



Report of Analysis

Name: DMC Water Lab
 2354 W 850 N
 Cedar City, UT 84721
Sample Date: 2/19/2025 2:34:00 PM
Receipt Date: 2/19/2025 4:13:00 PM
Report Date: 4/8/2025
Sample Site: Post Filter-lab

Sample ID#: K2025 00412
Sample Type: Drinking Water
Sampler: BEN PRATT
 DYLAN CLEMENTS

Parameter	Sample Result	Units	MRL	Method	Analysis Date	Analysis Time	Analyst
Receiving pH	7.23	SU	0	4500 H	2/19/2025	4:28:00 PM	AJ
Receiving Temperature	25.2	C	0	2550	2/19/2025	4:28:00 PM	AJ
Antimony	<1	ug/L	1	200.8	3/3/2025	12:11:00 PM	BR
Arsenic	2.37	ug/L	1	200.8	3/3/2025	12:11:00 PM	BR
Barium	156	ug/L	1	200.8	3/10/2025	8:16:00 AM	BR
Beryllium	<1	ug/L	1	200.8	3/21/2025	2:22:00 PM	BR
Cadmium	<1	ug/L	1	200.8	3/3/2025	12:11:00 PM	BR
Calcium	25.8	mg/L	0.2	3111 B	2/21/2025	12:00:00 PM	ZS
Chloride	12.7	mg/L	5	300.0	2/28/2025	9:00:00 AM	MF
Chromium	<5	ug/L	5	200.8	3/3/2025	12:11:00 PM	BR
Copper	<1	ug/L	1	200.8	3/3/2025	12:11:00 PM	BR
Cyanide	ND	mg/L	0.05	4500-CN-C	3/3/2025	12:00:00 PM	CTF
Disinfectant Biproducts	See Attached	mg/L	1	Various	2/24/2025	12:00:00 PM	CTF
Fluoride	<0.5	mg/L	0.5	4500 F C	2/28/2025	9:00:00 AM	MF
Lead	<1	ug/L	1	200.8	3/3/2025	12:11:00 PM	BR
Magnesium	9.88	mg/L	2.5	3111 B	2/21/2025	12:00:00 PM	ZS
Mercury	ND	mg/L	0.0002	200.8	2/24/2025	12:00:00 PM	CTF
Nitrate+Nitrite Total	0.276	mg/L	0.1	353.3	3/8/2025	9:00:00 AM	MW
Pesticides	See Attached	ug/L	0	Various	2/21/2025	12:00:00 PM	CTF
Potassium	4.48	mg/L	2.5	3111 B	2/21/2025	12:00:00 PM	ZS
Radio chemistry	See Attached	pCi/L	0	Various	3/11/2025	12:00:00 PM	ACZ
Selenium	<5	ug/L	5	200.8	3/3/2025	12:11:00 PM	BR
Sodium	10.3	mg/L	5	3111 B	2/21/2025	12:00:00 PM	ZS
Sulfate	5.33	mg/L	1	300.0	2/28/2025	9:00:00 AM	MF
Thallium	<1	ug/L	1	200.8	3/3/2025	12:11:00 PM	BR

351 West Center • Cedar City, Utah 84720 • (435) 586-7914 • (435) 865-8395 • Fax (435) 865-8051

Southern Utah University Science Center • Room 206

www.suu.edu/waterlab



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Name: DMC Water Lab
2354 W 850 N
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Sample Date: 2/19/2025 2:34:00 PM
Receipt Date: 2/19/2025 4:13:00 PM
Report Date: 4/8/2025
Sample Site: Post Filter-lab

Sample ID#: K2025 00412
Sample Type: Drinking Water
Sampler: BEN PRATT DYLAN

Parameter	Sample Result	Units	MRL	Method	Analysis Date	Analysis Time	Analyst
Total Dissolved Solids	208	mg/L	20	2540 C	2/19/2025	12:00:00 PM	EM
Uranium	0.0005	ug/L	1	200.8	2/25/2025	12:00:00 PM	CTF
Volatile Organic Carbons	See Attached	none	0	524.2	2/21/2025	12:00:00 PM	CTF

Report Approved By:

Kim Weaver, Director

CHEMTECH-FORD

3/6/2025

Work Order: 25B1609
Project: [none]

Southern Utah University
Attn: Water Lab
351 West Center Street
Cedar City, UT 84720

Client Service Contact: 801.262.7299

The analyses presented on this report were performed in accordance with the National Environmental Laboratory Accreditation Program (NELAP) unless noted in the comments, flags, or case narrative. If the report is to be used for regulatory compliance, it should be presented in its entirety, and not be altered.



