# SEMI-ANNUAL GROUND WATER QUALITY ASSURANCE REPORT

FIRST HALF OF 2022
(JANUARY THRU JUNE)

# SEMI – ANNUAL QUALITY ASSURANCE

# CHURCH ROCK SITE

# JANUARY TO JUNE 2022 SAMPLING EVENT

# AUGUST – 2022

# TABLE OF CONTENTS

1.0 Requirements
2.0 Field Sampling Procedures and QA/QC Report
3.0 Chain of Custody
4.0 Laboratory Quality Control
5.0 Data Validation

Appendix – A: Quarterly Field Data Sheet

Appendix – B: Quarterly QA/QC Field Blank and Duplicate Sample Report

Appendix – C: Quarterly Chain of Custody

Appendix – D: Quarterly Laboratory Quality Control and Performance Report

(1 of 2 & 2 of 2)

## 1.0 REQUIREMENTS

The quality assurance and control procedures are contained in Sec. 3.0 of the Remedial Action Plan of Church Rock Site dated April 1989. The procedure addresses sampling, chain of custody, laboratory quality control, and data validation. These requirements became effective July3, 1989, when United Nuclear received the Administrative Order on the Church Rock Site from the U.S. Environmental Protection Agency (USEPA).

## 2.0 FIELD SAMPLING PROCEDURES AND QA/QC REPORT

Copies of the 2022 QUARTERLY (1st AND 2nd) field low flow purging and sampling data sheets are included in Appendix A. These sheets indicate the field parameter of pH, temperature, conductivity and the water level drop in the well if any, during the sampling. The quarterly QA/QC Field Blank, Rinsate, VOC Trip Blank and Duplicate analysis report are included in Appendix B.

## 3.0 CHAIN OF CUSTODY

Copies of the quarterly Chain of Custody report are included in Appendix C. Energy Laboratories, Inc., our contract laboratory is located in Casper, Wyoming. Energy Labs inspect the sample shipment upon arrival to verify the information of the Chain of Custody form and to determine if sample arrive at the appropriate temperature and preservation.

## 4.0 LABORATORY CONTROL

Copies of the quarterly internal Quality Control reports prepared by Energy Laboratories and associated EPA performance evaluations are included in Appendix D (1 of 2 & 2 of 2).

## 5.0 DATA EVALUATION

Analytical reports are reviewed by the Remedial Project Managers and site Radiation Safety Officer after receipt from Energy Labs. Significant increase or decrease and out of range values are identified and the laboratory is requested to recheck the suspect values. The laboratory responds by checking transcription for these items, and where necessary, repeats the analysis. A revised report is then issued for that sample if an error is discovered.

# APPENDIX – A

## QUARTERLY

## FIELD DATA SHEET

PH Standard Verification Check

| STD. | PH Reading | Date/Time | Initial |
|---|---|---|---|
| 4-Buffer | 3.96 | 1-10-22/0759 | rc |
| 7-Buffer | 6.98 | 1-10-22/0751 | rc |

(Quar. Performance Monitoring – Pg. 1 of 7)

GROUND WATER MONITORING FIELD DATA SHEET

First QUARTER 2022 SAMPLING

(pH/cond. meter #1)

Cond. Standard Verification Check

| STD. | µS/cm Reading | Date/Time | Initial |
|---|---|---|---|
| 1413 µS/cm | 1378 | 1-10-22/0752 | rc |

(pH/cond. meter #1 calibrated on 1-7-22 by rc)

| Date | Well Number | WL w/Probe Pre-Sample | WL w/Probe Post Sample | Reading | Reading | Reading | Reading |
|---|---|---|---|---|---|---|---|
| | | | | 1st Cond. 4,500 | 2nd Cond. 4,510 | Stable Cond. 6,680 | Ending Cond. 6,680 |
| | 614 | | | 1st pH 6.19 | 2nd pH 6.34 | Stable pH 6.71 | Ending pH 6.71 |
| | | 107.90' | 108.50' | 1st Temp. 7.2 | 2nd Temp. 7.4 | Stable Temp. 7.9 | Ending Temp. 7.9 |
| 1-10-22 | Time | Bubbler Start | Bubbler End | Comments: Conductivity is in uS/cm Temperature is in °C pH is in std. units | | | |
| | 0908 | 0.238' | 0.237' | | | | |

| Date | Well Number | WL w/Probe Pre-Sample | WL w/Probe Post Sample | Reading | Reading | Reading | Reading |
|---|---|---|---|---|---|---|---|
| | | | | 1st Cond. 9,080 | 2nd Cond. 9,150 | Stable Cond. 9,270 | Ending Cond. 9,000 |
| | 515-A | | | 1st pH 7.17 | 2nd pH 7.17 | Stable pH 7.15 | Ending pH 5.93 |
| | | 109.45' | 111.64' | 1st Temp. 11.5 | 2nd Temp. 11.6 | Stable Temp. 11.7 | Ending Temp. 12.8 |
| 1-10-22 | Time | Bubbler Start | Bubbler End | Comments: Water level dropped 2.19' during sample. | | | |
| | 1115 | 3.547' | 0.254' | | | | |

| Date | Well Number | WL w/Probe Pre-Sample | WL w/Probe Post Sample | Reading | Reading | Reading | Reading |
|---|---|---|---|---|---|---|---|
| | | | | 1st Cond. 5,870 | 2nd Cond. 6,000 | Stable Cond. 6,070 | Ending Cond. 6,170 |
| | 604 | | | 1st pH 5.52 | 2nd pH 5.51 | Stable pH 5.50 | Ending pH 5.16 |
| | | 108.64' | 109.27' | 1st Temp. 11.7 | 2nd Temp. 11.7 | Stable Temp. 11.7 | Ending Temp. 12.1 |
| 1-10-22 | Time | Bubbler Start | Bubbler End | Comments: | | | |
| | 1226 | 0.821' | 0.256' | | | | |

| Date | Well Number | WL w/Probe Pre-Sample | WL w/Probe Post Sample | Reading | Reading | Reading | Reading |
|---|---|---|---|---|---|---|---|
| | | | | 1st Cond. 6,530 | 2nd Cond. 6,610 | Stable Cond. 6,700 | Ending Cond. 6,650 |
| | EPA-7 | | | 1st pH 7.63 | 2nd pH 7.65 | Stable pH 7.66 | Ending pH 5.98 |
| | | 119.81' | 121.41' | 1st Temp. 12.2 | 2nd Temp. 12.2 | Stable Temp. 12.2 | Ending Temp. 12.9 |
| 1-10-22 | Time | Bubbler Start | Bubbler End | Comments: | | | |
| | 1324 | 7.304' | 5.691' | | | | |

| Date | Well Number | WL w/Probe Pre-Sample | WL w/Probe Post Sample | Reading | Reading | Reading | Reading |
|---|---|---|---|---|---|---|---|
| | | | | 1st Cond. 8,050 | 2nd Cond. 8,150 | Stable Cond. 8,130 | Ending Cond. 8,450 |
| | 613 | | | 1st pH 4.08 | 2nd pH 4.00 | Stable pH 3.90 | Ending pH 3.05 |
| | | 80.89' | 81.76' | 1st Temp. 11.8 | 2nd Temp. 11.8 | Stable Temp. 11.8 | Ending Temp. 11.7 |
| 1-10-22 | Time | Bubbler Start | Bubbler End | Comments: | | | |
| | 1412 | 3.897' | 3.002' | | | | |

| Date | Well Number | WL w/Probe Pre-Sample | WL w/Probe Post Sample | Reading | Reading | Reading | Reading |
|---|---|---|---|---|---|---|---|
| | | | | 1st Cond. 4,890 | 2nd Cond. 4,920 | Stable Cond. 4,950 | Ending Cond. 4,900 |
| | 717 | | | 1st pH 2.88 | 2nd pH 2.90 | Stable pH 2.91 | Ending pH 3.38 |
| | | 138.10' | 139.18' | 1st Temp. 11.3 | 2nd Temp. 11.4 | Stable Temp. 11.4 | Ending Temp. 12.1 |
| 1-10-22 | Time | Bubbler Start | Bubbler End | Comments: | | | |
| | 1500 | 0.269' | 0.277' | | | | |

# GROUND WATER MONITORING FIELD DATA SHEET

First QUARTER 2022 SAMPLING

(pH/cond. meter #1 on 1-11-22)

PH Standard Verification Check

| STD. | PH Reading | Date/Time | Initial |
|---|---|---|---|
| 4-Buffer | 4.00 | 1-11-22/0816 | [illegible] |
| 7-Buffer | 6.92 | 1-11-22/0811 | [illegible] |

Cond. Standard Verification Check

| STD. | µS/cm Reading | Date/Time | Initial |
|---|---|---|---|
| 1413 µS/cm | 1474 | 1-11-22/0817 | [illegible] |

| Date | Well Number | WL w/Probe Pre-Sample | WL w/Probe Post Sample | Reading | Reading | Reading | Reading |
|---|---|---|---|---|---|---|---|
| 1-10-22 | 717 | 139.18' | 140.13' | 1st Cond. 4,890 | 2nd Cond. 4,890 | Stable Cond. 4,890 | Ending Cond. 4,930 |
| | DUPLICATE | | | 1st pH 3.38 | 2nd pH 3.39 | Stable pH 3.39 | Ending pH 3.38 |
| | | | | 1st Temp. 12.0 | 2nd Temp. 11.9 | Stable Temp. 11.9 | Ending Temp. 11.8 |
| | Time | Bubbler Start | Bubbler End | Comments: | | | |
| | 1533 | 0.277' | 0.274' | | | | |

| Date | Well Number | WL w/Probe Pre-Sample | WL w/Probe Post Sample | Reading | Reading | Reading | Reading |
|---|---|---|---|---|---|---|---|
| 1-11-22 | 517 | 109.92' | | 1st Cond. 6,010 | 2nd Cond. 6,030 | Stable Cond. 6,160 | Ending Cond. 6,190 |
| | | | | 1st pH 2.65 | 2nd pH 2.64 | Stable pH 2.63 | Ending pH 2.62 |
| | | | | 1st Temp. 9.2 | 2nd Temp. 9.3 | Stable Temp. 9.5 | Ending Temp. 9.6 |
| | Time | Bubbler Start | Bubbler End | Comments: No ending water level reading due to probe on top of pump. Required 8 hr. recharge to resume/collect full sample. | | | |
| | 0925 | 0.277' | 0.276' | | | | |

| Date | Well Number | WL w/Probe Pre-Sample | WL w/Probe Post Sample | Reading | Reading | Reading | Reading |
|---|---|---|---|---|---|---|---|
| 1-11-22 | EPA-14 | 128.15' | 128.83' | 1st Cond. 3,530 | 2nd Cond. 3,530 | Stable Cond. 3,530 | Ending Cond. 3,530 |
| | | | | 1st pH 6.48 | 2nd pH 6.53 | Stable pH 6.59 | Ending pH 5.76 |
| | | | | 1st Temp. 11.6 | 2nd Temp. 11.6 | Stable Temp. 11.6 | Ending Temp. 12.3 |
| | Time | Bubbler Start | Bubbler End | Comments: | | | |
| | 1047 | 0.287' | 0.292' | | | | |

| Date | Well Number | WL w/Probe Pre-Sample | WL w/Probe Post Sample | Reading | Reading | Reading | Reading |
|---|---|---|---|---|---|---|---|
| 1-11-22 | 708 | 161.97' | 163.22' | 1st Cond. 5,140 | 2nd Cond. 5,240 | Stable Cond. 5,280 | Ending Cond. 5,170 |
| | | | | 1st pH 3.25 | 2nd pH 3.23 | Stable pH 3.22 | Ending pH 3.71 |
| | | | | 1st Temp. 11.8 | 2nd Temp. 11.8 | Stable Temp. 11.9 | Ending Temp. 13.0 |
| | Time | Bubbler Start | Bubbler End | Comments: | | | |
| | 1133 | 0.321' | 0.309' | | | | |

| Date | Well Number | WL w/Probe Pre-Sample | WL w/Probe Post Sample | Reading | Reading | Reading | Reading |
|---|---|---|---|---|---|---|---|
| 1-11-22 | 711 | 186.89' | 187.79' | 1st Cond. 4,860 | 2nd Cond. 4,970 | Stable Cond. 5,150 | Ending Cond. 4,150 |
| | | | | 1st pH 2.86 | 2nd pH 2.81 | Stable pH 2.80 | Ending pH 3.46 |
| | | | | 1st Temp. 12.4 | 2nd Temp. 12.3 | Stable Temp. 12.4 | Ending Temp. 13.0 |
| | Time | Bubbler Start | Bubbler End | Comments: | | | |
| | 1233 | 0.082' | 0.071' | | | | |

| Date | Well Number | WL w/Probe Pre-Sample | WL w/Probe Post Sample | Reading | Reading | Reading | Reading |
|---|---|---|---|---|---|---|---|
| 1-11-22 | EPA-13 | 171.27' | 171.21' | 1st Cond. 6,000 | 2nd Cond. 6,180 | Stable Cond. 6,250 | Ending Cond. 6,520 |
| | | | | 1st pH 7.60 | 2nd pH 7.41 | Stable pH 7.27 | Ending pH 5.82 |
| | | | | 1st Temp. 10.5 | 2nd Temp. 10.5 | Stable Temp. 10.5 | Ending Temp. 9.9 |
| | Time | Bubbler Start | Bubbler End | Comments: Will need maintenance work due to slow discharge. | | | |
| | 1416 | 0.515' | 0.329' | | | | |

# GROUND WATER MONITORING FIELD DATA SHEET

First QUARTER 2022 SAMPLING

(pH/cond. meter #1 on 1-12-22)

PH Standard Verification Check

| STD. | PH Reading | Date/Time | Initial |
|---|---|---|---|
| 4-Buffer | 3.94 | 1-12-22/0807 | [illegible] |
| 7-Buffer | 7.01 | 1-12-22/0755 | [illegible] |

Cond. Standard Verification Check

| STD. | µS/cm Reading | Date/Time | Initial |
|---|---|---|---|
| 1413 µS/cm | 1471 | 1-12-22/0808 | [illegible] |

| Date | Well Number | WL w/Probe Pre-Sample | WL w/Probe Post Sample | Reading | Reading | Reading | Reading |
|---|---|---|---|---|---|---|---|
| 1-12-22 | RINSATE | | | 1st Cond. 3 | 2nd Cond. | Stable Cond. | Ending Cond. |
| | | | | 1st pH 5.61 | 2nd pH | Stable pH | Ending pH |
| | | | | 1st Temp. 13.2 | 2nd Temp. | Stable Temp. | Ending Temp. |
| | Time | Bubbler Start | Bubbler End | Comments: | | | |
| | 1355 | | | | | | |

| Date | Well Number | WL w/Probe Pre-Sample | WL w/Probe Post Sample | Reading | Reading | Reading | Reading |
|---|---|---|---|---|---|---|---|
| 1-12-22 | FIELD BLANK | | | 1st Cond. 2 | 2nd Cond. | Stable Cond. | Ending Cond. |
| | | | | 1st pH 6.04 | 2nd pH | Stable pH | Ending pH |
| | | | | 1st Temp. 15.4 | 2nd Temp. | Stable Temp. | Ending Temp. |
| | Time | Bubbler Start | Bubbler End | Comments: | | | |
| | 1400 | | | | | | |

| Date | Well Number | WL w/Probe Pre-Sample | WL w/Probe Post Sample | Reading | Reading | Reading | Reading |
|---|---|---|---|---|---|---|---|
| 1-13-22 | EPA-4 | | | 1st Cond. 4,080 | 2nd Cond. 4,130 | Stable Cond. 4,190 | Ending Cond. 4,410 |
| | | 210.89' | 211.44' | 1st pH 6.16 | 2nd pH 6.32 | Stable pH 6.41 | Ending pH 5.71 |
| | | | | 1st Temp. 11.1 | 2nd Temp. 11.2 | Stable Temp. 11.2 | Ending Temp. 12.7 |
| | Time | Bubbler Start | Bubbler End | Comments: | | | |
| | 0927 | 12.112' | 11.489' | | | | |

| Date | Well Number | WL w/Probe Pre-Sample | WL w/Probe Post Sample | Reading | Reading | Reading | Reading |
|---|---|---|---|---|---|---|---|
| 1-13-22 | EPA-5 | | | 1st Cond. 4,330 | 2nd Cond. 4,350 | Stable Cond. 4,460 | Ending Cond. 4,700 |
| | | 129.87' | 130.46' | 1st pH 3.84 | 2nd pH 3.74 | Stable pH 3.72 | Ending pH 6.14 |
| | | | | 1st Temp. 12.6 | 2nd Temp. 12.7 | Stable Temp. 12.6 | Ending Temp. 13.7 |
| | Time | Bubbler Start | Bubbler End | Comments: | | | |
| | 1033 | 0.994' | 0.419' | | | | |

| Date | Well Number | WL w/Probe Pre-Sample | WL w/Probe Post Sample | Reading | Reading | Reading | Reading |
|---|---|---|---|---|---|---|---|
| | | | | 1st Cond. | 2nd Cond. | Stable Cond. | Ending Cond. |
| | | | | 1st pH | 2nd pH | Stable pH | Ending pH |
| | | | | 1st Temp. | 2nd Temp. | Stable Temp. | Ending Temp. |
| | Time | Bubbler Start | Bubbler End | Comments: | | | |

| Date | Well Number | WL w/Probe Pre-Sample | WL w/Probe Post Sample | Reading | Reading | Reading | Reading |
|---|---|---|---|---|---|---|---|
| | | | | 1st Cond. | 2nd Cond. | Stable Cond. | Ending Cond. |
| | | | | 1st pH | 2nd pH | Stable pH | Ending pH |
| | | | | 1st Temp. | 2nd Temp. | Stable Temp. | Ending Temp. |
| | Time | Bubbler Start | Bubbler End | Comments: | | | |

# GROUND WATER MONITORING FIELD DATA SHEET

First QUARTER 20 22 SAMPLING

(pH/cond. meter #1 on 1-13-22)

PH Standard Verification Check

| STD. | PH Reading | Date/Time | Initial |
|---|---|---|---|
| 4-Buffer | 4.05 | 1-13-22/0810 | [illegible] |
| 7-Buffer | 7.04 | 1-13-22/0805 | [illegible] |

Cond. Standard Verification Check

| STD. | µS/cm Reading | Date/Time | Initial |
|---|---|---|---|
| 1413 µS/cm | 1444 | 1-13-22/0811 | [illegible] |

| Date | Well Number | WL w/Probe Pre-Sample | WL w/Probe Post Sample | Reading | Reading | Reading | Reading |
|---|---|---|---|---|---|---|---|
| 1-13-22 | EPA-2 | 177.01' | 177.81' | 1st Cond. 3,730 | 2nd Cond. 3,750 | Stable Cond. 3,780 | Ending Cond. 3,750 |
| | | | | 1st pH 5.60 | 2nd pH 5.80 | Stable pH 6.01 | Ending pH 6.76 |
| | | | | 1st Temp. 12.5 | 2nd Temp. 12.6 | Stable Temp. 12.5 | Ending Temp. 13.0 |
| | Time | Bubbler Start | Bubbler End | Comments: | | | |
| | 1140 | 4.509' | 3.717' | | | | |

| Date | Well Number | WL w/Probe Pre-Sample | WL w/Probe Post Sample | Reading | Reading | Reading | Reading |
|---|---|---|---|---|---|---|---|
| 1-13-22 | EPA-2 DUPLICATE | 177.81' | 177.98' | 1st Cond. 3,750 | 2nd Cond. 3,750 | Stable Cond. 3,750 | Ending Cond. 3,800 |
| | | | | 1st pH 6.76 | 2nd pH 6.75 | Stable pH 6.75 | Ending pH 6.72 |
| | | | | 1st Temp. 13.0 | 2nd Temp. 13.1 | Stable Temp. 12.9 | Ending Temp. 13.0 |
| | Time | Bubbler Start | Bubbler End | Comments: | | | |
| | 1210 | 3.717' | 3.497' | | | | |

| Date | Well Number | WL w/Probe Pre-Sample | WL w/Probe Post Sample | Reading | Reading | Reading | Reading |
|---|---|---|---|---|---|---|---|
| 1-13-22 | 142 | 205.42' | 206.13' | 1st Cond. 1,923 | 2nd Cond. 1,916 | Stable Cond. 1,924 | Ending Cond. 1,956 |
| | | | | 1st pH 7.65 | 2nd pH 7.65 | Stable pH 7.64 | Ending pH 7.75 |
| | | | | 1st Temp. 12.8 | 2nd Temp. 12.8 | Stable Temp. 12.8 | Ending Temp. 13.3 |
| | Time | Bubbler Start | Bubbler End | Comments: | | | |
| | 1252 | 15.498' | 14.793' | | | | |

| Date | Well Number | WL w/Probe Pre-Sample | WL w/Probe Post Sample | Reading | Reading | Reading | Reading |
|---|---|---|---|---|---|---|---|
| 1-13-22 | 719 | 171.43' | 171.87' | 1st Cond. 5,050 | 2nd Cond. 5,150 | Stable Cond. 5,220 | Ending Cond. 5,200 |
| | | | | 1st pH 4.92 | 2nd pH 4.88 | Stable pH 4.84 | Ending pH 5.60 |
| | | | | 1st Temp. 12.9 | 2nd Temp. 13.0 | Stable Temp. 12.9 | Ending Temp. 13.5 |
| | Time | Bubbler Start | Bubbler End | Comments: | | | |
| | 1342 | 0.372' | 0.369' | | | | |

| Date | Well Number | WL w/Probe Pre-Sample | WL w/Probe Post Sample | Reading | Reading | Reading | Reading |
|---|---|---|---|---|---|---|---|
| 1-14-22 | EPA-23 | 64.31' | 64.63' | 1st Cond. 5,720 | 2nd Cond. 5,770 | Stable Cond. 5,910 | Ending Cond. 6,000 |
| | | | | 1st pH 6.53 | 2nd pH 6.53 | Stable pH 6.52 | Ending pH 6.50 |
| | | | | 1st Temp. 12.1 | 2nd Temp. 12.2 | Stable Temp. 12.1 | Ending Temp. 13.0 |
| | Time | Bubbler Start | Bubbler End | Comments: See monthly/Quar. Supplemental - Pg. 1 of 2 for pH/cond. verification check. | | | |
| | 1051 | 0.185' | 0.190' | | | | |

| Date | Well Number | WL w/Probe Pre-Sample | WL w/Probe Post Sample | Reading | Reading | Reading | Reading |
|---|---|---|---|---|---|---|---|
| | | | | 1st Cond. | 2nd Cond. | Stable Cond. | Ending Cond. |
| | | | | 1st pH | 2nd pH | Stable pH | Ending pH |
| | | | | 1st Temp. | 2nd Temp. | Stable Temp. | Ending Temp. |
| | Time | Bubbler Start | Bubbler End | Comments: | | | |
| | | | | | | | |

GROUND WATER MONITORING FIELD DATA SHEET

First QUARTER 2022 SAMPLING

(pH/cond. meter # 1)

PH Standard Verification Check

| STD. | PH Reading | Date/Time | Initial |
|---|---|---|---|
| 4-Buffer | 3.92 | 1-17-22/0811 | [illegible] |
| 7-Buffer | 6.95 | 1-17-22/0804 | [illegible] |

Cond. Standard Verification Check

| STD. | µS/cm Reading | Date/Time | Initial |
|---|---|---|---|
| 1413 µS/cm | 1431 | 1-17-22/0812 | [illegible] |

(pH/cond. meter #1 calibrated on 1-14-22 by RC)

| Date | Well Number | WL w/Probe Pre-Sample | WL w/Probe Post Sample | Reading | Reading | Reading | Reading |
|---|---|---|---|---|---|---|---|
| 1-17-22 | 803 | 70.53' | 70.69' | 1st Cond. 6,210 | 2nd Cond. 6,180 | Stable Cond. 6,220 | Ending Cond. 6,190 |
| | | | | 1st pH 6.30 | 2nd pH 6.32 | Stable pH 6.33 | Ending pH 6.42 |
| | | | | 1st Temp. 10.9 | 2nd Temp. 11.1 | Stable Temp. 11.1 | Ending Temp. 11.6 |
| | Time | Bubbler Start | Bubbler End | Comments: | | | |
| | 0914 | 6.229' | 6.093' | | | | |

| Date | Well Number | WL w/Probe Pre-Sample | WL w/Probe Post Sample | Reading | Reading | Reading | Reading |
|---|---|---|---|---|---|---|---|
| 1-17-22 | 808 | 57.79' | 58.01' | 1st Cond. 4,820 | 2nd Cond. 5,740 | Stable Cond. 5,780 | Ending Cond. 6,580 |
| | | | | 1st pH 7.21 | 2nd pH 7.14 | Stable pH 6.98 | Ending pH 6.03 |
| | | | | 1st Temp. 9.9 | 2nd Temp. 10.2 | Stable Temp. 10.6 | Ending Temp. 11.5 |
| | Time | Bubbler Start | Bubbler End | Comments: | | | |
| | 0948 | 5.829' | 5.616' | | | | |

| Date | Well Number | WL w/Probe Pre-Sample | WL w/Probe Post Sample | Reading | Reading | Reading | Reading |
|---|---|---|---|---|---|---|---|
| 1-17-22 | 802 | 55.98' | 56.05' | 1st Cond. 5,990 | 2nd Cond. 6,080 | Stable Cond. 6,160 | Ending Cond. 6,390 |
| | | | | 1st pH 6.55 | 2nd pH 6.55 | Stable pH 6.54 | Ending pH 6.44 |
| | | | | 1st Temp. 10.5 | 2nd Temp. 10.7 | Stable Temp. 10.8 | Ending Temp. 11.8 |
| | Time | Bubbler Start | Bubbler End | Comments: | | | |
| | 1031 | 11.663' | 11.675' | | | | |

| Date | Well Number | WL w/Probe Pre-Sample | WL w/Probe Post Sample | Reading | Reading | Reading | Reading |
|---|---|---|---|---|---|---|---|
| 1-17-22 | 632 | 52.44' | 57.21' | 1st Cond. 5,480 | 2nd Cond. 5,590 | Stable Cond. 5,810 | Ending Cond. 6,400 |
| | | | | 1st pH 6.48 | 2nd pH 6.90 | Stable pH 6.87 | Ending pH 6.44 |
| | | | | 1st Temp. 10.5 | 2nd Temp. 10.7 | Stable Temp. 10.7 | Ending Temp. 12.0 |
| | Time | Bubbler Start | Bubbler End | Comments: water level dropped 4.77' during sample. | | | |
| | 1116 | 4.465' | 0.198' | | | | |

| Date | Well Number | WL w/Probe Pre-Sample | WL w/Probe Post Sample | Reading | Reading | Reading | Reading |
|---|---|---|---|---|---|---|---|
| 1-17-22 | 801 | 59.84' | 61.59' | 1st Cond. 5,000 | 2nd Cond. 5,270 | Stable Cond. 5,530 | Ending Cond. 5,530 |
| | | | | 1st pH 6.90 | 2nd pH 6.90 | Stable pH 6.85 | Ending pH 6.85 |
| | | | | 1st Temp. 11.1 | 2nd Temp. 11.1 | Stable Temp. 11.1 | Ending Temp. 11.1 |
| | Time | Bubbler Start | Bubbler End | Comments: | | | |
| | 1158 | 1.848' | 0.475' | | | | |

| Date | Well Number | WL w/Probe Pre-Sample | WL w/Probe Post Sample | Reading | Reading | Reading | Reading |
|---|---|---|---|---|---|---|---|
| | | | | 1st Cond. | 2nd Cond. | Stable Cond. | Ending Cond. |
| | | | | 1st pH | 2nd pH | Stable pH | Ending pH |
| | | | | 1st Temp. | 2nd Temp. | Stable Temp. | Ending Temp. |
| | Time | Bubbler Start | Bubbler End | Comments: | | | |
| | | | | | | | |

GROUND WATER MONITORING FIELD DATA SHEET

First QUARTER 2022 SAMPLING

PH Standard Verification Check

| STD. | PH Reading | Date/Time | Initial |
|---|---|---|---|
| 4-Buffer | 3.91 | 1-18-22/0809 | [illegible] |
| 7-Buffer | 6.98 | 1-18-22/0759 | [illegible] |

Cond. Standard Verification Check

| STD. | µS/cm Reading | Date/Time | Initial |
|---|---|---|---|
| 1413 µS/cm | 1454 | 1-18-22/0810 | [illegible] |

(pH/Cond. meter #1 on 1-18-22)

| Date | Well Number | WL w/Probe Pre-Sample | WL w/Probe Post Sample | Reading | Reading | Reading | Reading |
|---|---|---|---|---|---|---|---|
| | 624 | 58.56' | 58.61' | 1st Cond. 4,040 | 2nd Cond. 4,090 | Stable Cond. 4,560 | Ending Cond. 5,580 |
| 1-17-22 | Time | Bubbler Start | Bubbler End | 1st pH 7.16 | 2nd pH 7.22 | Stable pH 7.16 | Ending pH 6.48 |
| | 1319 | 3.905' | 3.871' | 1st Temp. 12.4 | 2nd Temp. 12.4 | Stable Temp. 12.3 | Ending Temp. 12.0 |
| | | | | Comments: | | | |

| Date | Well Number | WL w/Probe Pre-Sample | WL w/Probe Post Sample | Reading | Reading | Reading | Reading |
|---|---|---|---|---|---|---|---|
| | GW-1 | 69.74' | 70.12' | 1st Cond. 5,230 | 2nd Cond. 5,230 | Stable Cond. 5,430 | Ending Cond. 6,030 |
| 1-17-22 | Time | Bubbler Start | Bubbler End | 1st pH 7.20 | 2nd pH 7.18 | Stable pH 7.08 | Ending pH 6.62 |
| | 1408 | 0.994' | 0.601' | 1st Temp. 12.6 | 2nd Temp. 12.5 | Stable Temp. 12.4 | Ending Temp. 12.1 |
| | | | | Comments: | | | |

| Date | Well Number | WL w/Probe Pre-Sample | WL w/Probe Post Sample | Reading | Reading | Reading | Reading |
|---|---|---|---|---|---|---|---|
| | 509-D | 87.73' | 87.75' | 1st Cond. 5,060 | 2nd Cond. 5,200 | Stable Cond. 5,360 | Ending Cond. 6,520 |
| 1-18-22 | Time | Bubbler Start | Bubbler End | 1st pH 6.56 | 2nd pH 6.60 | Stable pH 6.60 | Ending pH 6.29 |
| | 0922 | 0.254' | 0.242' | 1st Temp. 8.8 | 2nd Temp. 9.1 | Stable Temp. 9.3 | Ending Temp. 11.7 |
| | | | | Comments: Collected sample after pump with ruptured bladder inside pump was replaced with newer GeoTech pump. | | | |

| Date | Well Number | WL w/Probe Pre-Sample | WL w/Probe Post Sample | Reading | Reading | Reading | Reading |
|---|---|---|---|---|---|---|---|
| | EPA-28 | 70.54' | 71.15' | 1st Cond. 4,130 | 2nd Cond. 4,540 | Stable Cond. 4,650 | Ending Cond. 4,610 |
| 1-18-22 | Time | Bubbler Start | Bubbler End | 1st pH 7.42 | 2nd pH 7.40 | Stable pH 7.34 | Ending pH 6.41 |
| | 1036 | 0.200' | 0.201' | 1st Temp. 11.6 | 2nd Temp. 11.5 | Stable Temp. 11.6 | Ending Temp. 12.3 |
| | | | | Comments: | | | |

| Date | Well Number | WL w/Probe Pre-Sample | WL w/Probe Post Sample | Reading | Reading | Reading | Reading |
|---|---|---|---|---|---|---|---|
| | EPA-28 | 71.15' | 71.38' | 1st Cond. 4,610 | 2nd Cond. 4,630 | Stable Cond. 4,620 | Ending Cond. 4,560 |
| 1-18-22 | DUPLICATE | | | 1st pH 6.48 | 2nd pH 6.50 | Stable pH 6.52 | Ending pH 6.62 |
| | Time | Bubbler Start | Bubbler End | 1st Temp. 12.4 | 2nd Temp. 12.2 | Stable Temp. 12.1 | Ending Temp. 13.0 |
| | 1106 | 0.201' | 0.200' | Comments: | | | |

| Date | Well Number | WL w/Probe Pre-Sample | WL w/Probe Post Sample | Reading | Reading | Reading | Reading |
|---|---|---|---|---|---|---|---|
| | | | | 1st Cond. | 2nd Cond. | Stable Cond. | Ending Cond. |
| | | | | 1st pH | 2nd pH | Stable pH | Ending pH |
| | | | | 1st Temp. | 2nd Temp. | Stable Temp. | Ending Temp. |
| | Time | Bubbler Start | Bubbler End | Comments: | | | |
| | | | | | | | |

PH Standard Verification Check

| STD. | PH Reading | Date/Time | Initial |
|---|---|---|---|
| 4-Buffer | | | |
| 7-Buffer | | | |

(Quar. Performance Monitoring – Pg. 7 of 7)

GROUND WATER MONITORING FIELD DATA SHEET

First QUARTER 2022

SAMPLING

Cond. Standard Verification Check

| STD. | µS/cm Reading | Date/Time | Initial |
|---|---|---|---|
| 1413 µS/cm | | | |

| Date | Well Number | WL w/Probe Pre-Sample | WL w/Probe Post Sample | Reading | Reading | Reading | Reading |
|---|---|---|---|---|---|---|---|
| 1-18-22 | SBL-1 | 51.71' | 52.73' | 1st Cond. 6,340 | 2nd Cond. 7,220 | Stable Cond. 7,550 | Ending Cond. 7,770 |
| | | | | 1st pH 8.59 | 2nd pH 8.22 | Stable pH 7.91 | Ending pH 6.52 |
| | | | | 1st Temp. 12.0 | 2nd Temp. 11.8 | Stable Temp. 11.7 | Ending Temp. 12.0 |
| | Time 1146 | Bubbler Start 2.992' | Bubbler End 1.972' | Comments: | | | |

| Date | Well Number | WL w/Probe Pre-Sample | WL w/Probe Post Sample | Reading | Reading | Reading | Reading |
|---|---|---|---|---|---|---|---|
| 1-18-22 | 627 | 64.85' | 64.97' | 1st Cond. 3,370 | 2nd Cond. 3,460 | Stable Cond. 4,180 | Ending Cond. 4,320 |
| | | | | 1st pH 6.32 | 2nd pH 6.45 | Stable pH 6.52 | Ending pH 6.89 |
| | | | | 1st Temp. 12.5 | 2nd Temp. 12.5 | Stable Temp. 12.3 | Ending Temp. 12.6 |
| | Time 1250 | Bubbler Start 0.204' | Bubbler End 0.202' | Comments: | | | |

| Date | Well Number | WL w/Probe Pre-Sample | WL w/Probe Post Sample | Reading | Reading | Reading | Reading |
|---|---|---|---|---|---|---|---|
| 1-18-22 | EPA-25 | 61.16' | 61.24' | 1st Cond. 3,830 | 2nd Cond. 3,880 | Stable Cond. 3,910 | Ending Cond. 4,800 |
| | | | | 1st pH 6.71 | 2nd pH 6.71 | Stable pH 6.70 | Ending pH 6.58 |
| | | | | 1st Temp. 12.1 | 2nd Temp. 12.1 | Stable Temp. 12.0 | Ending Temp. 11.9 |
| | Time 1348 | Bubbler Start 0.191' | Bubbler End 0.190' | Comments: | | | |

| Date | Well Number | WL w/Probe Pre-Sample | WL w/Probe Post Sample | Reading | Reading | Reading | Reading |
|---|---|---|---|---|---|---|---|
| 1-18-22 | RINSATE | | | 1st Cond. 3 | 2nd Cond. | Stable Cond. | Ending Cond. |
| | | | | 1st pH 7.62 | 2nd pH | Stable pH | Ending pH |
| | | | | 1st Temp. 14.6 | 2nd Temp. | Stable Temp. | Ending Temp. |
| | Time 1435 | Bubbler Start | Bubbler End | Comments: | | | |

| Date | Well Number | WL w/Probe Pre-Sample | WL w/Probe Post Sample | Reading | Reading | Reading | Reading |
|---|---|---|---|---|---|---|---|
| 1-18-22 | FIELD BLANK | | | 1st Cond. 2 | 2nd Cond. | Stable Cond. | Ending Cond. |
| | | | | 1st pH 6.95 | 2nd pH | Stable pH | Ending pH |
| | | | | 1st Temp. 17.2 | 2nd Temp. | Stable Temp. | Ending Temp. |
| | Time 1510 | Bubbler Start | Bubbler End | Comments: | | | |

| Date | Well Number | WL w/Probe Pre-Sample | WL w/Probe Post Sample | Reading | Reading | Reading | Reading |
|---|---|---|---|---|---|---|---|
| | | | | 1st Cond. | 2nd Cond. | Stable Cond. | Ending Cond. |
| | | | | 1st pH | 2nd pH | Stable pH | Ending pH |
| | | | | 1st Temp. | 2nd Temp. | Stable Temp. | Ending Temp. |
| | Time | Bubbler Start | Bubbler End | Comments: | | | |

PH Standard Verification Check

| STD. | PH Reading | Date/Time | Initial |
|---|---|---|---|
| 4-Buffer | 3.96 | 1-14-22/0817 | [illegible] |
| 7-Buffer | 7.07 | 1-14-22/0809 | [illegible] |

(Monthly/Quar. Supplemental – Pg. 1 of 2)

GROUND WATER MONITORING FIELD DATA SHEET

FIRST QUARTER 2022 SAMPLING

Cond. Standard Verification Check

| STD. | µS/cm Reading | Date/Time | Initial |
|---|---|---|---|
| 1413 µS/cm | 1477 | 1-14-22/0818 | [illegible] |

(pH/cond. meter #1 on 1-14-22)

| Date | Well Number | WL w/Probe Pre-Sample | WL w/Probe Post Sample | Reading | Reading | Reading | Reading |
|---|---|---|---|---|---|---|---|
| 1-12-22 | MW-7 | 200.86' | 200.84' | 1st Cond. 5,550 | 2nd Cond. 5,560 | Stable Cond. 5,570 | Ending Cond. 5,570 |
| | | | | 1st pH 2.61 | 2nd pH 2.61 | Stable pH 2.67 | Ending pH 2.67 |
| | | | | 1st Temp. 10.7 | 2nd Temp. 10.7 | Stable Temp. 10.7 | Ending Temp. 10.7 |
| | Time 1112 | Bubbler Start | Bubbler End | Comments: | | | |

| Date | Well Number | WL w/Probe Pre-Sample | WL w/Probe Post Sample | Reading | Reading | Reading | Reading |
|---|---|---|---|---|---|---|---|
| 1-12-22 | NW-3 | 195.57' | 195.82' | 1st Cond. 4,640 | 2nd Cond. 4,650 | Stable Cond. 4,670 | Ending Cond. 4,670 |
| | | | | 1st pH 5.63 | 2nd pH 6.16 | Stable pH 6.34 | Ending pH 6.49 |
| | | | | 1st Temp. 12.1 | 2nd Temp. 12.1 | Stable Temp. 12.1 | Ending Temp. 12.1 |
| | Time 1230 | Bubbler Start | Bubbler End | Comments: Inactive pumping well but used for monitoring only. | | | |

| Date | Well Number | WL w/Probe Pre-Sample | WL w/Probe Post Sample | Reading | Reading | Reading | Reading |
|---|---|---|---|---|---|---|---|
| 1-13-22 | NBL-2 | 176.12' | 176.25' | 1st Cond. 3,190 | 2nd Cond. 3,290 | Stable Cond. 3,390 | Ending Cond. 3,400 |
| | | | | 1st pH 7.13 | 2nd pH 7.18 | Stable pH 7.23 | Ending pH 6.87 |
| | | | | 1st Temp. 12.4 | 2nd Temp. 12.4 | Stable Temp. 12.4 | Ending Temp. 12.9 |
| | Time 1440 | Bubbler Start | Bubbler End | Comments: | | | |

| Date | Well Number | WL w/Probe Pre-Sample | WL w/Probe Post Sample | Reading | Reading | Reading | Reading |
|---|---|---|---|---|---|---|---|
| 1-14-22 | NW-4 | 198.27' | 199.03' | 1st Cond. 3,930 | 2nd Cond. 4,010 | Stable Cond. 4,050 | Ending Cond. 4,060 |
| | | | | 1st pH 5.33 | 2nd pH 5.34 | Stable pH 5.32 | Ending pH 5.32 |
| | | | | 1st Temp. 13.1 | 2nd Temp. 13.1 | Stable Temp. 13.0 | Ending Temp. 13.0 |
| | Time 0935 | Bubbler Start | Bubbler End | Comments: Inactive extraction pumping well but used for monitoring only. | | | |

| Date | Well Number | WL w/Probe Pre-Sample | WL w/Probe Post Sample | Reading | Reading | Reading | Reading |
|---|---|---|---|---|---|---|---|
| 1-14-22 | RW-A | | | 1st Cond. 5,410 | 2nd Cond. 5,420 | Stable Cond. 5,410 | Ending Cond. 5,420 |
| | | | | 1st pH 5.49 | 2nd pH 5.47 | Stable pH 5.45 | Ending pH 5.44 |
| | | | | 1st Temp. 12.2 | 2nd Temp. 12.3 | Stable Temp. 12.3 | Ending Temp. 12.3 |
| | Time 0950 | Bubbler Start | Bubbler End | Comments: Extraction well and water level measurement is not taken due to placement of probe in well. | | | |

| Date | Well Number | WL w/Probe Pre-Sample | WL w/Probe Post Sample | Reading | Reading | Reading | Reading |
|---|---|---|---|---|---|---|---|
| | | | | 1st Cond. | 2nd Cond. | Stable Cond. | Ending Cond. |
| | | | | 1st pH | 2nd pH | Stable pH | Ending pH |
| | | | | 1st Temp. | 2nd Temp. | Stable Temp. | Ending Temp. |
| | Time | Bubbler Start | Bubbler End | Comments: | | | |

PH Standard Verification Check

| STD. | PH Reading | Date/Time | Initial |
|---|---|---|---|
| 4-Buffer | 3.95 | 1-19-22/0816 | [illegible] |
| 7-Buffer | 6.98 | 1-19-22/0811 | [illegible] |

(Monthly/Quar. Supplemental – Pg. 2 of 2)

GROUND WATER MONITORING FIELD DATA SHEET

FIRST QUARTER 2022 SAMPLING

Cond. Standard Verification Check

| STD. | µS/cm Reading | Date/Time | Initial |
|---|---|---|---|
| 1413 µS/cm | 1446 | 1-19-22/0817 | [illegible] |

(pH/cond. meter #1 on 1-19-22)

| Date | Well Number | WL w/Probe Pre-Sample | WL w/Probe Post Sample | Reading | Reading | Reading | Reading |
|---|---|---|---|---|---|---|---|
| 1-19-22 | SW-3B | 290.68' | 290.79' | 1st Cond. 1,160 | 2nd Cond. 1,155 | Stable Cond. 1,158 | Ending Cond. 1,158 |
| | | | | 1st pH 7.72 | 2nd pH 7.73 | Stable pH 7.74 | Ending pH 7.75 |
| | | | | 1st Temp. 11.3 | 2nd Temp. 11.3 | Stable Temp. 11.3 | Ending Temp. 11.3 |
| | Time | Bubbler Start | Bubbler End | Comments: Sentinel well monitoring. | | | |
| | 1100 | | | | | | |

| Date | Well Number | WL w/Probe Pre-Sample | WL w/Probe Post Sample | Reading | Reading | Reading | Reading |
|---|---|---|---|---|---|---|---|
| 1-19-22 | SW-18 | 212.31' | 212.31' | 1st Cond. 3,310 | 2nd Cond. 3,340 | Stable Cond. 3,350 | Ending Cond. 3,430 |
| | | | | 1st pH 6.81 | 2nd pH 6.80 | Stable pH 6.80 | Ending pH 6.85 |
| | | | | 1st Temp. 10.4 | 2nd Temp. 10.4 | Stable Temp. 10.2 | Ending Temp. 11.9 |
| | Time | Bubbler Start | Bubbler End | Comments: Sentinel monitoring well with installment of low flow sampling equipment. | | | |
| | 1436 | | | | | | |

| Date | Well Number | WL w/Probe Pre-Sample | WL w/Probe Post Sample | Reading | Reading | Reading | Reading |
|---|---|---|---|---|---|---|---|
| | | | | 1st Cond. | 2nd Cond. | Stable Cond. | Ending Cond. |
| | | | | 1st pH | 2nd pH | Stable pH | Ending pH |
| | | | | 1st Temp. | 2nd Temp. | Stable Temp. | Ending Temp. |
| | Time | Bubbler Start | Bubbler End | Comments: | | | |

| Date | Well Number | WL w/Probe Pre-Sample | WL w/Probe Post Sample | Reading | Reading | Reading | Reading |
|---|---|---|---|---|---|---|---|
| | | | | 1st Cond. | 2nd Cond. | Stable Cond. | Ending Cond. |
| | | | | 1st pH | 2nd pH | Stable pH | Ending pH |
| | | | | 1st Temp. | 2nd Temp. | Stable Temp. | Ending Temp. |
| | Time | Bubbler Start | Bubbler End | Comments: | | | |

| Date | Well Number | WL w/Probe Pre-Sample | WL w/Probe Post Sample | Reading | Reading | Reading | Reading |
|---|---|---|---|---|---|---|---|
| | | | | 1st Cond. | 2nd Cond. | Stable Cond. | Ending Cond. |
| | | | | 1st pH | 2nd pH | Stable pH | Ending pH |
| | | | | 1st Temp. | 2nd Temp. | Stable Temp. | Ending Temp. |
| | Time | Bubbler Start | Bubbler End | Comments: | | | |

| Date | Well Number | WL w/Probe Pre-Sample | WL w/Probe Post Sample | Reading | Reading | Reading | Reading |
|---|---|---|---|---|---|---|---|
| | | | | 1st Cond. | 2nd Cond. | Stable Cond. | Ending Cond. |
| | | | | 1st pH | 2nd pH | Stable pH | Ending pH |
| | | | | 1st Temp. | 2nd Temp. | Stable Temp. | Ending Temp. |
| | Time | Bubbler Start | Bubbler End | Comments: | | | |

# GROUND WATER MONITORING FIELD DATA SHEET

Second QUARTER 2022 SAMPLING

PH Standard Verification Check

| STD. | PH Reading | Date/Time | Initial |
|---|---|---|---|
| 4-Buffer | 3.94 | 3-31-22/0822 | [illegible] |
| 7-Buffer | 6.95 | 3-31-22/0815 | [illegible] |

(pH/cond. meter #2)

Cond. Standard Verification Check

| STD. | µS/cm Reading | Date/Time | Initial |
|---|---|---|---|
| 1413 µS/cm | 1436 | 3-31-22/0823 | [illegible] |

(pH/cond. meter #2 calibrated on 3-29-22 by me)

| Date | Well Number | WL w/Probe Pre-Sample | WL w/Probe Post Sample | Reading | Reading | Reading | Reading |
|---|---|---|---|---|---|---|---|
| 3-31-22 | 614 | 107.35' | 108.16' | 1st Cond. 6,880 | 2nd Cond. 6,920 | Stable Cond. 6,950 | Ending Cond. 7,300 |
| | | | | 1st pH 6.78 | 2nd pH 6.80 | Stable pH 6.79 | Ending pH 6.41 |
| | | | | 1st Temp. 9.4 | 2nd Temp. 9.7 | Stable Temp. 9.8 | Ending Temp. 11.6 |
| | Time 0908 | Bubbler Start 0.249' | Bubbler End 0.254' | Comments: Conductivity is in uS/cm Temperature is in °C pH is in std. units | | | |

| Date | Well Number | WL w/Probe Pre-Sample | WL w/Probe Post Sample | Reading | Reading | Reading | Reading |
|---|---|---|---|---|---|---|---|
| 3-31-22 | 515-A | 108.94' | | 1st Cond. 9,160 | 2nd Cond. 9,190 | Stable Cond. 9,280 | Ending Cond. 8,360 |
| | | | | 1st pH 7.04 | 2nd pH 7.08 | Stable pH 7.06 | Ending pH 5.97 |
| | | | | 1st Temp. 11.1 | 2nd Temp. 11.1 | Stable Temp. 11.1 | Ending Temp. 12.3 |
| | Time 1042 | Bubbler Start 4.031' | Bubbler End 6.277' | Comments: water level dropped 3.75' during sample and no ending measurement due to probe on top of pump. | | | |

| Date | Well Number | WL w/Probe Pre-Sample | WL w/Probe Post Sample | Reading | Reading | Reading | Reading |
|---|---|---|---|---|---|---|---|
| 3-31-22 | 604 | 108.20' | 108.97' | 1st Cond. 5,900 | 2nd Cond. 6,100 | Stable Cond. 6,160 | Ending Cond. 6,030 |
| | | | | 1st pH 5.29 | 2nd pH 5.30 | Stable pH 5.28 | Ending pH 5.15 |
| | | | | 1st Temp. 11.8 | 2nd Temp. 11.8 | Stable Temp. 11.8 | Ending Temp. 13.0 |
| | Time 1146 | Bubbler Start 1.256' | Bubbler End 0.505' | Comments: | | | |

| Date | Well Number | WL w/Probe Pre-Sample | WL w/Probe Post Sample | Reading | Reading | Reading | Reading |
|---|---|---|---|---|---|---|---|
| 3-31-22 | EPA-7 | 119.30' | 120.91' | 1st Cond. 5,910 | 2nd Cond. 7,140 | Stable Cond. 7,170 | Ending Cond. 6,710 |
| | | | | 1st pH 7.11 | 2nd pH 6.26 | Stable pH 6.55 | Ending pH 5.88 |
| | | | | 1st Temp. 13.0 | 2nd Temp. 15.4 | Stable Temp. 14.0 | Ending Temp. 13.7 |
| | Time 1240 | Bubbler Start 7.810' | Bubbler End 6.297' | Comments: | | | |

| Date | Well Number | WL w/Probe Pre-Sample | WL w/Probe Post Sample | Reading | Reading | Reading | Reading |
|---|---|---|---|---|---|---|---|
| 3-31-22 | 613 | 80.55' | 81.48' | 1st Cond. 7,790 | 2nd Cond. 7,970 | Stable Cond. 8,100 | Ending Cond. 8,100 |
| | | | | 1st pH 3.12 | 2nd pH 3.11 | Stable pH 3.10 | Ending pH 2.98 |
| | | | | 1st Temp. 13.0 | 2nd Temp. 13.0 | Stable Temp. 13.0 | Ending Temp. 14.0 |
| | Time 1331 | Bubbler Start 4.250' | Bubbler End 3.337' | Comments: | | | |

| Date | Well Number | WL w/Probe Pre-Sample | WL w/Probe Post Sample | Reading | Reading | Reading | Reading |
|---|---|---|---|---|---|---|---|
| 3-31-22 | EPA-14 | 127.76' | 128.48' | 1st Cond. 3,350 | 2nd Cond. 3,430 | Stable Cond. 3,520 | Ending Cond. 3,540 |
| | | | | 1st pH 5.86 | 2nd pH 6.20 | Stable pH 6.35 | Ending pH 5.76 |
| | | | | 1st Temp. 13.3 | 2nd Temp. 13.2 | Stable Temp. 13.2 | Ending Temp. 13.5 |
| | Time 1413 | Bubbler Start 0.288' | Bubbler End 0.287' | Comments: | | | |

PH Standard Verification Check

| STD. | PH Reading | Date/Time | Initial |
|---|---|---|---|
| 4-Buffer | 4.01 | 4-1-22/0825 | mc |
| 7-Buffer | 6.99 | 4-1-22/0824 | mc |

# GROUND WATER MONITORING FIELD DATA SHEET

Second QUARTER 2022 SAMPLING

(pH/cond. meter #2 on 4-1-22)

Cond. Standard Verification Check

| STD. | µS/cm Reading | Date/Time | Initial |
|---|---|---|---|
| 1413 µS/cm | 1433 | 4-1-22/0825 | mc |

| Date | Well Number | WL w/Probe Pre-Sample | WL w/Probe Post Sample | Reading | Reading | Reading | Reading |
|---|---|---|---|---|---|---|---|
| 4-1-22 | 717 | 137.71' | 138.61' | 1st Cond. 4,910 | 2nd Cond. 4,920 | Stable Cond. 4,930 | Ending Cond. 4,830 |
| | | | | 1st pH 3.44 | 2nd pH 3.44 | Stable pH 3.44 | Ending pH 3.67 |
| | | | | 1st Temp. 10.5 | 2nd Temp. 10.6 | Stable Temp. 10.6 | Ending Temp. 12.5 |
| | Time 0922 | Bubbler Start 0.276' | Bubbler End 0.278' | Comments: | | | |

| Date | Well Number | WL w/Probe Pre-Sample | WL w/Probe Post Sample | Reading | Reading | Reading | Reading |
|---|---|---|---|---|---|---|---|
| 4-1-22 | 717 DUPLICATE | 138.61' | 139.63' | 1st Cond. 4,830 | 2nd Cond. 4,850 | Stable Cond. 4,820 | Ending Cond. 4,780 |
| | | | | 1st pH 3.67 | 2nd pH 3.67 | Stable pH 3.67 | Ending pH 3.58 |
| | | | | 1st Temp. 12.5 | 2nd Temp. 12.5 | Stable Temp. 12.4 | Ending Temp. 13.0 |
| | Time 1013 | Bubbler Start 0.278' | Bubbler End 0.283' | Comments: | | | |

| Date | Well Number | WL w/Probe Pre-Sample | WL w/Probe Post Sample | Reading | Reading | Reading | Reading |
|---|---|---|---|---|---|---|---|
| 4-1-22 | 708 | 161.69' | 162.91' | 1st Cond. 4,650 | 2nd Cond. 4,840 | Stable Cond. 5,160 | Ending Cond. 5,160 |
| | | | | 1st pH 3.14 | 2nd pH 3.15 | Stable pH 3.14 | Ending pH 3.88 |
| | | | | 1st Temp. 11.4 | 2nd Temp. 11.5 | Stable Temp. 11.6 | Ending Temp. 12.6 |
| | Time 1052 | Bubbler Start 0.338' | Bubbler End 0.334' | Comments: | | | |

| Date | Well Number | WL w/Probe Pre-Sample | WL w/Probe Post Sample | Reading | Reading | Reading | Reading |
|---|---|---|---|---|---|---|---|
| 4-1-22 | 711 | 186.51' | 187.50' | 1st Cond. 4,680 | 2nd Cond. 4,810 | Stable Cond. 4,950 | Ending Cond. 4,900 |
| | | | | 1st pH 3.11 | 2nd pH 3.13 | Stable pH 3.13 | Ending pH 3.67 |
| | | | | 1st Temp. 11.5 | 2nd Temp. 11.5 | Stable Temp. 11.5 | Ending Temp. 13.7 |
| | Time 1145 | Bubbler Start 0.082' | Bubbler End 0.083' | Comments: | | | |

| Date | Well Number | WL w/Probe Pre-Sample | WL w/Probe Post Sample | Reading | Reading | Reading | Reading |
|---|---|---|---|---|---|---|---|
| 4-1-22 | EPA-13 | 171.09' | 172.11' | 1st Cond. 5,920 | 2nd Cond. 6,020 | Stable Cond. 6,280 | Ending Cond. 6,280 |
| | | | | 1st pH 6.36 | 2nd pH 6.35 | Stable pH 6.32 | Ending pH 5.75 |
| | | | | 1st Temp. 13.2 | 2nd Temp. 13.2 | Stable Temp. 13.2 | Ending Temp. 14.5 |
| | Time 1306 | Bubbler Start 0.776' | Bubbler End 0.365' | Comments: | | | |

| Date | Well Number | WL w/Probe Pre-Sample | WL w/Probe Post Sample | Reading | Reading | Reading | Reading |
|---|---|---|---|---|---|---|---|
| 4-1-22 | 719 | 171.35' | 171.80' | 1st Cond. 4,860 | 2nd Cond. 5,140 | Stable Cond. 5,230 | Ending Cond. 5,220 |
| | | | | 1st pH 4.99 | 2nd pH 5.01 | Stable pH 5.03 | Ending pH 5.03 |
| | | | | 1st Temp. 13.3 | 2nd Temp. 13.4 | Stable Temp. 13.3 | Ending Temp. 14.7 |
| | Time 1423 | Bubbler Start 0.367' | Bubbler End 0.387' | Comments: | | | |

# GROUND WATER MONITORING FIELD DATA SHEET

Second QUARTER 2022 SAMPLING

PH Standard Verification Check

| STD. | PH Reading | Date/Time | Initial |
|---|---|---|---|
| 4-Buffer | 3.94 | 4-4-22/0821 | JB |
| 7-Buffer | 6.93 | 4-4-22/0816 | JB |

(PH/cond. meter #2)

Cond. Standard Verification Check

| STD. | µS/cm Reading | Date/Time | Initial |
|---|---|---|---|
| 1413 µS/cm | 1431 | 4-4-22/0822 | JB |

(PH/cond. meter #2 calibrated on 4-4-22 by me)

| Date | Well Number | WL w/Probe Pre-Sample | WL w/Probe Post Sample | Reading | Reading | Reading | Reading |
|---|---|---|---|---|---|---|---|
| | 517 | | | 1st Cond. 6,060 | 2nd Cond. 5,860 | Stable Cond. 5,980 | Ending Cond. 6,030 |
| | | | | 1st pH 2.77 | 2nd pH 2.77 | Stable pH 2.76 | Ending pH 2.76 |
| | | 109.62' | | 1st Temp. 12.9 | 2nd Temp. 12.8 | Stable Temp. 12.8 | Ending Temp. 12.7 |
| 4-4-22 | Time | Bubbler Start | Bubbler End | Comments: No ending water level measurement due to probe on top of pump and a 24 hr. recharge was required to resume/collect full sample. | | | |
| | 0928 | 0.294' | 0.296' | | | | |

| Date | Well Number | WL w/Probe Pre-Sample | WL w/Probe Post Sample | Reading | Reading | Reading | Reading |
|---|---|---|---|---|---|---|---|
| | EPA-2 | | | 1st Cond. 3,650 | 2nd Cond. 3,730 | Stable Cond. 3,760 | Ending Cond. 3,860 |
| | | | | 1st pH 6.91 | 2nd pH 6.93 | Stable pH 6.97 | Ending pH 6.77 |
| | | 176.73' | 177.55' | 1st Temp. 13.8 | 2nd Temp. 13.6 | Stable Temp. 13.7 | Ending Temp. 13.3 |
| 4-4-22 | Time | Bubbler Start | Bubbler End | Comments: | | | |
| | 1050 | 4.754' | 3.981' | | | | |

| Date | Well Number | WL w/Probe Pre-Sample | WL w/Probe Post Sample | Reading | Reading | Reading | Reading |
|---|---|---|---|---|---|---|---|
| | EPA-2 DUPLICATE | | | 1st Cond. 3,860 | 2nd Cond. 3,900 | Stable Cond. 3,910 | Ending Cond. 3,440 |
| | | | | 1st pH 6.77 | 2nd pH 6.78 | Stable pH 6.78 | Ending pH 6.79 |
| | | 177.55' | 177.63' | 1st Temp. 13.2 | 2nd Temp. 13.1 | Stable Temp. 13.2 | Ending Temp. 13.6 |
| 4-4-22 | Time | Bubbler Start | Bubbler End | Comments: | | | |
| | 1120 | 3.981' | 3.951' | | | | |

| Date | Well Number | WL w/Probe Pre-Sample | WL w/Probe Post Sample | Reading | Reading | Reading | Reading |
|---|---|---|---|---|---|---|---|
| | 142 | | | 1st Cond. 1,815 | 2nd Cond. 1,853 | Stable Cond. 1,866 | Ending Cond. 1,901 |
| | | | | 1st pH 7.52 | 2nd pH 7.54 | Stable pH 7.54 | Ending pH 7.60 |
| | | 205.25' | 205.84' | 1st Temp. 15.7 | 2nd Temp. 15.4 | Stable Temp. 15.4 | Ending Temp. 15.0 |
| 4-4-22 | Time | Bubbler Start | Bubbler End | Comments: | | | |
| | 1422 | 15.611' | 15.021' | | | | |

| Date | Well Number | WL w/Probe Pre-Sample | WL w/Probe Post Sample | Reading | Reading | Reading | Reading |
|---|---|---|---|---|---|---|---|
| | | | | 1st Cond. | 2nd Cond. | Stable Cond. | Ending Cond. |
| | | | | 1st pH | 2nd pH | Stable pH | Ending pH |
| | | | | 1st Temp. | 2nd Temp. | Stable Temp. | Ending Temp. |
| | Time | Bubbler Start | Bubbler End | Comments: | | | |
| | | | | | | | |

| Date | Well Number | WL w/Probe Pre-Sample | WL w/Probe Post Sample | Reading | Reading | Reading | Reading |
|---|---|---|---|---|---|---|---|
| | | | | 1st Cond. | 2nd Cond. | Stable Cond. | Ending Cond. |
| | | | | 1st pH | 2nd pH | Stable pH | Ending pH |
| | | | | 1st Temp. | 2nd Temp. | Stable Temp. | Ending Temp. |
| | Time | Bubbler Start | Bubbler End | Comments: | | | |
| | | | | | | | |

GROUND WATER MONITORING FIELD DATA SHEET
Second QUARTER 20 22
SAMPLING

PH Standard Verification Check

| STD. | PH Reading | Date/Time | Initial |
|---|---|---|---|
| 4-Buffer | 3.98 | 4-5-22/0806 | [illegible] |
| 7-Buffer | 6.96 | 4-5-22/0759 | [illegible] |

(pH/cond. meter #2)

Cond. Standard Verification Check

| STD. | µS/cm Reading | Date/Time | Initial |
|---|---|---|---|
| 1413 µS/cm | 1421 | 4-5-22/0807 | [illegible] |

(pH/cond. meter #2 on 4-5-22)

| Date | Well Number | WL w/Probe Pre-Sample | WL w/Probe Post Sample | Reading | Reading | Reading | Reading |
|---|---|---|---|---|---|---|---|
| 4-5-22 | EPA-4 | 210.54' | 211.12' | 1st Cond. 3,650 | 2nd Cond. 3,700 | Stable Cond. 3,950 | Ending Cond. 4,280 |
| | | | | 1st pH 6.89 | 2nd pH 6.96 | Stable pH 6.99 | Ending pH 6.57 |
| | | | | 1st Temp. 14.8 | 2nd Temp. 14.5 | Stable Temp. 14.4 | Ending Temp. 14.6 |
| | Time | Bubbler Start | Bubbler End | Comments: | | | |
| | 1125 | 12.452' | 11.943' | | | | |

| Date | Well Number | WL w/Probe Pre-Sample | WL w/Probe Post Sample | Reading | Reading | Reading | Reading |
|---|---|---|---|---|---|---|---|
| 4-5-22 | EPA-5 | 129.55' | 130.17' | 1st Cond. 3,810 | 2nd Cond. 4,300 | Stable Cond. 4,400 | Ending Cond. 3,980 |
| | | | | 1st pH 5.77 | 2nd pH 5.78 | Stable pH 5.78 | Ending pH 6.38 |
| | | | | 1st Temp. 15.7 | 2nd Temp. 15.7 | Stable Temp. 15.7 | Ending Temp. 16.3 |
| | Time | Bubbler Start | Bubbler End | Comments: | | | |
| | 1227 | 1.309' | 0.695' | | | | |

| Date | Well Number | WL w/Probe Pre-Sample | WL w/Probe Post Sample | Reading | Reading | Reading | Reading |
|---|---|---|---|---|---|---|---|
| 4-5-22 | SBL-1 | 51.72' | 52.76' | 1st Cond. 6,800 | 2nd Cond. 7,120 | Stable Cond. 7,450 | Ending Cond. 7,750 |
| | | | | 1st pH 6.83 | 2nd pH 6.78 | Stable pH 6.77 | Ending pH 6.54 |
| | | | | 1st Temp. 15.4 | 2nd Temp. 15.2 | Stable Temp. 15.1 | Ending Temp. 14.8 |
| | Time | Bubbler Start | Bubbler End | Comments: | | | |
| | 1348 | 3.009' | 1.982' | | | | |

| Date | Well Number | WL w/Probe Pre-Sample | WL w/Probe Post Sample | Reading | Reading | Reading | Reading |
|---|---|---|---|---|---|---|---|
| 4-5-22 | RINSATE | | | 1st Cond. 8 | 2nd Cond. | Stable Cond. | Ending Cond. |
| | | | | 1st pH 6.76 | 2nd pH | Stable pH | Ending pH |
| | | | | 1st Temp. 26.2 | 2nd Temp. | Stable Temp. | Ending Temp. |
| | Time | Bubbler Start | Bubbler End | Comments: | | | |
| | 1430 | | | | | | |

| Date | Well Number | WL w/Probe Pre-Sample | WL w/Probe Post Sample | Reading | Reading | Reading | Reading |
|---|---|---|---|---|---|---|---|
| 4-5-22 | FIELD BLANK | | | 1st Cond. 3 | 2nd Cond. | Stable Cond. | Ending Cond. |
| | | | | 1st pH 6.42 | 2nd pH | Stable pH | Ending pH |
| | | | | 1st Temp. 26.7 | 2nd Temp. | Stable Temp. | Ending Temp. |
| | Time | Bubbler Start | Bubbler End | Comments: | | | |
| | 1530 | | | | | | |

| Date | Well Number | WL w/Probe Pre-Sample | WL w/Probe Post Sample | Reading | Reading | Reading | Reading |
|---|---|---|---|---|---|---|---|
| | | | | 1st Cond. | 2nd Cond. | Stable Cond. | Ending Cond. |
| | | | | 1st pH | 2nd pH | Stable pH | Ending pH |
| | | | | 1st Temp. | 2nd Temp. | Stable Temp. | Ending Temp. |
| | Time | Bubbler Start | Bubbler End | Comments: | | | |
| | | | | | | | |

GROUND WATER MONITORING FIELD DATA SHEET

Second QUARTER 2022 SAMPLING

PH Standard Verification Check

| STD. | PH Reading | Date/Time | Initial |
|---|---|---|---|
| 4-Buffer | 3.97 | 4-7-22/0817 | [illegible] |
| 7-Buffer | 6.96 | 4-7-22/0800 | [illegible] |

(pH/cond. meter #2)

Cond. Standard Verification Check

| STD. | µS/cm Reading | Date/Time | Initial |
|---|---|---|---|
| 1413 µS/cm | 1426 | 4-7-22/0817 | [illegible] |

(pH/cond. meter #2 calibrated on 4-7-22 by [illegible])

| Date | Well Number | WL w/Probe Pre-Sample | WL w/Probe Post Sample | Reading | Reading | Reading | Reading |
|---|---|---|---|---|---|---|---|
| 4-7-22 | 509-D | 88.24' | 88.28' | 1st Cond. 5,930 | 2nd Cond. 6,030 | Stable Cond. 6,090 | Ending Cond. 6,250 |
| | | | | 1st pH 7.42 | 2nd pH 7.34 | Stable pH 7.29 | Ending pH 6.44 |
| | | | | 1st Temp. 11.6 | 2nd Temp. 11.7 | Stable Temp. 11.7 | Ending Temp. 12.4 |
| | Time | Bubbler Start | Bubbler End | Comments: | | | |
| | 0912 | 0.627' | 0.228' | | | | |

| Date | Well Number | WL w/Probe Pre-Sample | WL w/Probe Post Sample | Reading | Reading | Reading | Reading |
|---|---|---|---|---|---|---|---|
| 4-7-22 | EPA-23 | 64.75' | 65.06' | 1st Cond. 5,890 | 2nd Cond. 5,880 | Stable Cond. 5,770 | Ending Cond. 5,580 |
| | | | | 1st pH 5.57 | 2nd pH 6.85 | Stable pH 6.73 | Ending pH 6.54 |
| | | | | 1st Temp. 13.2 | 2nd Temp. 12.1 | Stable Temp. 12.0 | Ending Temp. 13.3 |
| | Time | Bubbler Start | Bubbler End | Comments: | | | |
| | 1035 | 0.173' | 0.175' | | | | |

| Date | Well Number | WL w/Probe Pre-Sample | WL w/Probe Post Sample | Reading | Reading | Reading | Reading |
|---|---|---|---|---|---|---|---|
| 4-7-22 | 803 | 70.86' | 70.94' | 1st Cond. 6,160 | 2nd Cond. 6,140 | Stable Cond. 6,160 | Ending Cond. 6,180 |
| | | | | 1st pH 6.43 | 2nd pH 6.44 | Stable pH 6.45 | Ending pH 6.48 |
| | | | | 1st Temp. 13.0 | 2nd Temp. 13.0 | Stable Temp. 12.8 | Ending Temp. 13.2 |
| | Time | Bubbler Start | Bubbler End | Comments: | | | |
| | 1118 | 5.887' | 5.843' | | | | |

| Date | Well Number | WL w/Probe Pre-Sample | WL w/Probe Post Sample | Reading | Reading | Reading | Reading |
|---|---|---|---|---|---|---|---|
| 4-7-22 | 808 | 58.13' | 58.29' | 1st Cond. 5,890 | 2nd Cond. 6,090 | Stable Cond. 6,210 | Ending Cond. 6,560 |
| | | | | 1st pH 6.83 | 2nd pH 6.79 | Stable pH 6.71 | Ending pH 6.42 |
| | | | | 1st Temp. 13.2 | 2nd Temp. 13.0 | Stable Temp. 13.1 | Ending Temp. 13.9 |
| | Time | Bubbler Start | Bubbler End | Comments: | | | |
| | 1220 | 5.492' | 5.279' | | | | |

| Date | Well Number | WL w/Probe Pre-Sample | WL w/Probe Post Sample | Reading | Reading | Reading | Reading |
|---|---|---|---|---|---|---|---|
| 4-7-22 | 802 | 56.10' | 56.18' | 1st Cond. 5,760 | 2nd Cond. 5,850 | Stable Cond. 6,040 | Ending Cond. 6,430 |
| | | | | 1st pH 6.63 | 2nd pH 6.62 | Stable pH 6.59 | Ending pH 6.44 |
| | | | | 1st Temp. 13.3 | 2nd Temp. 13.3 | Stable Temp. 13.4 | Ending Temp. 13.6 |
| | Time | Bubbler Start | Bubbler End | Comments: | | | |
| | 1305 | 11.557' | 11.481' | | | | |

| Date | Well Number | WL w/Probe Pre-Sample | WL w/Probe Post Sample | Reading | Reading | Reading | Reading |
|---|---|---|---|---|---|---|---|
| | | | | 1st Cond. | 2nd Cond. | Stable Cond. | Ending Cond. |
| | | | | 1st pH | 2nd pH | Stable pH | Ending pH |
| | | | | 1st Temp. | 2nd Temp. | Stable Temp. | Ending Temp. |
| | Time | Bubbler Start | Bubbler End | Comments: | | | |
| | | | | | | | |

PH Standard Verification Check

| STD. | PH Reading | Date/Time | Initial |
|---|---|---|---|
| 4-Buffer | | | |
| 7-Buffer | | | |

Cond. Standard Verification Check

| STD. | µS/cm Reading | Date/Time | Initial |
|---|---|---|---|
| 1413 µS/cm | | | |

GROUND WATER MONITORING FIELD DATA SHEET
Second QUARTER 2022
SAMPLING

| Date | Well Number | WL w/Probe Pre-Sample | WL w/Probe Post Sample | Reading | Reading | Reading | Reading |
|---|---|---|---|---|---|---|---|
| | 632 | | | 1st Cond. 6,380 | 2nd Cond. 6,440 | Stable Cond. 6,460 | Ending Cond. 6,500 |
| | | | | 1st pH 6.16 | 2nd pH 6.17 | Stable pH 6.16 | Ending pH 6.42 |
| 4-7-22 | | 52.57' | 57.19' | 1st Temp. 13.0 | 2nd Temp. 13.0 | Stable Temp. 13.0 | Ending Temp. 13.7 |
| | Time | Bubbler Start | Bubbler End | Comments: water level dropped 4.62' during sample. | | | |
| | 1345 | 4.423' | 0.182' | | | | |

| Date | Well Number | WL w/Probe Pre-Sample | WL w/Probe Post Sample | Reading | Reading | Reading | Reading |
|---|---|---|---|---|---|---|---|
| | 801 | | | 1st Cond. 5,950 | 2nd Cond. 5,980 | Stable Cond. 6,020 | Ending Cond. 6,070 |
| | | | | 1st pH 6.73 | 2nd pH 6.77 | Stable pH 6.67 | Ending pH 6.67 |
| 4-7-22 | | 58.97' | 61.50' | 1st Temp. 13.5 | 2nd Temp. 13.5 | Stable Temp. 13.4 | Ending Temp. 13.5 |
| | Time | Bubbler Start | Bubbler End | Comments: | | | |
| | 1425 | 1.724' | 0.199' | | | | |

| Date | Well Number | WL w/Probe Pre-Sample | WL w/Probe Post Sample | Reading | Reading | Reading | Reading |
|---|---|---|---|---|---|---|---|
| | GW-1 | | | 1st Cond. 4,900 | 2nd Cond. 5,230 | Stable Cond. 5,340 | Ending Cond. 6,030 |
| | | | | 1st pH 7.35 | 2nd pH 7.31 | Stable pH 7.38 | Ending pH 6.62 |
| 4-7-22 | | 69.86' | 70.25' | 1st Temp. 14.0 | 2nd Temp. 14.0 | Stable Temp. 13.6 | Ending Temp. 13.6 |
| | Time | Bubbler Start | Bubbler End | Comments: | | | |
| | 1530 | 0.880' | 0.497' | | | | |

| Date | Well Number | WL w/Probe Pre-Sample | WL w/Probe Post Sample | Reading | Reading | Reading | Reading |
|---|---|---|---|---|---|---|---|
| | EPA-28 | | | 1st Cond. 4,640 | 2nd Cond. 4,680 | Stable Cond. 4,710 | Ending Cond. 4,680 |
| | | | | 1st pH 7.49 | 2nd pH 7.47 | Stable pH 7.47 | Ending pH 6.86 |
| 4-8-22 | | 70.83' | 71.52' | 1st Temp. 13.2 | 2nd Temp. 13.1 | Stable Temp. 13.0 | Ending Temp. 13.6 |
| | Time | Bubbler Start | Bubbler End | Comments: | | | |
| | 0927 | 0.176' | 0.177' | | | | |

| Date | Well Number | WL w/Probe Pre-Sample | WL w/Probe Post Sample | Reading | Reading | Reading | Reading |
|---|---|---|---|---|---|---|---|
| | EPA-28 | | | 1st Cond. 4,770 | 2nd Cond. 4,760 | Stable Cond. 4,770 | Ending Cond. 4,600 |
| | DUPLICATE | | | 1st pH 6.86 | 2nd pH 6.87 | Stable pH 6.87 | Ending pH 6.77 |
| 4-8-22 | | 71.52' | 71.77' | 1st Temp. 12.8 | 2nd Temp. 12.8 | Stable Temp. 12.7 | Ending Temp. 14.0 |
| | Time | Bubbler Start | Bubbler End | Comments: | | | |
| | 0956 | 0.177' | 0.166' | | | | |

| Date | Well Number | WL w/Probe Pre-Sample | WL w/Probe Post Sample | Reading | Reading | Reading | Reading |
|---|---|---|---|---|---|---|---|
| | | | | 1st Cond. | 2nd Cond. | Stable Cond. | Ending Cond. |
| | | | | 1st pH | 2nd pH | Stable pH | Ending pH |
| | | | | 1st Temp. | 2nd Temp. | Stable Temp. | Ending Temp. |
| | Time | Bubbler Start | Bubbler End | Comments: | | | |
| | | | | | | | |

GROUND WATER MONITORING FIELD DATA SHEET
Second QUARTER 2022
SAMPLING

PH Standard Verification Check

| STD. | PH Reading | Date/Time | Initial |
|---|---|---|---|
| 4-Buffer | 3.95 | 4-8-22/0817 | [illegible] |
| 7-Buffer | 7.00 | 4-8-22/0811 | [illegible] |

Cond. Standard Verification Check

| STD. | µS/cm Reading | Date/Time | Initial |
|---|---|---|---|
| 1413 µS/cm | 1445 | 4-8-22/0818 | [illegible] |

(pH/cond. meter #2 on 4-8-22)

| Date | Well Number | WL w/Probe Pre-Sample | WL w/Probe Post Sample | Reading | Reading | Reading | Reading |
|---|---|---|---|---|---|---|---|
| 4-8-22 | 624 | 58.70' | 58.75' | 1st Cond. 3,880 | 2nd Cond. 4,410 | Stable Cond. 4,820 | Ending Cond. 5,490 |
| | | | | 1st pH 7.76 | 2nd pH 7.56 | Stable pH 7.36 | Ending pH 6.42 |
| | | | | 1st Temp. 12.8 | 2nd Temp. 12.8 | Stable Temp. 12.7 | Ending Temp. 13.6 |
| | Time 1035 | Bubbler Start 3.773' | Bubbler End 3.739' | Comments: | | | |

| Date | Well Number | WL w/Probe Pre-Sample | WL w/Probe Post Sample | Reading | Reading | Reading | Reading |
|---|---|---|---|---|---|---|---|
| 4-8-22 | 627 | 64.99' | 65.20' | 1st Cond. 3,850 | 2nd Cond. 4,140 | Stable Cond. 4,260 | Ending Cond. 4,330 |
| | | | | 1st pH 6.95 | 2nd pH 6.96 | Stable pH 6.97 | Ending pH 6.94 |
| | | | | 1st Temp. 14.7 | 2nd Temp. 14.6 | Stable Temp. 14.5 | Ending Temp. 14.6 |
| | Time 1136 | Bubbler Start 0.179' | Bubbler End 0.178' | Comments: | | | |

| Date | Well Number | WL w/Probe Pre-Sample | WL w/Probe Post Sample | Reading | Reading | Reading | Reading |
|---|---|---|---|---|---|---|---|
| 4-8-22 | EPA-25 | 61.38' | 61.44' | 1st Cond. 4,140 | 2nd Cond. 4,320 | Stable Cond. 4,470 | Ending Cond. 4,780 |
| | | | | 1st pH 6.62 | 2nd pH 6.62 | Stable pH 6.62 | Ending pH 6.58 |
| | | | | 1st Temp. 14.3 | 2nd Temp. 14.8 | Stable Temp. 14.5 | Ending Temp. 14.9 |
| | Time 1233 | Bubbler Start 0.164' | Bubbler End 0.169' | Comments: | | | |

| Date | Well Number | WL w/Probe Pre-Sample | WL w/Probe Post Sample | Reading | Reading | Reading | Reading |
|---|---|---|---|---|---|---|---|
| 4-8-22 | RINSATE | | | 1st Cond. 3 | 2nd Cond. | Stable Cond. | Ending Cond. |
| | | | | 1st pH 6.80 | 2nd pH | Stable pH | Ending pH |
| | | | | 1st Temp. 25.4 | 2nd Temp. | Stable Temp. | Ending Temp. |
| | Time 1315 | Bubbler Start | Bubbler End | Comments: | | | |

| Date | Well Number | WL w/Probe Pre-Sample | WL w/Probe Post Sample | Reading | Reading | Reading | Reading |
|---|---|---|---|---|---|---|---|
| 4-8-22 | FIELD BLANK | | | 1st Cond. 3 | 2nd Cond. | Stable Cond. | Ending Cond. |
| | | | | 1st pH 6.70 | 2nd pH | Stable pH | Ending pH |
| | | | | 1st Temp. 22.5 | 2nd Temp. | Stable Temp. | Ending Temp. |
| | Time 1345 | Bubbler Start | Bubbler End | Comments: | | | |

| Date | Well Number | WL w/Probe Pre-Sample | WL w/Probe Post Sample | Reading | Reading | Reading | Reading |
|---|---|---|---|---|---|---|---|
| | | | | 1st Cond. | 2nd Cond. | Stable Cond. | Ending Cond. |
| | | | | 1st pH | 2nd pH | Stable pH | Ending pH |
| | | | | 1st Temp. | 2nd Temp. | Stable Temp. | Ending Temp. |
| | Time | Bubbler Start | Bubbler End | Comments: | | | |

PH Standard Verification Check

| STD. | PH Reading | Date/Time | Initial |
|---|---|---|---|
| 4-Buffer | 3.94 | 4-4-22/0821 | [illegible] |
| 7-Buffer | 6.93 | 4-4-22/0816 | [illegible] |

(Monthly/Quar. Supplemental – Pg. 1 of 2)

# GROUND WATER MONITORING FIELD DATA SHEET

Second QUARTER 2022 SAMPLING

Cond. Standard Verification Check

| STD. | µS/cm Reading | Date/Time | Initial |
|---|---|---|---|
| 1413 µS/cm | 1431 | 4-4-22/0822 | [illegible] |

(pH/cond. meter on 4-4-22)

| Date | Well Number | WL w/Probe Pre-Sample | WL w/Probe Post Sample | Reading | Reading | Reading | Reading |
|---|---|---|---|---|---|---|---|
| | MW-7 | | | 1st Cond. 5,050 | 2nd Cond. 5,080 | Stable Cond. 5,120 | Ending Cond. 5,170 |
| | | | | 1st pH 2.97 | 2nd pH 2.93 | Stable pH 2.91 | Ending pH 2.89 |
| | | 200.78' | | 1st Temp. 15.3 | 2nd Temp. 15.3 | Stable Temp. 15.3 | Ending Temp. 15.4 |
| 4-4-22 | Time | Bubbler Start | Bubbler End | Comments: | | | |
| | 1210 | | | | | | |

| Date | Well Number | WL w/Probe Pre-Sample | WL w/Probe Post Sample | Reading | Reading | Reading | Reading |
|---|---|---|---|---|---|---|---|
| | NW-3 | | | 1st Cond. 4,700 | 2nd Cond. 4,700 | Stable Cond. 4,700 | Ending Cond. 4,700 |
| | | | | 1st pH 6.94 | 2nd pH 6.94 | Stable pH 6.94 | Ending pH 6.94 |
| | | 195.49' | 195.79' | 1st Temp. 13.1 | 2nd Temp. 13.1 | Stable Temp. 13.1 | Ending Temp. 13.2 |
| 4-4-22 | Time | Bubbler Start | Bubbler End | Comments: Inactive pumping well but used for monitoring only. | | | |
| | 1351 | | | | | | |

| Date | Well Number | WL w/Probe Pre-Sample | WL w/Probe Post Sample | Reading | Reading | Reading | Reading |
|---|---|---|---|---|---|---|---|
| | NBL-2 | | | 1st Cond. 3,410 | 2nd Cond. 3,430 | Stable Cond. 3,480 | Ending Cond. 3,480 |
| | | | | 1st pH 6.05 | 2nd pH 6.26 | Stable pH 6.47 | Ending pH 6.47 |
| | | 176.01' | 176.15' | 1st Temp. 12.1 | 2nd Temp. 12.1 | Stable Temp. 12.1 | Ending Temp. 12.1 |
| 4-5-22 | Time | Bubbler Start | Bubbler End | Comments: See Quar. Performance Monitoring – Pg. 4 of 7 for pH/cond. verification check. | | | |
| | 1010 | 4,282' | 4,187' | | | | |

| Date | Well Number | WL w/Probe Pre-Sample | WL w/Probe Post Sample | Reading | Reading | Reading | Reading |
|---|---|---|---|---|---|---|---|
| | NW-4 | | | 1st Cond. 3,940 | 2nd Cond. 3,940 | Stable Cond. 3,950 | Ending Cond. 3,950 |
| | | | | 1st pH 5.90 | 2nd pH 5.85 | Stable pH 5.83 | Ending pH 5.81 |
| | | 198.35' | 198.79' | 1st Temp. 10.8 | 2nd Temp. 10.8 | Stable Temp. 10.8 | Ending Temp. 10.8 |
| 4-5-22 | Time | Bubbler Start | Bubbler End | Comments: Inactive extraction pumping well but used for monitoring only. | | | |
| | 1039 | | | | | | |

| Date | Well Number | WL w/Probe Pre-Sample | WL w/Probe Post Sample | Reading | Reading | Reading | Reading |
|---|---|---|---|---|---|---|---|
| | RW-A | | | 1st Cond. 5,330 | 2nd Cond. 5,340 | Stable Cond. 5,340 | Ending Cond. 5,340 |
| | | | | 1st pH 5.50 | 2nd pH 5.50 | Stable pH 5.50 | Ending pH 5.50 |
| | | | | 1st Temp. 12.4 | 2nd Temp. 12.5 | Stable Temp. 12.4 | Ending Temp. 12.4 |
| 4-5-22 | Time | Bubbler Start | Bubbler End | Comments: Extraction well (active) and no water level measurement due to placement of probe in well. | | | |
| | 1052 | | | | | | |

| Date | Well Number | WL w/Probe Pre-Sample | WL w/Probe Post Sample | Reading | Reading | Reading | Reading |
|---|---|---|---|---|---|---|---|
| | | | | 1st Cond. | 2nd Cond. | Stable Cond. | Ending Cond. |
| | | | | 1st pH | 2nd pH | Stable pH | Ending pH |
| | | | | 1st Temp. | 2nd Temp. | Stable Temp. | Ending Temp. |
| | Time | Bubbler Start | Bubbler End | Comments: | | | |
| | | | | | | | |

