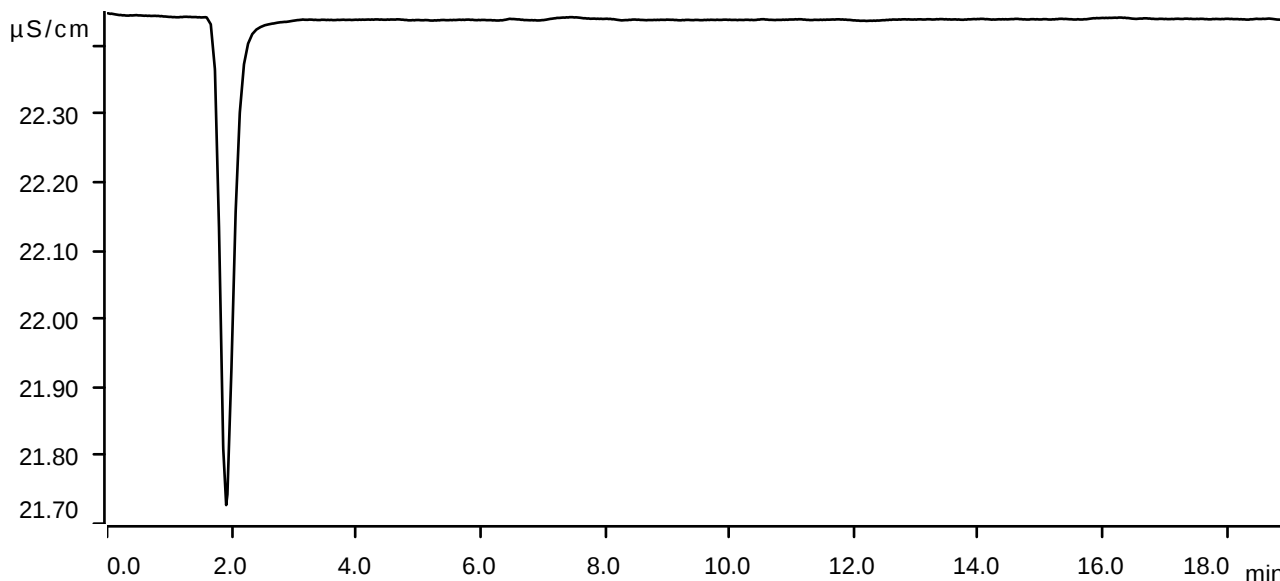
Sample data

Ident CCB
Sample type Sample
Determination start 2024-11-27 15:17:31 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 11.71 MPa
Maximum pressure monitored yes
Temperature ---- °C

Anions



WORKLIST(Hardcopy Internal Chain)

LB133665

WorkList Name : ANIONS S-11272024

WorkList ID : 185854

Department : Wet-Chemistry

Date : 11-27-2024 12:33:45

Sample	Customer Sample	Matrix	Test	Preservative	Customer	Raw Sample Storage Location	Collect Date	Method
P5022-01	5.02g TAPIAL2-SB02D-13-112424-00	Solid	Anions Group1	Cool 4 deg C	WEST04	L41	11/24/2024	9056A

P5022-01MS 0.1g

P5022-01MSA 5.01g

BL 5.00g

BS 5.00g

Final volume 100ml with DI water

Balance ID : WC SC-7 NF

11-27-2024

Date/Time 11-27-2024 12:45

Raw Sample Received by: NF(WC)

Raw Sample Relinquished by: SD GPCR

Date/Time 11-27-2024 14:3

Raw Sample Received by: SD GPCR

Raw Sample Relinquished by: NF(WC)

Analytical Summary Report

Analysis Method: 9045D

Analyst By : jignesh

Parameter: pH

Supervisor Review By : Iwona

Run Number: LB133690

Slope : 98.6

BalanceID: WC SC-7

pH Meter ID : WC PH METER-1

Calibration Standards	Chemtech Log#
PH 4 BUFFER SOLUTION	W3107
BUFFER PH 7.00 GREEN 1PINT PK6	W3093
PH 10.01 BUFFER,COLOR CD 475ML	W3094
buffer solution pH 7 yellow	W3071
Buffer Solution, PH2 (500ml)	W3005
Buffer Solution, PH12 (500ml)	W3072

True Value of ICV = 7.00 Control Limits[+/- 0.1].

True Value of CCV1 = 2.00 Control Limits[+/- 0.1].

True Value of CCV2 = 12.00 Control Limits[+/- 0.1].

Seq	LabID	DF	Matrix	Weight (gm)	Volume (ml)	Temperature (°C)	Result (pH)	Anal Date	Anal Time
1	CAL1	1	Water	NA	NA	20.3	4.01	12/02/2024	15:37
2	CAL2	1	Water	NA	NA	20.3	7.00	12/02/2024	15:38
3	CAL3	1	Water	NA	NA	20.3	10.02	12/02/2024	15:40
4	ICV	1	Water	NA	NA	20.3	7.00	12/02/2024	15:45
5	CCV1	1	Water	NA	NA	20.3	2.01	12/02/2024	15:50
6	P5022-01	1	Solid	20.02	20	22.1	6.17	12/02/2024	16:00
7	P5022-01DUP	1	Solid	20.03	20	22.2	6.18	12/02/2024	16:02
8	CCV2	1	Water	NA	NA	20.3	12.02	12/02/2024	16:05

WORKLIST(Hardcopy Internal Chain)

WP 133690

WorkList Name : PH P5022

WorkList ID : 185903

Department : Wet-Chemistry

Date : 12-02-2024 15:27:24

Sample	Customer Sample	Matrix	Test	Preservative	Customer	Raw Sample Storage Location	Collect Date	Method
P5022-01	TAPIAL2-SB02D-13-112424-00.	Solid	pH	Cool 4 deg C	WEST04	L41	11/24/2024	9045D

Date/Time 12/02/24 15:30
Raw Sample Received by: [Signature]
Raw Sample Relinquished by: [Signature]

Date/Time 12/02/24 17:30
Raw Sample Received by: [Signature]
Raw Sample Relinquished by: [Signature]

Sample ID	Result	Std. Dev.	RSD	Mode	ALT
CCV1	906.9207			TOC	
CCV1	946.1523			TOC	
CCV1	943.5790			TOC	
CCV1.....	952.4374...	..	...	TOC	..
CCB1	24.7643			TOC	
CCB1	7.8669			TOC	
CCB1.....	30.2333...	..	...	TOC	..
CCB1	23.6075			TOC	
LB133779BLS	2.3765			TOC	
LB133779BLS.....	1.9132...	..	...	TOC	..
LB133779BLS	5.4325			TOC	
LB133779BLS	13.4427			TOC	
LB133779BSS.....	960.5422...	..	...	TOC	..
LB133779BSS	966.7218			TOC	
LB133779BSS	945.8391			TOC	
LB133779BSS.....	973.9248...	..	...	TOC	..
P5113-01	313.2646			TOC	
P5113-01	331.6778			TOC	
P5113-01.....	232.7811...	..	...	TOC	..
P5113-01	231.7867			TOC	
P5113-02	424.3524			TOC	
P5113-02.....	348.4884...	..	...	TOC	..
P5113-02	404.6520			TOC	
P5113-02	409.2955			TOC	
P5022-01.....	1592.4867...	..	...	TOC	..
P5022-01	1520.0836			TOC	
P5022-01	1924.7922			TOC	
P5022-01.....	1631.9971...	..	...	TOC	..
P5022-01MS	2194.9075			TOC	
P5022-01MS	2786.8528			TOC	
P5022-01MS.....	2944.4070...	..	...	TOC	..
P5022-01MS	2298.9773			TOC	
P5022-01MSD	2434.9634			TOC	
P5022-01MSD.....	2164.7324...	..	...	TOC	..
P5022-01MSD	3038.4358			TOC	
P5022-01MSD	2567.5728			TOC	
P5076-01.....	1049.1886...	..	...	TOC	..
P5076-01	1247.4980			TOC	
P5076-01	1138.2893			TOC	
P5076-01.....	1132.0439...	..	...	TOC	..
P5117-01	477.3856			TOC	
P5117-01	409.1736			TOC	
P5117-01.....	378.8983...	..	...	TOC	..
P5117-01	338.3237			TOC	
CCV2	1074.5073			TOC	
CCV2.....	980.9690...	..	...	TOC	..
CCV2	974.1614			TOC	
CCV2	965.5085			TOC	
CCB2.....	5.6898...	..	...	TOC	..
CCB2	17.7748			TOC	
CCB2	43.7854			TOC	
CCB2.....	7.1315...	..	...	TOC	..