Approved By:

A handwritten signature in black ink, appearing to read "AR", written over a horizontal line.

Andrew Royer, Project Manager

Certificate of Analysis

Southern Utah University
Water Lab
351 West Center Street
Cedar City, UT 84720

PO#:
Receipt: 2/21/25 10:10 @ 2.4 °C
Date Reported: 3/6/2025
Project Name: [none]

Sample ID: K2025 00412

Matrix: Water

Lab ID: 25B1609-01

System No.: UTAH

Date Sampled: 2/19/25 16:13

Sampled By: Nia Bingham

	Result	Units	Minimum Reporting Limit	Method	Preparation Date/Time	Analysis Date/Time	Flag(s)
Calculations							
Total Haloacetic Acids	ND	ug/L	2.00	[CALC][CALC]	2/24/25	2/27/25	
Total Trihalomethanes	ND	ug/L	0.500	[CALC][CALC]	2/24/25	2/24/25	
Inorganic							
Cyanide, Total	ND	mg/L	0.005	EPA 335.4 9010C	3/3/25	3/3/25	
Metals							
Mercury, Total	ND	mg/L	0.00015	EPA 245.1	2/24/25	2/24/25	
Uranium, Total	0.0005	mg/L	0.0005	EPA 200.8/200.8	2/25/25	2/25/25	
Carbamates							
3-Hydroxycarbofuran	ND	ug/L	1	EPA 531.1	2/21/25	2/25/25	
Aldicarb	ND	ug/L	1	EPA 531.1	2/21/25	2/25/25	
Aldicarb sulfone	ND	ug/L	1	EPA 531.1	2/21/25	2/25/25	
Aldicarb sulfoxide	ND	ug/L	1	EPA 531.1	2/21/25	2/25/25	
Carbaryl	ND	ug/L	1	EPA 531.1	2/21/25	2/25/25	
Carbofuran	ND	ug/L	1	EPA 531.1	2/21/25	2/25/25	
Methomyl	ND	ug/L	1	EPA 531.1	2/21/25	2/25/25	
Oxamyl	ND	ug/L	1	EPA 531.1	2/21/25	2/25/25	
Regulated Haloacetic Acids (HAAs)							
Dibromoacetic Acid	ND	ug/L	1.0	EPA 552.2	2/25/25	2/27/25	
Dichloroacetic Acid	ND	ug/L	1.0	EPA 552.2	2/25/25	2/27/25	
Monobromoacetic Acid	ND	ug/L	1.0	EPA 552.2	2/25/25	2/27/25	
Monochloroacetic Acid	ND	ug/L	2.0	EPA 552.2	2/25/25	2/27/25	
Trichloroacetic Acid	ND	ug/L	1.0	EPA 552.2	2/25/25	2/27/25	
Herbicides							
2,4,5-TP (Silvex)	ND	ug/L	0.440	EPA 515.3	2/24/25	2/25/25	
2,4-D	ND	ug/L	0.220	EPA 515.3	2/24/25	2/25/25	
Dalapon	ND	ug/L	2.20	EPA 515.3	2/24/25	2/25/25	
Dicamba	ND	ug/L	1.00	EPA 515.3	2/24/25	2/25/25	
Dinoseb	ND	ug/L	0.440	EPA 515.3	2/24/25	2/25/25	
Pentachlorophenol	ND	ug/L	0.088	EPA 515.3	2/24/25	2/25/25	
Picloram	ND	ug/L	0.220	EPA 515.3	2/24/25	2/25/25	
Pesticides							
Endrin	ND	ug/L	0.022	EPA 508.1	2/26/25	2/27/25	
Heptachlor	ND	ug/L	0.088	EPA 508.1	2/26/25	2/27/25	
Heptachlor epoxide	ND	ug/L	0.044	EPA 508.1	2/26/25	2/27/25	
Lindane	ND	ug/L	0.011	EPA 508.1	2/26/25	2/27/25	

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Date Reported: 3/6/2025
Project Name: [none]

Sample ID: K2025 00412 (cont.)