PH Standard Verification Check

| STD. | PH Reading | Date/Time | Initial |
|---|---|---|---|
| 4-Buffer | 4.01 | 4-11-22/0909 | mc |
| 7-Buffer | 7.01 | 4-11-22/0907 | mc |

(PH/cond. meter#2)

(Monthly/Quar. Supplemental – Pg. 2 of 2)

GROUND WATER MONITORING FIELD DATA SHEET

Second QUARTER 2022 SAMPLING

Cond. Standard Verification Check

| STD. | µS/cm Reading | Date/Time | Initial |
|---|---|---|---|
| 1413 µS/cm | 1428 | 4-11-22/0911 | mc |

(PH/cond. meter #2 on 4-11-22)

| Date | Well Number | WL w/Probe Pre-Sample | WL w/Probe Post Sample | Reading | Reading | Reading | Reading |
|---|---|---|---|---|---|---|---|
| 4-11-22 | SW-1B | 212.73' | 212.72' | 1st Cond. 3,370 | 2nd Cond. 3,360 | Stable Cond. 3,410 | Ending Cond. 3,410 |
| | | | | 1st pH 5.87 | 2nd pH 6.12 | Stable pH 6.25 | Ending pH 6.81 |
| | | | | 1st Temp. 12.6 | 2nd Temp. 12.7 | Stable Temp. 12.6 | Ending Temp. 13.5 |
| | Time 1015 | Bubbler Start | Bubbler End | Comments: Sentinel well monitoring located within Navajo Reservation land. | | | |

| Date | Well Number | WL w/Probe Pre-Sample | WL w/Probe Post Sample | Reading | Reading | Reading | Reading |
|---|---|---|---|---|---|---|---|
| 4-11-22 | SW-3B | 290.73' | 291.22' | 1st Cond. 1,066 | 2nd Cond. 1,091 | Stable Cond. 1,114 | Ending Cond. 1,172 |
| | | | | 1st pH 8.04 | 2nd pH 8.07 | Stable pH 8.09 | Ending pH 8.06 |
| | | | | 1st Temp. 13.7 | 2nd Temp. 13.5 | Stable Temp. 13.6 | Ending Temp. 14.1 |
| | Time 1120 | Bubbler Start | Bubbler End | Comments: As well SW-1B above. | | | |

| Date | Well Number | WL w/Probe Pre-Sample | WL w/Probe Post Sample | Reading | Reading | Reading | Reading |
|---|---|---|---|---|---|---|---|
| | | | | 1st Cond. | 2nd Cond. | Stable Cond. | Ending Cond. |
| | | | | 1st pH | 2nd pH | Stable pH | Ending pH |
| | | | | 1st Temp. | 2nd Temp. | Stable Temp. | Ending Temp. |
| | Time | Bubbler Start | Bubbler End | Comments: | | | |

| Date | Well Number | WL w/Probe Pre-Sample | WL w/Probe Post Sample | Reading | Reading | Reading | Reading |
|---|---|---|---|---|---|---|---|
| | | | | 1st Cond. | 2nd Cond. | Stable Cond. | Ending Cond. |
| | | | | 1st pH | 2nd pH | Stable pH | Ending pH |
| | | | | 1st Temp. | 2nd Temp. | Stable Temp. | Ending Temp. |
| | Time | Bubbler Start | Bubbler End | Comments: | | | |

| Date | Well Number | WL w/Probe Pre-Sample | WL w/Probe Post Sample | Reading | Reading | Reading | Reading |
|---|---|---|---|---|---|---|---|
| | | | | 1st Cond. | 2nd Cond. | Stable Cond. | Ending Cond. |
| | | | | 1st pH | 2nd pH | Stable pH | Ending pH |
| | | | | 1st Temp. | 2nd Temp. | Stable Temp. | Ending Temp. |
| | Time | Bubbler Start | Bubbler End | Comments: | | | |

| Date | Well Number | WL w/Probe Pre-Sample | WL w/Probe Post Sample | Reading | Reading | Reading | Reading |
|---|---|---|---|---|---|---|---|
| | | | | 1st Cond. | 2nd Cond. | Stable Cond. | Ending Cond. |
| | | | | 1st pH | 2nd pH | Stable pH | Ending pH |
| | | | | 1st Temp. | 2nd Temp. | Stable Temp. | Ending Temp. |
| | Time | Bubbler Start | Bubbler End | Comments: | | | |

# APPENDIX B

## QUARTERLY SAMPLING

## SEMI-ANNUAL GROUND WATER MONITORING REPORT

## JANUARY TO JUNE 2022

## QA/QC CONTROLS

FIELD BLANKS
RINSATES
VOC TRIP BLANKS

EPA-28 AND EPA-28 DUPLICATES FOR SW ALLUVIUM

EPA-2 AND EPA-2 DUPLICATES FOR ZONE 1

717 AND 717 DUPLICATES FOR ZONE 3

INTENTIONALLY LEFT BLANK

# LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation
**Project:** UNC
**Lab ID:** C22010408-010
**Client Sample ID:** Field Blank

**Report Date:** 02/16/22
**Collection Date:** 01/12/22 14:00
**DateReceived:** 01/13/22
**Matrix:** Aqueous

| Analyses | Result | Units | Qualifiers | RL | MCL/ QCL | Method | Analysis Date / By |
|---|---|---|---|---|---|---|---|
| **MAJOR IONS** | | | | | | | |
| Bicarbonate as HCO3 | ND | mg/L | | 5 | | A2320 B | 01/17/22 15:44 / kjp |
| Chloride | ND | mg/L | | 1 | | E300.0 | 01/15/22 03:33 / dmb |
| Sulfate | ND | mg/L | | 1 | | E300.0 | 01/15/22 03:33 / dmb |
| Calcium | ND | mg/L | | 1 | | E200.8 | 01/17/22 20:29 / jcg |
| Magnesium | ND | mg/L | | 1 | | E200.8 | 01/17/22 20:29 / jcg |
| Potassium | ND | mg/L | | 1 | | E200.7 | 01/18/22 15:06 / srm |
| Sodium | ND | mg/L | | 1 | | E200.8 | 01/17/22 20:29 / jcg |
| **PHYSICAL PROPERTIES** | | | | | | | |
| pH | 5.7 | s.u. | H | 0.1 | | A4500-H B | 01/14/22 12:05 / kjp |
| pH Measurement Temp | 14.4 | °C | | | | A4500-H B | 01/14/22 12:05 / kjp |
| Solids, Total Dissolved TDS @ 180 C | ND | mg/L | | 20 | | A2540 C | 01/14/22 14:44 / kjp |
| - TDS did not obtain the minimum residue requirement of 2.5 mg residue. | | | | | | | |
| **NUTRIENTS** | | | | | | | |
| Nitrogen, Nitrate+Nitrite as N | ND | mg/L | | 0.05 | | E353.2 | 01/14/22 16:47 / nts |
| Nitrogen, Ammonia as N | ND | mg/L | | 0.05 | | E350.1 | 01/14/22 14:43 / nts |
| **METALS, TOTAL** | | | | | | | |
| Aluminum | ND | mg/L | | 0.03 | | E200.8 | 01/20/22 04:23 / jcg |
| Arsenic | ND | mg/L | | 0.001 | | E200.8 | 01/20/22 04:23 / jcg |
| Beryllium | ND | mg/L | | 0.001 | | E200.8 | 01/20/22 04:23 / jcg |
| Cadmium | ND | mg/L | | 0.001 | | E200.8 | 01/20/22 04:23 / jcg |
| Cobalt | ND | mg/L | | 0.005 | | E200.8 | 01/20/22 04:23 / jcg |
| Lead | ND | mg/L | | 0.001 | | E200.8 | 01/20/22 04:23 / jcg |
| Manganese | ND | mg/L | | 0.001 | | E200.8 | 01/20/22 04:23 / jcg |
| Molybdenum | ND | mg/L | | 0.001 | | E200.8 | 01/20/22 04:23 / jcg |
| Nickel | ND | mg/L | | 0.005 | | E200.8 | 01/20/22 04:23 / jcg |
| Selenium | ND | mg/L | | 0.001 | | E200.8 | 01/20/22 04:23 / jcg |
| Uranium | ND | mg/L | | 0.0003 | | E200.8 | 01/20/22 04:23 / jcg |
| Vanadium | ND | mg/L | | 0.01 | | E200.8 | 01/20/22 04:23 / jcg |
| **RADIONUCLIDES, TOTAL** | | | | | | | |
| Gross Alpha minus Rn & U | 0.1 | pCi/L | U | | | E900.1 | 01/21/22 11:05 / trs |
| Gross Alpha minus Rn & U Precision (±) | 0.6 | pCi/L | | | | E900.1 | 01/21/22 11:05 / trs |
| Gross Alpha minus Rn & U MDC | 1 | pCi/L | | | | E900.1 | 01/21/22 11:05 / trs |
| Lead 210 | 0.5 | pCi/L | U | | | E909.0 | 01/22/22 17:40 / hat |
| Lead 210 precision (±) | 0.5 | pCi/L | | | | E909.0 | 01/22/22 17:40 / hat |
| Lead 210 MDC | 0.8 | pCi/L | | | | E909.0 | 01/22/22 17:40 / hat |
| Radium 226 | 0.03 | pCi/L | U | | | E903.0 | 01/26/22 13:40 / kdk |
| Radium 226 precision (±) | 0.1 | pCi/L | | | | E903.0 | 01/26/22 13:40 / kdk |
| Radium 226 MDC | 0.2 | pCi/L | | | | E903.0 | 01/26/22 13:40 / kdk |
| Radium 228 | 0.2 | pCi/L | U | | | RA-05 | 01/20/22 13:49 / trs |
| Radium 228 precision (±) | 1 | pCi/L | | | | RA-05 | 01/20/22 13:49 / trs |

**Report Definitions:**
RL - Analyte Reporting Limit
QCL - Quality Control Limit
H - Analysis performed past the method holding time
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
U - Not detected at Minimum Detectable Concentration (MDC)

# LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation
**Project:** UNC
**Lab ID:** C22010408-010
**Client Sample ID:** Field Blank

**Report Date:** 02/16/22
**Collection Date:** 01/12/22 14:00
**DateReceived:** 01/13/22
**Matrix:** Aqueous

| Analyses | Result | Units | Qualifiers | RL | MCL/ QCL | Method | Analysis Date / By |
|---|---|---|---|---|---|---|---|
| **RADIONUCLIDES, TOTAL** | | | | | | | |
| Radium 228 MDC | 1.6 | pCi/L | | | | RA-05 | 01/20/22 13:49 / trs |
| Radium 226 + Radium 228 | 0.3 | pCi/L | U | | | A7500-RA | 01/27/22 15:26 / dmf |
| Radium 226 + Radium 228 precision (±) | 1 | pCi/L | | | | A7500-RA | 01/27/22 15:26 / dmf |
| Radium 226 + Radium 228 MDC | 1.6 | pCi/L | | | | A7500-RA | 01/27/22 15:26 / dmf |
| Thorium 230 | -0.02 | pCi/L | U | | | A7500-U C | 01/19/22 14:02 / sec |
| Thorium 230 precision (±) | 0.06 | pCi/L | | | | A7500-U C | 01/19/22 14:02 / sec |
| Thorium 230 MDC | 0.1 | pCi/L | | | | A7500-U C | 01/19/22 14:02 / sec |
| **DATA QUALITY** | | | | | | | |
| Solids, Total Dissolved - Calculated | ND | mg/L | | 1.00 | | A1030 E | 01/20/22 08:46 / jlw |
| A/C Balance | 100 | % | | | | A1030 E | 01/20/22 08:46 / jlw |
| Anions | ND | meq/L | | | | A1030 E | 01/20/22 08:46 / jlw |
| Cations | 0 | meq/L | | | | A1030 E | 01/20/22 08:46 / jlw |
| TDS Ratio | NA | unitless | | | | A1030 E | 01/20/22 08:46 / jlw |
| The Anion/Cation Balance Difference is <±0.2 meq/L | | | | | | | |
| **VOLATILE ORGANIC COMPOUNDS** | | | | | | | |
| Bromodichloromethane | 1.7 | ug/L | | 0.50 | | E624.1 | 01/21/22 16:48 / eli-b |
| Bromoform | 0.76 | ug/L | | 0.50 | | E624.1 | 01/21/22 16:48 / eli-b |
| Chlorodibromomethane | 1.2 | ug/L | | 0.50 | | E624.1 | 01/21/22 16:48 / eli-b |
| Chloroform | 2.6 | ug/L | | 0.50 | | E624.1 | 01/21/22 16:48 / eli-b |
| Trihalomethanes, Total | 6.3 | ug/L | | 0.50 | | E624.1 | 02/03/22 09:28 / jlw |
| Surr: 1,2-Dichloroethane-d4 | 108 | %REC | | 71-139 | | E624.1 | 01/21/22 16:48 / eli-b |
| Surr: p-Bromofluorobenzene | 99.0 | %REC | | 80-127 | | E624.1 | 01/21/22 16:48 / eli-b |
| Surr: Toluene-d8 | 102 | %REC | | 80-123 | | E624.1 | 01/21/22 16:48 / eli-b |

**Report Definitions:**
RL - Analyte Reporting Limit
QCL - Quality Control Limit
U - Not detected at Minimum Detectable Concentration (MDC)
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)

# LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation
**Project:** UNC-SW ALLUVIUM
**Lab ID:** C22010739-006
**Client Sample ID:** FIELD BLANK

**Report Date:** 03/07/22
**Collection Date:** 01/18/22 15:10
**DateReceived:** 01/25/22
**Matrix:** Aqueous

| Analyses | Result | Units | Qualifiers | RL | MCL/ QCL | Method | Analysis Date / By |
|---|---|---|---|---|---|---|---|
| **MAJOR IONS** | | | | | | | |
| Bicarbonate as HCO3 | ND | mg/L | | 5 | | A2320 B | 01/27/22 12:35 / kjp |
| Chloride | ND | mg/L | | 1 | | E300.0 | 01/28/22 08:52 / dmb |
| Sulfate | ND | mg/L | | 1 | | E300.0 | 01/28/22 08:52 / dmb |
| Calcium | ND | mg/L | | 1 | | E200.8 | 01/31/22 23:22 / jcg |
| Magnesium | ND | mg/L | | 1 | | E200.8 | 01/31/22 23:22 / jcg |
| Potassium | ND | mg/L | | 1 | | E200.8 | 01/31/22 23:22 / jcg |
| Sodium | ND | mg/L | | 1 | | E200.8 | 01/31/22 23:22 / jcg |
| **PHYSICAL PROPERTIES** | | | | | | | |
| pH | 5.8 | s.u. | H | 0.1 | | A4500-H B | 01/25/22 11:58 / mnm |
| pH Measurement Temp | 15.7 | °C | | | | A4500-H B | 01/25/22 11:58 / mnm |
| Solids, Total Dissolved TDS @ 180 C | ND | mg/L | | 20 | | A2540 C | 01/25/22 10:26 / mnm |
| - TDS did not obtain the minimum residue requirement of 2.5 mg residue. | | | | | | | |
| **NUTRIENTS** | | | | | | | |
| Nitrogen, Nitrate+Nitrite as N | ND | mg/L | | 0.05 | | E353.2 | 01/25/22 14:29 / nts |
| Nitrogen, Ammonia as N | ND | mg/L | | 0.05 | | E350.1 | 01/27/22 15:19 / dmb |
| **METALS, TOTAL** | | | | | | | |
| Aluminum | 0.03 | mg/L | | 0.03 | | E200.8 | 01/27/22 18:25 / jcg |
| Arsenic | ND | mg/L | | 0.001 | | E200.8 | 01/27/22 18:25 / jcg |
| Beryllium | ND | mg/L | | 0.001 | | E200.8 | 01/27/22 18:25 / jcg |
| Cadmium | ND | mg/L | | 0.001 | | E200.8 | 01/27/22 18:25 / jcg |
| Cobalt | ND | mg/L | | 0.005 | | E200.8 | 01/27/22 18:25 / jcg |
| Lead | ND | mg/L | | 0.001 | | E200.8 | 01/27/22 18:25 / jcg |
| Manganese | ND | mg/L | | 0.001 | | E200.8 | 01/27/22 18:25 / jcg |
| Molybdenum | ND | mg/L | | 0.001 | | E200.8 | 02/08/22 16:58 / jcg |
| Nickel | ND | mg/L | | 0.005 | | E200.8 | 01/27/22 18:25 / jcg |
| Selenium | ND | mg/L | | 0.001 | | E200.8 | 01/27/22 18:25 / jcg |
| Uranium | ND | mg/L | | 0.0003 | | E200.8 | 01/27/22 18:25 / jcg |
| Vanadium | ND | mg/L | | 0.01 | | E200.8 | 01/27/22 18:25 / jcg |
| **DATA QUALITY** | | | | | | | |
| Solids, Total Dissolved - Calculated | ND | mg/L | | 1.00 | | A1030 E | 02/02/22 16:59 / jlw |
| A/C Balance | 100 | % | | | | A1030 E | 02/02/22 16:59 / jlw |
| Anions | ND | meq/L | | | | A1030 E | 02/02/22 16:59 / jlw |
| Cations | 0 | meq/L | | | | A1030 E | 02/02/22 16:59 / jlw |
| TDS Ratio | NA | unitless | | | | A1030 E | 02/02/22 16:59 / jlw |
| The Anion/Cation Balance Difference is <±0.2 meq/L | | | | | | | |
| **RADIONUCLIDES, TOTAL** | | | | | | | |
| Gross Alpha minus Rn & U | 0.1 | pCi/L | U | | | E900.1 | 01/31/22 10:28 / trs |
| Gross Alpha minus Rn & U Precision (±) | 0.3 | pCi/L | | | | E900.1 | 01/31/22 10:28 / trs |
| Gross Alpha minus Rn & U MDC | 0.5 | pCi/L | | | | E900.1 | 01/31/22 10:28 / trs |
| Lead 210 | -0.2 | pCi/L | U | | | E909.0 | 02/02/22 15:19 / sec |

**Report Definitions:**
RL - Analyte Reporting Limit
QCL - Quality Control Limit
H - Analysis performed past the method holding time
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
U - Not detected at Minimum Detectable Concentration (MDC)

# LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation
**Project:** UNC-SW ALLUVIUM
**Lab ID:** C22010739-006
**Client Sample ID:** FIELD BLANK

**Report Date:** 03/07/22
**Collection Date:** 01/18/22 15:10
**DateReceived:** 01/25/22
**Matrix:** Aqueous

| Analyses | Result | Units | Qualifiers | RL | MCL/ QCL | Method | Analysis Date / By |
|---|---|---|---|---|---|---|---|
| **RADIONUCLIDES, TOTAL** | | | | | | | |
| Lead 210 precision (±) | 0.5 | pCi/L | | | | E909.0 | 02/02/22 15:19 / sec |
| Lead 210 MDC | 0.9 | pCi/L | | | | E909.0 | 02/02/22 15:19 / sec |
| Radium 226 | -0.007 | pCi/L | U | | | E903.0 | 02/08/22 12:24 / trs |
| Radium 226 precision (±) | 0.1 | pCi/L | | | | E903.0 | 02/08/22 12:24 / trs |
| Radium 226 MDC | 0.2 | pCi/L | | | | E903.0 | 02/08/22 12:24 / trs |
| Radium 228 | 0.9 | pCi/L | U | | | RA-05 | 02/02/22 15:59 / hat |
| Radium 228 precision (±) | 0.6 | pCi/L | | | | RA-05 | 02/02/22 15:59 / hat |
| Radium 228 MDC | 1 | pCi/L | | | | RA-05 | 02/02/22 15:59 / hat |
| Radium 226 + Radium 228 | 0.9 | pCi/L | U | | | A7500-RA | 02/08/22 14:30 / dmf |
| Radium 226 + Radium 228 precision (±) | 0.6 | pCi/L | | | | A7500-RA | 02/08/22 14:30 / dmf |
| Radium 226 + Radium 228 MDC | 1 | pCi/L | | | | A7500-RA | 02/08/22 14:30 / dmf |
| Thorium 230 | 0.03 | pCi/L | U | | | A7500-U C | 02/03/22 16:01 / sec |
| Thorium 230 precision (±) | 0.04 | pCi/L | | | | A7500-U C | 02/03/22 16:01 / sec |
| Thorium 230 MDC | 0.07 | pCi/L | | | | A7500-U C | 02/03/22 16:01 / sec |
| **VOLATILE ORGANIC COMPOUNDS** | | | | | | | |
| Bromodichloromethane | 0.92 | ug/L | J | 1.0 | | E624.1 | 01/28/22 01:20 / etad |
| Bromoform | ND | ug/L | | 2.0 | | E624.1 | 01/28/22 01:20 / etad |
| Chlorodibromomethane | 0.67 | ug/L | J | 1.0 | | E624.1 | 01/28/22 01:20 / etad |
| Chloroform | 1.0 | ug/L | | 1.0 | | E624.1 | 01/28/22 01:20 / etad |
| Trihalomethanes, Total | 2.6 | ug/L | | 0.50 | | E624.1 | 03/01/22 18:20 / tlf |
| Surr: 1,2-Dichloroethane-d4 | 94.0 | %REC | | 73-122 | | E624.1 | 01/28/22 01:20 / etad |
| Surr: p-Bromofluorobenzene | 85.0 | %REC | | 79-119 | | E624.1 | 01/28/22 01:20 / etad |
| Surr: Toluene-d8 | 96.0 | %REC | | 80-120 | | E624.1 | 01/28/22 01:20 / etad |

**Report Definitions:**

RL - Analyte Reporting Limit
QCL - Quality Control Limit
J - Estimated value - analyte was present but less than the Reporting Limit (RL)
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
U - Not detected at Minimum Detectable Concentration (MDC)

# LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation
**Project:** UNC
**Lab ID:** C22010408-009
**Client Sample ID:** Rinsate

**Report Date:** 02/16/22
**Collection Date:** 01/12/22 13:55
**DateReceived:** 01/13/22
**Matrix:** Aqueous

| Analyses | Result | Units | Qualifiers | RL | MCL/ QCL | Method | Analysis Date / By |
|---|---|---|---|---|---|---|---|
| **MAJOR IONS** | | | | | | | |
| Bicarbonate as HCO3 | ND | mg/L | | 5 | | A2320 B | 01/17/22 15:39 / kjp |
| Chloride | ND | mg/L | | 1 | | E300.0 | 01/15/22 03:14 / dmb |
| Sulfate | ND | mg/L | | 1 | | E300.0 | 01/15/22 03:14 / dmb |
| Calcium | ND | mg/L | | 1 | | E200.8 | 01/17/22 20:24 / jcg |
| Magnesium | ND | mg/L | | 1 | | E200.8 | 01/17/22 20:24 / jcg |
| Potassium | ND | mg/L | | 1 | | E200.7 | 01/18/22 14:40 / srm |
| Sodium | ND | mg/L | | 1 | | E200.8 | 01/17/22 20:24 / jcg |
| **PHYSICAL PROPERTIES** | | | | | | | |
| pH | 5.8 | s.u. | H | 0.1 | | A4500-H B | 01/14/22 12:02 / kjp |
| pH Measurement Temp | 14.1 | °C | | | | A4500-H B | 01/14/22 12:02 / kjp |
| Solids, Total Dissolved TDS @ 180 C | ND | mg/L | | 20 | | A2540 C | 01/14/22 14:44 / kjp |
| - TDS did not obtain the minimum residue requirement of 2.5 mg residue. | | | | | | | |
| **NUTRIENTS** | | | | | | | |
| Nitrogen, Nitrate+Nitrite as N | ND | mg/L | | 0.05 | | E353.2 | 01/14/22 16:46 / nts |
| Nitrogen, Ammonia as N | ND | mg/L | | 0.05 | | E350.1 | 01/14/22 14:42 / nts |
| **METALS, TOTAL** | | | | | | | |
| Aluminum | ND | mg/L | | 0.03 | | E200.8 | 01/20/22 04:18 / jcg |
| Arsenic | ND | mg/L | | 0.001 | | E200.8 | 01/20/22 04:18 / jcg |
| Beryllium | ND | mg/L | | 0.001 | | E200.8 | 01/20/22 04:18 / jcg |
| Cadmium | ND | mg/L | | 0.001 | | E200.8 | 01/20/22 04:18 / jcg |
| Cobalt | ND | mg/L | | 0.005 | | E200.8 | 01/20/22 04:18 / jcg |
| Lead | ND | mg/L | | 0.001 | | E200.8 | 01/20/22 04:18 / jcg |
| Manganese | ND | mg/L | | 0.001 | | E200.8 | 01/20/22 04:18 / jcg |
| Molybdenum | ND | mg/L | | 0.001 | | E200.8 | 01/20/22 04:18 / jcg |
| Nickel | ND | mg/L | | 0.005 | | E200.8 | 01/20/22 04:18 / jcg |
| Selenium | ND | mg/L | | 0.001 | | E200.8 | 01/20/22 04:18 / jcg |
| Uranium | ND | mg/L | | 0.0003 | | E200.8 | 01/20/22 04:18 / jcg |
| Vanadium | ND | mg/L | | 0.01 | | E200.8 | 01/20/22 04:18 / jcg |
| **RADIONUCLIDES, TOTAL** | | | | | | | |
| Gross Alpha minus Rn & U | 0.3 | pCi/L | U | | | E900.1 | 01/21/22 11:05 / trs |
| Gross Alpha minus Rn & U Precision (±) | 0.6 | pCi/L | | | | E900.1 | 01/21/22 11:05 / trs |
| Gross Alpha minus Rn & U MDC | 1 | pCi/L | | | | E900.1 | 01/21/22 11:05 / trs |
| Lead 210 | -0.2 | pCi/L | U | | | E909.0 | 01/22/22 14:04 / hat |
| Lead 210 precision (±) | 0.5 | pCi/L | | | | E909.0 | 01/22/22 14:04 / hat |
| Lead 210 MDC | 0.8 | pCi/L | | | | E909.0 | 01/22/22 14:04 / hat |
| Radium 226 | 0.04 | pCi/L | U | | | E903.0 | 01/26/22 13:40 / kdk |
| Radium 226 precision (±) | 0.1 | pCi/L | | | | E903.0 | 01/26/22 13:40 / kdk |
| Radium 226 MDC | 0.2 | pCi/L | | | | E903.0 | 01/26/22 13:40 / kdk |
| Radium 228 | 1.3 | pCi/L | U | | | RA-05 | 01/20/22 13:49 / trs |
| Radium 228 precision (±) | 1.0 | pCi/L | | | | RA-05 | 01/20/22 13:49 / trs |

**Report Definitions:**
RL - Analyte Reporting Limit
QCL - Quality Control Limit
H - Analysis performed past the method holding time
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
U - Not detected at Minimum Detectable Concentration (MDC)

# LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation
**Project:** UNC
**Lab ID:** C22010408-009
**Client Sample ID:** Rinsate

**Report Date:** 02/16/22
**Collection Date:** 01/12/22 13:55
**DateReceived:** 01/13/22
**Matrix:** Aqueous

| Analyses | Result | Units | Qualifiers | RL | MCL/ QCL | Method | Analysis Date / By |
|---|---|---|---|---|---|---|---|
| **RADIONUCLIDES, TOTAL** | | | | | | | |
| Radium 228 MDC | 1.6 | pCi/L | | | | RA-05 | 01/20/22 13:49 / trs |
| Radium 226 + Radium 228 | 1.3 | pCi/L | U | | | A7500-RA | 01/27/22 15:26 / dmf |
| Radium 226 + Radium 228 precision (±) | 1.0 | pCi/L | | | | A7500-RA | 01/27/22 15:26 / dmf |
| Radium 226 + Radium 228 MDC | 1.6 | pCi/L | | | | A7500-RA | 01/27/22 15:26 / dmf |
| Thorium 230 | 0.02 | pCi/L | U | | | A7500-U C | 01/19/22 14:02 / sec |
| Thorium 230 precision (±) | 0.04 | pCi/L | | | | A7500-U C | 01/19/22 14:02 / sec |
| Thorium 230 MDC | 0.07 | pCi/L | | | | A7500-U C | 01/19/22 14:02 / sec |
| **DATA QUALITY** | | | | | | | |
| Solids, Total Dissolved - Calculated | ND | mg/L | | 1.00 | | A1030 E | 01/20/22 08:45 / jlw |
| A/C Balance | -16.7 | % | | | | A1030 E | 01/20/22 08:45 / jlw |
| Anions | 0 | meq/L | | | | A1030 E | 01/20/22 08:45 / jlw |
| Cations | 0 | meq/L | | | | A1030 E | 01/20/22 08:45 / jlw |
| TDS Ratio | NA | unitless | | | | A1030 E | 01/20/22 08:45 / jlw |
| The Anion/Cation Balance Difference is <±0.2 meq/L | | | | | | | |
| **VOLATILE ORGANIC COMPOUNDS** | | | | | | | |
| Bromodichloromethane | 0.95 | ug/L | | 0.50 | | E624.1 | 01/21/22 16:21 / eli-b |
| Bromoform | 0.52 | ug/L | | 0.50 | | E624.1 | 01/21/22 16:21 / eli-b |
| Chlorodibromomethane | 0.64 | ug/L | | 0.50 | | E624.1 | 01/21/22 16:21 / eli-b |
| Chloroform | 1.6 | ug/L | | 0.50 | | E624.1 | 01/21/22 16:21 / eli-b |
| Trihalomethanes, Total | 3.7 | ug/L | | 0.50 | | E624.1 | 02/03/22 09:28 / jlw |
| Surr: 1,2-Dichloroethane-d4 | 111 | %REC | | 71-139 | | E624.1 | 01/21/22 16:21 / eli-b |
| Surr: p-Bromofluorobenzene | 101 | %REC | | 80-127 | | E624.1 | 01/21/22 16:21 / eli-b |
| Surr: Toluene-d8 | 101 | %REC | | 80-123 | | E624.1 | 01/21/22 16:21 / eli-b |

**Report Definitions:**
RL - Analyte Reporting Limit
QCL - Quality Control Limit
U - Not detected at Minimum Detectable Concentration (MDC)
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)

# LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation
**Project:** UNC-SW ALLUVIUM
**Lab ID:** C22010739-005
**Client Sample ID:** RINSATE

**Report Date:** 03/07/22
**Collection Date:** 01/18/22 14:35
**DateReceived:** 01/25/22
**Matrix:** Aqueous

| Analyses | Result | Units | Qualifiers | RL | MCL/ QCL | Method | Analysis Date / By |
|---|---|---|---|---|---|---|---|
| **MAJOR IONS** | | | | | | | |
| Bicarbonate as HCO3 | ND | mg/L | | 5 | | A2320 B | 01/27/22 12:30 / kjp |
| Chloride | ND | mg/L | | 1 | | E300.0 | 01/28/22 08:33 / dmb |
| Sulfate | ND | mg/L | | 1 | | E300.0 | 01/28/22 08:33 / dmb |
| Calcium | ND | mg/L | | 1 | | E200.8 | 01/31/22 23:03 / jcg |
| Magnesium | ND | mg/L | | 1 | | E200.8 | 02/02/22 01:44 / jcg |
| Potassium | ND | mg/L | | 1 | | E200.8 | 02/02/22 01:44 / jcg |
| Sodium | ND | mg/L | | 1 | | E200.8 | 02/02/22 01:44 / jcg |
| **PHYSICAL PROPERTIES** | | | | | | | |
| pH | 5.9 | s.u. | H | 0.1 | | A4500-H B | 01/25/22 11:56 / mnm |
| pH Measurement Temp | 16.1 | °C | | | | A4500-H B | 01/25/22 11:56 / mnm |
| Solids, Total Dissolved TDS @ 180 C | ND | mg/L | | 20 | | A2540 C | 01/25/22 10:19 / mnm |
| - TDS did not obtain the minimum residue requirement of 2.5 mg residue. | | | | | | | |
| **NUTRIENTS** | | | | | | | |
| Nitrogen, Nitrate+Nitrite as N | ND | mg/L | | 0.05 | | E353.2 | 01/25/22 14:28 / nts |
| Nitrogen, Ammonia as N | ND | mg/L | | 0.05 | | E350.1 | 01/27/22 15:18 / dmb |
| **METALS, TOTAL** | | | | | | | |
| Aluminum | ND | mg/L | | 0.03 | | E200.8 | 01/27/22 18:20 / jcg |
| Arsenic | ND | mg/L | | 0.001 | | E200.8 | 01/27/22 18:20 / jcg |
| Beryllium | ND | mg/L | | 0.001 | | E200.8 | 01/27/22 18:20 / jcg |
| Cadmium | ND | mg/L | | 0.001 | | E200.8 | 01/27/22 18:20 / jcg |
| Cobalt | ND | mg/L | | 0.005 | | E200.8 | 01/27/22 18:20 / jcg |
| Lead | ND | mg/L | | 0.001 | | E200.8 | 01/27/22 18:20 / jcg |
| Manganese | ND | mg/L | | 0.001 | | E200.8 | 01/27/22 18:20 / jcg |
| Molybdenum | ND | mg/L | | 0.001 | | E200.8 | 02/08/22 16:53 / jcg |
| Nickel | ND | mg/L | | 0.005 | | E200.8 | 02/08/22 16:53 / jcg |
| Selenium | ND | mg/L | | 0.001 | | E200.8 | 01/27/22 18:20 / jcg |
| Uranium | ND | mg/L | | 0.0003 | | E200.8 | 01/27/22 18:20 / jcg |
| Vanadium | ND | mg/L | | 0.01 | | E200.8 | 01/27/22 18:20 / jcg |
| **DATA QUALITY** | | | | | | | |
| Solids, Total Dissolved - Calculated | ND | mg/L | | 1.00 | | A1030 E | 02/02/22 16:59 / jlw |
| A/C Balance | -1.63 | % | | | | A1030 E | 02/02/22 16:59 / jlw |
| Anions | 0 | meq/L | | | | A1030 E | 02/02/22 16:59 / jlw |
| Cations | 0 | meq/L | | | | A1030 E | 02/02/22 16:59 / jlw |
| TDS Ratio | NA | unitless | | | | A1030 E | 02/02/22 16:59 / jlw |
| The Anion/Cation Balance Difference is <±0.2 meq/L | | | | | | | |
| **RADIONUCLIDES, TOTAL** | | | | | | | |
| Gross Alpha minus Rn & U | 0.1 | pCi/L | U | | | E900.1 | 01/31/22 08:28 / trs |
| Gross Alpha minus Rn & U Precision (±) | 0.3 | pCi/L | | | | E900.1 | 01/31/22 08:28 / trs |
| Gross Alpha minus Rn & U MDC | 0.5 | pCi/L | | | | E900.1 | 01/31/22 08:28 / trs |
| Lead 210 | -0.2 | pCi/L | U | | | E909.0 | 02/02/22 08:48 / sec |

**Report Definitions:**
RL - Analyte Reporting Limit
QCL - Quality Control Limit
H - Analysis performed past the method holding time
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
U - Not detected at Minimum Detectable Concentration (MDC)

# LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation
**Project:** UNC-SW ALLUVIUM
**Lab ID:** C22010739-005
**Client Sample ID:** RINSATE

**Report Date:** 03/07/22
**Collection Date:** 01/18/22 14:35
**DateReceived:** 01/25/22
**Matrix:** Aqueous

| Analyses | Result | Units | Qualifiers | RL | MCL/ QCL | Method | Analysis Date / By |
|---|---|---|---|---|---|---|---|
| **RADIONUCLIDES, TOTAL** | | | | | | | |
| Lead 210 precision (±) | 0.5 | pCi/L | | | | E909.0 | 02/02/22 08:48 / sec |
| Lead 210 MDC | 0.9 | pCi/L | | | | E909.0 | 02/02/22 08:48 / sec |
| Radium 226 | 0.03 | pCi/L | U | | | E903.0 | 02/08/22 12:24 / trs |
| Radium 226 precision (±) | 0.1 | pCi/L | | | | E903.0 | 02/08/22 12:24 / trs |
| Radium 226 MDC | 0.2 | pCi/L | | | | E903.0 | 02/08/22 12:24 / trs |
| Radium 228 | 0.4 | pCi/L | U | | | RA-05 | 02/02/22 15:59 / hat |
| Radium 228 precision (±) | 0.6 | pCi/L | | | | RA-05 | 02/02/22 15:59 / hat |
| Radium 228 MDC | 1.0 | pCi/L | | | | RA-05 | 02/02/22 15:59 / hat |
| Radium 226 + Radium 228 | 0.5 | pCi/L | U | | | A7500-RA | 02/08/22 14:30 / dmf |
| Radium 226 + Radium 228 precision (±) | 0.6 | pCi/L | | | | A7500-RA | 02/08/22 14:30 / dmf |
| Radium 226 + Radium 228 MDC | 1.0 | pCi/L | | | | A7500-RA | 02/08/22 14:30 / dmf |
| Thorium 230 | 0.02 | pCi/L | U | | | A7500-U C | 02/03/22 16:01 / sec |
| Thorium 230 precision (±) | 0.07 | pCi/L | | | | A7500-U C | 02/03/22 16:01 / sec |
| Thorium 230 MDC | 0.1 | pCi/L | | | | A7500-U C | 02/03/22 16:01 / sec |
| **VOLATILE ORGANIC COMPOUNDS** | | | | | | | |
| Bromodichloromethane | 0.93 | ug/L | J | 1.0 | | E624.1 | 01/28/22 00:59 / etad |
| Bromoform | ND | ug/L | | 2.0 | | E624.1 | 01/28/22 00:59 / etad |
| Chlorodibromomethane | 0.77 | ug/L | J | 1.0 | | E624.1 | 01/28/22 00:59 / etad |
| Chloroform | 1.3 | ug/L | | 1.0 | | E624.1 | 01/28/22 00:59 / etad |
| Trihalomethanes, Total | 3.0 | ug/L | | 0.50 | | E624.1 | 03/01/22 18:20 / tlf |
| Surr: 1,2-Dichloroethane-d4 | 93.0 | %REC | | 73-122 | | E624.1 | 01/28/22 00:59 / etad |
| Surr: p-Bromofluorobenzene | 85.0 | %REC | | 79-119 | | E624.1 | 01/28/22 00:59 / etad |
| Surr: Toluene-d8 | 98.0 | %REC | | 80-120 | | E624.1 | 01/28/22 00:59 / etad |

**Report Definitions:**

RL - Analyte Reporting Limit
QCL - Quality Control Limit
J - Estimated value - analyte was present but less than the Reporting Limit (RL)
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
U - Not detected at Minimum Detectable Concentration (MDC)

# LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation
**Project:** UNC- Zone 1 & Zone 3
**Lab ID:** C22010406-007
**Client Sample ID:** Trip Blank- 80352

**Report Date:** 02/16/22
**Collection Date:** 01/10/22 11:15
**DateReceived:** 01/13/22
**Matrix:** Trip Blank

| Analyses | Result | Units | Qualifiers | RL | MCL/ QCL | Method | Analysis Date / By |
|---|---|---|---|---|---|---|---|
| **VOLATILE ORGANIC COMPOUNDS** | | | | | | | |
| Bromodichloromethane | ND | ug/L | | 1.0 | | E624.1 | 01/19/22 19:17 / etad |
| Bromoform | ND | ug/L | | 2.0 | | E624.1 | 01/19/22 19:17 / etad |
| Chlorodibromomethane | ND | ug/L | | 1.0 | | E624.1 | 01/19/22 19:17 / etad |
| Chloroform | ND | ug/L | | 1.0 | | E624.1 | 01/19/22 19:17 / etad |
| Surr: 1,2-Dichloroethane-d4 | 99.0 | %REC | | 73-122 | | E624.1 | 01/19/22 19:17 / etad |
| Surr: p-Bromofluorobenzene | 101 | %REC | | 79-119 | | E624.1 | 01/19/22 19:17 / etad |
| Surr: Toluene-d8 | 98.0 | %REC | | 80-120 | | E624.1 | 01/19/22 19:17 / etad |

**Report Definitions:**
RL - Analyte Reporting Limit
QCL - Quality Control Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)

# LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation
**Project:** UNC
**Lab ID:** C22010408-011
**Client Sample ID:** Trip Blank- 80352

**Report Date:** 02/16/22
**Collection Date:** 01/10/22 09:08
**DateReceived:** 01/13/22
**Matrix:** Trip Blank

| Analyses | Result | Units | Qualifiers | RL | MCL/ QCL | Method | Analysis Date / By |
|---|---|---|---|---|---|---|---|
| **VOLATILE ORGANIC COMPOUNDS** | | | | | | | |
| Bromodichloromethane | ND | ug/L | H3 | 1.0 | | E624.1 | 01/20/22 19:50 / etad |
| Bromoform | ND | ug/L | H3 | 2.0 | | E624.1 | 01/20/22 19:50 / etad |
| Chlorodibromomethane | ND | ug/L | H3 | 1.0 | | E624.1 | 01/20/22 19:50 / etad |
| Chloroform | ND | ug/L | H3 | 1.0 | | E624.1 | 01/20/22 19:50 / etad |
| Surr: 1,2-Dichloroethane-d4 | 99.0 | %REC | | 73-122 | | E624.1 | 01/20/22 19:50 / etad |
| Surr: p-Bromofluorobenzene | 99.0 | %REC | | 79-119 | | E624.1 | 01/20/22 19:50 / etad |
| Surr: Toluene-d8 | 98.0 | %REC | | 80-120 | | E624.1 | 01/20/22 19:50 / etad |

**Report Definitions:**
RL - Analyte Reporting Limit
QCL - Quality Control Limit
H - Analysis performed past the method holding time
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)

# LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation
**Project:** UNC-Zone 3 & SW Alluvium, UNC - Zone1, UNC - Zone3
**Lab ID:** C22010583-018
**Client Sample ID:** Trip Blank - 80352

**Report Date:** 02/16/22
**Collection Date:** 01/13/22 09:27
**DateReceived:** 01/19/22
**Matrix:** Trip Blank

| Analyses | Result | Units | Qualifiers | RL | MCL/ QCL | Method | Analysis Date / By |
|---|---|---|---|---|---|---|---|
| **VOLATILE ORGANIC COMPOUNDS** | | | | | | | |
| Bromodichloromethane | ND | ug/L | | 1.0 | | E624.1 | 01/25/22 18:54 / etad |
| Bromoform | ND | ug/L | | 2.0 | | E624.1 | 01/25/22 18:54 / etad |
| Chlorodibromomethane | ND | ug/L | | 1.0 | | E624.1 | 01/25/22 18:54 / etad |
| Chloroform | ND | ug/L | | 1.0 | | E624.1 | 01/25/22 18:54 / etad |
| Surr: 1,2-Dichloroethane-d4 | 103 | %REC | | 73-122 | | E624.1 | 01/25/22 18:54 / etad |
| Surr: p-Bromofluorobenzene | 104 | %REC | | 79-119 | | E624.1 | 01/25/22 18:54 / etad |
| Surr: Toluene-d8 | 101 | %REC | | 80-120 | | E624.1 | 01/25/22 18:54 / etad |

**Report Definitions:**
RL - Analyte Reporting Limit
QCL - Quality Control Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)

# LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation
**Project:** UNC-SW ALLUVIUM
**Lab ID:** C22010739-009
**Client Sample ID:** Trip Blank-80352_5_6

**Report Date:** 03/07/22
**Collection Date:** 01/18/22 09:22
**DateReceived:** 01/25/22
**Matrix:** Trip Blank

| Analyses | Result | Units | Qualifiers | RL | MCL/ QCL | Method | Analysis Date / By |
|---|---|---|---|---|---|---|---|
| **VOLATILE ORGANIC COMPOUNDS** | | | | | | | |
| Bromodichloromethane | ND | ug/L | | 1.0 | | E624.1 | 01/28/22 02:25 / etad |
| Bromoform | ND | ug/L | | 2.0 | | E624.1 | 01/28/22 02:25 / etad |
| Chlorodibromomethane | ND | ug/L | | 1.0 | | E624.1 | 01/28/22 02:25 / etad |
| Chloroform | ND | ug/L | | 1.0 | | E624.1 | 01/28/22 02:25 / etad |
| Surr: 1,2-Dichloroethane-d4 | 95.0 | %REC | | 73-122 | | E624.1 | 01/28/22 02:25 / etad |
| Surr: p-Bromofluorobenzene | 86.0 | %REC | | 79-119 | | E624.1 | 01/28/22 02:25 / etad |
| Surr: Toluene-d8 | 97.0 | %REC | | 80-120 | | E624.1 | 01/28/22 02:25 / etad |

**Report Definitions:**
RL - Analyte Reporting Limit
QCL - Quality Control Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)

# LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation
**Project:** UNC-SW ALLUVIUM
**Lab ID:** C22010739-010
**Client Sample ID:** Trip Blank- 80352_4_7_8

**Report Date:** 03/07/22
**Collection Date:** 01/18/22 09:22
**DateReceived:** 01/25/22
**Matrix:** Trip Blank

| Analyses | Result | Units | Qualifiers | RL | MCL/ QCL | Method | Analysis Date / By |
|---|---|---|---|---|---|---|---|
| **VOLATILE ORGANIC COMPOUNDS** | | | | | | | |
| Bromodichloromethane | ND | ug/L | | 1.0 | | E624.1 | 01/28/22 02:46 / etad |
| Bromoform | ND | ug/L | | 2.0 | | E624.1 | 01/28/22 02:46 / etad |
| Chlorodibromomethane | ND | ug/L | | 1.0 | | E624.1 | 01/28/22 02:46 / etad |
| Chloroform | ND | ug/L | | 1.0 | | E624.1 | 01/28/22 02:46 / etad |
| Surr: 1,2-Dichloroethane-d4 | 95.0 | %REC | | 73-122 | | E624.1 | 01/28/22 02:46 / etad |
| Surr: p-Bromofluorobenzene | 88.0 | %REC | | 79-119 | | E624.1 | 01/28/22 02:46 / etad |
| Surr: Toluene-d8 | 96.0 | %REC | | 80-120 | | E624.1 | 01/28/22 02:46 / etad |

**Report Definitions:**
RL - Analyte Reporting Limit
QCL - Quality Control Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)

# LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation
**Project:** UNC-SW ALLUVIUM
**Lab ID:** C22010739-011
**Client Sample ID:** Trip Blank- 80352_1-3

**Report Date:** 03/07/22
**Collection Date:** 01/18/22 09:22
**DateReceived:** 01/25/22
**Matrix:** Trip Blank

| Analyses | Result | Units | Qualifiers | RL | MCL/ QCL | Method | Analysis Date / By |
|---|---|---|---|---|---|---|---|
| **VOLATILE ORGANIC COMPOUNDS** | | | | | | | |
| Bromodichloromethane | ND | ug/L | | 1.0 | | E624.1 | 01/28/22 03:08 / etad |
| Bromoform | ND | ug/L | | 2.0 | | E624.1 | 01/28/22 03:08 / etad |
| Chlorodibromomethane | ND | ug/L | | 1.0 | | E624.1 | 01/28/22 03:08 / etad |
| Chloroform | ND | ug/L | | 1.0 | | E624.1 | 01/28/22 03:08 / etad |
| Surr: 1,2-Dichloroethane-d4 | 94.0 | %REC | | 73-122 | | E624.1 | 01/28/22 03:08 / etad |
| Surr: p-Bromofluorobenzene | 87.0 | %REC | | 79-119 | | E624.1 | 01/28/22 03:08 / etad |
| Surr: Toluene-d8 | 98.0 | %REC | | 80-120 | | E624.1 | 01/28/22 03:08 / etad |

**Report Definitions:**
RL - Analyte Reporting Limit
QCL - Quality Control Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)

# LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation
**Project:** UNC- Sentinel Wells
**Lab ID:** C22010715-003
**Client Sample ID:** Trip Blank - 80352

**Report Date:** 02/16/22
**Collection Date:** 01/19/22 11:00
**DateReceived:** 01/21/22
**Matrix:** Trip Blank

| Analyses | Result | Units | Qualifiers | RL | MCL/ QCL | Method | Analysis Date / By |
|---|---|---|---|---|---|---|---|
| **VOLATILE ORGANIC COMPOUNDS** | | | | | | | |
| Bromodichloromethane | ND | ug/L | | 0.50 | | E624.1 | 01/26/22 15:07 / eli-b |
| Bromoform | ND | ug/L | | 0.50 | | E624.1 | 01/26/22 15:07 / eli-b |
| Chlorodibromomethane | ND | ug/L | | 0.50 | | E624.1 | 01/26/22 15:07 / eli-b |
| Chloroform | ND | ug/L | | 0.50 | | E624.1 | 01/26/22 15:07 / eli-b |
| Surr: 1,2-Dichloroethane-d4 | 104 | %REC | | 71-139 | | E624.1 | 01/26/22 15:07 / eli-b |
| Surr: p-Bromofluorobenzene | 119 | %REC | | 80-127 | | E624.1 | 01/26/22 15:07 / eli-b |
| Surr: Toluene-d8 | 102 | %REC | | 80-123 | | E624.1 | 01/26/22 15:07 / eli-b |

**Report Definitions:**
RL - Analyte Reporting Limit
QCL - Quality Control Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)

INTENTIONALLY LEFT BLANK

# LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation
**Project:** UNC-Zone 3, Swalluvium
**Lab ID:** C22040256-005
**Client Sample ID:** FIELD BLANK

**Report Date:** 05/04/22
**Collection Date:** 04/05/22 15:30
**DateReceived:** 04/07/22
**Matrix:** Aqueous

| Analyses | Result | Units | Qualifiers | RL | MCL/ QCL | Method | Analysis Date / By |
|---|---|---|---|---|---|---|---|
| **MAJOR IONS** | | | | | | | |
| Bicarbonate as HCO3 | ND | mg/L | | 5 | | A2320 B | 04/11/22 13:39 / nts |
| Chloride | ND | mg/L | | 1 | | E300.0 | 04/11/22 18:14 / dmb |
| Sulfate | ND | mg/L | | 1 | | E300.0 | 04/11/22 18:14 / dmb |
| Calcium | ND | mg/L | | 1 | | E200.8 | 04/19/22 04:30 / jcg |
| Magnesium | ND | mg/L | | 1 | | E200.8 | 04/19/22 04:30 / jcg |
| Potassium | ND | mg/L | | 1 | | E200.8 | 04/19/22 04:30 / jcg |
| Sodium | ND | mg/L | | 1 | | E200.8 | 04/19/22 04:30 / jcg |
| **PHYSICAL PROPERTIES** | | | | | | | |
| pH | 5.9 | s.u. | H | 0.1 | | A4500-H B | 04/08/22 12:30 / mnm |
| pH Measurement Temp | 18.4 | °C | | | | A4500-H B | 04/08/22 12:30 / mnm |
| Solids, Total Dissolved TDS @ 180 C | ND | mg/L | | 20 | | A2540 C | 04/08/22 14:46 / mnm |
| - TDS did not obtain the minimum residue requirement of 2.5 mg residue. | | | | | | | |
| **NUTRIENTS** | | | | | | | |
| Nitrogen, Nitrate+Nitrite as N | ND | mg/L | | 0.05 | | E353.2 | 04/08/22 12:25 / nts |
| Nitrogen, Ammonia as N | ND | mg/L | | 0.05 | | E350.1 | 04/13/22 10:52 / nts |
| **METALS, TOTAL** | | | | | | | |
| Aluminum | ND | mg/L | | 0.03 | | E200.8 | 04/20/22 05:48 / jcg |
| Arsenic | ND | mg/L | | 0.001 | | E200.8 | 04/27/22 04:12 / jcg |
| Beryllium | ND | mg/L | | 0.001 | | E200.8 | 04/20/22 05:48 / jcg |
| Cadmium | ND | mg/L | | 0.001 | | E200.8 | 04/20/22 05:48 / jcg |
| Cobalt | ND | mg/L | | 0.005 | | E200.8 | 04/20/22 05:48 / jcg |
| Lead | ND | mg/L | | 0.001 | | E200.8 | 04/20/22 05:48 / jcg |
| Manganese | ND | mg/L | | 0.001 | | E200.8 | 04/27/22 04:12 / jcg |
| Molybdenum | ND | mg/L | | 0.001 | | E200.8 | 04/27/22 04:12 / jcg |
| Nickel | ND | mg/L | | 0.005 | | E200.8 | 04/20/22 05:48 / jcg |
| Selenium | ND | mg/L | | 0.001 | | E200.8 | 04/20/22 05:48 / jcg |
| Uranium | ND | mg/L | | 0.0003 | | E200.8 | 04/27/22 04:12 / jcg |
| Vanadium | ND | mg/L | | 0.01 | | E200.8 | 04/20/22 05:48 / jcg |
| **DATA QUALITY** | | | | | | | |
| Solids, Total Dissolved - Calculated | ND | mg/L | | 1.00 | | A1030 E | 04/19/22 14:06 / tlf |
| A/C Balance | 41.6 | % | | | | A1030 E | 04/19/22 14:06 / tlf |
| Anions | 0.01 | meq/L | | | | A1030 E | 04/19/22 14:06 / tlf |
| Cations | 0.02 | meq/L | | | | A1030 E | 04/19/22 14:06 / tlf |
| TDS Ratio | NA | unitless | | | | A1030 E | 04/19/22 14:06 / tlf |
| The Anion/Cation Balance Difference is <±0.2 meq/L | | | | | | | |
| **RADIONUCLIDES, TOTAL** | | | | | | | |
| Gross Alpha minus Rn & U | -0.2 | pCi/L | U | | | E900.1 | 04/15/22 13:24 / kdk |
| Gross Alpha minus Rn & U Precision (±) | 0.6 | pCi/L | | | | E900.1 | 04/15/22 13:24 / kdk |
| Gross Alpha minus Rn & U MDC | 1 | pCi/L | | | | E900.1 | 04/15/22 13:24 / kdk |
| Lead 210 | 0.7 | pCi/L | U | | | E909.0 | 04/16/22 15:53 / hat |

**Report Definitions:**
RL - Analyte Reporting Limit
QCL - Quality Control Limit
H - Analysis performed past the method holding time
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
U - Not detected at Minimum Detectable Concentration (MDC)

# LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation
**Project:** UNC-Zone 3, Swalluvium
**Lab ID:** C22040256-005
**Client Sample ID:** FIELD BLANK

**Report Date:** 05/04/22
**Collection Date:** 04/05/22 15:30
**DateReceived:** 04/07/22
**Matrix:** Aqueous

| Analyses | Result | Units | Qualifiers | RL | MCL/ QCL | Method | Analysis Date / By |
|---|---|---|---|---|---|---|---|
| **RADIONUCLIDES, TOTAL** | | | | | | | |
| Lead 210 precision (±) | 0.5 | pCi/L | | | | E909.0 | 04/16/22 15:53 / hat |
| Lead 210 MDC | 0.9 | pCi/L | | | | E909.0 | 04/16/22 15:53 / hat |
| Radium 226 | 0.1 | pCi/L | U | | | E903.0 | 04/19/22 14:16 / kdk |
| Radium 226 precision (±) | 0.2 | pCi/L | | | | E903.0 | 04/19/22 14:16 / kdk |
| Radium 226 MDC | 0.3 | pCi/L | | | | E903.0 | 04/19/22 14:16 / kdk |
| Radium 228 | 0.5 | pCi/L | U | | | RA-05 | 04/14/22 15:29 / trs |
| Radium 228 precision (±) | 0.8 | pCi/L | | | | RA-05 | 04/14/22 15:29 / trs |
| Radium 228 MDC | 1.4 | pCi/L | | | | RA-05 | 04/14/22 15:29 / trs |
| Radium 226 + Radium 228 | 0.7 | pCi/L | U | | | A7500-RA | 04/20/22 14:59 / dmf |
| Radium 226 + Radium 228 precision (±) | 0.9 | pCi/L | | | | A7500-RA | 04/20/22 14:59 / dmf |
| Radium 226 + Radium 228 MDC | 1.4 | pCi/L | | | | A7500-RA | 04/20/22 14:59 / dmf |
| Thorium 230 | 0.2 | pCi/L | | | | A7500-U C | 04/14/22 15:55 / sec |
| Thorium 230 precision (±) | 0.07 | pCi/L | | | | A7500-U C | 04/14/22 15:55 / sec |
| Thorium 230 MDC | 0.08 | pCi/L | | | | A7500-U C | 04/14/22 15:55 / sec |
| **VOLATILE ORGANIC COMPOUNDS** | | | | | | | |
| Bromodichloromethane | 0.70 | ug/L | | 0.50 | | E624.1 | 04/11/22 16:42 / eli-b |
| Bromoform | 0.65 | ug/L | | 0.50 | | E624.1 | 04/11/22 16:42 / eli-b |
| Chlorodibromomethane | 0.98 | ug/L | | 0.50 | | E624.1 | 04/11/22 16:42 / eli-b |
| Chloroform | 0.39 | ug/L | J | 0.50 | | E624.1 | 04/11/22 16:42 / eli-b |
| Trihalomethanes, Total | 2.7 | ug/L | | 0.50 | | E624.1 | 04/27/22 18:25 / tlf |
| Surr: 1,2-Dichloroethane-d4 | 98.0 | %REC | | 71-139 | | E624.1 | 04/11/22 16:42 / eli-b |
| Surr: p-Bromofluorobenzene | 104 | %REC | | 80-127 | | E624.1 | 04/11/22 16:42 / eli-b |
| Surr: Toluene-d8 | 104 | %REC | | 80-123 | | E624.1 | 04/11/22 16:42 / eli-b |

**Report Definitions:**

RL - Analyte Reporting Limit
QCL - Quality Control Limit
J - Estimated value - analyte was present but less than the Reporting Limit (RL)
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
U - Not detected at Minimum Detectable Concentration (MDC)

# LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation
**Project:** UNC-SW Alluvium
**Lab ID:** C22040390-005
**Client Sample ID:** Field Blank

**Report Date:** 06/18/22
**Collection Date:** 04/08/22 13:45
**DateReceived:** 04/12/22
**Matrix:** Aqueous

| Analyses | Result | Units | Qualifiers | RL | MCL/ QCL | Method | Analysis Date / By |
|---|---|---|---|---|---|---|---|
| **MAJOR IONS** | | | | | | | |
| Bicarbonate as HCO3 | ND | mg/L | | 5 | | A2320 B | 04/13/22 19:41 / nts |
| Chloride | ND | mg/L | | 1 | | E300.0 | 04/15/22 10:27 / dmb |
| Sulfate | ND | mg/L | | 1 | | E300.0 | 04/15/22 10:27 / dmb |
| Calcium | ND | mg/L | | 1 | | E200.7 | 04/21/22 10:35 / erc |
| Magnesium | ND | mg/L | | 1 | | E200.7 | 04/21/22 10:35 / erc |
| Potassium | ND | mg/L | | 1 | | E200.7 | 04/21/22 10:35 / erc |
| Sodium | ND | mg/L | | 1 | | E200.7 | 04/21/22 10:35 / erc |
| **PHYSICAL PROPERTIES** | | | | | | | |
| pH | 5.9 | s.u. | H | 0.1 | | A4500-H B | 04/14/22 11:20 / mnm |
| pH Measurement Temp | 11.5 | °C | | | | A4500-H B | 04/14/22 11:20 / mnm |
| Solids, Total Dissolved TDS @ 180 C | ND | mg/L | | 20 | | A2540 C | 04/14/22 12:31 / mnm |
| - TDS did not obtain the minimum residue requirement of 2.5 mg residue. | | | | | | | |
| **NUTRIENTS** | | | | | | | |
| Nitrogen, Nitrate+Nitrite as N | ND | mg/L | | 0.05 | | E353.2 | 04/14/22 14:48 / nts |
| Nitrogen, Ammonia as N | ND | mg/L | | 0.05 | | E350.1 | 04/15/22 11:41 / nts |
| **METALS, TOTAL** | | | | | | | |
| Aluminum | ND | mg/L | | 0.03 | | E200.8 | 04/25/22 14:46 / jcg |
| Arsenic | ND | mg/L | | 0.001 | | E200.8 | 04/25/22 14:46 / jcg |
| Beryllium | ND | mg/L | | 0.001 | | E200.8 | 04/25/22 14:46 / jcg |
| Cadmium | ND | mg/L | | 0.001 | | E200.8 | 04/25/22 14:46 / jcg |
| Cobalt | ND | mg/L | | 0.005 | | E200.8 | 04/25/22 14:46 / jcg |
| Lead | ND | mg/L | | 0.001 | | E200.8 | 04/25/22 14:46 / jcg |
| Manganese | ND | mg/L | | 0.001 | | E200.8 | 04/25/22 14:46 / jcg |
| Molybdenum | ND | mg/L | | 0.001 | | E200.8 | 04/25/22 14:46 / jcg |
| Nickel | ND | mg/L | | 0.005 | | E200.8 | 04/25/22 14:46 / jcg |
| Selenium | ND | mg/L | | 0.001 | | E200.8 | 04/27/22 05:40 / jcg |
| Uranium | ND | mg/L | | 0.0003 | | E200.8 | 04/25/22 14:46 / jcg |
| Vanadium | ND | mg/L | | 0.01 | | E200.8 | 04/25/22 14:46 / jcg |
| **DATA QUALITY** | | | | | | | |
| Solids, Total Dissolved - Calculated | ND | mg/L | | 1.00 | | A1030 E | 04/22/22 18:52 / tlf |
| A/C Balance | 28.6 | % | | | | A1030 E | 04/22/22 18:52 / tlf |
| Anions | 0 | meq/L | | | | A1030 E | 04/22/22 18:52 / tlf |
| Cations | 0.01 | meq/L | | | | A1030 E | 04/22/22 18:52 / tlf |
| TDS Ratio | NA | unitless | | | | A1030 E | 04/22/22 18:52 / tlf |
| The Anion/Cation Balance Difference is <±0.2 meq/L | | | | | | | |
| **RADIONUCLIDES, TOTAL** | | | | | | | |
| Gross Alpha minus Rn & U | 0.09 | pCi/L | U | | | E900.1 | 04/26/22 20:44 / kdk |
| Gross Alpha minus Rn & U Precision (±) | 0.3 | pCi/L | | | | E900.1 | 04/26/22 20:44 / kdk |
| Gross Alpha minus Rn & U MDC | 0.6 | pCi/L | | | | E900.1 | 04/26/22 20:44 / kdk |
| Lead 210 | -2 | pCi/L | U | | | E909.0 | 04/21/22 16:21 / hat |

**Report Definitions:**
RL - Analyte Reporting Limit
QCL - Quality Control Limit
H - Analysis performed past the method holding time
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
U - Not detected at Minimum Detectable Concentration (MDC)

# LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation
**Project:** UNC-SW Alluvium
**Lab ID:** C22040390-005
**Client Sample ID:** Field Blank

**Report Date:** 06/18/22
**Collection Date:** 04/08/22 13:45
**DateReceived:** 04/12/22
**Matrix:** Aqueous

| Analyses | Result | Units | Qualifiers | RL | MCL/ QCL | Method | Analysis Date / By |
|---|---|---|---|---|---|---|---|
| **RADIONUCLIDES, TOTAL** | | | | | | | |
| Lead 210 precision (±) | 0.7 | pCi/L | | | | E909.0 | 04/21/22 16:21 / hat |
| Lead 210 MDC | 1.2 | pCi/L | | | | E909.0 | 04/21/22 16:21 / hat |
| Radium 226 | 0.2 | pCi/L | | | | E903.0 | 04/29/22 16:54 / trs |
| Radium 226 precision (±) | 0.07 | pCi/L | | | | E903.0 | 04/29/22 16:54 / trs |
| Radium 226 MDC | 0.1 | pCi/L | | | | E903.0 | 04/29/22 16:54 / trs |
| Radium 228 | 1.3 | pCi/L | U | | | RA-05 | 05/05/22 12:30 / trs |
| Radium 228 precision (±) | 0.9 | pCi/L | | | | RA-05 | 05/05/22 12:30 / trs |
| Radium 228 MDC | 1.4 | pCi/L | | | | RA-05 | 05/05/22 12:30 / trs |
| Radium 226 + Radium 228 | 1.5 | pCi/L | | | | A7500-RA | 05/09/22 12:33 / dmf |
| Radium 226 + Radium 228 precision (±) | 0.9 | pCi/L | | | | A7500-RA | 05/09/22 12:33 / dmf |
| Radium 226 + Radium 228 MDC | 1.4 | pCi/L | | | | A7500-RA | 05/09/22 12:33 / dmf |
| Thorium 230 | 0.1 | pCi/L | | | | A7500-U C | 04/21/22 13:52 / sec |
| Thorium 230 precision (±) | 0.07 | pCi/L | | | | A7500-U C | 04/21/22 13:52 / sec |
| Thorium 230 MDC | 0.09 | pCi/L | | | | A7500-U C | 04/21/22 13:52 / sec |
| **VOLATILE ORGANIC COMPOUNDS** | | | | | | | |
| Bromodichloromethane | 0.86 | ug/L | | 0.50 | | E624.1 | 04/17/22 17:50 / eli-b |
| Bromoform | 0.84 | ug/L | | 0.50 | | E624.1 | 04/17/22 17:50 / eli-b |
| Chlorodibromomethane | 1.2 | ug/L | | 0.50 | | E624.1 | 04/17/22 17:50 / eli-b |
| Chloroform | 0.54 | ug/L | | 0.50 | | E624.1 | 04/17/22 17:50 / eli-b |
| Trihalomethanes, Total | 3.4 | ug/L | | 0.50 | | E624.1 | 04/27/22 18:25 / tlf |
| Surr: 1,2-Dichloroethane-d4 | 102 | %REC | | 71-139 | | E624.1 | 04/17/22 17:50 / eli-b |
| Surr: p-Bromofluorobenzene | 102 | %REC | | 80-127 | | E624.1 | 04/17/22 17:50 / eli-b |
| Surr: Toluene-d8 | 108 | %REC | | 80-123 | | E624.1 | 04/17/22 17:50 / eli-b |

**Report Definitions:**
RL - Analyte Reporting Limit
QCL - Quality Control Limit
U - Not detected at Minimum Detectable Concentration (MDC)
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)

# LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation
**Project:** UNC-Zone 3, Swalluvium
**Lab ID:** C22040256-004
**Client Sample ID:** RINSATE

**Report Date:** 05/04/22
**Collection Date:** 04/05/22 14:30
**DateReceived:** 04/07/22
**Matrix:** Aqueous

| Analyses | Result | Units | Qualifiers | RL | MCL/ QCL | Method | Analysis Date / By |
|---|---|---|---|---|---|---|---|
| **MAJOR IONS** | | | | | | | |
| Bicarbonate as HCO3 | ND | mg/L | | 5 | | A2320 B | 04/11/22 13:35 / nts |
| Chloride | ND | mg/L | | 1 | | E300.0 | 04/11/22 17:55 / dmb |
| Sulfate | 1 | mg/L | | 1 | | E300.0 | 04/11/22 17:55 / dmb |
| Calcium | ND | mg/L | | 1 | | E200.8 | 04/19/22 04:26 / jcg |
| Magnesium | ND | mg/L | | 1 | | E200.8 | 04/19/22 04:26 / jcg |
| Potassium | ND | mg/L | | 1 | | E200.8 | 04/19/22 04:26 / jcg |
| Sodium | ND | mg/L | | 1 | | E200.8 | 04/19/22 04:26 / jcg |
| **PHYSICAL PROPERTIES** | | | | | | | |
| pH | 6.1 | s.u. | H | 0.1 | | A4500-H B | 04/08/22 12:18 / mnm |
| pH Measurement Temp | 18.0 | °C | | | | A4500-H B | 04/08/22 12:18 / mnm |
| Solids, Total Dissolved TDS @ 180 C | ND | mg/L | | 20 | | A2540 C | 04/08/22 14:45 / mnm |
| - TDS did not obtain the minimum residue requirement of 2.5 mg residue. | | | | | | | |
| **NUTRIENTS** | | | | | | | |
| Nitrogen, Nitrate+Nitrite as N | ND | mg/L | | 0.05 | | E353.2 | 04/08/22 12:24 / nts |
| Nitrogen, Ammonia as N | ND | mg/L | | 0.05 | | E350.1 | 04/13/22 10:50 / nts |
| **METALS, TOTAL** | | | | | | | |
| Aluminum | ND | mg/L | | 0.03 | | E200.8 | 04/20/22 05:25 / jcg |
| Arsenic | ND | mg/L | | 0.001 | | E200.8 | 04/20/22 05:25 / jcg |
| Beryllium | ND | mg/L | | 0.001 | | E200.8 | 04/20/22 05:25 / jcg |
| Cadmium | ND | mg/L | | 0.001 | | E200.8 | 04/20/22 05:25 / jcg |
| Cobalt | ND | mg/L | | 0.005 | | E200.8 | 04/20/22 05:25 / jcg |
| Lead | ND | mg/L | | 0.001 | | E200.8 | 04/20/22 05:25 / jcg |
| Manganese | ND | mg/L | | 0.001 | | E200.8 | 04/28/22 19:09 / jcg |
| Molybdenum | ND | mg/L | | 0.001 | | E200.8 | 04/23/22 00:58 / jcg |
| Nickel | ND | mg/L | | 0.005 | | E200.8 | 04/20/22 05:25 / jcg |
| Selenium | ND | mg/L | | 0.001 | | E200.8 | 04/20/22 05:25 / jcg |
| Uranium | ND | mg/L | | 0.0003 | | E200.8 | 04/23/22 00:58 / jcg |
| Vanadium | ND | mg/L | | 0.01 | | E200.8 | 04/20/22 05:25 / jcg |
| **DATA QUALITY** | | | | | | | |
| Solids, Total Dissolved - Calculated | ND | mg/L | | 1.00 | | A1030 E | 04/19/22 14:06 / tlf |
| A/C Balance | 2.57 | % | | | | A1030 E | 04/19/22 14:06 / tlf |
| Anions | 0.03 | meq/L | | | | A1030 E | 04/19/22 14:06 / tlf |
| Cations | 0.03 | meq/L | | | | A1030 E | 04/19/22 14:06 / tlf |
| TDS Ratio | NA | unitless | | | | A1030 E | 04/19/22 14:06 / tlf |
| The Anion/Cation Balance Difference is <±0.2 meq/L | | | | | | | |
| **RADIONUCLIDES, TOTAL** | | | | | | | |
| Gross Alpha minus Rn & U | -0.01 | pCi/L | U | | | E900.1 | 04/15/22 13:24 / kdk |
| Gross Alpha minus Rn & U Precision (±) | 0.6 | pCi/L | | | | E900.1 | 04/15/22 13:24 / kdk |
| Gross Alpha minus Rn & U MDC | 1 | pCi/L | | | | E900.1 | 04/15/22 13:24 / kdk |
| Lead 210 | 1.3 | pCi/L | | | | E909.0 | 04/16/22 12:47 / hat |

**Report Definitions:**
RL - Analyte Reporting Limit
QCL - Quality Control Limit
H - Analysis performed past the method holding time
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
U - Not detected at Minimum Detectable Concentration (MDC)

# LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation
**Project:** UNC-Zone 3, Swalluvium
**Lab ID:** C22040256-004
**Client Sample ID:** RINSATE

**Report Date:** 05/04/22
**Collection Date:** 04/05/22 14:30
**DateReceived:** 04/07/22
**Matrix:** Aqueous

| Analyses | Result | Units | Qualifiers | RL | MCL/ QCL | Method | Analysis Date / By |
|---|---|---|---|---|---|---|---|
| **RADIONUCLIDES, TOTAL** | | | | | | | |
| Lead 210 precision (±) | 0.7 | pCi/L | | | | E909.0 | 04/16/22 12:47 / hat |
| Lead 210 MDC | 0.9 | pCi/L | | | | E909.0 | 04/16/22 12:47 / hat |
| Radium 226 | -0.03 | pCi/L | U | | | E903.0 | 04/19/22 14:16 / kdk |
| Radium 226 precision (±) | 0.2 | pCi/L | | | | E903.0 | 04/19/22 14:16 / kdk |
| Radium 226 MDC | 0.3 | pCi/L | | | | E903.0 | 04/19/22 14:16 / kdk |
| Radium 228 | -0.5 | pCi/L | U | | | RA-05 | 04/14/22 15:29 / trs |
| Radium 228 precision (±) | 0.8 | pCi/L | | | | RA-05 | 04/14/22 15:29 / trs |
| Radium 228 MDC | 1.3 | pCi/L | | | | RA-05 | 04/14/22 15:29 / trs |
| Radium 226 + Radium 228 | -0.6 | pCi/L | U | | | A7500-RA | 04/20/22 14:59 / dmf |
| Radium 226 + Radium 228 precision (±) | 0.8 | pCi/L | | | | A7500-RA | 04/20/22 14:59 / dmf |
| Radium 226 + Radium 228 MDC | 1.4 | pCi/L | | | | A7500-RA | 04/20/22 14:59 / dmf |
| Thorium 230 | 0.1 | pCi/L | | | | A7500-U C | 04/14/22 15:55 / sec |
| Thorium 230 precision (±) | 0.05 | pCi/L | | | | A7500-U C | 04/14/22 15:55 / sec |
| Thorium 230 MDC | 0.07 | pCi/L | | | | A7500-U C | 04/14/22 15:55 / sec |
| **VOLATILE ORGANIC COMPOUNDS** | | | | | | | |
| Bromodichloromethane | 0.84 | ug/L | | 0.50 | | E624.1 | 04/11/22 16:15 / eli-b |
| Bromoform | 0.71 | ug/L | | 0.50 | | E624.1 | 04/11/22 16:15 / eli-b |
| Chlorodibromomethane | 1.1 | ug/L | | 0.50 | | E624.1 | 04/11/22 16:15 / eli-b |
| Chloroform | 0.53 | ug/L | | 0.50 | | E624.1 | 04/11/22 16:15 / eli-b |
| Trihalomethanes, Total | 3.2 | ug/L | | 0.50 | | E624.1 | 04/27/22 18:25 / tlf |
| Surr: 1,2-Dichloroethane-d4 | 97.0 | %REC | | 71-139 | | E624.1 | 04/11/22 16:15 / eli-b |
| Surr: p-Bromofluorobenzene | 107 | %REC | | 80-127 | | E624.1 | 04/11/22 16:15 / eli-b |
| Surr: Toluene-d8 | 109 | %REC | | 80-123 | | E624.1 | 04/11/22 16:15 / eli-b |

**Report Definitions:**
RL - Analyte Reporting Limit
QCL - Quality Control Limit
U - Not detected at Minimum Detectable Concentration (MDC)
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)

# LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation
**Project:** UNC-SW Alluvium
**Lab ID:** C22040390-004
**Client Sample ID:** Rinsate

**Report Date:** 06/18/22
**Collection Date:** 04/08/22 13:15
**DateReceived:** 04/12/22
**Matrix:** Aqueous

| Analyses | Result | Units | Qualifiers | RL | MCL/ QCL | Method | Analysis Date / By |
|---|---|---|---|---|---|---|---|
| **MAJOR IONS** | | | | | | | |
| Bicarbonate as HCO3 | ND | mg/L | | 5 | | A2320 B | 04/13/22 19:33 / nts |
| Chloride | ND | mg/L | | 1 | | E300.0 | 04/15/22 09:30 / dmb |
| Sulfate | ND | mg/L | | 1 | | E300.0 | 04/15/22 09:30 / dmb |
| Calcium | ND | mg/L | | 1 | | E200.7 | 04/21/22 10:30 / erc |
| Magnesium | ND | mg/L | | 1 | | E200.7 | 04/21/22 10:30 / erc |
| Potassium | ND | mg/L | | 1 | | E200.7 | 04/21/22 10:30 / erc |
| Sodium | ND | mg/L | | 1 | | E200.7 | 04/21/22 10:30 / erc |
| **PHYSICAL PROPERTIES** | | | | | | | |
| pH | 6.1 | s.u. | H | 0.1 | | A4500-H B | 04/14/22 11:17 / mnm |
| pH Measurement Temp | 11.4 | °C | | | | A4500-H B | 04/14/22 11:17 / mnm |
| Solids, Total Dissolved TDS @ 180 C | ND | mg/L | | 20 | | A2540 C | 04/14/22 12:31 / mnm |
| - TDS did not obtain the minimum residue requirement of 2.5 mg residue. | | | | | | | |
| **NUTRIENTS** | | | | | | | |
| Nitrogen, Nitrate+Nitrite as N | ND | mg/L | | 0.05 | | E353.2 | 04/14/22 14:44 / nts |
| Nitrogen, Ammonia as N | ND | mg/L | | 0.05 | | E350.1 | 04/15/22 11:40 / nts |
| **METALS, TOTAL** | | | | | | | |
| Aluminum | ND | mg/L | | 0.03 | | E200.8 | 04/25/22 14:42 / jcg |
| Arsenic | ND | mg/L | | 0.001 | | E200.8 | 04/25/22 14:42 / jcg |
| Beryllium | ND | mg/L | | 0.001 | | E200.8 | 04/25/22 14:42 / jcg |
| Cadmium | ND | mg/L | | 0.001 | | E200.8 | 04/25/22 14:42 / jcg |
| Cobalt | ND | mg/L | | 0.005 | | E200.8 | 04/25/22 14:42 / jcg |
| Lead | ND | mg/L | | 0.001 | | E200.8 | 04/25/22 14:42 / jcg |
| Manganese | ND | mg/L | | 0.001 | | E200.8 | 04/25/22 14:42 / jcg |
| Molybdenum | ND | mg/L | | 0.001 | | E200.8 | 04/25/22 14:42 / jcg |
| Nickel | ND | mg/L | | 0.005 | | E200.8 | 04/25/22 14:42 / jcg |
| Selenium | ND | mg/L | | 0.001 | | E200.8 | 04/27/22 05:35 / jcg |
| Uranium | ND | mg/L | | 0.0003 | | E200.8 | 04/25/22 14:42 / jcg |
| Vanadium | ND | mg/L | | 0.01 | | E200.8 | 04/25/22 14:42 / jcg |
| **DATA QUALITY** | | | | | | | |
| Solids, Total Dissolved - Calculated | ND | mg/L | | 1.00 | | A1030 E | 04/22/22 18:51 / tlf |
| A/C Balance | 34.0 | % | | | | A1030 E | 04/22/22 18:51 / tlf |
| Anions | 0 | meq/L | | | | A1030 E | 04/22/22 18:51 / tlf |
| Cations | 0.02 | meq/L | | | | A1030 E | 04/22/22 18:51 / tlf |
| TDS Ratio | NA | unitless | | | | A1030 E | 04/22/22 18:51 / tlf |
| The Anion/Cation Balance Difference is <±0.2 meq/L | | | | | | | |
| **RADIONUCLIDES, TOTAL** | | | | | | | |
| Gross Alpha minus Rn & U | 0.3 | pCi/L | U | | | E900.1 | 04/26/22 20:44 / kdk |
| Gross Alpha minus Rn & U Precision (±) | 0.3 | pCi/L | | | | E900.1 | 04/26/22 20:44 / kdk |
| Gross Alpha minus Rn & U MDC | 0.6 | pCi/L | | | | E900.1 | 04/26/22 20:44 / kdk |
| Lead 210 | -1 | pCi/L | U | | | E909.0 | 04/21/22 16:21 / hat |

**Report Definitions:**
RL - Analyte Reporting Limit
QCL - Quality Control Limit
H - Analysis performed past the method holding time
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
U - Not detected at Minimum Detectable Concentration (MDC)

# LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation
**Project:** UNC-SW Alluvium
**Lab ID:** C22040390-004
**Client Sample ID:** Rinsate

**Report Date:** 06/18/22
**Collection Date:** 04/08/22 13:15
**DateReceived:** 04/12/22
**Matrix:** Aqueous

| Analyses | Result | Units | Qualifiers | RL | MCL/ QCL | Method | Analysis Date / By |
|---|---|---|---|---|---|---|---|
| **RADIONUCLIDES, TOTAL** | | | | | | | |
| Lead 210 precision (±) | 0.7 | pCi/L | | | | E909.0 | 04/21/22 16:21 / hat |
| Lead 210 MDC | 1.2 | pCi/L | | | | E909.0 | 04/21/22 16:21 / hat |
| Radium 226 | 0.03 | pCi/L | U | | | E903.0 | 04/28/22 21:19 / trs |
| Radium 226 precision (±) | 0.08 | pCi/L | | | | E903.0 | 04/28/22 21:19 / trs |
| Radium 226 MDC | 0.1 | pCi/L | | | | E903.0 | 04/28/22 21:19 / trs |
| Radium 228 | 0.4 | pCi/L | U | | | RA-05 | 05/05/22 12:30 / trs |
| Radium 228 precision (±) | 0.9 | pCi/L | | | | RA-05 | 05/05/22 12:30 / trs |
| Radium 228 MDC | 1.4 | pCi/L | | | | RA-05 | 05/05/22 12:30 / trs |
| Radium 226 + Radium 228 | 0.6 | pCi/L | U | | | A7500-RA | 05/09/22 12:33 / dmf |
| Radium 226 + Radium 228 precision (±) | 0.9 | pCi/L | | | | A7500-RA | 05/09/22 12:33 / dmf |
| Radium 226 + Radium 228 MDC | 1.4 | pCi/L | | | | A7500-RA | 05/09/22 12:33 / dmf |
| Thorium 230 | 0.1 | pCi/L | | | | A7500-U C | 04/21/22 13:52 / sec |
| Thorium 230 precision (±) | 0.06 | pCi/L | | | | A7500-U C | 04/21/22 13:52 / sec |
| Thorium 230 MDC | 0.08 | pCi/L | | | | A7500-U C | 04/21/22 13:52 / sec |
| **VOLATILE ORGANIC COMPOUNDS** | | | | | | | |
| Bromodichloromethane | 1.1 | ug/L | | 0.50 | | E624.1 | 04/17/22 17:23 / eli-b |
| Bromoform | 0.85 | ug/L | | 0.50 | | E624.1 | 04/17/22 17:23 / eli-b |
| Chlorodibromomethane | 1.5 | ug/L | | 0.50 | | E624.1 | 04/17/22 17:23 / eli-b |
| Chloroform | 0.77 | ug/L | | 0.50 | | E624.1 | 04/17/22 17:23 / eli-b |
| Trihalomethanes, Total | 4.3 | ug/L | | 0.50 | | E624.1 | 04/27/22 18:25 / tlf |
| Surr: 1,2-Dichloroethane-d4 | 101 | %REC | | 71-139 | | E624.1 | 04/17/22 17:23 / eli-b |
| Surr: p-Bromofluorobenzene | 105 | %REC | | 80-127 | | E624.1 | 04/17/22 17:23 / eli-b |
| Surr: Toluene-d8 | 111 | %REC | | 80-123 | | E624.1 | 04/17/22 17:23 / eli-b |