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Method ID		Sample Type	Vial Timestamp		Message
Boat Sampler		Sample	2024/12/06	10:01	
Boat Sampler		Sample	2024/12/06	10:09	
Boat Sampler		Sample	2024/12/06	10:12	
Boat Sampler	...	Sample	..	..2024/12/06 10:16	..
Boat Sampler		Sample	2024/12/06	10:21	
Boat Sampler		Sample	2024/12/06	10:24	Low Sample Detected
Boat Sampler	...	Sample	..	..2024/12/06 10:26	..
Boat Sampler		Sample	2024/12/06	10:28	
Boat Sampler		Sample	2024/12/06	10:32	Low Sample Detected
Boat Sampler	...	Sample	..	..2024/12/06 10:36	..Low Sample Detected
Boat Sampler		Sample	2024/12/06	10:52	Low Sample Detected
Boat Sampler		Sample	2024/12/06	10:59	
Boat Sampler	...	Sample	..	..2024/12/06 11:04	..
Boat Sampler		Sample	2024/12/06	11:06	
Boat Sampler		Sample	2024/12/06	11:10	
Boat Sampler	...	Sample	..	..2024/12/06 11:15	..
Boat Sampler		Sample	2024/12/06	11:45	
Boat Sampler		Sample	2024/12/06	11:53	
Boat Sampler	...	Sample	..	..2024/12/06 12:05	..
Boat Sampler		Sample	2024/12/06	12:09	
Boat Sampler		Sample	2024/12/06	12:43	
Boat Sampler	...	Sample	..	..2024/12/06 12:51	..
Boat Sampler		Sample	2024/12/06	12:55	
Boat Sampler		Sample	2024/12/06	13:00	
Boat Sampler	...	Sample	..	..2024/12/06 13:17	..
Boat Sampler		Sample	2024/12/06	13:23	
Boat Sampler		Sample	2024/12/06	13:27	
Boat Sampler	...	Sample	..	..2024/12/06 13:55	..
Boat Sampler		Sample	2024/12/06	14:02	
Boat Sampler		Sample	2024/12/06	14:05	
Boat Sampler	...	Sample	..	..2024/12/06 14:09	..
Boat Sampler		Sample	2024/12/06	14:12	
Boat Sampler		Sample	2024/12/06	14:16	
Boat Sampler	...	Sample	..	..2024/12/06 14:20	..
Boat Sampler		Sample	2024/12/06	14:23	
Boat Sampler		Sample	2024/12/06	14:25	
Boat Sampler	...	Sample	..	..2024/12/06 14:51	..
Boat Sampler		Sample	2024/12/06	14:55	
Boat Sampler		Sample	2024/12/06	15:12	
Boat Sampler	...	Sample	..	..2024/12/06 15:17	..
Boat Sampler		Sample	2024/12/06	15:24	
Boat Sampler		Sample	2024/12/06	15:27	
Boat Sampler	...	Sample	..	..2024/12/06 15:30	..
Boat Sampler		Sample	2024/12/06	15:34	
Boat Sampler		Sample	2024/12/06	15:38	
Boat Sampler	...	Sample	..	..2024/12/06 15:41	..
Boat Sampler		Sample	2024/12/06	15:43	
Boat Sampler		Sample	2024/12/06	15:46	
Boat Sampler	...	Sample	..	..2024/12/06 15:50	..Low Sample Detected
Boat Sampler		Sample	2024/12/06	15:55	
Boat Sampler		Sample	2024/12/06	15:59	
Boat Sampler	...	Sample	..	..2024/12/06 16:02	..Low Sample Detected

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Sample ID: CCB1 Mode: TOC
Method: Boat Sampler Filename: 12061025
Cal. Curve: TOC SOIL Timestamp: 2024/12/06 10:26
Operator ID: NF IZ Sample Type: Sample

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	30.2333	1.2093	85634	-2.969	-1.983	37

Sample ID: CCB1 Mode: TOC
Method: Boat Sampler Filename: 12061027
Cal. Curve: TOC SOIL Timestamp: 2024/12/06 10:28
Operator ID: NF IZ Sample Type: Sample

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	23.6075	0.9443	66867	-2.937	-1.944	33

Sample ID: LB133779BLS Mode: TOC
Method: Boat Sampler Filename: 12061029
Cal. Curve: TOC SOIL Timestamp: 2024/12/06 10:32
Operator ID: NF IZ Sample Type: Sample

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	2.3765	0.0951	6731	-2.943	-3.029	120

Last Message: Low Sample Detected

Sample ID: LB133779BLS Mode: TOC
Method: Boat Sampler Filename: 12061033
Cal. Curve: TOC SOIL Timestamp: 2024/12/06 10:36
Operator ID: NF IZ Sample Type: Sample

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	1.9132	0.0765	5419	-2.979	-3.048	120

Last Message: Low Sample Detected

Sample ID: LB133779BLS Mode: TOC
Method: Boat Sampler Filename: 12061049
Cal. Curve: TOC SOIL Timestamp: 2024/12/06 10:52
Operator ID: NF IZ Sample Type: Sample

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	5.4325	0.2173	15387	-3.102	-3.151	120

Last Message: Low Sample Detected

Sample ID: LB133779BLS Mode: TOC
Method: Boat Sampler Filename: 12061058
Cal. Curve: TOC SOIL Timestamp: 2024/12/06 10:59
Operator ID: NF IZ Sample Type: Sample

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	13.4427	0.5377	38076	-3.204	-2.207	32

Sample ID: LB133779BSS Mode: TOC
Method: Boat Sampler Filename: 12061102
Cal. Curve: TOC SOIL Timestamp: 2024/12/06 11:04
Operator ID: NF IZ Sample Type: Sample

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	960.5422	38.4217	2720693	-3.023	-2.028	65

Sample ID: LB133779BSS Mode: TOC
Method: Boat Sampler Filename: 12061104
Cal. Curve: TOC SOIL Timestamp: 2024/12/06 11:06
Operator ID: NF IZ Sample Type: Sample

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	966.7218	38.6689	2738197	-2.960	-1.965	67

Sample ID: LB133779BSS Mode: TOC
Method: Boat Sampler Filename: 12061108
Cal. Curve: TOC SOIL Timestamp: 2024/12/06 11:10
Operator ID: NF IZ Sample Type: Sample

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	945.8391	37.8336	2679048	-3.196	-2.200	68

Sample ID: LB133779BSS Mode: TOC
Method: Boat Sampler Filename: 12061113
Cal. Curve: TOC SOIL Timestamp: 2024/12/06 11:15
Operator ID: NF IZ Sample Type: Sample

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	973.9248	38.9570	2758599	-3.246	-2.248	69

Sample ID: P5113-01 Mode: TOC
Method: Boat Sampler Filename: 12061143
Cal. Curve: TOC SOIL Timestamp: 2024/12/06 11:45
Operator ID: NF IZ Sample Type: Sample

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	313.2646	1.9422	137533	-3.371	-2.381	36

Sample ID: P5113-01 Mode: TOC
Method: Boat Sampler Filename: 12061152
Cal. Curve: TOC SOIL Timestamp: 2024/12/06 11:53
Operator ID: NF IZ Sample Type: Sample

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	331.6778	2.4212	171452	-3.383	-2.390	37

Sample ID: P5113-01
Method: Boat Sampler
Cal. Curve: TOC SOIL
Operator ID: NF IZ

Mode: TOC
Filename: 12061204
Timestamp: 2024/12/06 12:05
Sample Type: Sample

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	232.7811	1.6062	113737	-3.366	-2.367	36

Sample ID: P5113-01
Method: Boat Sampler
Cal. Curve: TOC SOIL
Operator ID: NF IZ

Mode: TOC
Filename: 12061208
Timestamp: 2024/12/06 12:09
Sample Type: Sample

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	231.7867	1.5761	111609	-3.419	-2.425	34

Sample ID: P5113-02
Method: Boat Sampler
Cal. Curve: TOC SOIL
Operator ID: NF IZ

Mode: TOC
Filename: 12061242
Timestamp: 2024/12/06 12:43
Sample Type: Sample

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	424.3524	3.0553	216353	-3.366	-2.373	42

Sample ID: P5113-02
Method: Boat Sampler
Cal. Curve: TOC SOIL
Operator ID: NF IZ

Mode: TOC
Filename: 12061250
Timestamp: 2024/12/06 12:51
Sample Type: Sample

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	348.4884	2.0909	148062	-3.386	-2.387	42

Sample ID: P5113-02
Method: Boat Sampler
Cal. Curve: TOC SOIL
Operator ID: NF IZ

Mode: TOC
Filename: 12061254
Timestamp: 2024/12/06 12:55
Sample Type: Sample

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	404.6520	2.2661	160462	-3.350	-2.358	40

Sample ID: P5113-02
Method: Boat Sampler
Cal. Curve: TOC SOIL
Operator ID: NF IZ

Mode: TOC
Filename: 12061259
Timestamp: 2024/12/06 13:00
Sample Type: Sample

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
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1	409.2955	2.4558	173897	-3.416	-2.418	41
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Sample ID: P5022-01
Method: Boat Sampler
Cal. Curve: TOC SOIL
Operator ID: NF IZ

Mode: TOC
Filename: 12061315
Timestamp: 2024/12/06 13:17
Sample Type: Sample

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	1592.4867	12.7399	902130	-3.460	-2.463	53

Sample ID: P5022-01
Method: Boat Sampler
Cal. Curve: TOC SOIL
Operator ID: NF IZ

Mode: TOC
Filename: 12061322
Timestamp: 2024/12/06 13:23
Sample Type: Sample

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	1520.0836	10.3366	731947	-3.406	-2.412	51

Sample ID: P5022-01
Method: Boat Sampler
Cal. Curve: TOC SOIL
Operator ID: NF IZ

Mode: TOC
Filename: 12061325
Timestamp: 2024/12/06 13:27
Sample Type: Sample

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	1924.7922	11.1638	790524	-3.446	-2.453	52

Sample ID: P5022-01
Method: Boat Sampler
Cal. Curve: TOC SOIL
Operator ID: NF IZ

Mode: TOC
Filename: 12061354
Timestamp: 2024/12/06 13:55
Sample Type: Sample

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	1631.9971	10.2816	728053	-3.216	-2.222	49

Sample ID: P5022-01MS
Method: Boat Sampler
Cal. Curve: TOC SOIL
Operator ID: NF IZ

Mode: TOC
Filename: 12061400
Timestamp: 2024/12/06 14:02
Sample Type: Sample

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	2194.9075	12.7305	901462	-3.349	-2.353	54

Sample ID: P5022-01MS
Method: Boat Sampler
Cal. Curve: TOC SOIL
Operator ID: NF IZ

Mode: TOC
Filename: 12061403
Timestamp: 2024/12/06 14:05
Sample Type: Sample

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	2786.8528	15.3277	1085375	-3.316	-2.321	59

Sample ID: P5022-01MS Mode: TOC
Method: Boat Sampler Filename: 12061407
Cal. Curve: TOC SOIL Timestamp: 2024/12/06 14:09
Operator ID: NF IZ Sample Type: Sample

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	2944.4070	18.2553	1292685	-3.368	-2.374	62