Matrix: Water

Lab ID: 25B1609-01

System No.: UTAH

Date Sampled: 2/19/25 16:13

Sampled By: Nia Bingham

	Result	Units	Minimum Reporting Limit	Method	Preparation Date/Time	Analysis Date/Time	Flag(s)
Pesticides (cont.)							
Methoxychlor	ND	ug/l	0.22	EPA 508.1	2/26/25	2/27/25	
PCB-1016	ND	ug/l	0.20	EPA 508.1	2/26/25	2/27/25	
PCB-1221	ND	ug/l	0.20	EPA 508.1	2/26/25	2/27/25	
PCB-1232	ND	ug/L	0.20	EPA 508.1	2/26/25	2/27/25	
PCB-1242	ND	ug/L	0.50	EPA 508.1	2/26/25	2/27/25	
PCB-1248	ND	ug/L	0.50	EPA 508.1	2/26/25	2/27/25	
PCB-1254	ND	ug/l	0.50	EPA 508.1	2/26/25	2/27/25	
PCB-1260	ND	ug/l	0.50	EPA 508.1	2/26/25	2/27/25	
PCB - Total	ND	ug/l	0.50	EPA 508.1	2/26/25	2/27/25	
Toxaphene	ND	ug/l	0.2	EPA 508.1	2/26/25	2/27/25	
Trihalomethanes (THMs)							
Bromodichloromethane	ND	ug/L	0.5	EPA 524.2	2/24/25	2/24/25	
Bromoform	ND	ug/L	0.5	EPA 524.2	2/24/25	2/24/25	
Chloroform	ND	ug/L	0.5	EPA 524.2	2/24/25	2/24/25	
Dibromochloromethane	ND	ug/L	0.5	EPA 524.2	2/24/25	2/24/25	
Semi-Volatile Compounds							
Alachlor	ND	ug/l	0.44	EPA 525.2	2/26/25	2/27/25	
Aldrin	ND	ug/l	2.00	EPA 525.2	2/26/25	2/27/25	
Atrazine	ND	ug/L	0.22	EPA 525.2	2/26/25	2/27/25	
Benzo (a) pyrene	ND	ug/L	0.04	EPA 525.2	2/26/25	2/27/25	
Bis (2-ethylhexyl) Adipate	ND	ug/L	1.30	EPA 525.2	2/26/25	2/27/25	
Bis (2-ethylhexyl) Phthalate	ND	ug/L	1.30	EPA 525.2	2/26/25	2/27/25	
Butachlor	ND	ug/l	0.50	EPA 525.2	2/26/25	2/27/25	
alpha-Chlordane	ND	ug/L	0.44	EPA 525.2	2/26/25	2/27/25	
gamma-Chlordane	ND	ug/l	0.44	EPA 525.2	2/26/25	2/27/25	
Chlordane - Total	ND	ug/l	0.44	EPA 525.2	2/26/25	2/27/25	
Dieldrin	ND	ug/L	1.00	EPA 525.2	2/26/25	2/27/25	
Hexachlorobenzene	ND	ug/L	0.22	EPA 525.2	2/26/25	2/27/25	
Hexachlorocyclopentadiene	ND	ug/L	0.22	EPA 525.2	2/26/25	2/27/25	
Metolachlor	ND	ug/L	0.50	EPA 525.2	2/26/25	2/27/25	
Metribuzin	ND	ug/l	0.50	EPA 525.2	2/26/25	2/27/25	
Propachlor	ND	ug/l	0.50	EPA 525.2	2/26/25	2/27/25	
Simazine	ND	ug/l	0.15	EPA 525.2	2/26/25	2/27/25	
Volatile Organic Compounds							
1,1,1,2-Tetrachloroethane	ND	ug/l	1.0	EPA 524.2	2/21/25	2/21/25	

Project Name: [none]

CtF WO#: 25B1609

www.ChemtechFord.com

Page 3 of 7

Certificate of Analysis

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Water Lab
351 West Center Street
Cedar City, UT 84720

PO#:
Receipt: 2/21/25 10:10 @ 2.4 °C
Date Reported: 3/6/2025
Project Name: [none]

Sample ID: K2025 00412 (cont.)