**Report Definitions:**
RL - Analyte Reporting Limit
QCL - Quality Control Limit
U - Not detected at Minimum Detectable Concentration (MDC)
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)

# LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation
**Project:** UNC-Zone 1, Zone 3
**Lab ID:** C22040181-005
**Client Sample ID:** Trip Blank-81031; EPA DUP, 142, NW-3

**Report Date:** 04/29/22
**Collection Date:** 04/04/22 10:50
**DateReceived:** 04/06/22
**Matrix:** Trip Blank

| Analyses | Result | Units | Qualifiers | RL | MCL/ QCL | Method | Analysis Date / By |
|---|---|---|---|---|---|---|---|
| **VOLATILE ORGANIC COMPOUNDS** | | | | | | | |
| Bromodichloromethane | ND | ug/L | | 0.50 | | E624.1 | 04/11/22 13:58 / eli-b |
| Bromoform | ND | ug/L | | 0.50 | | E624.1 | 04/11/22 13:58 / eli-b |
| Chlorodibromomethane | ND | ug/L | | 0.50 | | E624.1 | 04/11/22 13:58 / eli-b |
| Chloroform | ND | ug/L | | 0.50 | | E624.1 | 04/11/22 13:58 / eli-b |
| Trihalomethanes, Total | ND | ug/L | | 0.50 | | E624.1 | 04/27/22 18:25 / tlf |
| Surr: 1,2-Dichloroethane-d4 | 102 | %REC | | 71-139 | | E624.1 | 04/11/22 13:58 / eli-b |
| Surr: p-Bromofluorobenzene | 102 | %REC | | 80-127 | | E624.1 | 04/11/22 13:58 / eli-b |
| Surr: Toluene-d8 | 108 | %REC | | 80-123 | | E624.1 | 04/11/22 13:58 / eli-b |

**Report Definitions:**
RL - Analyte Reporting Limit
QCL - Quality Control Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)

# LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation
**Project:** UNC-Zone 3, Swalluvium
**Lab ID:** C22040256-006
**Client Sample ID:** TRIP BLANK - 81031 , EPA-4/EPA-5

**Report Date:** 05/04/22
**Collection Date:** 04/05/22 11:25
**DateReceived:** 04/07/22
**Matrix:** Aqueous

| Analyses | Result | Units | Qualifiers | RL | MCL/ QCL | Method | Analysis Date / By |
|---|---|---|---|---|---|---|---|
| **VOLATILE ORGANIC COMPOUNDS** | | | | | | | |
| Bromodichloromethane | ND | ug/L | | 0.50 | | E624.1 | 04/11/22 14:26 / eli-b |
| Bromoform | ND | ug/L | | 0.50 | | E624.1 | 04/11/22 14:26 / eli-b |
| Chlorodibromomethane | ND | ug/L | | 0.50 | | E624.1 | 04/11/22 14:26 / eli-b |
| Chloroform | ND | ug/L | | 0.50 | | E624.1 | 04/11/22 14:26 / eli-b |
| Surr: 1,2-Dichloroethane-d4 | 97.0 | %REC | | 71-139 | | E624.1 | 04/11/22 14:26 / eli-b |
| Surr: p-Bromofluorobenzene | 105 | %REC | | 80-127 | | E624.1 | 04/11/22 14:26 / eli-b |
| Surr: Toluene-d8 | 103 | %REC | | 80-123 | | E624.1 | 04/11/22 14:26 / eli-b |

**Report Definitions:**
RL - Analyte Reporting Limit
QCL - Quality Control Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)

# LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation
**Project:** UNC-Zone 3, Swalluvium
**Lab ID:** C22040256-007
**Client Sample ID:** TRIP BLANK - 80352, SBL-1/Rinsate/Field Blank

**Report Date:** 05/04/22
**Collection Date:** 04/05/22 13:48
**DateReceived:** 04/07/22
**Matrix:** Trip Blank

| Analyses | Result | Units | Qualifiers | RL | MCL/ QCL | Method | Analysis Date / By |
|---|---|---|---|---|---|---|---|
| **VOLATILE ORGANIC COMPOUNDS** | | | | | | | |
| Bromodichloromethane | ND | ug/L | | 0.50 | | E624.1 | 04/11/22 14:53 / eli-b |
| Bromoform | ND | ug/L | | 0.50 | | E624.1 | 04/11/22 14:53 / eli-b |
| Chlorodibromomethane | ND | ug/L | | 0.50 | | E624.1 | 04/11/22 14:53 / eli-b |
| Chloroform | ND | ug/L | | 0.50 | | E624.1 | 04/11/22 14:53 / eli-b |
| Surr: 1,2-Dichloroethane-d4 | 102 | %REC | | 71-139 | | E624.1 | 04/11/22 14:53 / eli-b |
| Surr: p-Bromofluorobenzene | 105 | %REC | | 80-127 | | E624.1 | 04/11/22 14:53 / eli-b |
| Surr: Toluene-d8 | 107 | %REC | | 80-123 | | E624.1 | 04/11/22 14:53 / eli-b |

**Report Definitions:**
RL - Analyte Reporting Limit
QCL - Quality Control Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)

# LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation
**Project:** UNC-Zone 1 and Zone 3
**Lab ID:** C22040142-013
**Client Sample ID:** Trip Blank 1-80352; 515-A, 708, 717 Duplicate

**Report Date:** 06/03/22
**Collection Date:** 03/31/22 10:42
**DateReceived:** 04/05/22
**Matrix:** Trip Blank

| Analyses | Result | Units | Qualifiers | RL | MCL/ QCL | Method | Analysis Date / By |
|---|---|---|---|---|---|---|---|
| **VOLATILE ORGANIC COMPOUNDS** | | | | | | | |
| Bromodichloromethane | ND | ug/L | | 1.0 | | E624.1 | 04/13/22 14:49 / etad |
| Bromoform | ND | ug/L | | 2.0 | | E624.1 | 04/13/22 14:49 / etad |
| Chlorodibromomethane | ND | ug/L | | 1.0 | | E624.1 | 04/13/22 14:49 / etad |
| Chloroform | ND | ug/L | | 1.0 | | E624.1 | 04/13/22 14:49 / etad |
| Trihalomethanes, Total | ND | ug/L | | 0.50 | | E624.1 | 04/27/22 18:25 / tlf |
| Surr: 1,2-Dichloroethane-d4 | 103 | %REC | | 73-122 | | E624.1 | 04/13/22 14:49 / etad |
| Surr: p-Bromofluorobenzene | 98.0 | %REC | | 79-119 | | E624.1 | 04/13/22 14:49 / etad |
| Surr: Toluene-d8 | 102 | %REC | | 80-120 | | E624.1 | 04/13/22 14:49 / etad |

**Report Definitions:**
RL - Analyte Reporting Limit
QCL - Quality Control Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)

# LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation
**Project:** UNC-Zone 1 and Zone 3
**Lab ID:** C22040142-014
**Client Sample ID:** Trip Blank 2-80352; 604, 614, 717

**Report Date:** 06/03/22
**Collection Date:** 03/31/22 09:08
**DateReceived:** 04/05/22
**Matrix:** Trip Blank

| Analyses | Result | Units | Qualifiers | RL | MCL/ QCL | Method | Analysis Date / By |
|---|---|---|---|---|---|---|---|
| **VOLATILE ORGANIC COMPOUNDS** | | | | | | | |
| Bromodichloromethane | ND | ug/L | | 1.0 | | E624.1 | 04/13/22 15:10 / etad |
| Bromoform | ND | ug/L | | 2.0 | | E624.1 | 04/13/22 15:10 / etad |
| Chlorodibromomethane | ND | ug/L | | 1.0 | | E624.1 | 04/13/22 15:10 / etad |
| Chloroform | ND | ug/L | | 1.0 | | E624.1 | 04/13/22 15:10 / etad |
| Trihalomethanes, Total | ND | ug/L | | 0.50 | | E624.1 | 04/27/22 18:25 / tlf |
| Surr: 1,2-Dichloroethane-d4 | 102 | %REC | | 73-122 | | E624.1 | 04/13/22 15:10 / etad |
| Surr: p-Bromofluorobenzene | 97.0 | %REC | | 79-119 | | E624.1 | 04/13/22 15:10 / etad |
| Surr: Toluene-d8 | 100 | %REC | | 80-120 | | E624.1 | 04/13/22 15:10 / etad |

**Report Definitions:**
RL - Analyte Reporting Limit
QCL - Quality Control Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)

# LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation
**Project:** UNC-Zone 1 and Zone 3
**Lab ID:** C22040142-015
**Client Sample ID:** Trip Blank 3-79121; EPA-7, 719, 711

**Report Date:** 06/03/22
**Collection Date:** 03/31/22 12:40
**DateReceived:** 04/05/22
**Matrix:** Trip Blank

| Analyses | Result | Units | Qualifiers | RL | MCL/ QCL | Method | Analysis Date / By |
|---|---|---|---|---|---|---|---|
| **VOLATILE ORGANIC COMPOUNDS** | | | | | | | |
| Bromodichloromethane | ND | ug/L | | 1.0 | | E624.1 | 04/13/22 15:31 / etad |
| Bromoform | ND | ug/L | | 2.0 | | E624.1 | 04/13/22 15:31 / etad |
| Chlorodibromomethane | ND | ug/L | | 1.0 | | E624.1 | 04/13/22 15:31 / etad |
| Chloroform | ND | ug/L | | 1.0 | | E624.1 | 04/13/22 15:31 / etad |
| Trihalomethanes, Total | ND | ug/L | | 0.50 | | E624.1 | 04/27/22 18:25 / tlf |
| Surr: 1,2-Dichloroethane-d4 | 104 | %REC | | 73-122 | | E624.1 | 04/13/22 15:31 / etad |
| Surr: p-Bromofluorobenzene | 98.0 | %REC | | 79-119 | | E624.1 | 04/13/22 15:31 / etad |
| Surr: Toluene-d8 | 99.0 | %REC | | 80-120 | | E624.1 | 04/13/22 15:31 / etad |

**Report Definitions:**
RL - Analyte Reporting Limit
QCL - Quality Control Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)

# LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation
**Project:** UNC-Zone 1 and Zone 3
**Lab ID:** C22040142-016
**Client Sample ID:** Trip Blank 4-80352; 613, EPA-14, EPA-13

**Report Date:** 06/03/22
**Collection Date:** 03/31/22 13:31
**DateReceived:** 04/05/22
**Matrix:** Trip Blank

| Analyses | Result | Units | Qualifiers | RL | MCL/ QCL | Method | Analysis Date / By |
|---|---|---|---|---|---|---|---|
| **VOLATILE ORGANIC COMPOUNDS** | | | | | | | |
| Bromodichloromethane | ND | ug/L | | 1.0 | | E624.1 | 04/13/22 15:52 / etad |
| Bromoform | ND | ug/L | | 2.0 | | E624.1 | 04/13/22 15:52 / etad |
| Chlorodibromomethane | ND | ug/L | | 1.0 | | E624.1 | 04/13/22 15:52 / etad |
| Chloroform | ND | ug/L | | 1.0 | | E624.1 | 04/13/22 15:52 / etad |
| Trihalomethanes, Total | ND | ug/L | | 0.50 | | E624.1 | 04/27/22 18:25 / tlf |
| Surr: 1,2-Dichloroethane-d4 | 103 | %REC | | 73-122 | | E624.1 | 04/13/22 15:52 / etad |
| Surr: p-Bromofluorobenzene | 98.0 | %REC | | 79-119 | | E624.1 | 04/13/22 15:52 / etad |
| Surr: Toluene-d8 | 100 | %REC | | 80-120 | | E624.1 | 04/13/22 15:52 / etad |

**Report Definitions:**
RL - Analyte Reporting Limit
QCL - Quality Control Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)

# LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation
**Project:** UNC-Zone 3
**Lab ID:** C22040188-003
**Client Sample ID:** Trip Blank-81031

**Report Date:** 04/29/22
**Collection Date:** 04/04/22 09:28
**DateReceived:** 04/06/22
**Matrix:** Trip Blank

| Analyses | Result | Units | Qualifiers | RL | MCL/ QCL | Method | Analysis Date / By |
|---|---|---|---|---|---|---|---|
| **VOLATILE ORGANIC COMPOUNDS** | | | | | | | |
| Bromodichloromethane | ND | ug/L | | 1.0 | | E624.1 | 04/15/22 19:47 / etad |
| Bromoform | ND | ug/L | | 2.0 | | E624.1 | 04/15/22 19:47 / etad |
| Chlorodibromomethane | ND | ug/L | | 1.0 | | E624.1 | 04/15/22 19:47 / etad |
| Chloroform | ND | ug/L | | 1.0 | | E624.1 | 04/15/22 19:47 / etad |
| Trihalomethanes, Total | ND | ug/L | | 0.50 | | E624.1 | 04/27/22 18:25 / tlf |
| Surr: 1,2-Dichloroethane-d4 | 104 | %REC | | 73-122 | | E624.1 | 04/15/22 19:47 / etad |
| Surr: p-Bromofluorobenzene | 102 | %REC | | 79-119 | | E624.1 | 04/15/22 19:47 / etad |
| Surr: Toluene-d8 | 104 | %REC | | 80-120 | | E624.1 | 04/15/22 19:47 / etad |

**Report Definitions:**
RL - Analyte Reporting Limit
QCL - Quality Control Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)

# LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation
**Project:** UNC-SW Alluvium
**Lab ID:** C22040413-011
**Client Sample ID:** Trip Blank 1-80352; Field Blank, 509-D, 803

**Report Date:** 06/18/22
**Collection Date:** 04/07/22 09:12
**DateReceived:** 04/12/22
**Matrix:** Trip Blank

| Analyses | Result | Units | Qualifiers | RL | MCL/ QCL | Method | Analysis Date / By |
|---|---|---|---|---|---|---|---|
| **VOLATILE ORGANIC COMPOUNDS** | | | | | | | |
| Bromodichloromethane | ND | ug/L | | 1.0 | | E624.1 | 04/21/22 13:52 / etad |
| Bromoform | ND | ug/L | | 2.0 | | E624.1 | 04/21/22 13:52 / etad |
| Chlorodibromomethane | ND | ug/L | | 1.0 | | E624.1 | 04/21/22 13:52 / etad |
| Chloroform | ND | ug/L | | 1.0 | | E624.1 | 04/21/22 13:52 / etad |
| Trihalomethanes, Total | ND | ug/L | | 0.50 | | E624.1 | 04/27/22 18:25 / tlf |
| Surr: 1,2-Dichloroethane-d4 | 97.0 | %REC | | 73-122 | | E624.1 | 04/21/22 13:52 / etad |
| Surr: p-Bromofluorobenzene | 96.0 | %REC | | 79-119 | | E624.1 | 04/21/22 13:52 / etad |
| Surr: Toluene-d8 | 102 | %REC | | 80-120 | | E624.1 | 04/21/22 13:52 / etad |

**Report Definitions:**
RL - Analyte Reporting Limit
QCL - Quality Control Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)

# LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation
**Project:** UNC-SW Alluvium
**Lab ID:** C22040413-012
**Client Sample ID:** Trip Blank 3-80352; 808, 632, EPA-23

**Report Date:** 06/18/22
**Collection Date:** 04/07/22 10:35
**DateReceived:** 04/12/22
**Matrix:** Trip Blank

| Analyses | Result | Units | Qualifiers | RL | MCL/ QCL | Method | Analysis Date / By |
|---|---|---|---|---|---|---|---|
| **VOLATILE ORGANIC COMPOUNDS** | | | | | | | |
| Bromodichloromethane | ND | ug/L | | 1.0 | | E624.1 | 04/21/22 14:13 / etad |
| Bromoform | ND | ug/L | | 2.0 | | E624.1 | 04/21/22 14:13 / etad |
| Chlorodibromomethane | ND | ug/L | | 1.0 | | E624.1 | 04/21/22 14:13 / etad |
| Chloroform | ND | ug/L | | 1.0 | | E624.1 | 04/21/22 14:13 / etad |
| Trihalomethanes, Total | ND | ug/L | | 0.50 | | E624.1 | 04/27/22 18:25 / tlf |
| Surr: 1,2-Dichloroethane-d4 | 97.0 | %REC | | 73-122 | | E624.1 | 04/21/22 14:13 / etad |
| Surr: p-Bromofluorobenzene | 94.0 | %REC | | 79-119 | | E624.1 | 04/21/22 14:13 / etad |
| Surr: Toluene-d8 | 101 | %REC | | 80-120 | | E624.1 | 04/21/22 14:13 / etad |

**Report Definitions:**
RL - Analyte Reporting Limit
QCL - Quality Control Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)

# LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation
**Project:** UNC-SW Alluvium
**Lab ID:** C22040413-013
**Client Sample ID:** Trip Blank 4-80352; EPA-28, 801, 802

**Report Date:** 06/18/22
**Collection Date:** 04/07/22 13:05
**DateReceived:** 04/12/22
**Matrix:** Trip Blank

| Analyses | Result | Units | Qualifiers | RL | MCL/ QCL | Method | Analysis Date / By |
|---|---|---|---|---|---|---|---|
| **VOLATILE ORGANIC COMPOUNDS** | | | | | | | |
| Bromodichloromethane | ND | ug/L | | 1.0 | | E624.1 | 04/21/22 14:35 / etad |
| Bromoform | ND | ug/L | | 2.0 | | E624.1 | 04/21/22 14:35 / etad |
| Chlorodibromomethane | ND | ug/L | | 1.0 | | E624.1 | 04/21/22 14:35 / etad |
| Chloroform | ND | ug/L | | 1.0 | | E624.1 | 04/21/22 14:35 / etad |
| Trihalomethanes, Total | ND | ug/L | | 0.50 | | E624.1 | 04/27/22 18:25 / tlf |
| Surr: 1,2-Dichloroethane-d4 | 99.0 | %REC | | 73-122 | | E624.1 | 04/21/22 14:35 / etad |
| Surr: p-Bromofluorobenzene | 95.0 | %REC | | 79-119 | | E624.1 | 04/21/22 14:35 / etad |
| Surr: Toluene-d8 | 101 | %REC | | 80-120 | | E624.1 | 04/21/22 14:35 / etad |

**Report Definitions:**
RL - Analyte Reporting Limit
QCL - Quality Control Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)

# LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation
**Project:** UNC-SW Alluvium
**Lab ID:** C22040413-014
**Client Sample ID:** Trip Blank 5-80352; EPA-28 DUP, GW-1, 624

**Report Date:** 06/18/22
**Collection Date:** 04/07/22 15:30
**DateReceived:** 04/12/22
**Matrix:** Trip Blank

| Analyses | Result | Units | Qualifiers | RL | MCL/ QCL | Method | Analysis Date / By |
|---|---|---|---|---|---|---|---|
| **VOLATILE ORGANIC COMPOUNDS** | | | | | | | |
| Bromodichloromethane | ND | ug/L | | 1.0 | | E624.1 | 04/21/22 14:56 / etad |
| Bromoform | ND | ug/L | | 2.0 | | E624.1 | 04/21/22 14:56 / etad |
| Chlorodibromomethane | ND | ug/L | | 1.0 | | E624.1 | 04/21/22 14:56 / etad |
| Chloroform | ND | ug/L | | 1.0 | | E624.1 | 04/21/22 14:56 / etad |
| Trihalomethanes, Total | ND | ug/L | | 0.50 | | E624.1 | 04/27/22 18:25 / tlf |
| Surr: 1,2-Dichloroethane-d4 | 100 | %REC | | 73-122 | | E624.1 | 04/21/22 14:56 / etad |
| Surr: p-Bromofluorobenzene | 97.0 | %REC | | 79-119 | | E624.1 | 04/21/22 14:56 / etad |
| Surr: Toluene-d8 | 100 | %REC | | 80-120 | | E624.1 | 04/21/22 14:56 / etad |

**Report Definitions:**
RL - Analyte Reporting Limit
QCL - Quality Control Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)

# LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation
**Project:** UNC-SW Alluvium
**Lab ID:** C22040413-015
**Client Sample ID:** Trip Blank 6-81031; Rinsate, 627, EPA-25

**Report Date:** 06/18/22
**Collection Date:** 04/08/22 11:36
**DateReceived:** 04/12/22
**Matrix:** Trip Blank

| Analyses | Result | Units | Qualifiers | RL | MCL/ QCL | Method | Analysis Date / By |
|---|---|---|---|---|---|---|---|
| **VOLATILE ORGANIC COMPOUNDS** | | | | | | | |
| Bromodichloromethane | ND | ug/L | | 1.0 | | E624.1 | 04/21/22 15:18 / etad |
| Bromoform | ND | ug/L | | 2.0 | | E624.1 | 04/21/22 15:18 / etad |
| Chlorodibromomethane | ND | ug/L | | 1.0 | | E624.1 | 04/21/22 15:18 / etad |
| Chloroform | ND | ug/L | | 1.0 | | E624.1 | 04/21/22 15:18 / etad |
| Trihalomethanes, Total | ND | ug/L | | 0.50 | | E624.1 | 04/27/22 18:25 / tlf |
| Surr: 1,2-Dichloroethane-d4 | 98.0 | %REC | | 73-122 | | E624.1 | 04/21/22 15:18 / etad |
| Surr: p-Bromofluorobenzene | 94.0 | %REC | | 79-119 | | E624.1 | 04/21/22 15:18 / etad |
| Surr: Toluene-d8 | 100 | %REC | | 80-120 | | E624.1 | 04/21/22 15:18 / etad |

**Report Definitions:**
RL - Analyte Reporting Limit
QCL - Quality Control Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)

# LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation
**Project:** UNC-Sentinel Wells
**Lab ID:** C22040416-003
**Client Sample ID:** Trip Blank-80352

**Report Date:** 06/18/22
**Collection Date:** 04/11/22 10:15
**DateReceived:** 04/12/22
**Matrix:** Trip Blank

| Analyses | Result | Units | Qualifiers | RL | MCL/ QCL | Method | Analysis Date / By |
|---|---|---|---|---|---|---|---|
| **VOLATILE ORGANIC COMPOUNDS** | | | | | | | |
| Bromodichloromethane | ND | ug/L | | 0.50 | | E624.1 | 04/17/22 16:56 / eli-b |
| Bromoform | ND | ug/L | | 0.50 | | E624.1 | 04/17/22 16:56 / eli-b |
| Chlorodibromomethane | ND | ug/L | | 0.50 | | E624.1 | 04/17/22 16:56 / eli-b |
| Chloroform | ND | ug/L | | 0.50 | | E624.1 | 04/17/22 16:56 / eli-b |
| Trihalomethanes, Total | ND | ug/L | | 0.50 | | E624.1 | 04/27/22 18:25 / tlf |
| Surr: 1,2-Dichloroethane-d4 | 100 | %REC | | 71-139 | | E624.1 | 04/17/22 16:56 / eli-b |
| Surr: p-Bromofluorobenzene | 103 | %REC | | 80-127 | | E624.1 | 04/17/22 16:56 / eli-b |
| Surr: Toluene-d8 | 105 | %REC | | 80-123 | | E624.1 | 04/17/22 16:56 / eli-b |

**Report Definitions:**
RL - Analyte Reporting Limit
QCL - Quality Control Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)

| 6/18/2022 | | | | | |
|---|---|---|---|---|---|
| Guideline 8: Sweetwater | | | | | |
| Well ID: | | EPA-28 | EPA-28 | EPA-28 | EPA-28 |
| Collection Date: | | 4/8/2022 | 1/18/2022 | 10/11/2021 | 7/19/2021 |
| Receive Date: | | 4/12/2022 | 1/25/2022 | 10/14/2021 | 7/21/2021 |
| Report Date: | | 6/18/2022 | 3/7/2022 | 12/3/2021 | 8/27/2021 |
| **Analyte** | **Units** | **C22040390-001** | **C22010739-001** | **C21100526-010** | **C21070842-008** |
| Bicarbonate as HCO3 | mg/L | 454 | 448 | 457 | 483 |
| Calcium | mg/L | 498 | 500 | 509 | 505 |
| Chloride | mg/L | 91 | 98 | 100 | 101 |
| Magnesium | mg/L | 448 | 458 | 447 | 457 |
| Potassium | mg/L | 11 | 10 | 11 | 12 |
| Sodium | mg/L | 226 | 234 | 235 | 235 |
| Sulfate | mg/L | 2950 | 3160 | 3240 | 3210 |
| pH | s.u. | 7.0 | 7.0 | 7.0 | 6.9 |
| pH Measurement Temp | °C | 10.7 | 15.7 | 13.5 | 14.8 |
| Solids, Total Dissolved TDS @ 180 C | mg/L | 5010 | 5030 | 5060 | 5070 |
| Solids, Total Dissolved - Calculated | mg/L | 4470 | 4700 | 4780 | 4760 |
| Nitrogen, Ammonia as N | mg/L | ND(0.05) | ND(0.05) | ND(0.05) | ND(0.05) |
| Nitrogen, Nitrate+Nitrite as N | mg/L | 0.12 | 0.53 | 0.53 | 0.38 |
| Aluminum | mg/L | 0.18 | ND(0.03) | ND(0.09) | 0.45 |
| Arsenic | mg/L | ND(0.001) | ND(0.001) | ND(0.02) | ND(0.001) |
| Beryllium | mg/L | ND(0.001) | ND(0.001) | ND(0.001) | ND(0.001) |
| Cadmium | mg/L | ND(0.001) | ND(0.001) | ND(0.001) | ND(0.001) |
| Cobalt | mg/L | ND(0.005) | ND(0.005) | ND(0.005) | ND(0.005) |
| Lead | mg/L | ND(0.001) | ND(0.001) | ND(0.001) | 0.001 |
| Manganese | mg/L | 0.740 | 0.162 | 0.346 | 0.453 |
| Molybdenum | mg/L | ND(0.001) | ND(0.001) | ND(0.001) | 0.001 |
| Nickel | mg/L | 0.009 | ND(0.005) | 0.007 | 0.007 |
| Selenium | mg/L | ND(0.001) | ND(0.001) | ND(0.001) | ND(0.001) |
| Uranium | mg/L | 0.015 | 0.0142 | 0.014 | 0.0155 |
| Vanadium | mg/L | ND(0.01) | ND(0.01) | ND(0.01) | ND(0.01) |
| A/C Balance | % | 0.26 | -1.90 | -3.35 | -2.86 |
| Anions | meq/L | 71.5 | 75.9 | 77.7 | 77.6 |
| Cations | meq/L | 71.9 | 73.1 | 72.7 | 73.3 |
| TDS Ratio | unitless | 1.12 | 1.07 | 1.06 | 1.07 |
| Gross Alpha minus Rn & U | pCi/L | 0.6 | 0.3 | 0.7 | 0.3 |
| Gross Alpha minus Rn & U MDC | pCi/L | 0.6 | 0.5 | 0.7 | 0.8 |
| Gross Alpha minus Rn & U Precision (±) | pCi/L | 0.4 | 0.3 | 0.6 | 0.5 |
| Lead 210 | pCi/L | 1.8 | -0.5 | -0.07 | -0.4 |
| Lead 210 MDC | pCi/L | 1.2 | 0.9 | 1.1 | 0.9 |
| Lead 210 precision (±) | pCi/L | 0.9 | 0.5 | 0.7 | 0.5 |
| Radium 226 | pCi/L | 0.4 | 0.2 | 0.1 | 0.4 |
| Radium 226 MDC | pCi/L | 0.2 | 0.2 | 0.2 | 0.2 |
| Radium 226 precision (±) | pCi/L | 0.1 | 0.1 | 0.2 | 0.2 |
| Radium 228 | pCi/L | 0.5 | 1.4 | 0.8 | 1.8 |
| Radium 228 MDC | pCi/L | 1.6 | 1.7 | 1.1 | 1.5 |
| Radium 228 precision (±) | pCi/L | 1 | 1.1 | 0.7 | 1.0 |
| Thorium 230 | pCi/L | 0.3 | -0.03 | 0.1 | 0.1 |
| Thorium 230 MDC | pCi/L | 0.1 | 0.1 | 0.1 | 0.1 |
| Thorium 230 precision (±) | pCi/L | 0.1 | 0.06 | 0.08 | 0.08 |
| Bromodichloromethane | ug/L | ND(0.50) | ND(1.0) | ND(0.50) | ND(0.50) |
| Bromoform | ug/L | ND(0.50) | ND(2.0) | ND(0.50) | ND(0.50) |
| Chlorodibromomethane | ug/L | ND(0.50) | ND(1.0) | ND(0.50) | ND(0.50) |
| Chloroform | ug/L | ND(0.50) | ND(1.0) | ND(0.50) | ND(0.50) |
| Trihalomethanes, Total | ug/L | ND(0.50) | ND(0.50) | ND(0.50) | ND(0.50) |

| United Nuclear Corp | | | | | |
|---|---|---|---|---|---|
| Guideline 8: Sweetwater | | | | | |
| Well ID: | | EPA-28 Duplicate | EPA-28 Duplicate | EPA-28 Duplicate | EPA-28 Duplicate |
| Collection Date: | | 4/8/2022 | 1/18/2022 | 10/11/2021 | 7/19/2021 |
| Receive Date: | | 4/12/2022 | 1/25/2022 | 10/14/2021 | 7/21/2021 |
| Report Date: | | 6/18/2022 | 3/7/2022 | 12/3/2021 | 8/27/2021 |
| Analyte | Units | C22040390-002 | C22010739-002 | C21100526-011 | C21070842-009 |
| Bicarbonate as HCO3 | mg/L | 433 | 458 | 437 | 449 |
| Calcium | mg/L | 510 | 533 | 487 | 524 |
| Chloride | mg/L | 98 | 103 | 96 | 105 |
| Magnesium | mg/L | 411 | 454 | 416 | 467 |
| Potassium | mg/L | 11 | 11 | 11 | 12 |
| Sodium | mg/L | 213 | 240 | 235 | 237 |
| Sulfate | mg/L | 2930 | 3210 | 3130 | 3370 |
| pH | s.u. | 7.0 | 6.9 | 6.9 | 6.9 |
| pH Measurement Temp | °C | 10.8 | 15.5 | 13.5 | 14.9 |
| Solids, Total Dissolved TDS @ 180 C | mg/L | 5000 | 5030 | 5050 | 5080 |
| Solids, Total Dissolved - Calculated | mg/L | 4400 | 4790 | 4590 | 4940 |
| Nitrogen, Ammonia as N | mg/L | ND(0.05) | ND(0.05) | ND(0.05) | ND(0.05) |
| Nitrogen, Nitrate+Nitrite as N | mg/L | 0.26 | 0.24 | 0.47 | 0.16 |
| Aluminum | mg/L | ND(0.09) | ND(0.03) | ND(0.03) | ND(0.03) |
| Arsenic | mg/L | ND(0.001) | ND(0.001) | ND(0.02) | ND(0.001) |
| Beryllium | mg/L | ND(0.001) | ND(0.001) | ND(0.001) | ND(0.001) |
| Cadmium | mg/L | ND(0.001) | ND(0.001) | ND(0.001) | ND(0.001) |
| Cobalt | mg/L | ND(0.005) | ND(0.005) | ND(0.005) | ND(0.005) |
| Lead | mg/L | ND(0.001) | ND(0.001) | ND(0.001) | ND(0.001) |
| Manganese | mg/L | 0.364 | 0.318 | 0.375 | 0.596 |
| Molybdenum | mg/L | ND(0.001) | ND(0.001) | ND(0.001) | ND(0.001) |
| Nickel | mg/L | 0.008 | 0.006 | 0.008 | 0.007 |
| Selenium | mg/L | ND(0.001) | ND(0.001) | ND(0.001) | ND(0.001) |
| Uranium | mg/L | 0.014 | 0.0158 | 0.013 | 0.0152 |
| Vanadium | mg/L | ND(0.01) | ND(0.01) | ND(0.01) | ND(0.01) |
| A/C Balance | % | -1.54 | -1.65 | -4.18 | -3.41 |
| Anions | meq/L | 70.9 | 77.2 | 75.1 | 80.5 |
| Cations | meq/L | 68.8 | 74.7 | 69.1 | 75.2 |
| TDS Ratio | unitless | 1.14 | 1.05 | 1.10 | 1.03 |
| Gross Alpha minus Rn & U | pCi/L | 0.5 | 0.4 | 0.5 | 0.6 |
| Gross Alpha minus Rn & U MDC | pCi/L | 0.6 | 0.5 | 0.7 | 0.8 |
| Gross Alpha minus Rn & U Precision (±) | pCi/L | 0.4 | 0.4 | 0.6 | 0.5 |
| Lead 210 | pCi/L | 0.9 | -0.3 | 0.2 | 0.2 |
| Lead 210 MDC | pCi/L | 1.2 | 0.9 | 1.1 | 0.9 |
| Lead 210 precision (±) | pCi/L | 0.7 | 0.5 | 0.7 | 0.5 |
| Radium 226 | pCi/L | 0.3 | 0.4 | 0.5 | 0.5 |
| Radium 226 MDC | pCi/L | 0.2 | 0.2 | 0.2 | 0.2 |
| Radium 226 precision (±) | pCi/L | 0.1 | 0.1 | 0.2 | 0.2 |
| Radium 228 | pCi/L | 0.3 | 1.8 | 1.4 | 0.4 |
| Radium 228 MDC | pCi/L | 1.5 | 1.5 | 1.1 | 1.5 |
| Radium 228 precision (±) | pCi/L | 0.9 | 1 | 0.9 | 0.9 |
| Thorium 230 | pCi/L | 0.6 | 0.09 | 0.06 | 0.03 |
| Thorium 230 MDC | pCi/L | 0.1 | 0.1 | 0.2 | 0.1 |
| Thorium 230 precision (±) | pCi/L | 0.2 | 0.09 | 0.09 | 0.05 |
| Bromodichloromethane | ug/L | ND(0.50) | ND(1.0) | ND(0.50) | ND(0.50) |
| Bromoform | ug/L | ND(0.50) | ND(2.0) | ND(0.50) | ND(0.50) |
| Chlorodibromomethane | ug/L | ND(0.50) | ND(1.0) | ND(0.50) | ND(0.50) |
| Chloroform | ug/L | ND(0.50) | ND(1.0) | ND(0.50) | ND(0.50) |
| Trihalomethanes, Total | ug/L | ND(0.50) | ND(0.50) | ND(0.50) | ND(0.50) |

# LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation
**Project:** UNC-SW ALLUVIUM
**Lab ID:** C22010739-002
**Client Sample ID:** EPA-28 Duplicate

**Report Date:** 03/07/22
**Collection Date:** 01/18/22 11:06
**DateReceived:** 01/25/22
**Matrix:** Aqueous

| Analyses | Result | Units | Qualifiers | RL | MCL/ QCL | Method | Analysis Date / By |
|---|---|---|---|---|---|---|---|
| **MAJOR IONS** | | | | | | | |
| Bicarbonate as HCO3 | 458 | mg/L | | 5 | | A2320 B | 01/25/22 12:48 / kjp |
| Chloride | 103 | mg/L | D | 2 | | E300.0 | 01/28/22 07:35 / dmb |
| Sulfate | 3210 | mg/L | D | 10 | | E300.0 | 01/28/22 07:35 / dmb |
| Calcium | 533 | mg/L | D | 3 | | E200.8 | 02/02/22 01:07 / jcg |
| Magnesium | 454 | mg/L | | 1 | | E200.8 | 02/02/22 01:07 / jcg |
| Potassium | 11 | mg/L | | 1 | | E200.8 | 02/02/22 01:07 / jcg |
| Sodium | 240 | mg/L | D | 2 | | E200.8 | 02/02/22 01:07 / jcg |
| **PHYSICAL PROPERTIES** | | | | | | | |
| pH | 6.9 | s.u. | H | 0.1 | | A4500-H B | 01/25/22 11:47 / mnm |
| pH Measurement Temp | 15.5 | °C | | | | A4500-H B | 01/25/22 11:47 / mnm |
| Solids, Total Dissolved TDS @ 180 C | 5030 | mg/L | D | 40 | | A2540 C | 01/25/22 10:03 / mnm |
| **NUTRIENTS** | | | | | | | |
| Nitrogen, Nitrate+Nitrite as N | 0.24 | mg/L | | 0.05 | | E353.2 | 01/25/22 14:24 / nts |
| Nitrogen, Ammonia as N | ND | mg/L | | 0.05 | | E350.1 | 01/27/22 15:09 / dmb |
| **METALS, TOTAL** | | | | | | | |
| Aluminum | ND | mg/L | | 0.03 | | E200.8 | 02/08/22 16:39 / jcg |
| Arsenic | ND | mg/L | | 0.001 | | E200.8 | 01/27/22 18:05 / jcg |
| Beryllium | ND | mg/L | | 0.001 | | E200.8 | 01/27/22 18:05 / jcg |
| Cadmium | ND | mg/L | | 0.001 | | E200.8 | 01/27/22 18:05 / jcg |
| Cobalt | ND | mg/L | | 0.005 | | E200.8 | 01/27/22 18:05 / jcg |
| Lead | ND | mg/L | | 0.001 | | E200.8 | 01/27/22 18:05 / jcg |
| Manganese | 0.318 | mg/L | | 0.001 | | E200.8 | 01/27/22 18:05 / jcg |
| Molybdenum | ND | mg/L | | 0.001 | | E200.8 | 02/08/22 16:39 / jcg |
| Nickel | 0.006 | mg/L | | 0.005 | | E200.8 | 02/08/22 16:39 / jcg |
| Selenium | ND | mg/L | | 0.001 | | E200.8 | 01/27/22 18:05 / jcg |
| Uranium | 0.0158 | mg/L | | 0.0003 | | E200.8 | 02/08/22 16:39 / jcg |
| Vanadium | ND | mg/L | | 0.01 | | E200.8 | 01/27/22 18:05 / jcg |
| **DATA QUALITY** | | | | | | | |
| Solids, Total Dissolved - Calculated | 4790 | mg/L | | 1.00 | | A1030 E | 02/02/22 16:58 / jlw |
| A/C Balance | -1.65 | % | | | | A1030 E | 02/02/22 16:58 / jlw |
| Anions | 77.2 | meq/L | | | | A1030 E | 02/02/22 16:58 / jlw |
| Cations | 74.7 | meq/L | | | | A1030 E | 02/02/22 16:58 / jlw |
| TDS Ratio | 1.05 | unitless | | | | A1030 E | 02/02/22 16:58 / jlw |
| **RADIONUCLIDES, TOTAL** | | | | | | | |
| Gross Alpha minus Rn & U | 0.4 | pCi/L | U | | | E900.1 | 01/31/22 08:28 / trs |
| Gross Alpha minus Rn & U Precision (±) | 0.4 | pCi/L | | | | E900.1 | 01/31/22 08:28 / trs |
| Gross Alpha minus Rn & U MDC | 0.5 | pCi/L | | | | E900.1 | 01/31/22 08:28 / trs |
| Lead 210 | -0.3 | pCi/L | U | | | E909.0 | 02/01/22 23:23 / sec |
| Lead 210 precision (±) | 0.5 | pCi/L | | | | E909.0 | 02/01/22 23:23 / sec |

**Report Definitions:**

RL - Analyte Reporting Limit
QCL - Quality Control Limit
D - Reporting Limit (RL) increased due to sample matrix
U - Not detected at Minimum Detectable Concentration (MDC)
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
H - Analysis performed past the method holding time

# LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation
**Project:** UNC-SW ALLUVIUM
**Lab ID:** C22010739-002
**Client Sample ID:** EPA-28 Duplicate

**Report Date:** 03/07/22
**Collection Date:** 01/18/22 11:06
**DateReceived:** 01/25/22
**Matrix:** Aqueous

| Analyses | Result | Units | Qualifiers | RL | MCL/ QCL | Method | Analysis Date / By |
|---|---|---|---|---|---|---|---|
| **RADIONUCLIDES, TOTAL** | | | | | | | |
| Lead 210 MDC | 0.9 | pCi/L | | | | E909.0 | 02/01/22 23:23 / sec |
| Radium 226 | 0.4 | pCi/L | | | | E903.0 | 02/07/22 12:03 / kdk |
| Radium 226 precision (±) | 0.1 | pCi/L | | | | E903.0 | 02/07/22 12:03 / kdk |
| Radium 226 MDC | 0.2 | pCi/L | | | | E903.0 | 02/07/22 12:03 / kdk |
| Radium 228 | 1.8 | pCi/L | | | | RA-05 | 02/01/22 16:25 / trs |
| Radium 228 precision (±) | 1 | pCi/L | | | | RA-05 | 02/01/22 16:25 / trs |
| Radium 228 MDC | 1.5 | pCi/L | | | | RA-05 | 02/01/22 16:25 / trs |
| Radium 226 + Radium 228 | 2.2 | pCi/L | | | | A7500-RA | 02/08/22 14:30 / dmf |
| Radium 226 + Radium 228 precision (±) | 1 | pCi/L | | | | A7500-RA | 02/08/22 14:30 / dmf |
| Radium 226 + Radium 228 MDC | 1.6 | pCi/L | | | | A7500-RA | 02/08/22 14:30 / dmf |
| Thorium 230 | 0.09 | pCi/L | U | | | A7500-U C | 02/03/22 16:01 / sec |
| Thorium 230 precision (±) | 0.09 | pCi/L | | | | A7500-U C | 02/03/22 16:01 / sec |
| Thorium 230 MDC | 0.1 | pCi/L | | | | A7500-U C | 02/03/22 16:01 / sec |
| **VOLATILE ORGANIC COMPOUNDS** | | | | | | | |
| Bromodichloromethane | ND | ug/L | | 1.0 | | E624.1 | 01/27/22 23:55 / etad |
| Bromoform | ND | ug/L | | 2.0 | | E624.1 | 01/27/22 23:55 / etad |
| Chlorodibromomethane | ND | ug/L | | 1.0 | | E624.1 | 01/27/22 23:55 / etad |
| Chloroform | ND | ug/L | | 1.0 | | E624.1 | 01/27/22 23:55 / etad |
| Trihalomethanes, Total | ND | ug/L | | 0.50 | | E624.1 | 03/01/22 18:20 / tlf |
| Surr: 1,2-Dichloroethane-d4 | 94.0 | %REC | | 73-122 | | E624.1 | 01/27/22 23:55 / etad |
| Surr: p-Bromofluorobenzene | 86.0 | %REC | | 79-119 | | E624.1 | 01/27/22 23:55 / etad |
| Surr: Toluene-d8 | 96.0 | %REC | | 80-120 | | E624.1 | 01/27/22 23:55 / etad |

**Report Definitions:**
RL - Analyte Reporting Limit
QCL - Quality Control Limit
U - Not detected at Minimum Detectable Concentration (MDC)
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)

# LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation
**Project:** UNC-SW Alluvium
**Lab ID:** C22040390-002
**Client Sample ID:** EPA-28 Duplicate

**Report Date:** 06/18/22
**Collection Date:** 04/08/22 09:56
**DateReceived:** 04/12/22
**Matrix:** Aqueous

| Analyses | Result | Units | Qualifiers | RL | MCL/ QCL | Method | Analysis Date / By |
|---|---|---|---|---|---|---|---|
| **MAJOR IONS** | | | | | | | |
| Bicarbonate as HCO3 | 433 | mg/L | | 5 | | A2320 B | 04/13/22 18:59 / nts |
| Chloride | 98 | mg/L | D | 2 | | E300.0 | 04/15/22 08:13 / dmb |
| Sulfate | 2930 | mg/L | D | 8 | | E300.0 | 04/15/22 08:13 / dmb |
| Calcium | 510 | mg/L | | 1 | | E200.8 | 04/26/22 20:07 / jcg |
| Magnesium | 411 | mg/L | | 1 | | E200.8 | 04/26/22 20:07 / jcg |
| Potassium | 11 | mg/L | | 1 | | E200.7 | 04/28/22 02:02 / erc |
| Sodium | 213 | mg/L | | 1 | | E200.8 | 04/26/22 20:07 / jcg |
| **PHYSICAL PROPERTIES** | | | | | | | |
| pH | 7.0 | s.u. | H | 0.1 | | A4500-H B | 04/14/22 11:11 / mnm |
| pH Measurement Temp | 10.8 | °C | | | | A4500-H B | 04/14/22 11:11 / mnm |
| Solids, Total Dissolved TDS @ 180 C | 5000 | mg/L | D | 40 | | A2540 C | 04/14/22 12:30 / mnm |
| **NUTRIENTS** | | | | | | | |
| Nitrogen, Nitrate+Nitrite as N | 0.26 | mg/L | | 0.05 | | E353.2 | 04/14/22 14:40 / nts |
| Nitrogen, Ammonia as N | ND | mg/L | | 0.05 | | E350.1 | 04/15/22 11:38 / nts |
| **METALS, TOTAL** | | | | | | | |
| Aluminum | ND | mg/L | D | 0.09 | | E200.8 | 06/14/22 02:26 / jcg |
| Arsenic | ND | mg/L | | 0.001 | | E200.8 | 04/25/22 14:33 / jcg |
| Beryllium | ND | mg/L | | 0.001 | | E200.8 | 04/25/22 14:33 / jcg |
| Cadmium | ND | mg/L | | 0.001 | | E200.8 | 04/25/22 14:33 / jcg |
| Cobalt | ND | mg/L | | 0.005 | | E200.8 | 04/25/22 14:33 / jcg |
| Lead | ND | mg/L | | 0.001 | | E200.8 | 04/25/22 14:33 / jcg |
| Manganese | 0.364 | mg/L | D | 0.003 | | E200.8 | 04/25/22 14:33 / jcg |
| Molybdenum | ND | mg/L | | 0.001 | | E200.8 | 04/25/22 14:33 / jcg |
| Nickel | 0.008 | mg/L | | 0.005 | | E200.8 | 04/25/22 14:33 / jcg |
| Selenium | ND | mg/L | | 0.001 | | E200.8 | 04/27/22 05:26 / jcg |
| Uranium | 0.014 | mg/L | D | 0.001 | | E200.8 | 04/25/22 14:33 / jcg |
| Vanadium | ND | mg/L | | 0.01 | | E200.8 | 05/07/22 00:03 / jcg |
| **DATA QUALITY** | | | | | | | |
| Solids, Total Dissolved - Calculated | 4400 | mg/L | | 1.00 | | A1030 E | 05/02/22 14:25 / dmb |
| A/C Balance | -1.54 | % | | | | A1030 E | 05/02/22 14:25 / dmb |
| Anions | 70.9 | meq/L | | | | A1030 E | 05/02/22 14:25 / dmb |
| Cations | 68.8 | meq/L | | | | A1030 E | 05/02/22 14:25 / dmb |
| TDS Ratio | 1.14 | unitless | | | | A1030 E | 05/02/22 14:25 / dmb |
| **RADIONUCLIDES, TOTAL** | | | | | | | |
| Gross Alpha minus Rn & U | 0.5 | pCi/L | U | | | E900.1 | 04/26/22 20:44 / kdk |
| Gross Alpha minus Rn & U Precision (±) | 0.4 | pCi/L | | | | E900.1 | 04/26/22 20:44 / kdk |
| Gross Alpha minus Rn & U MDC | 0.6 | pCi/L | | | | E900.1 | 04/26/22 20:44 / kdk |
| Lead 210 | 0.9 | pCi/L | U | | | E909.0 | 04/21/22 16:21 / hat |
| Lead 210 precision (±) | 0.7 | pCi/L | | | | E909.0 | 04/21/22 16:21 / hat |

**Report Definitions:**

RL - Analyte Reporting Limit
QCL - Quality Control Limit
D - Reporting Limit (RL) increased due to sample matrix
U - Not detected at Minimum Detectable Concentration (MDC)
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
H - Analysis performed past the method holding time

# LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation
**Project:** UNC-SW Alluvium
**Lab ID:** C22040390-002
**Client Sample ID:** EPA-28 Duplicate

**Report Date:** 06/18/22
**Collection Date:** 04/08/22 09:56
**DateReceived:** 04/12/22
**Matrix:** Aqueous

| Analyses | Result | Units | Qualifiers | RL | MCL/ QCL | Method | Analysis Date / By |
|---|---|---|---|---|---|---|---|
| **RADIONUCLIDES, TOTAL** | | | | | | | |
| Lead 210 MDC | 1.2 | pCi/L | | | | E909.0 | 04/21/22 16:21 / hat |
| Radium 226 | 0.3 | pCi/L | | | | E903.0 | 04/28/22 21:19 / trs |
| Radium 226 precision (±) | 0.1 | pCi/L | | | | E903.0 | 04/28/22 21:19 / trs |
| Radium 226 MDC | 0.2 | pCi/L | | | | E903.0 | 04/28/22 21:19 / trs |
| Radium 228 | 0.3 | pCi/L | U | | | RA-05 | 05/05/22 12:30 / trs |
| Radium 228 precision (±) | 0.9 | pCi/L | | | | RA-05 | 05/05/22 12:30 / trs |
| Radium 228 MDC | 1.5 | pCi/L | | | | RA-05 | 05/05/22 12:30 / trs |
| Radium 226 + Radium 228 | 0.6 | pCi/L | U | | | A7500-RA | 05/09/22 12:33 / dmf |
| Radium 226 + Radium 228 precision (±) | 0.9 | pCi/L | | | | A7500-RA | 05/09/22 12:33 / dmf |
| Radium 226 + Radium 228 MDC | 1.6 | pCi/L | | | | A7500-RA | 05/09/22 12:33 / dmf |
| Thorium 230 | 0.6 | pCi/L | | | | A7500-U C | 04/21/22 13:52 / sec |
| Thorium 230 precision (±) | 0.2 | pCi/L | | | | A7500-U C | 04/21/22 13:52 / sec |
| Thorium 230 MDC | 0.1 | pCi/L | | | | A7500-U C | 04/21/22 13:52 / sec |
| **VOLATILE ORGANIC COMPOUNDS** | | | | | | | |
| Bromodichloromethane | ND | ug/L | | 0.50 | | E624.1 | 04/17/22 16:01 / eli-b |
| Bromoform | ND | ug/L | | 0.50 | | E624.1 | 04/17/22 16:01 / eli-b |
| Chlorodibromomethane | ND | ug/L | | 0.50 | | E624.1 | 04/17/22 16:01 / eli-b |
| Chloroform | ND | ug/L | | 0.50 | | E624.1 | 04/17/22 16:01 / eli-b |
| Trihalomethanes, Total | ND | ug/L | | 0.50 | | E624.1 | 04/27/22 18:25 / tlf |
| Surr: 1,2-Dichloroethane-d4 | 105 | %REC | | 71-139 | | E624.1 | 04/17/22 16:01 / eli-b |
| Surr: p-Bromofluorobenzene | 106 | %REC | | 80-127 | | E624.1 | 04/17/22 16:01 / eli-b |
| Surr: Toluene-d8 | 107 | %REC | | 80-123 | | E624.1 | 04/17/22 16:01 / eli-b |

**Report Definitions:**
RL - Analyte Reporting Limit
QCL - Quality Control Limit
U - Not detected at Minimum Detectable Concentration (MDC)
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)

| Guideline 8: Sweetwater | | | | | |
|---|---|---|---|---|---|
| Well ID: | | EPA-2 | EPA-2 | EPA-2 | EPA-2 |
| Collection Date: | | 4/4/2022 | 1/13/2022 | 10/8/2021 | 7/12/2021 |
| Receive Date: | | 4/6/2022 | 1/19/2022 | 10/12/2021 | 7/14/2021 |
| Report Date: | | 4/29/2022 | 2/16/2022 | 11/28/2021 | 8/13/2022 |
| **Analyte** | **Units** | **C22040181-001** | **C22010583-012** | **C21100467-007** | **C21070550-004** |
| Bicarbonate as HCO3 | mg/L | 240 | 246 | 238 | 254 |
| Calcium | mg/L | 492 | 512 | 480 | 508 |
| Chloride | mg/L | 29 | 28 | 29 | 26 |
| Magnesium | mg/L | 226 | 244 | 231 | 248 |
| Potassium | mg/L | 8 | 8 | 8 | 9 |
| Sodium | mg/L | 210 | 234 | 228 | 240 |
| Sulfate | mg/L | 2480 | 2420 | 2510 | 2240 |
| pH | s.u. | 6.9 | 6.9 | 7.0 | 6.9 |
| pH Measurement Temp | °C | 10.6 | 14.8 | 14.0 | 13.1 |
| Solids, Total Dissolved TDS @ 180 C | mg/L | 4030 | 3900 | 3870 | 3820 |
| Solids, Total Dissolved - Calculated | mg/L | 3560 | 3570 | 3610 | 3390 |
| Nitrogen, Ammonia as N | mg/L | 0.09 | 0.20 | 0.25 | 0.19 |
| Nitrogen, Nitrate+Nitrite as N | mg/L | 0.42 | 0.41 | 0.33 | 0.26 |
| Aluminum | mg/L | ND(0.03) | ND(0.03) | ND(0.03) | ND(0.03) |
| Arsenic | mg/L | 0.002 | ND(0.001) | 0.002 | ND(0.001) |
| Beryllium | mg/L | ND(0.001) | ND(0.001) | ND(0.001) | ND(0.001) |
| Cadmium | mg/L | ND(0.001) | 0.001 | ND(0.001) | ND(0.001) |
| Cobalt | mg/L | ND(0.005) | ND(0.005) | ND(0.005) | ND(0.005) |
| Lead | mg/L | ND(0.001) | ND(0.001) | ND(0.001) | 0.001 |
| Manganese | mg/L | 1.84 | 1.67 | 1.84 | 2.10 |
| Molybdenum | mg/L | ND(0.001) | 0.001 | ND(0.001) | ND(0.001) |
| Nickel | mg/L | ND(0.005) | ND(0.005) | 0.008 | ND(0.005) |
| Selenium | mg/L | ND(0.001) | ND(0.001) | ND(0.001) | ND(0.001) |
| Uranium | mg/L | 0.0020 | 0.0016 | 0.0014 | 0.0013 |
| Vanadium | mg/L | ND(0.01) | ND(0.01) | ND(0.01) | ND(0.01) |
| A/C Balance | % | -3.56 | 0.67 | -3.58 | 4.62 |
| Anions | meq/L | 56.4 | 55.2 | 57.1 | 51.5 |
| Cations | meq/L | 52.5 | 56.0 | 53.1 | 56.5 |
| TDS Ratio | unitless | 1.13 | 1.09 | 1.07 | 1.13 |
| Gross Alpha minus Rn & U | pCi/L | 2.6 | 2.7 | 1.7 | 3.0 |
| Gross Alpha minus Rn & U MDC | pCi/L | 1 | 0.9 | 1.1 | 1.1 |
| Gross Alpha minus Rn & U Precision (±) | pCi/L | 0.9 | 1 | 0.8 | 1.0 |
| Lead 210 | pCi/L | 1 | 0.1 | 0.8 | 0.3 |
| Lead 210 MDC | pCi/L | 0.9 | 0.9 | 0.9 | 0.8 |
| Lead 210 precision (±) | pCi/L | 0.6 | 0.5 | 0.6 | 0.5 |
| Radium 226 | pCi/L | 1.2 | 1.3 | 1.7 | 2.3 |
| Radium 226 MDC | pCi/L | 0.2 | 0.2 | 0.2 | 0.2 |
| Radium 226 precision (±) | pCi/L | 0.3 | 0.3 | 0.4 | 0.5 |
| Radium 228 | pCi/L | 3.2 | 3.9 | 4.2 | 2.5 |
| Radium 228 MDC | pCi/L | 1.2 | 1.6 | 1 | 1.2 |
| Radium 228 precision (±) | pCi/L | 0.9 | 1.3 | 1.1 | 0.9 |
| Thorium 230 | pCi/L | 0.2 | 0.01 | 0.009 | 0.004 |
| Thorium 230 MDC | pCi/L | 0.08 | 0.07 | 0.08 | 0.06 |
| Thorium 230 precision (±) | pCi/L | 0.07 | 0.03 | 0.04 | 0.03 |
| Bromodichloromethane | ug/L | ND(0.50) | ND(1.0) | ND(0.50) | ND(0.50) |
| Bromoform | ug/L | ND(0.50) | ND(2.0) | ND(0.50) | ND(0.50) |
| Chlorodibromomethane | ug/L | ND(0.50) | ND(1.0) | ND(0.50) | ND(0.50) |
| Chloroform | ug/L | ND(0.50) | ND(1.0) | ND(0.50) | ND(0.50) |
| Trihalomethanes, Total | ug/L | ND(0.50) | ND(0.50) | ND(0.50) | ND(0.50) |

**United Nuclear Corp**

**Guideline 8: Sweetwater**

| Well ID: | | EPA-2 Duplicate | EPA-2 Duplicate | EPA-2 Duplicate | EPA-2 Duplicate |
|---|---|---|---|---|---|
| Collection Date: | | 1/13/2022 | 10/8/2021 | 7/12/2021 | 4/12/2021 |
| Receive Date: | | 1/19/2022 | 10/12/2021 | 7/14/2021 | 4/14/2021 |
| Report Date: | | 2/16/2022 | 11/28/2021 | 8/13/2021 | 5/20/2021 |
| **Analyte** | **Units** | **C22010583-013** | **C21100467-008** | **C21070550-005** | **C21040618-004** |
| Bicarbonate as HCO3 | mg/L | 254 | 256 | 260 | 239 |
| Calcium | mg/L | 504 | 485 | 501 | 505 |
| Chloride | mg/L | 29 | 27 | 27 | 28 |
| Magnesium | mg/L | 250 | 235 | 243 | 256 |
| Potassium | mg/L | 8 | 8 | 9 | 9 |
| Sodium | mg/L | 236 | 236 | 238 | 245 |
| Sulfate | mg/L | 2470 | 2370 | 2280 | 2430 |
| pH | s.u. | 6.8 | 6.8 | 6.8 | 6.76 |
| pH Measurement Temp | °C | 15.3 | 14.9 | 12.9 | 14 |
| Solids, Total Dissolved TDS @ 180 C | mg/L | 3880 | 3900 | 3800 | 3840 |
| Solids, Total Dissolved - Calculated | mg/L | 3620 | 3520 | 3420 | 3590 |
| TDS Ratio | unitless | 1.07 | 1.11 | 1.11 | 1.07 |
| Nitrogen, Ammonia as N | mg/L | 0.57 | 0.38 | 0.29 | 0.38 |
| Nitrogen, Nitrate+Nitrite as N | mg/L | ND(0.05) | 0.06 | 0.06 | 0.04 |
| Aluminum | mg/L | ND(0.03) | ND(0.03) | ND(0.03) | ND(0.03) |
| Arsenic | mg/L | ND(0.001) | ND(0.001) | ND(0.001) | ND(0.001) |
| Beryllium | mg/L | ND(0.001) | ND(0.001) | ND(0.001) | ND(0.001) |
| Cadmium | mg/L | ND(0.001) | ND(0.001) | ND(0.001) | ND(0.001) |
| Cobalt | mg/L | ND(0.005) | ND(0.005) | ND(0.005) | ND(0.005) |
| Lead | mg/L | ND(0.001) | ND(0.001) | ND(0.001) | ND(0.001) |
| Manganese | mg/L | 2.23 | 2.31 | 2.15 | 2.24 |
| Molybdenum | mg/L | 0.001 | 0.001 | ND(0.001) | 0.002 |
| Nickel | mg/L | ND(0.005) | ND(0.005) | ND(0.005) | ND(0.005) |
| Selenium | mg/L | ND(0.001) | ND(0.001) | ND(0.001) | ND(0.001) |
| Uranium | mg/L | 0.0021 | 0.0016 | 0.0011 | 0.0017 |
| Vanadium | mg/L | ND(0.01) | ND(0.01) | ND(0.01) | ND(0.01) |
| Gross Alpha minus Rn & U | pCi/L | 2.7 | 2.2 | 2.6 | 3.6 |
| Gross Alpha minus Rn & U MDC | pCi/L | 0.9 | 1.1 | 1.1 | 0.8 |
| Gross Alpha minus Rn & U Precision (±) | pCi/L | 1 | 1.0 | 1.0 | 1.1 |
| Lead 210 | pCi/L | -0.08 | 0.9 | 0.4 | 0.5 |
| Lead 210 MDC | pCi/L | 0.9 | 0.9 | 0.8 | 1.0 |
| Lead 210 precision (±) | pCi/L | 0.5 | 0.6 | 0.5 | 0.6 |
| Radium 226 | pCi/L | 1.1 | 1.5 | 2.6 | 1 |
| Radium 226 MDC | pCi/L | 0.2 | 0.2 | 0.2 | 0.08 |
| Radium 226 precision (±) | pCi/L | 0.3 | 0.4 | 0.6 | 0.1 |
| Radium 228 | pCi/L | 4.3 | 3.9 | 3.0 | 6.4 |
| Radium 228 MDC | pCi/L | 1.6 | 1.0 | 1.3 | 1 |
| Radium 228 precision (±) | pCi/L | 1.4 | 1 | 1.0 | 1.5 |
| Thorium 230 | pCi/L | 0.02 | 0.007 | 0.03 | -0.003 |
| Thorium 230 MDC | pCi/L | 0.08 | 0.2 | 0.06 | 0.08 |
| Thorium 230 precision (±) | pCi/L | 0.04 | 0.08 | 0.03 | 0.04 |
| A/C Balance | % | -0.16 | -0.29 | 2.92 | 1.67 |
| Anions | meq/L | 56.4 | 54.3 | 52.4 | 55.3 |
| Cations | meq/L | 56.2 | 54.0 | 55.6 | 57.1 |
| Bromodichloromethane | ug/L | ND(1.0) | ND(0.50) | ND(0.50) | ND(0.50) |
| Bromoform | ug/L | ND(2.0) | ND(0.50) | ND(0.50) | ND(0.50) |
| Chlorodibromomethane | ug/L | ND(1.0) | ND(0.50) | ND(0.50) | ND(0.50) |
| Chloroform | ug/L | ND(1.0) | ND(0.50) | ND(0.50) | ND(0.50) |
| Trihalomethanes, Total | ug/L | ND(0.50) | ND(0.50) | ND(0.50) | ND(0.50) |

NOTE: The data presented on this form is intended for summary only. Laboratory approved data is contained within the database reports.

# LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation
**Project:** UNC-Zone 3 & SW Alluvium, UNC - Zone1, UNC - Zone3
**Lab ID:** C22010583-013
**Client Sample ID:** EPA-2 Duplicate

**Report Date:** 02/16/22
**Collection Date:** 01/13/22 12:10
**DateReceived:** 01/19/22
**Matrix:** Aqueous

| Analyses | Result | Units | Qualifiers | RL | MCL/ QCL | Method | Analysis Date / By |
|---|---|---|---|---|---|---|---|
| **MAJOR IONS** | | | | | | | |
| Bicarbonate as HCO3 | 254 | mg/L | | 5 | | A2320 B | 01/20/22 17:58 / kjp |
| Chloride | 29 | mg/L | | 1 | | E300.0 | 01/21/22 22:38 / dmb |
| Sulfate | 2470 | mg/L | D | 4 | | E300.0 | 01/21/22 22:38 / dmb |
| Calcium | 504 | mg/L | | 1 | | E200.8 | 01/21/22 16:50 / jcg |
| Magnesium | 250 | mg/L | | 1 | | E200.8 | 01/21/22 16:50 / jcg |
| Potassium | 8 | mg/L | | 1 | | E200.8 | 01/21/22 16:50 / jcg |
| Sodium | 236 | mg/L | | 1 | | E200.8 | 01/21/22 16:50 / jcg |
| **PHYSICAL PROPERTIES** | | | | | | | |
| pH | 6.8 | s.u. | H | 0.1 | | A4500-H B | 01/20/22 11:15 / mnm |
| pH Measurement Temp | 15.3 | °C | | | | A4500-H B | 01/20/22 11:15 / mnm |
| Solids, Total Dissolved TDS @ 180 C | 3880 | mg/L | D | 40 | | A2540 C | 01/20/22 15:48 / mnm |
| **NUTRIENTS** | | | | | | | |
| Nitrogen, Nitrate+Nitrite as N | ND | mg/L | | 0.05 | | E353.2 | 01/20/22 13:07 / nts |
| Nitrogen, Ammonia as N | 0.57 | mg/L | | 0.05 | | E350.1 | 01/27/22 14:29 / dmb |
| **METALS, TOTAL** | | | | | | | |
| Aluminum | ND | mg/L | | 0.03 | | E200.8 | 02/02/22 06:11 / jcg |
| Arsenic | ND | mg/L | | 0.001 | | E200.8 | 02/01/22 04:51 / jcg |
| Beryllium | ND | mg/L | | 0.001 | | E200.8 | 02/01/22 04:51 / jcg |
| Cadmium | ND | mg/L | | 0.001 | | E200.8 | 02/01/22 04:51 / jcg |
| Cobalt | ND | mg/L | | 0.005 | | E200.8 | 02/01/22 04:51 / jcg |
| Lead | ND | mg/L | | 0.001 | | E200.8 | 02/02/22 06:11 / jcg |
| Manganese | 2.23 | mg/L | | 0.001 | | E200.8 | 02/01/22 04:51 / jcg |
| Molybdenum | 0.001 | mg/L | | 0.001 | | E200.8 | 02/01/22 04:51 / jcg |
| Nickel | ND | mg/L | | 0.005 | | E200.8 | 02/01/22 04:51 / jcg |
| Selenium | ND | mg/L | | 0.001 | | E200.8 | 02/01/22 04:51 / jcg |
| Uranium | 0.0021 | mg/L | | 0.0003 | | E200.8 | 02/02/22 06:11 / jcg |
| Vanadium | ND | mg/L | | 0.01 | | E200.8 | 02/01/22 04:51 / jcg |
| **RADIONUCLIDES, TOTAL** | | | | | | | |
| Gross Alpha minus Rn & U | 2.7 | pCi/L | | | | E900.1 | 01/24/22 14:38 / amm |
| Gross Alpha minus Rn & U Precision (±) | 1 | pCi/L | | | | E900.1 | 01/24/22 14:38 / amm |
| Gross Alpha minus Rn & U MDC | 0.9 | pCi/L | | | | E900.1 | 01/24/22 14:38 / amm |
| Lead 210 | -0.08 | pCi/L | U | | | E909.0 | 01/28/22 08:06 / hat |
| Lead 210 precision (±) | 0.5 | pCi/L | | | | E909.0 | 01/28/22 08:06 / hat |
| Lead 210 MDC | 0.9 | pCi/L | | | | E909.0 | 01/28/22 08:06 / hat |
| Radium 226 | 1.1 | pCi/L | | | | E903.0 | 02/01/22 13:02 / kdk |
| Radium 226 precision (±) | 0.3 | pCi/L | | | | E903.0 | 02/01/22 13:02 / kdk |
| Radium 226 MDC | 0.2 | pCi/L | | | | E903.0 | 02/01/22 13:02 / kdk |
| Radium 228 | 4.3 | pCi/L | | | | RA-05 | 01/27/22 16:15 / trs |
| Radium 228 precision (±) | 1.4 | pCi/L | | | | RA-05 | 01/27/22 16:15 / trs |
| Radium 228 MDC | 1.6 | pCi/L | | | | RA-05 | 01/27/22 16:15 / trs |

**Report Definitions:**
RL - Analyte Reporting Limit
QCL - Quality Control Limit
D - Reporting Limit (RL) increased due to sample matrix
U - Not detected at Minimum Detectable Concentration (MDC)
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
H - Analysis performed past the method holding time

# LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation
**Project:** UNC-Zone 3 & SW Alluvium, UNC - Zone1, UNC - Zone3
**Lab ID:** C22010583-013
**Client Sample ID:** EPA-2 Duplicate

**Report Date:** 02/16/22
**Collection Date:** 01/13/22 12:10
**DateReceived:** 01/19/22
**Matrix:** Aqueous

| Analyses | Result | Units | Qualifiers | RL | MCL/ QCL | Method | Analysis Date / By |
|---|---|---|---|---|---|---|---|
| **RADIONUCLIDES, TOTAL** | | | | | | | |
| Radium 226 + Radium 228 | 5.4 | pCi/L | | | | A7500-RA | 02/02/22 15:40 / dmf |
| Radium 226 + Radium 228 precision (±) | 1.4 | pCi/L | | | | A7500-RA | 02/02/22 15:40 / dmf |
| Radium 226 + Radium 228 MDC | 1.6 | pCi/L | | | | A7500-RA | 02/02/22 15:40 / dmf |
| Thorium 230 | 0.02 | pCi/L | U | | | A7500-U C | 01/26/22 13:49 / sec |
| Thorium 230 precision (±) | 0.04 | pCi/L | | | | A7500-U C | 01/26/22 13:49 / sec |
| Thorium 230 MDC | 0.08 | pCi/L | | | | A7500-U C | 01/26/22 13:49 / sec |
| **DATA QUALITY** | | | | | | | |
| Solids, Total Dissolved - Calculated | 3620 | mg/L | | 1.00 | | A1030 E | 01/24/22 16:23 / jlw |
| A/C Balance | -0.16 | % | | | | A1030 E | 01/24/22 16:23 / jlw |
| Anions | 56.4 | meq/L | | | | A1030 E | 01/24/22 16:23 / jlw |
| Cations | 56.2 | meq/L | | | | A1030 E | 01/24/22 16:23 / jlw |
| TDS Ratio | 1.07 | unitless | | | | A1030 E | 01/24/22 16:23 / jlw |
| **VOLATILE ORGANIC COMPOUNDS** | | | | | | | |
| Bromodichloromethane | ND | ug/L | | 1.0 | | E624.1 | 01/25/22 18:11 / etad |
| Bromoform | ND | ug/L | | 2.0 | | E624.1 | 01/25/22 18:11 / etad |
| Chlorodibromomethane | ND | ug/L | | 1.0 | | E624.1 | 01/25/22 18:11 / etad |
| Chloroform | ND | ug/L | | 1.0 | | E624.1 | 01/25/22 18:11 / etad |
| Trihalomethanes, Total | ND | ug/L | | 0.50 | | E624.1 | 02/16/22 14:49 / tlf |
| Surr: 1,2-Dichloroethane-d4 | 105 | %REC | | 73-122 | | E624.1 | 01/25/22 18:11 / etad |
| Surr: p-Bromofluorobenzene | 103 | %REC | | 79-119 | | E624.1 | 01/25/22 18:11 / etad |
| Surr: Toluene-d8 | 102 | %REC | | 80-120 | | E624.1 | 01/25/22 18:11 / etad |

**Report Definitions:**
RL - Analyte Reporting Limit
QCL - Quality Control Limit
U - Not detected at Minimum Detectable Concentration (MDC)
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)

# LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation
**Project:** UNC-Zone 1, Zone 3
**Lab ID:** C22040181-002
**Client Sample ID:** EPA Duplicate

**Report Date:** 04/29/22
**Collection Date:** 04/04/22 11:20
**DateReceived:** 04/06/22
**Matrix:** Aqueous

| Analyses | Result | Units | Qualifiers | RL | MCL/ QCL | Method | Analysis Date / By |
|---|---|---|---|---|---|---|---|
| **MAJOR IONS** | | | | | | | |
| Bicarbonate as HCO3 | 243 | mg/L | | 5 | | A2320 B | 04/07/22 17:40 / nts |
| Chloride | 27 | mg/L | | 1 | | E300.0 | 04/10/22 00:11 / dmb |
| Sulfate | 2470 | mg/L | D | 4 | | E300.0 | 04/10/22 00:11 / dmb |
| Calcium | 489 | mg/L | | 1 | | E200.7 | 04/17/22 03:57 / erc |
| Magnesium | 229 | mg/L | | 1 | | E200.8 | 04/15/22 21:41 / jcg |
| Potassium | 7 | mg/L | | 1 | | E200.8 | 04/15/22 21:41 / jcg |
| Sodium | 209 | mg/L | | 1 | | E200.8 | 04/15/22 21:41 / jcg |
| **PHYSICAL PROPERTIES** | | | | | | | |
| pH | 6.8 | s.u. | H | 0.1 | | A4500-H B | 04/08/22 10:14 / mnm |
| pH Measurement Temp | 11.0 | °C | | | | A4500-H B | 04/08/22 10:14 / mnm |
| Solids, Total Dissolved TDS @ 180 C | 4060 | mg/L | D | 40 | | A2540 C | 04/08/22 14:31 / mnm |
| **NUTRIENTS** | | | | | | | |
| Nitrogen, Nitrate+Nitrite as N | ND | mg/L | | 0.05 | | E353.2 | 04/08/22 11:40 / nts |
| Nitrogen, Ammonia as N | 0.46 | mg/L | | 0.05 | | E350.1 | 04/07/22 15:57 / nts |
| **METALS, TOTAL** | | | | | | | |
| Aluminum | ND | mg/L | | 0.03 | | E200.8 | 04/22/22 22:35 / jcg |
| Arsenic | 0.002 | mg/L | | 0.001 | | E200.8 | 04/22/22 22:35 / jcg |
| Beryllium | ND | mg/L | | 0.001 | | E200.8 | 04/20/22 02:04 / jcg |
| Cadmium | ND | mg/L | | 0.001 | | E200.8 | 04/20/22 02:04 / jcg |
| Cobalt | ND | mg/L | | 0.005 | | E200.8 | 04/20/22 02:04 / jcg |
| Lead | ND | mg/L | | 0.001 | | E200.8 | 04/20/22 02:04 / jcg |
| Manganese | 2.39 | mg/L | D | 0.002 | | E200.7 | 04/19/22 17:41 / erc |
| Molybdenum | 0.001 | mg/L | | 0.001 | | E200.8 | 04/22/22 22:35 / jcg |
| Nickel | ND | mg/L | | 0.005 | | E200.8 | 04/20/22 02:04 / jcg |
| Selenium | ND | mg/L | | 0.001 | | E200.8 | 04/20/22 02:04 / jcg |
| Uranium | 0.0023 | mg/L | D | 0.0005 | | E200.8 | 04/20/22 02:04 / jcg |
| Vanadium | ND | mg/L | | 0.01 | | E200.8 | 04/20/22 02:04 / jcg |
| **DATA QUALITY** | | | | | | | |
| Solids, Total Dissolved - Calculated | 3550 | mg/L | | 1.00 | | A1030 E | 04/19/22 12:18 / tlf |
| A/C Balance | -3.35 | % | | | | A1030 E | 04/19/22 12:18 / tlf |
| Anions | 56.2 | meq/L | | | | A1030 E | 04/19/22 12:18 / tlf |
| Cations | 52.5 | meq/L | | | | A1030 E | 04/19/22 12:18 / tlf |
| TDS Ratio | 1.14 | unitless | | | | A1030 E | 04/19/22 12:18 / tlf |
| **RADIONUCLIDES, TOTAL** | | | | | | | |
| Gross Alpha minus Rn & U | 2.5 | pCi/L | | | | E900.1 | 04/15/22 11:08 / kdk |
| Gross Alpha minus Rn & U Precision (±) | 0.9 | pCi/L | | | | E900.1 | 04/15/22 11:08 / kdk |
| Gross Alpha minus Rn & U MDC | 1 | pCi/L | | | | E900.1 | 04/15/22 11:08 / kdk |
| Lead 210 | 0.1 | pCi/L | U | | | E909.0 | 04/14/22 17:41 / hat |
| Lead 210 precision (±) | 0.5 | pCi/L | | | | E909.0 | 04/14/22 17:41 / hat |

**Report Definitions:**

RL - Analyte Reporting Limit
QCL - Quality Control Limit
D - Reporting Limit (RL) increased due to sample matrix
U - Not detected at Minimum Detectable Concentration (MDC)
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
H - Analysis performed past the method holding time

# LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation
**Project:** UNC-Zone 1, Zone 3
**Lab ID:** C22040181-002
**Client Sample ID:** EPA Duplicate

**Report Date:** 04/29/22
**Collection Date:** 04/04/22 11:20
**DateReceived:** 04/06/22
**Matrix:** Aqueous

| Analyses | Result | Units | Qualifiers | RL | MCL/ QCL | Method | Analysis Date / By |
|---|---|---|---|---|---|---|---|
| **RADIONUCLIDES, TOTAL** | | | | | | | |
| Lead 210 MDC | 0.8 | pCi/L | | | | E909.0 | 04/14/22 17:41 / hat |
| Radium 226 | 1.5 | pCi/L | | | | E903.0 | 04/19/22 18:11 / kdk |
| Radium 226 precision (±) | 0.4 | pCi/L | | | | E903.0 | 04/19/22 18:11 / kdk |
| Radium 226 MDC | 0.2 | pCi/L | | | | E903.0 | 04/19/22 18:11 / kdk |
| Radium 228 | 3.0 | pCi/L | | | | RA-05 | 04/14/22 13:49 / trs |
| Radium 228 precision (±) | 0.9 | pCi/L | | | | RA-05 | 04/14/22 13:49 / trs |
| Radium 228 MDC | 1.1 | pCi/L | | | | RA-05 | 04/14/22 13:49 / trs |
| Radium 226 + Radium 228 | 4.5 | pCi/L | | | | A7500-RA | 04/21/22 10:26 / dmf |
| Radium 226 + Radium 228 precision (±) | 0.9 | pCi/L | | | | A7500-RA | 04/21/22 10:26 / dmf |
| Radium 226 + Radium 228 MDC | 1.1 | pCi/L | | | | A7500-RA | 04/21/22 10:26 / dmf |
| Thorium 230 | 0.1 | pCi/L | | | | A7500-U C | 04/14/22 15:55 / sec |
| Thorium 230 precision (±) | 0.06 | pCi/L | | | | A7500-U C | 04/14/22 15:55 / sec |
| Thorium 230 MDC | 0.09 | pCi/L | | | | A7500-U C | 04/14/22 15:55 / sec |
| **VOLATILE ORGANIC COMPOUNDS** | | | | | | | |
| Bromodichloromethane | ND | ug/L | | 0.50 | | E624.1 | 04/11/22 17:37 / eli-b |
| Bromoform | ND | ug/L | | 0.50 | | E624.1 | 04/11/22 17:37 / eli-b |
| Chlorodibromomethane | ND | ug/L | | 0.50 | | E624.1 | 04/11/22 17:37 / eli-b |
| Chloroform | ND | ug/L | | 0.50 | | E624.1 | 04/11/22 17:37 / eli-b |
| Trihalomethanes, Total | ND | ug/L | | 0.50 | | E624.1 | 04/27/22 18:25 / tlf |
| Surr: 1,2-Dichloroethane-d4 | 101 | %REC | | 71-139 | | E624.1 | 04/11/22 17:37 / eli-b |
| Surr: p-Bromofluorobenzene | 101 | %REC | | 80-127 | | E624.1 | 04/11/22 17:37 / eli-b |
| Surr: Toluene-d8 | 107 | %REC | | 80-123 | | E624.1 | 04/11/22 17:37 / eli-b |