Sample ID: P5022-01MS Mode: TOC
Method: Boat Sampler Filename: 12061411
Cal. Curve: TOC SOIL Timestamp: 2024/12/06 14:12
Operator ID: NF IZ Sample Type: Sample

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	2298.9773	14.2537	1009322	-3.389	-2.396	57

Sample ID: P5022-01MSD Mode: TOC
Method: Boat Sampler Filename: 12061414
Cal. Curve: TOC SOIL Timestamp: 2024/12/06 14:16
Operator ID: NF IZ Sample Type: Sample

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	2434.9634	16.5578	1172477	-3.359	-2.360	59

Sample ID: P5022-01MSD Mode: TOC
Method: Boat Sampler Filename: 12061418
Cal. Curve: TOC SOIL Timestamp: 2024/12/06 14:20
Operator ID: NF IZ Sample Type: Sample

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	2164.7324	12.9884	919726	-3.330	-2.331	54

Sample ID: P5022-01MSD Mode: TOC
Method: Boat Sampler Filename: 12061421
Cal. Curve: TOC SOIL Timestamp: 2024/12/06 14:23
Operator ID: NF IZ Sample Type: Sample

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	3038.4358	18.8383	1333967	-3.342	-2.344	61

Sample ID: P5022-01MSD Mode: TOC
Method: Boat Sampler Filename: 12061424
Cal. Curve: TOC SOIL Timestamp: 2024/12/06 14:25
Operator ID: NF IZ Sample Type: Sample

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	2567.5728	14.8919	1054518	-3.298	-2.298	57

Sample ID: P5076-01
Method: Boat Sampler
Cal. Curve: TOC SOIL
Operator ID: NF IZ

Mode: TOC
Filename: 12061449
Timestamp: 2024/12/06 14:51
Sample Type: Sample

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	1049.1886	5.6656	401190	-3.439	-2.439	46

Sample ID: P5076-01
Method: Boat Sampler
Cal. Curve: TOC SOIL
Operator ID: NF IZ

Mode: TOC
Filename: 12061453
Timestamp: 2024/12/06 14:55
Sample Type: Sample

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	1247.4980	6.7365	477020	-3.456	-2.459	47

Sample ID: P5076-01
Method: Boat Sampler
Cal. Curve: TOC SOIL
Operator ID: NF IZ

Mode: TOC
Filename: 12061511
Timestamp: 2024/12/06 15:12
Sample Type: Sample

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	1138.2893	6.6021	467502	-3.417	-2.425	50

Sample ID: P5076-01
Method: Boat Sampler
Cal. Curve: TOC SOIL
Operator ID: NF IZ

Mode: TOC
Filename: 12061516
Timestamp: 2024/12/06 15:17
Sample Type: Sample

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	1132.0439	6.2262	440889	-3.397	-2.398	45

Sample ID: P5117-01
Method: Boat Sampler
Cal. Curve: TOC SOIL
Operator ID: NF IZ

Mode: TOC
Filename: 12061522
Timestamp: 2024/12/06 15:24
Sample Type: Sample

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	477.3856	3.4372	243391	-3.413	-2.424	39

Sample ID: P5117-01
Method: Boat Sampler
Cal. Curve: TOC SOIL
Operator ID: NF IZ

Mode: TOC
Filename: 12061526
Timestamp: 2024/12/06 15:27
Sample Type: Sample

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	409.1736	2.7824	197024	-3.384	-2.392	38

Sample ID: P5117-01

Mode: TOC

Method: Boat Sampler
Cal. Curve: TOC SOIL
Operator ID: NF IZ

Filename: 12061529
Timestamp: 2024/12/06 15:30
Sample Type: Sample

Reviewed By:Iwona
On:12/10/2024 9:22:06
AM
Inst Id :Appolo-9000
LB :LB133779

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	378.8983	3.0312	214643	-3.379	-2.382	36

Sample ID: P5117-01
Method: Boat Sampler
Cal. Curve: TOC SOIL
Operator ID: NF IZ

Mode: TOC
Filename: 12061533
Timestamp: 2024/12/06 15:34
Sample Type: Sample

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	338.3237	1.9623	138952	-3.396	-2.402	36

Sample ID: CCV2
Method: Boat Sampler
Cal. Curve: TOC SOIL
Operator ID: NF IZ

Mode: TOC
Filename: 12061535
Timestamp: 2024/12/06 15:38
Sample Type: Sample

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	1074.5073	42.9803	3043495	-3.365	-2.366	88

Sample ID: CCV2
Method: Boat Sampler
Cal. Curve: TOC SOIL
Operator ID: NF IZ

Mode: TOC
Filename: 12061539
Timestamp: 2024/12/06 15:41
Sample Type: Sample

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	980.9690	39.2388	2778551	-3.194	-2.195	71

Sample ID: CCV2
Method: Boat Sampler
Cal. Curve: TOC SOIL
Operator ID: NF IZ

Mode: TOC
Filename: 12061542
Timestamp: 2024/12/06 15:43
Sample Type: Sample

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	974.1614	38.9665	2759269	-3.147	-2.151	71

Sample ID: CCV2
Method: Boat Sampler
Cal. Curve: TOC SOIL
Operator ID: NF IZ

Mode: TOC
Filename: 12061544
Timestamp: 2024/12/06 15:46
Sample Type: Sample

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	965.5085	38.6203	2734760	-3.083	-2.083	68

Sample ID: CCB2
Method: Boat Sampler
Cal. Curve: TOC SOIL

Mode: TOC
Filename: 12061547
Timestamp: 2024/12/06 15:50

Operator ID: NF IZ

Sample Type: Sample

Reviewed By:Iwona
On:12/10/2024 9:22:06
AM
Inst Id :Appolo-9000
LB :LB133779

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	5.6898	0.2276	16116	-3.126	-3.264	120

Last Message: Low Sample Detected

Sample ID: CCB2
Method: Boat Sampler
Cal. Curve: TOC SOIL
Timestamp: 2024/12/06 15:55
Operator ID: NF IZ
Mode: TOC
Filename: 12061554

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	17.7748	0.7110	50346	-3.273	-2.286	32

Sample ID: CCB2
Method: Boat Sampler
Cal. Curve: TOC SOIL
Operator ID: NF IZ
Mode: TOC
Filename: 12061558
Timestamp: 2024/12/06 15:59
Sample Type: Sample

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	43.7854	1.7514	124020	-3.256	-2.258	42

Sample ID: CCB2
Method: Boat Sampler
Cal. Curve: TOC SOIL
Operator ID: NF IZ
Mode: TOC
Filename: 12061559
Timestamp: 2024/12/06 16:02
Sample Type: Sample

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	7.1315	0.2853	20200	-3.217	-3.281	120

Last Message: Low Sample Detected

Sample ID	Result	Std. Dev.	RSD	Mode	ALT
BLANK	9263	5695	61.48	TOC	
250mg/l	813930	31881	3.92	TOC	
500mg/l	1580916	138813	8.78	TOC	
1000mg/l.....	2797885...	74757..	2.67...	TOC	..
2000mg/l	5752648	21216	0.37	TOC	
ICV	943.9813			TOC	
ICV.....	919.2893...	..	...	TOC	..
ICV	940.0988			TOC	
ICV	933.3373			TOC	
ICB.....	4.4514...	..	...	TOC	..
ICB	9.3085			TOC	
ICB	6.7305			TOC	
ICB.....	7.5078...	..	...	TOC	..

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Method ID	Sample Type	Vial	Timestamp	Message
Boat Sampler	TOC Standard		2024/11/12 11:01	Low Sample Detected
Boat Sampler	TOC Standard		2024/11/12 11:15	
Boat Sampler	TOC Standard		2024/11/12 11:27	
Boat Sampler	...TOC Standard	..	..2024/11/12 11:36	..
Boat Sampler	TOC Standard		2024/11/12 12:05	
Boat Sampler	Sample		2024/11/12 12:12	
Boat Sampler	...Sample	..	..2024/11/12 12:14	..
Boat Sampler	Sample		2024/11/12 12:16	
Boat Sampler	Sample		2024/11/12 12:18	
Boat Sampler	...Sample	..	..2024/11/12 12:23	..Low Sample Detected
Boat Sampler	Sample		2024/11/12 12:26	Low Sample Detected
Boat Sampler	Sample		2024/11/12 12:29	Low Sample Detected
Boat Sampler	...Sample	..	..2024/11/12 12:32	..Low Sample Detected

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Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1			5772363	-2.492	-1.493	116
2			5763448	-2.138	-1.139	91
3			5723617	-0.015	0.979	57
4			5751163	-0.355	0.644	62

<<<Statistics>>> Mean: 5752648 Std Dev: 21216 RSD: 0.37

Sample ID: ICV
Method: Boat Sampler
Cal. Curve: TOC SOIL
Operator ID: NF IZ

Mode: TOC
Filename: 11121210
Timestamp: 2024/11/12 12:12
Sample Type: Sample

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	943.9813	37.7593	2673786	-2.569	-1.574	83

Sample ID: ICV
Method: Boat Sampler
Cal. Curve: TOC SOIL
Operator ID: NF IZ

Mode: TOC
Filename: 11121212
Timestamp: 2024/11/12 12:14
Sample Type: Sample

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	919.2893	36.7716	2603846	-2.379	-1.380	64

Sample ID: ICV
Method: Boat Sampler
Cal. Curve: TOC SOIL
Operator ID: NF IZ

Mode: TOC
Filename: 11121214
Timestamp: 2024/11/12 12:16
Sample Type: Sample

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	940.0988	37.6040	2662788	-2.346	-1.346	61

Sample ID: ICV
Method: Boat Sampler
Cal. Curve: TOC SOIL
Operator ID: NF IZ

Mode: TOC
Filename: 11121217
Timestamp: 2024/11/12 12:18
Sample Type: Sample

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	933.3373	37.3335	2643637	-2.443	-1.445	63

Sample ID: ICB
Method: Boat Sampler
Cal. Curve: TOC SOIL
Operator ID: NF IZ

Mode: TOC
Filename: 11121220
Timestamp: 2024/11/12 12:23
Sample Type: Sample

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	4.4514	0.1781	12608	-2.598	-2.685	120