Matrix: Water

Lab ID: 25B1609-01

System No.: UTAH

Date Sampled: 2/19/25 16:13

Sampled By: Nia Bingham

	Result	Units	Minimum Reporting Limit	Method	Preparation Date/Time	Analysis Date/Time	Flag(s)
Volatile Organic Compounds (cont.)							
1,1,1-Trichloroethane	ND	ug/L	0.5	EPA 524.2	2/21/25	2/21/25	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	EPA 524.2	2/21/25	2/21/25	
1,1,2-Trichloroethane	ND	ug/L	0.5	EPA 524.2	2/21/25	2/21/25	
1,1,2-Trichlorotrifluoroethane	ND	ug/L	1.0	EPA 524.2	2/21/25	2/21/25	
1,1-Dichloroethane	ND	ug/L	1.0	EPA 524.2	2/21/25	2/21/25	
1,1-Dichloroethene	ND	ug/L	0.5	EPA 524.2	2/21/25	2/21/25	
1,1-Dichloropropene	ND	ug/L	0.5	EPA 524.2	2/21/25	2/21/25	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	EPA 524.2	2/21/25	2/21/25	
1,2,3-Trichloropropane	ND	ug/L	1.0	EPA 524.2	2/21/25	2/21/25	
1,2,4-Trichlorobenzene	ND	ug/L	0.5	EPA 524.2	2/21/25	2/21/25	
1,2,4-Trimethylbenzene	ND	ug/L	1.0	EPA 524.2	2/21/25	2/21/25	
1,2-Dichlorobenzene	ND	ug/L	0.5	EPA 524.2	2/21/25	2/21/25	
1,2-Dichloroethane	ND	ug/L	0.5	EPA 524.2	2/21/25	2/21/25	
1,2-Dichloropropane	ND	ug/L	0.5	EPA 524.2	2/21/25	2/21/25	
1,3,5-Trimethylbenzene	ND	ug/L	1.0	EPA 524.2	2/21/25	2/21/25	
1,3-Dichlorobenzene	ND	ug/L	1.0	EPA 524.2	2/21/25	2/21/25	
1,3-Dichloropropane	ND	ug/L	0.5	EPA 524.2	2/21/25	2/21/25	
1,4-Dichlorobenzene	ND	ug/L	0.5	EPA 524.2	2/21/25	2/21/25	
2,2-Dichloropropane	ND	ug/L	0.5	EPA 524.2	2/21/25	2/21/25	
2-Chlorotoluene	ND	ug/L	1.0	EPA 524.2	2/21/25	2/21/25	
4-Chlorotoluene	ND	ug/L	1.0	EPA 524.2	2/21/25	2/21/25	
Benzene	ND	ug/L	0.5	EPA 524.2	2/21/25	2/21/25	
Bromobenzene	ND	ug/L	1.0	EPA 524.2	2/21/25	2/21/25	
Bromochloromethane	ND	ug/L	1.0	EPA 524.2	2/21/25	2/21/25	
Bromodichloromethane	ND	ug/L	0.5	EPA 524.2	2/21/25	2/21/25	J-L.O.W-L
Bromoform	ND	ug/L	0.5	EPA 524.2	2/21/25	2/21/25	
Bromomethane	ND	ug/L	1.0	EPA 524.2	2/21/25	2/21/25	
Carbon Tetrachloride	ND	ug/L	1.0	EPA 524.2	2/21/25	2/21/25	
Chlorobenzene	ND	ug/L	0.5	EPA 524.2	2/21/25	2/21/25	
Chloroethane	ND	ug/L	1.0	EPA 524.2	2/21/25	2/21/25	
Chloroform	ND	ug/L	0.5	EPA 524.2	2/21/25	2/21/25	
Chloromethane	ND	ug/L	1.0	EPA 524.2	2/21/25	2/21/25	
cis-1,2-Dichloroethene	ND	ug/L	1.0	EPA 524.2	2/21/25	2/21/25	
cis-1,3-Dichloropropene	ND	ug/L	1.0	EPA 524.2	2/21/25	2/21/25	
Dibromochloromethane	ND	ug/L	0.5	EPA 524.2	2/21/25	2/21/25	

Certificate of Analysis

Southern Utah University
Water Lab
351 West Center Street
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Date Reported: 3/6/2025

Project Name: [none]

Sample ID: K2025 00412 (cont.)