**Report Definitions:**
RL - Analyte Reporting Limit
QCL - Quality Control Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)

| Guideline 8: Sweetwater | | | | | |
|---|---|---|---|---|---|
| Well ID: | | 717 | 717 | 717 | 717 |
| Collection Date: | | 4/1/2022 | 1/10/2022 | 10/4/2021 | 7/12/2021 |
| Receive Date: | | 4/5/2022 | 1/13/2022 | 10/6/2021 | 7/14/2021 |
| Report Date: | | 6/3/2022 | 2/16/2022 | 11/19/2021 | 8/13/2021 |
| Analyte | Units | C22040142-007 | C22010406-005 | C21100250-007 | C21070218-002 |
| Bicarbonate as HCO3 | mg/L | ND(5) | ND(5) | ND(5) | ND(5) |
| Calcium | mg/L | 431 | 453 | 406 | 455 |
| Chloride | mg/L | 33 | 39 | 41 | 43 |
| Magnesium | mg/L | 356 | 373 | 361 | 414 |
| Potassium | mg/L | 8 | 8 | 9 | 7 |
| Sodium | mg/L | 125 | 130 | 126 | 141 |
| Sulfate | mg/L | 3910 | 4260 | 4380 | 4260 |
| pH | s.u. | 3.5 | 3.3 | 3.4 | 3.4 |
| pH Measurement Temp | °C | 15.6 | 12.5 | 16.1 | 15.5 |
| Solids, Total Dissolved TDS @ 180 C | mg/L | 5740 | 5760 | 5790 | 5950 |
| Solids, Total Dissolved - Calculated | mg/L | 4870 | 5270 | 5330 | 5330 |
| Nitrogen, Ammonia as N | mg/L | 13.2 | 13 | 15 | 14 |
| Nitrogen, Nitrate+Nitrite as N | mg/L | ND(0.05) | ND(0.05) | 0.03 | 0.02 |
| Aluminum | mg/L | 164 | 179 | 161 | 156 |
| Arsenic | mg/L | 0.013 | 0.009 | 0.008 | 0.009 |
| Beryllium | mg/L | 0.132 | 0.127 | 0.131 | 0.122 |
| Cadmium | mg/L | 0.012 | 0.011 | 0.012 | 0.011 |
| Cobalt | mg/L | 0.898 | 0.780 | 0.870 | 0.87 |
| Lead | mg/L | 0.036 | 0.025 | 0.030 | 0.028 |
| Manganese | mg/L | 13.6 | 12.2 | 13.1 | 12.0 |
| Molybdenum | mg/L | ND(0.001) | ND(0.001) | ND(0.001) | ND(0.001) |
| Nickel | mg/L | 0.988 | 0.930 | 0.911 | 0.876 |
| Selenium | mg/L | 0.007 | 0.005 | 0.006 | 0.007 |
| Uranium | mg/L | 0.576 | 0.541 | 0.591 | 0.555 |
| Vanadium | mg/L | ND(0.01) | ND(0.01) | ND(0.01) | ND(0.2) |
| A/C Balance | % | -2.03 | -4.87 | -6.47 | -1.67 |
| Anions | meq/L | 82.7 | 90.2 | 92.7 | 90.3 |
| Cations | meq/L | 79.4 | 81.8 | 81.4 | 87.4 |
| TDS Ratio | unitless | 1.18 | 1.09 | 1.09 | 1.12 |
| Gross Alpha minus Rn & U | pCi/L | 20.1 | 22.4 | 28.0 | 26.8 |
| Gross Alpha minus Rn & U MDC | pCi/L | 0.7 | 1 | 0.9 | 1.4 |
| Gross Alpha minus Rn & U Precision (±) | pCi/L | 4.1 | 4.6 | 5.7 | 5.6 |
| Lead 210 | pCi/L | 1.1 | 1.5 | 1.1 | 2.0 |
| Lead 210 MDC | pCi/L | 1.0 | 0.9 | 1.0 | 1.0 |
| Lead 210 precision (±) | pCi/L | 0.7 | 0.7 | 0.7 | 0.9 |
| Radium 226 | pCi/L | 7.6 | 10.5 | 11.7 | 13.9 |
| Radium 226 MDC | pCi/L | 0.2 | 0.2 | 0.2 | 0.1 |
| Radium 226 precision (±) | pCi/L | 1.5 | 2.0 | 2.3 | 2.6 |
| Radium 228 | pCi/L | 17.9 | 17.6 | 16.5 | 14.5 |
| Radium 228 MDC | pCi/L | 1.0 | 1.4 | 1.6 | 0.9 |
| Radium 228 precision (±) | pCi/L | 3.4 | 3.4 | 3.3 | 2.7 |
| Thorium 230 | pCi/L | 4.4 | 3.4 | 2.0 | 0.8 |
| Thorium 230 MDC | pCi/L | 0.8 | 0.6 | 0.4 | 1.3 |
| Thorium 230 precision (±) | pCi/L | 0.8 | 0.7 | 0.4 | 0.8 |
| Bromodichloromethane | ug/L | ND(1.0) | ND(1.0) | ND(1.0) | ND(1.0) |
| Bromoform | ug/L | ND(2.0) | ND(2.0) | ND(2.0) | ND(2.0) |
| Chlorodibromomethane | ug/L | ND(1.0) | ND(1.0) | ND(1.0) | ND(1.0) |
| Chloroform | ug/L | ND(1.0) | 1.2 | 1.1 | ND(1.0) |
| Trihalomethanes, Total | ug/L | ND(0.50) | 1.2 | 1.1 | 0.53 |

| Guideline 8: Sweetwater | | | | | |
|---|---|---|---|---|---|
| Well ID: | | 717 Duplicate | 717 Duplicate | 717 Duplicate | 717 Duplicate |
| Collection Date: | | 4/1/2022 | 1/10/2022 | 10/4/2021 | 7/5/2021 |
| Receive Date: | | 4/5/2022 | 1/13/2022 | 10/6/2021 | 7/721 |
| Report Date: | | 6/3/2022 | 2/16/2022 | 11/19/2021 | 8/13/2021 |
| **Analyte** | **Units** | **C22040142-008** | **C22010406-006** | **C21100250-008** | **C21070218-003** |
| Bicarbonate as HCO3 | mg/L | ND(5) | ND(5) | ND(5) | ND(5) |
| Calcium | mg/L | 437 | 457 | 405 | 461 |
| Chloride | mg/L | 36 | 39 | 41 | 43 |
| Magnesium | mg/L | 393 | 399 | 361 | 421 |
| Potassium | mg/L | 8 | 7 | 9 | 7 |
| Sodium | mg/L | 129 | 144 | 126 | 144 |
| Sulfate | mg/L | 4250 | 4320 | 4390 | 4340 |
| pH | s.u. | 3.6 | 3.6 | 3.6 | 3.6 |
| pH Measurement Temp | °C | 15.6 | 12.8 | 16.0 | 15.8 |
| Solids, Total Dissolved TDS @ 180 C | mg/L | 5760 | 5800 | 5840 | 5930 |
| Solids, Total Dissolved - Calculated | mg/L | 5260 | 5370 | 5340 | 5420 |
| Nitrogen, Ammonia as N | mg/L | 12.6 | 14 | 13 | 13 |
| Nitrogen, Nitrate+Nitrite as N | mg/L | ND(0.05) | ND(0.05) | 0.04 | 0.04 |
| Aluminum | mg/L | 159 | 171 | 165 | 160 |
| Arsenic | mg/L | 0.013 | 0.009 | 0.008 | 0.009 |
| Beryllium | mg/L | 0.131 | 0.126 | 0.150 | 0.14 |
| Cadmium | mg/L | 0.011 | 0.011 | 0.011 | 0.011 |
| Cobalt | mg/L | 0.903 | 0.772 | 0.9 | 0.781 |
| Lead | mg/L | 0.012 | 0.012 | 0.012 | 0.012 |
| Manganese | mg/L | 13.7 | 12.2 | 13.5 | 12.4 |
| Molybdenum | mg/L | ND(0.001) | ND(0.001) | ND(0.001) | ND(0.001) |
| Nickel | mg/L | 0.976 | 0.915 | 1.0 | 0.889 |
| Selenium | mg/L | 0.006 | 0.006 | 0.006 | 0.007 |
| Uranium | mg/L | 0.566 | 0.541 | 0.587 | 0.563 |
| Vanadium | mg/L | ND(0.01) | ND(0.01) | ND(0.01) | ND(0.2) |
| A/C Balance | % | -3.68 | -3.61 | -6.85 | -1.59 |
| Anions | meq/L | 89.9 | 91.3 | 92.9 | 92.0 |
| Cations | meq/L | 83.5 | 85.0 | 81.0 | 89.1 |
| TDS Ratio | unitless | 1.10 | 1.08 | 1.09 | 1.09 |
| Gross Alpha minus Rn & U | pCi/L | 21.1 | 27.4 | 33.2 | 24.9 |
| Gross Alpha minus Rn & U MDC | pCi/L | 0.7 | 1 | 0.9 | 1.4 |
| Gross Alpha minus Rn & U Precision (±) | pCi/L | 4.3 | 5.6 | 6.6 | 5.3 |
| Lead 210 | pCi/L | 0.8 | 1.7 | 1.9 | 2.5 |
| Lead 210 MDC | pCi/L | 1.0 | 1 | 1.1 | 1.0 |
| Lead 210 precision (±) | pCi/L | 0.6 | 0.8 | 0.9 | 1.0 |
| Radium 226 | pCi/L | 8.8 | 11.4 | 11.8 | 15.8 |
| Radium 226 MDC | pCi/L | 0.2 | 0.2 | 0.2 | 0.2 |
| Radium 226 precision (±) | pCi/L | 1.7 | 2.2 | 2.3 | 3.0 |
| Radium 228 | pCi/L | 17.1 | 17.5 | 15.8 | 16.6 |
| Radium 228 MDC | pCi/L | 1.1 | 1.4 | 1.6 | 1.0 |
| Radium 228 precision (±) | pCi/L | 3.2 | 3.3 | 3.1 | 3.1 |
| Thorium 230 | pCi/L | 3.8 | 5.5 | 1.6 | 1.5 |
| Thorium 230 MDC | pCi/L | 0.7 | 0.6 | 0.6 | 1.8 |
| Thorium 230 precision (±) | pCi/L | 0.7 | 1.0 | 0.3 | 0.3 |
| Bromodichloromethane | ug/L | ND(1.0) | ND(1.0) | ND(1.0) | ND(1.0) |
| Bromoform | ug/L | ND(2.0) | ND(2.0) | ND(2.0) | ND(2.0) |
| Chlorodibromomethane | ug/L | ND(1.0) | ND(1.0) | ND(1.0) | ND(1.0) |
| Chloroform | ug/L | ND(1.0) | ND(1.0) | ND(1.0) | ND(1.0) |
| Trihalomethanes, Total | ug/L | 0.55 | 0.73 | 0.83 | ND(0.50) |

# LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation
**Project:** UNC- Zone 1 & Zone 3
**Lab ID:** C22010406-006
**Client Sample ID:** 717 Duplicate

**Report Date:** 02/16/22
**Collection Date:** 01/10/22 15:33
**DateReceived:** 01/13/22
**Matrix:** Aqueous

| Analyses | Result | Units | Qualifiers | RL | MCL/ QCL | Method | Analysis Date / By |
|---|---|---|---|---|---|---|---|
| **MAJOR IONS** | | | | | | | |
| Acidity, Total as CaCO3 | 1100 | mg/L | | | | A2310 B | 01/24/22 10:46 / nts |
| Bicarbonate as HCO3 | ND | mg/L | | 5 | | A2320 B | 01/17/22 14:44 / kjp |
| Chloride | 39 | mg/L | D | 2 | | E300.0 | 01/14/22 23:04 / dmb |
| Sulfate | 4320 | mg/L | D | 8 | | E300.0 | 01/14/22 23:04 / dmb |
| Calcium | 457 | mg/L | | 1 | | E200.7 | 01/19/22 19:30 / srm |
| Magnesium | 399 | mg/L | | 1 | | E200.7 | 01/19/22 19:30 / srm |
| Potassium | 7 | mg/L | | 1 | | E200.7 | 01/14/22 20:16 / srm |
| Sodium | 144 | mg/L | D | 3 | | E200.7 | 01/19/22 19:30 / srm |
| **PHYSICAL PROPERTIES** | | | | | | | |
| pH | 3.6 | s.u. | H | 0.1 | | A4500-H B | 01/14/22 11:24 / kjp |
| pH Measurement Temp | 12.8 | °C | | | | A4500-H B | 01/14/22 11:24 / kjp |
| Solids, Total Dissolved TDS @ 180 C | 5800 | mg/L | D | 40 | | A2540 C | 01/14/22 12:22 / kjp |
| **NUTRIENTS** | | | | | | | |
| Nitrogen, Nitrate+Nitrite as N | ND | mg/L | | 0.05 | | E353.2 | 01/14/22 16:31 / nts |
| Nitrogen, Ammonia as N | 14 | mg/L | D | 1 | | E350.1 | 01/14/22 14:26 / nts |
| **METALS, TOTAL** | | | | | | | |
| Aluminum | 171 | mg/L | D | 20 | | E200.8 | 01/25/22 12:22 / jcg |
| Arsenic | 0.009 | mg/L | | 0.001 | | E200.8 | 01/20/22 03:00 / jcg |
| Beryllium | 0.126 | mg/L | | 0.001 | | E200.8 | 01/20/22 03:00 / jcg |
| Cadmium | 0.011 | mg/L | | 0.001 | | E200.8 | 01/20/22 03:00 / jcg |
| Cobalt | 0.772 | mg/L | | 0.005 | | E200.8 | 01/20/22 03:00 / jcg |
| Lead | 0.012 | mg/L | | 0.001 | | E200.8 | 01/20/22 03:00 / jcg |
| Manganese | 12.2 | mg/L | D | 0.006 | | E200.8 | 01/20/22 03:00 / jcg |
| Molybdenum | ND | mg/L | | 0.001 | | E200.8 | 01/21/22 20:04 / jcg |
| Nickel | 0.915 | mg/L | | 0.005 | | E200.8 | 01/20/22 03:00 / jcg |
| Selenium | 0.006 | mg/L | | 0.001 | | E200.8 | 01/20/22 03:00 / jcg |
| Uranium | 0.541 | mg/L | D | 0.001 | | E200.8 | 01/20/22 03:00 / jcg |
| Vanadium | ND | mg/L | | 0.01 | | E200.8 | 01/20/22 03:00 / jcg |
| **RADIONUCLIDES, TOTAL** | | | | | | | |
| Gross Alpha minus Rn & U | 27.4 | pCi/L | | | | E900.1 | 01/21/22 09:12 / trs |
| Gross Alpha minus Rn & U Precision (±) | 5.6 | pCi/L | | | | E900.1 | 01/21/22 09:12 / trs |
| Gross Alpha minus Rn & U MDC | 1 | pCi/L | | | | E900.1 | 01/21/22 09:12 / trs |
| Lead 210 | 1.7 | pCi/L | | | | E909.0 | 01/21/22 13:02 / hat |
| Lead 210 precision (±) | 0.8 | pCi/L | | | | E909.0 | 01/21/22 13:02 / hat |
| Lead 210 MDC | 1 | pCi/L | | | | E909.0 | 01/21/22 13:02 / hat |
| Radium 226 | 11.4 | pCi/L | | | | E903.0 | 01/26/22 11:30 / kdk |
| Radium 226 precision (±) | 2.2 | pCi/L | | | | E903.0 | 01/26/22 11:30 / kdk |
| Radium 226 MDC | 0.2 | pCi/L | | | | E903.0 | 01/26/22 11:30 / kdk |
| Radium 228 | 17.5 | pCi/L | | | | RA-05 | 01/20/22 13:49 / trs |
| Radium 228 precision (±) | 3.3 | pCi/L | | | | RA-05 | 01/20/22 13:49 / trs |

**Report Definitions:**
RL - Analyte Reporting Limit
QCL - Quality Control Limit
D - Reporting Limit (RL) increased due to sample matrix
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
H - Analysis performed past the method holding time

# LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation
**Project:** UNC- Zone 1 & Zone 3
**Lab ID:** C22010406-006
**Client Sample ID:** 717 Duplicate

**Report Date:** 02/16/22
**Collection Date:** 01/10/22 15:33
**DateReceived:** 01/13/22
**Matrix:** Aqueous

| Analyses | Result | Units | Qualifiers | RL | MCL/ QCL | Method | Analysis Date / By |
|---|---|---|---|---|---|---|---|
| **RADIONUCLIDES, TOTAL** | | | | | | | |
| Radium 228 MDC | 1.4 | pCi/L | | | | RA-05 | 01/20/22 13:49 / trs |
| Radium 226 + Radium 228 | 28.9 | pCi/L | | | | A7500-RA | 01/27/22 15:26 / dmf |
| Radium 226 + Radium 228 precision (±) | 4.0 | pCi/L | | | | A7500-RA | 01/27/22 15:26 / dmf |
| Radium 226 + Radium 228 MDC | 1.4 | pCi/L | | | | A7500-RA | 01/27/22 15:26 / dmf |
| Thorium 230 | 5.5 | pCi/L | | | | A7500-U C | 01/24/22 12:42 / sec |
| Thorium 230 precision (±) | 1.0 | pCi/L | | | | A7500-U C | 01/24/22 12:42 / sec |
| Thorium 230 MDC | 0.6 | pCi/L | | | | A7500-U C | 01/24/22 12:42 / sec |
| **DATA QUALITY** | | | | | | | |
| Solids, Total Dissolved - Calculated | 5370 | mg/L | | 1.00 | | A1030 E | 01/24/22 16:33 / jlw |
| A/C Balance | -3.61 | % | | | | A1030 E | 01/24/22 16:33 / jlw |
| Anions | 91.3 | meq/L | | | | A1030 E | 01/24/22 16:33 / jlw |
| Cations | 85.0 | meq/L | | | | A1030 E | 01/24/22 16:33 / jlw |
| TDS Ratio | 1.08 | unitless | | | | A1030 E | 01/24/22 16:33 / jlw |
| **VOLATILE ORGANIC COMPOUNDS** | | | | | | | |
| Bromodichloromethane | ND | ug/L | | 1.0 | | E624.1 | 01/19/22 18:55 / etad |
| Bromoform | ND | ug/L | | 2.0 | | E624.1 | 01/19/22 18:55 / etad |
| Chlorodibromomethane | ND | ug/L | | 1.0 | | E624.1 | 01/19/22 18:55 / etad |
| Chloroform | 0.73 | ug/L | J | 1.0 | | E624.1 | 01/19/22 18:55 / etad |
| Trihalomethanes, Total | 0.73 | ug/L | | 0.50 | | E624.1 | 02/03/22 09:28 / jlw |
| Surr: 1,2-Dichloroethane-d4 | 99.0 | %REC | | 73-122 | | E624.1 | 01/19/22 18:55 / etad |
| Surr: p-Bromofluorobenzene | 101 | %REC | | 79-119 | | E624.1 | 01/19/22 18:55 / etad |
| Surr: Toluene-d8 | 99.0 | %REC | | 80-120 | | E624.1 | 01/19/22 18:55 / etad |

**Report Definitions:**
RL - Analyte Reporting Limit
QCL - Quality Control Limit
J - Estimated value - analyte was present but less than the Reporting Limit (RL)
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)

# LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation
**Project:** UNC-Zone 1 and Zone 3
**Lab ID:** C22040142-008
**Client Sample ID:** 717 Duplicate

**Report Date:** 06/03/22
**Collection Date:** 04/01/22 10:13
**DateReceived:** 04/05/22
**Matrix:** Aqueous

| Analyses | Result | Units | Qualifiers | RL | MCL/ QCL | Method | Analysis Date / By |
|---|---|---|---|---|---|---|---|
| **MAJOR IONS** | | | | | | | |
| Acidity, Total as CaCO3 | 1140 | mg/L | | | | A2310 B | 04/13/22 14:12 / nts |
| Bicarbonate as HCO3 | ND | mg/L | | 5 | | A2320 B | 04/07/22 16:39 / nts |
| Chloride | 36 | mg/L | D | 2 | | E300.0 | 04/09/22 19:03 / dmb |
| Sulfate | 4250 | mg/L | D | 8 | | E300.0 | 04/09/22 19:03 / dmb |
| Calcium | 437 | mg/L | | 1 | | E200.7 | 04/17/22 03:22 / erc |
| Magnesium | 393 | mg/L | | 1 | | E200.7 | 04/15/22 02:20 / erc |
| Potassium | 8 | mg/L | | 1 | | E200.7 | 04/17/22 03:22 / erc |
| Sodium | 129 | mg/L | D | 3 | | E200.7 | 04/17/22 03:22 / erc |
| **PHYSICAL PROPERTIES** | | | | | | | |
| pH | 3.6 | s.u. | H | 0.1 | | A4500-H B | 04/06/22 12:09 / mnm |
| pH Measurement Temp | 15.6 | °C | | | | A4500-H B | 04/06/22 12:09 / mnm |
| Solids, Total Dissolved TDS @ 180 C | 5760 | mg/L | D | 40 | | A2540 C | 04/06/22 15:00 / mnm |
| **NUTRIENTS** | | | | | | | |
| Nitrogen, Nitrate+Nitrite as N | ND | mg/L | | 0.05 | | E353.2 | 04/06/22 12:20 / nts |
| Nitrogen, Ammonia as N | 12.6 | mg/L | D | 0.5 | | E350.1 | 04/07/22 15:41 / nts |
| **METALS, TOTAL** | | | | | | | |
| Aluminum | 159 | mg/L | D | 20 | | E200.8 | 04/29/22 11:59 / jcg |
| Arsenic | 0.013 | mg/L | | 0.001 | | E200.8 | 04/16/22 07:26 / jcg |
| Beryllium | 0.131 | mg/L | | 0.001 | | E200.8 | 04/16/22 07:26 / jcg |
| Cadmium | 0.011 | mg/L | | 0.001 | | E200.8 | 04/16/22 07:26 / jcg |
| Cobalt | 0.903 | mg/L | | 0.005 | | E200.8 | 04/16/22 07:26 / jcg |
| Lead | 0.012 | mg/L | | 0.001 | | E200.8 | 04/20/22 00:50 / jcg |
| Manganese | 13.7 | mg/L | D | 0.006 | | E200.8 | 04/16/22 07:26 / jcg |
| Molybdenum | ND | mg/L | | 0.001 | | E200.8 | 04/16/22 07:26 / jcg |
| Nickel | 0.976 | mg/L | | 0.005 | | E200.8 | 04/16/22 07:26 / jcg |
| Selenium | 0.006 | mg/L | | 0.001 | | E200.8 | 04/20/22 00:50 / jcg |
| Uranium | 0.566 | mg/L | D | 0.001 | | E200.8 | 04/16/22 07:26 / jcg |
| Vanadium | ND | mg/L | | 0.01 | | E200.8 | 04/16/22 07:26 / jcg |
| **DATA QUALITY** | | | | | | | |
| Solids, Total Dissolved - Calculated | 5260 | mg/L | | 1.00 | | A1030 E | 04/19/22 12:17 / tlf |
| A/C Balance | -3.68 | % | | | | A1030 E | 04/19/22 12:17 / tlf |
| Anions | 89.9 | meq/L | | | | A1030 E | 04/19/22 12:17 / tlf |
| Cations | 83.5 | meq/L | | | | A1030 E | 04/19/22 12:17 / tlf |
| TDS Ratio | 1.10 | unitless | | | | A1030 E | 04/19/22 12:17 / tlf |
| **RADIONUCLIDES, TOTAL** | | | | | | | |
| Gross Alpha minus Rn & U | 21.1 | pCi/L | | | | E900.1 | 04/12/22 15:02 / kdk |
| Gross Alpha minus Rn & U Precision (±) | 4.3 | pCi/L | | | | E900.1 | 04/12/22 15:02 / kdk |
| Gross Alpha minus Rn & U MDC | 0.7 | pCi/L | | | | E900.1 | 04/12/22 15:02 / kdk |
| Lead 210 | 0.8 | pCi/L | U | | | E909.0 | 04/11/22 06:35 / hat |

**Report Definitions:**

RL - Analyte Reporting Limit
QCL - Quality Control Limit
D - Reporting Limit (RL) increased due to sample matrix
U - Not detected at Minimum Detectable Concentration (MDC)
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)
H - Analysis performed past the method holding time

# LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation
**Project:** UNC-Zone 1 and Zone 3
**Lab ID:** C22040142-008
**Client Sample ID:** 717 Duplicate

**Report Date:** 06/03/22
**Collection Date:** 04/01/22 10:13
**DateReceived:** 04/05/22
**Matrix:** Aqueous

| Analyses | Result | Units | Qualifiers | RL | MCL/ QCL | Method | Analysis Date / By |
|---|---|---|---|---|---|---|---|
| **RADIONUCLIDES, TOTAL** | | | | | | | |
| Lead 210 precision (±) | 0.6 | pCi/L | | | | E909.0 | 04/11/22 06:35 / hat |
| Lead 210 MDC | 1.0 | pCi/L | | | | E909.0 | 04/11/22 06:35 / hat |
| Radium 226 | 8.8 | pCi/L | | | | E903.0 | 04/17/22 10:41 / trs |
| Radium 226 precision (±) | 1.7 | pCi/L | | | | E903.0 | 04/17/22 10:41 / trs |
| Radium 226 MDC | 0.2 | pCi/L | | | | E903.0 | 04/17/22 10:41 / trs |
| Radium 228 | 17.1 | pCi/L | | | | RA-05 | 04/25/22 15:57 / trs |
| Radium 228 precision (±) | 3.2 | pCi/L | | | | RA-05 | 04/25/22 15:57 / trs |
| Radium 228 MDC | 1.1 | pCi/L | | | | RA-05 | 04/25/22 15:57 / trs |
| Radium 226 + Radium 228 | 25.9 | pCi/L | | | | A7500-RA | 04/26/22 11:12 / dmf |
| Radium 226 + Radium 228 precision (±) | 3.6 | pCi/L | | | | A7500-RA | 04/26/22 11:12 / dmf |
| Radium 226 + Radium 228 MDC | 1.1 | pCi/L | | | | A7500-RA | 04/26/22 11:12 / dmf |
| Thorium 230 | 3.8 | pCi/L | | | | A7500-U C | 04/18/22 13:49 / sec |
| Thorium 230 precision (±) | 0.7 | pCi/L | | | | A7500-U C | 04/18/22 13:49 / sec |
| Thorium 230 MDC | 0.7 | pCi/L | | | | A7500-U C | 04/18/22 13:49 / sec |
| **VOLATILE ORGANIC COMPOUNDS** | | | | | | | |
| Bromodichloromethane | ND | ug/L | | 1.0 | | E624.1 | 04/14/22 03:05 / etad |
| Bromoform | ND | ug/L | | 2.0 | | E624.1 | 04/14/22 03:05 / etad |
| Chlorodibromomethane | ND | ug/L | | 1.0 | | E624.1 | 04/14/22 03:05 / etad |
| Chloroform | 0.55 | ug/L | J | 1.0 | | E624.1 | 04/14/22 03:05 / etad |
| Trihalomethanes, Total | 0.55 | ug/L | | 0.50 | | E624.1 | 04/27/22 18:25 / tlf |
| Surr: 1,2-Dichloroethane-d4 | 103 | %REC | | 73-122 | | E624.1 | 04/14/22 03:05 / etad |
| Surr: p-Bromofluorobenzene | 98.0 | %REC | | 79-119 | | E624.1 | 04/14/22 03:05 / etad |
| Surr: Toluene-d8 | 98.0 | %REC | | 80-120 | | E624.1 | 04/14/22 03:05 / etad |

**Report Definitions:**
RL - Analyte Reporting Limit
QCL - Quality Control Limit
J - Estimated value - analyte was present but less than the Reporting Limit (RL)
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)

# APPENDIX – C

## QUARTERLY

## CHAIN OF CUSTODY REPORT

ENERGY LABORATORIES
Trust our People. Trust our Data.

# Chain of Custody & Analytical Request Record

www.energylab.com

Page 1 of 1

## Account Information (Billing Information)

| | |
|---|---|
| Company/Name | Wood PLC |
| Contact | Dorina Young |
| Phone | 505-905-6651 |
| Mailing Address | P.O. Box 1088 |
| City, State, Zip | Gallup, NM 87305 |
| Email | dorina.young@woodplc.com |
| Receive Invoice | ☐Hard Copy ☒Email |
| Receive Report | ☐Hard Copy ☒Email |
| Purchase Order | C014000055 |
| Quote | 6117 |
| Bottle Order | 68284 |

## Report Information (if different than Account Information)

| | |
|---|---|
| Company/Name | United Nuclear Corp. |
| Contact | Max Chischilly JR. |
| Phone | 505-905-6651 |
| Mailing Address | P.O. Box 1088 |
| City, State, Zip | Gallup, NM 87305 |
| Email | max.chischilly@woodplc.com |
| Receive Report | ☐Hard Copy ☒Email |

Special Report/Formats: ☐ LEVEL IV ☐NELAC ☐ EDD/EDT (contact laboratory) ☐ Other_____

## Comments

Wood PLC
Acct. No. is C16610
United Nuclear Corporation is no longer mining and milling.

These water samples were not considered Radioactive under US DOT-HMR gudelines for shipping on recent/previous quarterly sampling.

## Project Information

| | |
|---|---|
| Project Name, PWSID, Permit, etc. | UNC-ZONE 1 & ZONE 3 |
| Sampler Name | Max Chischilly JR. |
| Sampler Phone | 505-905-6651 |
| Sample Origin State | NM |
| EPA/State Compliance | ☒ Yes ☐ No |

URANIUM MINING CLIENTS MUST indicate sample type
☐ Unprocessed Ore
☐ Processed Ore (Ground or Refined) **CALL BEFORE SENDING
☒ 11(e)2 Byproduct Material (Can ONLY be Submitted to ELI Casper Location)

**Matrix Codes**
A - Air
W - Water
S - Soils/Solids
V - Vegetation
B - Bioassay
O - Oil
DW - Drinking Water

All turnaround times are standard unless marked as RUSH.
Energy Laboratories MUST be contacted prior to RUSH sample submittal for charges and scheduling – See Instructions Page

| | Sample Identification (Name, Location, Interval, etc.) | Collection Date | Collection Time | Number of Containers | Matrix (See Codes Above) | As (Total) | Se (Total) | Be, Ca, Cd, Cl, HCO3 K, Mg, Mn, Na | NH4, Ni, NO3, Pb, Mo Pb-210, pH, SO4 | TDS, Th-230, U, V Chloroform | Gross Alpha (-) U & Rn, Al | Co, Combined Ra-226 & Ra-228. | TTHMS | | See Attached | RUSH TAT | ELI LAB ID (Laboratory Use Only) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 515-A | 1-10-22 | 1115 | 8 | W | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | C22010466 |
| 2 | 604 | 1-10-22 | 1226 | 8 | W | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | |
| 3 | EPA-7 | 1-10-22 | 1324 | 8 | W | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | |
| 4 | 613 | 1-10-22 | 1412 | 8 | W | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | |
| 5 | 717 | 1-10-22 | 1500 | 8 | W | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | |
| 6 | TRIP DUPLICATE | 1-10-22 | 1533 | 8 | W | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | |
| 7 | | | | | | | | | | | | | | | | | |
| 8 | | | | | | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | | | | | | |

ELI is REQUIRED to provide preservative traceability. If the preservatives supplied with the bottle order were NOT used, please attach your preservative information with this COC.

| Custody Record MUST be signed | Relinquished by (print) | Date/Time | Signature | Received by (print) | Date/Time | Signature |
|---|---|---|---|---|---|---|
| | Max Chischilly Jr. | 1-10-22/1630 | Max Chischilly Jr. | Franchesca Gillreath | 1-11-22/0850 | [illegible] |
| | Ricky E. Spitz | 1-11-22/1200 | [illegible] | [illegible] | 1/13/22 1305 | [illegible] |

LABORATORY USE ONLY

| Shipped By | Cooler ID(s) | Custody Seals Y N C B | Intact Y N | Receipt Temp °C | Temp Blank Y N | On Ice Y N | Payment Type CC Cash Check_____ | Amount $ | Receipt Number (cash/check only) |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | |

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested. This serves as notice of this possibility. All subcontracted data will be clearly notated on your analytical report.

# Work Order Receipt Checklist

## United Nuclear Corporation C22010406

Login completed by: Kirsten L. Smith
Date Received: 1/13/2022
Reviewed by: Misty Stephens
Received by: lmc
Reviewed Date: 1/17/2022
Carrier name: NDA

| | | | |
|---|---|---|---|
| Shipping container/cooler in good condition? | Yes ☑ | No ☐ | Not Present ☐ |
| Custody seals intact on all shipping container(s)/cooler(s)? | Yes ☑ | No ☐ | Not Present ☐ |
| Custody seals intact on all sample bottles? | Yes ☐ | No ☐ | Not Present ☑ |
| Chain of custody present? | Yes ☑ | No ☐ | |
| Chain of custody signed when relinquished and received? | Yes ☑ | No ☐ | |
| Chain of custody agrees with sample labels? | Yes ☑ | No ☐ | |
| Samples in proper container/bottle? | Yes ☑ | No ☐ | |
| Sample containers intact? | Yes ☑ | No ☐ | |
| Sufficient sample volume for indicated test? | Yes ☑ | No ☐ | |
| All samples received within holding time? (Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.) | Yes ☑ | No ☐ | |
| Temp Blank received in all shipping container(s)/cooler(s)? | Yes ☑ | No ☐ | Not Applicable ☐ |
| Container/Temp Blank temperature: | 3.7°C On Ice | | |
| Containers requiring zero headspace have no headspace or bubble that is <6mm (1/4"). | Yes ☑ | No ☐ | No VOA vials submitted ☐ |
| Water - pH acceptable upon receipt? | Yes ☑ | No ☐ | Not Applicable ☐ |

## Standard Reporting Procedures:

Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH, Dissolved Oxygen and Residual Chlorine, are qualified as being analyzed outside of recommended holding time.

Solid/soil samples are reported on a wet weight basis (as received) unless specifically indicated. If moisture corrected, data units are typically noted as –dry. For agricultural and mining soil parameters/characteristics, all samples are dried and ground prior to sample analysis.

Radiochemical precision results represent a 2-sigma Total Measurement Uncertainty.

## Contact and Corrective Action Comments:

Temperature Blank temperature for Cooler 1 was 3.7°C and Cooler 2 was 3.7°C. 1/13/2022-KS

**Energy Laboratories, Inc.**
2393 Salt Creek Hwy
Casper, WY 82601-9601
307.235.0515

C22010406

# CHAIN-OF-CUSTODY RECORD


13-Jan-22

PO: C22010406

**Earliest HT Expires:** Mon, 1/24/2022 1115
**Test Codes:** VOC-624.1-W

**Earliest Due Date:** 2/10/2022
**# Bus. Days Until Due:** 20

**Subcontractor:**
Eurofins TA-Denver
4955 Yarrow St
Arvada. CO 80002
TEL: 3037360100
FAX:
Acct #: 3037360100

Project # 28019575

**Subcontractor's Client**

| | | | | | Requested Tests: VOC-624.1-W |
|---|---|---|---|---|---|
| C22010406-001F | Aqueous | 01/10/22 11:15 A | 3 - 40ML-CG-VOA-AA-H | 1 | |
| C22010406-002F | Aqueous | 01/10/22 12:26 P | 3 - 40ML-CG-VOA-AA-H | 1 | |
| C22010406-003F | Aqueous | 01/10/22 01:24 P | 3 - 40ML-CG-VOA-AA-H | 1 | |
| C22010406-004F | Aqueous | 01/10/22 02:12 P | 3 - 40ML-CG-VOA-AA-H | 1 | |
| C22010406-005F | Aqueous | 01/10/22 03:00 P | 3 - 40ML-CG-VOA-AA-H | 1 | |
| C22010406-006F | Aqueous | 01/10/22 03:33 P | 3 - 40ML-CG-VOA-AA-H | 1 | |
| C22010406-007A | Trip Blank | 01/10/22 11:15 A | 2 - 40ML-CG-VOA-AA-3 | 1 | |

Samples are HCl

**Comments:** See attached for Analysis Requested.

280-157826 Chain of Custody

3.6IR13-0.2

QC Level: STD

| | | Date/Time | | | Date/Time |
|---|---|---|---|---|---|
| **Relinquished by:** | [signature] | 1/13/2022 14:52 | **Received by:** | [signature] | 01/18/2022 1320 |
| **Relinquished by:** | | | **Received by:** | | |

| Shipped By: | Custody Seal | Intact | Receipt Temp: °C | Temp Blank | On Ice |
|---|---|---|---|---|---|
| | Y N | Y N | | Y N | Y N |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| G | ☐ | ☐ | VOC-624.1-W | ☐ | ☐ | ☑ | Sub-TA-Arvada | |
| A | Bromodichloromethane | | | 0.01076 | 0.5 | | 0 | |
| A | Bromoform | | | 0.0325 | 0.5 | | 0 | |
| A | Chlorodibromomethane | | | 0.01741 | 0.5 | | 0 | |
| A | Chloroform | | | 0.03616 | 0.5 | | 0 | |
| S | 1,2-Dichloroethane-d4 | | | 0 | 0.5 | | 0 | |
| S | p-Bromofluorobenzene | | | 0 | 0.5 | | 0 | |
| S | Toluene-d8 | | | 0 | 0.5 | | 0 | |
| G | ☐ | ☐ | VOC-624.1-W-CALC | ☐ | ☐ | ☑ | Sub-TA-Arvada | |

# Login Sample Receipt Checklist

Client: Energy Laboratories, Inc.

Job Number: 280-157826-1

**Login Number: 157826**
**List Number: 1**
**Creator: O'Hara, Jake F**

**List Source: Eurofins Denver**

| Question | Answer | Comment |
|---|---|---|
| Radioactivity wasn't checked or is </= background as measured by a survey meter. | True | |
| The cooler's custody seal, if present, is intact. | True | |
| Sample custody seals, if present, are intact. | True | |
| The cooler or samples do not appear to have been compromised or tampered with. | True | |
| Samples were received on ice. | True | |
| Cooler Temperature is acceptable. | True | |
| Cooler Temperature is recorded. | True | |
| COC is present. | True | |
| COC is filled out in ink and legible. | True | |
| COC is filled out with all pertinent information. | True | |
| Is the Field Sampler's name present on COC? | N/A | |
| There are no discrepancies between the containers received and the COC. | True | |
| Samples are received within Holding Time (excluding tests with immediate HTs) | False | Refer to Job Narrative for details. |
| Sample containers have legible labels. | True | |
| Containers are not broken or leaking. | True | |
| Sample collection date/times are provided. | True | |
| Appropriate sample containers are used. | True | |
| Sample bottles are completely filled. | True | |
| Sample Preservation Verified. | N/A | |
| There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs | True | |
| Containers requiring zero headspace have no headspace or bubble is <6mm (1/4"). | False | Narrative to indicate if headspace container used for analysis. |
| Multiphasic samples are not present. | True | |
| Samples do not require splitting or compositing. | True | |
| Residual Chlorine Checked. | N/A | |

ENERGY LABORATORIES
Trust our People. Trust our Data.

# Chain of Custody & Analytical Request Record

www.energylab.com

Page 1 of 2

## Account Information (Billing Information)

| | |
|---|---|
| Company/Name | Wood PLC |
| Contact | Dorina Young |
| Phone | 505-905-6651 |
| Mailing Address | P.O. Box 1088 |
| City, State, Zip | Gallup, NM 87305 |
| Email | dorina.young@woodplc.com |
| Receive Invoice | ☐Hard Copy ☒Email |
| Receive Report | ☐Hard Copy ☒Email |
| Purchase Order | C014000055 |
| Quote | 6117 |
| Bottle Order | 68284 |

## Report Information (if different than Account Information)

| | |
|---|---|
| Company/Name | United Nuclear Corp. |
| Contact | Max Chischilly JR. |
| Phone | 505-905-6651 |
| Mailing Address | P.O. Box 1088 |
| City, State, Zip | Gallup, NM 87305 |
| Email | max.chischilly@woodplc.com |
| Receive Report | ☐Hard Copy ☒Email |

Special Report/Formats: ☐ LEVEL IV ☐NELAC ☐ EDD/EDT (contact laboratory) ☐ Other_____

## Comments

Wood PLC
Acct. No. is C16610
United Nuclear Corporation is no longer mining and milling.

These water samples were not considered Radioactive under US DOT-HMR gudelines for shipping on recent/previous quarterly sampling.

## Project Information

| | |
|---|---|
| Project Name, PWSID, Permit, etc. | UNC |
| Sampler Name | Max Chischilly JR. |
| Sampler Phone | 505-905-6651 |
| Sample Origin State | NM |
| EPA/State Compliance | ☒ Yes ☐ No |

URANIUM MINING CLIENTS MUST indicate sample type
☐ Unprocessed Ore
☐ Processed Ore (Ground or Refined) **CALL BEFORE SENDING
☒ 11(e)2 Byproduct Material (Can ONLY be Submitted to ELI Casper Location)

**Matrix Codes**
A - Air
W - Water
S - Soils/Solids
V - Vegetation
B - Bioassay
O - Oil
DW - Drinking Water

All turnaround times are standard unless marked as RUSH.
Energy Laboratories MUST be contacted prior to RUSH sample submittal for charges and scheduling -- See Instructions Page

| | Sample Identification (Name, Location, Interval, etc.) | Collection Date | Collection Time | Number of Containers | Matrix (See Codes Above) | As (Total) | Se (Total) | Be, Ca, Cd, Cl, HCO3 K, Mg, Mn, Na | NH4, Ni, NO3, Pb, Mo Pb-210, pH, SO4 | TDS, Th-230, U, V Chloroform | Gross Alpha (-) U & Rn, Al | Co, Combined Ra-226 & Ra-228.. | TTHM'S | | See Attached | RUSH TAT | ELI LAB ID. Laboratory Use Only |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 614 | 1-10-22 | 0908 | 8 | W | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | C220104158 |
| 2 | EPA-14 | 1-11-22 | 1047 | 8 | W | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | |
| 3 | 708 | 1-11-22 | 1133 | 8 | W | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | |
| 4 | 711 | 1-11-22 | 1233 | 8 | W | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | |
| 5 | EPA-13 | 1-11-22 | 1416 | 8 | W | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | |
| 6 | 517 | 1-11-22 | 0925 | 8 | W | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | |
| 7 | MW-7 | 1-12-22 | 1112 | 8 | W | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | |
| 8 | | | | | | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | | | | | | |

**ELI is REQUIRED to provide preservative traceability.** If the preservatives supplied with the bottle order were NOT used, please attach your preservative information with this COC.

| Custody Record MUST be signed | Relinquished by (print) | Date/Time | Signature | Received by (print) | Date/Time | Signature |
|---|---|---|---|---|---|---|
| | Max Chischilly Jr. | 1-11-22/1645 | Max Chischilly Jr. | Franchesca Gillrezbhi | 1-12-22/1400 | |
| | Ricky E. Spitz | 1-12-22/1430 | | | | |

LABORATORY USE ONLY

| Shipped By | Cooler ID(s) | Custody Seals Y N C B | Intact Y N | Receipt Temp °C | Temp Blank Y N | On Ice Y N | Payment Type CC Cash Check_____ | Amount $ | Receipt Number (cash/check only) |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | |

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested. This serves as notice of this possibility. All subcontracted data will be clearly noted on your analytical report.

ENERGY LABORATORIES
Trust our People. Trust our Data.

# Chain of Custody & Analytical Request Record

www.energylab.com



## Account Information (Billing information)

| | |
|---|---|
| Company/Name | Wood PLC |
| Contact | Dorina Young |
| Phone | 505-905-6651 |
| Mailing Address | P.O. Box 1088 |
| City, State, Zip | Gallup, NM 87305 |
| Email | dorina.young@woodplc.com |
| Receive Invoice | ☐Hard Copy ☒Email |
| Receive Report | ☐Hard Copy ☒Email |
| Purchase Order | C014000055 |
| Quote | 6117 |
| Bottle Order | 68284 |

## Report Information (if different than Account Information)

| | |
|---|---|
| Company/Name | United Nuclear Corp. |
| Contact | Max Chischilly JR. |
| Phone | 505-905-6651 |
| Mailing Address | P.O. Box 1088 |
| City, State, Zip | Gallup, NM 87305 |
| Email | max.chischilly@woodplc.com |
| Receive Report | ☐Hard Copy ☒Email |

Special Report/Formats: ☐ LEVEL IV ☐NELAC ☐ EDD/EDT (contact laboratory) ☐ Other_____

## Comments

Wood PLC
Acct. No. is C16610
United Nuclear Corporation is no longer mining and milling.

These water samples were not considered Radioactive under US DOT-HMR gudelines for shipping on recent/previous quarterly sampling.

## Project Information

| | |
|---|---|
| Project Name, PWSID, Permit, etc. UNC | |
| Sampler Name Max Chischilly JR. | Sampler Phone 505-905-6651 |
| Sample Origin State NM | EPA/State Compliance ☒ Yes ☐ No |

URANIUM MINING CLIENTS MUST indicate sample type
☒ Unprocessed Ore
☐ Processed Ore (Ground or Refined) **CALL BEFORE SENDING
☐ 11(e)2 Byproduct Material (Can ONLY be Submitted to ELI Casper Location)

**Matrix Codes**
A - Air
W - Water
S - Soils/Solids
V - Vegetation
B - Bioassay
O - Oil
DW - Drinking Water

All turnaround times are standard unless marked as RUSH.
Energy Laboratories MUST be contacted prior to RUSH sample submittal for charges and scheduling – See Instructions Page

**Analysis Requested**

| | Sample Identification (Name, Location, Interval, etc.) | Collection Date | Collection Time | Number of Containers | Matrix (See Codes Above) | As (Total) | Se (Total) | Be, Ca, Cd, Cl, HCO3 K, Mg, Mn, Na | NH4, Ni, NO3, Pb, Mo Pb-210, pH, SO4 | TDS, Th-230, U, V Chloroform | Gross Alpha (-) U & Rn, Al | Co, Combined Ra-226 & Ra-228 | TTHM'S | | See Attached | RUSH TAT | ELI LAB ID (Laboratory Use Only) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | NW-3 | 1-12-22 | 1230 | 8 | W | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | C22010408 |
| 2 | RINSATE | 1-12-22 | 1355 | 8 | W | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | |
| 3 | FIELD BLANK | 1-12-22 | 1400 | 8 | W | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | |
| 4 | | | | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | | | | |
| 7 | | | | | | | | | | | | | | | | | |
| 8 | | | | | | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | | | | | | |

**ELI is REQUIRED to provide preservative traceability.** If the preservatives supplied with the bottle order were NOT used, please attach your preservative information with this COC.

| Custody Record MUST be signed | Relinquished by (print) | Date/Time | Signature | Received by (print) | Date/Time | Signature |
|---|---|---|---|---|---|---|
| | Max Chischilly Jr. | 1-12-22/ 1330 | [signature] | Francheska Gillreath | 1-12-22/1430 | [signature] |
| | Ricky E. Spitz | 1-12-22/1430 | [signature] | [signature] | 1/12/22 1430 | [signature] |

LABORATORY USE ONLY

| Shipped By | Cooler ID(s) | Custody Seals Y N C B | Intact Y N | Receipt Temp °C | Temp Blank Y N | On Ice Y N | Payment Type CC Cash Check_____ | Amount $ | Receipt Number (cash/check only) |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | |

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested. This serves as notice of this possibility. All subcontracted data will be clearly notated on your analytical report.

# Work Order Receipt Checklist

## United Nuclear Corporation C22010408

Login completed by: Kirsten L. Smith
Reviewed by: Misty Stephens
Reviewed Date: 1/17/2022

Date Received: 1/13/2022
Received by: lmc
Carrier name: NDA

| | | | |
|---|---|---|---|
| Shipping container/cooler in good condition? | Yes ☑ | No ☐ | Not Present ☐ |
| Custody seals intact on all shipping container(s)/cooler(s)? | Yes ☑ | No ☐ | Not Present ☐ |
| Custody seals intact on all sample bottles? | Yes ☐ | No ☐ | Not Present ☑ |
| Chain of custody present? | Yes ☑ | No ☐ | |
| Chain of custody signed when relinquished and received? | Yes ☑ | No ☐ | |
| Chain of custody agrees with sample labels? | Yes ☑ | No ☐ | |
| Samples in proper container/bottle? | Yes ☑ | No ☐ | |
| Sample containers intact? | Yes ☑ | No ☐ | |
| Sufficient sample volume for indicated test? | Yes ☑ | No ☐ | |
| All samples received within holding time? (Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.) | Yes ☑ | No ☐ | |
| Temp Blank received in all shipping container(s)/cooler(s)? | Yes ☑ | No ☐ | Not Applicable ☐ |
| Container/Temp Blank temperature: | 3.1°C On Ice | | |
| Containers requiring zero headspace have no headspace or bubble that is <6mm (1/4"). | Yes ☑ | No ☐ | No VOA vials submitted ☐ |
| Water - pH acceptable upon receipt? | Yes ☑ | No ☐ | Not Applicable ☐ |

### Standard Reporting Procedures:

Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH, Dissolved Oxygen and Residual Chlorine, are qualified as being analyzed outside of recommended holding time.

Solid/soil samples are reported on a wet weight basis (as received) unless specifically indicated. If moisture corrected, data units are typically noted as –dry. For agricultural and mining soil parameters/characteristics, all samples are dried and ground prior to sample analysis.

Radiochemical precision results represent a 2-sigma Total Measurement Uncertainty.

### Contact and Corrective Action Comments:

Temperature Blank temperature for Cooler 1 was 3.1°C, Cooler 2 was 0.7°C, Cooler 3 was 1.8°C, and Cooler 4 was 3.1°C. 1/13/2022-KS

**Energy Laboratories, Inc.**
2393 Salt Creek Hwy
Casper, WY 82601-9601
307.235.0515

C22010408

# CHAIN-OF-CUSTODY RECORD


13-Jan-22

PO: C22010408

**Earliest HT Expires:** Mon, 1/24/2022 0908
**Test Codes:** VOC-624.1-W

**Earliest Due Date:** 2/10/2022
**# Bus. Days Until Due:** 20

**Subcontractor:**
Eurofins TA-Denver
4955 Yarrow St
Arvada. CO 80002
TEL: 3037360100
FAX:
Acct #: 3037360100

Project # 280195738

**Subcontractor's Client**

280-157827 Chain of Custody

| | | | | | Requested Tests: VOC-624.1-W |
|---|---|---|---|---|---|
| | C22010408-001F | Aqueous | 01/10/22 09:08 A | 3 - 40ML-CG-VOA-AA-H | 1 |
| | C22010408-002F | Aqueous | 01/11/22 10:47 A | 3 - 40ML-CG-VOA-AA-H | 1 |
| | C22010408-003F | Aqueous | 01/11/22 11:33 A | 3 - 40ML-CG-VOA-AA-H | 1 |
| | C22010408-004F | Aqueous | 01/11/22 12:33 P | 3 - 40ML-CG-VOA-AA-H | 1 |
| | C22010408-005F | Aqueous | 01/11/22 02:16 P | 3 - 40ML-CG-VOA-AA-H | 1 |
| | C22010408-006F | Aqueous | 01/11/22 09:25 A | 3 - 40ML-CG-VOA-AA-H | 1 |
| | C22010408-007F | Aqueous | 01/12/22 11:12 A | 3 - 40ML-CG-VOA-AA-H | 1 |
| | C22010408-011A | Trip Blank | 01/10/22 09:08 A | 4 - 40ML-CG-VOA-AA-3 | 1 |

Samples are Iced

**Comments:** See attached for Analysis Requested

QC Level: **STD**

3-6IR13-0.2

| | | | |
|---|---|---|---|
| **Relinquished by:** | **Date/Time** 1/13/2022 15:31 | **Received by:** | **Date/Time** 01/18/2022 1320 |
| **Relinquished by:** | | **Received by:** | |

| Shipped By: | Custody Seal | Intact | Receipt Temp: °C | Temp Blank | On Ice |
|---|---|---|---|---|---|
| | Y N | Y N | | Y N | Y N |

G ☐ ☐ VOC-624.1-W ☐ ☐ ☑ Sub-TA-Arvada

| | | | | |
|---|---|---|---|---|
| A | Bromodichloromethane | 0.01078 | 0.5 | 0 |
| A | Bromoform | 0.0325 | 0.5 | 0 |
| A | Chlorodibromomethane | 0.01741 | 0.5 | 0 |
| A | Chloroform | 0.03616 | 0.5 | 0 |
| S | 1,2-Dichloroethane-d4 | 0 | 0.5 | 0 |
| S | p-Bromofluorobenzene | 0 | 0.5 | 0 |
| S | Toluene-d8 | 0 | 0.5 | 0 |

G ☐ ☐ VOC-624.1-W-CALC ☐ ☐ ☑ Sub-TA-Arvada

# Login Sample Receipt Checklist

Client: Energy Laboratories, Inc.

Job Number: 280-157827-1

**Login Number: 157827**
**List Number: 1**
**Creator: Rystrom, Joshua R**

**List Source: Eurofins Denver**

| Question | Answer | Comment |
|---|---|---|
| Radioactivity wasn't checked or is </= background as measured by a survey meter. | True | |
| The cooler's custody seal, if present, is intact. | True | |
| Sample custody seals, if present, are intact. | True | |
| The cooler or samples do not appear to have been compromised or tampered with. | True | |
| Samples were received on ice. | True | |
| Cooler Temperature is acceptable. | True | |
| Cooler Temperature is recorded. | True | |
| COC is present. | True | |
| COC is filled out in ink and legible. | True | |
| COC is filled out with all pertinent information. | True | |
| Is the Field Sampler's name present on COC? | N/A | |
| There are no discrepancies between the containers received and the COC. | True | |
| Samples are received within Holding Time (excluding tests with immediate HTs) | False | Refer to Job Narrative for details. |
| Sample containers have legible labels. | True | |
| Containers are not broken or leaking. | True | |
| Sample collection date/times are provided. | True | |
| Appropriate sample containers are used. | True | |
| Sample bottles are completely filled. | True | |
| Sample Preservation Verified. | N/A | |
| There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs | True | |
| Containers requiring zero headspace have no headspace or bubble is <6mm (1/4"). | False | Narrative to indicate if headspace container used for analysis. |
| Multiphasic samples are not present. | True | |
| Samples do not require splitting or compositing. | True | |
| Residual Chlorine Checked. | N/A | |

ENERGY LABORATORIES
Trust our People. Trust our Data.

# Chain of Custody & Analytical Request Record

www.energylab.com

Page 1 of 3

## Account Information (Billing Information)

| | |
|---|---|
| Company/Name | Wood PLC |
| Contact | Dorina Young |
| Phone | 505-905-6651 |
| Mailing Address | P.O. Box 1088 |
| City, State, Zip | Gallup, NM 87305 |
| Email | dorina.young@woodplc.com |
| Receive Invoice | ☐Hard Copy ☒Email |
| Receive Report | ☐Hard Copy ☒Email |
| Purchase Order | C014000055 |
| Quote | 6117 |
| Bottle Order | 68284 |

## Report Information (if different than Account Information)

| | |
|---|---|
| Company/Name | United Nuclear Corp. |
| Contact | Max Chischilly JR. |
| Phone | 505-905-6651 |
| Mailing Address | P.O. Box 1088 |
| City, State, Zip | Gallup, NM 87305 |
| Email | max.chischilly@woodplc.com |
| Receive Report | ☐Hard Copy ☒Email |

Special Report/Formats: ☐ LEVEL IV ☐NELAC ☐ EDD/EDT (contact laboratory) ☐ Other_____

## Comments

Wood PLC
Acct. No. is C16610
United Nuclear Corporation is no longer mining and milling.

These water samples were not considered Radioactive under US DOT-HMR gudelines for shipping on recent/previous quarterly sampling.

## Project Information

| | |
|---|---|
| Project Name, PWSID, Permit, etc. | UNC-ZONE 3 & SW ALLUVIUM |
| Sampler Name | Max Chischilly JR. |
| Sampler Phone | 505-905-6651 |
| Sample Origin State | NM |
| EPA/State Compliance | ☒ Yes ☐ No |

URANIUM MINING CLIENTS MUST indicate sample type
☐ Unprocessed Ore
☐ Processed Ore (Ground or Refined) **CALL BEFORE SENDING
■ 11(e)2 Byproduct Material (Can ONLY be Submitted to ELI Casper Location)

**Matrix Codes**
A - Air
W - Water
S - Soils/Solids
V - Vegetation
B - Bioassay
O - Oil
DW - Drinking Water

All turnaround times are standard unless marked as RUSH.
Energy Laboratories MUST be contacted prior to RUSH sample submittal for charges and scheduling -- See Instructions Page

## Analysis Requested

| | Sample Identification (Name, Location, Interval, etc.) | Collection Date | Collection Time | Number of Containers | Matrix (See Codes Above) | As (Total) | Se (Total) | Be, Ca, Cd, Cl, HCO3 K, Mg, Mn, Na | NH4, Ni, NO3, Pb, Mo Pb-210, pH, SO4 | TDS, Th-230, U, V Chloroform | Gross Alpha (-) U & Rn, Al | Co, Combined Ra-226 & Ra-228, | TTHM'S | | | See Attached | RUSH TAT | ELI LAB ID (Laboratory Use Only) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 719 | 1-13-22 | 1342 | 8 | W | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | | C22010583 |
| 2 | EPA-23 | 1-14-22 | 1051 | 8 | W | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | | |
| 3 | 803 | 1-17-22 | 0914 | 8 | W | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | | |
| 4 | 808 | 1-17-22 | 0948 | 8 | W | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | | |
| 5 | 802 | 1-17-22 | 1031 | 8 | W | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | | |
| 6 | 632 | 1-17-22 | 1116 | 8 | W | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | | |
| 7 | 801 | 1-17-22 | 1158 | 8 | W | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | | |
| 8 | 624 | 1-17-22 | 1319 | 8 | W | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | | |
| 9 | GW-1 | 1-17-22 | 1408 | 8 | W | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | | |

ELI is REQUIRED to provide preservative traceability. If the preservatives supplied with the bottle order were NOT used, please attach your preservative information with this COC.

| Custody Record MUST be signed | Relinquished by (print) | Date/Time | Signature | Received by (print) | Date/Time | Signature |
|---|---|---|---|---|---|---|
| | Max Chischilly Jr. | 1-14-22/1200 | Max Chischilly Jr. | Franchesca Gillreath | 1-17-22/1500 1-14-22/1400 | |
| | Ricky E. Spitz | 1-18-22/1340 | | Sidney Atkinson | 1/19/22 1124 | |

LABORATORY USE ONLY

| Shipped By | Cooler ID(s) | Custody Seals Y N C B | Intact Y N | Receipt Temp °C | Temp Blank Y N | On Ice Y N | Payment Type CC Cash Check_____ | Amount $ | Receipt Number (cash/check only) |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | |

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested. This serves as notice of this possibility. All subcontracted data will be clearly notated on your analytical report.

ENERGY LABORATORIES
Trust our People. Trust our Data.

# Chain of Custody & Analytical Request Record

www.energylab.com



## Account Information (Billing Information)

| | |
|---|---|
| Company/Name | Wood PLC |
| Contact | Dorina Young |
| Phone | 505-905-6651 |
| Mailing Address | P.O. Box 1088 |
| City, State, Zip | Gallup, NM 87305 |
| Email | dorina.young@woodplc.com |
| Receive Invoice | ☐Hard Copy ☒Email |
| Receive Report | ☐Hard Copy ☒Email |
| Purchase Order | C014000055 |
| Quote | 6117 |
| Bottle Order | 68284 |

## Report Information (if different than Account Information)

| | |
|---|---|
| Company/Name | United Nuclear Corp. |
| Contact | Max Chischilly JR. |
| Phone | 505-905-6651 |
| Mailing Address | P.O. Box 1088 |
| City, State, Zip | Gallup, NM 87305 |
| Email | max chischilly@woodplc.com |
| Receive Report | ☐Hard Copy ☒Email |

Special Report/Formats: ☐ LEVEL IV ☐NELAC ☐ EDD/EDT (contact laboratory) ☐ Other_____

## Comments

Wood PLC
Acct. No. is C16610
United Nuclear Corporation is no longer mining and milling.

These water samples were not considered Radioactive under US DOT-HMR gudelines for shipping on recent/previous quarterly sampling.

## Project Information

| | |
|---|---|
| Project Name, PWSID, Permit, etc. | UNC - ZONE 1 |
| Sampler Name | Max Chischilly JR. |
| Sampler Phone | 505-905-6651 |
| Sample Origin State | NM |
| EPA/State Compliance | ☒ Yes ☐ No |

URANIUM MINING CLIENTS MUST Indicate sample type
☒ Unprocessed Ore
☐ Processed Ore (Ground or Refined) **CALL BEFORE SENDING
☐ 11(e)2 Byproduct Material (Can ONLY be Submitted to ELI Casper Location)

**Matrix Codes**
A - Air
W - Water
S - Soils/Solids
V - Vegetation
B - Bioassay
O - Oil
DW - Drinking Water

All turnaround times are standard unless marked as RUSH.
Energy Laboratories MUST be contacted prior to RUSH sample submittal for charges and scheduling – See Instructions Page

## Analysis Requested

| | Sample Identification (Name, Location, Interval, etc.) | Collection Date | Collection Time | Number of Containers | Matrix (See Codes Above) | As (Total) | Se (Total) | Be, Ca, Cd, Cl, HC03 K, Mg, Mn, Na | NH4, Ni, NO3, Pb, Mo Pb-210, pH, S04 | TDS, Th-230, U, V Chloroform | Gross Alpha (-) U & Rn, Al | Co, Combined Ra-226 & Ra-228. | TTHM'S | | See Attached | RUSH TAT | ELI LAB ID (Laboratory Use Only) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | EPA-4 | 1-13-22 | 0927 | 8 | W | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | |
| 2 | EPA-5 | 1-13-22 | 1033 | 8 | W | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | |
| 3 | EPA-2 | 1-13-22 | 1140 | 8 | W | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | |
| 4 | EPA-2 DUPLICATE | 1-13-22 | 1210 | 8 | W | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | |
| 5 | 142 | 1-13-22 | 1252 | 8 | W | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | |
| 6 | | | | | | | | | | | | | | | | | |
| 7 | | | | | | | | | | | | | | | | | |
| 8 | | | | | | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | | | | | | |

**ELI is REQUIRED to provide preservative traceability.** If the preservatives supplied with the bottle order were NOT used, please attach your preservative information with this COC.

| Custody Record MUST be signed | Relinquished by (print) | Date/Time | Signature | Received by (print) | Date/Time | Signature |
|---|---|---|---|---|---|---|
| | max Chischilly Jr. | 1-13-22/1530 | Max Chischilly J. | Franchesca Gillreath | 1-14-22/0900 | [illegible] |
| | Ricky E. Spitz | 1-18-22/1340 | [illegible] | Sydney Atkinson | 1/19/22 1125 | [illegible] |

LABORATORY USE ONLY

| Shipped By | Cooler ID(s) | Custody Seals | Intact | Receipt Temp °C | Temp Blank | On Ice | Payment Type | Amount | Receipt Number (cash/check only) |
|---|---|---|---|---|---|---|---|---|---|
| | | Y N C B | Y N | | Y N | Y N | CC Cash Check_____ | $ | |

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested. This serves as notice of this possibility. All subcontracted data will be clearly notated on your analytical report.

ENERGY LABORATORIES
Trust our People. Trust our Data.

# Chain of Custody & Analytical Request Record

www.energylab.com

Page 3 of 3

## Account Information (Billing Information)

| | |
|---|---|
| Company/Name | Wood PLC |
| Contact | Dorina Young |
| Phone | 505-905-6651 |
| Mailing Address | P.O. Box 1088 |
| City, State, Zip | Gallup, NM 87305 |
| Email | dorina.young@woodplc.com |
| Receive Invoice | ☐Hard Copy ☒Email |
| Receive Report | ☐Hard Copy ☒Email |
| Purchase Order | C014000055 |
| Quote | 6117 |
| Bottle Order | 68284 |

## Report Information (if different than Account Information)

| | |
|---|---|
| Company/Name | United Nuclear Corp. |
| Contact | Max Chischilly JR. |
| Phone | 505-905-6651 |
| Mailing Address | P.O. Box 1088 |
| City, State, Zip | Gallup, NM 87305 |
| Email | max.chischilly@woodplc.com |
| Receive Report | ☐Hard Copy ☒Email |

Special Report/Formats: ☐ LEVEL IV ☐NELAC ☐ EDD/EDT (contact laboratory) ☐ Other_____

## Comments

Wood PLC
Acct. No. is C16610
United Nuclear Corporation is no longer mining and milling.

These water samples were not considered Radioactive under US DOT-HMR gudelines for shipping on recent/previous quarterly sampling.

## Project Information

| | |
|---|---|
| Project Name, PWSID, Permit, etc. | UNC – ZONE 3 |
| Sampler Name | Max Chischilly JR. |
| Sampler Phone | 505-905-6651 |
| Sample Origin State | NM |
| EPA/State Compliance | ☒ Yes ☐ No |

URANIUM MINING CLIENTS MUST indicate sample type
☒ Unprocessed Ore ✱
☐ Processed Ore (Ground or Refined) **CALL BEFORE SENDING
☒ 11(e)2 Byproduct Material (Can ONLY be Submitted to ELI Casper Location)

**Matrix Codes**
A - Air
W - Water
S - Soils/Solids
V - Vegetation
B - Bioassay
O - Oil
DW - Drinking Water

All turnaround times are standard unless marked as RUSH
Energy Laboratories MUST be contacted prior to RUSH sample submittal for charges and scheduling – See Instructions Page

## Analysis Requested

| | Sample Identification (Name, Location, Interval, etc.) | Collection Date | Collection Time | Number of Containers | Matrix (See Codes Above) | Bicarbonate | Chloride | pH | TDS | | | | | | See Attached | RUSH TAT | ELI LAB ID (Laboratory Use Only) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | ✱ NBL-2 | 1-13-22 | 1440 | 1 | W | ✓ | ✓ | ✓ | ✓ | | | | | | | | |
| 2 | NW-4 | 1-14-22 | 0935 | 1 | W | ✓ | ✓ | ✓ | ✓ | | | | | | | | |
| 3 | RW-A | 1-14-22 | 0950 | 1 | W | ✓ | ✓ | ✓ | ✓ | | | | | | | | |
| 4 | | | | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | | | | |
| 7 | | | | | | | | | | | | | | | | | |
| 8 | | | | | | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | | | | | | |

ELI is REQUIRED to provide preservative traceability. If the preservatives supplied with the bottle order were NOT used, please attach your preservative information with this COC

| Custody Record MUST be signed | Relinquished by (print) | Date/Time | Signature | Received by (print) | Date/Time | Signature |
|---|---|---|---|---|---|---|
| | Max Chischilly Jr. | 1-13-22/1530 | Max Chischilly Jr. | Frenchesca Gillreath | 1-14-22/~~0900~~ 1400 | [illegible] |
| | Rieky E. Spitz | 1-18-22/1340 | [illegible] | Sidney Atkinson | 1/19/22 1175 | [illegible] |

LABORATORY USE ONLY

| Shipped By | Cooler ID(s) | Custody Seals | Intact | Receipt Temp °C | Temp Blank | On Ice | Payment Type | Amount | Receipt Number (cash/check only) |
|---|---|---|---|---|---|---|---|---|---|
| | | Y N C B | Y N | | Y N | Y N | CC Cash Check_____ | $ | |

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested. This serves as notice of this possibility. All subcontracted data will be clearly notated on your analytical report.

# Work Order Receipt Checklist

## United Nuclear Corporation

## C22010583

Login completed by: Mark E. Traider

Reviewed by: Misty Stephens

Reviewed Date: 1/21/2022

Date Received: 1/19/2022

Received by: saa

Carrier name: NDA

| | | | |
|---|---|---|---|
| Shipping container/cooler in good condition? | Yes ☑ | No ☐ | Not Present ☐ |
| Custody seals intact on all shipping container(s)/cooler(s)? | Yes ☑ | No ☐ | Not Present ☐ |
| Custody seals intact on all sample bottles? | Yes ☐ | No ☐ | Not Present ☑ |
| Chain of custody present? | Yes ☑ | No ☐ | |
| Chain of custody signed when relinquished and received? | Yes ☑ | No ☐ | |
| Chain of custody agrees with sample labels? | Yes ☑ | No ☐ | |
| Samples in proper container/bottle? | Yes ☑ | No ☐ | |
| Sample containers intact? | Yes ☑ | No ☐ | |
| Sufficient sample volume for indicated test? | Yes ☑ | No ☐ | |
| All samples received within holding time? (Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.) | Yes ☑ | No ☐ | |
| Temp Blank received in all shipping container(s)/cooler(s)? | Yes ☑ | No ☐ | Not Applicable ☐ |
| Container/Temp Blank temperature: | 1.8°C On Ice | | |
| Containers requiring zero headspace have no headspace or bubble that is <6mm (1/4"). | Yes ☐ | No ☑ | No VOA vials submitted ☐ |
| Water - pH acceptable upon receipt? | Yes ☐ | No ☑ | Not Applicable ☐ |

## Standard Reporting Procedures:

Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH, Dissolved Oxygen and Residual Chlorine, are qualified as being analyzed outside of recommended holding time.

Solid/soil samples are reported on a wet weight basis (as received) unless specifically indicated. If moisture corrected, data units are typically noted as –dry. For agricultural and mining soil parameters/characteristics, all samples are dried and ground prior to sample analysis.

Radiochemical precision results represent a 2-sigma Total Measurement Uncertainty.

## Contact and Corrective Action Comments:

1 of 3 voa vials for sample EPA-23 have less than 1/4" headspace, 2 of 3 voa's for sample 803 have less than 1/4" headspace, 2 of 3 voa's for sample 808 have under 1/4" headspace, 3 of 3 voa's for sample 802 have less than 1/4" headspace, 2 of 3 voa's for sample 624 have less than 1/4" headspace, 2 of 3 voa's for sample GW-1 have less than 1/4" headspace. 1/19/22. M.T. Temperatures for additional coolers is 1.7°, 2.0°, 1.9°, and 1.2°. Sample EPA-23 was received with a pH of 6 and was preserved with 15 ml of Nitric Acid, sample 803 was received with a pH of 7 and was preserved with 15ml of Nitric Acid, sample 808 was received with a pH of 7 and was preserved with 15ml of Nitric Acid, sample 802 was received with a pH of 7 and was preserved with 15ml of Nitric Acid, sample 632 was received with a pH of 6 and was preserved with 15ml of Nitric Acid, sample 801 was received with a pH of 7 and was presereved with 15ml of Nitric Acid, sample 624 was received with a Ph of 6 and was preserved with 15ml of Nitric Acid

**Energy Laboratories, Inc.**
2393 Salt Creek Hwy
Casper, WY 82601-9601
307.235.0515

C22010583

PO: C22010583

# CHAIN-OF-CUSTODY RECORD


20-Jan-22

**Earliest HT Expires:** Thu, 1/27/2022 0927
**Test Codes:** VOC-624.1-W

**Earliest Due Date:** 2/16/2022
**# Bus. Days Until Due:** 19

**Subcontractor:**
Eurofins TA-Denver
4955 Yarrow St
Arvada, CO 80002
TEL: 3037360100
FAX:
Acct #: 3037360100

**Subcontractor's Client**

| | | | | | Requested Tests: VOC-624.1-W |
|---|---|---|---|---|---|
| | C22010583-001F | Aqueous | 01/13/22 01:42 P | 3 - 40ML-CG-VOA-AA-H | 1 |
| | C22010583-002F | Aqueous | 01/14/22 10:51 A | 3 - 40ML-CG-VOA-AA-H | 1 |
| | C22010583-003F | Aqueous | 01/17/22 09:14 A | 3 - 40ML-CG-VOA-AA-H | 1 |
| | C22010583-004F | Aqueous | 01/17/22 09:48 A | 3 - 40ML-CG-VOA-AA-H | 1 |
| | C22010583-005F | Aqueous | 01/17/22 10:31 A | 3 - 40ML-CG-VOA-AA-H | 1 |
| | C22010583-006F | Aqueous | 01/17/22 11:16 A | 3 - 40ML-CG-VOA-AA-H | 1 |
| | C22010583-007F | Aqueous | 01/17/22 11:58 A | 3 - 40ML-CG-VOA-AA-H | 1 |
| | C22010583-008F | Aqueous | 01/17/22 01:19 P | 3 - 40ML-CG-VOA-AA-H | 1 |
| | C22010583-009F | Aqueous | 01/17/22 02:08 P | 3 - 40ML-CG-VOA-AA-H | 1 |

**Comments:** SEE attached For Analysis

QC Level: STD

280-157947 Chain of Custody

| | Date/Time | | |
|---|---|---|---|
| **Relinquished by:** | 1/20/22 11:41 | **Received by:** | 1/21/2022 0940 |
| **Relinquished by:** | | **Received by:** | |

| Shipped By: | Custody Seal | Intact | Receipt Temp: | Temp Blank | On Ice |
|---|---|---|---|---|---|
| | Y N | Y N | 0.4 °C | Y N | Y N |

Energy Laboratories, Inc.
2393 Salt Creek Hwy
Casper, WY 82601-9601
307.235.0515

C22010583

# CHAIN-OF-CUSTODY RECORD



PO: C22010583

**Earliest HT Expires:** Thu, 1/27/2022 0927
**Test Codes:** VOC-624.1-W

**Earliest Due Date:** 2/16/2022
**# Bus. Days Until Due:** 19

**Subcontractor:**
Eurofins TA-Denver
4955 Yarrow St
Arvada, CO 80002
TEL: 3037360100
FAX:
Acct #: 3037360100

**Subcontractor's Client**

| | | | | | Requested Tests: VOC-624.1-W |
|---|---|---|---|---|---|
| | C22010583-010F | Aqueous | 01/13/22 09:27 A | 3 - 40ML-CG-VOA-AA-H | 1 |
| | C22010583-011F | Aqueous | 01/13/22 10:33 A | 3 - 40ML-CG-VOA-AA-H | 1 |
| | C22010583-012F | Aqueous | 01/13/22 11:40 A | 3 - 40ML-CG-VOA-AA-H | 1 |
| | C22010583-013F | Aqueous | 01/13/22 12:10 P | 3 - 40ML-CG-VOA-AA-H | 1 |
| | C22010583-014F | Aqueous | 01/13/22 12:52 P | 3 - 40ML-CG-VOA-AA-H | 1 |
| | C22010583-018A | | 01/13/22 09:27 A | 5 - 40ML-CG-VOA-AA-3 | 1 |

**Comments:**

QC Level:
**STD**

| | Date/Time | | Date/Time |
|---|---|---|---|
| **Relinquished by:** [illegible] | 1/20/22 11:41 | **Received by:** | |
| **Relinquished by:** | | **Received by:** | |

| Shipped By: | Custody Seal | Intact | Receipt Temp: °C | Temp Blank | On Ice |
|---|---|---|---|---|---|
| | Y N | Y N | | Y N | Y N |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| G | ☐ | ☐ | VOC-624.1-W | ☐ | ☐ | ☑ | Sub-TA-Arvada | |
| A | Bromodichloromethane | | | 0.01078 | | 0.5 | | 0 |
| A | Bromoform | | | 0.0325 | | 0.5 | | 0 |
| A | Chlorodibromomethane | | | 0.01741 | | 0.5 | | 0 |
| A | Chloroform | | | 0.03616 | | 0.5 | | 0 |
| S | 1,2-Dichloroethane-d4 | | | 0 | | 0.5 | | 0 |
| S | p-Bromofluorobenzene | | | 0 | | 0.5 | | 0 |
| S | Toluene-d8 | | | 0 | | 0.5 | | 0 |
| G | ☐ | ☐ | VOC-624.1-W-CALC | ☐ | ☐ | ☑ | Sub-TA-Arvada | |

57947 Waybill

LYDIA CORMANY / CIARA LEIS
(307) 235-0515
ENERGY LABORATORIES
2393 SALT CREEK HWY
CASPER WY 82601-8201

50 LBS

1 OF 1

DWT: 27,16,16

SHIP TO:
SAMPLE RECEIVING
(303) 736-0100
EUROFINS TA DENVER
4955 YARROW ST
ARVADA CO 80002-4517

CO 802 9-30

UPS GROUND
TRACKING #: 1Z 822 358 03 5828 3145

BILLING: P/P

REF 1:Samples

W8 24.0.17 Zebra ZP 450 03.0A 01/2022

SEE NOTICE ON REVERSE regarding UPS Terms, and notice of limitation of liability. Where allowed by law, shipper authorizes UPS to act as forwarding agent for export control and customs purposes. If exported from the US, shipper certifies that the commodities, technology or software were exported from the US in accordance with the Export Administration Regulations. Diversion contrary to law is prohibited.

For information about UPS's privacy practices or to opt out from the sale of personal information, please see the UPS Privacy Notice at www.ups.com
850 0072

# Login Sample Receipt Checklist

Client: Energy Laboratories, Inc.

Job Number: 280-157947-

**Login Number: 157947**
**List Number: 1**
**Creator: Dubicki, Adam L**

**List Source: Eurofins Denver**

| Question | Answer | Comment |
|---|---|---|
| Radioactivity wasn't checked or is </= background as measured by a survey meter. | True | |
| The cooler's custody seal, if present, is intact. | True | |
| Sample custody seals, if present, are intact. | True | |
| The cooler or samples do not appear to have been compromised or tampered with. | True | |
| Samples were received on ice. | True | |
| Cooler Temperature is acceptable. | True | |
| Cooler Temperature is recorded. | True | |
| COC is present. | True | |
| COC is filled out in ink and legible. | True | |
| COC is filled out with all pertinent information. | True | |
| Is the Field Sampler's name present on COC? | N/A | |
| There are no discrepancies between the containers received and the COC. | True | |
| Samples are received within Holding Time (excluding tests with immediate HTs) | True | |
| Sample containers have legible labels. | True | |
| Containers are not broken or leaking. | True | |
| Sample collection date/times are provided. | True | |
| Appropriate sample containers are used. | True | |
| Sample bottles are completely filled. | True | |
| Sample Preservation Verified. | True | |
| There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs | True | |
| Containers requiring zero headspace have no headspace or bubble is <6mm (1/4"). | False | Narrative to indicate if headspace container used for analysis. |
| Multiphasic samples are not present. | True | |
| Samples do not require splitting or compositing. | True | |
| Residual Chlorine Checked. | N/A | |

ENERGY LABORATORIES
Trust our People. Trust our Data.

# Chain of Custody & Analytical Request Record

www.energylab.com

Page 1 of 2

## Account Information (Billing Information)

| | |
|---|---|
| Company/Name | Wood PLC |
| Contact | Dorina Young |
| Phone | 505-905-6651 |
| Mailing Address | P.O. Box 1088 |
| City, State, Zip | Gallup, NM 87305 |
| Email | dorina.young@woodplc.com |
| Receive Invoice | ☐Hard Copy ☒Email |
| Receive Report | ☐Hard Copy ☒Email |
| Purchase Order | C014000055 |
| Quote | 6117 |
| Bottle Order | 68284 |

## Report Information (if different than Account Information)

| | |
|---|---|
| Company/Name | United Nuclear Corp. |
| Contact | Max Chischilly JR. |
| Phone | 505-905-6651 |
| Mailing Address | P.O. Box 1088 |
| City, State, Zip | Gallup, NM 87305 |
| Email | max.chischilly@woodplc.com |
| Receive Report | ☐Hard Copy ☒Email |
| Special Report/Formats: | ☐ LEVEL IV ☐NELAC ☐ EDD/EDT (contact laboratory) ☐ Other_____ |

## Comments

Wood PLC
Acct. No. is C16610
United Nuclear Corporation is no longer mining and milling.

These water samples were not considered Radioactive under US DOT-HMR gudelines for shipping on recent/previous quarterly sampling.

## Project Information

| | |
|---|---|
| Project Name, PWSID, Permit, etc. | UNC - SW ALLUVIUM |
| Sampler Name | Max Chischilly JR. |
| Sampler Phone | 505-905-6651 |
| Sample Origin State | NM |
| EPA/State Compliance | ☒ Yes ☐ No |

URANIUM MINING CLIENTS MUST indicate sample type
☒ Unprocessed Ore
☐ Processed Ore (Ground or Refined) **CALL BEFORE SENDING
☐ 11(e)2 Byproduct Material (Can ONLY be Submitted to ELI Casper Location)

Matrix Codes: A - Air; W - Water; S - Soils/Solids; V - Vegetation; B - Bioassay; O - Oil; DW - Drinking Water

All turnaround times are standard unless marked as RUSH.
Energy Laboratories MUST be contacted prior to RUSH sample submittal for charges and scheduling – See Instructions Page

Analysis Requested

| | Sample Identification (Name, Location, Interval, etc.) | Collection Date | Collection Time | Number of Containers | Matrix (See Codes Above) | As (Total) | Se (Total) | Be, Ca, Cd, Cl, HC03 K, Mg, Mn, Na | NH4, Ni, NO3, Pb, Mo Pb-210, pH, S04 | TDS, Th-230, U, V Chloroform | Gross Alpha (-) U & Rn, Al | Co, Combined Ra-226 & Ra-228. | TTHM'S | | See Attached | RUSH TAT | ELI LAB ID Laboratory Use Only |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | EPA-28 | 1-18-22 | 1036 | 8 | W | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | C22010739 |
| 2 | EPA-28 DUPLICATE | 1-18-22 | 1106 | 8 | W | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | |
| 3 | SBL-1 | 1-18-22 | 1146 | 8 | W | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | |
| 4 | 627 | 1-18-22 | 1250 | 8 | W | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | |
| 5 | RINSATE | 1-18-22 | 1435 | 8 | W | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | |
| 6 | FIELD BLANK | 1-18-22 | 1510 | 8 | W | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | |
| 7 | | | | | | | | | | | | | | | | | |
| 8 | | | | | | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | | | | | | |

ELI is REQUIRED to provide preservative traceability. If the preservatives supplied with the bottle order were NOT used, please attach your preservative information with this COC.

| Custody Record MUST be signed | Relinquished by (print) | Date/Time | Signature | Received by (print) | Date/Time | Signature |
|---|---|---|---|---|---|---|
| | Max Chischilly Jr. | 1-18-22/1520 | Max Chischilly Jr. | Franchesca Gillreath | 1-19-22/0800 | [signature] |
| | Ricky E. Spitz | 1-19-22/1340 | [signature] | Received by Laboratory (print) Ciara Reis | 1-24-22 11:28 | [signature] |

LABORATORY USE ONLY

| Shipped By | Cooler ID(s) | Custody Seals Y N C B | Intact Y N | Receipt Temp °C | Temp Blank Y N | On Ice Y N | Payment Type CC Cash Check_____ | Amount $ | Receipt Number (cash/check only) |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | |

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested. This serves as notice of this possibility. All subcontracted data will be clearly notated on your analytical report.

ENERGY LABORATORIES
Trust our People. Trust our Data.

# Chain of Custody & Analytical Request Record

www.energylab.com

Page 2 of 2

**Account Information** *(Billing information)*

| | |
|---|---|
| Company/Name | Wood PLC |
| Contact | Dorina Young |
| Phone | 505-905-6651 |
| Mailing Address | P.O. Box 1088 |
| City, State, Zip | Gallup, NM 87305 |
| Email | dorina.young@woodplc.com |
| Receive Invoice | ☐Hard Copy ☒Email |
| Receive Report | ☐Hard Copy ☒Email |
| Purchase Order | C014000055 |
| Quote | 6117 |
| Bottle Order | 68284 |

**Report Information** *(if different than Account Information)*

| | |
|---|---|
| Company/Name | United Nuclear Corp. |
| Contact | Max Chischilly JR. |
| Phone | 505-905-6651 |
| Mailing Address | P.O. Box 1088 |
| City, State, Zip | Gallup, NM 87305 |
| Email | max.chischilly@woodplc.com |
| Receive Report | ☐Hard Copy ☒Email |

Special Report/Formats: ☐ LEVEL IV ☐NELAC ☐ EDD/EDT *(contact laboratory)* ☐ Other_____

**Comments**

Wood PLC
Acct. No. is C16610
United Nuclear Corporation is no longer mining and milling.

These water samples were not considered Radioactive under US DOT-HMR gudelines for shipping on recent/previous quarterly sampling.

**Project Information**

| | |
|---|---|
| Project Name, PWSID, Permit, etc. | UNC - SW ALLUVIUM |
| Sampler Name | Max Chischilly JR. |
| Sampler Phone | 505-905-6651 |
| Sample Origin State | NM |
| EPA/State Compliance | ☒ Yes ☐ No |

URANIUM MINING CLIENTS MUST indicate sample type
☐ Unprocessed Ore
☐ Processed Ore (Ground or Refined) **CALL BEFORE SENDING
☒ 11(e)2 Byproduct Material (Can ONLY be Submitted to ELI Casper Location)

**Matrix Codes**

A - Air
W - Water
S - Soils/Solids
V - Vegetation
B - Bioassay
O - Oil
DW - Drinking Water

All turnaround times are standard unless marked as RUSH.
Energy Laboratories MUST be contacted prior to RUSH sample submittal for charges and scheduling – See Instructions Page

**Analysis Requested**

| | Sample Identification (Name, Location, Interval, etc.) | Collection Date | Collection Time | Number of Containers | Matrix (See Codes Above) | As (Total) | Se (Total) | Be, Ca, Cd, Cl, HCO3 K, Mg, Mn, Na | NH4, Ni, NO3, Pb, Mo Pb-210, pH, SO4 | TDS, Th-230, U, V Chloroform | Gross Alpha (-) U & Rn, Al | Co, Combined Ra-226 & Ra-228. | TTHM'S | | See Attached | RUSH TAT | ELI LAB ID (Laboratory Use Only) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 509-D | 1-18-22 | 0922 | 8 | W | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | C22010739 |
| 2 | EPA-25 | 1-18-22 | 1348 | 8 | W | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | |
| 3 | | | | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | | | | |
| 7 | | | | | | | | | | | | | | | | | |
| 8 | | | | | | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | | | | | | |

**ELI is REQUIRED to provide preservative traceability.** If the preservatives supplied with the bottle order were NOT used, please attach your preservative information with this COC.

| Custody Record MUST be signed | Relinquished by (print) | Date/Time | Signature | Received by (print) | Date/Time | Signature |
|---|---|---|---|---|---|---|
| | Max Chischilly Jr. | 1-18-22/1520 | Max Chischilly Jr. | Francheseca Gillreath | 1-19-22/0800 | [illegible] |
| | Relinquished by (print) | Date/Time | Signature | Received by Laboratory (print) | Date/Time | Signature |
| | Ricky E. Spitz | 1-19-22/1340 | [illegible] | [illegible] | 1-19-22 11:28 | [illegible] |

**LABORATORY USE ONLY**

| Shipped By | Cooler ID(s) | Custody Seals Y N C B | Intact Y N | Receipt Temp °C | Temp Blank Y N | On Ice Y N | Payment Type CC Cash Check_____ | Amount $ | Receipt Number *(cash/check only)* |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | |

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested. This serves as notice of this possibility. All subcontracted data will be clearly notated on your analytical report.