Last Message: Low Sample Detected
=====

Sample ID: ICB Mode: TOC
Method: Boat Sampler Filename: 11121223
Cal. Curve: TOC SOIL Timestamp: 2024/11/12 12:26
Operator ID: NF IZ Sample Type: Sample

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	9.3085	0.3723	26366	-2.661	-2.693	120

Last Message: Low Sample Detected
=====

Sample ID: ICB Mode: TOC
Method: Boat Sampler Filename: 11121226
Cal. Curve: TOC SOIL Timestamp: 2024/11/12 12:29
Operator ID: NF IZ Sample Type: Sample

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	6.7305	0.2692	19064	-2.649	-2.682	120

Last Message: Low Sample Detected
=====

Sample ID: ICB Mode: TOC
Method: Boat Sampler Filename: 11121230
Cal. Curve: TOC SOIL Timestamp: 2024/11/12 12:32
Operator ID: NF IZ Sample Type: Sample

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	7.5078	0.3003	2			
1266	-2.657	-2.679	120			

Last Message: Low Sample Detected
=====

Calibration Report Print Date/Time: 2024/11/12 12:05:31

Cal. Curve ID: TOC SOIL
Created: 2024/11/12 12:05
Calibration Factor (m): 7.081e+04
Y Intercept (b): 66586
r-squared: 0.99875

Standard ID	Y	X Expected	Measured	Message	Date & Time
	Raw Data	ug C	ug C		
BLANK	9263	0.000	-0.810		2024/11/12 11:01
250mg/l	813930	10.000	10.554	5.5	2024/11/12 11:15
500mg/l	1580917	20.000	21.385	6.9	2024/11/12 11:27
1000mg/l	2797884	40.000	38.571	-3.6	2024/11/12 11:36
2000mg/l	5752648	80.000	80.299	0.4	2024/11/12 12:05

12
11/12/24

WORKLIST(Hardcopy Internal Chain)

LB133779

WorkList Name : TOC SOIL-12032024

WorkList ID : 185934

Department : Wet-Chemistry

Date : 12-03-2024 15:04:40

Sample	Customer Sample	Matrix	Test	Preservative	Customer	Raw Sample Storage Location	Collect Date	Method
P5113-01	FES-SB406-4345	Solid	TOC	Cool 4 deg C	TETR06	L31	12/04/2024	9060A
P5113-02	FES-SB406-7375	Solid	TOC	Cool 4 deg C	TETR06	L31	12/04/2024	9060A
P5022-01	TAPIAL2-SB02D-13-112424-00-	Solid	TOC	Cool 4 deg C	WEST04	L41	11/24/2024	9060A
P5076-01	TAPIAL2-SB02I-7.5-120224-00-	Solid	TOC	Cool 4 deg C	WEST04	L61	12/02/2024	9060A
P5117-01	TAPIAL3-SB04I-10-120324-00-	Solid	TOC	Cool 4 deg C	WEST04	L41	12/05/2024	9060A

Date/Time 12.06.2024, 08:30
Raw Sample Received by: NFWC
Raw Sample Relinquished by: NFWC

Instrument ID: IC-2

Daily Analysis Runlog For Sequence/QC Batch ID # LB133665

Review By	Niha	Review On	12/2/2024 10:14:59 AM
Supervise By	Iwona	Supervise On	12/2/2024 2:04:18 PM
SubDirectory	LB133665	Test	Anions
STD. NAME	STD REF.#		
ICAL Standard	WP110752,WP110753,WP110754,WP110755,WP110756,WP110757,WP110758		
ICV Standard	WP110759		
CCV Standard	WP110890		
ICSA Standard	N/A		
CRI Standard	N/A		
LCS Standard	WP110891		
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 W2865	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	11/27/24 11:26		NF/IZ	OK
11	CCB1	CCB1	CCB	11/27/24 11:47		NF/IZ	OK
12	LB133665BLS	LB133665BLS	MB	11/27/24 12:09		NF/IZ	OK
13	LB133665BSS	LB133665BSS	LCS	11/27/24 12:30		NF/IZ	OK
14	P5022-01	TAPIAL2-SB02D-13-1	SAM	11/27/24 13:51		NF/IZ	OK
15	P5022-01MS	TAPIAL2-SB02D-13-1	MS	11/27/24 14:12	5ML W3091	NF/IZ	OK
16	P5022-01MSD	TAPIAL2-SB02D-13-1	MSD	11/27/24 14:34	5ML W3091	NF/IZ	OK
17	CCV2	CCV2	CCV	11/27/24 14:56		NF/IZ	OK
18	CCB2	CCB2	CCB	11/27/24 15:17		NF/IZ	OK

Instrument ID: WC PH METER-1

Daily Analysis Runlog For Sequence/QC Batch ID # LB133690

Review By	jignesh	Review On	12/2/2024 3:34:16 PM
Supervise By	Iwona	Supervise On	12/2/2024 3:59:12 PM
SubDirectory	LB133690	Test	pH
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	W3107,W3093,W3094,W3071,W3005,W3072		

Sr#	SampleId	ClientID	QcType	Date	Comment	Operator	Status
1	CAL1	CAL1	CAL	12/02/24 15:37		Jignesh	OK
2	CAL2	CAL2	CAL	12/02/24 15:38		Jignesh	OK
3	CAL3	CAL3	CAL	12/02/24 15:40		Jignesh	OK
4	ICV	ICV	ICV	12/02/24 15:45		Jignesh	OK
5	CCV1	CCV1	CCV	12/02/24 15:50		Jignesh	OK
6	P5022-01	TAPIAL2-SB02D-13-1	SAM	12/02/24 16:00		Jignesh	OK
7	P5022-01DUP	TAPIAL2-SB02D-13-1	DUP	12/02/24 16:02		Jignesh	OK
8	CCV2	CCV2	CCV	12/02/24 16:05		Jignesh	OK

Instrument ID: TOC

Daily Analysis Runlog For Sequence/QC Batch ID # LB133779

Review By	Niha	Review On	12/9/2024 2:36:05 PM
Supervise By	Iwona	Supervise On	12/10/2024 9:22:06 AM
SubDirectory	LB133779	Test	TOC
STD. NAME	STD REF.#		
ICAL Standard	WP110667,WP110662,WP110663,WP110664,WP110665		
ICV Standard	WP110666		
CCV Standard	WP111002		
ICSA Standard	N/A		
CRI Standard	N/A		
LCS Standard	WP111003		
Chk Standard	WP109225		

Sr#	SampleId	ClientID	QcType	Date	Comment	Operator	Status
1	BLANK	BLANK	CAL1	11/12/24 11:01		NF IZ	OK
2	250mg/l	250mg/l	CAL2	11/12/24 11:15		NF IZ	OK
3	500mg/l	500mg/l	CAL3	11/12/24 11:27		NF IZ	OK
4	1000mg/l	1000mg/l	CAL4	11/12/24 11:36		NF IZ	OK
5	2000mg/l	2000mg/l	CAL5	11/12/24 12:05		NF IZ	OK
6	ICV1	ICV1	ICV	11/12/24 12:18		NF IZ	OK
7	ICB1	ICB1	ICB	11/12/24 12:32		NF IZ	OK
8	CCV1	CCV1	CCV	12/06/24 10:16		NF IZ	OK
9	CCB1	CCB1	CCB	12/06/24 10:28		NF IZ	OK
10	LB133779BLS	LB133779BLS	MB	12/06/24 10:59		NF IZ	OK
11	LB133779BSS	LB133779BSS	LCS	12/06/24 11:15		NF IZ	OK
12	P5113-01	FES-SB406-4345	SAM	12/06/24 12:09		NF IZ	OK
13	P5113-02	FES-SB406-7375	SAM	12/06/24 13:00		NF IZ	OK
14	P5022-01	TAPIAL2-SB02D-13-1	SAM	12/06/24 13:55		NF IZ	OK
15	P5022-01MS	TAPIAL2-SB02D-13-1	MS	12/06/24 14:12	sample + 40ul of 111002	NF IZ	OK
16	P5022-01MSD	TAPIAL2-SB02D-13-1	MSD	12/06/24 14:25	sample + 40ul of 111002	NF IZ	OK
17	P5076-01	TAPIAL2-SB02I-7.5-1	SAM	12/06/24 15:17		NF IZ	OK
18	P5117-01	TAPIAL3-SB04I-10-12	SAM	12/06/24 15:34		NF IZ	OK

Instrument ID: TOC

Daily Analysis Runlog For Sequence/QC Batch ID # LB133779

Review By	Niha	Review On	12/9/2024 2:36:05 PM
Supervise By	Iwona	Supervise On	12/10/2024 9:22:06 AM
SubDirectory	LB133779	Test	TOC

STD. NAME	STD REF.#
ICAL Standard	WP110667,WP110662,WP110663,WP110664,WP110665
ICV Standard	WP110666
CCV Standard	WP111002
ICSA Standard	N/A
CRI Standard	N/A
LCS Standard	WP111003
Chk Standard	WP109225

19	CCV2	CCV2	CCV	12/06/24 15:46		NF IZ	OK
20	CCB2	CCB2	CCB	12/06/24 16:02		NF IZ	OK

Prep Standard - Chemical Standard Summary

Order ID : P5022

Test : Anions Group1,Percent Solids,pH,TOC

Prepbatch ID :

Sequence ID/Qc Batch ID: LB133665,LB133690,LB133779,

Standard ID :

WP109217,WP109218,WP109225,WP110259,WP110662,WP110663,WP110664,WP110665,WP110666,WP110667,W
P110752,WP110753,WP110754,WP110755,WP110756,WP110757,WP110758,WP110759,WP110760,WP110761,WP11
0890,WP110891,WP111002,WP111003,

Chemical ID :