Matrix: Water

Lab ID: 25B1609-01

System No.: UTAH

Date Sampled: 2/19/25 16:13

Sampled By: Nia Bingham

	Result	Units	Minimum Reporting Limit	Method	Preparation Date/Time	Analysis Date/Time	Flag(s)
Volatile Organic Compounds (cont.)							
Dibromomethane	ND	ug/L	1.0	EPA 524.2	2/21/25	2/21/25	
Dichlorodifluoromethane	ND	ug/L	1.0	EPA 524.2	2/21/25	2/21/25	
Ethylbenzene	ND	ug/L	0.5	EPA 524.2	2/21/25	2/21/25	
Hexachlorobutadiene	ND	ug/L	1.0	EPA 524.2	2/21/25	2/21/25	
Isopropylbenzene	ND	ug/L	1.0	EPA 524.2	2/21/25	2/21/25	
Methyl-tert-butyl ether (MTBE)	ND	ug/L	1.0	EPA 524.2	2/21/25	2/21/25	
Methylene Chloride	ND	ug/L	1.0	EPA 524.2	2/21/25	2/21/25	
Naphthalene	ND	ug/L	1.0	EPA 524.2	2/21/25	2/21/25	
n-Butylbenzene	ND	ug/L	1.0	EPA 524.2	2/21/25	2/21/25	
n-Propyl Benzene	ND	ug/L	1.0	EPA 524.2	2/21/25	2/21/25	
p-Isopropyltoluene	ND	ug/L	1.0	EPA 524.2	2/21/25	2/21/25	
sec-Butyl Benzene	ND	ug/L	1.0	EPA 524.2	2/21/25	2/21/25	
Styrene	ND	ug/L	0.5	EPA 524.2	2/21/25	2/21/25	
tert-Butylbenzene	ND	ug/L	1.0	EPA 524.2	2/21/25	2/21/25	
Tetrachloroethene	ND	ug/L	0.5	EPA 524.2	2/21/25	2/21/25	
Toluene	ND	ug/L	0.5	EPA 524.2	2/21/25	2/21/25	
trans-1,2-Dichloroethene	ND	ug/L	0.5	EPA 524.2	2/21/25	2/21/25	
trans-1,3-Dichloropropene	ND	ug/L	1.0	EPA 524.2	2/21/25	2/21/25	
Trichloroethene	ND	ug/L	0.5	EPA 524.2	2/21/25	2/21/25	
Trichlorofluoromethane	ND	ug/L	1.0	EPA 524.2	2/21/25	2/21/25	
Vinyl Chloride	ND	ug/L	0.5	EPA 524.2	2/21/25	2/21/25	
Xylenes, total	ND	ug/L	1.5	EPA 524.2	2/21/25	2/21/25	

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Water Lab
351 West Center Street
Cedar City, UT 84720

PO#:
Receipt: 2/21/25 10:10 @ 2.4 °C
Date Reported: 3/6/2025
Project Name: [none]

Report Footnotes**Abbreviations**

ND = Not detected at the corresponding Minimum Reporting Limit (MRL).

1 mg/L = one milligram per liter or 1 mg/kg = one milligram per kilogram = 1 part per million.

1 µg/L = one microgram per liter or 1 µg/kg = one microgram per kilogram = 1 part per billion.

1 ng/L = one nanogram per liter or 1 ng/kg = one nanogram per kilogram = 1 part per trillion.

On calculated parameters, there may be a slight difference between summing the rounded values shown on the report vs the unrounded values used in the calculation.

Flag Descriptions

J-LOW-L = Estimated low due to low recovery of LCS

CHAIN OF CUSTODY

BILLING ADDRESS: 1351 W. University Blvd
BILLING CITY/STATE/ZIP: Cedar City, UT 84720
PURCHASE ORDER:

UPS GROUND

TRACKING # 12 511 31E 03 5224 2794

State System Number

Send to State

TESTS REQUESTED										Bacteria	
✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	R	Plasma
✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	TR	1.00000000
✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	RP	1.00000000
✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	REPEAT CR 1.00000000 US 1.00000000 DN 1.00000000	
✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	LAB FAIL Ref #	

[illegible]

Alia Bingham	Nia Bingham
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[illegible]

803.262-7200 P(HCN)
806-792-0034 AX
1530-753-7420 FAX (408) 438-0707

Permutation tests are used to show that $\text{E}(\text{MSE}_{\text{MSE}}) = \text{E}(\text{MSE}_{\text{MSE}})$ and that the $\text{E}(\text{MSE}_{\text{MSE}})$ and $\text{E}(\text{MSE}_{\text{MSE}})$ are equal. The results of the permutation tests are shown in Table 1. The results show that the $\text{E}(\text{MSE}_{\text{MSE}})$ and $\text{E}(\text{MSE}_{\text{MSE}})$ are equal.