# Work Order Receipt Checklist

## United Nuclear Corporation

## C22010739

Login completed by: Caroline M. Johnson
Reviewed by: Misty Stephens
Reviewed Date: 1/26/2022

Date Received: 1/25/2022
Received by: cml
Carrier name: NDA

| | | | |
|---|---|---|---|
| Shipping container/cooler in good condition? | Yes ☑ | No ☐ | Not Present ☐ |
| Custody seals intact on all shipping container(s)/cooler(s)? | Yes ☑ | No ☐ | Not Present ☐ |
| Custody seals intact on all sample bottles? | Yes ☐ | No ☐ | Not Present ☑ |
| Chain of custody present? | Yes ☑ | No ☐ | |
| Chain of custody signed when relinquished and received? | Yes ☑ | No ☐ | |
| Chain of custody agrees with sample labels? | Yes ☑ | No ☐ | |
| Samples in proper container/bottle? | Yes ☑ | No ☐ | |
| Sample containers intact? | Yes ☑ | No ☐ | |
| Sufficient sample volume for indicated test? | Yes ☑ | No ☐ | |
| All samples received within holding time? (Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.) | Yes ☑ | No ☐ | |
| Temp Blank received in all shipping container(s)/cooler(s)? | Yes ☐ | No ☑ | Not Applicable ☐ |
| Container/Temp Blank temperature: | 2.1°C On Ice | | |
| Containers requiring zero headspace have no headspace or bubble that is <6mm (1/4"). | Yes ☐ | No ☑ | No VOA vials submitted ☐ |
| Water - pH acceptable upon receipt? | Yes ☐ | No ☑ | Not Applicable ☐ |

## Standard Reporting Procedures:

Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH, Dissolved Oxygen and Residual Chlorine, are qualified as being analyzed outside of recommended holding time.

Solid/soil samples are reported on a wet weight basis (as received) unless specifically indicated. If moisture corrected, data units are typically noted as –dry. For agricultural and mining soil parameters/characteristics, all samples are dried and ground prior to sample analysis.

The reference date for Radon analysis is the sample collection date. The reference date for all other Radiochemical analyses is the analysis date. Radiochemical precision results represent a 2-sigma Total Measurement Uncertainty.

## Contact and Corrective Action Comments:

Temperature Blank temperature for Cooler#1 was 3.6°C, Cooler#2 was 2.4°C, and Cooler #3 was 2.1°C.
one of three EPA-25 VOAs have less than 1/4" headspace two of three have greater than 1/4" headspace
three of three 509-D VOAS Have greater than 1/4" headspace
one of three epa-28 less than 1/4" headspace
three of three epa dup have less than 1/4" headspace
three of three sbl-1 have less than 1/4" headspace
one of three 627 has less than 1/4" headspace - 1/25/22 CJ
Sample 509-D Radiochem bottle was preserved with 15mL of HN03 to a pH of <2. 1/26/22. M.T.
Sample 509-D Nitrate bottle was preserved with 2mL H2SO4 to a pH of <2. 1/26/22. M.T.

**Energy Laboratories, Inc.**
2393 Salt Creek Hwy
Casper, WY 82601-9601
307.235.0515

C22010739

PO: C22010739

# CHAIN-OF-CUSTODY RECORD


26-Jan-22

Earliest HT Expires: Tue, 2/01/2022 0922
Test Codes: VOC-624.1-W

Earliest Due Date: 2/3/2022
# Bus. Days Until Due: 8

Subcontractor:
Eurofins TA-Denver
4955 Yarrow St
Arvada. CO 80002
TEL: 3037360100
FAX:
Acct #: 3037360100

Subcontractor's Client

Requested Tests

| | | | | | VOC-624.1-W |
|---|---|---|---|---|---|
| | C22010739-001F | Aqueous | 01/18/22 10:36 A | 3 - 40ML-CG-VOA-AA-H | 1 |
| | C22010739-002F | Aqueous | 01/18/22 11:06 A | 3 - 40ML-CG-VOA-AA-H | 1 |
| | C22010739-003F | Aqueous | 01/18/22 11:46 A | 3 - 40ML-CG-VOA-AA-H | 1 |
| | C22010739-004F | Aqueous | 01/18/22 12:50 P | 3 - 40ML-CG-VOA-AA-H | 1 |
| | C22010739-005F | Aqueous | 01/18/22 02:35 P | 3 - 40ML-CG-VOA-AA-H | 1 |
| | C22010739-006F | Aqueous | 01/18/22 03:10 P | 3 - 40ML-CG-VOA-AA-H | 1 |
| | C22010739-007F | Aqueous | 01/18/22 09:22 A | 3 - 40ML-CG-VOA-AA-H | 1 |
| | C22010739-008F | Aqueous | 01/18/22 01:48 P | 3 - 40ML-CG-VOA-AA-H | 1 |
| | C22010739-009A | Trip Blank | 01/18/22 09:22 A | 1 - 40ML-CG-VOA-AA-3 | 1 |

280-158147 Chain of Custody

Project #280195578

Comments:

QC Level:

STD

Please Analyze samples by method E624.1

* samples are 1102

| | | Date/Time | | | Date/Time |
|---|---|---|---|---|---|
| Relinquished by: | [signature] | 1/26/22 9:46 | Received by: | [signature] | 1/27/2022 0950 |
| Relinquished by: | | | Received by: | | |

| Shipped By: | Custody Seal | Intact | Receipt Temp: | Temp Blank | On Ice |
|---|---|---|---|---|---|
| | Y N | Y N | 2.3 °C | Y N | Y N |

IRB
OF-0-1

**Energy Laboratories, Inc.**
2393 Salt Creek Hwy
Casper, WY 82601-9601
307.235.0515

C22010739

PO: C22010739

# CHAIN-OF-CUSTODY RECORD


26-Jan-22

Earliest HT Expires: Tue, 2/01/2022 0922
Test Codes: VOC-624.1-W

Earliest Due Date: 2/3/2022
# Bus. Days Until Due: 6

Subcontractor:
Eurofins TA-Denver
4955 Yarrow St
Arvada, CO 80002
TEL: 3037360100
FAX:
Acct #: 3037360100

Subcontractor's Client

| | | | | | Requested Tests |
|---|---|---|---|---|---|
| | | | | | VOC-624.1-W |
| | C22010739-010A | Trip Blank | 01/18/22 09:22 A | 1 - 40ML-CG-VOA-AA-3 | 1 |
| | C22010739-011A | Trip Blank | 01/18/22 09:22 A | 1 - 40ML-CG-VOA-AA-3 | 1 |

Project # 280195578

Please analyze samples by method EG24.1

Comments:

QC Level:
STD

* Samples are 1 to 2

| | | Date/Time | | | Date/Time |
|---|---|---|---|---|---|
| Relinquished by: | [signature] | 1/26/22 7:46 | Received by: | | |
| Relinquished by: | | | Received by: | | |

| | Custody Seal | Intact | | Temp Blank | On Ice |
|---|---|---|---|---|---|
| Shipped By: | Y N | Y N | Receipt Temp: °C | Y N | Y N |

# Login Sample Receipt Checklist

Client: Energy Laboratories, Inc.

Job Number: 280-158147-

**Login Number: 158147**
**List Number: 1**
**Creator: Dubicki, Adam L**

**List Source: Eurofins Denver**

| Question | Answer | Comment |
|---|---|---|
| Radioactivity wasn't checked or is </= background as measured by a survey meter. | True | |
| The cooler's custody seal, if present, is intact. | True | |
| Sample custody seals, if present, are intact. | True | |
| The cooler or samples do not appear to have been compromised or tampered with. | True | |
| Samples were received on ice. | True | |
| Cooler Temperature is acceptable. | True | |
| Cooler Temperature is recorded. | True | |
| COC is present. | True | |
| COC is filled out in ink and legible. | True | |
| COC is filled out with all pertinent information. | True | |
| Is the Field Sampler's name present on COC? | N/A | |
| There are no discrepancies between the containers received and the COC. | True | |
| Samples are received within Holding Time (excluding tests with immediate HTs) | True | |
| Sample containers have legible labels. | True | |
| Containers are not broken or leaking. | True | |
| Sample collection date/times are provided. | True | |
| Appropriate sample containers are used. | True | |
| Sample bottles are completely filled. | True | |
| Sample Preservation Verified. | True | |
| There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs | True | |
| Containers requiring zero headspace have no headspace or bubble is <6mm (1/4"). | True | |
| Multiphasic samples are not present. | True | |
| Samples do not require splitting or compositing. | True | |
| Residual Chlorine Checked. | N/A | |

ENERGY LABORATORIES
Trust our People. Trust our Data.

# Chain of Custody & Analytical Request Record

www.energylab.com

Page 1 of 1

## Account Information (Billing information)

| | |
|---|---|
| Company/Name | Wood PLC |
| Contact | Dorina Young |
| Phone | 505-905-6651 |
| Mailing Address | P.O. Box 1088 |
| City, State, Zip | Gallup, NM 87305 |
| Email | dorina.young@woodplc.com |
| Receive Invoice | ☐Hard Copy ☒Email |
| Receive Report | ☐Hard Copy ☒Email |
| Purchase Order | C014000055 |
| Quote | 6117 |
| Bottle Order | 68284 |

## Report Information (If different than Account Information)

| | |
|---|---|
| Company/Name | United Nuclear Corp. |
| Contact | Max Chischilly JR. |
| Phone | 505-905-6651 |
| Mailing Address | P.O. Box 1088 |
| City, State, Zip | Gallup, NM 87305 |
| Email | max.chischilly@woodplc.com |
| Receive Report | ☐Hard Copy ☒Email |

Special Report/Formats: ☐ LEVEL IV ☐NELAC ☐ EDD/EDT (contact laboratory) ☐ Other_____

## Comments

Wood PLC
Acct. No. is C16610
United Nuclear Corporation is no longer mining and milling.

These water samples were not considered Radioactive under US DOT-HMR gudelines for shipping on recent/previous quarterly sampling.

## Project Information

| | |
|---|---|
| Project Name, PWSID, Permit, etc. | UNC - SENTINEL WELLS |
| Sampler Name | Max Chischilly JR. |
| Sampler Phone | 505-905-6651 |
| Sample Origin State | NM |
| EPA/State Compliance | ☒ Yes ☐ No |

URANIUM MINING CLIENTS MUST indicate sample type
☒ Unprocessed Ore
☐ Processed Ore (Ground or Refined) **CALL BEFORE SENDING
☐ 11(e)2 Byproduct Material (Can ONLY be Submitted to ELI Casper Location)

**Matrix Codes**
A - Air
W - Water
S - Soils/Solids
V - Vegetation
B - Bioassay
O - Oil
DW - Drinking Water

All turnaround times are standard unless marked as RUSH.
Energy Laboratories MUST be contacted prior to RUSH sample submittal for charges and scheduling – See Instructions Page

| | Sample Identification (Name, Location, Interval, etc.) | Collection Date | Collection Time | Number of Containers | Matrix (See Codes Above) | As (Total) | Se (Total) | Be, Ca, Cd, Cl, HCO3 K, Mg, Mn, Na | NH4, Ni, NO3, Pb, Mo Pb-210, pH, S04 | TDS, Th-230, U, V Chloroform | Gross Alpha (-) U & Rn, Al | Co, Combined Ra-226 & Ra-228 | TTHM'S | | See Attached | RUSH TAT | ELI LAB ID. (Laboratory Use Only) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | SW-3B | 1-19-22 | 1100 | 8 | W | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | C22010715 |
| 2 | SW-1B | 1-19-22 | 1436 | 8 | W | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | |
| 3 | | | | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | | | | |
| 7 | | | | | | | | | | | | | | | | | |
| 8 | | | | | | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | | | | | | |

ELI is REQUIRED to provide preservative traceability. If the preservatives supplied with the bottle order were NOT used, please attach your preservative information with this COC.

| Custody Record MUST be signed | Relinquished by (print) | Date/Time | Signature | Received by (print) | Date/Time | Signature |
|---|---|---|---|---|---|---|
| | Max Chischilly Jr. | 1-19-22/1340 | Max Chischilly Jr. | Francheska Gilreath | 1-19-22/1600 | [illegible] |
| | Ricky E. Spitz | 1-20-22/1300 | [illegible] | Sidney Atkinson | 1/21/2022 1257 | [illegible] |

LABORATORY USE ONLY

| Shipped By | Cooler ID(s) | Custody Seals | Intact | Receipt Temp °C | Temp Blank | On Ice | Payment Type | Amount | Receipt Number (cash/check only) |
|---|---|---|---|---|---|---|---|---|---|
| | | Y N C B | Y N | | Y N | Y N | CC Cash Check_____ | $ | |

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested. This serves as notice of this possibility. All subcontracted data will be clearly notated on your analytical report.

# Work Order Receipt Checklist

## United Nuclear Corporation

## C22010715

Login completed by: Mark E. Traider

Reviewed by: Misty Stephens

Reviewed Date: 1/24/2022

Date Received: 1/21/2022

Received by: saa

Carrier name: NDA

| | | | |
|---|---|---|---|
| Shipping container/cooler in good condition? | Yes ☑ | No ☐ | Not Present ☐ |
| Custody seals intact on all shipping container(s)/cooler(s)? | Yes ☑ | No ☐ | Not Present ☐ |
| Custody seals intact on all sample bottles? | Yes ☐ | No ☐ | Not Present ☑ |
| Chain of custody present? | Yes ☑ | No ☐ | |
| Chain of custody signed when relinquished and received? | Yes ☑ | No ☐ | |
| Chain of custody agrees with sample labels? | Yes ☑ | No ☐ | |
| Samples in proper container/bottle? | Yes ☑ | No ☐ | |
| Sample containers intact? | Yes ☑ | No ☐ | |
| Sufficient sample volume for indicated test? | Yes ☑ | No ☐ | |
| All samples received within holding time? (Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.) | Yes ☑ | No ☐ | |
| Temp Blank received in all shipping container(s)/cooler(s)? | Yes ☑ | No ☐ | Not Applicable ☐ |
| Container/Temp Blank temperature: | 0.9°C On Ice | | |
| Containers requiring zero headspace have no headspace or bubble that is <6mm (1/4"). | Yes ☑ | No ☐ | No VOA vials submitted ☐ |
| Water - pH acceptable upon receipt? | Yes ☑ | No ☐ | Not Applicable ☐ |

## Standard Reporting Procedures:

Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH, Dissolved Oxygen and Residual Chlorine, are qualified as being analyzed outside of recommended holding time.

Solid/soil samples are reported on a wet weight basis (as received) unless specifically indicated. If moisture corrected, data units are typically noted as –dry. For agricultural and mining soil parameters/characteristics, all samples are dried and ground prior to sample analysis.

Radiochemical precision results represent a 2-sigma Total Measurement Uncertainty.

## Contact and Corrective Action Comments:

None

ENERGY LABORATORIES
Trust our People. Trust our Data.

# Chain of Custody & Analytical Request Record

www.energylab.com

Page _____ of _____

## Account Information (Billing information)

| | |
|---|---|
| Company/Name | Wood PLC |
| Contact | Dorina Young |
| Phone | 505-905-6651 |
| Mailing Address | P.O. Box 1088 |
| City, State, Zip | Gallup, NM 87305 |
| Email | dorina.young@woodplc.com |
| Receive Invoice | ☐Hard Copy ☒Email |
| Receive Report | ☐Hard Copy ☒Email |
| Purchase Order | C014000055 |
| Quote | 6117 |
| Bottle Order | 69281 |

## Report Information (if different than Account Information)

| | |
|---|---|
| Company/Name | United Nuclear Corp. |
| Contact | Max Chischilly JR. |
| Phone | 505-905-6651 |
| Mailing Address | P.O. Box 1088 |
| City, State, Zip | Gallup, NM 87305 |
| Email | max.chischilly@woodplc.com |
| Receive Report | ☐Hard Copy ☒Email |

Special Report/Formats: ☐ LEVEL IV ☐NELAC ☐ EDD/EDT (contact laboratory) ☐ Other_____

## Comments

Wood PLC
Acct. No. is C16610
United Nuclear Corporation is no longer mining and milling.

These water samples were not considered Radioactive under US DOT-HMR gudelines for shipping on recent/previous quarterly sampling.

## Project Information

| | |
|---|---|
| Project Name, PWSID, Permit, etc. | UNC - Zone 1, Zone 3 |
| Sampler Name | Max Chischilly JR. |
| Sampler Phone | 505-905-6651 |
| Sample Origin State | NM |
| EPA/State Compliance | ☒ Yes ☐ No |

URANIUM MINING CLIENTS MUST indicate sample type
☒ Unprocessed Ore
☐ Processed Ore (Ground or Refined) **CALL BEFORE SENDING
☐ 11(e)2 Byproduct Material (Can ONLY be Submitted to ELI Casper Location)

**Matrix Codes**
A - Air
W - Water
S - Soils/Solids
V - Vegetation
B - Bioassay
O - Oil
DW - Drinking Water

All turnaround times are standard unless marked as RUSH.
Energy Laboratories MUST be contacted prior to RUSH sample submittal for charges and scheduling – See Instructions Page

## Analysis Requested

| | Sample Identification (Name, Location, Interval, etc.) | Collection Date | Collection Time | Number of Containers | Matrix (See Codes Above) | As (Total) | Se (Total) | Be, Ca, Cd, Cl, HCO3 K, Mg, Mn, Na | NH4, Ni, NO3, Pb, Mo Pb-210, pH, SO4 | TDS, Th-230, U, V Chloroform | Gross Alpha (-) U & Rn, Al | Co, Combined Ra-226 & Ra-228. | TTHM'S | | See Attached | RUSH TAT | ELI-LAB ID (Laboratory Use Only) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | EPA-2 | 4-4-22 | 1050 | 8 | W | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | C22040181 |
| 2 | EPA DUPLICATE | 4-4-22 | 1120 | 8 | W | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | |
| 3 | 142 | 4-4-22 | 1422 | 8 | W | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | |
| 4 | NW-3 | 4-4-22 | 1351 | 8 | W | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | |
| 5 | | | | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | | | | |
| 7 | | | | | | | | | | | | | | | | | |
| 8 | | | | | | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | | | | | | |

ELI is REQUIRED to provide preservative traceability. If the preservatives supplied with the bottle order were NOT used, please attach your preservative information with this COC.

| Custody Record MUST be signed | Relinquished by (print) | Date/Time | Signature | Received by (print) | Date/Time | Signature |
|---|---|---|---|---|---|---|
| | Max Chischilly Jr. | 4-4-22/1615 | Max Chischilly Jr. | Francheska Gillreath | 4-5-22/0900 | [illegible] |
| | Relinquished by (print) | Date/Time | Signature | Received by Laboratory (print) | Date/Time | Signature |
| | Ricky E. Spitz | 4-5-22/1300 | [illegible] | Sydney Atkinson | 4-6-2022 1111 | [illegible] |

LABORATORY USE ONLY

| Shipped By | Cooler ID(s) | Custody Seals | Intact | Receipt Temp | Temp Blank | On Ice | Payment Type | Amount | Receipt Number (cash/check only) |
|---|---|---|---|---|---|---|---|---|---|
| | | Y N C B | Y N | °C | Y N | Y N | CC Cash Check_____ | $ | |

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested. This serves as notice of this possibility. All subcontracted data will be clearly notated on your analytical report.

# Work Order Receipt Checklist

## United Nuclear Corporation C22040181

Login completed by: Kirsten L. Smith
Reviewed by: Misty Stephens
Reviewed Date: 4/8/2022

Date Received: 4/6/2022
Received by: saa
Carrier name: FedEx

| | | | |
|---|---|---|---|
| Shipping container/cooler in good condition? | Yes ☑ | No ☐ | Not Present ☐ |
| Custody seals intact on all shipping container(s)/cooler(s)? | Yes ☑ | No ☐ | Not Present ☐ |
| Custody seals intact on all sample bottles? | Yes ☐ | No ☐ | Not Present ☑ |
| Chain of custody present? | Yes ☑ | No ☐ | |
| Chain of custody signed when relinquished and received? | Yes ☑ | No ☐ | |
| Chain of custody agrees with sample labels? | Yes ☑ | No ☐ | |
| Samples in proper container/bottle? | Yes ☑ | No ☐ | |
| Sample containers intact? | Yes ☑ | No ☐ | |
| Sufficient sample volume for indicated test? | Yes ☑ | No ☐ | |
| All samples received within holding time? (Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.) | Yes ☑ | No ☐ | |
| Temp Blank received in all shipping container(s)/cooler(s)? | Yes ☑ | No ☐ | Not Applicable ☐ |
| Container/Temp Blank temperature: | 1.6°C On Ice | | |
| Containers requiring zero headspace have no headspace or bubble that is <6mm (1/4"). | Yes ☑ | No ☐ | No VOA vials submitted ☐ |
| Water - pH acceptable upon receipt? | Yes ☑ | No ☐ | Not Applicable ☐ |

## Standard Reporting Procedures:

Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH, Dissolved Oxygen and Residual Chlorine, are qualified as being analyzed outside of recommended holding time.

Solid/soil samples are reported on a wet weight basis (as received) unless specifically indicated. If moisture corrected, data units are typically noted as –dry. For agricultural and mining soil parameters/characteristics, all samples are dried and ground prior to sample analysis.

The reference date for Radon analysis is the sample collection date. The reference date for all other Radiochemical analyses is the analysis date. Radiochemical precision results represent a 2-sigma Total Measurement Uncertainty.

## Contact and Corrective Action Comments:

ENERGY
Trust our People. Trust our Data.

# Chain of Custody & Analytical Request Record

www.energylab.com



## Account Information (Billing information)

| | |
|---|---|
| Company/Name | Wood PLC |
| Contact | Dorina Young |
| Phone | 505-905-6651 |
| Mailing Address | P.O. Box 1088 |
| City, State, Zip | Gallup, NM 87305 |
| Email | dorina.young@woodplc.com |
| Receive Invoice | ☐Hard Copy ☒Email |
| Receive Report | ☐Hard Copy ☒Email |
| Purchase Order | C014000055 |
| Quote | 6117 |
| Bottle Order | 69281 |

## Report Information (if different than Account Information)

| | |
|---|---|
| Company/Name | United Nuclear Corp. |
| Contact | Max Chischilly JR. |
| Phone | 505-905-6651 |
| Mailing Address | P.O. Box 1088 |
| City, State, Zip | Gallup, NM 87305 |
| Email | max.chischilly@woodplc.com |
| Receive Report | ☐Hard Copy ☒Email |

Special Report/Formats: ☐ LEVEL IV ☐NELAC ☐ EDD/EDT (contact laboratory) ☐ Other_____

## Comments

Wood PLC
Acct. No. is C16610
United Nuclear Corporation is no longer mining and milling.

These water samples were not considered Radioactive under US DOT-HMR gudelines for shipping on recent/previous quarterly sampling.

## Project Information

Project Name, PWSID, Permit, etc. UNC-ZONE1, SWALLUVIUM

Sampler Name Max Chischilly JR. | Sampler Phone 505-905-6651

Sample Origin State NM | EPA/State Compliance ☒ Yes ☐ No

**URANIUM MINING CLIENTS MUST indicate sample type**
☒ Unprocessed Ore
☐ Processed Ore (Ground or Refined) **CALL BEFORE SENDING
☐ 11(e)2 Byproduct Material (Can ONLY be Submitted to ELI Casper Location)

**Matrix Codes**
A - Air
W - Water
S - Soils/Solids
V - Vegetation
B - Bioassay
O - Oil
DW - Drinking Water

All turnaround times are standard unless marked as RUSH.
Energy Laboratories MUST be contacted prior to RUSH sample submittal for charges and scheduling – See Instructions Page

**Analysis Requested**

| | Sample Identification (Name, Location, Interval, etc.) | Collection Date | Collection Time | Number of Containers | Matrix (See Codes Above) | As (Total) | Se (Total) | Be, Ca, Cd, Cl, HC03 K, Mg, Mn, Na | NH4, Ni, NO3, Pb, Mo Pb-210, pH, S04 | TDS, Th-230, U, V Chloroform | Gross Alpha (-) U & Rn, Al | Co, Combined Ra-226 & Ra-228. | TTHM'S | | See Attached | RUSH TAT | ELI LAB ID Laboratory Use Only |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | EPA-4 | 4-5-22 | 1125 | 8 | W | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | C22040256 |
| 2 | EPA-5 | 4-5-22 | 1227 | 8 | W | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | |
| 3 | SBL-1 | 4-5-22 | 1348 | 8 | W | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | |
| 4 | RINSATE | 4-5-22 | [illegible] | 8 | W | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | |
| 5 | FIELD BLANK | 4-5-22 | 1530 | 8 | W | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | |
| 6 | | | | | | | | | | | | | | | | | |
| 7 | | | | | | | | | | | | | | | | | |
| 8 | | | | | | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | | | | | | |

ELI is REQUIRED to provide preservative traceability. If the preservatives supplied with the bottle order were NOT used, please attach your preservative information with this COC.

| Custody Record MUST be signed | Relinquished by (print) | Date/Time | Signature | Received by (print) | Date/Time | Signature |
|---|---|---|---|---|---|---|
| | Max Chischilly Jr. | 4-5-22/1500 | Max Chischilly Jr. | Francesca Gillreath | 4-5-22/1530 | [signature] |
| | Ricky [illegible] | 4-6-22/1330 | [illegible] | Received by Laboratory (print) Caroline [illegible] | 4/7/22 12:32 | [signature] |

**LABORATORY USE ONLY**

| Shipped By | Cooler ID(s) | Custody Seals | Intact | Receipt Temp | Temp Blank | On Ice | Payment Type | Amount | Receipt Number (cash/check only) |
|---|---|---|---|---|---|---|---|---|---|
| FedEx | ELI | Y N C B | Y N | 2.5, 2.6°C | Y N | Y N | CC Cash Check_____ | $ | |

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested. This serves as notice of this possibility. All subcontracted data will be clearly notated on your analytical report.

ENERGY
Trust our People. Trust our Data.

# Chain of Custody & Analytical Request Record

www.energylab.com



## Account Information (Billing Information)

| | |
|---|---|
| Company/Name | Wood PLC |
| Contact | Dorina Young |
| Phone | 505-905-6651 |
| Mailing Address | P.O. Box 1088 |
| City, State, Zip | Gallup, NM 87305 |
| Email | dorina.young@woodplc.com |
| Receive Invoice | ☐Hard Copy ☒Email |
| Receive Report | ☐Hard Copy ☒Email |
| Purchase Order | C014000055 |
| Quote | 6117 |
| Bottle Order | 69281 |

## Report Information (If different than Account Information)

| | |
|---|---|
| Company/Name | United Nuclear Corp. |
| Contact | Max Chischilly JR. |
| Phone | 505-905-6651 |
| Mailing Address | P.O. Box 1088 |
| City, State, Zip | Gallup, NM 87305 |
| Email | max.chischilly@woodplc.com |
| Receive Report | ☐Hard Copy ☒Email |
| Special Report/Formats: | ☐ LEVEL IV ☐NELAC ☐ EDD/EDT (contact laboratory) ☐ Other_____ |

## Comments

Wood PLC
Acct. No. is C16610
United Nuclear Corporation is no longer mining and milling.

These water samples were not considered Radioactive under US DOT-HMR gudelines for shipping on recent/previous quarterly sampling.

## Project Information

| | |
|---|---|
| Project Name, PWSID, Permit, etc. | UNC-ZONE 3 |
| Sampler Name | Max Chischilly JR. |
| Sampler Phone | 505-905-6651 |
| Sample Origin State | NM |
| EPA/State Compliance | ☒ Yes ☐ No |

URANIUM MINING CLIENTS MUST indicate sample type
☒ Unprocessed Ore ✱
☐ Processed Ore (Ground or Refined) **CALL BEFORE SENDING
☒ 11(e)2 Byproduct Material (Can ONLY be Submitted to ELI Casper Location)

**Matrix Codes**
A - Air
W - Water
S - Soils/Solids
V - Vegetation
B - Bioassay
O - Oil
DW - Drinking Water

All turnaround times are standard unless marked as RUSH.
Energy Laboratories MUST be contacted prior to RUSH sample submittal for charges and scheduling – See Instructions Page

**Analysis Requested**

| | Sample Identification (Name, Location, Interval, etc.) | Collection Date | Collection Time | Number of Containers | Matrix (See Codes Above) | Bicarbonate | Chloride | pH | TDS | | | | | | See Attached | RUSH TAT | ELI LAB ID Laboratory Use Only |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | ✱ NBL-2 | 4-5-22 | 1010 | 1 | W | ✓ | ✓ | ✓ | ✓ | | | | | | | | C22040246 |
| 2 | NW-4 | 4-5-22 | 1039 | 1 | W | ✓ | ✓ | ✓ | ✓ | | | | | | | | " |
| 3 | RW-A | 4-5-22 | 1052 | 1 | W | ✓ | ✓ | ✓ | ✓ | | | | | | | | " |
| 4 | | | | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | | | | |
| 7 | | | | | | | | | | | | | | | | | |
| 8 | | | | | | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | | | | | | |

**ELI is REQUIRED to provide preservative traceability.** If the preservatives supplied with the bottle order were NOT used, please attach your preservative information with this COC.

| Custody Record MUST be signed | Relinquished by (print) | Date/Time | Signature | Received by (print) | Date/Time | Signature |
|---|---|---|---|---|---|---|
| | Max Chischilly Jr. | 4-5-22/1500 | Max Chischilly Jr. | Franchesca Gillreath | 4-5-22/1530 | [signature] |
| | Ricky E. Spitz | 4-6-22/1330 | [signature] | Received by Laboratory (print) [illegible] | 4/7/22 12:52 | [signature] |

LABORATORY USE ONLY

| Shipped By | Cooler ID(s) | Custody Seals | Intact | Receipt Temp | Temp Blank | On Ice | Payment Type | Amount | Receipt Number (cash/check only) |
|---|---|---|---|---|---|---|---|---|---|
| Fed Ex | ELI Cooler | Y N C B | Y N | 2.5 °C | Y N | Y N | CC Cash Check_____ | $ | |

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested. [illegible] of this possibility. All subcontracted data will be clearly notated on your analytical report.

# Work Order Receipt Checklist

## United Nuclear Corporation

## C22040256

Login completed by: Lydia M. Cormaney

Reviewed by: Misty Stephens

Reviewed Date: 4/11/2022

Date Received: 4/7/2022

Received by: cmj

Carrier name: FedEx

| | | | |
|---|---|---|---|
| Shipping container/cooler in good condition? | Yes ☑ | No ☐ | Not Present ☐ |
| Custody seals intact on all shipping container(s)/cooler(s)? | Yes ☑ | No ☐ | Not Present ☐ |
| Custody seals intact on all sample bottles? | Yes ☐ | No ☐ | Not Present ☑ |
| Chain of custody present? | Yes ☑ | No ☐ | |
| Chain of custody signed when relinquished and received? | Yes ☑ | No ☐ | |
| Chain of custody agrees with sample labels? | Yes ☑ | No ☐ | |
| Samples in proper container/bottle? | Yes ☑ | No ☐ | |
| Sample containers intact? | Yes ☑ | No ☐ | |
| Sufficient sample volume for indicated test? | Yes ☑ | No ☐ | |
| All samples received within holding time? (Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.) | Yes ☑ | No ☐ | |
| Temp Blank received in all shipping container(s)/cooler(s)? | Yes ☑ | No ☐ | Not Applicable ☐ |
| Container/Temp Blank temperature: | 2.5°C On Ice | | |
| Containers requiring zero headspace have no headspace or bubble that is <6mm (1/4"). | Yes ☐ | No ☐ | No VOA vials submitted ☑ |
| Water - pH acceptable upon receipt? | Yes ☐ | No ☐ | Not Applicable ☑ |

## Standard Reporting Procedures:

Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH, Dissolved Oxygen and Residual Chlorine, are qualified as being analyzed outside of recommended holding time.

Solid/soil samples are reported on a wet weight basis (as received) unless specifically indicated. If moisture corrected, data units are typically noted as –dry. For agricultural and mining soil parameters/characteristics, all samples are dried and ground prior to sample analysis.

The reference date for Radon analysis is the sample collection date. The reference date for all other Radiochemical analyses is the analysis date. Radiochemical precision results represent a 2-sigma Total Measurement Uncertainty.

## Contact and Corrective Action Comments:

cooler #1: 2.5°c, cooler #2: 2.6°c. 4/7/2022 lc

ENERGY LABORATORIES
Trust our People. Trust our Data.

# Chain of Custody & Analytical Request Record

www.energylab.com

Page 1 of 2

## Account Information (Billing Information)

| | |
|---|---|
| Company/Name | Wood PLC |
| Contact | Dorina Young |
| Phone | 505-905-6651 |
| Mailing Address | P.O. Box 1088 |
| City, State, Zip | Gallup, NM 87305 |
| Email | dorina.young@woodplc.com |
| Receive Invoice | ☐Hard Copy ☒Email |
| Receive Report | ☐Hard Copy ☒Email |
| Purchase Order | C014000055 |
| Quote | 6117 |
| Bottle Order | 69281 |

## Report Information (If different than Account Information)

| | |
|---|---|
| Company/Name | United Nuclear Corp. |
| Contact | Max Chischilly JR. |
| Phone | 505-905-6651 |
| Mailing Address | P.O. Box 1088 |
| City, State, Zip | Gallup, NM 87305 |
| Email | max.chischilly@woodplc.com |
| Receive Report | ☐Hard Copy ☒Email |
| Special Report/Formats: | ☐ LEVEL IV ☐NELAC ☐ EDD/EDT (contact laboratory) ☐ Other_____ |

## Comments

Wood PLC
Acct. No. is C16610
United Nuclear Corporation is no longer mining and milling.

These water samples were not considered Radioactive under US DOT-HMR gudelines for shipping on recent/previous quarterly sampling.

## Project Information

| | |
|---|---|
| Project Name, PWSID, Permit, etc. | UNC-ZONE 1 & ZONE 3 |
| Sampler Name | Max Chischilly JR. |
| Sampler Phone | 505-905-6651 |
| Sample Origin State | NM |
| EPA/State Compliance | ☒ Yes ☐ No |

URANIUM MINING CLIENTS MUST indicate sample type
☐ Unprocessed Ore
☐ Processed Ore (Ground or Refined) **CALL BEFORE SENDING
☒ 11(e)2 Byproduct Material (Can ONLY be Submitted to ELI Casper Location)

Matrix Codes
A - Air
W - Water
S - Soils/Solids
V - Vegetation
B - Bioassay
O - Oil
DW - Drinking Water

All turnaround times are standard unless marked as RUSH.
Energy Laboratories MUST be contacted prior to RUSH sample submittal for charges and scheduling – See Instructions Page

Analysis Requested

| | Sample Identification (Name, Location, Interval, etc.) | Collection Date | Collection Time | Number of Containers | Matrix (See Codes Above) | As (Total) | Se (Total) | Be, Ca, Cd, Cl, HCO3 K, Mg, Mn, Na | NH4, Ni, NO3, Pb, Mo Pb-210, pH, S04 | TDS, Th-230, U, V Chloroform | Gross Alpha (-) U & Rn, Al | Co, Combined Ra-226 & Ra-228. | TTHM'S | | See Attached | RUSH TAT | ELI LAB ID Laboratory Use Only |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 614 | 3-31-22 | 0908 | 8 | W | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | C2204042 |
| 2 | 515-A | 3-31-22 | 1042 | 8 | W | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | |
| 3 | 604 | 3-31-22 | 1146 | 8 | W | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | |
| 4 | EPA-7 | 3-31-22 | 1240 | 8 | W | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | |
| 5 | 613 | 3-31-22 | 1331 | 8 | W | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | |
| 6 | EPA-14 | 3-31-22 | 1413 | 8 | W | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | |
| 7 | | | | | | | | | | | | | | | | | |
| 8 | | | | | | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | | | | | | |

ELI is REQUIRED to provide preservative traceability. If the preservatives supplied with the bottle order were NOT used, please attach your preservative information with this COC.

| Custody Record MUST be signed | Relinquished by (print) | Date/Time | Signature | Received by (print) | Date/Time | Signature |
|---|---|---|---|---|---|---|
| | Max Chischilly Jr. | 3-31-22/1500 | Max Chischilly Jr. | Franchesca Gillreath | 3-31-22/1530 | [signature] |
| | Ricky E. Spitz | 4-4-22/1200 | [signature] | Sonny Atkinson | 4-5-22 1082 | [signature] |

LABORATORY USE ONLY

| Shipped By | Cooler ID(s) | Custody Seals Y N C B | Intact Y N | Receipt Temp °C | Temp Blank Y N | On Ice Y N | Payment Type CC Cash Check_____ | Amount $ | Receipt Number (cash/check only) |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | |

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested. This serves as notice of this possibility. All subcontracted data will be clearly notated on your analytical report.

ENERGY LABORATORIES
Trust our People. Trust our Data.

# Chain of Custody & Analytical Request Record

www.energylab.com



## Account Information (Billing information)

| | |
|---|---|
| Company/Name | Wood PLC |
| Contact | Dorina Young |
| Phone | 505-905-6651 |
| Mailing Address | P.O. Box 1088 |
| City, State, Zip | Gallup, NM 87305 |
| Email | dorina.young@woodplc.com |
| Receive Invoice | ☐Hard Copy ☒Email |
| Receive Report | ☐Hard Copy ☒Email |
| Purchase Order | C014000055 |
| Quote | 6117 |
| Bottle Order | 69281 |

## Report Information (if different than Account Information)

| | |
|---|---|
| Company/Name | United Nuclear Corp. |
| Contact | Max Chischilly JR. |
| Phone | 505-905-6651 |
| Mailing Address | P.O. Box 1088 |
| City, State, Zip | Gallup, NM 87305 |
| Email | max.chischilly@woodplc.com |
| Receive Report | ☐Hard Copy ☒Email |

Special Report/Formats: ☐ LEVEL IV ☐NELAC ☐ EDD/EDT (contact laboratory) ☐ Other_____

## Comments

Wood PLC
Acct. No. is C16610
United Nuclear Corporation is no longer mining and milling.

These water samples were not considered Radioactive under US DOT-HMR gudelines for shipping on recent/previous quarterly sampling.

## Project Information

| | |
|---|---|
| Project Name, PWSID, Permit, etc. | UNC - ZONE 3 |
| Sampler Name | Max Chischilly JR. |
| Sampler Phone | 505-905-6651 |
| Sample Origin State | NM |
| EPA/State Compliance | ☒ Yes ☐ No |

URANIUM MINING CLIENTS MUST Indicate sample type
☐ Unprocessed Ore
☐ Processed Ore (Ground or Refined) **CALL BEFORE SENDING
■ 11(e)2 Byproduct Material (Can ONLY be Submitted to ELI Casper Location)

**Matrix Codes**
A - Air
W - Water
S - Soils/Solids
V - Vegetation
B - Bioassay
O - Oil
DW - Drinking Water

All turnaround times are standard unless marked as RUSH.
Energy Laboratories MUST be contacted prior to RUSH sample submittal for charges and scheduling – See Instructions Page

| | Sample Identification (Name, Location, Interval, etc.) | Collection Date | Collection Time | Number of Containers | Matrix (See Codes Above) | As (Total) | Se (Total) | Be, Ca, Cd, Cl, HCO3 K, Mg, Mn, Na | NH4, Ni, NO3, Pb, Mo Pb-210, pH, SO4 | TDS, Th-230, U, V Chloroform | Gross Alpha (-) U & Rn, Al | Co, Combined Ra-226 & Ra-228 | TTHM'S | | See Attached | RUSH TAT | ELI LAB ID (Laboratory Use Only) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 717 | 4-1-22 | 0922 | 8 | W | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | C22040142 |
| 2 | 717 DUPLICATE | 4-1-22 | 1013 | 8 | W | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | |
| 3 | 708 | 4-1-22 | 1052 | 8 | W | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | |
| 4 | 711 | 4-1-22 | 1145 | 8 | W | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | |
| 5 | EPA-13 | 4-1-22 | 1306 | 8 | W | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | |
| 6 | 719 | 4-1-22 | 1423 | 8 | W | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | |
| 7 | | | | | | | | | | | | | | | | | |
| 8 | | | | | | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | | | | | | |

ELI is REQUIRED to provide preservative traceability. If the preservatives supplied with the bottle order were NOT used, please attach your preservative information with this COC.

| Custody Record MUST be signed | Relinquished by (print) | Date/Time | Signature | Received by (print) | Date/Time | Signature |
|---|---|---|---|---|---|---|
| | Max Chischilly Jr. | 4-1-22/1500 | Max Chischilly Jr. | Duane Smith Jr. | 4-1-22/1530 | Duane Smith Jr. |
| | Ricky E. Spitz | 4-4-22/1200 | Ricky E. Spitz | Sydney Atkinson | 4-5-22 1033 | Sydney Atkinson |

LABORATORY USE ONLY

| Shipped By | Cooler ID(s) | Custody Seals | Intact | Receipt Temp | Temp Blank | On Ice | Payment Type | Amount | Receipt Number (cash/check only) |
|---|---|---|---|---|---|---|---|---|---|
| | | Y N C B | Y N | °C | Y N | Y N | CC Cash Check_____ | $ | |

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested. This serves as notice of this possibility. All subcontracted data will be clearly notated on your analytical report.

# Work Order Receipt Checklist

## United Nuclear Corporation

## C22040142

Login completed by: Kirsten L. Smith
Reviewed by: Misty Stephens
Reviewed Date: 4/6/2022

Date Received: 4/5/2022
Received by: saa
Carrier name: FedEx

| | | | |
|---|---|---|---|
| Shipping container/cooler in good condition? | Yes ☑ | No ☐ | Not Present ☐ |
| Custody seals intact on all shipping container(s)/cooler(s)? | Yes ☐ | No ☐ | Not Present ☑ |
| Custody seals intact on all sample bottles? | Yes ☐ | No ☐ | Not Present ☑ |
| Chain of custody present? | Yes ☑ | No ☐ | |
| Chain of custody signed when relinquished and received? | Yes ☑ | No ☐ | |
| Chain of custody agrees with sample labels? | Yes ☐ | No ☑ | |
| Samples in proper container/bottle? | Yes ☑ | No ☐ | |
| Sample containers intact? | Yes ☑ | No ☐ | |
| Sufficient sample volume for indicated test? | Yes ☑ | No ☐ | |
| All samples received within holding time? (Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.) | Yes ☑ | No ☐ | |
| Temp Blank received in all shipping container(s)/cooler(s)? | Yes ☑ | No ☐ | Not Applicable ☐ |
| Container/Temp Blank temperature: | 2.1°C On Ice | | |
| Containers requiring zero headspace have no headspace or bubble that is <6mm (1/4"). | Yes ☑ | No ☐ | No VOA vials submitted ☐ |
| Water - pH acceptable upon receipt? | Yes ☑ | No ☐ | Not Applicable ☐ |

## Standard Reporting Procedures:

Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH, Dissolved Oxygen and Residual Chlorine, are qualified as being analyzed outside of recommended holding time.

Solid/soil samples are reported on a wet weight basis (as received) unless specifically indicated. If moisture corrected, data units are typically noted as –dry. For agricultural and mining soil parameters/characteristics, all samples are dried and ground prior to sample analysis.

The reference date for Radon analysis is the sample collection date. The reference date for all other Radiochemical analyses is the analysis date. Radiochemical precision results represent a 2-sigma Total Measurement Uncertainty.

## Contact and Corrective Action Comments:

Temperature Blank temperature of Cooler 1 was 2.1°C, Cooler 2 was 1.1°C, Cooler 3 was 3.8°C, and Cooler 4 was 4.3°C. 4/5/2022-KS
Trip Blanks were not listed on the COC.

**Energy Laboratories, Inc.**
2393 Salt Creek Hwy
Casper, WY 82601-9601
307.235.0515

C22040142

# CHAIN-OF-CUSTODY RECORD


05-Apr-22

PO C22040142

**Earliest HT Expires:** Thu, 4/14/2022 0908
**Test Codes:** VOC-624.1-W

**Earliest Due Date:** 4/14/2022
**# Bus. Days Until Due:** 7

Project # 28019578

**Subcontractor:**
Eurofins TA-Denver
4955 Yarrow St
Arvada, CO 80002
TEL: 3037360100
FAX:
Acct #: 3037360100

**Subcontractor's Client**

| | | | | | Requested Tests: VOC-624.1-W |
|---|---|---|---|---|---|
| | C22040142-001F | Aqueous | 03/31/22 09:08 A | 3 - 40ML-CG-VOA-AA-H | 1 |
| | C22040142-002F | Aqueous | 03/31/22 10:42 A | 3 - 40ML-CG-VOA-AA-H | 1 |
| | C22040142-003F | Aqueous | 03/31/22 11:46 A | 3 - 40ML-CG-VOA-AA-H | 1 |
| | C22040142-004F | Aqueous | 03/31/22 12:40 P | 3 - 40ML-CG-VOA-AA-H | 1 |
| | C22040142-005F | Aqueous | 03/31/22 01:31 P | 3 - 40ML-CG-VOA-AA-H | 1 |
| | C22040142-006F | Aqueous | 03/31/22 02:13 P | 3 - 40ML-CG-VOA-AA-H | 1 |
| | C22040142-007F | Aqueous | 04/01/22 09:22 A | 3 - 40ML-CG-VOA-AA-H | 1 |
| | C22040142-008F | Aqueous | 04/01/22 10:13 A | 3 - 40ML-CG-VOA-AA-H | 1 |
| | C22040142-009F | Aqueous | 04/01/22 10:52 A | 3 - 40ML-CG-VOA-AA-H | 1 |

Samples are HCl

**Comments:**

Analysis Requested: See Attached

QC Level: STD

280-160713 Chain of Custody

| | | Date/Time | | | Date/Time |
|---|---|---|---|---|---|
| **Relinquished by:** | [signature] | 4/5/2022 | **Received by:** | [signature] | 04/07/2022 0940 |
| **Relinquished by:** | | 15:18 | **Received by:** | | |

| Shipped By: | Custody Seal | Intact | Receipt Temp: | Temp Blank | On Ice |
|---|---|---|---|---|---|
| | Y N | Y N | CF+0.1 1.8 °C | Y N | Y N |

**Energy Laboratories, Inc.**

2393 Salt Creek Hwy
Casper, WY 82601-9601
307.235.0515

C22040142

# CHAIN-OF-CUSTODY RECORD


05-Apr-22

PO: C22040142

**Earliest HT Expires:** Thu, 4/14/2022 0908
**Test Codes:** VOC-624.1-W

**Earliest Due Date:** 4/14/2022
**# Bus. Days Until Due:** 7

**Subcontractor:**
Eurofins TA-Denver
4955 Yarrow St
Arvada, CO 80002
TEL: 3037360100
FAX:
Acct #: 3037360100

Project # 28019578

**Subcontractor's Client**

| | | | | | Requested Tests: VOC-624.1-W |
|---|---|---|---|---|---|
| | C22040142-010F | Aqueous | 04/01/22 11:45 A | 3 - 40ML-CG-VOA-AA-H | 1 |
| | C22040142-011F | Aqueous | 04/01/22 01:06 P | 3 - 40ML-CG-VOA-AA-H | 1 |
| | C22040142-012F | Aqueous | 04/01/22 02:23 P | 3 - 40ML-CG-VOA-AA-H | 1 |
| | C22040142-013A | Trip Blank | 03/31/22 10:42 A | 1 - 40ML-CG-VOA-AA-H | 1 |
| | C22040142-014A | Trip Blank | 03/31/22 09:08 A | 1 - 40ML-CG-VOA-AA-H | 1 |
| | C22040142-015A | Trip Blank | 03/31/22 12:40 P | 1 - 40ML-CG-VOA-AA-H | 1 |
| | C22040142-016A | Trip Blank | 03/31/22 01:31 P | 1 - 40ML-CG-VOA-AA-H | 1 |

Samples are Iez

**Comments:** Analysis Requested: See Attached

QC Level: STD

| | | | |
|---|---|---|---|
| **Relinquished by:** [signature] | **Date/Time** 4/5/2022 15:18 | **Received by:** [signature] | **Date/Time** 04/07/2022 0945 |
| **Relinquished by:** | | **Received by:** | |

| Shipped By: | Custody Seal | Intact | Receipt Temp: °C | Temp Blank | On Ice |
|---|---|---|---|---|---|
| | Y N | Y N | | Y N | Y N |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | G | ☐ | ☐ | VOC-624.1-W | ☐ | ☐ | ☑ | Sub-TA-Arvada |

| | | | | |
|---|---|---|---|---|
| A | Bromodichloromethane | 0.01076 | 0.5 | 0 |
| A | Bromoform | 0.0325 | 0.5 | 0 |
| A | Chlorodibromomethane | 0.01741 | 0.5 | 0 |
| A | Chloroform | 0.03616 | 0.5 | 0 |
| S | 1,2-Dichloroethane-d4 | 0 | 0.5 | 0 |
| S | p-Bromofluorobenzene | 0 | 0.5 | 0 |
| S | Toluene-d8 | 0 | 0.5 | 0 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | G | ☐ | ☐ | VOC-624.1-W-CALC | ☐ | ☐ | ☑ | Sub-TA-Arvada |

LYDIA CORMANEY / CIARA LEIS
(307) 235-0515
ENERGY LABORATORIES
2393 SALT CREEK HWY
CASPER WY 82601-8201

16 LBS

1 OF 1

DWT: 17,12,12

SHIP TO:
SAMPLE RECEIVING
(303) 736-0100
EUROFINS TA DENVER
4955 YARROW ST
ARVADA CO 80002-4517

CO 802 9-30

UPS GROUND
TRACKING #: 1Z 822 358 03 5918 8916

BILLING: P/P

280-160713 Waybill

WB 24.0.17 Zebra ZP 450 13.0A 03/2022

SEE NOTICE ON REVERSE regarding UPS Terms, and notice of limitation of liability. Where allowed by law, shipper authorizes UPS to act as forwarding agent for export control and customs purposes. If exported from the US, shipper certifies that the commodities, technology or software were exported from the US in accordance with the Export Administration Regulations. Diversion contrary to law is prohibited. KR0122

# Login Sample Receipt Checklist

Client: Energy Laboratories, Inc.

Job Number: 280-160713-1

**Login Number: 160713**
**List Number: 1**
**Creator: Rystrom, Joshua R**

**List Source: Eurofins Denver**

| Question | Answer | Comment |
|---|---|---|
| Radioactivity wasn't checked or is </= background as measured by a survey meter. | True | |
| The cooler's custody seal, if present, is intact. | True | |
| Sample custody seals, if present, are intact. | True | |
| The cooler or samples do not appear to have been compromised or tampered with. | True | |
| Samples were received on ice. | True | |
| Cooler Temperature is acceptable. | True | |
| Cooler Temperature is recorded. | True | |
| COC is present. | True | |
| COC is filled out in ink and legible. | True | |
| COC is filled out with all pertinent information. | True | |
| Is the Field Sampler's name present on COC? | N/A | |
| There are no discrepancies between the containers received and the COC. | True | |
| Samples are received within Holding Time (excluding tests with immediate HTs) | True | |
| Sample containers have legible labels. | True | |
| Containers are not broken or leaking. | True | |
| Sample collection date/times are provided. | True | |
| Appropriate sample containers are used. | True | |
| Sample bottles are completely filled. | True | |
| Sample Preservation Verified. | N/A | |
| There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs | True | |
| Containers requiring zero headspace have no headspace or bubble is <6mm (1/4"). | True | |
| Multiphasic samples are not present. | True | |
| Samples do not require splitting or compositing. | True | |
| Residual Chlorine Checked. | N/A | |

Trust our People. Trust our Data.

# Chain of Custody & Analytical Request Record

www.energylab.com

Page _____ of _____

## Account Information (Billing Information)

| | |
|---|---|
| Company/Name | Wood PLC |
| Contact | Dorina Young |
| Phone | 505-905-6651 |
| Mailing Address | P.O. Box 1088 |
| City, State, Zip | Gallup, NM 87305 |
| Email | dorina.young@woodplc.com |
| Receive Invoice | ☐Hard Copy ☒Email |
| Receive Report | ☐Hard Copy ☒Email |
| Purchase Order | C014000055 |
| Quote | 6117 |
| Bottle Order | 69281 |

## Report Information (if different than Account Information)

| | |
|---|---|
| Company/Name | United Nuclear Corp. |
| Contact | Max Chischilly JR. |
| Phone | 505-905-6651 |
| Mailing Address | P.O. Box 1088 |
| City, State, Zip | Gallup, NM 87305 |
| Email | max.chischilly@woodplc.com |
| Receive Report | ☐Hard Copy ☒Email |

Special Report/Formats: ☐ LEVEL IV ☐NELAC ☐ EDD/EDT (contact laboratory) ☐ Other_____

## Comments

Wood PLC
Acct. No. is C16610
United Nuclear Corporation is no longer mining and milling.

These water samples were not considered Radioactive under US DOT-HMR gudelines for shipping on recent/previous quarterly sampling.

## Project Information

| | |
|---|---|
| Project Name, PWSID, Permit, etc. | UNC-Zone 3. |
| Sampler Name | Max Chischilly JR. |
| Sampler Phone | 505-905-6651 |
| Sample Origin State | NM |
| EPA/State Compliance | ☒ Yes ☐ No |

URANIUM MINING CLIENTS MUST indicate sample type
☐ Unprocessed Ore
☐ Processed Ore (Ground or Refined) **CALL BEFORE SENDING
☒ 11(e)2 Byproduct Material (Can ONLY be Submitted to ELI Casper Location)

**Matrix Codes**
A- Air
W- Water
S- Soils/Solids
V- Vegetation
B- Bioassay
O- Oil
DW- Drinking Water

All turnaround times are standard unless marked as RUSH.
Energy Laboratories MUST be contacted prior to RUSH sample submittal for charges and scheduling – See Instructions Page

| | Sample Identification (Name, Location, Interval, etc.) | Collection Date | Collection Time | Number of Containers | Matrix (See Codes Above) | As (Total) | Se (Total) | Be, Ca, Cd, Cl, HCO3 K, Mg, Mn, Na | NH4, Ni, NO3, Pb, Mo Pb-210, pH, SO4 | TDS, Th-230, U, V Chloroform | Gross Alpha (-) U & Rn, Al | Co, Combined Ra-226 & Ra-228 | TTHM'S | | | See Attached | RUSH TAT | ELI LAB ID (Laboratory Use Only) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 517 | 4-4-22 | 0928 | 8 | W | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | | C22040188 |
| 2 | MW-7 | 4-4-22 | 1210 | 8 | W | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | | |
| 3 | | | | | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | | | | | |
| 7 | | | | | | | | | | | | | | | | | | |
| 8 | | | | | | | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | | | | | | | |

ELI is REQUIRED to provide preservative traceability. If the preservatives supplied with the bottle order were NOT used, please attach your preservative information with this COC.

| Custody Record MUST be signed | Relinquished by (print) | Date/Time | Signature | Received by (print) | Date/Time | Signature |
|---|---|---|---|---|---|---|
| | Max Chischilly Jr. | 4-4-22/1615 | Max Chischilly Jr. | Franchesca Gillreath | 4-4-22/1640 | [illegible] |
| | Relinquished by (print) | Date/Time | Signature | Received by Laboratory (print) | Date/Time | Signature |
| | Ricky E. Spitz | 4-5-22/1300 | [illegible] | Sidney Atkinson | 4-6-22 1114 | [illegible] |

LABORATORY USE ONLY

| Shipped By | Cooler ID(s) | Custody Seals | Intact | Receipt Temp | Temp Blank | On Ice | Payment Type | Amount | Receipt Number (cash/check only) |
|---|---|---|---|---|---|---|---|---|---|
| | | Y N C B | Y N | °C | Y N | Y N | CC Cash Check_____ | $ | |

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested. This serves as notice of this possibility. All subcontracted data will be clearly notated on your analytical report.

# Work Order Receipt Checklist

## United Nuclear Corporation

## C22040188

Login completed by: Kirsten L. Smith

Reviewed by: Misty Stephens

Reviewed Date: 4/8/2022

Date Received: 4/6/2022

Received by: saa

Carrier name: FedEx

| | | | |
|---|---|---|---|
| Shipping container/cooler in good condition? | Yes ☑ | No ☐ | Not Present ☐ |
| Custody seals intact on all shipping container(s)/cooler(s)? | Yes ☑ | No ☐ | Not Present ☐ |
| Custody seals intact on all sample bottles? | Yes ☐ | No ☐ | Not Present ☑ |
| Chain of custody present? | Yes ☑ | No ☐ | |
| Chain of custody signed when relinquished and received? | Yes ☑ | No ☐ | |
| Chain of custody agrees with sample labels? | Yes ☑ | No ☐ | |
| Samples in proper container/bottle? | Yes ☑ | No ☐ | |
| Sample containers intact? | Yes ☑ | No ☐ | |
| Sufficient sample volume for indicated test? | Yes ☑ | No ☐ | |
| All samples received within holding time? (Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.) | Yes ☑ | No ☐ | |
| Temp Blank received in all shipping container(s)/cooler(s)? | Yes ☑ | No ☐ | Not Applicable ☐ |
| Container/Temp Blank temperature: | 2.6°C On Ice | | |
| Containers requiring zero headspace have no headspace or bubble that is <6mm (1/4"). | Yes ☑ | No ☐ | No VOA vials submitted ☐ |
| Water - pH acceptable upon receipt? | Yes ☑ | No ☐ | Not Applicable ☐ |

## Standard Reporting Procedures:

Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH, Dissolved Oxygen and Residual Chlorine, are qualified as being analyzed outside of recommended holding time.

Solid/soil samples are reported on a wet weight basis (as received) unless specifically indicated. If moisture corrected, data units are typically noted as –dry. For agricultural and mining soil parameters/characteristics, all samples are dried and ground prior to sample analysis.

The reference date for Radon analysis is the sample collection date. The reference date for all other Radiochemical analyses is the analysis date. Radiochemical precision results represent a 2-sigma Total Measurement Uncertainty.

## Contact and Corrective Action Comments:

None

**Energy Laboratories, Inc.**
2393 Salt Creek Hwy
Casper, WY 82601-9601
307.235.0515

C22040188

# CHAIN-OF-CUSTODY RECORD


06-Apr-22

PO: C22040188

**Earliest HT Expires:** Mon, 4/18/2022 0928
**Test Codes:** VOC-624.1-W

**Earliest Due Date:** 4/15/2022
**# Bus. Days Until Due:** 7

**Subcontractor:**
Eurofins TA-Denver
4955 Yarrow St
Arvada. CO 80002
TEL: 3037360100
FAX:
Acct #: 3037360100

Project #
28019578

**Subcontractor's Client**

| | | | | | Requested Tests |
|---|---|---|---|---|---|
| | | | | | VOC-624.1-W |
| C22040188-001F | Aqueous | 04/04/22 09:28 A | 3 - 40ML-CG-VOA-AA-H | | 1 |
| C22040188-002F | Aqueous | 04/04/22 12:10 P | 3 - 40ML-CG-VOA-AA-H | | 1 |
| C22040188-003A | Aqueous | 04/04/22 09:28 A | 1 - 40ML-CG-VOA-AA-H | | 1 |

Samples are 11e2

Analyses Requested. See Attached

280-160792 Chain of Custody

**Comments:**

QC Level:
**STD**

| | | Date/Time | | | Date/Time |
|---|---|---|---|---|---|
| **Relinquished by:** | [signature] | 4/6/2022 | **Received by:** | [signature] | 4/8/22 1000 |
| **Relinquished by:** | | 15:13 | **Received by:** | | |

| Shipped By: | Custody Seal | Intact | Receipt Temp: | Temp Blank | On Ice |
|---|---|---|---|---|---|
| | Y N | Y N | 4.2 1R12 CF+0.1°C | (Y) N | (Y) N |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| G | ☐ | ☐ | VOC-624.1-W | ☐ | ☐ | ☑ | Sub-TA-Arvada |

| | | | | |
|---|---|---|---|---|
| A | Bromodichloromethane | 0.01076 | 0.5 | 0 |
| A | Bromoform | 0.0325 | 0.5 | 0 |
| A | Chlorodibromomethane | 0.01741 | 0.5 | 0 |
| A | Chloroform | 0.03616 | 0.5 | 0 |
| S | 1,2-Dichloroethane-d4 | 0 | 0.5 | 0 |
| S | p-Bromofluorobenzene | 0 | 0.5 | 0 |
| S | Toluene-d8 | 0 | 0.5 | 0 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| G | ☐ | ☐ | VOC-624.1-W-CALC | ☐ | ☐ | ☑ | Sub-TA-Arvada |

# Login Sample Receipt Checklist

Client: Energy Laboratories, Inc.

Job Number: 280-160792-

**Login Number: 160792**
**List Number: 1**
**Creator: Rystrom, Joshua R**

**List Source: Eurofins Denver**

| Question | Answer | Comment |
|---|---|---|
| Radioactivity wasn't checked or is </= background as measured by a survey meter. | True | |
| The cooler's custody seal, if present, is intact. | False | Not present |
| Sample custody seals, if present, are intact. | True | |
| The cooler or samples do not appear to have been compromised or tampered with. | True | |
| Samples were received on ice. | True | |
| Cooler Temperature is acceptable. | True | |
| Cooler Temperature is recorded. | True | |
| COC is present. | True | |
| COC is filled out in ink and legible. | True | |
| COC is filled out with all pertinent information. | True | |
| Is the Field Sampler's name present on COC? | N/A | |
| There are no discrepancies between the containers received and the COC. | True | |
| Samples are received within Holding Time (excluding tests with immediate HTs) | True | |
| Sample containers have legible labels. | True | |
| Containers are not broken or leaking. | True | |
| Sample collection date/times are provided. | True | |
| Appropriate sample containers are used. | True | |
| Sample bottles are completely filled. | True | |
| Sample Preservation Verified. | N/A | |
| There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs | True | |
| Containers requiring zero headspace have no headspace or bubble is <6mm (1/4"). | True | |
| Multiphasic samples are not present. | True | |
| Samples do not require splitting or compositing. | True | |
| Residual Chlorine Checked. | N/A | |

ENERGY LABORATORIES
Trust our People. Trust our Data.

# Chain of Custody & Analytical Request Record

www.energylab.com

Page 1 of 2

## Account Information (Billing Information)

| | |
|---|---|
| Company/Name | Wood PLC |
| Contact | Dorina Young |
| Phone | 505-905-6651 |
| Mailing Address | P.O. Box 1088 |
| City, State, Zip | Gallup, NM 87305 |
| Email | dorina.young@woodplc.com |
| Receive Invoice | ☐Hard Copy ☒Email |
| Receive Report | ☐Hard Copy ☒Email |
| Purchase Order | C014000055 |
| Quote | 6117 |
| Bottle Order | 69281 |

## Report Information (If different than Account Information)

| | |
|---|---|
| Company/Name | United Nuclear Corp. |
| Contact | Max Chischilly JR. |
| Phone | 505-905-6651 |
| Mailing Address | P.O. Box 1088 |
| City, State, Zip | Gallup, NM 87305 |
| Email | max.chischilly@woodplc.com |
| Receive Report | ☐Hard Copy ☒Email |

Special Report/Formats: ☐ LEVEL IV ☐NELAC ☐ EDD/EDT (contact laboratory) ☐ Other_____

## Comments

Wood PLC
Acct. No. is C16610
United Nuclear Corporation is no longer mining and milling.

These water samples were not considered Radioactive under US DOT-HMR gudelines for shipping on recent/previous quarterly sampling.

## Project Information

| | |
|---|---|
| Project Name, PWSID, Permit, etc. | UNC - SW ALLUVIUM |
| Sampler Name | Max Chischilly JR. |
| Sampler Phone | 505-905-6651 |
| Sample Origin State | NM |
| EPA/State Compliance | ☒ Yes ☐ No |

URANIUM MINING CLIENTS MUST indicate sample type
☐ Unprocessed Ore
☐ Processed Ore (Ground or Refined) **CALL BEFORE SENDING
☒ 11(e)2 Byproduct Material (Can ONLY be Submitted to ELI Casper Location)

**Matrix Codes**
A - Air
W - Water
S - Soils/Solids
V - Vegetation
B - Bioassay
O - Oil
DW - Drinking Water

All turnaround times are standard unless marked as RUSH.
Energy Laboratories MUST be contacted prior to RUSH sample submittal for charges and scheduling – See Instructions Page

## Analysis Requested

| | Sample Identification (Name, Location, Interval, etc.) | Collection Date | Collection Time | Number of Containers | Matrix (See Codes Above) | As (Total) | Se (Total) | Be, Ca, Cd, Cl, HC03 K, Mg, Mn, Na | NH4, Ni, NO3, Pb, Mo Pb-210, pH, S04 | TDS, Th-230, U, V Chloroform | Gross Alpha (-) U & Rn, Al | Co, Combined Ra-226 & Ra-228. | TTHM'S | | See Attached | RUSH TAT | ELI LAB ID (Laboratory Use Only) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 509-D | 4-7-22 | 0912 | 8 | W | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | C204413 |
| 2 | EPA-23 | 4-7-22 | 1035 | 8 | W | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | |
| 3 | 803 | 4-7-22 | 1118 | 8 | W | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | |
| 4 | 808 | 4-7-22 | 1220 | 8 | W | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | |
| 5 | 802 | 4-7-22 | 1305 | 8 | W | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | |
| 6 | 632 | 4-7-22 | 1345 | 8 | W | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | |
| 7 | 801 | 4-7-22 | 1425 | 8 | W | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | |
| 8 | GW-1 | 4-7-22 | 1530 | 8 | W | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | |
| 9 | | | | | | | | | | | | | | | | | |

ELI is REQUIRED to provide preservative traceability. If the preservatives supplied with the bottle order were NOT used, please attach your preservative information with this COC.

| Custody Record MUST be signed | Relinquished by (print) | Date/Time | Signature | Received by (print) | Date/Time | Signature |
|---|---|---|---|---|---|---|
| | Max Chischilly Jr. | 4-7-22/1615 | Max Chischilly Jr. | Francheska Gillreath | 4-7-22/1700 | [illegible] |
| | Ricky E. Spitz | 4-11-22/1400 | [illegible] | Received by Laboratory (print) [illegible] | Date/Time 4-12-22 1245 | Signature [illegible] |

LABORATORY USE ONLY

| Shipped By | Cooler ID(s) | Custody Seals Y N C B | Intact Y N | Receipt Temp °C | Temp Blank Y N | On Ice Y N | Payment Type CC Cash Check_____ | Amount $ | Receipt Number (cash/check only) |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | |

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested. This serves as notice of this possibility. All subcontracted data will be clearly notated on your analytical report.

ENERGY LABORATORIES
Trust our People. Trust our Data.

# Chain of Custody & Analytical Request Record

www.energylab.com

Page 2 of 2

## Account Information (Billing Information)

| | |
|---|---|
| Company/Name | Wood PLC |
| Contact | Dorina Young |
| Phone | 505-905-6651 |
| Mailing Address | P.O. Box 1088 |
| City, State, Zip | Gallup, NM 87305 |
| Email | dorina.young@woodplc.com |
| Receive Invoice | ☐Hard Copy ☒Email |
| Receive Report | ☐Hard Copy ☒Email |
| Purchase Order | C014000055 |
| Quote | 6117 |
| Bottle Order | 69281 |

## Report Information (if different than Account Information)

| | |
|---|---|
| Company/Name | United Nuclear Corp. |
| Contact | Max Chischilly JR. |
| Phone | 505-905-6651 |
| Mailing Address | P.O. Box 1088 |
| City, State, Zip | Gallup, NM 87305 |
| Email | max.chischilly@woodplc.com |
| Receive Report | ☐Hard Copy ☒Email |

Special Report/Formats: ☐ LEVEL IV ☐NELAC ☐ EDD/EDT (contact laboratory) ☐ Other_____

## Comments

Wood PLC
Acct. No. is C16610
United Nuclear Corporation is no longer mining and milling.

These water samples were not considered Radioactive under US DOT-HMR gudelines for shipping on recent/previous quarterly sampling.

## Project Information

Project Name, PWSID, Permit, etc. UNC - SW ALLUVIUM

Sampler Name Max Chischilly JR. | Sampler Phone 505-905-6651

Sample Origin State NM | EPA/State Compliance ☒ Yes ☐ No

URANIUM MINING CLIENTS MUST indicate sample type
☐ Unprocessed Ore
☐ Processed Ore (Ground or Refined) **CALL BEFORE SENDING
☒ 11(e)2 Byproduct Material (Can ONLY be Submitted to ELI Casper Location)

**Matrix Codes**
A - Air
W - Water
S - Solids/Solids
V - Vegetation
B - Bioassay
O - Oil
DW - Drinking Water

All turnaround times are standard unless marked as RUSH.
Energy Laboratories MUST be contacted prior to RUSH sample submittal for charges and scheduling – See Instructions Page

| | Sample Identification (Name, Location, Interval, etc.) | Collection Date | Collection Time | Number of Containers | Matrix (See Codes Above) | As (Total) | Se (Total) | Be, Ca, Cd, Cl, HCO3 K, Mg, Mn, Na | NH4, Ni, NO3, Pb, Mo Pb-210, pH, SO4 | TDS, Th-230, U, V Chloroform | Gross Alpha (-) U & Rn, Al | Co, Combined Ra-226 & Ra-228. | TTHM'S | | See Attached | RUSH TAT | ELI LAB ID (Laboratory Use Only) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 624 | 4-8-22 | 1035 | 8 | W | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | C204613 |
| 2 | EPA-25 | 4-8-22 | 1233 | 8 | W | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | |
| 3 | | | | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | | | | |
| 7 | | | | | | | | | | | | | | | | | |
| 8 | | | | | | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | | | | | | |

ELI is REQUIRED to provide preservative traceability. If the preservatives supplied with the bottle order were NOT used, please attach your preservative information with this COC.

| Custody Record MUST be signed | Relinquished by (print) | Date/Time | Signature | Received by (print) | Date/Time | Signature |
|---|---|---|---|---|---|---|
| | Max Chischilly Jr. | 4-8-22/1350 | Max Chischilly Jr. | Francesca Gillreath | 4-8-22/1500 | [illegible] |
| | Ricky E. Spitz | 4-11-22/1400 | [illegible] | Received by Laboratory (print) Sydney Atkinson | Date/Time 4-12-22 1250 | Signature [illegible] |

LABORATORY USE ONLY

| Shipped By | Cooler ID(s) | Custody Seals Y N C B | Intact Y N | Receipt Temp °C | Temp Blank Y N | On Ice Y N | Payment Type CC Cash Check_____ | Amount $ | Receipt Number (cash/check only) |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | |

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested. This serves as notice of this possibility. All subcontracted data will be clearly notated on your analytical report.

# Work Order Receipt Checklist

## United Nuclear Corporation C22040413

Login completed by: Kirsten L. Smith
Date Received: 4/12/2022
Reviewed by: Misty Stephens
Received by: saa
Reviewed Date: 4/15/2022
Carrier name: FedEx

| | | | |
|---|---|---|---|
| Shipping container/cooler in good condition? | Yes ☑ | No ☐ | Not Present ☐ |
| Custody seals intact on all shipping container(s)/cooler(s)? | Yes ☑ | No ☐ | Not Present ☐ |
| Custody seals intact on all sample bottles? | Yes ☐ | No ☐ | Not Present ☑ |
| Chain of custody present? | Yes ☑ | No ☐ | |
| Chain of custody signed when relinquished and received? | Yes ☑ | No ☐ | |
| Chain of custody agrees with sample labels? | Yes ☑ | No ☐ | |
| Samples in proper container/bottle? | Yes ☑ | No ☐ | |
| Sample containers intact? | Yes ☑ | No ☐ | |
| Sufficient sample volume for indicated test? | Yes ☑ | No ☐ | |
| All samples received within holding time? (Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.) | Yes ☑ | No ☐ | |
| Temp Blank received in all shipping container(s)/cooler(s)? | Yes ☑ | No ☐ | Not Applicable ☐ |
| Container/Temp Blank temperature: | °C On Ice | | |
| Containers requiring zero headspace have no headspace or bubble that is <6mm (1/4"). | Yes ☐ | No ☑ | No VOA vials submitted ☐ |
| Water - pH acceptable upon receipt? | Yes ☑ | No ☐ | Not Applicable ☐ |

## Standard Reporting Procedures:

Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH, Dissolved Oxygen and Residual Chlorine, are qualified as being analyzed outside of recommended holding time.

Solid/soil samples are reported on a wet weight basis (as received) unless specifically indicated. If moisture corrected, data units are typically noted as –dry. For agricultural and mining soil parameters/characteristics, all samples are dried and ground prior to sample analysis.

The reference date for Radon analysis is the sample collection date. The reference date for all other Radiochemical analyses is the analysis date. Radiochemical precision results represent a 2-sigma Total Measurement Uncertainty.

## Contact and Corrective Action Comments:

Temperature Blank temperature of Cooler 1 was 1.0°C, Cooler 2 was 1.2°C, Cooler 3 was 0.7°C, Cooler 4 was 0.4°C, Cooler 5 was 1.1°C.
Sample 509-D, 1 of 3 VOA's has <1/4" headspace
Sample EPA-23, 1 of 3 VOA's has <1/4" headspace
Sample 808, 1 of 3 VOA's has <1/4" headspace
Sample 632, 1 of 3 VOA's has <1/4" headspace
Sample GW-1, 1 of 3 VOA's has <1/4" headspace
Sample 624, 2 of 3 VOA's has <1/4" headspace
Sample EPA-25, 1 of 3 VOA's has <1/4" headspace. 4/12/2022-KS

# Work Order Receipt Checklist - Continued

United Nuclear Corporation C22040413

The collection time was not indicated on the Chain of Custody or the container label for the Trip Blank. The sample was assigned the earliest collection time for the requested analysis in order to evaluate the holding time.

**Energy Laboratories, Inc.**
2393 Salt Creek Hwy
Casper, WY 82601-9601
307.235.0515

C22040413

# CHAIN-OF-CUSTODY RECORD


12-Apr-22

PO: C22040413

**Earliest HT Expires:** Thu, 4/21/2022 0912
**Test Codes:** VOC-624.1-W

**Earliest Due Date:** 4/21/2022
**# Bus. Days Until Due:** 7

**Subcontractor:**
Eurofins TA-Denver
4955 Yarrow St
Arvada. CO 80002
TEL: 3037360100
FAX:
Acct #: 3037360100

Project # 28014578

**Subcontractor's Client**

| | | | | | Requested Tests: VOC-624.1-W |
|---|---|---|---|---|---|
| C22040413-001F | Aqueous | 04/07/22 09:12 A | 3 - 40ML-CG-VOA-AA-H | | 1 |
| C22040413-002F | Aqueous | 04/07/22 10:35 A | 3 - 40ML-CG-VOA-AA-H | | 1 |
| C22040413-003F | Aqueous | 04/07/22 11:18 A | 3 - 40ML-CG-VOA-AA-H | | 1 |
| C22040413-004F | Aqueous | 04/07/22 12:20 P | 3 - 40ML-CG-VOA-AA-H | | 1 |
| C22040413-005F | Aqueous | 04/07/22 01:05 P | 3 - 40ML-CG-VOA-AA-H | | 1 |
| C22040413-006F | Aqueous | 04/07/22 01:45 P | 3 - 40ML-CG-VOA-AA-H | | 1 |
| C22040413-007F | Aqueous | 04/07/22 02:25 P | 3 - 40ML-CG-VOA-AA-H | | 1 |
| C22040413-008F | Aqueous | 04/07/22 03:30 P | 3 - 40ML-CG-VOA-AA-H | | 1 |
| C22040413-009F | Aqueous | 04/08/22 10:35 A | 3 - 40ML-CG-VOA-AA-H | | 1 |

Samples are 11e2

**Comments:**

Analysis Requested: See Attached

QC Level:
STD

280-161093 Chain of Custody

| | Date/Time | | Date/Time |
|---|---|---|---|
| **Relinquished by:** [signature] | 4/12/2022 | **Received by:** [signature] | 4/15/22 0950 |
| **Relinquished by:** | 15:32 | **Received by:** | |

| Shipped By: | Custody Seal Y N | Intact Y N | Receipt Temp: 3.1 (1C2 CF+0.1) °C | Temp Blank Y N | On Ice Y N |
|---|---|---|---|---|---|

**Energy Laboratories, Inc.**
2393 Salt Creek Hwy
Casper, WY 82601-9601
307.235.0515

C22040413

# CHAIN-OF-CUSTODY RECORD


12-Apr-22

PO: C22040413

**Earliest HT Expires:** Thu, 4/21/2022 0912
**Test Codes:** VOC-624.1-W

**Earliest Due Date:** 4/21/2022
**# Bus. Days Until Due:** 7

**Subcontractor:**
Eurofins TA-Denver
4955 Yarrow St
Arvada, CO 80002
TEL: 3037360100
FAX:
Acct #: 3037360100

Project # 28019578

**Subcontractor's Client**

| | | | | | Requested Tests: VOC-624.1-W |
|---|---|---|---|---|---|
| C22040413-010F | Aqueous | 04/08/22 12:33 P | 3 - 40ML-CG-VOA-AA-H | | 1 |
| C22040413-011A | Trip Blank | 04/07/22 09:12 A | 1 - 40ML-CG-VOA-AA-H | | 1 |
| C22040413-012A | Trip Blank | 04/07/22 10:35 A | 1 - 40ML-CG-VOA-AA-H | | 1 |
| C22040413-013A | Trip Blank | 04/07/22 01:05 P | 1 - 40ML-CG-VOA-AA-H | | 1 |
| C22040413-014A | Trip Blank | 04/07/22 03:30 P | 1 - 40ML-CG-VOA-AA-H | | 1 |
| C22040413-015A | Trip Blank | 04/08/22 11:36 A | 1 - 40ML-CG-VOA-AA-H | | 1 |

Samples are HCl

Analysis Requested: See Attached

**Comments:**

QC Level:
**STD**

| | | Date/Time | | | Date/Time |
|---|---|---|---|---|---|
| **Relinquished by:** | [signature] | 4/12/2022 | **Received by:** | [signature] | 4/15/22 0950 |
| **Relinquished by:** | | 15:32 | **Received by:** | | |

| Shipped By: | Custody Seal Y N | Intact Y N | Receipt Temp: °C | Temp Blank Y N | On Ice Y N |
|---|---|---|---|---|---|

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| G | ☐ | ☐ | VOC-624.1-W | ☐ | ☐ | ☑ | Sub-TA-Arvada | |

| | | | | |
|---|---|---|---|---|
| A | Bromodichloromethane | 0.01076 | 0.5 | 0 |
| A | Bromoform | 0.0325 | 0.5 | 0 |
| A | Chlorodibromomethane | 0.01741 | 0.5 | 0 |
| A | Chloroform | 0.03616 | 0.5 | 0 |
| S | 1,2-Dichloroethane-d4 | 0 | 0.5 | 0 |
| S | p-Bromofluorobenzene | 0 | 0.5 | 0 |
| S | Toluene-d8 | 0 | 0.5 | 0 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| G | ☐ | ☐ | VOC-624.1-W-CALC | ☐ | ☐ | ☑ | Sub-TA-Arvada | |

LYDIA CORMANEY / CIARA LEIS
(307) 235-0515
ENERGY LABORATORIES
2393 SALT CREEK HWY
CASPER WY 82601-8201

15 LBS

DWT: 16,15,14

SHIP TO:
SAMPLE RECEIVING
(303) 736-0100
EUROFINS TA DENVER
4955 YARROW ST
ARVADA CO 80002-4017

CO 802 9-30

UPS GROUND
TRACKING #: 1Z 822 358 03 5906 5503

BILLING: P/P

REF 1:client charge
REF 2:C22040413

WS 24.0.17 Zebra ZP 450 13.0A 03/2022

SEE NOTICE ON REVERSE regarding UPS Terms, and notice of limitation of liability. Where allowed by law, shipper authorizes UPS to act as forwarding agent for export control and customs purposes. If exported from the US, shipper certifies that the commodities, technology or software were exported from the US in accordance with the Export Administration Regulations. Diversion contrary to law is prohibited.

1081121

280-161093 Waybill

# Login Sample Receipt Checklist

Client: Energy Laboratories, Inc. Job Number: 280-161093-1

**Login Number: 161093** **List Source: Eurofins Denver**
**List Number: 1**
**Creator: Rystrom, Joshua R**

| Question | Answer | Comment |
|---|---|---|
| Radioactivity wasn't checked or is </= background as measured by a survey meter. | True | |
| The cooler's custody seal, if present, is intact. | True | |
| Sample custody seals, if present, are intact. | True | |
| The cooler or samples do not appear to have been compromised or tampered with. | True | |
| Samples were received on ice. | True | |
| Cooler Temperature is acceptable. | True | |
| Cooler Temperature is recorded. | True | |
| COC is present. | True | |
| COC is filled out in ink and legible. | True | |
| COC is filled out with all pertinent information. | True | |
| Is the Field Sampler's name present on COC? | N/A | |
| There are no discrepancies between the containers received and the COC. | True | |
| Samples are received within Holding Time (excluding tests with immediate HTs) | True | |
| Sample containers have legible labels. | True | |
| Containers are not broken or leaking. | True | |
| Sample collection date/times are provided. | True | |
| Appropriate sample containers are used. | True | |
| Sample bottles are completely filled. | True | |
| Sample Preservation Verified. | N/A | |
| There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs | True | |
| Containers requiring zero headspace have no headspace or bubble is <6mm (1/4"). | True | |
| Multiphasic samples are not present. | True | |
| Samples do not require splitting or compositing. | True | |
| Residual Chlorine Checked. | N/A | |

ENERGY LABORATORIES
Trust our People. Trust our Data.

# Chain of Custody & Analytical Request Record

www.energylab.com

Page 1 of 1

## Account Information (Billing information)

| | |
|---|---|
| Company/Name | Wood PLC |
| Contact | Dorina Young |
| Phone | 505-905-6651 |
| Mailing Address | P.O. Box 1088 |
| City, State, Zip | Gallup, NM 87305 |
| Email | dorina.young@woodplc.com |
| Receive Invoice | ☐Hard Copy ☒Email |
| Receive Report | ☐Hard Copy ☒Email |
| Purchase Order | C014000055 |
| Quote | 6117 |
| Bottle Order | 69281 |

## Report Information (if different than Account Information)

| | |
|---|---|
| Company/Name | United Nuclear Corp. |
| Contact | Max Chischilly JR. |
| Phone | 505-905-6651 |
| Mailing Address | P.O. Box 1088 |
| City, State, Zip | Gallup, NM 87305 |
| Email | max.chischilly@woodplc.com |
| Receive Report | ☐Hard Copy ☒Email |

Special Report/Formats: ☐ LEVEL IV ☐NELAC ☐ EDD/EDT (contact laboratory) ☐ Other_____

## Comments

Wood PLC
Acct. No. is C16610
United Nuclear Corporation is no longer mining and milling.

These water samples were not considered Radioactive under US DOT-HMR gudelines for shipping on recent/previous quarterly sampling.