M5673,W2647,W2784,W2860,W3005,W3058,W3062,W3063,W3071,W3072,W3093,W3094,W3107,W3111,W3112,

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>
2050	TOC STOCK STD, 4000PPM	WP109217	08/07/2024	01/18/2025	Iwona Zarych	WETCHEM_SCALE_5 (WC)	WETCHEM_FIPETTE_3 (WC)	Mohan Bera 08/16/2024
FROM 5.00000ml of W2860 + 8.51200gram of W3111 + 990.00000ml 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>
2051	TOC STOCK STD-SS, 4000PPM	WP109218	08/07/2024	02/07/2025	Iwona Zarych	WETCHEM_SCALE_5 (WC)	WETCHEM_FIPETTE_3 (WC)	Mohan Bera 08/16/2024
FROM 5.00000ml of W2860 + 8.51200gram of W2784 + 990.00000ml of W3112 = Final Quantity: 1000.000 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>
2435	1:1 PHOSPHORIC ACID FOR TOC SOILS	WP109225	08/07/2024	02/07/2025	Iwona Zarych	None	WETCHEM_FIPETTE_3 (WC)	Mohan Bera 08/16/2024
FROM 50.00000ml of W2860 + 50.00000ml of W3112 = Final Quantity: 100.000 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>
4035	IC ELUENT CONCENTRATE FOR IC-1	WP110259	10/16/2024	04/16/2025	Iwona Zarych	WETCHEM_SCALE_5 (WC SC-5)	None	Jignesh Parikh 10/17/2024
FROM 2.10000gram of W2647 + 84.75000gram of W3058 + 913.15000ml of W3112 = Final Quantity: 1000.000 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>
712	TOC SOIL cal 250ppm	WP110662	11/12/2024	11/19/2024	Niha Farheen Shaik	None	None	Iwona Zarych
								11/14/2024

FROM 15.00000ml of W3112 + 1.00000ml of WP109217 = Final Quantity: 16.000 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>
710	TOC SOIL cal 500ppm	WP110663	11/12/2024	11/19/2024	Niha Farheen Shaik	None	None	Iwona Zarych
								11/14/2024

FROM 14.00000ml of W3112 + 2.00000ml of WP109217 = Final Quantity: 16.000 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>
3544	TOC SOIL Cal- CCV 1000PPM	WP110664	11/12/2024	11/19/2024	Niha Farheen Shaik	None	None	Iwona Zarych
11/14/2024								

FROM 15.00000ml of W3112 + 5.00000ml of WP109217 = Final Quantity: 20.000 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>
713	TOC SOIL cal 2000ppm	WP110665	11/12/2024	11/19/2024	Niha Farheen Shaik	None	None	Iwona Zarych
11/14/2024								

FROM 5.00000ml of W3112 + 5.00000ml of WP109217 = 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>
2819	TOC ICV-LCSS, 1000PPM	WP110666	11/12/2024	11/19/2024	Niha Farheen Shaik	None	None	Iwona Zarych
								11/14/2024

FROM 15.00000ml of W3112 + 5.00000ml of WP109218 = Final Quantity: 20.000 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>
304	TOC CAL 0.00ppm	WP110667	11/12/2024	11/19/2024	Niha Farheen Shaik	None	None	Iwona Zarych
								11/14/2024

FROM 100.00000ml of W3112 = Final Quantity: 100.000 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>
2487	Anions 300/9056 calibration standard 1	WP110752	11/18/2024	11/19/2024	Niha Farheen Shaik	None	None	Iwona Zarych 11/19/2024

FROM 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

FROM 0.20000ml of W3063 + 9.80000ml 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>
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
FROM 0.40000ml of W3063 + 9.60000ml 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>
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								

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>
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

<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

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>
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

<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

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>
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

<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

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>
3680	Anions 300/9056 calibration standard 5-CCV	WP110890	11/27/2024	11/28/2024	Niha Farheen Shaik	None	None	Iwona Zarych 12/02/2024

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	WP110891	11/27/2024	11/28/2024	Niha Farheen Shaik	None	None	Iwona Zarych 12/02/2024

FROM 45.00000ml of W3112 + 5.00000ml of W3062 = 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>
3544	TOC SOIL Cal- CCV 1000PPM	WP111002	12/06/2024	12/13/2024	Niha Farheen Shaik	None	None	Iwona Zarych
								12/09/2024

FROM 15.00000ml of W3112 + 5.00000ml of WP109217 = Final Quantity: 20.000 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>
2819	TOC ICV-LCSS, 1000PPM	WP111003	12/06/2024	12/13/2024	Niha Farheen Shaik	None	None	Iwona Zarych
								12/09/2024

FROM 15.00000ml of W3112 + 5.00000ml of WP109218 = Final Quantity: 20.000 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.	P243-500 / Potassium Hydrogen Phthalate, 500 gms	201089	06/30/2025	12/23/2020 / apatel	12/16/2020 / apatel	W2784

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
PCI Scientific Supply, Inc.	J0260-3 / Phosphoric Acid, 2.5 L	0000278313	01/31/2026	07/12/2021 / apatel	07/12/2021 / apatel	W2860

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
PCI Scientific Supply, Inc.	AL13850-1 / Buffer Solution, PH2 (500ml)	4212E45	12/31/2024	01/31/2023 / lwona	01/31/2023 / lwona	W3005

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

CHEMICAL RECEIPT LOG BOOK

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 #
PCI Scientific Supply, Inc.	AL14455-3 / buffer solution pH 7 yellow	4308H30	07/31/2025	01/02/2024 / JIGNESH	12/06/2023 / lwona	W3071

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
PCI Scientific Supply, Inc.	AL14940-1 / Buffer Solution, PH12 (500ml)	2310P21	04/30/2025	01/02/2024 / JIGNESH	12/07/2023 / lwona	W3072

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
PCI Scientific Supply, Inc.	566002 / BUFFER PH 7.00 GREEN 1PINT PK6	44001f99	12/31/2025	04/03/2024 / jignesh	04/02/2024 / jignesh	W3093

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
PCI Scientific Supply, Inc.	1601-1 / PH 10.01 BUFFER,COLOR CD 475ML	4310g83	03/31/2025	04/03/2024 / jignesh	04/02/2024 / jignesh	W3094

CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
PCI Scientific Supply, Inc.	AL14055-3 / PH 4 BUFFER SOLUTION	AL14055-3	02/27/2026	09/05/2024 / jignesh	05/13/2024 / jignesh	W3107

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
PCI Scientific Supply, Inc.	P243-500 / Potassium Hydrogen Phthalate, 500 gms	24A1956910	01/18/2025	06/26/2024 / lwona	06/26/2024 / lwona	W3111

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

Phosphoric Acid
BAKER ANALYZED® A.C.S. Reagent

(orthophosphoric acid)



Material No.: 0260-03
Batch No.: 0000278313
Manufactured Date: 2021/02/01
Retest Date: 2026/01/31
Revision No: 2

Certificate of Analysis

Meets ACS Reagent Chemical Requirements,

Test	Specification	Result
Assay (H ₃ PO ₄) (by acidimetry)	85.0 – 87.0 %	85.8
Calcium (Ca)	<= 0.002 %	< 0.001
Color (APHA)	<= 10	5
Insoluble Matter	<= 0.001 %	< 0.001
ACS – Magnesium (Mg)	<= 0.002 %	< 0.002
Sulfate (SO ₄)	<= 12 ppm	< 4
Volatile Acids (as CH ₃ COOH)	<= 0.001 %	0.001
Reducing Substances	Passes Test	PT
Chloride (Cl)	<= 3 ppm	< 1
Nitrate (NO ₃)	<= 5 ppm	< 2
Trace Impurities – Antimony (Sb)	<= 20.000 ppm	0.007
Trace Impurities – Arsenic (As)	<= 0.500 ppm	< 0.001
Trace Impurities – Iron (Fe)	<= 10.000 ppm	< 1.000
Heavy Metals (as Pb)	<= 8 ppm	< 3
Trace Impurities – Manganese (Mn)	<= 0.500 ppm	0.005
Trace Impurities – Potassium (K)	<= 40.000 ppm	< 0.001
Trace Impurities – Sodium (Na)	<= 200.000 ppm	0.082

For Laboratory, Research or Manufacturing Use
Exceeds A.C.S. Specifications
Meets Reagent Specifications for testing USP/NF monographs

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


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


W3071
Rec 12/6/23

Certificate of Analysis 12

Buffer, Reference Standard, pH 7.00 ± 0.01 at 25°C (Color Coded Yellow)

Lot Number: 4308H30

Product Number: 1551

Manufacture Date: AUG 09, 2023

Expiration Date: JUL 2025

The certified value for this product is confirmed in independent testing by a second qualified chemist.

The NIST traceable pH value is certified to ±0.01 at 25 °C only. All other pH values at their corresponding temperatures are accurate to ± 0.05.

°C	0	5	10	15	20	25	30	35	40	45	50
pH	7.12	7.09	7.06	7.04	7.02	7.00	6.99	6.98	6.98	6.97	6.97

Name	CAS#	Grade
Water	7732-18-5	ACS/ASTM/USP/EP
Sodium Phosphate Dibasic	7558-79-4	ACS
Potassium Dihydrogen Phosphate	7778-77-0	ACS
Preservative	Proprietary	
Yellow Dye	Proprietary	
Sodium Hydroxide	1310-73-2	Reagent

Test	Specification	Result
Appearance	Yellow liquid	Passed

*Not a certified value.