- Custody Seal Present
- Containers intact
- COC, and Labels Match
- Received in one

† Significant at $p < 0.05$ (one-tailed).

Received with: 110 d

Checked by:

March 20, 2025

Report to:
SUU Water Lab
Southern Utah University Water Lab
351 W. University Blvd
Cedar City, UT 84720
cc: Kim Weaver

Bill to:
Kim Weaver
Southern Utah University Water Lab
351 W University Blvd
Cedar City, UT 84720

Project ID:
ACZ Project ID: L93148

SUU Water Lab:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on February 24, 2025. This project has been assigned to ACZ's project number, L93148. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L93148. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all requirements of NELAC.

This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after April 19, 2025. If the samples are determined to be hazardous, additional charges apply for disposal (typically \$11/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical raw data reports for ten years.

If you have any questions or other needs, please contact your Project Manager.

ACZ Laboratories, Inc.
Manager, Customer Service
351 W. University Blvd
Cedar City, UT 84720



Southern Utah University Water Lab

March 20, 2025

Project ID:

ACZ Project ID: L93148

ACZ Laboratories, Inc. (ACZ) received 1 drinking water sample from Southern Utah University Water Lab on February 24, 2025. The sample was received in good condition. Upon receipt, the sample custodian removed the sample from the cooler, inspected the contents, and logged the sample into ACZ's computerized Laboratory Information Management System (LIMS). The sample was assigned ACZ LIMS project number L93148. The custodian verified the sample information entered into the computer against the chain of custody (COC) forms and sample bottle labels.

All analyses were performed within EPA recommended holding times.

This sample was analyzed for radiochemistry parameters. The individual methods are referenced on both, the ACZ invoice and the analytical reports. The following required further detail not provided by the Extended Qualifier Report:

1. The below is from WG607440, Qualifier: N1. Applies to: L93148-01/RADIUM 228 - Recovery of the LCSW was outside drinking water acceptance limits. MS within drinking water limits and used for positive control.



Laboratories, Inc.

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Southern Utah University Water Lab

Project ID:

Sample ID: K2025 00412

Locator:

ACZ Sample ID: **L93148-01**

Date Sampled: 02/19/25 16:13

Date Received: 02/24/25

Sample Matrix: Drinking Water

Gross Alpha & Beta, total

Prep Method:

EPA 900.0

Gross Alpha	03/11/25 0:18	1.1	1.2	1.3	pCi/L	*	amk
Gross Beta	03/11/25 0:18	4.3	2.1	2	pCi/L		amk

Radium 226, total

Prep Method:

EPA 903.1

Radium 226, total	03/19/25 0:08	0.05	0.08	0.08	pCi/L	*	ang
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Radium 228, total

Prep Method:

EPA 904.0

Radium 228, total	03/14/25 18:09	-0.04	0.37	0.39	pCi/L	*	ajp
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<i>Batch</i>	A distinct set of samples analyzed at a specific time
<i>Error(+/-)</i>	Calculated sample specific uncertainty
<i>Found</i>	Value of the QC Type of interest
<i>Limit</i>	Upper limit for RPD, in %.
<i>LCL</i>	Lower Control Limit, in % (except for LCSS, mg/Kg)
<i>LLD</i>	Calculated sample specific Lower Limit of Detection
<i>PCN/SCN</i>	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
<i>PQL</i>	Practical Quantitation Limit
<i>QC</i>	True Value of the Control Sample or the amount added to the Spike
<i>Rec</i>	Amount of the true value or spike added recovered, in % (except for LCSS, mg/Kg)
<i>RER</i>	Relative Error Ratio, calculation used for Dup. QC taking into account the error factor.
<i>RPD</i>	Relative Percent Difference, calculation used for Duplicate QC Types
<i>UCL</i>	Upper Control Limit, in % (except for LCSS, mg/Kg)
<i>Sample</i>	Value of the Sample of interest

<i>DUP</i>	Sample Duplicate	<i>MS/MSD</i>	Matrix Spike/Matrix Spike Duplicate
<i>LCSS</i>	Laboratory Control Sample - Soil	<i>PBS</i>	Prep Blank - Soil
<i>LCSW</i>	Laboratory Control Sample - Water	<i>PBW</i>	Prep Blank - Water

Blanks	Verifies that there is no or minimal contamination in the prep method procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Matrix Spikes	Determines sample matrix interferences, if any.