## Project Information

| | |
|---|---|
| Project Name, PWSID, Permit, etc. | UNC - SW ALLUVIUM |
| Sampler Name | Max Chischilly JR. |
| Sampler Phone | 505-905-6651 |
| Sample Origin State | NM |
| EPA/State Compliance | ☒ Yes ☐ No |

URANIUM MINING CLIENTS MUST indicate sample type
☒ Unprocessed Ore
☐ Processed Ore (Ground or Refined) **CALL BEFORE SENDING
☐ 11(e)2 Byproduct Material (Can ONLY be Submitted to ELI Casper Location)

**Matrix Codes**
A - Air
W - Water
S - Soils/Solids
V - Vegetation
B - Bioassay
O - Oil
DW - Drinking Water

All turnaround times are standard unless marked as RUSH.
Energy Laboratories MUST be contacted prior to RUSH sample submittal for charges and scheduling -- See Instructions Page

| | Sample Identification (Name, Location, Interval, etc.) | Collection Date | Collection Time | Number of Containers | Matrix (See Codes Above) | As (Total) | Se (Total) | Be, Ca, Cd, Cl, HCO3 K, Mg, Mn, Na | NH4, Ni, NO3, Pb, Mo Pb-210, pH, SO4 | TDS, Th-230, U, V Chloroform | Gross Alpha (-) U & Rn, Al | Co, Combined Ra-226 & Ra-228. | TTHM'S | | See Attached | RUSH TAT | ELI LAB ID (Laboratory Use Only) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | EPA-28 | 4-8-22 | 0927 | 8 | W | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | C22040390 |
| 2 | EPA-28 DUPLICATE | 4-8-22 | 0956 | 8 | W | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | |
| 3 | 627 | 4-8-22 | 1136 | 8 | W | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | |
| 4 | RINSATE | 4-8-22 | 1315 | 8 | W | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | |
| 5 | FIELD BLANK | 4-8-22 | 1345 | 8 | W | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | |
| 6 | | | | | | | | | | | | | | | | | |
| 7 | | | | | | | | | | | | | | | | | |
| 8 | | | | | | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | | | | | | |

ELI is REQUIRED to provide preservative traceability. If the preservatives supplied with the bottle order were NOT used, please attach your preservative information with this COC.

| Custody Record MUST be signed | Relinquished by (print) | Date/Time | Signature | Received by (print) | Date/Time | Signature |
|---|---|---|---|---|---|---|
| | Max Chischilly Jr. | 4-8-22/1350 | Max Chischilly Jr. | Francesca Gillreath | 4-8-22/1500 | [signature] |
| | Relinquished by (print) | Date/Time | Signature | Received by Laboratory (print) | Date/Time | Signature |
| | Ricky E. Spitz | 4-11-22/1400 | [signature] | Sydney Atkinson | 4-12-22 1237 | [signature] |

LABORATORY USE ONLY

| Shipped By | Cooler ID(s) | Custody Seals | Intact | Receipt Temp | Temp Blank | On Ice | Payment Type | Amount | Receipt Number (cash/check only) |
|---|---|---|---|---|---|---|---|---|---|
| | | Y N C B | Y N | °C | Y N | Y N | CC Cash Check_____ | $ | |

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested. This serves as notice of this possibility. All subcontracted data will be clearly notated on your analytical report.

# Work Order Receipt Checklist

## United Nuclear Corporation

## C22040390

Login completed by: Kirsten L. Smith

Reviewed by: Misty Stephens

Reviewed Date: 4/15/2022

Date Received: 4/12/2022

Received by: saa

Carrier name: FedEx

| | | | |
|---|---|---|---|
| Shipping container/cooler in good condition? | Yes ☑ | No ☐ | Not Present ☐ |
| Custody seals intact on all shipping container(s)/cooler(s)? | Yes ☑ | No ☐ | Not Present ☐ |
| Custody seals intact on all sample bottles? | Yes ☐ | No ☐ | Not Present ☑ |
| Chain of custody present? | Yes ☑ | No ☐ | |
| Chain of custody signed when relinquished and received? | Yes ☑ | No ☐ | |
| Chain of custody agrees with sample labels? | Yes ☑ | No ☐ | |
| Samples in proper container/bottle? | Yes ☑ | No ☐ | |
| Sample containers intact? | Yes ☑ | No ☐ | |
| Sufficient sample volume for indicated test? | Yes ☑ | No ☐ | |
| All samples received within holding time? (Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.) | Yes ☑ | No ☐ | |
| Temp Blank received in all shipping container(s)/cooler(s)? | Yes ☑ | No ☐ | Not Applicable ☐ |
| Container/Temp Blank temperature: | °C On Ice | | |
| Containers requiring zero headspace have no headspace or bubble that is <6mm (1/4"). | Yes ☑ | No ☐ | No VOA vials submitted ☐ |
| Water - pH acceptable upon receipt? | Yes ☑ | No ☐ | Not Applicable ☐ |

### Standard Reporting Procedures:

Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH, Dissolved Oxygen and Residual Chlorine, are qualified as being analyzed outside of recommended holding time.

Solid/soil samples are reported on a wet weight basis (as received) unless specifically indicated. If moisture corrected, data units are typically noted as –dry. For agricultural and mining soil parameters/characteristics, all samples are dried and ground prior to sample analysis.

The reference date for Radon analysis is the sample collection date. The reference date for all other Radiochemical analyses is the analysis date. Radiochemical precision results represent a 2-sigma Total Measurement Uncertainty.

### Contact and Corrective Action Comments:

Temperature Blank temperature of Cooler 1 was 0.7°, Cooler 2 was 1.2°C, Cooler 3 was 0.4°C and Cooler 4 was 1.0°C. 4/12/2022-KS

The collection time was not indicated on the Chain of Custody or the container label for the Trip Blank. The sample was assigned the earliest collection time for the requested analysis in order to evaluate the holding time.
The Associated trip blanks are logged on WO C22040413

ENERGY LABORATORIES
Trust our People. Trust our Data.

# Chain of Custody & Analytical Request Record

www.energylab.com

Page 1 of 1

## Account Information (Billing information)

| | |
|---|---|
| Company/Name | Wood PLC |
| Contact | Dorina Young |
| Phone | 505-905-6651 |
| Mailing Address | P.O. Box 1088 |
| City, State, Zip | Gallup, NM 87305 |
| Email | dorina.young@woodplc.com |
| Receive Invoice | ☐Hard Copy ☒Email |
| Receive Report | ☐Hard Copy ☒Email |
| Purchase Order | C014000055 |
| Quote | 6117 |
| Bottle Order | 69281 |

## Report Information (if different than Account Information)

| | |
|---|---|
| Company/Name | United Nuclear Corp. |
| Contact | Max Chischilly JR. |
| Phone | 505-905-6651 |
| Mailing Address | P.O. Box 1088 |
| City, State, Zip | Gallup, NM 87305 |
| Email | max.chischilly@woodplc.com |
| Receive Report | ☐Hard Copy ☒Email |
| Special Report/Formats: | ☐ LEVEL IV ☐NELAC ☐ EDD/EDT (contact laboratory) ☐ Other |

## Comments

Wood PLC
Acct. No. is C16610
United Nuclear Corporation is no longer mining and milling.

These water samples were not considered Radioactive under US DOT-HMR gudelines for shipping on recent/previous quarterly sampling.

## Project Information

| | |
|---|---|
| Project Name, PWSID, Permit, etc. | UNC - SENTINEL WELLS |
| Sampler Name | Max Chischilly JR. |
| Sampler Phone | 505-905-6651 |
| Sample Origin State | NM |
| EPA/State Compliance | ☒ Yes ☐ No |

URANIUM MINING CLIENTS MUST indicate sample type
■ Unprocessed Ore
☐ Processed Ore (Ground or Refined) **CALL BEFORE SENDING
☐ 11(e)2 Byproduct Material (Can ONLY be Submitted to ELI Casper Location)

Matrix Codes: A - Air; W - Water; S - Soils/Solids; V - Vegetation; B - Bioassay; O - Oil; DW - Drinking Water

All turnaround times are standard unless marked as RUSH.
Energy Laboratories MUST be contacted prior to RUSH sample submittal for charges and scheduling – See Instructions Page

Analysis Requested

| | Sample Identification (Name, Location, Interval, etc.) | Collection Date | Collection Time | Number of Containers | Matrix (See Codes Above) | As (Total) | Se (Total) | Be, Ca, Cd, Cl, HCO3 K, Mg, Mn, Na | NH4, Ni, NO3, Pb, Mo Pb-210, pH, SO4 | TDS, Th-230, U, V Chloroform | Gross Alpha (-) U & Rn, Al | Co, Combined Ra-226 & Ra-228. | TTHM'S | | See Attached | RUSH TAT | ELI LAB ID Laboratory Use Only |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | SW-1B | 4-11-22 | 1015 | 8 | W | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | [illegible] |
| 2 | SW-3B | 4-11-22 | 1120 | 8 | W | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | |
| 3 | | | | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | | | | |
| 7 | | | | | | | | | | | | | | | | | |
| 8 | | | | | | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | | | | | | |

ELI is REQUIRED to provide preservative traceability. If the preservatives supplied with the bottle order were NOT used, please attach your preservative information with this COC.

| Custody Record MUST be signed | Relinquished by (print) | Date/Time | Signature | Received by (print) | Date/Time | Signature |
|---|---|---|---|---|---|---|
| | Max Chischilly Jr. | 4-11-22/1200 | Max Chischilly Jr. | Franchesca Gillreath | 4-11-22/1300 | [signature] |
| | Ricky E. Spitz | 4-11-22/1400 | [signature] | Sydney Atkinson | 4-12-22 1242 | [signature] |

LABORATORY USE ONLY

| Shipped By | Cooler ID(s) | Custody Seals | Intact | Receipt Temp | Temp Blank | On Ice | Payment Type | Amount | Receipt Number (cash/check only) |
|---|---|---|---|---|---|---|---|---|---|
| | | Y N C B | Y N | °C | Y N | Y N | CC Cash Check | $ | |

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested. This serves as notice of this possibility. All subcontracted data will be clearly notated on your analytical report.

# Work Order Receipt Checklist

## United Nuclear Corporation

## C22040416

Login completed by: Kirsten L. Smith

Reviewed by: Misty Stephens

Reviewed Date: 4/15/2022

Date Received: 4/12/2022

Received by: saa

Carrier name: FedEx

| | | | |
|---|---|---|---|
| Shipping container/cooler in good condition? | Yes ☑ | No ☐ | Not Present ☐ |
| Custody seals intact on all shipping container(s)/cooler(s)? | Yes ☑ | No ☐ | Not Present ☐ |
| Custody seals intact on all sample bottles? | Yes ☐ | No ☐ | Not Present ☑ |
| Chain of custody present? | Yes ☑ | No ☐ | |
| Chain of custody signed when relinquished and received? | Yes ☑ | No ☐ | |
| Chain of custody agrees with sample labels? | Yes ☑ | No ☐ | |
| Samples in proper container/bottle? | Yes ☑ | No ☐ | |
| Sample containers intact? | Yes ☑ | No ☐ | |
| Sufficient sample volume for indicated test? | Yes ☑ | No ☐ | |
| All samples received within holding time? (Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.) | Yes ☑ | No ☐ | |
| Temp Blank received in all shipping container(s)/cooler(s)? | Yes ☑ | No ☐ | Not Applicable ☐ |
| Container/Temp Blank temperature: | 0.8°C On Ice | | |
| Containers requiring zero headspace have no headspace or bubble that is <6mm (1/4"). | Yes ☑ | No ☐ | No VOA vials submitted ☐ |
| Water - pH acceptable upon receipt? | Yes ☑ | No ☐ | Not Applicable ☐ |

## Standard Reporting Procedures:

Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH, Dissolved Oxygen and Residual Chlorine, are qualified as being analyzed outside of recommended holding time.

Solid/soil samples are reported on a wet weight basis (as received) unless specifically indicated. If moisture corrected, data units are typically noted as –dry. For agricultural and mining soil parameters/characteristics, all samples are dried and ground prior to sample analysis.

The reference date for Radon analysis is the sample collection date. The reference date for all other Radiochemical analyses is the analysis date. Radiochemical precision results represent a 2-sigma Total Measurement Uncertainty.

## Contact and Corrective Action Comments:

None

# APPENDIX – D ( 1 OF 2 )

## FIRST QUARTER

## LABORATORY QUALITY CONTROL AND

## PERFORMANCE REPORT

# ANALYTICAL SUMMARY REPORT

February 16, 2022

United Nuclear Corporation
21 Miles NE of Gallup
Gallup, NM 87305

Work Order: C22010406 Quote ID: C6117

Project Name: UNC- Zone 1 & Zone 3

Energy Laboratories, Inc. Casper WY received the following 7 samples for United Nuclear Corporation on 1/13/2022 for analysis.

| Lab ID | Client Sample ID | Collect Date | Receive Date | Matrix | Test |
|---|---|---|---|---|---|
| C22010406-001 | 515-A | 01/10/22 11:15 | 01/13/22 | Aqueous | Metals by ICP/ICPMS, Dissolved<br>Metals by ICP/ICPMS, Total<br>Alkalinity<br>Anion - Cation Balance<br>Anions by Ion Chromatography<br>Nitrogen, Ammonia<br>Nitrogen, Nitrate + Nitrite<br>pH<br>Metals Preparation by EPA 200.2<br>Gross Alpha minus Radon and Uranium, Total<br>Lead 210, Total<br>Radium 226 + Radium 228, Total<br>Radium 226, Total<br>Radium 228, Total<br>Thorium, Isotopic, Total<br>Solids, Total Dissolved<br>Solids, Total Dissolved - Calculated<br>TRACKER SHEET<br>624-Purgeable Organics<br>624-Purgeable Organics |
| C22010406-002 | 604 | 01/10/22 12:26 | 01/13/22 | Aqueous | Same As Above |
| C22010406-003 | EPA-7 | 01/10/22 13:24 | 01/13/22 | Aqueous | Same As Above |
| C22010406-004 | 613 | 01/10/22 14:12 | 01/13/22 | Aqueous | Metals by ICP/ICPMS, Dissolved<br>Metals by ICP/ICPMS, Total<br>Acidity, Total as CaCO3<br>Alkalinity<br>Anion - Cation Balance<br>Anions by Ion Chromatography<br>Nitrogen, Ammonia<br>Nitrogen, Nitrate + Nitrite<br>pH<br>Metals Preparation by EPA 200.2<br>Gross Alpha minus Radon and Uranium, Total<br>Lead 210, Total<br>Radium 226 + Radium 228, Total<br>Radium 226, Total<br>Radium 228, Total<br>Thorium, Isotopic, Total<br>Solids, Total Dissolved<br>Solids, Total Dissolved - Calculated<br>TRACKER SHEET<br>624-Purgeable Organics<br>624-Purgeable Organics |

# ANALYTICAL SUMMARY REPORT

| | | | | | |
|---|---|---|---|---|---|
| C22010406-005 | 717 | 01/10/22 15:00 | 01/13/22 | Aqueous | Same As Above |
| C22010406-006 | 717 Duplicate | 01/10/22 15:33 | 01/13/22 | Aqueous | Same As Above |
| C22010406-007 | Trip Blank- 80352 | 01/10/22 11:15 | 01/13/22 | Trip Blank | 624-Purgeable Organics |

The analyses presented in this report were performed by Energy Laboratories, Inc., 2393 Salt Creek Hwy., Casper, WY 82601, unless otherwise noted. Any exceptions or problems with the analyses are noted in the report package. Any issues encountered during sample receipt are documented in the Work Order Receipt Checklist.

The results as reported relate only to the item(s) submitted for testing. This report shall be used or copied only in its entirety. Energy Laboratories, Inc. is not responsible for the consequences arising from the use of a partial report.

If you have any questions regarding these test results, please contact your Project Manager .

Report Approved By:

Wyoming Regional Director

Digitally signed by
Terry Friedlan
Date: 2022.02.16 14:29:46 -07:00

**CLIENT:** United Nuclear Corporation
**Project:** UNC- Zone 1 & Zone 3
**Work Order:** C22010406

**Report Date:** 02/16/22

# CASE NARRATIVE

Tests associated with analyst identified as "etad" were subcontracted to Eurofins Test America, 4955 Yarrow St, Arvada, CO 80002, TEL (303) 736-0100. Please see attached data packet for details.

# Work Order Sample Summary

**CLIENT:** United Nuclear Corporation
**Project:** UNC- Zone 1 & Zone 3
**Work Order:** C22010406 **Report Date:** 02/16/22

| Lab ID | Client Sample ID | Collection Date | Date Received |
|---|---|---|---|
| C22010406-001 | 515-A | 1/10/2022 11:15:00 AM | 1/13/2022 |
| C22010406-002 | 604 | 1/10/2022 12:26:00 PM | 1/13/2022 |
| C22010406-003 | EPA-7 | 1/10/2022 1:24:00 PM | 1/13/2022 |
| C22010406-004 | 613 | 1/10/2022 2:12:00 PM | 1/13/2022 |
| C22010406-005 | 717 | 1/10/2022 3:00:00 PM | 1/13/2022 |
| C22010406-006 | 717 Duplicate | 1/10/2022 3:33:00 PM | 1/13/2022 |
| C22010406-007 | Trip Blank- 80352 | 1/10/2022 11:15:00 AM | 1/13/2022 |

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22010406 **Report Date:** 01/24/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: A2310 B** | | | | | | | | | Analytical Run: ACIDITY_220124A | |
| **Lab ID: ICV** | | Initial Calibration Verification Standard | | | | | | | 01/24/22 10:31 | |
| pH | | 6.77 | s.u. | 0.010 | 99 | 98 | 102 | | | |
| **Method: A2310 B** | | | | | | | | | Batch: ACID220124_A | |
| **Lab ID: MBLK** | | Method Blank | | | | Run: ACIDITY_220124A | | | 01/24/22 10:34 | |
| Acidity, Total as CaCO3 | | 1 | mg/L | | | | | | | |
| **Lab ID: LCS** | | Laboratory Control Sample | | | | Run: ACIDITY_220124A | | | 01/24/22 10:39 | |
| Acidity, Total as CaCO3 | | 765 | mg/L | | 97 | 90 | 110 | | | |
| **Lab ID: C22010406-004A DUP** | | Sample Duplicate | | | | Run: ACIDITY_220124A | | | 01/24/22 10:42 | |
| Acidity, Total as CaCO3 | | 3060 | mg/L | | | | | 0.7 | 10 | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22010406 **Report Date:** 01/24/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: A2320 B** | | | | | | | | | Analytical Run: MANTECH_220117A | |
| **Lab ID: ICV** | | Initial Calibration Verification Standard | | | | | | | 01/17/22 10:34 | |
| pH | | 6.86 | s.u. | 0.010 | 100 | 98 | 102 | | | |
| **Method: A2320 B** | | | | | | | | | Batch: R278810 | |
| **Lab ID: MBLK** | | Method Blank | | | | Run: MANTECH_220117A | | | 01/17/22 13:55 | |
| Alkalinity, Total as CaCO3 | | ND | mg/L | 2 | | | | | | |
| **Lab ID: LCS** | | Laboratory Control Sample | | | | Run: MANTECH_220117A | | | 01/17/22 14:04 | |
| Alkalinity, Total as CaCO3 | | 252 | mg/L | 5.0 | 101 | 90 | 110 | | | |
| **Lab ID: C22010406-001ADUP** | | Sample Duplicate | | | | Run: MANTECH_220117A | | | 01/17/22 14:20 | |
| Alkalinity, Total as CaCO3 | | 640 | mg/L | 5.0 | | | | 0.3 | 10 | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22010406 **Report Date:** 01/24/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: A2540 C** | | | | | | | | | Batch: TDS220114A | |
| **Lab ID: MB-1_220114A** | | Method Blank | | | | Run: BAL-111_220114A | | | 01/14/22 12:17 | |
| Solids, Total Dissolved TDS @ 180 C | | ND | mg/L | 10 | | | | | | |
| **Lab ID: LCS-2_220114A** | | Laboratory Control Sample | | | | Run: BAL-111_220114A | | | 01/14/22 12:18 | |
| Solids, Total Dissolved TDS @ 180 C | | 1010 | mg/L | 20 | 101 | 90 | 110 | | | |
| **Lab ID: C22010406-004A DUP** | | Sample Duplicate | | | | Run: BAL-111_220114A | | | 01/14/22 12:22 | |
| Solids, Total Dissolved TDS @ 180 C | | 10400 | mg/L | 100 | | | | 1.1 | 5 | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22010406 **Report Date:** 01/24/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: A4500-H B** | | | | | | | | | Analytical Run: PHSC_101-C_220114A | |
| **Lab ID: 6.86** | 2 | Initial Calibration Verification Standard | | | | | | | 01/14/22 10:11 | |
| pH | | 6.9 | s.u. | 0.1 | 100 | 98 | 102 | | | |
| pH Measurement Temp | | 20.2 | °C | | | 0 | 0 | | | |
| **Method: A4500-H B** | | | | | | | | | Batch: R278746 | |
| **Lab ID: C22010406-002ADUP** | 2 | Sample Duplicate | | | | Run: PHSC_101-C_220114A | | | 01/14/22 11:13 | |
| pH | | 5.5 | s.u. | 0.1 | | | | 0.2 | 1.5 | |
| pH Measurement Temp | | 11.3 | °C | | | | | | | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22010406 **Report Date:** 01/24/22

| Analyte | | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Method:** | **E300.0** | | | | | | | | | Analytical Run: IC3-C_220114A | |
| **Lab ID:** | **ICV** | 2 | Initial Calibration Verification Standard | | | | | | | 01/14/22 15:05 | |
| Chloride | | | 10.1 | mg/L | 1.0 | 101 | 90 | 110 | | | |
| Sulfate | | | 39.1 | mg/L | 1.0 | 98 | 90 | 110 | | | |
| **Method:** | **E300.0** | | | | | | | | | Batch: R278772 | |
| **Lab ID:** | **ICB** | 2 | Method Blank | | | | Run: IC3-C_220114A | | | 01/14/22 15:24 | |
| Chloride | | | ND | mg/L | 0.09 | | | | | | |
| Sulfate | | | ND | mg/L | 0.2 | | | | | | |
| **Lab ID:** | **LFB** | 2 | Laboratory Fortified Blank | | | | Run: IC3-C_220114A | | | 01/14/22 15:43 | |
| Chloride | | | 9.77 | mg/L | 1.0 | 102 | 90 | 110 | | | |
| Sulfate | | | 37.9 | mg/L | 1.0 | 98 | 90 | 110 | | | |
| **Lab ID:** | **C22010406-001AMS** | 2 | Sample Matrix Spike | | | | Run: IC3-C_220114A | | | 01/14/22 21:09 | |
| Chloride | | | 884 | mg/L | 5.2 | 99 | 80 | 120 | | | |
| Sulfate | | | 8230 | mg/L | 21 | 95 | 80 | 120 | | | |
| **Lab ID:** | **C22010406-001AMSD** | 2 | Sample Matrix Spike Duplicate | | | | Run: IC3-C_220114A | | | 01/14/22 21:28 | |
| Chloride | | | 890 | mg/L | 5.2 | 100 | 80 | 120 | 0.6 | 20 | |
| Sulfate | | | 8240 | mg/L | 21 | 96 | 80 | 120 | 0.2 | 20 | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22010406 **Report Date:** 01/24/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: E350.1** | | | | | | | | | Analytical Run: FIA201-C_220114B | |
| **Lab ID: ICV** | | Initial Calibration Verification Standard | | | | | | | 01/14/22 13:54 | |
| Nitrogen, Ammonia as N | | 0.978 | mg/L | 0.050 | 98 | 90 | 110 | | | |
| **Method: E350.1** | | | | | | | | | Batch: R278753 | |
| **Lab ID: MBLK** | | Method Blank | | | | Run: FIA201-C_220114B | | | 01/14/22 13:53 | |
| Nitrogen, Ammonia as N | | ND | mg/L | 0.03 | | | | | | |
| **Lab ID: LFB** | | Laboratory Fortified Blank | | | | Run: FIA201-C_220114B | | | 01/14/22 13:55 | |
| Nitrogen, Ammonia as N | | 0.932 | mg/L | 0.050 | 94 | 90 | 110 | | | |
| **Lab ID: C22010399-001CMS** | | Sample Matrix Spike | | | | Run: FIA201-C_220114B | | | 01/14/22 14:14 | |
| Nitrogen, Ammonia as N | | 29.3 | mg/L | 1.3 | 93 | 90 | 110 | | | |
| **Lab ID: C22010399-001CMSD** | | Sample Matrix Spike Duplicate | | | | Run: FIA201-C_220114B | | | 01/14/22 14:15 | |
| Nitrogen, Ammonia as N | | 29.0 | mg/L | 1.3 | 92 | 90 | 110 | 0.9 | 10 | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22010406 **Report Date:** 01/24/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: E353.2** | | | | | | | | | Analytical Run: FIA201-C_220114C | |
| **Lab ID: ICV** | | Initial Calibration Verification Standard | | | | | | | 01/14/22 15:44 | |
| Nitrogen, Nitrate+Nitrite as N | | 1.00 | mg/L | 0.050 | 100 | 90 | 110 | | | |
| **Method: E353.2** | | | | | | | | | Batch: R278761 | |
| **Lab ID: MBLK** | | Method Blank | | | | Run: FIA201-C_220114C | | | 01/14/22 15:45 | |
| Nitrogen, Nitrate+Nitrite as N | | ND | mg/L | 0.01 | | | | | | |
| **Lab ID: LFB** | | Laboratory Fortified Blank | | | | Run: FIA201-C_220114C | | | 01/14/22 15:47 | |
| Nitrogen, Nitrate+Nitrite as N | | 0.980 | mg/L | 0.050 | 99 | 90 | 110 | | | |
| **Lab ID: C22010406-001DMS** | | Sample Matrix Spike | | | | Run: FIA201-C_220114C | | | 01/14/22 16:24 | |
| Nitrogen, Nitrate+Nitrite as N | | 87.9 | mg/L | 1.0 | 96 | 90 | 110 | | | |
| **Lab ID: C22010406-001DMSD** | | Sample Matrix Spike Duplicate | | | | Run: FIA201-C_220114C | | | 01/14/22 16:25 | |
| Nitrogen, Nitrate+Nitrite as N | | 89.4 | mg/L | 1.0 | 99 | 90 | 110 | 1.7 | 10 | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22010406 **Report Date:** 01/26/22

| Analyte | | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Method:** | **E200.7** | | | | | | | | | Analytical Run: ICP4-C_220114A | |
| **Lab ID:** | **QCS** | 2 | Initial Calibration Verification Standard | | | | | | | 01/14/22 17:31 | |
| Magnesium | | | 40.2 | mg/L | 0.50 | 101 | 95 | 105 | | | |
| Potassium | | | 40.1 | mg/L | 0.50 | 100 | 95 | 105 | | | |
| **Method:** | **E200.7** | | | | | | | | | Batch: R278771 | |
| **Lab ID:** | **LRB** | 2 | Method Blank | | | | Run: ICP4-C_220114A | | | 01/14/22 16:58 | |
| Magnesium | | | ND | mg/L | 0.08 | | | | | | |
| Potassium | | | ND | mg/L | 0.2 | | | | | | |
| **Lab ID:** | **LFB** | 2 | Laboratory Fortified Blank | | | | Run: ICP4-C_220114A | | | 01/14/22 17:25 | |
| Magnesium | | | 56.2 | mg/L | 0.50 | 112 | 85 | 115 | | | |
| Potassium | | | 56.1 | mg/L | 0.50 | 112 | 85 | 115 | | | |
| **Lab ID:** | **C22010179-001CMS2** | 2 | Sample Matrix Spike | | | | Run: ICP4-C_220114A | | | 01/14/22 18:31 | |
| Magnesium | | | 152 | mg/L | 1.0 | 114 | 70 | 130 | | | |
| Potassium | | | 60.9 | mg/L | 1.0 | 116 | 70 | 130 | | | |
| **Lab ID:** | **C22010179-001CMSD** | 2 | Sample Matrix Spike Duplicate | | | | Run: ICP4-C_220114A | | | 01/14/22 18:37 | |
| Magnesium | | | 155 | mg/L | 1.0 | 122 | 70 | 130 | 2.5 | 20 | |
| Potassium | | | 62.2 | mg/L | 1.0 | 118 | 70 | 130 | 2.0 | 20 | |
| **Method:** | **E200.7** | | | | | | | | | Analytical Run: ICP4-C_220117A | |
| **Lab ID:** | **QCS** | | Initial Calibration Verification Standard | | | | | | | 01/17/22 13:04 | |
| Calcium | | | 40.7 | mg/L | 0.50 | 102 | 95 | 105 | | | |
| **Method:** | **E200.7** | | | | | | | | | Batch: R278808 | |
| **Lab ID:** | **LRB1** | | Method Blank | | | | Run: ICP4-C_220117A | | | 01/17/22 12:31 | |
| Calcium | | | 0.4 | mg/L | 0.1 | | | | | | |
| **Lab ID:** | **LFB** | | Laboratory Fortified Blank | | | | Run: ICP4-C_220117A | | | 01/17/22 17:50 | |
| Calcium | | | 50.9 | mg/L | 0.50 | 105 | 85 | 115 | | | |
| **Lab ID:** | **C22010179-001CMS2** | | Sample Matrix Spike | | | | Run: ICP4-C_220117A | | | 01/17/22 14:04 | |
| Calcium | | | 221 | mg/L | 1.0 | 97 | 70 | 130 | | | |
| **Lab ID:** | **C22010179-001CMSD** | | Sample Matrix Spike Duplicate | | | | Run: ICP4-C_220117A | | | 01/17/22 14:10 | |
| Calcium | | | 203 | mg/L | 1.0 | 61 | 70 | 130 | 8.4 | 20 | S |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

S - Spike recovery outside of advisory limits

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22010406 **Report Date:** 01/26/22

| Analyte | | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Method:** | **E200.7** | | | | | | | | | Analytical Run: ICP4-C_220118B | |
| **Lab ID:** | **QCS** | 3 | Initial Calibration Verification Standard | | | | | | | 01/19/22 16:46 | |
| Calcium | | | 41.2 | mg/L | 0.50 | 103 | 95 | 105 | | | |
| Magnesium | | | 41.1 | mg/L | 0.50 | 103 | 95 | 105 | | | |
| Sodium | | | 41.4 | mg/L | 0.53 | 104 | 95 | 105 | | | |
| **Method:** | **E200.7** | | | | | | | | | Batch: R278878 | |
| **Lab ID:** | **LRB** | 3 | Method Blank | | | | Run: ICP4-C_220118B | | | 01/19/22 16:13 | |
| Calcium | | | ND | mg/L | 0.1 | | | | | | |
| Magnesium | | | 0.08 | mg/L | 0.08 | | | | | | |
| Sodium | | | ND | mg/L | 1 | | | | | | |
| **Lab ID:** | **LFB** | 3 | Laboratory Fortified Blank | | | | Run: ICP4-C_220118B | | | 01/19/22 16:40 | |
| Calcium | | | 50.3 | mg/L | 0.50 | 101 | 85 | 115 | | | |
| Magnesium | | | 49.7 | mg/L | 0.50 | 99 | 85 | 115 | | | |
| Sodium | | | 49.9 | mg/L | 0.54 | 100 | 85 | 115 | | | |
| **Lab ID:** | **C22010406-005BMS2** | 3 | Sample Matrix Spike | | | | Run: ICP4-C_220118B | | | 01/19/22 19:17 | |
| Calcium | | | 674 | mg/L | 1.3 | 89 | 70 | 130 | | | |
| Magnesium | | | 614 | mg/L | 1.0 | 87 | 70 | 130 | | | |
| Sodium | | | 380 | mg/L | 2.7 | 96 | 70 | 130 | | | |
| **Lab ID:** | **C22010406-005BMSD** | 3 | Sample Matrix Spike Duplicate | | | | Run: ICP4-C_220118B | | | 01/19/22 19:24 | |
| Calcium | | | 717 | mg/L | 1.3 | 106 | 70 | 130 | 6.2 | 20 | |
| Magnesium | | | 657 | mg/L | 1.0 | 104 | 70 | 130 | 6.7 | 20 | |
| Sodium | | | 402 | mg/L | 2.7 | 104 | 70 | 130 | 5.6 | 20 | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22010406 **Report Date:** 01/26/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: E200.8** | | | | | | | | | Analytical Run: ICPMS5-C_220117A | |
| **Lab ID: QCS** | 2 | Initial Calibration Verification Standard | | | | | | | 01/17/22 16:11 | |
| Magnesium | | 2.58 | mg/L | 0.50 | 103 | 90 | 110 | | | |
| Sodium | | 2.53 | mg/L | 0.50 | 101 | 90 | 110 | | | |
| **Method: E200.8** | | | | | | | | | Batch: R278785 | |
| **Lab ID: LRB** | 2 | Method Blank | | | | Run: ICPMS5-C_220117A | | | 01/17/22 13:19 | |
| Magnesium | | ND | mg/L | 0.02 | | | | | | |
| Sodium | | ND | mg/L | 0.3 | | | | | | |
| **Lab ID: LFB** | 2 | Laboratory Fortified Blank | | | | Run: ICPMS5-C_220117A | | | 01/17/22 13:24 | |
| Magnesium | | 49.7 | mg/L | 0.50 | 99 | 85 | 115 | | | |
| Sodium | | 49.8 | mg/L | 0.50 | 100 | 85 | 115 | | | |
| **Lab ID: C22010403-002BMS** | 2 | Sample Matrix Spike | | | | Run: ICPMS5-C_220117A | | | 01/17/22 18:01 | |
| Magnesium | | 58.6 | mg/L | 1.0 | 99 | 70 | 130 | | | |
| Sodium | | 89.4 | mg/L | 1.0 | 98 | 70 | 130 | | | |
| **Lab ID: C22010403-002BMSD** | 2 | Sample Matrix Spike Duplicate | | | | Run: ICPMS5-C_220117A | | | 01/17/22 18:20 | |
| Magnesium | | 57.6 | mg/L | 1.0 | 97 | 70 | 130 | 1.8 | 20 | |
| Sodium | | 88.2 | mg/L | 1.0 | 96 | 70 | 130 | 1.4 | 20 | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22010406 **Report Date:** 01/26/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: E200.8** | | | | | | | | | Analytical Run: ICPMS5-C_220119A | |
| **Lab ID: QCS** | | Initial Calibration Verification Standard | | | | | | | 01/19/22 12:46 | |
| Calcium | | 2.70 | mg/L | 0.64 | 108 | 90 | 110 | | | |
| **Method: E200.8** | | | | | | | | | Batch: 65554 | |
| **Lab ID: MB-65554** | 12 | Method Blank | | | | Run: ICPMS5-C_220119A | | | 01/20/22 02:00 | |
| Aluminum | | ND | mg/L | 0.02 | | | | | | |
| Arsenic | | ND | mg/L | 0.0003 | | | | | | |
| Beryllium | | ND | mg/L | 0.0002 | | | | | | |
| Cadmium | | ND | mg/L | 0.00002 | | | | | | |
| Cobalt | | ND | mg/L | 0.0001 | | | | | | |
| Lead | | ND | mg/L | 0.0001 | | | | | | |
| Manganese | | ND | mg/L | 0.0007 | | | | | | |
| Molybdenum | | ND | mg/L | 0.0001 | | | | | | |
| Nickel | | ND | mg/L | 0.0003 | | | | | | |
| Selenium | | ND | mg/L | 0.0001 | | | | | | |
| Uranium | | ND | mg/L | 0.0003 | | | | | | |
| Vanadium | | ND | mg/L | 0.003 | | | | | | |
| **Lab ID: LCS3-65554** | 12 | Laboratory Control Sample | | | | Run: ICPMS5-C_220119A | | | 01/20/22 02:04 | |
| Aluminum | | 2.40 | mg/L | 0.030 | 96 | 85 | 115 | | | |
| Arsenic | | 0.486 | mg/L | 0.0010 | 97 | 85 | 115 | | | |
| Beryllium | | 0.246 | mg/L | 0.0010 | 98 | 85 | 115 | | | |
| Cadmium | | 0.244 | mg/L | 0.0010 | 97 | 85 | 115 | | | |
| Cobalt | | 0.479 | mg/L | 0.0050 | 96 | 85 | 115 | | | |
| Lead | | 0.427 | mg/L | 0.0010 | 85 | 85 | 115 | | | |
| Manganese | | 2.49 | mg/L | 0.0010 | 100 | 85 | 115 | | | |
| Molybdenum | | 0.527 | mg/L | 0.0010 | 105 | 85 | 115 | | | |
| Nickel | | 0.498 | mg/L | 0.0050 | 100 | 85 | 115 | | | |
| Selenium | | 0.475 | mg/L | 0.0010 | 95 | 85 | 115 | | | |
| Uranium | | 0.423 | mg/L | 0.00030 | 85 | 85 | 115 | | | |
| Vanadium | | 0.505 | mg/L | 0.010 | 101 | 85 | 115 | | | |
| **Lab ID: C22010406-001CMS3** | 12 | Sample Matrix Spike | | | | Run: ICPMS5-C_220119A | | | 01/20/22 02:18 | |
| Aluminum | | 2.41 | mg/L | 0.091 | 88 | 70 | 130 | | | |
| Arsenic | | 0.453 | mg/L | 0.0014 | 91 | 70 | 130 | | | |
| Beryllium | | 0.214 | mg/L | 0.0010 | 85 | 70 | 130 | | | |
| Cadmium | | 0.214 | mg/L | 0.0010 | 85 | 70 | 130 | | | |
| Cobalt | | 0.458 | mg/L | 0.0050 | 88 | 70 | 130 | | | |
| Lead | | 0.443 | mg/L | 0.0010 | 88 | 70 | 130 | | | |
| Manganese | | 7.38 | mg/L | 0.0035 | 81 | 70 | 130 | | | |
| Molybdenum | | 0.497 | mg/L | 0.0034 | 99 | 70 | 130 | | | |
| Nickel | | 0.525 | mg/L | 0.0050 | 87 | 70 | 130 | | | |
| Selenium | | 0.525 | mg/L | 0.0010 | 93 | 70 | 130 | | | |
| Uranium | | 0.454 | mg/L | 0.0014 | 89 | 70 | 130 | | | |
| Vanadium | | 0.458 | mg/L | 0.012 | 92 | 70 | 130 | | | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22010406 **Report Date:** 01/26/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: E200.8** | | | | | | | | | | Batch: 65554 |
| **Lab ID: C22010406-001CMSD** | 12 | Sample Matrix Spike Duplicate | | | | Run: ICPMS5-C_220119A | | | | 01/20/22 02:23 |
| Aluminum | | 2.41 | mg/L | 0.091 | 88 | 70 | 130 | 0.0 | 20 | |
| Arsenic | | 0.455 | mg/L | 0.0014 | 91 | 70 | 130 | 0.5 | 20 | |
| Beryllium | | 0.214 | mg/L | 0.0010 | 86 | 70 | 130 | 0.2 | 20 | |
| Cadmium | | 0.215 | mg/L | 0.0010 | 85 | 70 | 130 | 0.4 | 20 | |
| Cobalt | | 0.460 | mg/L | 0.0050 | 88 | 70 | 130 | 0.3 | 20 | |
| Lead | | 0.441 | mg/L | 0.0010 | 88 | 70 | 130 | 0.4 | 20 | |
| Manganese | | 7.42 | mg/L | 0.0035 | 83 | 70 | 130 | 0.5 | 20 | |
| Molybdenum | | 0.491 | mg/L | 0.0034 | 97 | 70 | 130 | 1.3 | 20 | |
| Nickel | | 0.537 | mg/L | 0.0050 | 90 | 70 | 130 | 2.4 | 20 | |
| Selenium | | 0.518 | mg/L | 0.0010 | 92 | 70 | 130 | 1.4 | 20 | |
| Uranium | | 0.454 | mg/L | 0.0014 | 89 | 70 | 130 | 0.0 | 20 | |
| Vanadium | | 0.461 | mg/L | 0.012 | 92 | 70 | 130 | 0.7 | 20 | |
| **Method: E200.8** | | | | | | | | | | Batch: R278863 |
| **Lab ID: LRB** | | Method Blank | | | | Run: ICPMS5-C_220119A | | | | 01/19/22 13:13 |
| Calcium | | ND | mg/L | 0.3 | | | | | | |
| **Lab ID: LFB** | | Laboratory Fortified Blank | | | | Run: ICPMS5-C_220119A | | | | 01/19/22 13:18 |
| Calcium | | 39.7 | mg/L | 0.66 | 79 | 85 | 115 | | | S |
| **Lab ID: C22010406-004BMS** | | Sample Matrix Spike | | | | Run: ICPMS5-C_220119A | | | | 01/19/22 17:51 |
| Calcium | | 931 | mg/L | 6.7 | 102 | 70 | 130 | | | |
| **Lab ID: C22010406-004BMSD** | | Sample Matrix Spike Duplicate | | | | Run: ICPMS5-C_220119A | | | | 01/19/22 17:55 |
| Calcium | | 933 | mg/L | 6.7 | 102 | 70 | 130 | 0.2 | 20 | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

S - Spike recovery outside of advisory limits

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22010406 **Report Date:** 01/26/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: E200.8** | | | | | | | | | Analytical Run: ICPMS5-C_220120A | |
| **Lab ID: QCS** | 10 | Initial Calibration Verification Standard | | | | | | | 01/21/22 15:36 | |
| Aluminum | | 0.255 | mg/L | 0.030 | 102 | 90 | 110 | | | |
| Arsenic | | 0.0531 | mg/L | 0.0010 | 106 | 90 | 110 | | | |
| Beryllium | | 0.0256 | mg/L | 0.0010 | 102 | 90 | 110 | | | |
| Cadmium | | 0.0255 | mg/L | 0.0010 | 102 | 90 | 110 | | | |
| Cobalt | | 0.0494 | mg/L | 0.0050 | 99 | 90 | 110 | | | |
| Lead | | 0.0497 | mg/L | 0.0010 | 99 | 90 | 110 | | | |
| Manganese | | 0.255 | mg/L | 0.0010 | 102 | 90 | 110 | | | |
| Molybdenum | | 0.0519 | mg/L | 0.0010 | 104 | 90 | 110 | | | |
| Nickel | | 0.0527 | mg/L | 0.0050 | 105 | 90 | 110 | | | |
| Vanadium | | 0.0504 | mg/L | 0.010 | 101 | 90 | 110 | | | |
| **Method: E200.8** | | | | | | | | | Batch: 65554 | |
| **Lab ID: MB-65554** | 12 | Method Blank | | | | Run: ICPMS5-C_220120A | | | 01/21/22 19:08 | |
| Aluminum | | ND | mg/L | 0.02 | | | | | | |
| Arsenic | | ND | mg/L | 0.0003 | | | | | | |
| Beryllium | | ND | mg/L | 0.0002 | | | | | | |
| Cadmium | | ND | mg/L | 0.00002 | | | | | | |
| Cobalt | | ND | mg/L | 0.0001 | | | | | | |
| Lead | | ND | mg/L | 0.0001 | | | | | | |
| Manganese | | ND | mg/L | 0.0007 | | | | | | |
| Molybdenum | | ND | mg/L | 0.0001 | | | | | | |
| Nickel | | ND | mg/L | 0.0003 | | | | | | |
| Selenium | | ND | mg/L | 0.0001 | | | | | | |
| Uranium | | ND | mg/L | 0.0003 | | | | | | |
| Vanadium | | ND | mg/L | 0.003 | | | | | | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22010406 **Report Date:** 01/26/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: E200.8** | | | | | | | | | Analytical Run: ICPMS5-C_220124A | |
| **Lab ID: QCS** | 3 | Initial Calibration Verification Standard | | | | | | | 01/25/22 08:20 | |
| Aluminum | | 0.266 | mg/L | 0.030 | 106 | 90 | 110 | | | |
| Manganese | | 0.256 | mg/L | 0.0010 | 103 | 90 | 110 | | | |
| Uranium | | 0.0203 | mg/L | 0.00030 | 101 | 90 | 110 | | | |
| **Method: E200.8** | | | | | | | | | Batch: 65554 | |
| **Lab ID: MB-65554** | 12 | Method Blank | | | | Run: ICPMS5-C_220124A | | | 01/25/22 11:55 | |
| Aluminum | | ND | mg/L | 0.02 | | | | | | |
| Arsenic | | ND | mg/L | 0.0003 | | | | | | |
| Beryllium | | ND | mg/L | 0.0002 | | | | | | |
| Cadmium | | ND | mg/L | 0.00002 | | | | | | |
| Cobalt | | ND | mg/L | 0.0001 | | | | | | |
| Lead | | ND | mg/L | 0.0001 | | | | | | |
| Manganese | | ND | mg/L | 0.0007 | | | | | | |
| Molybdenum | | ND | mg/L | 0.0001 | | | | | | |
| Nickel | | ND | mg/L | 0.0003 | | | | | | |
| Selenium | | ND | mg/L | 0.0001 | | | | | | |
| Uranium | | ND | mg/L | 0.0003 | | | | | | |
| Vanadium | | ND | mg/L | 0.003 | | | | | | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22010406 **Report Date:** 01/27/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: A7500-U C** | | | | | | | | | Batch: RA-TH-ISO-3376 | |
| **Lab ID: MB-RA-TH-ISO-3376** | 3 | Method Blank | | | | Run: EGG-ORTEC_ALL_220118B | | | 01/19/22 14:02 | |
| Thorium 230 | | 0.02 | pCi/L | | | | | | | U |
| Thorium 230 precision (±) | | 0.03 | pCi/L | | | | | | | |
| Thorium 230 MDC | | 0.06 | pCi/L | | | | | | | |
| **Lab ID: LCS-RA-TH-ISO-3376** | 3 | Laboratory Control Sample | | | | Run: EGG-ORTEC_ALL_220118B | | | 01/19/22 14:02 | |
| Thorium 230 | | 9.1 | pCi/L | | 95 | 70 | 130 | | | |
| Thorium 230 precision (±) | | 1.7 | pCi/L | | | | | | | |
| Thorium 230 MDC | | 0.039 | pCi/L | | | | | | | |
| **Lab ID: C22010403-001FDUP** | 3 | Sample Duplicate | | | | Run: EGG-ORTEC_ALL_220118B | | | 01/19/22 14:01 | |
| Thorium 230 | | 0.0088 | pCi/L | | | | | 540 | 30 | UR |
| Thorium 230 precision (±) | | 0.044 | pCi/L | | | | | | | |
| Thorium 230 MDC | | 0.084 | pCi/L | | | | | | | |
| - Duplicate RPD is outside of the acceptance range for this analysis. However, the RER is less than the limit of 3, the RER result is 0.25. | | | | | | | | | | |
| **Method: A7500-U C** | | | | | | | | | Batch: RA-TH-ISO-3377R | |
| **Lab ID: MB-RA-TH-ISO-3377** | 3 | Method Blank | | | | Run: EGG-ORTEC_ALL_220118D | | | 01/20/22 14:21 | |
| Thorium 230 | | 0.1 | pCi/L | | | | | | | |
| Thorium 230 precision (±) | | 0.06 | pCi/L | | | | | | | |
| Thorium 230 MDC | | 0.08 | pCi/L | | | | | | | |
| **Lab ID: LCS-RA-TH-ISO-3377** | 3 | Laboratory Control Sample | | | | Run: EGG-ORTEC_ALL_220118D | | | 01/20/22 14:21 | |
| Thorium 230 | | 10 | pCi/L | | 104 | 70 | 130 | | | |
| Thorium 230 precision (±) | | 1.9 | pCi/L | | | | | | | |
| Thorium 230 MDC | | 0.073 | pCi/L | | | | | | | |
| **Lab ID: C22010408-007EDUP** | 3 | Sample Duplicate | | | | Run: EGG-ORTEC_ALL_220118D | | | 01/20/22 14:21 | |
| Thorium 230 | | 0.17 | pCi/L | | | | | 18 | 30 | |
| Thorium 230 precision (±) | | 0.11 | pCi/L | | | | | | | |
| Thorium 230 MDC | | 0.15 | pCi/L | | | | | | | |

**Qualifiers:**

RL - Analyte Reporting Limit

R - Relative Percent Difference (RPD) exceeds advisory limit

ND - Not detected at the Reporting Limit (RL)

U - Not detected at Minimum Detectable Concentration (MDC)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22010406 **Report Date:** 01/27/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: E900.1** | | | | | | | | | | Batch: GA-1334 |
| **Lab ID: LCS-GA-1334** | 3 | Laboratory Control Sample | | | | Run: G542M-2_220118A | | | | 01/21/22 09:12 |
| Gross Alpha minus Rn & U | | 36 | pCi/L | | 106 | 70 | 130 | | | |
| Gross Alpha minus Rn & U Precision (±) | | 7.2 | pCi/L | | | | | | | |
| Gross Alpha minus Rn & U MDC | | 1.0 | pCi/L | | | | | | | |
| **Lab ID: MB-GA-1334** | 3 | Method Blank | | | | Run: G542M-2_220118A | | | | 01/21/22 09:12 |
| Gross Alpha minus Rn & U | | 0.1 | pCi/L | | | | | | | U |
| Gross Alpha minus Rn & U Precision (±) | | 0.6 | pCi/L | | | | | | | |
| Gross Alpha minus Rn & U MDC | | 1 | pCi/L | | | | | | | |
| **Lab ID: C22010406-001EDUP** | 3 | Sample Duplicate | | | | Run: G542M-2_220118A | | | | 01/21/22 09:12 |
| Gross Alpha minus Rn & U | | 4.1 | pCi/L | | | | | 2.4 | 30 | |
| Gross Alpha minus Rn & U Precision (±) | | 1.2 | pCi/L | | | | | | | |
| Gross Alpha minus Rn & U MDC | | 1.0 | pCi/L | | | | | | | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

U - Not detected at Minimum Detectable Concentration (MDC)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22010406 **Report Date:** 01/27/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: E903.0** | | | | | | | | | Batch: RA226-10335 | |
| **Lab ID: LCS-RA226-10335** | 3 | Laboratory Control Sample | | | | Run: G542M-2_220114A | | | 01/26/22 11:30 | |
| Radium 226 | | 10 | pCi/L | | 99 | 70 | 130 | | | |
| Radium 226 precision (±) | | 2.0 | pCi/L | | | | | | | |
| Radium 226 MDC | | 0.21 | pCi/L | | | | | | | |
| **Lab ID: MB-RA226-10335** | 3 | Method Blank | | | | Run: G542M-2_220114A | | | 01/26/22 11:30 | |
| Radium 226 | | 0.1 | pCi/L | | | | | | | U |
| Radium 226 precision (±) | | 0.1 | pCi/L | | | | | | | |
| Radium 226 MDC | | 0.2 | pCi/L | | | | | | | |
| **Lab ID: C22010403-001FDUP** | 3 | Sample Duplicate | | | | Run: G542M-2_220114A | | | 01/26/22 11:30 | |
| Radium 226 | | 1.6 | pCi/L | | | | | 4.8 | 30 | |
| Radium 226 precision (±) | | 0.37 | pCi/L | | | | | | | |
| Radium 226 MDC | | 0.21 | pCi/L | | | | | | | |
| **Lab ID: C22010426-001ADUP** | 3 | Sample Duplicate | | | | Run: G542M-2_220114A | | | 01/26/22 13:40 | |
| Radium 226 | | 2.9 | pCi/L | | | | | 5.4 | 30 | |
| Radium 226 precision (±) | | 0.58 | pCi/L | | | | | | | |
| Radium 226 MDC | | 0.11 | pCi/L | | | | | | | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

U - Not detected at Minimum Detectable Concentration (MDC)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22010406 **Report Date:** 01/27/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: E909.0** | | | | | | | | | Batch: PB-210-1364 | |
| **Lab ID: LCS-PB-210-1364** | 3 | Laboratory Control Sample | | | | Run: PACKARD 3100TR_220114A | | | 01/19/22 14:50 | |
| Lead 210 | | 14 | pCi/L | | 83 | 70 | 130 | | | |
| Lead 210 precision (±) | | 4.3 | pCi/L | | | | | | | |
| Lead 210 MDC | | 1.4 | pCi/L | | | | | | | |
| **Lab ID: MB-PB-210-1364** | 3 | Method Blank | | | | Run: PACKARD 3100TR_220114A | | | 01/19/22 15:57 | |
| Lead 210 | | 0.6 | pCi/L | | | | | | | U |
| Lead 210 precision (±) | | 0.6 | pCi/L | | | | | | | |
| Lead 210 MDC | | 0.9 | pCi/L | | | | | | | |
| **Lab ID: C22010403-005GDUP** | 3 | Sample Duplicate | | | | Run: PACKARD 3100TR_220114A | | | 01/20/22 16:02 | |
| Lead 210 | | 0.90 | pCi/L | | | | | 4.0 | 30 | U |
| Lead 210 precision (±) | | 0.56 | pCi/L | | | | | | | |
| Lead 210 MDC | | 0.92 | pCi/L | | | | | | | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

U - Not detected at Minimum Detectable Concentration (MDC)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22010406 **Report Date:** 01/27/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: RA-05** | | | | | | | | | | Batch: RA228-6702 |
| **Lab ID: LCS-228-RA226-10335** | 3 | Laboratory Control Sample | | | | Run: G5000W_220114A | | | | 01/20/22 12:15 |
| Radium 228 | | 7.4 | pCi/L | | 98 | 70 | 130 | | | |
| Radium 228 precision (±) | | 1.6 | pCi/L | | | | | | | |
| Radium 228 MDC | | 1.3 | pCi/L | | | | | | | |
| **Lab ID: MB-RA226-10335** | 3 | Method Blank | | | | Run: G5000W_220114A | | | | 01/20/22 12:15 |
| Radium 228 | | 0.6 | pCi/L | | | | | | | U |
| Radium 228 precision (±) | | 0.8 | pCi/L | | | | | | | |
| Radium 228 MDC | | 1 | pCi/L | | | | | | | |
| **Lab ID: C22010403-001FDUP** | 3 | Sample Duplicate | | | | Run: G5000W_220114A | | | | 01/20/22 12:15 |
| Radium 228 | | 5.1 | pCi/L | | | | | 14 | 30 | |
| Radium 228 precision (±) | | 1.3 | pCi/L | | | | | | | |
| Radium 228 MDC | | 1.3 | pCi/L | | | | | | | |
| **Lab ID: C22010426-001ADUP** | 3 | Sample Duplicate | | | | Run: G5000W_220114A | | | | 01/20/22 12:15 |
| Radium 228 | | 2.5 | pCi/L | | | | | | | |
| Radium 228 precision (±) | | 0.64 | pCi/L | | | | | | | |
| Radium 228 MDC | | 0.70 | pCi/L | | | | | | | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

U - Not detected at Minimum Detectable Concentration (MDC)

eurofins | Environment Testing America

# ANALYTICAL REPORT

Eurofins Denver
4955 Yarrow Street
Arvada, CO 80002
Tel: (303)736-0100

Laboratory Job ID: 280-157826-1
Client Project/Site: 11(e) Byproduct Material

For:
Energy Laboratories, Inc.
400 W Boxelder Rd
Gillette, Wyoming 82718

Attn: Casper Reporting

*Authorized for release by:*
*1/28/2022 2:57:47 PM*

Dylan Bieniulis, Project Manager I
(303)736-0138
Dylan.Bieniulis@Eurofinset.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at:
www.eurofinsus.com/Env

*The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.*

*This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.*

*Results relate only to the items tested and the sample(s) as received by the laboratory.*

# Table of Contents

Cover Page . . . . . 1
Table of Contents . . . . . 2
Definitions . . . . . 3
Case Narrative . . . . . 4
Detection Summary . . . . . 5
Method Summary . . . . . 6
Sample Summary . . . . . 7
Client Sample Results . . . . . 8
Surrogate Summary . . . . . 10
QC Sample Results . . . . . 11
QC Association . . . . . 13
Chronicle . . . . . 14
Certification Summary . . . . . 15
Chain of Custody . . . . . 16
Receipt Checklists . . . . . 18

# Definitions/Glossary

Client: Energy Laboratories, Inc.
Project/Site: 11(e) Byproduct Material

Job ID: 280-157826-1

## Qualifiers

### GC/MS VOA

| Qualifier | Qualifier Description |
|---|---|
| J | Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value. |

## Glossary

| Abbreviation | These commonly used abbreviations may or may not be present in this report. |
|---|---|
| ¤ | Listed under the "D" column to designate that the result is reported on a dry weight basis |
| %R | Percent Recovery |
| CFL | Contains Free Liquid |
| CFU | Colony Forming Unit |
| CNF | Contains No Free Liquid |
| DER | Duplicate Error Ratio (normalized absolute difference) |
| Dil Fac | Dilution Factor |
| DL | Detection Limit (DoD/DOE) |
| DL, RA, RE, IN | Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample |
| DLC | Decision Level Concentration (Radiochemistry) |
| EDL | Estimated Detection Limit (Dioxin) |
| LOD | Limit of Detection (DoD/DOE) |
| LOQ | Limit of Quantitation (DoD/DOE) |
| MCL | EPA recommended "Maximum Contaminant Level" |
| MDA | Minimum Detectable Activity (Radiochemistry) |
| MDC | Minimum Detectable Concentration (Radiochemistry) |
| MDL | Method Detection Limit |
| ML | Minimum Level (Dioxin) |
| MPN | Most Probable Number |
| MQL | Method Quantitation Limit |
| NC | Not Calculated |
| ND | Not Detected at the reporting limit (or MDL or EDL if shown) |
| NEG | Negative / Absent |
| POS | Positive / Present |
| PQL | Practical Quantitation Limit |
| PRES | Presumptive |
| QC | Quality Control |
| RER | Relative Error Ratio (Radiochemistry) |
| RL | Reporting Limit or Requested Limit (Radiochemistry) |
| RPD | Relative Percent Difference, a measure of the relative difference between two points |
| TEF | Toxicity Equivalent Factor (Dioxin) |
| TEQ | Toxicity Equivalent Quotient (Dioxin) |
| TNTC | Too Numerous To Count |

## Job ID: 280-157826-1

**Laboratory: Eurofins Denver**

**Narrative**

# CASE NARRATIVE

## Client: Energy Laboratories, Inc.

## Project: 11(e) Byproduct Material

## Report Number: 280-157826-1

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

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

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

**RECEIPT**
The samples were received on 01/18/2022; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was 3.4 C.

Sample volume received for the requested VOCs analysis on sample C22010406-007A (280-157826-7) was unpreserved while the field samples received and associated with this trip blank sample were HCl preserved. The trip blank was received outside of the 7 day hold time for VOCs analysis of unpreserved sample volume. The laboratory will proceed with the requested analysis outside of hold time unless instructed otherwise. The client was notified on 1/19/2022.

Two of three HCl preserved VOA vials for sample C22010406-001F (280-157826-1) were received with a headspace bubble greater than 6mm in diameter. The client was notified on 1/19/2022.

**VOLATILE ORGANIC COMPOUNDS BY GC/MS**
Samples C22010406-001F (280-157826-1), C22010406-002F (280-157826-2), C22010406-003F (280-157826-3), C22010406-004F (280-157826-4), C22010406-005F (280-157826-5), C22010406-006F (280-157826-6) and C22010406-007A (280-157826-7) were analyzed for Volatile Organic Compounds by GC/MS in accordance with 624.1 40CFR136A. The samples were analyzed on 01/19/2022 and 01/20/2022.

Sample C22010406-001F (280-157826-1)[10X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

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

# Detection Summary

Client: Energy Laboratories, Inc.
Project/Site: 11(e) Byproduct Material

Job ID: 280-157826-1

## Client Sample ID: C22010406-001F — Lab Sample ID: 280-157826-1

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| Chloroform | 310 | | 10 | 2.2 | ug/L | 10 | | 624.1 | Total/NA |
| Trihalomethanes, Total | 310 | | 10 | 1.5 | ug/L | 10 | | 624.1 | Total/NA |

## Client Sample ID: C22010406-002F — Lab Sample ID: 280-157826-2

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| Chloroform | 10 | | 1.0 | 0.22 | ug/L | 1 | | 624.1 | Total/NA |
| Trihalomethanes, Total | 10 | | 1.0 | 0.15 | ug/L | 1 | | 624.1 | Total/NA |

## Client Sample ID: C22010406-003F — Lab Sample ID: 280-157826-3

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| Chloroform | 1.5 | | 1.0 | 0.22 | ug/L | 1 | | 624.1 | Total/NA |
| Trihalomethanes, Total | 1.5 | | 1.0 | 0.15 | ug/L | 1 | | 624.1 | Total/NA |

## Client Sample ID: C22010406-004F — Lab Sample ID: 280-157826-4

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| Chloroform | 58 | | 1.0 | 0.22 | ug/L | 1 | | 624.1 | Total/NA |
| Trihalomethanes, Total | 58 | | 1.0 | 0.15 | ug/L | 1 | | 624.1 | Total/NA |

## Client Sample ID: C22010406-005F — Lab Sample ID: 280-157826-5

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| Chloroform | 1.2 | | 1.0 | 0.22 | ug/L | 1 | | 624.1 | Total/NA |
| Trihalomethanes, Total | 1.2 | | 1.0 | 0.15 | ug/L | 1 | | 624.1 | Total/NA |

## Client Sample ID: C22010406-006F — Lab Sample ID: 280-157826-6

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| Chloroform | 0.73 | J | 1.0 | 0.22 | ug/L | 1 | | 624.1 | Total/NA |
| Trihalomethanes, Total | 0.73 | J | 1.0 | 0.15 | ug/L | 1 | | 624.1 | Total/NA |

## Client Sample ID: C22010406-007A — Lab Sample ID: 280-157826-7

No Detections.

This Detection Summary does not include radiochemical test results.

# Method Summary

Client: Energy Laboratories, Inc.
Project/Site: 11(e) Byproduct Material

Job ID: 280-157826-1

| Method | Method Description | Protocol | Laboratory |
|---|---|---|---|
| 624.1 | Volatile Organic Compounds (GC/MS) | 40CFR136A | TAL DEN |

**Protocol References:**

40CFR136A = "Methods for Organic Chemical Analysis of Municipal Industrial Wastewater", 40CFR, Part 136, Appendix A, October 26, 1984 and subsequent revisions.

**Laboratory References:**

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

# Sample Summary

Client: Energy Laboratories, Inc.
Project/Site: 11(e) Byproduct Material

Job ID: 280-157826-1

| Lab Sample ID | Client Sample ID | Matrix | Collected | Received |
|---|---|---|---|---|
| 280-157826-1 | C22010406-001F | Water | 01/10/22 11:15 | 01/18/22 13:20 |
| 280-157826-2 | C22010406-002F | Water | 01/10/22 12:26 | 01/18/22 13:20 |
| 280-157826-3 | C22010406-003F | Water | 01/10/22 13:24 | 01/18/22 13:20 |
| 280-157826-4 | C22010406-004F | Water | 01/10/22 14:12 | 01/18/22 13:20 |
| 280-157826-5 | C22010406-005F | Water | 01/10/22 15:00 | 01/18/22 13:20 |
| 280-157826-6 | C22010406-006F | Water | 01/10/22 15:33 | 01/18/22 13:20 |
| 280-157826-7 | C22010406-007A | Water | 01/10/22 11:15 | 01/18/22 13:20 |

# Client Sample Results

Client: Energy Laboratories, Inc.
Project/Site: 11(e) Byproduct Material

Job ID: 280-157826-1

## Method: 624.1 - Volatile Organic Compounds (GC/MS)

**Client Sample ID: C22010406-001F** — **Lab Sample ID: 280-157826-1**
**Date Collected: 01/10/22 11:15** — **Matrix: Water**
**Date Received: 01/18/22 13:20**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | ND | | 10 | 1.5 | ug/L | | | 01/20/22 19:28 | 10 |
| Bromoform | ND | | 20 | 6.7 | ug/L | | | 01/20/22 19:28 | 10 |
| Chlorodibromomethane | ND | | 10 | 2.1 | ug/L | | | 01/20/22 19:28 | 10 |
| **Chloroform** | **310** | | 10 | 2.2 | ug/L | | | 01/20/22 19:28 | 10 |
| **Trihalomethanes, Total** | **310** | | 10 | 1.5 | ug/L | | | 01/20/22 19:28 | 10 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1,2-Dichloroethane-d4 (Surr)* | *100* | | *73 - 122* | | *01/20/22 19:28* | *10* |
| *4-Bromofluorobenzene (Surr)* | *102* | | *79 - 119* | | *01/20/22 19:28* | *10* |
| *Toluene-d8 (Surr)* | *98* | | *80 - 120* | | *01/20/22 19:28* | *10* |

**Client Sample ID: C22010406-002F** — **Lab Sample ID: 280-157826-2**
**Date Collected: 01/10/22 12:26** — **Matrix: Water**
**Date Received: 01/18/22 13:20**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | ND | | 1.0 | 0.15 | ug/L | | | 01/19/22 17:29 | 1 |
| Bromoform | ND | | 2.0 | 0.67 | ug/L | | | 01/19/22 17:29 | 1 |
| Chlorodibromomethane | ND | | 1.0 | 0.21 | ug/L | | | 01/19/22 17:29 | 1 |
| **Chloroform** | **10** | | 1.0 | 0.22 | ug/L | | | 01/19/22 17:29 | 1 |
| **Trihalomethanes, Total** | **10** | | 1.0 | 0.15 | ug/L | | | 01/19/22 17:29 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1,2-Dichloroethane-d4 (Surr)* | *101* | | *73 - 122* | | *01/19/22 17:29* | *1* |
| *4-Bromofluorobenzene (Surr)* | *100* | | *79 - 119* | | *01/19/22 17:29* | *1* |
| *Toluene-d8 (Surr)* | *99* | | *80 - 120* | | *01/19/22 17:29* | *1* |

**Client Sample ID: C22010406-003F** — **Lab Sample ID: 280-157826-3**
**Date Collected: 01/10/22 13:24** — **Matrix: Water**
**Date Received: 01/18/22 13:20**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | ND | | 1.0 | 0.15 | ug/L | | | 01/19/22 17:51 | 1 |
| Bromoform | ND | | 2.0 | 0.67 | ug/L | | | 01/19/22 17:51 | 1 |
| Chlorodibromomethane | ND | | 1.0 | 0.21 | ug/L | | | 01/19/22 17:51 | 1 |
| **Chloroform** | **1.5** | | 1.0 | 0.22 | ug/L | | | 01/19/22 17:51 | 1 |
| **Trihalomethanes, Total** | **1.5** | | 1.0 | 0.15 | ug/L | | | 01/19/22 17:51 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1,2-Dichloroethane-d4 (Surr)* | *101* | | *73 - 122* | | *01/19/22 17:51* | *1* |
| *4-Bromofluorobenzene (Surr)* | *102* | | *79 - 119* | | *01/19/22 17:51* | *1* |
| *Toluene-d8 (Surr)* | *98* | | *80 - 120* | | *01/19/22 17:51* | *1* |

**Client Sample ID: C22010406-004F** — **Lab Sample ID: 280-157826-4**
**Date Collected: 01/10/22 14:12** — **Matrix: Water**
**Date Received: 01/18/22 13:20**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | ND | | 1.0 | 0.15 | ug/L | | | 01/19/22 18:12 | 1 |
| Bromoform | ND | | 2.0 | 0.67 | ug/L | | | 01/19/22 18:12 | 1 |
| Chlorodibromomethane | ND | | 1.0 | 0.21 | ug/L | | | 01/19/22 18:12 | 1 |
| **Chloroform** | **58** | | 1.0 | 0.22 | ug/L | | | 01/19/22 18:12 | 1 |
| **Trihalomethanes, Total** | **58** | | 1.0 | 0.15 | ug/L | | | 01/19/22 18:12 | 1 |

## Method: 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

| Surrogate | %Recovery | Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|
| 1,2-Dichloroethane-d4 (Surr) | 102 | | 73 - 122 | | 01/19/22 18:12 | 1 |
| 4-Bromofluorobenzene (Surr) | 100 | | 79 - 119 | | 01/19/22 18:12 | 1 |
| Toluene-d8 (Surr) | 98 | | 80 - 120 | | 01/19/22 18:12 | 1 |

**Client Sample ID: C22010406-005F** **Lab Sample ID: 280-157826-5**
**Date Collected: 01/10/22 15:00** **Matrix: Water**
**Date Received: 01/18/22 13:20**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | ND | | 1.0 | 0.15 | ug/L | | | 01/19/22 18:34 | 1 |
| Bromoform | ND | | 2.0 | 0.67 | ug/L | | | 01/19/22 18:34 | 1 |
| Chlorodibromomethane | ND | | 1.0 | 0.21 | ug/L | | | 01/19/22 18:34 | 1 |
| **Chloroform** | **1.2** | | 1.0 | 0.22 | ug/L | | | 01/19/22 18:34 | 1 |
| **Trihalomethanes, Total** | **1.2** | | 1.0 | 0.15 | ug/L | | | 01/19/22 18:34 | 1 |

| Surrogate | %Recovery | Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|
| 1,2-Dichloroethane-d4 (Surr) | 100 | | 73 - 122 | | 01/19/22 18:34 | 1 |
| 4-Bromofluorobenzene (Surr) | 101 | | 79 - 119 | | 01/19/22 18:34 | 1 |
| Toluene-d8 (Surr) | 99 | | 80 - 120 | | 01/19/22 18:34 | 1 |

**Client Sample ID: C22010406-006F** **Lab Sample ID: 280-157826-6**
**Date Collected: 01/10/22 15:33** **Matrix: Water**
**Date Received: 01/18/22 13:20**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | ND | | 1.0 | 0.15 | ug/L | | | 01/19/22 18:55 | 1 |
| Bromoform | ND | | 2.0 | 0.67 | ug/L | | | 01/19/22 18:55 | 1 |
| Chlorodibromomethane | ND | | 1.0 | 0.21 | ug/L | | | 01/19/22 18:55 | 1 |
| **Chloroform** | **0.73** | **J** | 1.0 | 0.22 | ug/L | | | 01/19/22 18:55 | 1 |
| **Trihalomethanes, Total** | **0.73** | **J** | 1.0 | 0.15 | ug/L | | | 01/19/22 18:55 | 1 |

| Surrogate | %Recovery | Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|
| 1,2-Dichloroethane-d4 (Surr) | 99 | | 73 - 122 | | 01/19/22 18:55 | 1 |
| 4-Bromofluorobenzene (Surr) | 101 | | 79 - 119 | | 01/19/22 18:55 | 1 |
| Toluene-d8 (Surr) | 99 | | 80 - 120 | | 01/19/22 18:55 | 1 |

**Client Sample ID: C22010406-007A** **Lab Sample ID: 280-157826-7**
**Date Collected: 01/10/22 11:15** **Matrix: Water**
**Date Received: 01/18/22 13:20**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | ND | | 1.0 | 0.15 | ug/L | | | 01/19/22 19:17 | 1 |
| Bromoform | ND | | 2.0 | 0.67 | ug/L | | | 01/19/22 19:17 | 1 |
| Chlorodibromomethane | ND | | 1.0 | 0.21 | ug/L | | | 01/19/22 19:17 | 1 |
| Chloroform | ND | | 1.0 | 0.22 | ug/L | | | 01/19/22 19:17 | 1 |
| Trihalomethanes, Total | ND | | 1.0 | 0.15 | ug/L | | | 01/19/22 19:17 | 1 |

| Surrogate | %Recovery | Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|
| 1,2-Dichloroethane-d4 (Surr) | 99 | | 73 - 122 | | 01/19/22 19:17 | 1 |
| 4-Bromofluorobenzene (Surr) | 101 | | 79 - 119 | | 01/19/22 19:17 | 1 |
| Toluene-d8 (Surr) | 98 | | 80 - 120 | | 01/19/22 19:17 | 1 |

# Surrogate Summary

Client: Energy Laboratories, Inc.
Project/Site: 11(e) Byproduct Material

Job ID: 280-157826-1

## Method: 624.1 - Volatile Organic Compounds (GC/MS)

**Matrix: Water**

**Prep Type: Total/NA**

| | | Percent Surrogate Recovery (Acceptance Limits) | | |
|---|---|---|---|---|
| | | DCA | BFB | TOL |
| **Lab Sample ID** | **Client Sample ID** | **(73-122)** | **(79-119)** | **(80-120)** |
| 280-157826-1 | C22010406-001F | 100 | 102 | 98 |
| 280-157826-2 | C22010406-002F | 101 | 100 | 99 |
| 280-157826-3 | C22010406-003F | 101 | 102 | 98 |
| 280-157826-4 | C22010406-004F | 102 | 100 | 98 |
| 280-157826-5 | C22010406-005F | 100 | 101 | 99 |
| 280-157826-6 | C22010406-006F | 99 | 101 | 99 |
| 280-157826-7 | C22010406-007A | 99 | 101 | 98 |
| LCS 280-563750/4 | Lab Control Sample | 97 | 100 | 97 |
| LCS 280-563877/4 | Lab Control Sample | 98 | 101 | 97 |
| LCSD 280-563750/5 | Lab Control Sample Dup | 98 | 100 | 99 |
| LCSD 280-563877/5 | Lab Control Sample Dup | 100 | 101 | 98 |
| MB 280-563750/9 | Method Blank | 101 | 100 | 99 |
| MB 280-563877/9 | Method Blank | 102 | 101 | 100 |

**Surrogate Legend**

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
TOL = Toluene-d8 (Surr)

# QC Sample Results

Client: Energy Laboratories, Inc.
Project/Site: 11(e) Byproduct Material

Job ID: 280-157826-1

## Method: 624.1 - Volatile Organic Compounds (GC/MS)

**Lab Sample ID: MB 280-563750/9**
**Matrix: Water**
**Analysis Batch: 563750**

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

| Analyte | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | ND | | 1.0 | 0.15 | ug/L | | | 01/19/22 12:44 | 1 |
| Bromoform | ND | | 2.0 | 0.67 | ug/L | | | 01/19/22 12:44 | 1 |
| Chlorodibromomethane | ND | | 1.0 | 0.21 | ug/L | | | 01/19/22 12:44 | 1 |
| Chloroform | ND | | 1.0 | 0.22 | ug/L | | | 01/19/22 12:44 | 1 |
| Trihalomethanes, Total | ND | | 1.0 | 0.15 | ug/L | | | 01/19/22 12:44 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1,2-Dichloroethane-d4 (Surr)* | *101* | | *73 - 122* | | *01/19/22 12:44* | *1* |
| *4-Bromofluorobenzene (Surr)* | *100* | | *79 - 119* | | *01/19/22 12:44* | *1* |
| *Toluene-d8 (Surr)* | *99* | | *80 - 120* | | *01/19/22 12:44* | *1* |

**Lab Sample ID: LCS 280-563750/4**
**Matrix: Water**
**Analysis Batch: 563750**

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

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|
| Bromodichloromethane | 25.0 | 24.5 | | ug/L | | 98 | 65 - 135 |
| Bromoform | 25.0 | 18.4 | | ug/L | | 74 | 70 - 130 |
| Chlorodibromomethane | 25.0 | 20.4 | | ug/L | | 81 | 70 - 135 |
| Chloroform | 25.0 | 24.0 | | ug/L | | 96 | 70 - 135 |

| *Surrogate* | *LCS %Recovery* | *LCS Qualifier* | *Limits* |
|---|---|---|---|
| *1,2-Dichloroethane-d4 (Surr)* | *97* | | *73 - 122* |
| *4-Bromofluorobenzene (Surr)* | *100* | | *79 - 119* |
| *Toluene-d8 (Surr)* | *97* | | *80 - 120* |

**Lab Sample ID: LCSD 280-563750/5**
**Matrix: Water**
**Analysis Batch: 563750**

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

| Analyte | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | 25.0 | 24.7 | | ug/L | | 99 | 65 - 135 | 1 | 30 |
| Bromoform | 25.0 | 19.7 | | ug/L | | 79 | 70 - 130 | 7 | 30 |
| Chlorodibromomethane | 25.0 | 21.6 | | ug/L | | 86 | 70 - 135 | 6 | 30 |
| Chloroform | 25.0 | 24.0 | | ug/L | | 96 | 70 - 135 | 0 | 30 |

| *Surrogate* | *LCSD %Recovery* | *LCSD Qualifier* | *Limits* |
|---|---|---|---|
| *1,2-Dichloroethane-d4 (Surr)* | *98* | | *73 - 122* |
| *4-Bromofluorobenzene (Surr)* | *100* | | *79 - 119* |
| *Toluene-d8 (Surr)* | *99* | | *80 - 120* |

**Lab Sample ID: MB 280-563877/9**
**Matrix: Water**
**Analysis Batch: 563877**

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

| Analyte | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | ND | | 1.0 | 0.15 | ug/L | | | 01/20/22 12:20 | 1 |
| Bromoform | ND | | 2.0 | 0.67 | ug/L | | | 01/20/22 12:20 | 1 |

## Method: 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: MB 280-563877/9** — **Client Sample ID: Method Blank**
**Matrix: Water** — **Prep Type: Total/NA**
**Analysis Batch: 563877**

| Analyte | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Chlorodibromomethane | ND | | 1.0 | 0.21 | ug/L | | | 01/20/22 12:20 | 1 |
| Chloroform | ND | | 1.0 | 0.22 | ug/L | | | 01/20/22 12:20 | 1 |
| Trihalomethanes, Total | ND | | 1.0 | 0.15 | ug/L | | | 01/20/22 12:20 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1,2-Dichloroethane-d4 (Surr)* | *102* | | *73 - 122* | | *01/20/22 12:20* | *1* |
| *4-Bromofluorobenzene (Surr)* | *101* | | *79 - 119* | | *01/20/22 12:20* | *1* |
| *Toluene-d8 (Surr)* | *100* | | *80 - 120* | | *01/20/22 12:20* | *1* |

**Lab Sample ID: LCS 280-563877/4** — **Client Sample ID: Lab Control Sample**
**Matrix: Water** — **Prep Type: Total/NA**
**Analysis Batch: 563877**

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|
| Bromodichloromethane | 25.0 | 25.0 | | ug/L | | 100 | 65 - 135 |
| Bromoform | 25.0 | 18.3 | | ug/L | | 73 | 70 - 130 |
| Chlorodibromomethane | 25.0 | 20.8 | | ug/L | | 83 | 70 - 135 |
| Chloroform | 25.0 | 24.8 | | ug/L | | 99 | 70 - 135 |

| *Surrogate* | *LCS %Recovery* | *LCS Qualifier* | *Limits* |
|---|---|---|---|
| *1,2-Dichloroethane-d4 (Surr)* | *98* | | *73 - 122* |
| *4-Bromofluorobenzene (Surr)* | *101* | | *79 - 119* |
| *Toluene-d8 (Surr)* | *97* | | *80 - 120* |

**Lab Sample ID: LCSD 280-563877/5** — **Client Sample ID: Lab Control Sample Dup**
**Matrix: Water** — **Prep Type: Total/NA**
**Analysis Batch: 563877**

| Analyte | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | 25.0 | 24.2 | | ug/L | | 97 | 65 - 135 | 3 | 30 |
| Bromoform | 25.0 | 19.0 | | ug/L | | 76 | 70 - 130 | 4 | 30 |
| Chlorodibromomethane | 25.0 | 21.3 | | ug/L | | 85 | 70 - 135 | 3 | 30 |
| Chloroform | 25.0 | 24.2 | | ug/L | | 97 | 70 - 135 | 2 | 30 |

| *Surrogate* | *LCSD %Recovery* | *LCSD Qualifier* | *Limits* |
|---|---|---|---|
| *1,2-Dichloroethane-d4 (Surr)* | *100* | | *73 - 122* |
| *4-Bromofluorobenzene (Surr)* | *101* | | *79 - 119* |
| *Toluene-d8 (Surr)* | *98* | | *80 - 120* |

# QC Association Summary

Client: Energy Laboratories, Inc.
Project/Site: 11(e) Byproduct Material

Job ID: 280-157826-1

## GC/MS VOA

### Analysis Batch: 563750

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 280-157826-2 | C22010406-002F | Total/NA | Water | 624.1 | |
| 280-157826-3 | C22010406-003F | Total/NA | Water | 624.1 | |
| 280-157826-4 | C22010406-004F | Total/NA | Water | 624.1 | |
| 280-157826-5 | C22010406-005F | Total/NA | Water | 624.1 | |
| 280-157826-6 | C22010406-006F | Total/NA | Water | 624.1 | |
| 280-157826-7 | C22010406-007A | Total/NA | Water | 624.1 | |
| MB 280-563750/9 | Method Blank | Total/NA | Water | 624.1 | |
| LCS 280-563750/4 | Lab Control Sample | Total/NA | Water | 624.1 | |
| LCSD 280-563750/5 | Lab Control Sample Dup | Total/NA | Water | 624.1 | |

### Analysis Batch: 563877

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 280-157826-1 | C22010406-001F | Total/NA | Water | 624.1 | |
| MB 280-563877/9 | Method Blank | Total/NA | Water | 624.1 | |
| LCS 280-563877/4 | Lab Control Sample | Total/NA | Water | 624.1 | |
| LCSD 280-563877/5 | Lab Control Sample Dup | Total/NA | Water | 624.1 | |

# Lab Chronicle

Client: Energy Laboratories, Inc.
Project/Site: 11(e) Byproduct Material

Job ID: 280-157826-1

## Client Sample ID: C22010406-001F — Lab Sample ID: 280-157826-1

Date Collected: 01/10/22 11:15
Date Received: 01/18/22 13:20
Matrix: Water

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 624.1 | | 10 | 5 mL | 5 mL | 563877 | 01/20/22 19:28 | SKL | TAL DEN |

## Client Sample ID: C22010406-002F — Lab Sample ID: 280-157826-2

Date Collected: 01/10/22 12:26
Date Received: 01/18/22 13:20
Matrix: Water

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 624.1 | | 1 | 5 mL | 5 mL | 563750 | 01/19/22 17:29 | SKL | TAL DEN |

## Client Sample ID: C22010406-003F — Lab Sample ID: 280-157826-3

Date Collected: 01/10/22 13:24
Date Received: 01/18/22 13:20
Matrix: Water

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 624.1 | | 1 | 5 mL | 5 mL | 563750 | 01/19/22 17:51 | SKL | TAL DEN |

## Client Sample ID: C22010406-004F — Lab Sample ID: 280-157826-4

Date Collected: 01/10/22 14:12
Date Received: 01/18/22 13:20
Matrix: Water

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 624.1 | | 1 | 5 mL | 5 mL | 563750 | 01/19/22 18:12 | SKL | TAL DEN |

## Client Sample ID: C22010406-005F — Lab Sample ID: 280-157826-5

Date Collected: 01/10/22 15:00
Date Received: 01/18/22 13:20
Matrix: Water

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 624.1 | | 1 | 5 mL | 5 mL | 563750 | 01/19/22 18:34 | SKL | TAL DEN |

## Client Sample ID: C22010406-006F — Lab Sample ID: 280-157826-6

Date Collected: 01/10/22 15:33
Date Received: 01/18/22 13:20
Matrix: Water

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 624.1 | | 1 | 5 mL | 5 mL | 563750 | 01/19/22 18:55 | SKL | TAL DEN |

## Client Sample ID: C22010406-007A — Lab Sample ID: 280-157826-7

Date Collected: 01/10/22 11:15
Date Received: 01/18/22 13:20
Matrix: Water

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 624.1 | | 1 | 5 mL | 5 mL | 563750 | 01/19/22 19:17 | SKL | TAL DEN |

**Laboratory References:**

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

# Accreditation/Certification Summary

Client: Energy Laboratories, Inc. Job ID: 280-157826-1
Project/Site: 11(e) Byproduct Material

## Laboratory: Eurofins Denver

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

| Authority | Program | Identification Number | Expiration Date |
|---|---|---|---|
| A2LA | Dept. of Defense ELAP | 2907.01 | 10-31-23 |
| A2LA | ISO/IEC 17025 | 2907.01 | 10-31-23 |
| Alabama | State Program | 40730 | 09-30-12 * |
| Alaska (UST) | State | 18-001 | 02-28-22 |
| Arizona | State | AZ0713 | 12-20-22 |
| Arkansas DEQ | State | 19-047-0 | 06-01-22 |
| California | State | 2513 | 01-08-22 * |
| Connecticut | State | PH-0686 | 09-30-22 |
| Florida | NELAP | E87667-57 | 06-30-22 |
| Georgia | State | 4025-011 | 01-08-23 |
| Illinois | NELAP | 2000172019-1 | 04-30-22 |
| Iowa | State | IA#370 | 12-02-22 |
| Kansas | NELAP | E-10166 | 04-30-22 |
| Kentucky (WW) | State | KY98047 | 12-31-22 |
| Louisiana | NELAP | 30785 | 06-30-14 * |
| Louisiana | NELAP | 30785 | 06-30-22 |
| Minnesota | NELAP | 1788752 | 12-31-22 |
| Nevada | State | CO000262020-1 | 07-31-22 |
| New Hampshire | NELAP | 205319 | 04-29-22 |
| New Jersey | NELAP | 190002 | 06-30-22 |
| New York | NELAP | 59923 | 04-01-22 |
| North Carolina (WW/SW) | State | 358 | 12-31-22 |
| North Dakota | State | R-034 | 01-08-22 * |
| Oklahoma | State | 2018-006 | 08-31-22 |
| Oregon | NELAP | 4025-011 | 01-08-23 |
| Pennsylvania | NELAP | 013 | 07-31-22 |
| South Carolina | State | 72002001 | 01-08-23 |
| Texas | NELAP | TX104704183-08-TX | 09-30-09 * |
| Texas | NELAP | T104704183-21-19 | 10-01-22 |
| US Fish & Wildlife | US Federal Programs | 058448 | 07-31-22 |
| USDA | US Federal Programs | P330-20-00065 | 03-06-23 |
| Utah | NELAP | QUAN5 | 06-30-13 * |
| Utah | NELAP | CO000262019-11 | 07-31-22 |
| Virginia | NELAP | 10490 | 06-14-22 |
| Washington | State | C583-19 | 08-03-22 |
| West Virginia DEP | State | 354 | 01-31-22 |
| Wisconsin | State | 999615430 | 08-31-22 |
| Wyoming (UST) | A2LA | 2907.01 | 10-31-22 |

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

# ANALYTICAL SUMMARY REPORT

February 16, 2022

United Nuclear Corporation
21 Miles NE of Gallup
Gallup, NM 87305

Work Order: C22010408 Quote ID: C6117

Project Name: UNC

Energy Laboratories, Inc. Casper WY received the following 11 samples for United Nuclear Corporation on 1/13/2022 for analysis.

| Lab ID | Client Sample ID | Collect Date | Receive Date | Matrix | Test |
|---|---|---|---|---|---|
| C22010408-001 | 614 | 01/10/22 9:08 | 01/13/22 | Aqueous | Metals by ICP/ICPMS, Dissolved<br>Metals by ICP/ICPMS, Total<br>Alkalinity<br>Anion - Cation Balance<br>Anions by Ion Chromatography<br>Nitrogen, Ammonia<br>Nitrogen, Nitrate + Nitrite<br>pH<br>Metals Preparation by EPA 200.2<br>Gross Alpha minus Radon and Uranium, Total<br>Lead 210, Total<br>Radium 226 + Radium 228, Total<br>Radium 226, Total<br>Radium 228, Total<br>Thorium, Isotopic, Total<br>Solids, Total Dissolved<br>Solids, Total Dissolved - Calculated<br>TRACKER SHEET<br>624-Purgeable Organics<br>624-Purgeable Organics |
| C22010408-002 | EPA-14 | 01/11/22 10:47 | 01/13/22 | Aqueous | Same As Above |
| C22010408-003 | 708 | 01/11/22 11:33 | 01/13/22 | Aqueous | Metals by ICP/ICPMS, Dissolved<br>Metals by ICP/ICPMS, Total<br>Acidity, Total as CaCO3<br>Alkalinity<br>Anion - Cation Balance<br>Anions by Ion Chromatography<br>Nitrogen, Ammonia<br>Nitrogen, Nitrate + Nitrite<br>pH<br>Metals Preparation by EPA 200.2<br>Gross Alpha minus Radon and Uranium, Total<br>Lead 210, Total<br>Radium 226 + Radium 228, Total<br>Radium 226, Total<br>Radium 228, Total<br>Thorium, Isotopic, Total<br>Solids, Total Dissolved<br>Solids, Total Dissolved - Calculated<br>TRACKER SHEET<br>624-Purgeable Organics<br>624-Purgeable Organics |
| C22010408-004 | 711 | 01/11/22 12:33 | 01/13/22 | Aqueous | Same As Above |

# ANALYTICAL SUMMARY REPORT

| | | | | | |
|---|---|---|---|---|---|
| C22010408-005 | EPA-13 | 01/11/22 14:16 | 01/13/22 | Aqueous | Metals by ICP/ICPMS, Dissolved<br>Metals by ICP/ICPMS, Total<br>Alkalinity<br>Anion - Cation Balance<br>Anions by Ion Chromatography<br>Nitrogen, Ammonia<br>Nitrogen, Nitrate + Nitrite<br>pH<br>Metals Preparation by EPA 200.2<br>Gross Alpha minus Radon and Uranium, Total<br>Lead 210, Total<br>Radium 226 + Radium 228, Total<br>Radium 226, Total<br>Radium 228, Total<br>Thorium, Isotopic, Total<br>Solids, Total Dissolved<br>Solids, Total Dissolved - Calculated<br>TRACKER SHEET<br>624-Purgeable Organics<br>624-Purgeable Organics |
| C22010408-006 | 517 | 01/11/22 9:25 | 01/13/22 | Aqueous | Metals by ICP/ICPMS, Dissolved<br>Metals by ICP/ICPMS, Total<br>Acidity, Total as CaCO3<br>Alkalinity<br>Anion - Cation Balance<br>Anions by Ion Chromatography<br>Nitrogen, Ammonia<br>Nitrogen, Nitrate + Nitrite<br>pH<br>Metals Preparation by EPA 200.2<br>Gross Alpha minus Radon and Uranium, Total<br>Lead 210, Total<br>Radium 226 + Radium 228, Total<br>Radium 226, Total<br>Radium 228, Total<br>Thorium, Isotopic, Total<br>Solids, Total Dissolved<br>Solids, Total Dissolved - Calculated<br>TRACKER SHEET<br>624-Purgeable Organics<br>624-Purgeable Organics |
| C22010408-007 | MW-7 | 01/12/22 11:12 | 01/13/22 | Aqueous | Same As Above |

# ANALYTICAL SUMMARY REPORT

| | | | | | |
|---|---|---|---|---|---|
| C22010408-008 | NW-3 | 01/12/22 12:30 | 01/13/22 | Aqueous | Metals by ICP/ICPMS, Dissolved<br>Metals by ICP/ICPMS, Total<br>Alkalinity<br>Anion - Cation Balance<br>Anions by Ion Chromatography<br>Nitrogen, Ammonia<br>Nitrogen, Nitrate + Nitrite<br>pH<br>Metals Preparation by EPA 200.2<br>Gross Alpha minus Radon and Uranium, Total<br>Lead 210, Total<br>Radium 226 + Radium 228, Total<br>Radium 226, Total<br>Radium 228, Total<br>Thorium, Isotopic, Total<br>Solids, Total Dissolved<br>Solids, Total Dissolved - Calculated<br>TRACKER SHEET<br>624-Purgeable Organics<br>624-Purgeable Organics |
| C22010408-009 | Rinsate | 01/12/22 13:55 | 01/13/22 | Aqueous | Same As Above |
| C22010408-010 | Field Blank | 01/12/22 14:00 | 01/13/22 | Aqueous | Same As Above |
| C22010408-011 | Trip Blank- 80352 | 01/10/22 9:08 | 01/13/22 | Trip Blank | 624-Purgeable Organics |

The analyses presented in this report were performed by Energy Laboratories, Inc., 2393 Salt Creek Hwy., Casper, WY 82601, unless otherwise noted. Any exceptions or problems with the analyses are noted in the report package. Any issues encountered during sample receipt are documented in the Work Order Receipt Checklist.