Test	Certified Value	Uncertainty	NIST SRM#
pH at 25°C (Method: SQCP027, SQCP033)	7.002	0.02	186-I-g, 186-II-g, 191d

Specification	Reference
Commercial Buffer Solutions	ASTM (D 1293 B)
Buffer A	ASTM (D 5464)
Buffer A	ASTM (D 5128)

pH measurements were performed in our Batesville, IN laboratory under ISO/IEC 17025 accreditation (ANAB Certificate L2387.02) and are certified traceable to National Institute of Standards and Technology (NIST) Standard Reference Material as indicated above via an unbroken chain of comparisons. The uncertainty is calculated from the uncertainty of the measurement variation from sample to sample, the uncertainty in the NIST Standard Reference Material, and the uncertainty of the measurement process. The uncertainty is multiplied by k=2, corresponding to 95% coverage in a normal distribution. Volumetric glassware complies with Class A tolerance requirements of ASTM E 288 and NIST Circular 434; it is calibrated before first use and recalibrated regularly in accordance with ASTM E 542 and NIST Procedure NBSIR 74-461. Balances are calibrated regularly with weights certified traceable to the NIST national mass standard. Thermometers and temperature probes are calibrated before first use and recalibrated regularly with a thermometer traceable to NIST standards. All products are prepared according to master documents that assure manufacture according to validated methods. Batch records document raw material traceability and production and testing history for each lot manufactured.

Part Number	Size / Package Type	Shelf Life (Unopened Container)
1551-2.5	10 L Cubitainer®	24 months
1551-5	20 L Cubitainer®	24 months

Recommended Storage: 15°C - 30°C (59°F - 86°F)



Paul Brandon (08/09/2023)

Production Manager

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

This product was tested in an ISO 17025 Accredited Laboratory

This test report shall not be reproduced, except in full, without the written approval of Ricca Chemical Company.

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 (PO4)	0.001% max.	<0.001%
Potassium (K)	0.005% max.	0.003%
Silica (SiO2)	0.005% max.	<0.005%
Sulfur compounds (as SO4)	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

400 Summit Drive
Burlington, MA 01803
U.S.A.

Form number: 00005624CA, Rev. 2.0

Certificate of Analysis

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N 3062

rec on 10/30/23
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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, 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 ± 0.30 µg/mL
Sulfate, SO ₄	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

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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

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

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

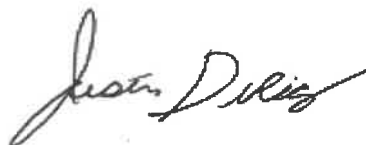
- Sealed TCT Bag Open Date: _____
- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in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





RICCA CHEMICAL COMPANY®

1841 Broad Street
Pocomoke City, MD 21851
<http://www.riccachemical.com>
1-888-GO-RICCA
customerservice@riccachemical.com

W 3072
REC. 12/01/23
12

Certificate of Analysis

Buffer, Reference Standard, pH 12.00 ± 0.01 at 25°C

Lot Number: 2310P21

Product Number: 1615

Manufacture Date: OCT 24, 2023

Expiration Date: APR 2025

The certified value for this product is confirmed in independent testing by a second qualified chemist.

°C	15	20	25	30	35	40
pH	12.35	12.17	11.99	11.78	11.62	11.46

Name	CAS#	Grade
Water	7732-18-5	ACS/ASTM/USP/EP
Potassium Chloride	7447-40-7	ACS
Sodium Hydroxide	1310-73-2	Reagent

Test	Specification	Result
Appearance	Colorless liquid	Passed

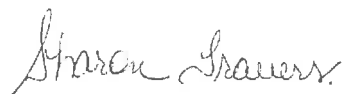
*Not a certified value.

Test	Certified Value	Uncertainty	NIST SRM#
pH at 25°C (Method: SQCP027, SQCP033)	12.005	0.02	186-I-g, 186-II-g, 191d

pH measurements were performed in our Pocomoke City, MD laboratory under ISO/IEC 17025 accreditation (ANAB Certificate L2387.01) and are certified traceable to National Institute of Standards and Technology (NIST) Standard Reference Material as indicated above via an unbroken chain of comparisons. The uncertainty is calculated from the uncertainty of the measurement variation from sample to sample, the uncertainty in the NIST Standard Reference Material, and the uncertainty of the measurement process. The uncertainty is multiplied by k=2, corresponding to 95% coverage in a normal distribution. Volumetric glassware complies with Class A tolerance requirements of ASTM E 288 and NIST Circular 434; it is calibrated before first use and recalibrated regularly in accordance with ASTM E 542 and NIST Procedure NBSIR 74-461. Balances are calibrated regularly with weights certified traceable to the NIST national mass standard. Thermometers and temperature probes are calibrated before first use and recalibrated regularly with a thermometer traceable to NIST standards. All products are prepared according to master documents that assure manufacture according to validated methods. Batch records document raw material traceability and production and testing history for each lot manufactured.

Part Number	Size / Package Type	Shelf Life (Unopened Container)
1615-1	4 L natural poly	18 months
1615-16	500 mL clear PET-G	18 months
1615-32	1 L natural poly	18 months
1615-5	20 L Cubitainer®	18 months

Recommended Storage: 15°C - 30°C (59°F - 86°F)



Sharon Travers (10/24/2023)

Operations Manager

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

This product was tested in an ISO 17025 Accredited Laboratory

This test report shall not be reproduced, except in full, without the written approval of Ricca Chemical Company.

Certificate of Analysis

ThermoFisher
SCIENTIFIC

Certificate of Analysis

1 Reagent Lane
Fair Lawn, NJ 07410
201.796.7100 tel
201.796.1329 faxThermo Fisher Scientific's Quality System has been found to conform to Quality Management System
Standard ISO9001:2015 by SAI Global Certificate Number CERT – 0120632

This is to certify that units of the lot number below were tested and found to comply with the specifications of the grade listed. Certain data have been supplied by third parties. Thermo Fisher Scientific expressly disclaims all warranties, expressed or implied, including the implied warranties of merchantability and fitness for a particular purpose. Products are for research use or further manufacturing. Not for direct administration to humans or animals. It is the responsibility of the final formulator and end user to determine suitability based upon the intended use of the end product. Products are tested to meet the analytical requirements of the noted grade. The following information is the actual analytical results obtained.

Catalog Number	P243	Quality Test / Release Date	06/19/2020
Lot Number	201089		
Description	POTASSIUM HYDROGEN PHTHALATE, ACIDIMETRIC STANDARD, A.C.S.		
Country of Origin	Spain	Suggested Retest Date	Jun/2025
Chemical Origin	Organic - non animal		
BSE/TSE Comment	No animal products are used as starting raw material ingredients, or used in processing, including lubricants, processing aids, or any other material that might migrate to the finished product.		

N/A			
Result Name	Units	Specifications	Test Value
APPEARANCE		REPORT	WHITE CRYSTALS
ASSAY POTASSIUM HYDROGEN PHTHALATE	%	Inclusive Between 99.95 - 100.05	100.03
CHLORINE COMPOUNDS	%	<= 0.003	<0.003
HEAVY METALS (as Pb)	ppm	<= 5	<5
IDENTIFICATION	PASS/FAIL	= PASS TEST	PASS TEST
INSOLUBLE MATTER	%	<= 0.005	<0.005
IRON (Fe)	ppm	<= 5	<5
PH OF 0.05M SOLUTION		Inclusive Between 4.00 - 4.02	4.00
SODIUM (Na)	%	<= 0.005	<0.005
SULFUR COMPOUNDS	%	<= 0.002	<0.002%
TRACEABLE TO NIST	SOD CARBONATE	= LOT 351a	351a
TRACEABLE TO NIST KHP STD	POT. ACID PHTHALATE	= LOT 84L	84L



Julian Burton - Quality Control Manager – Fair Lawn

Note: The data listed is valid for all package sizes of this lot of this product, expressed as an extension of this catalog number listed above.
If there are any questions with this certificate, please call at (800) 227-6701.

*Based on suggested storage condition.

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

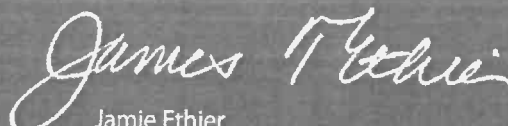


Material No.: 9673-33
Batch No.: 23D2462010

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


Jamie Ethier
Vice President Global Quality



RICCA CHEMICAL COMPANY®

W 3005

REC- 1/31/23

12

1490 Lammers Pike

Batesville, IN 47006

<http://www.riccachemical.com>

1-888-GO-RICCA

customerservice@riccachemical.com

Certificate of Analysis

Buffer, Reference Standard, pH 2.00 ± 0.01 at 25°C

Lot Number: 4212E45

Product Number: 1493

Manufacture Date: DEC 20, 2022

Expiration Date: DEC 2024

The certified value for this product is confirmed in independent testing by a second qualified chemist.

The NIST traceable pH value is certified to ±0.01 at 25 °C only. All other pH values at their corresponding temperatures are accurate to ± 0.05.

°C	10	15	20	25	30	35	40	45	50
pH	1.93	1.98	1.98	2.00	2.01	2.03	2.03	2.04	2.04

Name	CAS#	Grade
Water	7732-18-5	ACS/ASTM/USP/EP
Potassium Chloride	7447-40-7	ACS
Hydrochloric Acid	7647-01-0	ACS

Test	Specification	Result
Appearance	Colorless liquid	Passed

*Not a certified value.

Test	Certified Value	Uncertainty	NIST SRM#
pH at 25°C (Method: SQCP027, SQCP033)	2.000	0.02	185i, 186-I-g, 186-II-g

pH measurements were performed in our Batesville, IN laboratory under ISO/IEC 17025 accreditation (ANAB Certificate L2387.02) and are certified traceable to National Institute of Standards and Technology (NIST) Standard Reference Material as indicated above via an unbroken chain of comparisons. The uncertainty is calculated from the uncertainty of the measurement variation from sample to sample, the uncertainty in the NIST Standard Reference Material, and the uncertainty of the measurement process. The uncertainty is multiplied by k=2, corresponding to 95% coverage in a normal distribution. Volumetric glassware complies with Class A tolerance requirements of ASTM E 288 and NIST Circular 434; it is calibrated before first use and recalibrated regularly in accordance with ASTM E 542 and NIST Procedure NBSIR 74-461. Balances are calibrated regularly with weights certified traceable to the NIST national mass standard. Thermometers and temperature probes are calibrated before first use and recalibrated regularly with a thermometer traceable to NIST standards. All products are prepared according to master documents that assure manufacture according to validated methods. Batch records document raw material traceability and production and testing history for each lot manufactured.