H Analysis exceeded method hold time.

M	EPA methodology, including those under SDWA, CWA, and RCRA
SM	Standard Methods for the Examination of Water and Wastewater.
D	ASTM
RP	DOE
ESM	DOE/ESM

- (1) Solid matrices are reported on a dry weight basis.
- (2) Preparation method: "Method" indicates preparation defined in analytical method.
- (3) QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
- (4) An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.

For a complete list of ACZ's Extended Qualifiers, please click:

<https://aczk.com/wp-content/uploads/2019/04/Ext-Qual-List.pdf>



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Southern Utah University Water Lab

ACZ Project ID: **L93148**

L93148-01	WG607290	Gross Alpha	EPA 900.0	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LTB) was acceptable.
			EPA 900.0	RG	Sample concentration is less than 5x LLD; RPD was not used for data validation. Replicate Error Ratio (RER) is less than 2. Precision judged to be in control.
	WG607392	Radium 226, total	EPA 903.1	RG	Sample concentration is less than 5x LLD; RPD was not used for data validation. Replicate Error Ratio (RER) is less than 2. Precision judged to be in control.
	WG607440	Radium 228, total	EPA 904.0	N1	See Case Narrative.
			EPA 904.0	RG	Sample concentration is less than 5x LLD; RPD was not used for data validation. Replicate Error Ratio (RER) is less than 2. Precision judged to be in control.



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Southern Utah University Water Lab

ACZ Project ID: **L93148**

No certification qualifiers associated with this analysis



Southern Utah University Water Lab

ACZ Project ID: L93148

Date Received: 02/24/2025 15:50

Received By:

Date Printed: 2/25/2025

	YES	NO	NA
1) Is a foreign soil permit included for applicable samples?			X
2) Is the Chain of Custody form or other directive shipping papers present?	X		
3) Does this project require special handling procedures such as CLP protocol?		X	
4) Are any samples NRC licensable material?			X
5) If samples are received past hold time, proceed with requested short hold time analyses?	X		
6) Is the Chain of Custody form complete and accurate?	X		
7) Were any changes made to the Chain of Custody form prior to ACZ receiving the samples?		X	
8) Are all containers intact and with no leaks?	X		
9) Are all labels on containers and are they intact and legible?	X		
10) Do the sample labels and Chain of Custody form match for Sample ID, Date, and Time?	X		
11) For preserved bottle types, was the pH checked and within limits? ¹	X		
12) Is there sufficient sample volume to perform all requested work?	X		
13) Is the custody seal intact on all containers?			X
14) Are samples that require zero headspace acceptable?			X
15) Are all sample containers appropriate for analytical requirements?	X		
16) Is there an Hg-1631 trip blank present?			X
17) Is there a VOA trip blank present?			X
18) Were all samples received within hold time?	X		

NA indicates Not Applicable

Container ID	Temp (°C)	Temp (°F)	pH (analyte)	Chain of Custody Intact?
NA44357	9.9	NA	10	N/A

Was ice present in the shipment container(s)?

Yes - Wet Ice was present in the shipment container(s).

Client must contact an ACZ Project Manager if analysis should not proceed for samples received outside of their thermal preservation acceptance criteria.



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Southern Utah University Water Lab

ACZ Project ID: L93148

Date Received: 02/24/2025 15:50

Received By:

Date Printed: 2/25/2025

¹ The preservation of the following bottle types is not checked at sample receipt: Orange (oil and grease), Purple (total cyanide), Pink (dissolved cyanide), Brown (arsenic speciation), Sterile (fecal coliform), EDTA (sulfite), HCl preserved vial (organics), Na₂S₂O₃ preserved vial (organics), and HG-1631 (total/dissolved mercury by method 1631).