The results as reported relate only to the item(s) submitted for testing. This report shall be used or copied only in its entirety. Energy Laboratories, Inc. is not responsible for the consequences arising from the use of a partial report.

If you have any questions regarding these test results, please contact your Project Manager .

Report Approved By:

Wyoming Regional Director

Digitally signed by
Terry Friedlan
Date: 2022.02.16 15:15:34 -07:00

**CLIENT:** United Nuclear Corporation
**Project:** UNC
**Work Order:** C22010408

**Report Date:** 02/16/22

# CASE NARRATIVE

Tests associated with analyst identified as ELI-B were subcontracted to Energy Laboratories, 1120 S. 27th St., Billings, MT, EPA Number MT00005.

Tests associated with analyst identified as "etad" were subcontracted to Eurofins Test America, 4955 Yarrow St, Arvada, CO 80002; TEL (303) 736-0100. Please see attached data packet for details.

# Work Order Sample Summary

**CLIENT:** United Nuclear Corporation
**Project:** UNC
**Work Order:** C22010408 **Report Date:** 02/16/22

| Lab ID | Client Sample ID | Collection Date | Date Received |
|---|---|---|---|
| C22010408-001 | 614 | 1/10/2022 9:08:00 AM | 1/13/2022 |
| C22010408-002 | EPA-14 | 1/11/2022 10:47:00 AM | 1/13/2022 |
| C22010408-003 | 708 | 1/11/2022 11:33:00 AM | 1/13/2022 |
| C22010408-004 | 711 | 1/11/2022 12:33:00 PM | 1/13/2022 |
| C22010408-005 | EPA-13 | 1/11/2022 2:16:00 PM | 1/13/2022 |
| C22010408-006 | 517 | 1/11/2022 9:25:00 AM | 1/13/2022 |
| C22010408-007 | MW-7 | 1/12/2022 11:12:00 AM | 1/13/2022 |
| C22010408-008 | NW-3 | 1/12/2022 12:30:00 PM | 1/13/2022 |
| C22010408-009 | Rinsate | 1/12/2022 1:55:00 PM | 1/13/2022 |
| C22010408-010 | Field Blank | 1/12/2022 2:00:00 PM | 1/13/2022 |
| C22010408-011 | Trip Blank- 80352 | 1/10/2022 9:08:00 AM | 1/13/2022 |

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22010408 **Report Date:** 01/24/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: A2310 B** | | | | | | | | | Analytical Run: ACIDITY_220124A | |
| **Lab ID: ICV** | | Initial Calibration Verification Standard | | | | | | | 01/24/22 10:31 | |
| pH | | 6.77 | s.u. | 0.010 | 99 | 98 | 102 | | | |
| **Method: A2310 B** | | | | | | | | | Batch: ACID220124_A | |
| **Lab ID: MBLK** | | Method Blank | | | | Run: ACIDITY_220124A | | | 01/24/22 10:34 | |
| Acidity, Total as CaCO3 | | 1 | mg/L | | | | | | | |
| **Lab ID: LCS** | | Laboratory Control Sample | | | | Run: ACIDITY_220124A | | | 01/24/22 10:39 | |
| Acidity, Total as CaCO3 | | 765 | mg/L | | 97 | 90 | 110 | | | |
| **Lab ID: C22010406-004A DUP** | | Sample Duplicate | | | | Run: ACIDITY_220124A | | | 01/24/22 10:42 | |
| Acidity, Total as CaCO3 | | 3060 | mg/L | | | | | 0.7 | 10 | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22010408 **Report Date:** 01/24/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: A2320 B** | | | | | | | | | Analytical Run: MANTECH_220117A | |
| **Lab ID: ICV** | | Initial Calibration Verification Standard | | | | | | | 01/17/22 10:34 | |
| pH | | 6.86 | s.u. | 0.010 | 100 | 98 | 102 | | | |
| **Method: A2320 B** | | | | | | | | | Batch: R278810 | |
| **Lab ID: MBLK** | | Method Blank | | | | Run: MANTECH_220117A | | | 01/17/22 13:55 | |
| Alkalinity, Total as CaCO3 | | ND | mg/L | 2 | | | | | | |
| **Lab ID: LCS** | | Laboratory Control Sample | | | | Run: MANTECH_220117A | | | 01/17/22 14:04 | |
| Alkalinity, Total as CaCO3 | | 252 | mg/L | 5.0 | 101 | 90 | 110 | | | |
| **Lab ID: C22010408-005ADUP** | | Sample Duplicate | | | | Run: MANTECH_220117A | | | 01/17/22 15:21 | |
| Alkalinity, Total as CaCO3 | | 43.8 | mg/L | 5.0 | | | | 6.3 | 10 | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22010408 **Report Date:** 01/24/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: A2540 C** | | | | | | | | | Batch: TDS220114A | |
| **Lab ID: MB-1_220114A** | Method Blank | | | | | Run: BAL-111_220114A | | | 01/14/22 12:17 | |
| Solids, Total Dissolved TDS @ 180 C | | ND | mg/L | 10 | | | | | | |
| **Lab ID: LCS-2_220114A** | Laboratory Control Sample | | | | | Run: BAL-111_220114A | | | 01/14/22 12:18 | |
| Solids, Total Dissolved TDS @ 180 C | | 1010 | mg/L | 20 | 101 | 90 | 110 | | | |
| **Lab ID: C22010406-004A DUP** | Sample Duplicate | | | | | Run: BAL-111_220114A | | | 01/14/22 12:22 | |
| Solids, Total Dissolved TDS @ 180 C | | 10400 | mg/L | 100 | | | | 1.1 | 5 | |
| **Lab ID: MB-25_220114A** | Method Blank | | | | | Run: BAL-111_220114A | | | 01/14/22 14:43 | |
| Solids, Total Dissolved TDS @ 180 C | | ND | mg/L | 10 | | | | | | |
| **Lab ID: LCS-26_220114A** | Laboratory Control Sample | | | | | Run: BAL-111_220114A | | | 01/14/22 14:43 | |
| Solids, Total Dissolved TDS @ 180 C | | 1010 | mg/L | 20 | 101 | 90 | 110 | | | |
| **Lab ID: C22010408-008A DUP** | Sample Duplicate | | | | | Run: BAL-111_220114A | | | 01/14/22 14:43 | |
| Solids, Total Dissolved TDS @ 180 C | | 5020 | mg/L | 40 | | | | 0.2 | 5 | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22010408 **Report Date:** 01/24/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: A4500-H B** | | | | | | | | | Analytical Run: PHSC_101-C_220114A | |
| **Lab ID: 6.86** | 2 | Initial Calibration Verification Standard | | | | | | | 01/14/22 10:11 | |
| pH | | 6.9 | s.u. | 0.1 | 100 | 98 | 102 | | | |
| pH Measurement Temp | | 20.2 | °C | | | 0 | 0 | | | |
| **Method: A4500-H B** | | | | | | | | | | Batch: R278746 |
| **Lab ID: C22010408-006ADUP** | 2 | Sample Duplicate | | | | Run: PHSC_101-C_220114A | | | 01/14/22 11:53 | |
| pH | | 3.1 | s.u. | 0.1 | | | | 0.0 | 1.5 | |
| pH Measurement Temp | | 14.2 | °C | | | | | | | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22010408 **Report Date:** 01/24/22

| Analyte | | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Method:** | **E300.0** | | | | | | | | | Analytical Run: IC3-C_220114A | |
| **Lab ID:** | **ICV** | 2 | Initial Calibration Verification Standard | | | | | | | 01/14/22 15:05 | |
| Chloride | | | 10.1 | mg/L | 1.0 | 101 | 90 | 110 | | | |
| Sulfate | | | 39.1 | mg/L | 1.0 | 98 | 90 | 110 | | | |
| **Method:** | **E300.0** | | | | | | | | | Batch: R278772 | |
| **Lab ID:** | **ICB** | 2 | Method Blank | | | | Run: IC3-C_220114A | | | 01/14/22 15:24 | |
| Chloride | | | ND | mg/L | 0.09 | | | | | | |
| Sulfate | | | ND | mg/L | 0.2 | | | | | | |
| **Lab ID:** | **LFB** | 2 | Laboratory Fortified Blank | | | | Run: IC3-C_220114A | | | 01/14/22 15:43 | |
| Chloride | | | 9.77 | mg/L | 1.0 | 102 | 90 | 110 | | | |
| Sulfate | | | 37.9 | mg/L | 1.0 | 98 | 90 | 110 | | | |
| **Lab ID:** | **C22010408-005AMS** | 2 | Sample Matrix Spike | | | | Run: IC3-C_220114A | | | 01/15/22 01:38 | |
| Chloride | | | 246 | mg/L | 2.1 | 102 | 80 | 120 | | | |
| Sulfate | | | 6200 | mg/L | 8.3 | | 80 | 120 | | | A |
| **Lab ID:** | **C22010408-005AMSD** | 2 | Sample Matrix Spike Duplicate | | | | Run: IC3-C_220114A | | | 01/15/22 01:57 | |
| Chloride | | | 248 | mg/L | 2.1 | 103 | 80 | 120 | 1.0 | 20 | |
| Sulfate | | | 6210 | mg/L | 8.3 | | 80 | 120 | 0.1 | 20 | A |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

A - Analyte level was greater than four times the spike level - in accordance with the method, percent recovery is not calculated

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22010408 **Report Date:** 01/24/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: E350.1** | | | | | | | | | Analytical Run: FIA201-C_220114B | |
| **Lab ID: ICV** | | Initial Calibration Verification Standard | | | | | | | 01/14/22 13:54 | |
| Nitrogen, Ammonia as N | | 0.978 | mg/L | 0.050 | 98 | 90 | 110 | | | |
| **Method: E350.1** | | | | | | | | | Batch: R278753 | |
| **Lab ID: MBLK** | | Method Blank | | | | Run: FIA201-C_220114B | | | 01/14/22 13:53 | |
| Nitrogen, Ammonia as N | | ND | mg/L | 0.03 | | | | | | |
| **Lab ID: LFB** | | Laboratory Fortified Blank | | | | Run: FIA201-C_220114B | | | 01/14/22 13:55 | |
| Nitrogen, Ammonia as N | | 0.932 | mg/L | 0.050 | 94 | 90 | 110 | | | |
| **Lab ID: C22010408-001DMS** | | Sample Matrix Spike | | | | Run: FIA201-C_220114B | | | 01/14/22 14:31 | |
| Nitrogen, Ammonia as N | | 82.8 | mg/L | 2.5 | 96 | 90 | 110 | | | |
| **Lab ID: C22010408-001DMSD** | | Sample Matrix Spike Duplicate | | | | Run: FIA201-C_220114B | | | 01/14/22 14:32 | |
| Nitrogen, Ammonia as N | | 81.3 | mg/L | 2.5 | 93 | 90 | 110 | 1.8 | 10 | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22010408 **Report Date:** 01/24/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: E353.2** | | | | | | | | | Analytical Run: FIA201-C_220114C | |
| **Lab ID: ICV** | | Initial Calibration Verification Standard | | | | | | | 01/14/22 15:44 | |
| Nitrogen, Nitrate+Nitrite as N | | 1.00 | mg/L | 0.050 | 100 | 90 | 110 | | | |
| **Method: E353.2** | | | | | | | | | Batch: R278761 | |
| **Lab ID: MBLK** | | Method Blank | | | | Run: FIA201-C_220114C | | | 01/14/22 15:45 | |
| Nitrogen, Nitrate+Nitrite as N | | ND | mg/L | 0.01 | | | | | | |
| **Lab ID: LFB** | | Laboratory Fortified Blank | | | | Run: FIA201-C_220114C | | | 01/14/22 15:47 | |
| Nitrogen, Nitrate+Nitrite as N | | 0.980 | mg/L | 0.050 | 99 | 90 | 110 | | | |
| **Lab ID: C22010408-005DMS** | | Sample Matrix Spike | | | | Run: FIA201-C_220114C | | | 01/14/22 16:40 | |
| Nitrogen, Nitrate+Nitrite as N | | 0.986 | mg/L | 0.050 | 93 | 90 | 110 | | | |
| **Lab ID: C22010408-005DMSD** | | Sample Matrix Spike Duplicate | | | | Run: FIA201-C_220114C | | | 01/14/22 16:42 | |
| Nitrogen, Nitrate+Nitrite as N | | 0.973 | mg/L | 0.050 | 92 | 90 | 110 | 1.3 | 10 | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22010408 **Report Date:** 01/26/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: E200.7** | | | | | | | | | Analytical Run: ICP4-C_220114A | |
| **Lab ID: QCS** | 2 | Initial Calibration Verification Standard | | | | | | | 01/14/22 17:31 | |
| Magnesium | | 40.2 | mg/L | 0.50 | 101 | 95 | 105 | | | |
| Potassium | | 40.1 | mg/L | 0.50 | 100 | 95 | 105 | | | |
| **Method: E200.7** | | | | | | | | | Batch: R278771 | |
| **Lab ID: LRB** | 2 | Method Blank | | | | Run: ICP4-C_220114A | | | 01/14/22 16:58 | |
| Magnesium | | ND | mg/L | 0.08 | | | | | | |
| Potassium | | ND | mg/L | 0.2 | | | | | | |
| **Lab ID: LFB** | 2 | Laboratory Fortified Blank | | | | Run: ICP4-C_220114A | | | 01/14/22 17:25 | |
| Magnesium | | 56.2 | mg/L | 0.50 | 112 | 85 | 115 | | | |
| Potassium | | 56.1 | mg/L | 0.50 | 112 | 85 | 115 | | | |
| **Lab ID: C22010406-004BMS2** | 2 | Sample Matrix Spike | | | | Run: ICP4-C_220114A | | | 01/14/22 19:56 | |
| Magnesium | | 643 | mg/L | 1.0 | | 70 | 130 | | | A |
| Potassium | | 51.1 | mg/L | 1.0 | 99 | 70 | 130 | | | |
| **Lab ID: C22010406-004BMSD** | 2 | Sample Matrix Spike Duplicate | | | | Run: ICP4-C_220114A | | | 01/14/22 20:03 | |
| Magnesium | | 681 | mg/L | 1.0 | | 70 | 130 | 5.7 | 20 | A |
| Potassium | | 54.1 | mg/L | 1.0 | 105 | 70 | 130 | 5.7 | 20 | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

A - Analyte level was greater than four times the spike level - in accordance with the method, percent recovery is not calculated

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22010408 **Report Date:** 01/26/22

| Analyte | | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Method:** | **E200.7** | | | | | | | | | Analytical Run: ICP4-C_220118A | |
| **Lab ID:** | **QCS** | 4 | Initial Calibration Verification Standard | | | | | | | 01/18/22 12:35 | |
| Calcium | | | 38.9 | mg/L | 0.50 | 97 | 95 | 105 | | | |
| Magnesium | | | 39.4 | mg/L | 0.50 | 98 | 95 | 105 | | | |
| Potassium | | | 38.5 | mg/L | 0.50 | 96 | 95 | 105 | | | |
| Sodium | | | 38.6 | mg/L | 0.53 | 96 | 95 | 105 | | | |
| **Method:** | **E200.7** | | | | | | | | | Batch: R278829 | |
| **Lab ID:** | **LRB** | 4 | Method Blank | | | | Run: ICP4-C_220118A | | | 01/18/22 12:02 | |
| Calcium | | | ND | mg/L | 0.1 | | | | | | |
| Magnesium | | | ND | mg/L | 0.08 | | | | | | |
| Potassium | | | ND | mg/L | 0.2 | | | | | | |
| Sodium | | | ND | mg/L | 1 | | | | | | |
| **Lab ID:** | **LFB** | 4 | Laboratory Fortified Blank | | | | Run: ICP4-C_220118A | | | 01/18/22 12:28 | |
| Calcium | | | 53.6 | mg/L | 0.50 | 107 | 85 | 115 | | | |
| Magnesium | | | 54.1 | mg/L | 0.50 | 108 | 85 | 115 | | | |
| Potassium | | | 53.0 | mg/L | 0.50 | 106 | 85 | 115 | | | |
| Sodium | | | 53.7 | mg/L | 0.54 | 107 | 85 | 115 | | | |
| **Lab ID:** | **C22010319-001CMS2** | 4 | Sample Matrix Spike | | | | Run: ICP4-C_220118A | | | 01/18/22 13:47 | |
| Calcium | | | 56.6 | mg/L | 1.0 | 113 | 70 | 130 | | | |
| Magnesium | | | 57.6 | mg/L | 1.0 | 115 | 70 | 130 | | | |
| Potassium | | | 55.7 | mg/L | 1.0 | 111 | 70 | 130 | | | |
| Sodium | | | 58.5 | mg/L | 1.0 | 114 | 70 | 130 | | | |
| **Lab ID:** | **C22010319-001CMSD** | 4 | Sample Matrix Spike Duplicate | | | | Run: ICP4-C_220118A | | | 01/18/22 13:54 | |
| Calcium | | | 56.1 | mg/L | 1.0 | 112 | 70 | 130 | 0.9 | 20 | |
| Magnesium | | | 57.4 | mg/L | 1.0 | 115 | 70 | 130 | 0.2 | 20 | |
| Potassium | | | 55.1 | mg/L | 1.0 | 110 | 70 | 130 | 0.9 | 20 | |
| Sodium | | | 58.2 | mg/L | 1.0 | 114 | 70 | 130 | 0.5 | 20 | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22010408 **Report Date:** 01/26/22

| Analyte | | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Method:** | **E200.8** | | | | | | | | Analytical Run: ICPMS5-C_220117A | | |
| **Lab ID:** | **QCS** | 4 | Initial Calibration Verification Standard | | | | | | | 01/17/22 16:11 | |
| Calcium | | | 2.45 | mg/L | 0.64 | 98 | 90 | 110 | | | |
| Magnesium | | | 2.58 | mg/L | 0.50 | 103 | 90 | 110 | | | |
| Potassium | | | 2.46 | mg/L | 0.50 | 98 | 90 | 110 | | | |
| Sodium | | | 2.53 | mg/L | 0.50 | 101 | 90 | 110 | | | |
| **Method:** | **E200.8** | | | | | | | | | Batch: R278785 | |
| **Lab ID:** | **LRB** | 4 | Method Blank | | | | Run: ICPMS5-C_220117A | | | 01/17/22 13:19 | |
| Calcium | | | ND | mg/L | 0.3 | | | | | | |
| Magnesium | | | ND | mg/L | 0.02 | | | | | | |
| Potassium | | | ND | mg/L | 0.1 | | | | | | |
| Sodium | | | ND | mg/L | 0.3 | | | | | | |
| **Lab ID:** | **LFB** | 4 | Laboratory Fortified Blank | | | | Run: ICPMS5-C_220117A | | | 01/17/22 13:24 | |
| Calcium | | | 50.3 | mg/L | 0.66 | 101 | 85 | 115 | | | |
| Magnesium | | | 49.7 | mg/L | 0.50 | 99 | 85 | 115 | | | |
| Potassium | | | 49.6 | mg/L | 0.50 | 99 | 85 | 115 | | | |
| Sodium | | | 49.8 | mg/L | 0.50 | 100 | 85 | 115 | | | |
| **Lab ID:** | **C22010408-001BMS** | 4 | Sample Matrix Spike | | | | Run: ICPMS5-C_220117A | | | 01/17/22 19:29 | |
| Calcium | | | 781 | mg/L | 3.3 | 96 | 70 | 130 | | | |
| Magnesium | | | 813 | mg/L | 1.0 | 90 | 70 | 130 | | | |
| Potassium | | | 258 | mg/L | 1.0 | 98 | 70 | 130 | | | |
| Sodium | | | 666 | mg/L | 1.6 | 93 | 70 | 130 | | | |
| **Lab ID:** | **C22010408-001BMSD** | 4 | Sample Matrix Spike Duplicate | | | | Run: ICPMS5-C_220117A | | | 01/17/22 19:33 | |
| Calcium | | | 781 | mg/L | 3.3 | 96 | 70 | 130 | 0.1 | 20 | |
| Magnesium | | | 806 | mg/L | 1.0 | 87 | 70 | 130 | 0.9 | 20 | |
| Potassium | | | 259 | mg/L | 1.0 | 99 | 70 | 130 | 0.4 | 20 | |
| Sodium | | | 663 | mg/L | 1.6 | 92 | 70 | 130 | 0.5 | 20 | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22010408 **Report Date:** 01/26/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: E200.8** | | | | | | | | | Analytical Run: ICPMS5-C_220119A | |
| **Lab ID: QCS** | 12 | Initial Calibration Verification Standard | | | | | | | 01/19/22 12:46 | |
| Aluminum | | 0.262 | mg/L | 0.030 | 105 | 90 | 110 | | | |
| Arsenic | | 0.0534 | mg/L | 0.0010 | 107 | 90 | 110 | | | |
| Beryllium | | 0.0260 | mg/L | 0.0010 | 104 | 90 | 110 | | | |
| Cadmium | | 0.0262 | mg/L | 0.0010 | 105 | 90 | 110 | | | |
| Cobalt | | 0.0516 | mg/L | 0.0050 | 103 | 90 | 110 | | | |
| Lead | | 0.0503 | mg/L | 0.0010 | 101 | 90 | 110 | | | |
| Manganese | | 0.259 | mg/L | 0.0010 | 104 | 90 | 110 | | | |
| Molybdenum | | 0.0520 | mg/L | 0.0010 | 104 | 90 | 110 | | | |
| Nickel | | 0.0538 | mg/L | 0.0050 | 108 | 90 | 110 | | | |
| Selenium | | 0.0529 | mg/L | 0.0010 | 106 | 90 | 110 | | | |
| Uranium | | 0.0207 | mg/L | 0.00030 | 103 | 90 | 110 | | | |
| Vanadium | | 0.0509 | mg/L | 0.010 | 102 | 90 | 110 | | | |
| **Method: E200.8** | | | | | | | | | Batch: 65563 | |
| **Lab ID: MB-65563** | 12 | Method Blank | | | | Run: ICPMS5-C_220119A | | | 01/20/22 03:04 | |
| Aluminum | | ND | mg/L | 0.02 | | | | | | |
| Arsenic | | ND | mg/L | 0.0003 | | | | | | |
| Beryllium | | ND | mg/L | 0.0002 | | | | | | |
| Cadmium | | ND | mg/L | 0.00002 | | | | | | |
| Cobalt | | ND | mg/L | 0.0001 | | | | | | |
| Lead | | ND | mg/L | 0.0001 | | | | | | |
| Manganese | | 0.001 | mg/L | 0.0007 | | | | | | |
| Molybdenum | | ND | mg/L | 0.0001 | | | | | | |
| Nickel | | ND | mg/L | 0.0003 | | | | | | |
| Selenium | | ND | mg/L | 0.0001 | | | | | | |
| Uranium | | ND | mg/L | 0.0003 | | | | | | |
| Vanadium | | ND | mg/L | 0.003 | | | | | | |
| **Lab ID: LCS3-65563** | 12 | Laboratory Control Sample | | | | Run: ICPMS5-C_220119A | | | 01/20/22 03:09 | |
| Aluminum | | 2.43 | mg/L | 0.030 | 97 | 85 | 115 | | | |
| Arsenic | | 0.486 | mg/L | 0.0010 | 97 | 85 | 115 | | | |
| Beryllium | | 0.243 | mg/L | 0.0010 | 97 | 85 | 115 | | | |
| Cadmium | | 0.247 | mg/L | 0.0010 | 99 | 85 | 115 | | | |
| Cobalt | | 0.481 | mg/L | 0.0050 | 96 | 85 | 115 | | | |
| Lead | | 0.492 | mg/L | 0.0010 | 98 | 85 | 115 | | | |
| Manganese | | 2.46 | mg/L | 0.0010 | 99 | 85 | 115 | | | |
| Molybdenum | | 0.508 | mg/L | 0.0010 | 102 | 85 | 115 | | | |
| Nickel | | 0.504 | mg/L | 0.0050 | 101 | 85 | 115 | | | |
| Selenium | | 0.468 | mg/L | 0.0010 | 94 | 85 | 115 | | | |
| Uranium | | 0.500 | mg/L | 0.00030 | 100 | 85 | 115 | | | |
| Vanadium | | 0.497 | mg/L | 0.010 | 99 | 85 | 115 | | | |
| **Lab ID: C22010408-001CMS3** | 12 | Sample Matrix Spike | | | | Run: ICPMS5-C_220119A | | | 01/20/22 03:23 | |
| Aluminum | | 2.24 | mg/L | 0.091 | 90 | 70 | 130 | | | |
| Arsenic | | 0.458 | mg/L | 0.0014 | 92 | 70 | 130 | | | |
| Beryllium | | 0.218 | mg/L | 0.0010 | 87 | 70 | 130 | | | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22010408 **Report Date:** 01/26/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: E200.8** | | | | | | | | | | Batch: 65563 |
| **Lab ID: C22010408-001CMS3** | 12 | Sample Matrix Spike | | | | Run: ICPMS5-C_220119A | | | | 01/20/22 03:23 |
| Cadmium | | 0.221 | mg/L | 0.0010 | 88 | 70 | 130 | | | |
| Cobalt | | 0.444 | mg/L | 0.0050 | 88 | 70 | 130 | | | |
| Lead | | 0.442 | mg/L | 0.0010 | 88 | 70 | 130 | | | |
| Manganese | | 2.91 | mg/L | 0.0035 | 89 | 70 | 130 | | | |
| Molybdenum | | 0.495 | mg/L | 0.0034 | 98 | 70 | 130 | | | |
| Nickel | | 0.457 | mg/L | 0.0050 | 88 | 70 | 130 | | | |
| Selenium | | 0.518 | mg/L | 0.0010 | 90 | 70 | 130 | | | |
| Uranium | | 0.491 | mg/L | 0.0014 | 90 | 70 | 130 | | | |
| Vanadium | | 0.458 | mg/L | 0.012 | 92 | 70 | 130 | | | |
| **Lab ID: C22010408-001CMSD** | 12 | Sample Matrix Spike Duplicate | | | | Run: ICPMS5-C_220119A | | | | 01/20/22 03:41 |
| Aluminum | | 2.60 | mg/L | 0.091 | 104 | 70 | 130 | 15 | 20 | |
| Arsenic | | 0.524 | mg/L | 0.0014 | 105 | 70 | 130 | 13 | 20 | |
| Beryllium | | 0.241 | mg/L | 0.0010 | 97 | 70 | 130 | 10 | 20 | |
| Cadmium | | 0.249 | mg/L | 0.0010 | 100 | 70 | 130 | 12 | 20 | |
| Cobalt | | 0.497 | mg/L | 0.0050 | 99 | 70 | 130 | 11 | 20 | |
| Lead | | 0.513 | mg/L | 0.0010 | 102 | 70 | 130 | 15 | 20 | |
| Manganese | | 3.36 | mg/L | 0.0035 | 107 | 70 | 130 | 14 | 20 | |
| Molybdenum | | 0.561 | mg/L | 0.0034 | 112 | 70 | 130 | 13 | 20 | |
| Nickel | | 0.525 | mg/L | 0.0050 | 102 | 70 | 130 | 14 | 20 | |
| Selenium | | 0.590 | mg/L | 0.0010 | 104 | 70 | 130 | 13 | 20 | |
| Uranium | | 0.562 | mg/L | 0.0014 | 104 | 70 | 130 | 14 | 20 | |
| Vanadium | | 0.527 | mg/L | 0.012 | 105 | 70 | 130 | 14 | 20 | |
| **Method: E200.8** | | | | | | | | | | Analytical Run: ICPMS5-C_220120A |
| **Lab ID: QCS** | | Initial Calibration Verification Standard | | | | | | | | 01/21/22 15:36 |
| Molybdenum | | 0.0519 | mg/L | 0.0010 | 104 | 90 | 110 | | | |
| **Method: E200.8** | | | | | | | | | | Batch: 65563 |
| **Lab ID: MB-65563** | 12 | Method Blank | | | | Run: ICPMS5-C_220120A | | | | 01/21/22 20:08 |
| Aluminum | | ND | mg/L | 0.02 | | | | | | |
| Arsenic | | ND | mg/L | 0.0003 | | | | | | |
| Beryllium | | ND | mg/L | 0.0002 | | | | | | |
| Cadmium | | ND | mg/L | 0.00002 | | | | | | |
| Cobalt | | ND | mg/L | 0.0001 | | | | | | |
| Lead | | ND | mg/L | 0.0001 | | | | | | |
| Manganese | | ND | mg/L | 0.0007 | | | | | | |
| Molybdenum | | ND | mg/L | 0.0001 | | | | | | |
| Nickel | | ND | mg/L | 0.0003 | | | | | | |
| Selenium | | ND | mg/L | 0.0001 | | | | | | |
| Uranium | | ND | mg/L | 0.0003 | | | | | | |
| Vanadium | | ND | mg/L | 0.003 | | | | | | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22010408 **Report Date:** 01/26/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: E200.8** | | | | | | | | | Analytical Run: ICPMS5-C_220124A | |
| **Lab ID: QCS** | | Initial Calibration Verification Standard | | | | | | | 01/25/22 08:20 | |
| Aluminum | | 0.266 | mg/L | 0.030 | 106 | 90 | 110 | | | |
| **Method: E200.8** | | | | | | | | | Batch: 65563 | |
| **Lab ID: MB-65563** | 12 | Method Blank | | | | Run: ICPMS5-C_220124A | | | 01/25/22 12:27 | |
| Aluminum | | ND | mg/L | 0.02 | | | | | | |
| Arsenic | | ND | mg/L | 0.0003 | | | | | | |
| Beryllium | | ND | mg/L | 0.0002 | | | | | | |
| Cadmium | | ND | mg/L | 0.00002 | | | | | | |
| Cobalt | | ND | mg/L | 0.0001 | | | | | | |
| Lead | | ND | mg/L | 0.0001 | | | | | | |
| Manganese | | ND | mg/L | 0.0007 | | | | | | |
| Molybdenum | | ND | mg/L | 0.0001 | | | | | | |
| Nickel | | ND | mg/L | 0.0003 | | | | | | |
| Selenium | | ND | mg/L | 0.0001 | | | | | | |
| Uranium | | ND | mg/L | 0.0003 | | | | | | |
| Vanadium | | ND | mg/L | 0.003 | | | | | | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22010408 **Report Date:** 01/28/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: A7500-U C** | | | | | | | | | | Batch: RA-TH-ISO-3376 |
| **Lab ID: MB-RA-TH-ISO-3376** | 3 | Method Blank | | | | Run: EGG-ORTEC_ALL_220118B | | | | 01/19/22 14:02 |
| Thorium 230 | | 0.02 | pCi/L | | | | | | | U |
| Thorium 230 precision (±) | | 0.03 | pCi/L | | | | | | | |
| Thorium 230 MDC | | 0.06 | pCi/L | | | | | | | |
| **Lab ID: LCS-RA-TH-ISO-3376** | 3 | Laboratory Control Sample | | | | Run: EGG-ORTEC_ALL_220118B | | | | 01/19/22 14:02 |
| Thorium 230 | | 9.1 | pCi/L | | 95 | 70 | 130 | | | |
| Thorium 230 precision (±) | | 1.7 | pCi/L | | | | | | | |
| Thorium 230 MDC | | 0.039 | pCi/L | | | | | | | |
| **Lab ID: C22010403-001FDUP** | 3 | Sample Duplicate | | | | Run: EGG-ORTEC_ALL_220118B | | | | 01/19/22 14:01 |
| Thorium 230 | | 0.0088 | pCi/L | | | | | 540 | 30 | UR |
| Thorium 230 precision (±) | | 0.044 | pCi/L | | | | | | | |
| Thorium 230 MDC | | 0.084 | pCi/L | | | | | | | |
| - Duplicate RPD is outside of the acceptance range for this analysis. However, the RER is less than the limit of 3, the RER result is 0.25. | | | | | | | | | | |
| **Method: A7500-U C** | | | | | | | | | | Batch: RA-TH-ISO-3377R |
| **Lab ID: MB-RA-TH-ISO-3377** | 3 | Method Blank | | | | Run: EGG-ORTEC_ALL_220118D | | | | 01/20/22 14:21 |
| Thorium 230 | | 0.1 | pCi/L | | | | | | | |
| Thorium 230 precision (±) | | 0.06 | pCi/L | | | | | | | |
| Thorium 230 MDC | | 0.08 | pCi/L | | | | | | | |
| **Lab ID: LCS-RA-TH-ISO-3377** | 3 | Laboratory Control Sample | | | | Run: EGG-ORTEC_ALL_220118D | | | | 01/20/22 14:21 |
| Thorium 230 | | 10 | pCi/L | | 104 | 70 | 130 | | | |
| Thorium 230 precision (±) | | 1.9 | pCi/L | | | | | | | |
| Thorium 230 MDC | | 0.073 | pCi/L | | | | | | | |
| **Lab ID: C22010408-007EDUP** | 3 | Sample Duplicate | | | | Run: EGG-ORTEC_ALL_220118D | | | | 01/20/22 14:21 |
| Thorium 230 | | 0.17 | pCi/L | | | | | 18 | 30 | |
| Thorium 230 precision (±) | | 0.11 | pCi/L | | | | | | | |
| Thorium 230 MDC | | 0.15 | pCi/L | | | | | | | |

**Qualifiers:**

RL - Analyte Reporting Limit

R - Relative Percent Difference (RPD) exceeds advisory limit

ND - Not detected at the Reporting Limit (RL)

U - Not detected at Minimum Detectable Concentration (MDC)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22010408 **Report Date:** 01/28/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: E900.1** | | | | | | | | | | Batch: GA-1334 |
| **Lab ID: LCS-GA-1334** | 3 | Laboratory Control Sample | | | | Run: G542M-2_220118A | | | | 01/21/22 09:12 |
| Gross Alpha minus Rn & U | | 36 | pCi/L | | 106 | 70 | 130 | | | |
| Gross Alpha minus Rn & U Precision (±) | | 7.2 | pCi/L | | | | | | | |
| Gross Alpha minus Rn & U MDC | | 1.0 | pCi/L | | | | | | | |
| **Lab ID: MB-GA-1334** | 3 | Method Blank | | | | Run: G542M-2_220118A | | | | 01/21/22 09:12 |
| Gross Alpha minus Rn & U | | 0.1 | pCi/L | | | | | | | U |
| Gross Alpha minus Rn & U Precision (±) | | 0.6 | pCi/L | | | | | | | |
| Gross Alpha minus Rn & U MDC | | 1 | pCi/L | | | | | | | |
| **Lab ID: C22010406-001EDUP** | 3 | Sample Duplicate | | | | Run: G542M-2_220118A | | | | 01/21/22 09:12 |
| Gross Alpha minus Rn & U | | 4.1 | pCi/L | | | | | 2.4 | 30 | |
| Gross Alpha minus Rn & U Precision (±) | | 1.2 | pCi/L | | | | | | | |
| Gross Alpha minus Rn & U MDC | | 1.0 | pCi/L | | | | | | | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

U - Not detected at Minimum Detectable Concentration (MDC)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22010408 **Report Date:** 01/28/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: E903.0** | | | | | | | | | Batch: RA226-10335 | |
| **Lab ID: LCS-RA226-10335** | 3 | Laboratory Control Sample | | | | Run: G542M-2_220114A | | | 01/26/22 11:30 | |
| Radium 226 | | 10 | pCi/L | | 99 | 70 | 130 | | | |
| Radium 226 precision (±) | | 2.0 | pCi/L | | | | | | | |
| Radium 226 MDC | | 0.21 | pCi/L | | | | | | | |
| **Lab ID: MB-RA226-10335** | 3 | Method Blank | | | | Run: G542M-2_220114A | | | 01/26/22 11:30 | |
| Radium 226 | | 0.1 | pCi/L | | | | | | | U |
| Radium 226 precision (±) | | 0.1 | pCi/L | | | | | | | |
| Radium 226 MDC | | 0.2 | pCi/L | | | | | | | |
| **Lab ID: C22010403-001FDUP** | 3 | Sample Duplicate | | | | Run: G542M-2_220114A | | | 01/26/22 11:30 | |
| Radium 226 | | 1.6 | pCi/L | | | | | 4.8 | 30 | |
| Radium 226 precision (±) | | 0.37 | pCi/L | | | | | | | |
| Radium 226 MDC | | 0.21 | pCi/L | | | | | | | |
| **Lab ID: C22010426-001ADUP** | 3 | Sample Duplicate | | | | Run: G542M-2_220114A | | | 01/26/22 13:40 | |
| Radium 226 | | 2.9 | pCi/L | | | | | 5.4 | 30 | |
| Radium 226 precision (±) | | 0.58 | pCi/L | | | | | | | |
| Radium 226 MDC | | 0.11 | pCi/L | | | | | | | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

U - Not detected at Minimum Detectable Concentration (MDC)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22010408 **Report Date:** 01/28/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: E909.0** | | | | | | | | | Batch: PB-210-1364 | |
| **Lab ID: LCS-PB-210-1364** | 3 | Laboratory Control Sample | | | | Run: PACKARD 3100TR_220114A | | | 01/19/22 14:50 | |
| Lead 210 | | 14 | pCi/L | | 83 | 70 | 130 | | | |
| Lead 210 precision (±) | | 4.3 | pCi/L | | | | | | | |
| Lead 210 MDC | | 1.4 | pCi/L | | | | | | | |
| **Lab ID: MB-PB-210-1364** | 3 | Method Blank | | | | Run: PACKARD 3100TR_220114A | | | 01/19/22 15:57 | |
| Lead 210 | | 0.6 | pCi/L | | | | | | | U |
| Lead 210 precision (±) | | 0.6 | pCi/L | | | | | | | |
| Lead 210 MDC | | 0.9 | pCi/L | | | | | | | |
| **Lab ID: C22010403-005GDUP** | 3 | Sample Duplicate | | | | Run: PACKARD 3100TR_220114A | | | 01/20/22 16:02 | |
| Lead 210 | | 0.90 | pCi/L | | | | | 4.0 | 30 | U |
| Lead 210 precision (±) | | 0.56 | pCi/L | | | | | | | |
| Lead 210 MDC | | 0.92 | pCi/L | | | | | | | |
| **Method: E909.0** | | | | | | | | | Batch: PB-210-1365 | |
| **Lab ID: LCS-PB-210-1365** | 3 | Laboratory Control Sample | | | | Run: TRICARB LSC_220118A | | | 01/21/22 23:33 | |
| Lead 210 | | 15 | pCi/L | | 86 | 70 | 130 | | | |
| Lead 210 precision (±) | | 4.5 | pCi/L | | | | | | | |
| Lead 210 MDC | | 1.3 | pCi/L | | | | | | | |
| **Lab ID: MB-PB-210-1365** | 3 | Method Blank | | | | Run: TRICARB LSC_220118A | | | 01/22/22 00:37 | |
| Lead 210 | | -0.1 | pCi/L | | | | | | | U |
| Lead 210 precision (±) | | 0.5 | pCi/L | | | | | | | |
| Lead 210 MDC | | 0.8 | pCi/L | | | | | | | |
| **Lab ID: C22010438-001FDUP** | 3 | Sample Duplicate | | | | Run: TRICARB LSC_220118A | | | 01/24/22 22:11 | |
| Lead 210 | | 0.45 | pCi/L | | | | | 53 | 30 | UR |
| Lead 210 precision (±) | | 0.51 | pCi/L | | | | | | | |
| Lead 210 MDC | | 0.84 | pCi/L | | | | | | | |

- Duplicate RPD is outside of the acceptance range for this analysis. However, the RER is less than the limit of 3, the RER result is 0.44.

**Qualifiers:**

RL - Analyte Reporting Limit

R - Relative Percent Difference (RPD) exceeds advisory limit

ND - Not detected at the Reporting Limit (RL)

U - Not detected at Minimum Detectable Concentration (MDC)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22010408 **Report Date:** 01/28/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: RA-05** | | | | | | | | | | Batch: RA228-6702 |
| **Lab ID: LCS-228-RA226-10335** | 3 | Laboratory Control Sample | | | | Run: G5000W_220114A | | | | 01/20/22 12:15 |
| Radium 228 | | 7.4 | pCi/L | | 98 | 70 | 130 | | | |
| Radium 228 precision (±) | | 1.6 | pCi/L | | | | | | | |
| Radium 228 MDC | | 1.3 | pCi/L | | | | | | | |
| **Lab ID: MB-RA226-10335** | 3 | Method Blank | | | | Run: G5000W_220114A | | | | 01/20/22 12:15 |
| Radium 228 | | 0.6 | pCi/L | | | | | | | U |
| Radium 228 precision (±) | | 0.8 | pCi/L | | | | | | | |
| Radium 228 MDC | | 1 | pCi/L | | | | | | | |
| **Lab ID: C22010403-001FDUP** | 3 | Sample Duplicate | | | | Run: G5000W_220114A | | | | 01/20/22 12:15 |
| Radium 228 | | 5.1 | pCi/L | | | | | 14 | 30 | |
| Radium 228 precision (±) | | 1.3 | pCi/L | | | | | | | |
| Radium 228 MDC | | 1.3 | pCi/L | | | | | | | |
| **Lab ID: C22010426-001ADUP** | 3 | Sample Duplicate | | | | Run: G5000W_220114A | | | | 01/20/22 12:15 |
| Radium 228 | | 2.5 | pCi/L | | | | | 2.8 | 30 | |
| Radium 228 precision (±) | | 0.64 | pCi/L | | | | | | | |
| Radium 228 MDC | | 0.70 | pCi/L | | | | | | | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

U - Not detected at Minimum Detectable Concentration (MDC)

# QA/QC Summary Report

Prepared by Billings, MT Branch

**Client:** United Nuclear Corporation **Work Order:** C22010408 **Report Date:** 01/27/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: E624.1** | | | | | | | | | | Analytical Run: R373593 |
| **Lab ID: CCV012122** | 7 | Continuing Calibration Verification Standard | | | | | | | | 01/21/22 11:00 |
| Bromodichloromethane | | 5.11 | ug/L | 0.50 | 102 | 70 | 130 | | | |
| Bromoform | | 4.93 | ug/L | 0.50 | 99 | 70 | 130 | | | |
| Chlorodibromomethane | | 5.03 | ug/L | 0.50 | 101 | 70 | 130 | | | |
| Chloroform | | 5.04 | ug/L | 0.50 | 101 | 70 | 130 | | | |
| Surr: 1,2-Dichloroethane-d4 | | | | 0.50 | 100 | 71 | 139 | | | |
| Surr: p-Bromofluorobenzene | | | | 0.50 | 103 | 80 | 127 | | | |
| Surr: Toluene-d8 | | | | 0.50 | 102 | 80 | 123 | | | |
| **Method: E624.1** | | | | | | | | | | Batch: R373593 |
| **Lab ID: LCS012122** | 7 | Laboratory Control Sample | | | | Run: 5971A.I_220121A | | | | 01/21/22 12:07 |
| Bromodichloromethane | | 5.78 | ug/L | 0.50 | 116 | 74 | 128 | | | |
| Bromoform | | 5.34 | ug/L | 0.50 | 107 | 70 | 130 | | | |
| Chlorodibromomethane | | 5.21 | ug/L | 0.50 | 104 | 74 | 125 | | | |
| Chloroform | | 5.31 | ug/L | 0.50 | 106 | 70 | 135 | | | |
| Surr: 1,2-Dichloroethane-d4 | | | | 0.50 | 109 | 71 | 139 | | | |
| Surr: p-Bromofluorobenzene | | | | 0.50 | 104 | 80 | 127 | | | |
| Surr: Toluene-d8 | | | | 0.50 | 102 | 80 | 123 | | | |
| **Lab ID: MBLK012122** | 7 | Method Blank | | | | Run: 5971A.I_220121A | | | | 01/21/22 14:23 |
| Bromodichloromethane | | ND | ug/L | 0.50 | | | | | | |
| Bromoform | | ND | ug/L | 0.50 | | | | | | |
| Chlorodibromomethane | | ND | ug/L | 0.50 | | | | | | |
| Chloroform | | ND | ug/L | 0.50 | | | | | | |
| Surr: 1,2-Dichloroethane-d4 | | | | 0.50 | 100 | 71 | 139 | | | |
| Surr: p-Bromofluorobenzene | | | | 0.50 | 100 | 80 | 127 | | | |
| Surr: Toluene-d8 | | | | 0.50 | 102 | 80 | 123 | | | |
| **Lab ID: B22011355-001AMS** | 7 | Sample Matrix Spike | | | | Run: 5971A.I_220121A | | | | 01/21/22 18:11 |
| Bromodichloromethane | | 4.98 | ug/L | 0.50 | 100 | 74 | 128 | | | |
| Bromoform | | 5.15 | ug/L | 0.50 | 103 | 66 | 128 | | | |
| Chlorodibromomethane | | 4.93 | ug/L | 0.50 | 99 | 74 | 125 | | | |
| Chloroform | | 7.25 | ug/L | 0.50 | 92 | 68 | 124 | | | |
| Surr: 1,2-Dichloroethane-d4 | | | | 0.50 | 109 | 71 | 139 | | | |
| Surr: p-Bromofluorobenzene | | | | 0.50 | 105 | 80 | 127 | | | |
| Surr: Toluene-d8 | | | | 0.50 | 101 | 80 | 123 | | | |
| **Lab ID: B22011355-001AMSD** | 7 | Sample Matrix Spike Duplicate | | | | Run: 5971A.I_220121A | | | | 01/21/22 18:38 |
| Bromodichloromethane | | 5.55 | ug/L | 0.50 | 111 | 74 | 128 | 11 | 20 | |
| Bromoform | | 5.38 | ug/L | 0.50 | 108 | 66 | 128 | 4.3 | 20 | |
| Chlorodibromomethane | | 5.14 | ug/L | 0.50 | 103 | 74 | 125 | 4.3 | 20 | |
| Chloroform | | 7.78 | ug/L | 0.50 | 102 | 68 | 124 | 7.1 | 20 | |
| Surr: 1,2-Dichloroethane-d4 | | | | 0.50 | 115 | 71 | 139 | | | |
| Surr: p-Bromofluorobenzene | | | | 0.50 | 108 | 80 | 127 | | | |
| Surr: Toluene-d8 | | | | 0.50 | 104 | 80 | 123 | | | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

eurofins | Environment Testing America

# ANALYTICAL REPORT

Eurofins Denver
4955 Yarrow Street
Arvada, CO 80002
Tel: (303)736-0100

Laboratory Job ID: 280-157827-1
Client Project/Site: 11(e) Byproduct Material

For:
Energy Laboratories, Inc.
400 W Boxelder Rd
Gillette, Wyoming 82718

Attn: Casper Reporting

*Authorized for release by:*
*1/31/2022 12:10:47 PM*

Dylan Bieniulis, Project Manager I
(303)736-0138
Dylan.Bieniulis@Eurofinset.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at:
www.eurofinsus.com/Env

*The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.*

*This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.*

*Results relate only to the items tested and the sample(s) as received by the laboratory.*

# Table of Contents

Cover Page . . . . . 1
Table of Contents . . . . . 2
Definitions . . . . . 3
Case Narrative . . . . . 4
Detection Summary . . . . . 5
Method Summary . . . . . 6
Sample Summary . . . . . 7
Client Sample Results . . . . . 8
Surrogate Summary . . . . . 11
QC Sample Results . . . . . 12
QC Association . . . . . 14
Chronicle . . . . . 15
Certification Summary . . . . . 17
Chain of Custody . . . . . 18
Receipt Checklists . . . . . 20

# Definitions/Glossary

Client: Energy Laboratories, Inc.
Project/Site: 11(e) Byproduct Material

Job ID: 280-157827-1

## Qualifiers

### GC/MS VOA

| Qualifier | Qualifier Description |
|---|---|
| H | Sample was prepped or analyzed beyond the specified holding time |
| H3 | Sample was received and analyzed past holding time. |
| J | Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value. |

## Glossary

| Abbreviation | These commonly used abbreviations may or may not be present in this report. |
|---|---|
| ¤ | Listed under the "D" column to designate that the result is reported on a dry weight basis |
| %R | Percent Recovery |
| CFL | Contains Free Liquid |
| CFU | Colony Forming Unit |
| CNF | Contains No Free Liquid |
| DER | Duplicate Error Ratio (normalized absolute difference) |
| Dil Fac | Dilution Factor |
| DL | Detection Limit (DoD/DOE) |
| DL, RA, RE, IN | Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample |
| DLC | Decision Level Concentration (Radiochemistry) |
| EDL | Estimated Detection Limit (Dioxin) |
| LOD | Limit of Detection (DoD/DOE) |
| LOQ | Limit of Quantitation (DoD/DOE) |
| MCL | EPA recommended "Maximum Contaminant Level" |
| MDA | Minimum Detectable Activity (Radiochemistry) |
| MDC | Minimum Detectable Concentration (Radiochemistry) |
| MDL | Method Detection Limit |
| ML | Minimum Level (Dioxin) |
| MPN | Most Probable Number |
| MQL | Method Quantitation Limit |
| NC | Not Calculated |
| ND | Not Detected at the reporting limit (or MDL or EDL if shown) |
| NEG | Negative / Absent |
| POS | Positive / Present |
| PQL | Practical Quantitation Limit |
| PRES | Presumptive |
| QC | Quality Control |
| RER | Relative Error Ratio (Radiochemistry) |
| RL | Reporting Limit or Requested Limit (Radiochemistry) |
| RPD | Relative Percent Difference, a measure of the relative difference between two points |
| TEF | Toxicity Equivalent Factor (Dioxin) |
| TEQ | Toxicity Equivalent Quotient (Dioxin) |
| TNTC | Too Numerous To Count |

## Job ID: 280-157827-1

**Laboratory: Eurofins Denver**

**Narrative**

# CASE NARRATIVE

## Client: Energy Laboratories, Inc.

## Project: 11(e) Byproduct Material

## Report Number: 280-157827-1

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

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

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

**RECEIPT**

The samples were received on 01/18/2022; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was 3.4 C.

Two of three HCl preserved VOA vials for sample C22010408-001F (280-157827-1) were received with a headspace bubble greater than 6mm in diameter. The client was notified on 1/19/2022.

Sample volume received for the requested VOCs analysis on sample C22010408-011A (280-157827-8) was unpreserved while the field samples received and associated with this trip blank sample were HCl preserved. The trip blank was received outside of the 7 day hold time for VOCs analysis of unpreserved sample volume. The laboratory will proceed with the requested analysis outside of hold time unless instructed otherwise. The client was notified on 1/19/2022.

**VOLATILE ORGANIC COMPOUNDS BY GC/MS**

Samples C22010408-001F (280-157827-1), C22010408-002F (280-157827-2), C22010408-003F (280-157827-3), C22010408-004F (280-157827-4), C22010408-005F (280-157827-5), C22010408-006F (280-157827-6), C22010408-007F (280-157827-7) and C22010408-011A (280-157827-8) were analyzed for Volatile Organic Compounds by GC/MS in accordance with 624.1 40CFR136A. The samples were analyzed on 01/19/2022 and 01/20/2022.

The following samples was received and analyzed outside of holding time: C22010408-011A (280-157827-8).

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

# Detection Summary

Client: Energy Laboratories, Inc.
Project/Site: 11(e) Byproduct Material

Job ID: 280-157827-1

## Client Sample ID: C22010408-001F — Lab Sample ID: 280-157827-1

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| Chloroform | 34 | | 1.0 | 0.22 | ug/L | 1 | | 624.1 | Total/NA |
| Trihalomethanes, Total | 34 | | 1.0 | 0.15 | ug/L | 1 | | 624.1 | Total/NA |

## Client Sample ID: C22010408-002F — Lab Sample ID: 280-157827-2

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| Chloroform | 0.33 | J | 1.0 | 0.22 | ug/L | 1 | | 624.1 | Total/NA |
| Trihalomethanes, Total | 0.33 | J | 1.0 | 0.15 | ug/L | 1 | | 624.1 | Total/NA |

## Client Sample ID: C22010408-003F — Lab Sample ID: 280-157827-3

No Detections.

## Client Sample ID: C22010408-004F — Lab Sample ID: 280-157827-4

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| Chloroform | 0.22 | J | 1.0 | 0.22 | ug/L | 1 | | 624.1 | Total/NA |
| Trihalomethanes, Total | 0.22 | J | 1.0 | 0.15 | ug/L | 1 | | 624.1 | Total/NA |

## Client Sample ID: C22010408-005F — Lab Sample ID: 280-157827-5

No Detections.

## Client Sample ID: C22010408-006F — Lab Sample ID: 280-157827-6

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| Chloroform | 4.9 | | 1.0 | 0.22 | ug/L | 1 | | 624.1 | Total/NA |
| Trihalomethanes, Total | 4.9 | | 1.0 | 0.15 | ug/L | 1 | | 624.1 | Total/NA |

## Client Sample ID: C22010408-007F — Lab Sample ID: 280-157827-7

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| Chloroform | 1.1 | | 1.0 | 0.22 | ug/L | 1 | | 624.1 | Total/NA |
| Trihalomethanes, Total | 1.1 | | 1.0 | 0.15 | ug/L | 1 | | 624.1 | Total/NA |

## Client Sample ID: C22010408-011A — Lab Sample ID: 280-157827-8

No Detections.

This Detection Summary does not include radiochemical test results.

# Method Summary

Client: Energy Laboratories, Inc.
Project/Site: 11(e) Byproduct Material

Job ID: 280-157827-1

| Method | Method Description | Protocol | Laboratory |
|---|---|---|---|
| 624.1 | Volatile Organic Compounds (GC/MS) | 40CFR136A | TAL DEN |

**Protocol References:**

40CFR136A = "Methods for Organic Chemical Analysis of Municipal Industrial Wastewater", 40CFR, Part 136, Appendix A, October 26, 1984 and subsequent revisions.

**Laboratory References:**

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

# Sample Summary

Client: Energy Laboratories, Inc.
Project/Site: 11(e) Byproduct Material

Job ID: 280-157827-1

| Lab Sample ID | Client Sample ID | Matrix | Collected | Received |
|---|---|---|---|---|
| 280-157827-1 | C22010408-001F | Water | 01/10/22 09:08 | 01/18/22 13:20 |
| 280-157827-2 | C22010408-002F | Water | 01/11/22 10:47 | 01/18/22 13:20 |
| 280-157827-3 | C22010408-003F | Water | 01/11/22 11:33 | 01/18/22 13:20 |
| 280-157827-4 | C22010408-004F | Water | 01/11/22 12:33 | 01/18/22 13:20 |
| 280-157827-5 | C22010408-005F | Water | 01/11/22 14:16 | 01/18/22 13:20 |
| 280-157827-6 | C22010408-006F | Water | 01/11/22 09:25 | 01/18/22 13:20 |
| 280-157827-7 | C22010408-007F | Water | 01/12/22 11:12 | 01/18/22 13:20 |
| 280-157827-8 | C22010408-011A | Water | 01/10/22 09:08 | 01/18/22 13:20 |

# Client Sample Results

Client: Energy Laboratories, Inc.
Project/Site: 11(e) Byproduct Material

Job ID: 280-157827-1

## Method: 624.1 - Volatile Organic Compounds (GC/MS)

**Client Sample ID: C22010408-001F** — **Lab Sample ID: 280-157827-1**
**Date Collected: 01/10/22 09:08** — **Matrix: Water**
**Date Received: 01/18/22 13:20**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | ND | | 1.0 | 0.15 | ug/L | | | 01/19/22 13:11 | 1 |
| Bromoform | ND | | 2.0 | 0.67 | ug/L | | | 01/19/22 13:11 | 1 |
| Chlorodibromomethane | ND | | 1.0 | 0.21 | ug/L | | | 01/19/22 13:11 | 1 |
| **Chloroform** | **34** | | 1.0 | 0.22 | ug/L | | | 01/19/22 13:11 | 1 |
| **Trihalomethanes, Total** | **34** | | 1.0 | 0.15 | ug/L | | | 01/19/22 13:11 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1,2-Dichloroethane-d4 (Surr)* | *99* | | *73 - 122* | | *01/19/22 13:11* | *1* |
| *4-Bromofluorobenzene (Surr)* | *102* | | *79 - 119* | | *01/19/22 13:11* | *1* |
| *Toluene-d8 (Surr)* | *99* | | *80 - 120* | | *01/19/22 13:11* | *1* |

**Client Sample ID: C22010408-002F** — **Lab Sample ID: 280-157827-2**
**Date Collected: 01/11/22 10:47** — **Matrix: Water**
**Date Received: 01/18/22 13:20**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | ND | | 1.0 | 0.15 | ug/L | | | 01/19/22 13:33 | 1 |
| Bromoform | ND | | 2.0 | 0.67 | ug/L | | | 01/19/22 13:33 | 1 |
| Chlorodibromomethane | ND | | 1.0 | 0.21 | ug/L | | | 01/19/22 13:33 | 1 |
| **Chloroform** | **0.33** | **J** | 1.0 | 0.22 | ug/L | | | 01/19/22 13:33 | 1 |
| **Trihalomethanes, Total** | **0.33** | **J** | 1.0 | 0.15 | ug/L | | | 01/19/22 13:33 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1,2-Dichloroethane-d4 (Surr)* | *100* | | *73 - 122* | | *01/19/22 13:33* | *1* |
| *4-Bromofluorobenzene (Surr)* | *101* | | *79 - 119* | | *01/19/22 13:33* | *1* |
| *Toluene-d8 (Surr)* | *99* | | *80 - 120* | | *01/19/22 13:33* | *1* |

**Client Sample ID: C22010408-003F** — **Lab Sample ID: 280-157827-3**
**Date Collected: 01/11/22 11:33** — **Matrix: Water**
**Date Received: 01/18/22 13:20**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | ND | | 1.0 | 0.15 | ug/L | | | 01/19/22 13:54 | 1 |
| Bromoform | ND | | 2.0 | 0.67 | ug/L | | | 01/19/22 13:54 | 1 |
| Chlorodibromomethane | ND | | 1.0 | 0.21 | ug/L | | | 01/19/22 13:54 | 1 |
| Chloroform | ND | | 1.0 | 0.22 | ug/L | | | 01/19/22 13:54 | 1 |
| Trihalomethanes, Total | ND | | 1.0 | 0.15 | ug/L | | | 01/19/22 13:54 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1,2-Dichloroethane-d4 (Surr)* | *102* | | *73 - 122* | | *01/19/22 13:54* | *1* |
| *4-Bromofluorobenzene (Surr)* | *101* | | *79 - 119* | | *01/19/22 13:54* | *1* |
| *Toluene-d8 (Surr)* | *98* | | *80 - 120* | | *01/19/22 13:54* | *1* |

**Client Sample ID: C22010408-004F** — **Lab Sample ID: 280-157827-4**
**Date Collected: 01/11/22 12:33** — **Matrix: Water**
**Date Received: 01/18/22 13:20**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | ND | | 1.0 | 0.15 | ug/L | | | 01/19/22 14:16 | 1 |
| Bromoform | ND | | 2.0 | 0.67 | ug/L | | | 01/19/22 14:16 | 1 |
| Chlorodibromomethane | ND | | 1.0 | 0.21 | ug/L | | | 01/19/22 14:16 | 1 |
| **Chloroform** | **0.22** | **J** | 1.0 | 0.22 | ug/L | | | 01/19/22 14:16 | |
| **Trihalomethanes, Total** | **0.22** | **J** | 1.0 | 0.15 | ug/L | | | 01/19/22 14:16 | 1 |

## Method: 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

| Surrogate | %Recovery | Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|
| 1,2-Dichloroethane-d4 (Surr) | 100 | | 73 - 122 | | 01/19/22 14:16 | 1 |
| 4-Bromofluorobenzene (Surr) | 100 | | 79 - 119 | | 01/19/22 14:16 | 1 |
| Toluene-d8 (Surr) | 100 | | 80 - 120 | | 01/19/22 14:16 | 1 |

**Client Sample ID: C22010408-005F** **Lab Sample ID: 280-157827-5**
**Date Collected: 01/11/22 14:16** **Matrix: Water**
**Date Received: 01/18/22 13:20**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | ND | | 1.0 | 0.15 | ug/L | | | 01/19/22 14:37 | 1 |
| Bromoform | ND | | 2.0 | 0.67 | ug/L | | | 01/19/22 14:37 | 1 |
| Chlorodibromomethane | ND | | 1.0 | 0.21 | ug/L | | | 01/19/22 14:37 | 1 |
| Chloroform | ND | | 1.0 | 0.22 | ug/L | | | 01/19/22 14:37 | 1 |
| Trihalomethanes, Total | ND | | 1.0 | 0.15 | ug/L | | | 01/19/22 14:37 | 1 |

| Surrogate | %Recovery | Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|
| 1,2-Dichloroethane-d4 (Surr) | 102 | | 73 - 122 | | 01/19/22 14:37 | 1 |
| 4-Bromofluorobenzene (Surr) | 102 | | 79 - 119 | | 01/19/22 14:37 | 1 |
| Toluene-d8 (Surr) | 97 | | 80 - 120 | | 01/19/22 14:37 | 1 |

**Client Sample ID: C22010408-006F** **Lab Sample ID: 280-157827-6**
**Date Collected: 01/11/22 09:25** **Matrix: Water**
**Date Received: 01/18/22 13:20**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | ND | | 1.0 | 0.15 | ug/L | | | 01/19/22 14:58 | 1 |
| Bromoform | ND | | 2.0 | 0.67 | ug/L | | | 01/19/22 14:58 | 1 |
| Chlorodibromomethane | ND | | 1.0 | 0.21 | ug/L | | | 01/19/22 14:58 | 1 |
| **Chloroform** | **4.9** | | 1.0 | 0.22 | ug/L | | | 01/19/22 14:58 | 1 |
| **Trihalomethanes, Total** | **4.9** | | 1.0 | 0.15 | ug/L | | | 01/19/22 14:58 | 1 |

| Surrogate | %Recovery | Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|
| 1,2-Dichloroethane-d4 (Surr) | 102 | | 73 - 122 | | 01/19/22 14:58 | 1 |
| 4-Bromofluorobenzene (Surr) | 99 | | 79 - 119 | | 01/19/22 14:58 | 1 |
| Toluene-d8 (Surr) | 98 | | 80 - 120 | | 01/19/22 14:58 | 1 |

**Client Sample ID: C22010408-007F** **Lab Sample ID: 280-157827-7**
**Date Collected: 01/12/22 11:12** **Matrix: Water**
**Date Received: 01/18/22 13:20**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | ND | | 1.0 | 0.15 | ug/L | | | 01/20/22 17:40 | 1 |
| Bromoform | ND | | 2.0 | 0.67 | ug/L | | | 01/20/22 17:40 | 1 |
| Chlorodibromomethane | ND | | 1.0 | 0.21 | ug/L | | | 01/20/22 17:40 | 1 |
| **Chloroform** | **1.1** | | 1.0 | 0.22 | ug/L | | | 01/20/22 17:40 | 1 |
| **Trihalomethanes, Total** | **1.1** | | 1.0 | 0.15 | ug/L | | | 01/20/22 17:40 | 1 |

| Surrogate | %Recovery | Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|
| 1,2-Dichloroethane-d4 (Surr) | 102 | | 73 - 122 | | 01/20/22 17:40 | 1 |
| 4-Bromofluorobenzene (Surr) | 100 | | 79 - 119 | | 01/20/22 17:40 | 1 |
| Toluene-d8 (Surr) | 99 | | 80 - 120 | | 01/20/22 17:40 | 1 |

**Client Sample ID: C22010408-011A** **Lab Sample ID: 280-157827-8**
**Date Collected: 01/10/22 09:08** **Matrix: Water**
**Date Received: 01/18/22 13:20**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | ND | H H3 | 1.0 | 0.15 | ug/L | | | 01/20/22 19:50 | 1 |

## Method: 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

**Client Sample ID: C22010408-011A**
**Date Collected: 01/10/22 09:08**
**Date Received: 01/18/22 13:20**

**Lab Sample ID: 280-157827-8**
**Matrix: Water**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Bromoform | ND | H H3 | 2.0 | 0.67 | ug/L | | | 01/20/22 19:50 | 1 |
| Chlorodibromomethane | ND | H H3 | 1.0 | 0.21 | ug/L | | | 01/20/22 19:50 | 1 |
| Chloroform | ND | H H3 | 1.0 | 0.22 | ug/L | | | 01/20/22 19:50 | 1 |
| Trihalomethanes, Total | ND | H H3 | 1.0 | 0.15 | ug/L | | | 01/20/22 19:50 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1,2-Dichloroethane-d4 (Surr)* | *99* | | *73 - 122* | | *01/20/22 19:50* | *1* |
| *Toluene-d8 (Surr)* | *98* | | *80 - 120* | | *01/20/22 19:50* | *1* |
| *4-Bromofluorobenzene (Surr)* | *99* | | *79 - 119* | | *01/20/22 19:50* | *1* |

# Surrogate Summary

Client: Energy Laboratories, Inc.
Project/Site: 11(e) Byproduct Material

Job ID: 280-157827-1

## Method: 624.1 - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

| | | Percent Surrogate Recovery (Acceptance Limits) | | |
|---|---|---|---|---|
| | | DCA | BFB | TOL |
| Lab Sample ID | Client Sample ID | (73-122) | (79-119) | (80-120) |
| 280-157827-1 | C22010408-001F | 99 | 102 | 99 |
| 280-157827-2 | C22010408-002F | 100 | 101 | 99 |
| 280-157827-3 | C22010408-003F | 102 | 101 | 98 |
| 280-157827-4 | C22010408-004F | 100 | 100 | 100 |
| 280-157827-5 | C22010408-005F | 102 | 102 | 97 |
| 280-157827-6 | C22010408-006F | 102 | 99 | 98 |
| 280-157827-7 | C22010408-007F | 102 | 100 | 99 |
| 280-157827-8 | C22010408-011A | 99 | 99 | 98 |
| LCS 280-563750/4 | Lab Control Sample | 97 | 100 | 97 |
| LCS 280-563877/4 | Lab Control Sample | 98 | 101 | 97 |
| LCSD 280-563750/5 | Lab Control Sample Dup | 98 | 100 | 99 |
| LCSD 280-563877/5 | Lab Control Sample Dup | 100 | 101 | 98 |
| MB 280-563750/9 | Method Blank | 101 | 100 | 99 |
| MB 280-563877/9 | Method Blank | 102 | 101 | 100 |

**Surrogate Legend**

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
TOL = Toluene-d8 (Surr)

# QC Sample Results

Client: Energy Laboratories, Inc.
Project/Site: 11(e) Byproduct Material

Job ID: 280-157827-1

## Method: 624.1 - Volatile Organic Compounds (GC/MS)

**Lab Sample ID: MB 280-563750/9**
**Matrix: Water**
**Analysis Batch: 563750**

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

| Analyte | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | ND | | 1.0 | 0.15 | ug/L | | | 01/19/22 12:44 | 1 |
| Bromoform | ND | | 2.0 | 0.67 | ug/L | | | 01/19/22 12:44 | 1 |
| Chlorodibromomethane | ND | | 1.0 | 0.21 | ug/L | | | 01/19/22 12:44 | 1 |
| Chloroform | ND | | 1.0 | 0.22 | ug/L | | | 01/19/22 12:44 | 1 |
| Trihalomethanes, Total | ND | | 1.0 | 0.15 | ug/L | | | 01/19/22 12:44 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1,2-Dichloroethane-d4 (Surr)* | *101* | | *73 - 122* | | *01/19/22 12:44* | *1* |
| *Toluene-d8 (Surr)* | *99* | | *80 - 120* | | *01/19/22 12:44* | *1* |
| *4-Bromofluorobenzene (Surr)* | *100* | | *79 - 119* | | *01/19/22 12:44* | *1* |

**Lab Sample ID: LCS 280-563750/4**
**Matrix: Water**
**Analysis Batch: 563750**

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

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|
| Bromodichloromethane | 25.0 | 24.5 | | ug/L | | 98 | 65 - 135 |
| Bromoform | 25.0 | 18.4 | | ug/L | | 74 | 70 - 130 |
| Chlorodibromomethane | 25.0 | 20.4 | | ug/L | | 81 | 70 - 135 |
| Chloroform | 25.0 | 24.0 | | ug/L | | 96 | 70 - 135 |

| *Surrogate* | *LCS %Recovery* | *LCS Qualifier* | *Limits* |
|---|---|---|---|
| *1,2-Dichloroethane-d4 (Surr)* | *97* | | *73 - 122* |
| *Toluene-d8 (Surr)* | *97* | | *80 - 120* |
| *4-Bromofluorobenzene (Surr)* | *100* | | *79 - 119* |

**Lab Sample ID: LCSD 280-563750/5**
**Matrix: Water**
**Analysis Batch: 563750**

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

| Analyte | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | 25.0 | 24.7 | | ug/L | | 99 | 65 - 135 | 1 | 30 |
| Bromoform | 25.0 | 19.7 | | ug/L | | 79 | 70 - 130 | 7 | 30 |
| Chlorodibromomethane | 25.0 | 21.6 | | ug/L | | 86 | 70 - 135 | 6 | 30 |
| Chloroform | 25.0 | 24.0 | | ug/L | | 96 | 70 - 135 | 0 | 30 |

| *Surrogate* | *LCSD %Recovery* | *LCSD Qualifier* | *Limits* |
|---|---|---|---|
| *1,2-Dichloroethane-d4 (Surr)* | *98* | | *73 - 122* |
| *Toluene-d8 (Surr)* | *99* | | *80 - 120* |
| *4-Bromofluorobenzene (Surr)* | *100* | | *79 - 119* |

**Lab Sample ID: MB 280-563877/9**
**Matrix: Water**
**Analysis Batch: 563877**

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

| Analyte | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | ND | | 1.0 | 0.15 | ug/L | | | 01/20/22 12:20 | 1 |
| Bromoform | ND | | 2.0 | 0.67 | ug/L | | | 01/20/22 12:20 | 1 |

## Method: 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: MB 280-563877/9**
**Matrix: Water**
**Analysis Batch: 563877**

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

| Analyte | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Chlorodibromomethane | ND | | 1.0 | 0.21 | ug/L | | | 01/20/22 12:20 | 1 |
| Chloroform | ND | | 1.0 | 0.22 | ug/L | | | 01/20/22 12:20 | 1 |
| Trihalomethanes, Total | ND | | 1.0 | 0.15 | ug/L | | | 01/20/22 12:20 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1,2-Dichloroethane-d4 (Surr)* | *102* | | *73 - 122* | | *01/20/22 12:20* | *1* |
| *Toluene-d8 (Surr)* | *100* | | *80 - 120* | | *01/20/22 12:20* | *1* |
| *4-Bromofluorobenzene (Surr)* | *101* | | *79 - 119* | | *01/20/22 12:20* | *1* |

**Lab Sample ID: LCS 280-563877/4**
**Matrix: Water**
**Analysis Batch: 563877**

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

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|
| Bromodichloromethane | 25.0 | 25.0 | | ug/L | | 100 | 65 - 135 |
| Bromoform | 25.0 | 18.3 | | ug/L | | 73 | 70 - 130 |
| Chlorodibromomethane | 25.0 | 20.8 | | ug/L | | 83 | 70 - 135 |
| Chloroform | 25.0 | 24.8 | | ug/L | | 99 | 70 - 135 |

| *Surrogate* | *LCS %Recovery* | *LCS Qualifier* | *Limits* |
|---|---|---|---|
| *1,2-Dichloroethane-d4 (Surr)* | *98* | | *73 - 122* |
| *Toluene-d8 (Surr)* | *97* | | *80 - 120* |
| *4-Bromofluorobenzene (Surr)* | *101* | | *79 - 119* |

**Lab Sample ID: LCSD 280-563877/5**
**Matrix: Water**
**Analysis Batch: 563877**

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

| Analyte | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | 25.0 | 24.2 | | ug/L | | 97 | 65 - 135 | 3 | 30 |
| Bromoform | 25.0 | 19.0 | | ug/L | | 76 | 70 - 130 | 4 | 30 |
| Chlorodibromomethane | 25.0 | 21.3 | | ug/L | | 85 | 70 - 135 | 3 | 30 |
| Chloroform | 25.0 | 24.2 | | ug/L | | 97 | 70 - 135 | 2 | 30 |

| *Surrogate* | *LCSD %Recovery* | *LCSD Qualifier* | *Limits* |
|---|---|---|---|
| *1,2-Dichloroethane-d4 (Surr)* | *100* | | *73 - 122* |
| *Toluene-d8 (Surr)* | *98* | | *80 - 120* |
| *4-Bromofluorobenzene (Surr)* | *101* | | *79 - 119* |

# QC Association Summary

Client: Energy Laboratories, Inc.
Project/Site: 11(e) Byproduct Material

Job ID: 280-157827-1

## GC/MS VOA

### Analysis Batch: 563750

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 280-157827-1 | C22010408-001F | Total/NA | Water | 624.1 | |
| 280-157827-2 | C22010408-002F | Total/NA | Water | 624.1 | |
| 280-157827-3 | C22010408-003F | Total/NA | Water | 624.1 | |
| 280-157827-4 | C22010408-004F | Total/NA | Water | 624.1 | |
| 280-157827-5 | C22010408-005F | Total/NA | Water | 624.1 | |
| 280-157827-6 | C22010408-006F | Total/NA | Water | 624.1 | |
| MB 280-563750/9 | Method Blank | Total/NA | Water | 624.1 | |
| LCS 280-563750/4 | Lab Control Sample | Total/NA | Water | 624.1 | |
| LCSD 280-563750/5 | Lab Control Sample Dup | Total/NA | Water | 624.1 | |

### Analysis Batch: 563877

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 280-157827-7 | C22010408-007F | Total/NA | Water | 624.1 | |
| 280-157827-8 | C22010408-011A | Total/NA | Water | 624.1 | |
| MB 280-563877/9 | Method Blank | Total/NA | Water | 624.1 | |
| LCS 280-563877/4 | Lab Control Sample | Total/NA | Water | 624.1 | |
| LCSD 280-563877/5 | Lab Control Sample Dup | Total/NA | Water | 624.1 | |

# Lab Chronicle

Client: Energy Laboratories, Inc.
Project/Site: 11(e) Byproduct Material

Job ID: 280-157827-1

**Client Sample ID: C22010408-001F** — **Lab Sample ID: 280-157827-1**
**Date Collected: 01/10/22 09:08** — **Matrix: Water**
**Date Received: 01/18/22 13:20**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 624.1 | | 1 | 5 mL | 5 mL | 563750 | 01/19/22 13:11 | SKL | TAL DEN |

**Client Sample ID: C22010408-002F** — **Lab Sample ID: 280-157827-2**
**Date Collected: 01/11/22 10:47** — **Matrix: Water**
**Date Received: 01/18/22 13:20**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 624.1 | | 1 | 5 mL | 5 mL | 563750 | 01/19/22 13:33 | SKL | TAL DEN |

**Client Sample ID: C22010408-003F** — **Lab Sample ID: 280-157827-3**
**Date Collected: 01/11/22 11:33** — **Matrix: Water**
**Date Received: 01/18/22 13:20**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 624.1 | | 1 | 5 mL | 5 mL | 563750 | 01/19/22 13:54 | SKL | TAL DEN |

**Client Sample ID: C22010408-004F** — **Lab Sample ID: 280-157827-4**
**Date Collected: 01/11/22 12:33** — **Matrix: Water**
**Date Received: 01/18/22 13:20**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 624.1 | | 1 | 5 mL | 5 mL | 563750 | 01/19/22 14:16 | SKL | TAL DEN |

**Client Sample ID: C22010408-005F** — **Lab Sample ID: 280-157827-5**
**Date Collected: 01/11/22 14:16** — **Matrix: Water**
**Date Received: 01/18/22 13:20**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 624.1 | | 1 | 5 mL | 5 mL | 563750 | 01/19/22 14:37 | SKL | TAL DEN |

**Client Sample ID: C22010408-006F** — **Lab Sample ID: 280-157827-6**
**Date Collected: 01/11/22 09:25** — **Matrix: Water**
**Date Received: 01/18/22 13:20**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 624.1 | | 1 | 5 mL | 5 mL | 563750 | 01/19/22 14:58 | SKL | TAL DEN |

**Client Sample ID: C22010408-007F** — **Lab Sample ID: 280-157827-7**
**Date Collected: 01/12/22 11:12** — **Matrix: Water**
**Date Received: 01/18/22 13:20**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 624.1 | | 1 | 5 mL | 5 mL | 563877 | 01/20/22 17:40 | SKL | TAL DEN |

# Lab Chronicle

Client: Energy Laboratories, Inc.
Project/Site: 11(e) Byproduct Material

Job ID: 280-157827-1

## Client Sample ID: C22010408-011A

**Date Collected: 01/10/22 09:08**
**Date Received: 01/18/22 13:20**

**Lab Sample ID: 280-157827-8**
**Matrix: Water**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 624.1 | | 1 | 5 mL | 5 mL | 563877 | 01/20/22 19:50 | SKL | TAL DEN |

**Laboratory References:**

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

# Accreditation/Certification Summary

Client: Energy Laboratories, Inc.
Project/Site: 11(e) Byproduct Material

Job ID: 280-157827-1

## Laboratory: Eurofins Denver

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

| Authority | Program | Identification Number | Expiration Date |
|---|---|---|---|
| A2LA | Dept. of Defense ELAP | 2907.01 | 10-31-23 |
| A2LA | ISO/IEC 17025 | 2907.01 | 10-31-23 |
| Alabama | State Program | 40730 | 09-30-12 * |
| Alaska (UST) | State | 18-001 | 02-28-22 |
| Arizona | State | AZ0713 | 12-20-22 |
| Arkansas DEQ | State | 19-047-0 | 06-01-22 |
| California | State | 2513 | 01-08-22 * |
| Connecticut | State | PH-0686 | 09-30-22 |
| Florida | NELAP | E87667-57 | 06-30-22 |
| Georgia | State | 4025-011 | 01-08-23 |
| Illinois | NELAP | 2000172019-1 | 04-30-22 |
| Iowa | State | IA#370 | 12-02-22 |
| Kansas | NELAP | E-10166 | 04-30-22 |
| Kentucky (WW) | State | KY98047 | 12-31-22 |
| Louisiana | NELAP | 30785 | 06-30-14 * |
| Louisiana | NELAP | 30785 | 06-30-22 |
| Minnesota | NELAP | 1788752 | 12-31-22 |
| Nevada | State | CO000262020-1 | 07-31-22 |
| New Hampshire | NELAP | 205319 | 04-29-22 |
| New Jersey | NELAP | 190002 | 06-30-22 |
| New York | NELAP | 59923 | 04-01-22 |
| North Carolina (WW/SW) | State | 358 | 12-31-22 |
| North Dakota | State | R-034 | 01-08-22 * |
| Oklahoma | State | 2018-006 | 08-31-22 |
| Oregon | NELAP | 4025-011 | 01-08-23 |
| Pennsylvania | NELAP | 013 | 07-31-22 |
| South Carolina | State | 72002001 | 01-08-23 |
| Texas | NELAP | TX104704183-08-TX | 09-30-09 * |
| Texas | NELAP | T104704183-21-19 | 10-01-22 |
| US Fish & Wildlife | US Federal Programs | 058448 | 07-31-22 |
| USDA | US Federal Programs | P330-20-00065 | 03-06-23 |
| Utah | NELAP | QUAN5 | 06-30-13 * |
| Utah | NELAP | CO000262019-11 | 07-31-22 |
| Virginia | NELAP | 10490 | 06-14-22 |
| Washington | State | C583-19 | 08-03-22 |
| West Virginia DEP | State | 354 | 01-31-22 |
| Wisconsin | State | 999615430 | 08-31-22 |
| Wyoming (UST) | A2LA | 2907.01 | 10-31-22 |

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

# ANALYTICAL SUMMARY REPORT

February 16, 2022

United Nuclear Corporation
21 Miles NE of Gallup
Gallup, NM 87305

Work Order: C22010583 Quote ID: C6117

Project Name: UNC-Zone 3 & SW Alluvium, UNC - Zone1, UNC - Zone3

Energy Laboratories, Inc. Casper WY received the following 18 samples for United Nuclear Corporation on 1/19/2022 for analysis.

| Lab ID | Client Sample ID | Collect Date | Receive Date | Matrix | Test |
|---|---|---|---|---|---|
| C22010583-001 | 719 | 01/13/22 13:42 | 01/19/22 | Aqueous | Metals by ICP/ICPMS, Dissolved<br>Metals by ICP/ICPMS, Total<br>Alkalinity<br>Anion - Cation Balance<br>Anions by Ion Chromatography<br>Nitrogen, Ammonia<br>Nitrogen, Nitrate + Nitrite<br>pH<br>Metals Preparation by EPA 200.2<br>Gross Alpha minus Radon and Uranium, Total<br>Lead 210, Total<br>Radium 226 + Radium 228, Total<br>Radium 226, Total<br>Radium 228, Total<br>Thorium, Isotopic, Total<br>Solids, Total Dissolved<br>Solids, Total Dissolved - Calculated<br>TRACKER SHEET<br>624-Purgeable Organics<br>624-Purgeable Organics |
| C22010583-002 | EPA-23 | 01/14/22 10:51 | 01/19/22 | Aqueous | Same As Above |
| C22010583-003 | 803 | 01/17/22 9:14 | 01/19/22 | Aqueous | Same As Above |
| C22010583-004 | 808 | 01/17/22 9:48 | 01/19/22 | Aqueous | Same As Above |
| C22010583-005 | 802 | 01/17/22 10:31 | 01/19/22 | Aqueous | Same As Above |
| C22010583-006 | 632 | 01/17/22 11:16 | 01/19/22 | Aqueous | Same As Above |
| C22010583-007 | 801 | 01/17/22 11:58 | 01/19/22 | Aqueous | Same As Above |
| C22010583-008 | 624 | 01/17/22 13:19 | 01/19/22 | Aqueous | Same As Above |
| C22010583-009 | GW-1 | 01/17/22 14:08 | 01/19/22 | Aqueous | Same As Above |
| C22010583-010 | EPA-4 | 01/13/22 9:27 | 01/19/22 | Aqueous | Same As Above |
| C22010583-011 | EPA-5 | 01/13/22 10:33 | 01/19/22 | Aqueous | Same As Above |
| C22010583-012 | EPA-2 | 01/13/22 11:40 | 01/19/22 | Aqueous | Same As Above |
| C22010583-013 | EPA-2 Duplicate | 01/13/22 12:10 | 01/19/22 | Aqueous | Same As Above |
| C22010583-014 | 142 | 01/13/22 12:52 | 01/19/22 | Aqueous | Same As Above |

# ANALYTICAL SUMMARY REPORT

| | | | | | |
|---|---|---|---|---|---|
| C22010583-015 | NBL-2 | 01/13/22 14:40 | 01/19/22 | Aqueous | Alkalinity<br>Anions by Ion Chromatography<br>pH<br>Solids, Total Dissolved |
| C22010583-016 | NW-4 | 01/14/22 9:35 | 01/19/22 | Aqueous | Same As Above |
| C22010583-017 | RW-A | 01/14/22 9:50 | 01/19/22 | Aqueous | Same As Above |
| C22010583-018 | Trip Blank - 80352 | 01/13/22 9:27 | 01/19/22 | Trip Blank | 624-Purgeable Organics |

The analyses presented in this report were performed by Energy Laboratories, Inc., 2393 Salt Creek Hwy., Casper, WY 82601, unless otherwise noted. Any exceptions or problems with the analyses are noted in the report package. Any issues encountered during sample receipt are documented in the Work Order Receipt Checklist.