Part Number	Size / Package Type	Shelf Life (Unopened Container)
1493-1	4 L natural poly	24 months
1493-16	500 mL natural poly	24 months
1493-32	1 L natural poly	24 months
1493-5	20 L Cubitainer®	24 months

Recommended Storage: 15°C - 30°C (59°F - 86°F)



Paul Brandon (12/20/2022)

Production Manager

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

This product was tested in an ISO 17025 Accredited Laboratory

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Certificate of Analysis

W3093
094121
04/03/2024
16

Buffer, Reference Standard, pH 7.00 ± 0.01 at 25°C (Color Coded Yellow)

Lot Number: 4401F99

Product Number: 1551

Manufacture Date: JAN 08, 2024

Expiration Date: DEC 2025

The certified value for this product is confirmed in independent testing by a second qualified chemist.

The NIST traceable pH value is certified to ±0.01 at 25 °C only. All other pH values at their corresponding temperatures are accurate to ± 0.05.

°C	0	5	10	15	20	25	30	35	40	45	50
pH	7.12	7.09	7.06	7.04	7.02	7.00	6.99	6.98	6.98	6.97	6.97

Name	CAS#	Grade
Water	7732-18-5	ACS/ASTM/USP/EP
Sodium Phosphate Dibasic	7558-79-4	ACS
Potassium Dihydrogen Phosphate	7778-77-0	ACS
Preservative	Proprietary	
Yellow Dye	Proprietary	
Sodium Hydroxide	1310-73-2	

Test	Specification	Result
Appearance	Yellow liquid	Passed

*Not a certified value.

Test	Certified Value	Uncertainty	NIST SRM#
pH at 25°C (Method: SQCP027, SQCP033)	7.004	0.02	186-I-g, 186-II-g, 191d

Specification	Reference
Commercial Buffer Solutions	ASTM (D 1293 B)
Buffer A	ASTM (D 5464)
Buffer A	ASTM (D 5128)

pH measurements were performed in our Batesville, IN laboratory under ISO/IEC 17025 accreditation (ANAB Certificate L2387.02) and are certified traceable to National Institute of Standards and Technology (NIST) Standard Reference Material as indicated above via an unbroken chain of comparisons. The uncertainty is calculated from the uncertainty of the measurement variation from sample to sample, the uncertainty in the NIST Standard Reference Material, and the uncertainty of the measurement process. The uncertainty is multiplied by k=2, corresponding to 95% coverage in a normal distribution. Volumetric glassware complies with Class A tolerance requirements of ASTM E 288 and NIST Circular 434; it is calibrated before first use and recalibrated regularly in accordance with ASTM E 542 and NIST Procedure NBSIR 74-461. Balances are calibrated regularly with weights certified traceable to the NIST national mass standard. Thermometers and temperature probes are calibrated before first use and recalibrated regularly with a thermometer traceable to NIST standards. All products are prepared according to master documents that assure manufacture according to validated methods. Batch records document raw material traceability and production and testing history for each lot manufactured.

Part Number	Size / Package Type	Shelf Life (Unopened Container)
1551-1	4 L natural poly	24 months
1551-1CT	4 L Cubitainer®	24 months
1551-2.5	10 L Cubitainer®	24 months
1551-5	20 L Cubitainer®	24 months

Recommended Storage: 15°C - 30°C (59°F - 86°F)

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14

Paul Brandon

Paul Brandon (01/08/2024)
Production Manager

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This product was tested in an ISO 17025 Accredited Laboratory

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Certificate of Analysis

Buffer, Reference Standard, pH 10.00 ± 0.01 at 25°C (Color Coded Blue)

Lot Number: 4310G83

Product Number: 1601

Manufacture Date: OCT 09, 2023

Expiration Date: MAR 2025

The certified value for this product is confirmed in independent testing by a second qualified chemist.

The NIST traceable pH value is certified to ±0.01 at 25 °C only. All other pH values at their corresponding temperatures are accurate to ± 0.05.

°C	0	5	10	15	20	25	30	35	40	50
pH	10.31	10.23	10.17	10.11	10.05	10.00	9.95	9.91	9.87	9.81

Name	CAS#	Grade
Water	7732-18-5	ACS/ASTM/USP/EP
Sodium Carbonate	497-19-8	ACS
Sodium Bicarbonate	144-55-8	ACS
Sodium Hydroxide	1310-73-2	Reagent
Preservative	Proprietary	
Blue Dye	Proprietary	

Test	Specification	Result
Appearance	Blue liquid	Passed

*Not a certified value.

Test	Certified Value	Uncertainty	NIST SRM#
pH at 25°C (Method: SQCP027, SQCP033)	10.003	0.02	186-I-g, 186-II-g, 191d

Specification	Reference
Commercial Buffer Solutions	ASTM (D 1293 B)
Buffer C	ASTM (D 5464)
Buffer C	ASTM (D 5128)

pH measurements were performed in our Batesville, IN laboratory under ISO/IEC 17025 accreditation (ANAB Certificate L2387.02) and are certified traceable to National Institute of Standards and Technology (NIST) Standard Reference Material as indicated above via an unbroken chain of comparisons. The uncertainty is calculated from the uncertainty of the measurement variation from sample to sample, the uncertainty in the NIST Standard Reference Material, and the uncertainty of the measurement process. The uncertainty is multiplied by k=2, corresponding to 95% coverage in a normal distribution. Volumetric glassware complies with Class A tolerance requirements of ASTM E 288 and NIST Circular 434; it is calibrated before first use and recalibrated regularly in accordance with ASTM E 542 and NIST Procedure NBSIR 74-461. Balances are calibrated regularly with weights certified traceable to the NIST national mass standard. Thermometers and temperature probes are calibrated before first use and recalibrated regularly with a thermometer traceable to NIST standards. All products are prepared according to master documents that assure manufacture according to validated methods. Batch records document raw material traceability and production and testing history for each lot manufactured.

Part Number	Size / Package Type	Shelf Life (Unopened Container)
1601-16	500 mL natural poly	18 months
1601-5	20 L Cubitainer®	18 months

Recommended Storage: 15°C - 30°C (59°F - 86°F)



Paul Brandon (10/09/2023)

Production Manager

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Contents of Certificates and Labels."

This product was tested in an ISO 17025 Accredited Laboratory

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Certificate of Analysis

Buffer, Reference Standard, pH 4.00 ± 0.01 at 25°C (Color Coded Red)

Lot Number: 4403F90

Product Number: 1501

Manufacture Date: MAR 09, 2024

Expiration Date: FEB 2026

The certified value for this product is confirmed in independent testing by a second qualified chemist.

The NIST Traceable pH value is certified to ±0.01 at 25 °C only. All other pH values at their corresponding temperatures are accurate to ± 0.05.

°C	0	5	10	15	20	25	30	35	40	45	50
pH	4.00	4.00	4.00	4.00	4.00	4.00	4.01	4.02	4.03	4.04	4.06

Name	CAS#	Grade
Water	7732-18-5	ACS/ASTM/USP/EP
Potassium Acid Phthalate	877-24-7	Buffer
Preservative	Proprietary	Commercial
Red Dye	Proprietary	Purified

Test	Specification	Result
Appearance	Red liquid	Passed

*Not a certified value.

Test	Certified Value	Uncertainty	NIST SRM#
pH at 25°C (Method: SQCP027, SQCP033)	4.000	0.02	185i, 186-I-g, 186-II-g

Specification	Reference
Commercial Buffer Solutions	ASTM (D 1293 B)
Buffer B	ASTM (D 5464)
Buffer B	ASTM (D 5128)

pH measurements were performed in our Batesville, IN laboratory under ISO/IEC 17025 accreditation (ANAB Certificate L2387.02) and are certified traceable to National Institute of Standards and Technology (NIST) Standard Reference Material as indicated above via an unbroken chain of comparisons. The uncertainty is calculated from the uncertainty of the measurement variation from sample to sample, the uncertainty in the NIST Standard Reference Material, and the uncertainty of the measurement process. The uncertainty is multiplied by k=2, corresponding to 95% coverage in a normal distribution. Volumetric glassware complies with Class A tolerance requirements of ASTM E 288 and NIST Circular 434; it is calibrated before first use and recalibrated regularly in accordance with ASTM E 542 and NIST Procedure NBSIR 74-461. Balances are calibrated regularly with weights certified traceable to the NIST national mass standard. Thermometers and temperature probes are calibrated before first use and recalibrated regularly with a thermometer traceable to NIST standards. All products are prepared according to master documents that assure manufacture according to validated methods. Batch records document raw material traceability and production and testing history for each lot manufactured.

Part Number	Size / Package Type	Shelf Life (Unopened Container)
1501-2.5	10 L Cubitainer®	24 months
1501-32	1 L natural poly	24 months
1501-5	20 L Cubitainer®	24 months

Recommended Storage: 15°C - 30°C (59°F - 86°F)

Paul Brandon

Production Manager

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This product was tested in an ISO 17025 Accredited Laboratory

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POTASSIUM HYDROGEN PHTHALATE

Material: N983
Grade: ACS GRADE
Batch Number: 24A1956910

Chemical Formula: HOCC6H4COOK
Molecular Weight: 204.22
CAS #: 877-24-7
Appearance:

Manufacture Date: 01/19/2022
Reassay Date: 01/18/2025
Storage: Room Temperature

White crystals.

TEST	SPECIFICATION	ANALYSIS	DISPOSITION
Assay (dried basis)	99.95 - 100.05 %	99.97 %	PASS
Chlorine Compounds	<= 0.003 %	<0.003 %	PASS
Heavy Metals (as Pb)	<= 5 ppm	<5 ppm	PASS
Insoluble Matter	<= 0.005 %	0.003 %	PASS
Iron	<= 5 ppm	<5 ppm	PASS
pH (0.05M, Water) @25C	4.00 - 4.02	4.00	PASS
Sodium	<= 0.005 %	<0.005 %	PASS
Sulfur Compounds	<= 0.002 %	<0.002 %	PASS

Spec Set: N983ACS

Internal ID #: 710

Signature	Additional Information
We certify that this batch conforms to the specifications listed. This document has been electronically produced and is valid without a signature. Leona Edwardson, Quality Control Sr. Manager - Solon VWR Chemicals, LLC. 28600 Fountain Parkway, Solon OH 44139 USA	Analysis may have been rounded to significant digits in specification limits. Product meets analytical specifications of the grades listed.

PERCENT SOLID

Supervisor: Iwona
Analyst: jignesh
Date: 12/2/2024

OVENTEMP IN Celsius(°C): 107
Time IN: 17:15
In Date: 11/27/2024
Weight Check 1.0g: 1.00
Weight Check 10g: 10.00
OvenID: M OVEN#1

OVENTEMP OUT Celsius(°C): 103
Time OUT: 08:15
Out Date: 11/28/2024
Weight Check 1.0g: 1.00
Weight Check 10g: 10.00
BalanceID: M SC-4
Thermometer ID: % SOLID- OVEN

QC:LB133667

Lab ID	Client SampleID	Dish #	Dish Wt (g) (A)	Sample Wt (g)	Dish + Sample Wt (g) (B)	Dish+Dry Sample Wt (g) (C)	% Solid	Comments
P5022-01	TAPIAL2-SB02D-13-11242 4-00-T1	1	1.15	8.70	9.85	9.23	92.9	
P5025-01	SOIL-WEST	2	1.18	8.43	9.61	8.41	85.8	
P5025-03	SOIL-WEST-TPH2	3	1.17	8.60	9.77	8.54	85.7	
P5025-04	SOIL-WEST-GRAB	4	1.16	8.49	9.65	8.43	85.6	
P5025-05	SOIL-EAST	5	1.15	8.73	9.88	7.85	76.7	
P5025-07	SOIL-EAST-TPH2	6	1.11	8.70	9.81	7.76	76.4	
P5025-08	SOIL-EAST-GRAB	7	1.15	8.82	9.97	9.39	93.4	
P5026-01	SOIL-1-HAM	8	1.13	8.65	9.78	8.00	79.4	
P5026-03	SOIL-1-HAM-TPH2	9	1.17	8.50	9.67	8.72	88.8	
P5026-04	SOIL-1-HAM-GRAB	10	1.18	8.42	9.6	8.66	88.8	
P5026-05	SOIL-1-HAM	11	1.15	8.81	9.96	8.00	77.8	
P5026-07	SOIL-1-HAM-TPH2	12	1.19	8.50	9.69	7.51	74.4	
P5026-08	SOIL-1-HAM-GRAB	13	1.14	8.75	9.89	7.7	75.0	
P5045-01	SU-04-11222024	14	1.19	8.50	9.69	8.96	91.4	
P5045-02	SU-04-11222024-E2	15	1.13	8.74	9.87	8.49	84.2	
P5046-01	HD-01-11272024	16	1.17	8.57	9.74	8.8	89.0	
P5046-02	HD-01-11272024-E2	17	1.16	8.83	9.99	9.00	88.8	
P5048-01	MH-746-WC	18	1.17	8.65	9.82	9.18	92.6	
P5048-02	MH-746-EPH	19	1.15	8.80	9.95	8.91	88.2	
P5048-03	MH-746--VOC	20	1.15	8.36	9.51	8.48	87.7	

$$\% \text{ Solid} = \frac{(C-A) * 100}{(B-A)}$$

WORKLIST(Hardcopy Internal Chain)

133667

WorkList Name : %1-112724

WorkList ID : 185820

Department : Wet-Chemistry

Date : 11-27-2024 08:06:01

Sample	Customer Sample	Matrix	Test	Preservative	Customer	Raw Sample Storage Location	Collect Date	Method
P5022-01	TAPIAL2-SB02D-13-112424-00.	Solid	Percent Solids	Cool 4 deg C	WEST04	L41	11/24/2024	Chemtech -SO
P5025-01	SOIL-WEST	Solid	Percent Solids	Cool 4 deg C	TULL02	L61	11/27/2024	Chemtech -SO
P5025-03	SOIL-WEST-TPH2	Solid	Percent Solids	Cool 4 deg C	TULL02	L61	11/27/2024	Chemtech -SO
P5025-04	SOIL-WEST-GRAB	Solid	Percent Solids	Cool 4 deg C	TULL02	L61	11/27/2024	Chemtech -SO
P5025-05	SOIL-EAST	Solid	Percent Solids	Cool 4 deg C	TULL02	L61	11/27/2024	Chemtech -SO
P5025-07	SOIL-EAST-TPH2	Solid	Percent Solids	Cool 4 deg C	TULL02	L61	11/27/2024	Chemtech -SO
P5025-08	SOIL-EAST-GRAB	Solid	Percent Solids	Cool 4 deg C	TULL02	L61	11/27/2024	Chemtech -SO
P5026-01	SOIL-1-HAM	Solid	Percent Solids	Cool 4 deg C	TULL02	L61	11/27/2024	Chemtech -SO
P5026-03	SOIL-1-HAM-TPH2	Solid	Percent Solids	Cool 4 deg C	TULL02	L61	11/27/2024	Chemtech -SO
P5026-04	SOIL-1-HAM-GRAB	Solid	Percent Solids	Cool 4 deg C	TULL02	L61	11/27/2024	Chemtech -SO
P5026-05	SOIL-1-HAM	Solid	Percent Solids	Cool 4 deg C	TULL02	L61	11/27/2024	Chemtech -SO
P5026-07	SOIL-1-HAM-TPH2	Solid	Percent Solids	Cool 4 deg C	TULL02	L61	11/27/2024	Chemtech -SO
P5026-08	SOIL-1-HAM-GRAB	Solid	Percent Solids	Cool 4 deg C	TULL02	L61	11/27/2024	Chemtech -SO
P5045-01	SU-04-11222024	Solid	Percent Solids	Cool 4 deg C	PSEG05	L51	11/27/2024	Chemtech -SO
P5045-02	SU-04-11222024-E2	Solid	Percent Solids	Cool 4 deg C	PSEG05	L51	11/27/2024	Chemtech -SO
P5046-01	HD-01-11272024	Solid	Percent Solids	Cool 4 deg C	PSEG05	L51	11/27/2024	Chemtech -SO
P5046-02	HD-01-11272024-E2	Solid	Percent Solids	Cool 4 deg C	PSEG05	L51	11/27/2024	Chemtech -SO
P5048-01	MH-746-WC	Solid	Percent Solids	Cool 4 deg C	PSEG03	L61	11/27/2024	Chemtech -SO
P5048-02	MH-746-EPH	Solid	Percent Solids	Cool 4 deg C	PSEG03	L61	11/27/2024	Chemtech -SO
P5048-03	MH-746-VOC	Solid	Percent Solids	Cool 4 deg C	PSEG03	L61	11/27/2024	Chemtech -SO

Date/Time

11/27/24 16:10

Raw Sample Received by:

yo woc

Raw Sample Relinquished by:

CSM

Date/Time

11/27/24

Raw Sample Received by:

CSM



SHIPPING DOCUMENTS

- 1
- 2
- 3
- 4
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- 7
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P5022



Weston COC ID

Weston_20241126_1529

Chain of Custody Record/Lab Work Request

Page 1 of 1

Client:	Weston Solutions, Inc.		
Project Manager:	David Sembrot		
Street Address:	1400 Weston Way	City:	West Chester
Phone:	610-314-5456	ST, ZIP:	PA, 19038
e-mail:	david.sembrot@westonsolutions.com		
Sampled By:	Cheyenne Harrington		

Lab Use Only

Temperature of cooler when received (°C)		
COC Tape was present and unbroken on outer package?	Y	N
Samples received in good condition?	Y	N
Labels indicate properly preserved?	Y	N
Received within holding times?	Y	N
Discrepancies between sample labels and COC record?	Y	N

Project Name:	Fort Meade RI	Project POC:	Nathan Fretz
PO Number	0111169	Phone:	484-524-5665
W.O. #:		POC e-mail:	nathan.fretz@westonsolutions.com
Lab:	Chemtech	Lab POC:	Jordan Hedvat
TAT (days):	21	Lab Phone:	908-728-3148
Lab Address:	284 Sheffield Street Mountainside, NJ 07092		

Matrix Codes

SB - Soil
SE - Sediment
SO - Solid
SL - Sludge
GW - Groundwater
W - Water
O - Oil
A - Air
DS - Drum Solids
DL - Drum Liquids
L - EP/TCLP Leachate
WI - Wipe
X - Other
F - Fish

Analyses Requested:

TAL Metals by EPA 6020B/7471B	pH by EPA 9045D	Anions by EPA 9056A	TOC by EPA 9060A															
Container Type:	Glass	Glass	Glass	Glass														
Container Size:	8 oz	8 oz	8 oz	8 oz														
Preservative:	Ice to 0-6	Ice to 0-6	Ice to 0-6	Ice to 0-6														

#	Sample ID	G/C	Matrix	# Cont	MS/MSD	Date Collected	Time Collected												Special Instructions/Comments
1	TAPIAL2-SB02D-13-112424-00-T1	g	SB	3	no	11/24/2024	16:30	X	X	X	X								
2																			
3																			
4																			
5																			
6																			
7																			
8																			
9																			
10																			
11																			
12																			

Shipping Airbill Number:		770246101180				Cooler Number:		1	of	1
Relinquished By	Date	Time	Received By	Date	Time	Additional Comments				
1.) <i>Chyen H</i>	11/26/24	1600	<i>R</i>	11-27-24	1005	QSM 6.0 Compliant				
2.)						Deliverable Requirements: DoD Level IV report, EnviroData EDD, and ERIS-compatible EDD				
3.)										

28 Cont #1 3.4

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