The results as reported relate only to the item(s) submitted for testing. This report shall be used or copied only in its entirety. Energy Laboratories, Inc. is not responsible for the consequences arising from the use of a partial report.

If you have any questions regarding these test results, please contact your Project Manager .

Report Approved By:

Wyoming Regional Director

Digitally signed by
Terry Friedlan
Date: 2022.02.16 16:27:02 -07:00

**CLIENT:** United Nuclear Corporation
**Project:** UNC-Zone 3 & SW Alluvium, UNC - Zone1, UNC
**Work Order:** C22010583

**Report Date:** 02/16/22

# CASE NARRATIVE

Tests associated with analyst identified as ELI-B were subcontracted to Energy Laboratories, 1120 S. 27th St., Billings, MT, EPA Number MT00005.

Tests associated with analyst identified as "etad" were subcontracted to Eurofins Test America, 4955 Yarrow St, Arvada, CO 80002, TEL (303) 736-0100. Please see attached data packet for details.

# Work Order Sample Summary

**CLIENT:** United Nuclear Corporation
**Project:** UNC-Zone 3 & SW Alluvium, UNC - Zone1, U
**Work Order:** C22010583 **Report Date:** 02/16/22

| Lab ID | Client Sample ID | Collection Date | Date Received |
|---|---|---|---|
| C22010583-001 | 719 | 1/13/2022 1:42:00 PM | 1/19/2022 |
| C22010583-002 | EPA-23 | 1/14/2022 10:51:00 AM | 1/19/2022 |
| C22010583-003 | 803 | 1/17/2022 9:14:00 AM | 1/19/2022 |
| C22010583-004 | 808 | 1/17/2022 9:48:00 AM | 1/19/2022 |
| C22010583-005 | 802 | 1/17/2022 10:31:00 AM | 1/19/2022 |
| C22010583-006 | 632 | 1/17/2022 11:16:00 AM | 1/19/2022 |
| C22010583-007 | 801 | 1/17/2022 11:58:00 AM | 1/19/2022 |
| C22010583-008 | 624 | 1/17/2022 1:19:00 PM | 1/19/2022 |
| C22010583-009 | GW-1 | 1/17/2022 2:08:00 PM | 1/19/2022 |
| C22010583-010 | EPA-4 | 1/13/2022 9:27:00 AM | 1/19/2022 |
| C22010583-011 | EPA-5 | 1/13/2022 10:33:00 AM | 1/19/2022 |
| C22010583-012 | EPA-2 | 1/13/2022 11:40:00 AM | 1/19/2022 |
| C22010583-013 | EPA-2 Duplicate | 1/13/2022 12:10:00 PM | 1/19/2022 |
| C22010583-014 | 142 | 1/13/2022 12:52:00 PM | 1/19/2022 |
| C22010583-015 | NBL-2 | 1/13/2022 2:40:00 PM | 1/19/2022 |
| C22010583-016 | NW-4 | 1/14/2022 9:35:00 AM | 1/19/2022 |
| C22010583-017 | RW-A | 1/14/2022 9:50:00 AM | 1/19/2022 |
| C22010583-018 | Trip Blank - 80352 | 1/13/2022 9:27:00 AM | 1/19/2022 |

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22010583 **Report Date:** 01/28/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: A2320 B** | | | | | | | | | Analytical Run: MANTECH_220120A | |
| **Lab ID: ICV** | | Initial Calibration Verification Standard | | | | | | | 01/20/22 10:35 | |
| pH | | 6.83 | s.u. | 0.010 | 100 | 98 | 102 | | | |
| **Method: A2320 B** | | | | | | | | | Batch: R278925 | |
| **Lab ID: MBLK** | | Method Blank | | | | Run: MANTECH_220120A | | | 01/20/22 13:30 | |
| Alkalinity, Total as CaCO3 | | ND | mg/L | 2 | | | | | | |
| **Lab ID: LCS** | | Laboratory Control Sample | | | | Run: MANTECH_220120A | | | 01/20/22 13:39 | |
| Alkalinity, Total as CaCO3 | | 258 | mg/L | 5.0 | 103 | 90 | 110 | | | |
| **Lab ID: C22010602-001ADUP** | | Sample Duplicate | | | | Run: MANTECH_220120A | | | 01/20/22 15:18 | |
| Alkalinity, Total as CaCO3 | | 61.2 | mg/L | 5.0 | | | | 1.4 | 10 | |
| **Lab ID: MBLK** | | Method Blank | | | | Run: MANTECH_220120A | | | 01/20/22 17:02 | |
| Alkalinity, Total as CaCO3 | | ND | mg/L | 2 | | | | | | |
| **Lab ID: LCS** | | Laboratory Control Sample | | | | Run: MANTECH_220120A | | | 01/20/22 17:10 | |
| Alkalinity, Total as CaCO3 | | 264 | mg/L | 5.0 | 106 | 90 | 110 | | | |
| **Lab ID: C22010583-009ADUP** | | Sample Duplicate | | | | Run: MANTECH_220120A | | | 01/20/22 17:30 | |
| Alkalinity, Total as CaCO3 | | 1100 | mg/L | 5.0 | | | | 0.3 | 10 | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22010583 **Report Date:** 01/28/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: A2540 C** | | | | | | | | | | Batch: TDS220120B |
| **Lab ID: MB-1_220120B** | | Method Blank | | | | Run: BAL-111_220120C | | | | 01/20/22 14:58 |
| Solids, Total Dissolved TDS @ 180 C | | ND | mg/L | 10 | | | | | | |
| **Lab ID: LCS-2_220120B** | | Laboratory Control Sample | | | | Run: BAL-111_220120C | | | | 01/20/22 14:58 |
| Solids, Total Dissolved TDS @ 180 C | | 1000 | mg/L | 20 | 100 | 90 | 110 | | | |
| **Lab ID: C22010583-008A DUP** | | Sample Duplicate | | | | Run: BAL-111_220120C | | | | 01/20/22 15:26 |
| Solids, Total Dissolved TDS @ 180 C | | 5290 | mg/L | 40 | | | | 1.1 | 5 | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22010583 **Report Date:** 01/28/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: A4500-H B** | | | | | | | | | Analytical Run: PHSC_101-C_220120A | |
| **Lab ID: 6.86** | 2 | Initial Calibration Verification Standard | | | | | | | 01/20/22 09:37 | |
| pH | | 6.9 | s.u. | 0.1 | 100 | 98 | 102 | | | |
| pH Measurement Temp | | 19.2 | °C | | | 0 | 0 | | | |
| **Method: A4500-H B** | | | | | | | | | Batch: R278875 | |
| **Lab ID: C22010583-004ADUP** | 2 | Sample Duplicate | | | | Run: PHSC_101-C_220120A | | | 01/20/22 10:50 | |
| pH | | 6.6 | s.u. | 0.1 | | | | 0.2 | 1.5 | |
| pH Measurement Temp | | 13.6 | °C | | | | | | | |
| **Lab ID: C22010583-014ADUP** | 2 | Sample Duplicate | | | | Run: PHSC_101-C_220120A | | | 01/20/22 11:30 | |
| pH | | 7.5 | s.u. | 0.1 | | | | 0.0 | 1.5 | |
| pH Measurement Temp | | 15.8 | °C | | | | | | | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22010583 **Report Date:** 01/28/22

| Analyte | | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Method:** | **E300.0** | | | | | | | | Analytical Run: IC3-C_220121A | | |
| **Lab ID:** | **ICV** | 2 | Initial Calibration Verification Standard | | | | | | | 01/21/22 13:22 | |
| Chloride | | | 10.3 | mg/L | 1.0 | 103 | 90 | 110 | | | |
| Sulfate | | | 40.5 | mg/L | 1.0 | 101 | 90 | 110 | | | |
| **Method:** | **E300.0** | | | | | | | | | Batch: R278964 | |
| **Lab ID:** | **ICB** | 2 | Method Blank | | | | Run: IC3-C_220121A | | | 01/21/22 13:41 | |
| Chloride | | | ND | mg/L | 0.09 | | | | | | |
| Sulfate | | | ND | mg/L | 0.2 | | | | | | |
| **Lab ID:** | **LFB** | 2 | Laboratory Fortified Blank | | | | Run: IC3-C_220121A | | | 01/21/22 14:00 | |
| Chloride | | | 10.0 | mg/L | 1.0 | 104 | 90 | 110 | | | |
| Sulfate | | | 39.3 | mg/L | 1.0 | 102 | 90 | 110 | | | |
| **Lab ID:** | **C22010583-004AMS** | 2 | Sample Matrix Spike | | | | Run: IC3-C_220121A | | | 01/21/22 19:26 | |
| Chloride | | | 388 | mg/L | 2.1 | 95 | 80 | 120 | | | |
| Sulfate | | | 3990 | mg/L | 8.3 | | 80 | 120 | | | A |
| **Lab ID:** | **C22010583-004AMSD** | 2 | Sample Matrix Spike Duplicate | | | | Run: IC3-C_220121A | | | 01/21/22 19:45 | |
| Chloride | | | 390 | mg/L | 2.1 | 96 | 80 | 120 | 0.6 | 20 | |
| Sulfate | | | 3990 | mg/L | 8.3 | | 80 | 120 | 0.0 | 20 | A |
| **Lab ID:** | **C22010583-014AMS** | 2 | Sample Matrix Spike | | | | Run: IC3-C_220121A | | | 01/21/22 23:55 | |
| Chloride | | | 68.7 | mg/L | 1.0 | 103 | 80 | 120 | | | |
| Sulfate | | | 890 | mg/L | 2.1 | 90 | 80 | 120 | | | |
| **Lab ID:** | **C22010583-014AMSD** | 2 | Sample Matrix Spike Duplicate | | | | Run: IC3-C_220121A | | | 01/22/22 00:14 | |
| Chloride | | | 68.5 | mg/L | 1.0 | 102 | 80 | 120 | 0.2 | 20 | |
| Sulfate | | | 886 | mg/L | 2.1 | 88 | 80 | 120 | 0.4 | 20 | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

A - Analyte level was greater than four times the spike level - in accordance with the method, percent recovery is not calculated

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22010583 **Report Date:** 01/28/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: E350.1** | | | | | | | | | Analytical Run: FIA201-C_220127B | |
| **Lab ID: ICV** | | Initial Calibration Verification Standard | | | | | | | 01/27/22 14:02 | |
| Nitrogen, Ammonia as N | | 1.06 | mg/L | 0.050 | 106 | 90 | 110 | | | |
| **Method: E350.1** | | | | | | | | | Batch: R279115 | |
| **Lab ID: MBLK** | | Method Blank | | | | Run: FIA201-C_220127B | | | 01/27/22 14:01 | |
| Nitrogen, Ammonia as N | | ND | mg/L | 0.03 | | | | | | |
| **Lab ID: LFB** | | Laboratory Fortified Blank | | | | Run: FIA201-C_220127B | | | 01/27/22 14:04 | |
| Nitrogen, Ammonia as N | | 0.999 | mg/L | 0.050 | 101 | 90 | 110 | | | |
| **Lab ID: C22010581-001DMS** | | Sample Matrix Spike | | | | Run: FIA201-C_220127B | | | 01/27/22 14:06 | |
| Nitrogen, Ammonia as N | | 1.23 | mg/L | 0.050 | 95 | 90 | 110 | | | |
| **Lab ID: C22010581-001DMSD** | | Sample Matrix Spike Duplicate | | | | Run: FIA201-C_220127B | | | 01/27/22 14:07 | |
| Nitrogen, Ammonia as N | | 1.24 | mg/L | 0.050 | 96 | 90 | 110 | 0.8 | 10 | |
| **Lab ID: C22010583-010DMS** | | Sample Matrix Spike | | | | Run: FIA201-C_220127B | | | 01/27/22 14:24 | |
| Nitrogen, Ammonia as N | | 1.29 | mg/L | 0.050 | 97 | 90 | 110 | | | |
| **Lab ID: C22010583-010DMSD** | | Sample Matrix Spike Duplicate | | | | Run: FIA201-C_220127B | | | 01/27/22 14:25 | |
| Nitrogen, Ammonia as N | | 1.32 | mg/L | 0.050 | 100 | 90 | 110 | 2.3 | 10 | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22010583 **Report Date:** 01/28/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: E353.2** | | | | | | | | | Analytical Run: FIA201-C_220120A | |
| **Lab ID: ICV** | | Initial Calibration Verification Standard | | | | | | | 01/20/22 11:28 | |
| Nitrogen, Nitrate+Nitrite as N | | 1.00 | mg/L | 0.050 | 100 | 90 | 110 | | | |
| **Method: E353.2** | | | | | | | | | Batch: R278893 | |
| **Lab ID: MBLK** | | Method Blank | | | | Run: FIA201-C_220120A | | | 01/20/22 11:29 | |
| Nitrogen, Nitrate+Nitrite as N | | ND | mg/L | 0.01 | | | | | | |
| **Lab ID: LFB** | | Laboratory Fortified Blank | | | | Run: FIA201-C_220120A | | | 01/20/22 11:30 | |
| Nitrogen, Nitrate+Nitrite as N | | 0.971 | mg/L | 0.050 | 98 | 90 | 110 | | | |
| **Lab ID: C22010557-004AMS** | | Sample Matrix Spike | | | | Run: FIA201-C_220120A | | | 01/20/22 12:41 | |
| Nitrogen, Nitrate+Nitrite as N | | 5.20 | mg/L | 0.050 | 101 | 90 | 110 | | | E |
| **Lab ID: C22010557-004AMSD** | | Sample Matrix Spike Duplicate | | | | Run: FIA201-C_220120A | | | 01/20/22 12:42 | |
| Nitrogen, Nitrate+Nitrite as N | | 5.20 | mg/L | 0.050 | 101 | 90 | 110 | 0.0 | 10 | E |
| **Lab ID: C22010583-006DMS** | | Sample Matrix Spike | | | | Run: FIA201-C_220120A | | | 01/20/22 12:58 | |
| Nitrogen, Nitrate+Nitrite as N | | 55.3 | mg/L | 0.50 | 71 | 90 | 110 | | | S |
| **Lab ID: C22010583-006DMSD** | | Sample Matrix Spike Duplicate | | | | Run: FIA201-C_220120A | | | 01/20/22 12:59 | |
| Nitrogen, Nitrate+Nitrite as N | | 53.8 | mg/L | 0.50 | 65 | 90 | 110 | 2.8 | 10 | S |

**Qualifiers:**

RL - Analyte Reporting Limit

E - Estimated value - result exceeds the instrument upper quantitation limit

ND - Not detected at the Reporting Limit (RL)

S - Spike recovery outside of advisory limits

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22010583 **Report Date:** 02/15/22

| Analyte | | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Method:** | **E200.7** | | | | | | | | | Analytical Run: ICP4-C_220124A | |
| **Lab ID:** | **QCS** | 2 | Initial Calibration Verification Standard | | | | | | | 01/25/22 07:40 | |
| Cadmium | | | 0.394 | mg/L | 0.010 | 98 | 95 | 105 | | | |
| Manganese | | | 3.88 | mg/L | 0.010 | 97 | 95 | 105 | | | |
| **Method:** | **E200.7** | | | | | | | | | Batch: 65629 | |
| **Lab ID:** | **MB-65629** | 2 | Method Blank | | | | Run: ICP4-C_220124A | | | 01/25/22 21:24 | |
| Cadmium | | | ND | mg/L | 0.002 | | | | | | |
| Manganese | | | ND | mg/L | 0.0008 | | | | | | |
| **Lab ID:** | **LCS3-65629** | 2 | Laboratory Control Sample | | | | Run: ICP4-C_220124A | | | 01/25/22 21:31 | |
| Cadmium | | | 0.263 | mg/L | 0.025 | 105 | 85 | 115 | | | |
| Manganese | | | 2.68 | mg/L | 0.0012 | 107 | 85 | 115 | | | |
| **Lab ID:** | **C22010583-011CMS3** | 2 | Sample Matrix Spike | | | | Run: ICP4-C_220124A | | | 01/25/22 22:04 | |
| Cadmium | | | 0.289 | mg/L | 0.12 | 116 | 70 | 130 | | | |
| Manganese | | | 3.13 | mg/L | 0.0062 | 109 | 70 | 130 | | | |
| **Lab ID:** | **C22010583-011CMSD** | 2 | Sample Matrix Spike Duplicate | | | | Run: ICP4-C_220124A | | | 01/25/22 22:10 | |
| Cadmium | | | 0.269 | mg/L | 0.12 | 108 | 70 | 130 | 7.0 | 20 | |
| Manganese | | | 3.05 | mg/L | 0.0062 | 105 | 70 | 130 | 2.7 | 20 | |
| **Method:** | **E200.7** | | | | | | | | | Analytical Run: ICP4-C_220126B | |
| **Lab ID:** | **QCS** | | Initial Calibration Verification Standard | | | | | | | 01/26/22 17:00 | |
| Magnesium | | | 41.4 | mg/L | 0.50 | 104 | 95 | 105 | | | |
| **Method:** | **E200.7** | | | | | | | | | Batch: 65629 | |
| **Lab ID:** | **MB-65629** | 2 | Method Blank | | | | Run: ICP4-C_220126B | | | 01/27/22 03:40 | |
| Cadmium | | | ND | mg/L | 0.002 | | | | | | |
| Manganese | | | ND | mg/L | 0.0008 | | | | | | |
| **Method:** | **E200.7** | | | | | | | | | Batch: R279087 | |
| **Lab ID:** | **LRB** | | Method Blank | | | | Run: ICP4-C_220126B | | | 01/26/22 16:20 | |
| Magnesium | | | ND | mg/L | 0.08 | | | | | | |
| **Lab ID:** | **LFB** | | Laboratory Fortified Blank | | | | Run: ICP4-C_220126B | | | 01/26/22 16:53 | |
| Magnesium | | | 52.2 | mg/L | 0.50 | 104 | 85 | 115 | | | |
| **Lab ID:** | **C22010583-003BMS2** | | Sample Matrix Spike | | | | Run: ICP4-C_220126B | | | 01/26/22 22:07 | |
| Magnesium | | | 1120 | mg/L | 1.0 | 93 | 70 | 130 | | | |
| **Lab ID:** | **C22010583-003BMSD** | | Sample Matrix Spike Duplicate | | | | Run: ICP4-C_220126B | | | 01/26/22 22:13 | |
| Magnesium | | | 1160 | mg/L | 1.0 | 100 | 70 | 130 | 3.1 | 20 | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22010583 **Report Date:** 02/15/22

| Analyte | | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Method:** | **E200.7** | | | | | | | | | Analytical Run: ICP4-C_220127A | |
| **Lab ID:** | **QCS** | 2 | Initial Calibration Verification Standard | | | | | | | 01/27/22 15:11 | |
| Calcium | | | 40.7 | mg/L | 0.50 | 102 | 95 | 105 | | | |
| Sodium | | | 40.5 | mg/L | 0.53 | 101 | 95 | 105 | | | |
| **Method:** | **E200.7** | | | | | | | | | Batch: 65629 | |
| **Lab ID:** | **MB-65629** | 2 | Method Blank | | | | Run: ICP4-C_220127A | | | 01/28/22 02:41 | |
| Cadmium | | | ND | mg/L | 0.002 | | | | | | |
| Manganese | | | ND | mg/L | 0.0008 | | | | | | |
| **Method:** | **E200.7** | | | | | | | | | Batch: R279107 | |
| **Lab ID:** | **LFB** | 2 | Laboratory Fortified Blank | | | | Run: ICP4-C_220127A | | | 01/27/22 17:03 | |
| Calcium | | | 51.6 | mg/L | 0.50 | 103 | 85 | 115 | | | |
| Sodium | | | 51.3 | mg/L | 0.54 | 103 | 85 | 115 | | | |
| **Lab ID:** | **MB-65562** | 2 | Method Blank | | | | Run: ICP4-C_220127A | | | 01/27/22 17:42 | |
| Calcium | | | ND | mg/L | 0.1 | | | | | | |
| Sodium | | | ND | mg/L | 1 | | | | | | |
| **Lab ID:** | **C22010514-002BMS2** | 2 | Sample Matrix Spike | | | | Run: ICP4-C_220127A | | | 01/27/22 19:41 | |
| Calcium | | | 447 | mg/L | 1.0 | 108 | 70 | 130 | | | |
| Sodium | | | 569 | mg/L | 1.1 | | 70 | 130 | | | A |
| **Lab ID:** | **C22010514-002BMSD** | 2 | Sample Matrix Spike Duplicate | | | | Run: ICP4-C_220127A | | | 01/27/22 19:47 | |
| Calcium | | | 453 | mg/L | 1.0 | 114 | 70 | 130 | 1.3 | 20 | |
| Sodium | | | 575 | mg/L | 1.1 | | 70 | 130 | 1.1 | 20 | A |
| **Method:** | **E200.7** | | | | | | | | | Analytical Run: ICP4-C_220131A | |
| **Lab ID:** | **QCS** | | Initial Calibration Verification Standard | | | | | | | 01/31/22 17:57 | |
| Potassium | | | 40.2 | mg/L | 0.50 | 101 | 95 | 105 | | | |
| **Method:** | **E200.7** | | | | | | | | | Batch: R279215 | |
| **Lab ID:** | **LRB** | | Method Blank | | | | Run: ICP4-C_220131A | | | 01/31/22 15:40 | |
| Potassium | | | ND | mg/L | 0.2 | | | | | | |
| **Lab ID:** | **LFB** | | Laboratory Fortified Blank | | | | Run: ICP4-C_220131A | | | 01/31/22 16:06 | |
| Potassium | | | 50.6 | mg/L | 0.50 | 101 | 85 | 115 | | | |
| **Lab ID:** | **C22010582-001BMS2** | | Sample Matrix Spike | | | | Run: ICP4-C_220131A | | | 01/31/22 18:49 | |
| Potassium | | | 50.9 | mg/L | 1.0 | 96 | 70 | 130 | | | |
| **Lab ID:** | **C22010582-001BMSD** | | Sample Matrix Spike Duplicate | | | | Run: ICP4-C_220131A | | | 01/31/22 18:56 | |
| Potassium | | | 52.0 | mg/L | 1.0 | 98 | 70 | 130 | 2.3 | 20 | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

A - Analyte level was greater than four times the spike level - in accordance with the method, percent recovery is not calculated

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22010583 **Report Date:** 02/15/22

| Analyte | | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Method:** | **E200.8** | | | | | | | | | Analytical Run: ICPMS5-C_220120A | |
| **Lab ID:** | **QCS** | 4 | Initial Calibration Verification Standard | | | | | | | 01/21/22 15:36 | |
| Calcium | | | 2.46 | mg/L | 0.64 | 99 | 90 | 110 | | | |
| Magnesium | | | 2.67 | mg/L | 0.50 | 107 | 90 | 110 | | | |
| Potassium | | | 2.61 | mg/L | 0.50 | 104 | 90 | 110 | | | |
| Sodium | | | 2.66 | mg/L | 0.50 | 107 | 90 | 110 | | | |
| **Method:** | **E200.8** | | | | | | | | | Batch: R278947 | |
| **Lab ID:** | **LRB** | 4 | Method Blank | | | | Run: ICPMS5-C_220120A | | | 01/20/22 17:08 | |
| Calcium | | | ND | mg/L | 0.3 | | | | | | |
| Magnesium | | | ND | mg/L | 0.02 | | | | | | |
| Potassium | | | ND | mg/L | 0.1 | | | | | | |
| Sodium | | | ND | mg/L | 0.3 | | | | | | |
| **Lab ID:** | **LFB** | 4 | Laboratory Fortified Blank | | | | Run: ICPMS5-C_220120A | | | 01/20/22 17:13 | |
| Calcium | | | 50.1 | mg/L | 0.66 | 100 | 85 | 115 | | | |
| Magnesium | | | 48.5 | mg/L | 0.50 | 97 | 85 | 115 | | | |
| Potassium | | | 48.6 | mg/L | 0.50 | 97 | 85 | 115 | | | |
| Sodium | | | 49.0 | mg/L | 0.50 | 98 | 85 | 115 | | | |
| **Lab ID:** | **C22010583-001BMS** | 4 | Sample Matrix Spike | | | | Run: ICPMS5-C_220120A | | | 01/21/22 14:35 | |
| Calcium | | | 659 | mg/L | 3.3 | 85 | 70 | 130 | | | |
| Magnesium | | | 839 | mg/L | 1.0 | 86 | 70 | 130 | | | |
| Potassium | | | 266 | mg/L | 1.0 | 102 | 70 | 130 | | | |
| Sodium | | | 375 | mg/L | 1.6 | 97 | 70 | 130 | | | |
| **Lab ID:** | **C22010583-001BMSD** | 4 | Sample Matrix Spike Duplicate | | | | Run: ICPMS5-C_220120A | | | 01/21/22 14:40 | |
| Calcium | | | 674 | mg/L | 3.3 | 91 | 70 | 130 | 2.3 | 20 | |
| Magnesium | | | 905 | mg/L | 1.0 | 112 | 70 | 130 | 7.5 | 20 | |
| Potassium | | | 267 | mg/L | 1.0 | 102 | 70 | 130 | 0.2 | 20 | |
| Sodium | | | 396 | mg/L | 1.6 | 105 | 70 | 130 | 5.4 | 20 | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22010583 **Report Date:** 02/15/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: E200.8** | | | | | | | | | Analytical Run: ICPMS5-C_220131A | |
| **Lab ID: QCS** | 11 | Initial Calibration Verification Standard | | | | | | | 01/31/22 13:08 | |
| Aluminum | | 0.250 | mg/L | 0.030 | 100 | 90 | 110 | | | |
| Arsenic | | 0.0517 | mg/L | 0.0010 | 103 | 90 | 110 | | | |
| Beryllium | | 0.0253 | mg/L | 0.0010 | 101 | 90 | 110 | | | |
| Cadmium | | 0.0256 | mg/L | 0.0010 | 102 | 90 | 110 | | | |
| Cobalt | | 0.0482 | mg/L | 0.0050 | 96 | 90 | 110 | | | |
| Manganese | | 0.249 | mg/L | 0.0010 | 100 | 90 | 110 | | | |
| Molybdenum | | 0.0502 | mg/L | 0.0010 | 100 | 90 | 110 | | | |
| Nickel | | 0.0515 | mg/L | 0.0050 | 103 | 90 | 110 | | | |
| Potassium | | 2.52 | mg/L | 0.50 | 101 | 90 | 110 | | | |
| Selenium | | 0.0521 | mg/L | 0.0010 | 104 | 90 | 110 | | | |
| Vanadium | | 0.0485 | mg/L | 0.010 | 97 | 90 | 110 | | | |
| **Method: E200.8** | | | | | | | | | Batch: 65629 | |
| **Lab ID: MB-65629** | 12 | Method Blank | | | | Run: ICPMS5-C_220131A | | | 02/01/22 02:54 | |
| Aluminum | | ND | mg/L | 0.02 | | | | | | |
| Arsenic | | ND | mg/L | 0.0003 | | | | | | |
| Beryllium | | ND | mg/L | 0.0002 | | | | | | |
| Cadmium | | ND | mg/L | 0.00002 | | | | | | |
| Cobalt | | ND | mg/L | 0.0001 | | | | | | |
| Lead | | ND | mg/L | 0.0001 | | | | | | |
| Manganese | | ND | mg/L | 0.0007 | | | | | | |
| Molybdenum | | 0.0009 | mg/L | 0.0001 | | | | | | |
| Nickel | | ND | mg/L | 0.0003 | | | | | | |
| Selenium | | 0.0006 | mg/L | 0.0001 | | | | | | |
| Uranium | | ND | mg/L | 0.0003 | | | | | | |
| Vanadium | | ND | mg/L | 0.003 | | | | | | |
| **Lab ID: LCS3-65629** | 12 | Laboratory Control Sample | | | | Run: ICPMS5-C_220131A | | | 02/01/22 02:58 | |
| Aluminum | | 2.24 | mg/L | 0.030 | 89 | 85 | 115 | | | |
| Arsenic | | 0.441 | mg/L | 0.0010 | 88 | 85 | 115 | | | |
| Beryllium | | 0.236 | mg/L | 0.0010 | 95 | 85 | 115 | | | |
| Cadmium | | 0.226 | mg/L | 0.0010 | 91 | 85 | 115 | | | |
| Cobalt | | 0.467 | mg/L | 0.0050 | 93 | 85 | 115 | | | |
| Lead | | 0.414 | mg/L | 0.0010 | 83 | 85 | 115 | | | S |
| Manganese | | 2.26 | mg/L | 0.0010 | 90 | 85 | 115 | | | |
| Molybdenum | | 0.485 | mg/L | 0.0010 | 97 | 85 | 115 | | | |
| Nickel | | 0.449 | mg/L | 0.0050 | 90 | 85 | 115 | | | |
| Selenium | | 0.437 | mg/L | 0.0010 | 87 | 85 | 115 | | | |
| Uranium | | 0.417 | mg/L | 0.00030 | 83 | 85 | 115 | | | S |
| Vanadium | | 0.442 | mg/L | 0.010 | 88 | 85 | 115 | | | |
| **Lab ID: C22010583-001CMS3** | 12 | Sample Matrix Spike | | | | Run: ICPMS5-C_220131A | | | 02/01/22 03:12 | |
| Aluminum | | 4.41 | mg/L | 0.091 | 92 | 70 | 130 | | | |
| Arsenic | | 0.487 | mg/L | 0.0014 | 97 | 70 | 130 | | | |
| Beryllium | | 0.242 | mg/L | 0.0010 | 95 | 70 | 130 | | | |
| Cadmium | | 0.232 | mg/L | 0.0010 | 93 | 70 | 130 | | | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

S - Spike recovery outside of advisory limits

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22010583 **Report Date:** 02/15/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: E200.8** | | | | | | | | | | Batch: 65629 |
| **Lab ID: C22010583-001CMS3** | 12 | Sample Matrix Spike | | | | Run: ICPMS5-C_220131A | | | | 02/01/22 03:12 |
| Cobalt | | 0.642 | mg/L | 0.0050 | 95 | 70 | 130 | | | |
| Lead | | 0.469 | mg/L | 0.0010 | 94 | 70 | 130 | | | |
| Manganese | | 7.48 | mg/L | 0.0035 | 86 | 70 | 130 | | | |
| Molybdenum | | 0.910 | mg/L | 0.0034 | 97 | 70 | 130 | | | |
| Nickel | | 0.742 | mg/L | 0.0050 | 92 | 70 | 130 | | | |
| Selenium | | 0.512 | mg/L | 0.0010 | 102 | 70 | 130 | | | |
| Uranium | | 0.546 | mg/L | 0.0014 | 96 | 70 | 130 | | | |
| Vanadium | | 0.482 | mg/L | 0.012 | 96 | 70 | 130 | | | |
| **Lab ID: C22010583-001CMSD** | 12 | Sample Matrix Spike Duplicate | | | | Run: ICPMS5-C_220131A | | | | 02/01/22 03:17 |
| Aluminum | | 4.41 | mg/L | 0.091 | 92 | 70 | 130 | 0.1 | 20 | |
| Arsenic | | 0.488 | mg/L | 0.0014 | 97 | 70 | 130 | 0.3 | 20 | |
| Beryllium | | 0.241 | mg/L | 0.0010 | 95 | 70 | 130 | 0.4 | 20 | |
| Cadmium | | 0.231 | mg/L | 0.0010 | 92 | 70 | 130 | 0.5 | 20 | |
| Cobalt | | 0.636 | mg/L | 0.0050 | 93 | 70 | 130 | 1.0 | 20 | |
| Lead | | 0.464 | mg/L | 0.0010 | 93 | 70 | 130 | 1.0 | 20 | |
| Manganese | | 7.46 | mg/L | 0.0035 | 86 | 70 | 130 | 0.2 | 20 | |
| Molybdenum | | 0.912 | mg/L | 0.0034 | 97 | 70 | 130 | 0.2 | 20 | |
| Nickel | | 0.748 | mg/L | 0.0050 | 93 | 70 | 130 | 0.9 | 20 | |
| Selenium | | 0.486 | mg/L | 0.0010 | 96 | 70 | 130 | 5.2 | 20 | |
| Uranium | | 0.534 | mg/L | 0.0014 | 93 | 70 | 130 | 2.1 | 20 | |
| Vanadium | | 0.479 | mg/L | 0.012 | 96 | 70 | 130 | 0.5 | 20 | |
| **Method: E200.8** | | | | | | | | | | Batch: R279198 |
| **Lab ID: LRB** | | Method Blank | | | | Run: ICPMS5-C_220131A | | | | 01/31/22 13:35 |
| Potassium | | ND | mg/L | 0.1 | | | | | | |
| **Lab ID: LFB** | | Laboratory Fortified Blank | | | | Run: ICPMS5-C_220131A | | | | 01/31/22 13:40 |
| Potassium | | 49.5 | mg/L | 0.50 | 99 | 85 | 115 | | | |
| **Lab ID: C22010583-001BMS** | | Sample Matrix Spike | | | | Run: ICPMS5-C_220131A | | | | 01/31/22 18:35 |
| Potassium | | 255 | mg/L | 1.0 | 98 | 70 | 130 | | | |
| **Lab ID: C22010583-001BMSD** | | Sample Matrix Spike Duplicate | | | | Run: ICPMS5-C_220131A | | | | 01/31/22 18:40 |
| Potassium | | 255 | mg/L | 1.0 | 98 | 70 | 130 | 0.2 | 20 | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22010583 **Report Date:** 02/15/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: E200.8** | | | | | | | | | Analytical Run: ICPMS5-C_220201A | |
| **Lab ID: QCS** | 5 | Initial Calibration Verification Standard | | | | | | | 02/01/22 18:58 | |
| Aluminum | | 0.261 | mg/L | 0.030 | 105 | 90 | 110 | | | |
| Arsenic | | 0.0527 | mg/L | 0.0010 | 105 | 90 | 110 | | | |
| Lead | | 0.0499 | mg/L | 0.0010 | 100 | 90 | 110 | | | |
| Manganese | | 0.253 | mg/L | 0.0010 | 101 | 90 | 110 | | | |
| Uranium | | 0.0204 | mg/L | 0.00030 | 102 | 90 | 110 | | | |
| **Method: E200.8** | | | | | | | | | Batch: 65629 | |
| **Lab ID: MB-65629** | 12 | Method Blank | | | | Run: ICPMS5-C_220201A | | | 02/02/22 04:11 | |
| Aluminum | | ND | mg/L | 0.02 | | | | | | |
| Arsenic | | ND | mg/L | 0.0003 | | | | | | |
| Beryllium | | ND | mg/L | 0.0002 | | | | | | |
| Cadmium | | ND | mg/L | 0.00002 | | | | | | |
| Cobalt | | ND | mg/L | 0.0001 | | | | | | |
| Lead | | ND | mg/L | 0.0001 | | | | | | |
| Manganese | | ND | mg/L | 0.0007 | | | | | | |
| Molybdenum | | 0.0002 | mg/L | 0.0001 | | | | | | |
| Nickel | | ND | mg/L | 0.0003 | | | | | | |
| Selenium | | ND | mg/L | 0.0001 | | | | | | |
| Uranium | | ND | mg/L | 0.0003 | | | | | | |
| Vanadium | | ND | mg/L | 0.003 | | | | | | |
| **Method: E200.8** | | | | | | | | | Analytical Run: ICPMS5-C_220203A | |
| **Lab ID: QCS** | 3 | Initial Calibration Verification Standard | | | | | | | 02/03/22 09:56 | |
| Aluminum | | 0.258 | mg/L | 0.030 | 103 | 90 | 110 | | | |
| Lead | | 0.0498 | mg/L | 0.0010 | 100 | 90 | 110 | | | |
| Uranium | | 0.0204 | mg/L | 0.00030 | 102 | 90 | 110 | | | |
| **Method: E200.8** | | | | | | | | | Batch: 65629 | |
| **Lab ID: MB-65629** | 12 | Method Blank | | | | Run: ICPMS5-C_220203A | | | 02/03/22 13:37 | |
| Aluminum | | ND | mg/L | 0.02 | | | | | | |
| Arsenic | | ND | mg/L | 0.0003 | | | | | | |
| Beryllium | | ND | mg/L | 0.0002 | | | | | | |
| Cadmium | | ND | mg/L | 0.00002 | | | | | | |
| Cobalt | | ND | mg/L | 0.0001 | | | | | | |
| Lead | | ND | mg/L | 0.0001 | | | | | | |
| Manganese | | ND | mg/L | 0.0007 | | | | | | |
| Molybdenum | | 0.0001 | mg/L | 0.0001 | | | | | | |
| Nickel | | ND | mg/L | 0.0003 | | | | | | |
| Selenium | | ND | mg/L | 0.0001 | | | | | | |
| Uranium | | ND | mg/L | 0.0003 | | | | | | |
| Vanadium | | ND | mg/L | 0.003 | | | | | | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22010583 **Report Date:** 02/15/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: E200.8** | | | | | | | | | Analytical Run: ICPMS5-C_220207B | |
| **Lab ID: QCS** | 2 | Initial Calibration Verification Standard | | | | | | | 02/08/22 12:29 | |
| Aluminum | | 0.233 | mg/L | 0.030 | 93 | 90 | 110 | | | |
| Uranium | | 0.0186 | mg/L | 0.00030 | 93 | 90 | 110 | | | |
| **Method: E200.8** | | | | | | | | | Batch: 65629 | |
| **Lab ID: MB-65629** | 12 | Method Blank | | | | Run: ICPMS5-C_220207B | | | 02/08/22 14:30 | |
| Aluminum | | ND | mg/L | 0.02 | | | | | | |
| Arsenic | | ND | mg/L | 0.0003 | | | | | | |
| Beryllium | | ND | mg/L | 0.0002 | | | | | | |
| Cadmium | | ND | mg/L | 0.00002 | | | | | | |
| Cobalt | | ND | mg/L | 0.0001 | | | | | | |
| Lead | | ND | mg/L | 0.0001 | | | | | | |
| Manganese | | ND | mg/L | 0.0007 | | | | | | |
| Molybdenum | | ND | mg/L | 0.0001 | | | | | | |
| Nickel | | ND | mg/L | 0.0003 | | | | | | |
| Selenium | | ND | mg/L | 0.0001 | | | | | | |
| Uranium | | ND | mg/L | 0.0003 | | | | | | |
| Vanadium | | ND | mg/L | 0.003 | | | | | | |
| **Method: E200.8** | | | | | | | | | Analytical Run: ICPMS5-C_220209A | |
| **Lab ID: QCS** | | Initial Calibration Verification Standard | | | | | | | 02/10/22 11:57 | |
| Beryllium | | 0.0248 | mg/L | 0.0010 | 99 | 90 | 110 | | | |
| **Method: E200.8** | | | | | | | | | Batch: 65629 | |
| **Lab ID: MB-65629** | 12 | Method Blank | | | | Run: ICPMS5-C_220209A | | | 02/10/22 12:38 | |
| Aluminum | | ND | mg/L | 0.02 | | | | | | |
| Arsenic | | ND | mg/L | 0.0003 | | | | | | |
| Beryllium | | ND | mg/L | 0.0002 | | | | | | |
| Cadmium | | ND | mg/L | 0.00002 | | | | | | |
| Cobalt | | ND | mg/L | 0.0001 | | | | | | |
| Lead | | ND | mg/L | 0.0001 | | | | | | |
| Manganese | | ND | mg/L | 0.0007 | | | | | | |
| Molybdenum | | 0.0001 | mg/L | 0.0001 | | | | | | |
| Nickel | | ND | mg/L | 0.0003 | | | | | | |
| Selenium | | 0.0006 | mg/L | 0.0001 | | | | | | |
| Uranium | | ND | mg/L | 0.0003 | | | | | | |
| Vanadium | | ND | mg/L | 0.003 | | | | | | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22010583 **Report Date:** 02/15/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: E200.8** | | | | | | | | | Analytical Run: ICPMS5-C_220214A | |
| **Lab ID: QCS** | 6 | Initial Calibration Verification Standard | | | | | | | 02/15/22 07:24 | |
| Arsenic | | 0.0522 | mg/L | 0.0010 | 104 | 90 | 110 | | | |
| Cadmium | | 0.0256 | mg/L | 0.0010 | 102 | 90 | 110 | | | |
| Manganese | | 0.252 | mg/L | 0.0010 | 101 | 90 | 110 | | | |
| Molybdenum | | 0.0474 | mg/L | 0.0010 | 95 | 90 | 110 | | | |
| Nickel | | 0.0534 | mg/L | 0.0050 | 107 | 90 | 110 | | | |
| Selenium | | 0.0524 | mg/L | 0.0010 | 105 | 90 | 110 | | | |
| **Method: E200.8** | | | | | | | | | | Batch: 65629 |
| **Lab ID: MB-65629** | 12 | Method Blank | | | | Run: ICPMS5-C_220214A | | | 02/15/22 10:36 | |
| Aluminum | | ND | mg/L | 0.02 | | | | | | |
| Arsenic | | ND | mg/L | 0.0003 | | | | | | |
| Beryllium | | ND | mg/L | 0.0002 | | | | | | |
| Cadmium | | ND | mg/L | 0.00002 | | | | | | |
| Cobalt | | ND | mg/L | 0.0001 | | | | | | |
| Lead | | ND | mg/L | 0.0001 | | | | | | |
| Manganese | | ND | mg/L | 0.0007 | | | | | | |
| Molybdenum | | 0.0002 | mg/L | 0.0001 | | | | | | |
| Nickel | | ND | mg/L | 0.0003 | | | | | | |
| Selenium | | ND | mg/L | 0.0001 | | | | | | |
| Uranium | | ND | mg/L | 0.0003 | | | | | | |
| Vanadium | | ND | mg/L | 0.003 | | | | | | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22010583 **Report Date:** 02/09/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: A7500-U C** | | | | | | | | | Batch: RA-TH-ISO-3381 | |
| **Lab ID: MB-RA-TH-ISO-3381** | 3 | Method Blank | | | | Run: EGG-ORTEC_ALL_220124C | | | 01/26/22 13:49 | |
| Thorium 230 | | 0.001 | pCi/L | | | | | | | U |
| Thorium 230 precision (±) | | 0.04 | pCi/L | | | | | | | |
| Thorium 230 MDC | | 0.07 | pCi/L | | | | | | | |
| **Lab ID: LCS-RA-TH-ISO-3381** | 3 | Laboratory Control Sample | | | | Run: EGG-ORTEC_ALL_220124C | | | 01/26/22 13:49 | |
| Thorium 230 | | 8.9 | pCi/L | | 93 | 70 | 130 | | | |
| Thorium 230 precision (±) | | 1.7 | pCi/L | | | | | | | |
| Thorium 230 MDC | | 0.056 | pCi/L | | | | | | | |
| **Lab ID: C22010514-005EDUP** | 3 | Sample Duplicate | | | | Run: EGG-ORTEC_ALL_220124C | | | 01/26/22 13:49 | |
| Thorium 230 | | 0.060 | pCi/L | | | | | 220 | 30 | R |
| Thorium 230 precision (±) | | 0.040 | pCi/L | | | | | | | |
| Thorium 230 MDC | | 0.059 | pCi/L | | | | | | | |
| - Duplicate RPD is outside of the acceptance range for this analysis. However, the RER is less than the limit of 3, the RER result is 1.12. | | | | | | | | | | |
| **Method: A7500-U C** | | | | | | | | | Batch: RA-TH-ISO-3382 | |
| **Lab ID: MB-RA-TH-ISO-3382** | 3 | Method Blank | | | | Run: EGG-ORTEC_ALL_220125D | | | 01/27/22 20:05 | |
| Thorium 230 | | 0.2 | pCi/L | | | | | | | |
| Thorium 230 precision (±) | | 0.08 | pCi/L | | | | | | | |
| Thorium 230 MDC | | 0.09 | pCi/L | | | | | | | |
| **Lab ID: LCS-RA-TH-ISO-3382** | 3 | Laboratory Control Sample | | | | Run: EGG-ORTEC_ALL_220125D | | | 01/27/22 20:05 | |
| Thorium 230 | | 11 | pCi/L | | 114 | 70 | 130 | | | |
| Thorium 230 precision (±) | | 2.1 | pCi/L | | | | | | | |
| Thorium 230 MDC | | 0.080 | pCi/L | | | | | | | |
| **Lab ID: C22010562-002DDUP** | 3 | Sample Duplicate | | | | Run: EGG-ORTEC_ALL_220125D | | | 01/27/22 20:04 | |
| Thorium 230 | | 0.33 | pCi/L | | | | | 10 | 30 | |
| Thorium 230 precision (±) | | 0.13 | pCi/L | | | | | | | |
| Thorium 230 MDC | | 0.13 | pCi/L | | | | | | | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

R - Relative Percent Difference (RPD) exceeds advisory limit

U - Not detected at Minimum Detectable Concentration (MDC)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22010583 **Report Date:** 02/09/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: E900.1** | | | | | | | | | | Batch: GA-1336 |
| **Lab ID: LCS-GA-1336** | 3 | Laboratory Control Sample | | | | Run: G542M_220121A | | | | 01/24/22 11:57 |
| Gross Alpha minus Rn & U | | 37 | pCi/L | | 109 | 70 | 130 | | | |
| Gross Alpha minus Rn & U Precision (±) | | 7.5 | pCi/L | | | | | | | |
| Gross Alpha minus Rn & U MDC | | 0.94 | pCi/L | | | | | | | |
| **Lab ID: MB-GA-1336** | 3 | Method Blank | | | | Run: G542M_220121A | | | | 01/24/22 11:57 |
| Gross Alpha minus Rn & U | | 0.08 | pCi/L | | | | | | | U |
| Gross Alpha minus Rn & U Precision (±) | | 0.6 | pCi/L | | | | | | | |
| Gross Alpha minus Rn & U MDC | | 0.9 | pCi/L | | | | | | | |
| **Lab ID: C22010583-014EDUP** | 3 | Sample Duplicate | | | | Run: G542M_220121A | | | | 01/24/22 14:38 |
| Gross Alpha minus Rn & U | | 0.65 | pCi/L | | | | | 67 | 30 | UR |
| Gross Alpha minus Rn & U Precision (±) | | 0.65 | pCi/L | | | | | | | |
| Gross Alpha minus Rn & U MDC | | 0.93 | pCi/L | | | | | | | |

- Duplicate RPD is outside of the acceptance range for this analysis. However, the RER is less than the limit of 3, the RER result is 0.70.

**Qualifiers:**

RL - Analyte Reporting Limit

R - Relative Percent Difference (RPD) exceeds advisory limit

ND - Not detected at the Reporting Limit (RL)

U - Not detected at Minimum Detectable Concentration (MDC)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22010583 **Report Date:** 02/09/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: E903.0** | | | | | | | | | Batch: RA226-10344 | |
| **Lab ID: LCS-RA226-10344** | 3 | Laboratory Control Sample | | | | Run: G542M_220121E | | | 02/01/22 11:19 | |
| Radium 226 | | 9.4 | pCi/L | | 92 | 70 | 130 | | | |
| Radium 226 precision (±) | | 1.8 | pCi/L | | | | | | | |
| Radium 226 MDC | | 0.19 | pCi/L | | | | | | | |
| **Lab ID: MB-RA226-10344** | 3 | Method Blank | | | | Run: G542M_220121E | | | 02/01/22 11:19 | |
| Radium 226 | | 0.2 | pCi/L | | | | | | | U |
| Radium 226 precision (±) | | 0.1 | pCi/L | | | | | | | |
| Radium 226 MDC | | 0.2 | pCi/L | | | | | | | |
| **Lab ID: C22010646-001DDUP** | 3 | Sample Duplicate | | | | Run: G542M_220121E | | | 02/01/22 13:02 | |
| Radium 226 | | 0.17 | pCi/L | | | | | 38 | 30 | UR |
| Radium 226 precision (±) | | 0.14 | pCi/L | | | | | | | |
| Radium 226 MDC | | 0.19 | pCi/L | | | | | | | |
| - Duplicate RPD is outside of the acceptance range for this analysis. However, the RER is less than the limit of 3, the RER result is 0.39. | | | | | | | | | | |
| **Method: E903.0** | | | | | | | | | Batch: RA226-10343 | |
| **Lab ID: LCS-RA226-10343** | 3 | Laboratory Control Sample | | | | Run: G542M_220121G | | | 02/02/22 12:04 | |
| Radium 226 | | 9.7 | pCi/L | | 95 | 70 | 130 | | | |
| Radium 226 precision (±) | | 1.9 | pCi/L | | | | | | | |
| Radium 226 MDC | | 0.20 | pCi/L | | | | | | | |
| **Lab ID: MB-RA226-10343** | 3 | Method Blank | | | | Run: G542M_220121G | | | 02/02/22 12:04 | |
| Radium 226 | | 0.03 | pCi/L | | | | | | | U |
| Radium 226 precision (±) | | 0.1 | pCi/L | | | | | | | |
| Radium 226 MDC | | 0.2 | pCi/L | | | | | | | |
| **Lab ID: C22010490-001ADUP** | 3 | Sample Duplicate | | | | Run: G542M_220121G | | | 02/02/22 12:05 | |
| Radium 226 | | 0.11 | pCi/L | | | | | 170 | 30 | UR |
| Radium 226 precision (±) | | 0.13 | pCi/L | | | | | | | |
| Radium 226 MDC | | 0.19 | pCi/L | | | | | | | |
| - Duplicate RPD is outside of the acceptance range for this analysis. However, the RER is less than the limit of 3, the RER result is 0.55. | | | | | | | | | | |

**Qualifiers:**

RL - Analyte Reporting Limit

R - Relative Percent Difference (RPD) exceeds advisory limit

ND - Not detected at the Reporting Limit (RL)

U - Not detected at Minimum Detectable Concentration (MDC)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22010583 **Report Date:** 02/09/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: E909.0** | | | | | | | | | | Batch: PB-210-1371 |
| **Lab ID: LCS-PB-210-1371** | 3 | Laboratory Control Sample | | | | Run: PACKARD 3100TR_220121A | | | 01/27/22 18:12 | |
| Lead 210 | | 16 | pCi/L | | 95 | 70 | 130 | | | |
| Lead 210 precision (±) | | 5.0 | pCi/L | | | | | | | |
| Lead 210 MDC | | 1.5 | pCi/L | | | | | | | |
| **Lab ID: MB-PB-210-1371** | 3 | Method Blank | | | | Run: PACKARD 3100TR_220121A | | | 01/27/22 19:12 | |
| Lead 210 | | -0.2 | pCi/L | | | | | | | U |
| Lead 210 precision (±) | | 0.5 | pCi/L | | | | | | | |
| Lead 210 MDC | | 0.9 | pCi/L | | | | | | | |
| **Lab ID: C22010647-004FDUP** | 3 | Sample Duplicate | | | | Run: PACKARD 3100TR_220121A | | | 01/29/22 22:40 | |
| Lead 210 | | 0.092 | pCi/L | | | | | 1100 | 30 | UR |
| Lead 210 precision (±) | | 0.55 | pCi/L | | | | | | | |
| Lead 210 MDC | | 0.92 | pCi/L | | | | | | | |
| - Duplicate RPD is outside of the acceptance range for this analysis. However, the RER is less than the limit of 3, the RER result is 0.20. | | | | | | | | | | |
| **Method: E909.0** | | | | | | | | | | Batch: PB-210-1370 |
| **Lab ID: LCS-PB-210-1370** | 3 | Laboratory Control Sample | | | | Run: TRICARB LSC_220120A | | | 01/28/22 07:00 | |
| Lead 210 | | 16 | pCi/L | | 96 | 70 | 130 | | | |
| Lead 210 precision (±) | | 5.0 | pCi/L | | | | | | | |
| Lead 210 MDC | | 1.4 | pCi/L | | | | | | | |
| **Lab ID: MB-PB-210-1370** | 3 | Method Blank | | | | Run: TRICARB LSC_220120A | | | 01/28/22 08:00 | |
| Lead 210 | | -0.1 | pCi/L | | | | | | | U |
| Lead 210 precision (±) | | 0.5 | pCi/L | | | | | | | |
| Lead 210 MDC | | 0.8 | pCi/L | | | | | | | |
| **Lab ID: C22010593-001FDUP** | 3 | Sample Duplicate | | | | Run: TRICARB LSC_220120A | | | 01/31/22 06:42 | |
| Lead 210 | | 0.88 | pCi/L | | | | | 59 | 30 | R |
| Lead 210 precision (±) | | 0.53 | pCi/L | | | | | | | |
| Lead 210 MDC | | 0.86 | pCi/L | | | | | | | |
| - Duplicate RPD is outside of the acceptance range for this analysis. However, the RER is less than the limit of 3, the RER result is 0.55. | | | | | | | | | | |

**Qualifiers:**

RL - Analyte Reporting Limit

R - Relative Percent Difference (RPD) exceeds advisory limit

ND - Not detected at the Reporting Limit (RL)

U - Not detected at Minimum Detectable Concentration (MDC)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22010583 **Report Date:** 02/09/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: RA-05** | | | | | | | | | | Batch: RA228-6709 |
| **Lab ID: LCS-228-RA226-10343** | 3 | Laboratory Control Sample | | | | Run: G542M_220121C | | | | 01/28/22 13:55 |
| Radium 228 | | 7.7 | pCi/L | | 103 | 70 | 130 | | | |
| Radium 228 precision (±) | | 1.8 | pCi/L | | | | | | | |
| Radium 228 MDC | | 1.7 | pCi/L | | | | | | | |
| **Lab ID: MB-RA226-10343** | 3 | Method Blank | | | | Run: G542M_220121C | | | | 01/28/22 13:55 |
| Radium 228 | | 0.4 | pCi/L | | | | | | | U |
| Radium 228 precision (±) | | 1 | pCi/L | | | | | | | |
| Radium 228 MDC | | 2 | pCi/L | | | | | | | |
| **Lab ID: C22010490-001ADUP** | 3 | Sample Duplicate | | | | Run: G542M_220121C | | | | 01/28/22 13:55 |
| Radium 228 | | 0.067 | pCi/L | | | | | 160 | 30 | UR |
| Radium 228 precision (±) | | 0.97 | pCi/L | | | | | | | |
| Radium 228 MDC | | 1.6 | pCi/L | | | | | | | |

- Duplicate RPD is outside of the acceptance range for this analysis. However, the RER is less than the limit of 3, the RER result is 0.32

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: RA-05** | | | | | | | | | | Batch: RA228-6708 |
| **Lab ID: LCS-228-RA226-10344** | 3 | Laboratory Control Sample | | | | Run: TENNELEC-4_220121B | | | | 01/27/22 14:42 |
| Radium 228 | | 9.2 | pCi/L | | 123 | 70 | 130 | | | |
| Radium 228 precision (±) | | 2.1 | pCi/L | | | | | | | |
| Radium 228 MDC | | 1.4 | pCi/L | | | | | | | |
| **Lab ID: MB-RA226-10344** | 3 | Method Blank | | | | Run: TENNELEC-4_220121B | | | | 01/27/22 14:42 |
| Radium 228 | | 0.5 | pCi/L | | | | | | | U |
| Radium 228 precision (±) | | 0.9 | pCi/L | | | | | | | |
| Radium 228 MDC | | 1 | pCi/L | | | | | | | |
| **Lab ID: C22010646-001DDUP** | 3 | Sample Duplicate | | | | Run: TENNELEC-4_220121B | | | | 01/27/22 14:42 |
| Radium 228 | | 0.25 | pCi/L | | | | | 630 | 30 | UR |
| Radium 228 precision (±) | | 0.89 | pCi/L | | | | | | | |
| Radium 228 MDC | | 1.5 | pCi/L | | | | | | | |

- Duplicate RPD is outside of the acceptance range for this analysis. However, the RER is less than the limit of 3, the RER result is 0.57.

**Qualifiers:**

RL - Analyte Reporting Limit

R - Relative Percent Difference (RPD) exceeds advisory limit

ND - Not detected at the Reporting Limit (RL)

U - Not detected at Minimum Detectable Concentration (MDC)

eurofins | Environment Testing America

# ANALYTICAL REPORT

Eurofins Denver
4955 Yarrow Street
Arvada, CO 80002
Tel: (303)736-0100

Laboratory Job ID: 280-157947-1
Client Project/Site: 11(e) Byproduct Material

For:
Energy Laboratories, Inc.
400 W Boxelder Rd
Gillette, Wyoming 82718

Attn: Casper Reporting

*Authorized for release by:*
*1/28/2022 2:40:08 PM*

Dylan Bieniulis, Project Manager I
(303)736-0138
Dylan.Bieniulis@Eurofinset.com

LINKS

Review your project results through Total Access

Have a Question? Ask The Expert

Visit us at: www.eurofinsus.com/Env

*The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.*

*This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.*

*Results relate only to the items tested and the sample(s) as received by the laboratory.*

# Table of Contents

Cover Page . . . . . 1
Table of Contents . . . . . 2
Definitions . . . . . 3
Case Narrative . . . . . 4
Detection Summary . . . . . 6
Method Summary . . . . . 8
Sample Summary . . . . . 9
Client Sample Results . . . . . 10
Surrogate Summary . . . . . 15
QC Sample Results . . . . . 16
QC Association . . . . . 18
Chronicle . . . . . 19
Certification Summary . . . . . 22
Chain of Custody . . . . . 23
Receipt Checklists . . . . . 27

# Definitions/Glossary

Client: Energy Laboratories, Inc.
Project/Site: 11(e) Byproduct Material

Job ID: 280-157947-1

## Qualifiers

### GC/MS VOA

| Qualifier | Qualifier Description |
|---|---|
| *- | LCS and/or LCSD is outside acceptance limits, low biased. |
| J | Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value. |

## Glossary

| Abbreviation | These commonly used abbreviations may or may not be present in this report. |
|---|---|
| ¤ | Listed under the "D" column to designate that the result is reported on a dry weight basis |
| %R | Percent Recovery |
| CFL | Contains Free Liquid |
| CFU | Colony Forming Unit |
| CNF | Contains No Free Liquid |
| DER | Duplicate Error Ratio (normalized absolute difference) |
| Dil Fac | Dilution Factor |
| DL | Detection Limit (DoD/DOE) |
| DL, RA, RE, IN | Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample |
| DLC | Decision Level Concentration (Radiochemistry) |
| EDL | Estimated Detection Limit (Dioxin) |
| LOD | Limit of Detection (DoD/DOE) |
| LOQ | Limit of Quantitation (DoD/DOE) |
| MCL | EPA recommended "Maximum Contaminant Level" |
| MDA | Minimum Detectable Activity (Radiochemistry) |
| MDC | Minimum Detectable Concentration (Radiochemistry) |
| MDL | Method Detection Limit |
| ML | Minimum Level (Dioxin) |
| MPN | Most Probable Number |
| MQL | Method Quantitation Limit |
| NC | Not Calculated |
| ND | Not Detected at the reporting limit (or MDL or EDL if shown) |
| NEG | Negative / Absent |
| POS | Positive / Present |
| PQL | Practical Quantitation Limit |
| PRES | Presumptive |
| QC | Quality Control |
| RER | Relative Error Ratio (Radiochemistry) |
| RL | Reporting Limit or Requested Limit (Radiochemistry) |
| RPD | Relative Percent Difference, a measure of the relative difference between two points |
| TEF | Toxicity Equivalent Factor (Dioxin) |
| TEQ | Toxicity Equivalent Quotient (Dioxin) |
| TNTC | Too Numerous To Count |

## Job ID: 280-157947-1

**Laboratory: Eurofins Denver**

**Narrative**

# CASE NARRATIVE

## Client: Energy Laboratories, Inc.

## Project: 11(e) Byproduct Material

## Report Number: 280-157947-1

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

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

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

**RECEIPT**

The samples were received on 01/21/2022; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was 0.2 C.

Three of three VOA vials for each of the following samples were received with a headspace bubble greater than 6mm in diameter: C22010583-005F (280-157947-5) and C22010583-008F (280-157947-8). Analytical results may be biased low due to headspace. The laboratory will proceed with the requested analyses unless instructed otherwise. The client was notified on 1/21/2022.

Two of three VOA vials for each of the following samples were received with a headspace bubble greater than 6mm in diameter: C22010583-004F (280-157947-4) and C22010583-009F (280-157947-9). The client was notified on 1/21/2022.

One of three VOA vials for the following sample was received with a headspace bubble greater than 6mm in diameter: C22010583-003F (280-157947-3). The client was notified on 1/21/2022.

One of five VOA vials for the following sample was received with a headspace bubble greater than 6mm in diameter: C22010583-018A (280-157947-15). The client was notified on 1/21/2022.

**VOLATILE ORGANIC COMPOUNDS BY GC/MS**

Samples C22010583-001F (280-157947-1), C22010583-002F (280-157947-2), C22010583-003F (280-157947-3), C22010583-004F (280-157947-4), C22010583-005F (280-157947-5), C22010583-006F (280-157947-6), C22010583-007F (280-157947-7), C22010583-008F (280-157947-8), C22010583-009F (280-157947-9), C22010583-010F (280-157947-10), C22010583-011F (280-157947-11), C22010583-012F (280-157947-12), C22010583-013F (280-157947-13), C22010583-014F (280-157947-14) and C22010583-018A (280-157947-15) were analyzed for Volatile Organic Compounds by GC/MS in accordance with 624.1 40CFR136A. The samples were analyzed on 01/25/2022.

The method requirement for no headspace was not met. The following volatile samples were analyzed with significant headspace in the sample container(s): C22010583-002F (280-157947-2), C22010583-005F (280-157947-5), C22010583-006F (280-157947-6) and C22010583-008F (280-157947-8). Significant headspace is defined as a bubble greater than 6 mm in diameter.

The following samples were collected in a properly preserved vial; however, the pH was outside the required criteria (pH < 2) when verified by the laboratory. The samples were analyzed outside the 7-day holding time specified for unpreserved samples but within the 14-day holding time specified for preserved samples: C22010583-003F (280-157947-3), C22010583-004F (280-157947-4), (280-157985-B-2),

## Job ID: 280-157947-1 (Continued)

**Laboratory: Eurofins Denver (Continued)**

(280-157985-B-2 MS) and (280-157985-A-2 MSD).

The following analyte recovered outside control limits for the LCS associated with analytical batch 280-564252: Bromoform, 66%R (70-130%R control limits, and marginal exceedance control limits = 52-133 %R). This low recovery is not indicative of a systematic control problem because as it is within the control limits for random marginal exceedances and the analyte is a non-detect in samples. Qualified results have been reported.

The MSD (performed on another client's sample) and CCVC of batch 564252 were out of tune time but all associated client samples referenced in this report were within the time range of the tune therefore the data has been reported: (CCVC 280-564252/35) and (280-157985-A-2 MSD)

The following sample was received with less than 2 days remaining on the holding time. As such, the laboratory had insufficient time remaining to perform the analysis within holding time: (280-157985-B-2).

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

# Detection Summary

Client: Energy Laboratories, Inc.
Project/Site: 11(e) Byproduct Material

Job ID: 280-157947-1

## Client Sample ID: C22010583-001F — Lab Sample ID: 280-157947-1

No Detections.

## Client Sample ID: C22010583-002F — Lab Sample ID: 280-157947-2

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| Chloroform | 1.4 | | 1.0 | 0.22 | ug/L | 1 | | 624.1 | Total/NA |
| Trihalomethanes, Total | 1.4 | | 1.0 | 0.15 | ug/L | 1 | | 624.1 | Total/NA |

## Client Sample ID: C22010583-003F — Lab Sample ID: 280-157947-3

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| Chloroform | 0.27 | J | 1.0 | 0.22 | ug/L | 1 | | 624.1 | Total/NA |
| Trihalomethanes, Total | 0.27 | J | 1.0 | 0.15 | ug/L | 1 | | 624.1 | Total/NA |

## Client Sample ID: C22010583-004F — Lab Sample ID: 280-157947-4

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| Chloroform | 0.37 | J | 1.0 | 0.22 | ug/L | 1 | | 624.1 | Total/NA |
| Trihalomethanes, Total | 0.37 | J | 1.0 | 0.15 | ug/L | 1 | | 624.1 | Total/NA |

## Client Sample ID: C22010583-005F — Lab Sample ID: 280-157947-5

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| Chloroform | 0.88 | J | 1.0 | 0.22 | ug/L | 1 | | 624.1 | Total/NA |
| Trihalomethanes, Total | 0.88 | J | 1.0 | 0.15 | ug/L | 1 | | 624.1 | Total/NA |

## Client Sample ID: C22010583-006F — Lab Sample ID: 280-157947-6

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| Chloroform | 0.47 | J | 1.0 | 0.22 | ug/L | 1 | | 624.1 | Total/NA |
| Trihalomethanes, Total | 0.47 | J | 1.0 | 0.15 | ug/L | 1 | | 624.1 | Total/NA |

## Client Sample ID: C22010583-007F — Lab Sample ID: 280-157947-7

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| Chloroform | 0.25 | J | 1.0 | 0.22 | ug/L | 1 | | 624.1 | Total/NA |
| Trihalomethanes, Total | 0.25 | J | 1.0 | 0.15 | ug/L | 1 | | 624.1 | Total/NA |

## Client Sample ID: C22010583-008F — Lab Sample ID: 280-157947-8

No Detections.

## Client Sample ID: C22010583-009F — Lab Sample ID: 280-157947-9

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| Chloroform | 0.28 | J | 1.0 | 0.22 | ug/L | 1 | | 624.1 | Total/NA |
| Trihalomethanes, Total | 0.28 | J | 1.0 | 0.15 | ug/L | 1 | | 624.1 | Total/NA |

## Client Sample ID: C22010583-010F — Lab Sample ID: 280-157947-10

No Detections.

## Client Sample ID: C22010583-011F — Lab Sample ID: 280-157947-11

No Detections.

## Client Sample ID: C22010583-012F — Lab Sample ID: 280-157947-12

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins Denver

# Detection Summary

Client: Energy Laboratories, Inc.
Project/Site: 11(e) Byproduct Material

Job ID: 280-157947-1

## Client Sample ID: C22010583-013F — Lab Sample ID: 280-157947-13

No Detections.

## Client Sample ID: C22010583-014F — Lab Sample ID: 280-157947-14

No Detections.

## Client Sample ID: C22010583-018A — Lab Sample ID: 280-157947-15

No Detections.

This Detection Summary does not include radiochemical test results.

# Method Summary

Client: Energy Laboratories, Inc.
Project/Site: 11(e) Byproduct Material

Job ID: 280-157947-1

| Method | Method Description | Protocol | Laboratory |
|---|---|---|---|
| 624.1 | Volatile Organic Compounds (GC/MS) | 40CFR136A | TAL DEN |

**Protocol References:**

40CFR136A = "Methods for Organic Chemical Analysis of Municipal Industrial Wastewater", 40CFR, Part 136, Appendix A, October 26, 1984 and subsequent revisions.

**Laboratory References:**

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

# Sample Summary

Client: Energy Laboratories, Inc.
Project/Site: 11(e) Byproduct Material

Job ID: 280-157947-1

| Lab Sample ID | Client Sample ID | Matrix | Collected | Received |
|---|---|---|---|---|
| 280-157947-1 | C22010583-001F | Water | 01/13/22 13:42 | 01/21/22 09:40 |
| 280-157947-2 | C22010583-002F | Water | 01/14/22 10:51 | 01/21/22 09:40 |
| 280-157947-3 | C22010583-003F | Water | 01/17/22 09:14 | 01/21/22 09:40 |
| 280-157947-4 | C22010583-004F | Water | 01/17/22 09:48 | 01/21/22 09:40 |
| 280-157947-5 | C22010583-005F | Water | 01/17/22 10:31 | 01/21/22 09:40 |
| 280-157947-6 | C22010583-006F | Water | 01/17/22 11:16 | 01/21/22 09:40 |
| 280-157947-7 | C22010583-007F | Water | 01/17/22 11:58 | 01/21/22 09:40 |
| 280-157947-8 | C22010583-008F | Water | 01/17/22 13:19 | 01/21/22 09:40 |
| 280-157947-9 | C22010583-009F | Water | 01/17/22 14:08 | 01/21/22 09:40 |
| 280-157947-10 | C22010583-010F | Water | 01/13/22 09:27 | 01/21/22 09:40 |
| 280-157947-11 | C22010583-011F | Water | 01/13/22 10:33 | 01/21/22 09:40 |
| 280-157947-12 | C22010583-012F | Water | 01/13/22 11:40 | 01/21/22 09:40 |
| 280-157947-13 | C22010583-013F | Water | 01/13/22 12:10 | 01/21/22 09:40 |
| 280-157947-14 | C22010583-014F | Water | 01/13/22 12:52 | 01/21/22 09:40 |
| 280-157947-15 | C22010583-018A | Water | 01/13/22 09:27 | 01/21/22 09:40 |

# Client Sample Results

Client: Energy Laboratories, Inc.
Project/Site: 11(e) Byproduct Material

Job ID: 280-157947-1

## Method: 624.1 - Volatile Organic Compounds (GC/MS)

**Client Sample ID: C22010583-001F** — **Lab Sample ID: 280-157947-1**
**Date Collected: 01/13/22 13:42** — **Matrix: Water**
**Date Received: 01/21/22 09:40**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | ND | | 1.0 | 0.15 | ug/L | | | 01/25/22 13:52 | 1 |
| Bromoform | ND | *- | 2.0 | 0.67 | ug/L | | | 01/25/22 13:52 | 1 |
| Chlorodibromomethane | ND | | 1.0 | 0.21 | ug/L | | | 01/25/22 13:52 | 1 |
| Chloroform | ND | | 1.0 | 0.22 | ug/L | | | 01/25/22 13:52 | 1 |
| Trihalomethanes, Total | ND | | 1.0 | 0.15 | ug/L | | | 01/25/22 13:52 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1,2-Dichloroethane-d4 (Surr)* | *102* | | *73 - 122* | | *01/25/22 13:52* | *1* |
| *4-Bromofluorobenzene (Surr)* | *102* | | *79 - 119* | | *01/25/22 13:52* | *1* |
| *Toluene-d8 (Surr)* | *100* | | *80 - 120* | | *01/25/22 13:52* | *1* |

**Client Sample ID: C22010583-002F** — **Lab Sample ID: 280-157947-2**
**Date Collected: 01/14/22 10:51** — **Matrix: Water**
**Date Received: 01/21/22 09:40**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | ND | | 1.0 | 0.15 | ug/L | | | 01/25/22 14:14 | 1 |
| Bromoform | ND | *- | 2.0 | 0.67 | ug/L | | | 01/25/22 14:14 | 1 |
| Chlorodibromomethane | ND | | 1.0 | 0.21 | ug/L | | | 01/25/22 14:14 | 1 |
| **Chloroform** | **1.4** | | 1.0 | 0.22 | ug/L | | | 01/25/22 14:14 | 1 |
| **Trihalomethanes, Total** | **1.4** | | 1.0 | 0.15 | ug/L | | | 01/25/22 14:14 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1,2-Dichloroethane-d4 (Surr)* | *100* | | *73 - 122* | | *01/25/22 14:14* | *1* |
| *4-Bromofluorobenzene (Surr)* | *105* | | *79 - 119* | | *01/25/22 14:14* | *1* |
| *Toluene-d8 (Surr)* | *101* | | *80 - 120* | | *01/25/22 14:14* | *1* |

**Client Sample ID: C22010583-003F** — **Lab Sample ID: 280-157947-3**
**Date Collected: 01/17/22 09:14** — **Matrix: Water**
**Date Received: 01/21/22 09:40**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | ND | | 1.0 | 0.15 | ug/L | | | 01/25/22 14:35 | 1 |
| Bromoform | ND | *- | 2.0 | 0.67 | ug/L | | | 01/25/22 14:35 | 1 |
| Chlorodibromomethane | ND | | 1.0 | 0.21 | ug/L | | | 01/25/22 14:35 | 1 |
| **Chloroform** | **0.27** | **J** | 1.0 | 0.22 | ug/L | | | 01/25/22 14:35 | 1 |
| **Trihalomethanes, Total** | **0.27** | **J** | 1.0 | 0.15 | ug/L | | | 01/25/22 14:35 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1,2-Dichloroethane-d4 (Surr)* | *105* | | *73 - 122* | | *01/25/22 14:35* | *1* |
| *4-Bromofluorobenzene (Surr)* | *103* | | *79 - 119* | | *01/25/22 14:35* | *1* |
| *Toluene-d8 (Surr)* | *101* | | *80 - 120* | | *01/25/22 14:35* | *1* |

**Client Sample ID: C22010583-004F** — **Lab Sample ID: 280-157947-4**
**Date Collected: 01/17/22 09:48** — **Matrix: Water**
**Date Received: 01/21/22 09:40**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | ND | | 1.0 | 0.15 | ug/L | | | 01/25/22 14:57 | 1 |
| Bromoform | ND | *- | 2.0 | 0.67 | ug/L | | | 01/25/22 14:57 | 1 |
| Chlorodibromomethane | ND | | 1.0 | 0.21 | ug/L | | | 01/25/22 14:57 | 1 |
| **Chloroform** | **0.37** | **J** | 1.0 | 0.22 | ug/L | | | 01/25/22 14:57 | |
| **Trihalomethanes, Total** | **0.37** | **J** | 1.0 | 0.15 | ug/L | | | 01/25/22 14:57 | 1 |

## Method: 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

| Surrogate | %Recovery | Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|
| 1,2-Dichloroethane-d4 (Surr) | 101 | | 73 - 122 | | 01/25/22 14:57 | 1 |
| 4-Bromofluorobenzene (Surr) | 105 | | 79 - 119 | | 01/25/22 14:57 | 1 |
| Toluene-d8 (Surr) | 103 | | 80 - 120 | | 01/25/22 14:57 | 1 |

**Client Sample ID: C22010583-005F** — **Lab Sample ID: 280-157947-5**
**Date Collected: 01/17/22 10:31** — **Matrix: Water**
**Date Received: 01/21/22 09:40**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | ND | | 1.0 | 0.15 | ug/L | | | 01/25/22 15:18 | 1 |
| Bromoform | ND | *- | 2.0 | 0.67 | ug/L | | | 01/25/22 15:18 | 1 |
| Chlorodibromomethane | ND | | 1.0 | 0.21 | ug/L | | | 01/25/22 15:18 | 1 |
| **Chloroform** | **0.88** | **J** | 1.0 | 0.22 | ug/L | | | 01/25/22 15:18 | 1 |
| **Trihalomethanes, Total** | **0.88** | **J** | 1.0 | 0.15 | ug/L | | | 01/25/22 15:18 | 1 |

| Surrogate | %Recovery | Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|
| 1,2-Dichloroethane-d4 (Surr) | 101 | | 73 - 122 | | 01/25/22 15:18 | 1 |
| 4-Bromofluorobenzene (Surr) | 104 | | 79 - 119 | | 01/25/22 15:18 | 1 |
| Toluene-d8 (Surr) | 102 | | 80 - 120 | | 01/25/22 15:18 | 1 |

**Client Sample ID: C22010583-006F** — **Lab Sample ID: 280-157947-6**
**Date Collected: 01/17/22 11:16** — **Matrix: Water**
**Date Received: 01/21/22 09:40**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | ND | | 1.0 | 0.15 | ug/L | | | 01/25/22 15:40 | 1 |
| Bromoform | ND | *- | 2.0 | 0.67 | ug/L | | | 01/25/22 15:40 | 1 |
| Chlorodibromomethane | ND | | 1.0 | 0.21 | ug/L | | | 01/25/22 15:40 | 1 |
| **Chloroform** | **0.47** | **J** | 1.0 | 0.22 | ug/L | | | 01/25/22 15:40 | 1 |
| **Trihalomethanes, Total** | **0.47** | **J** | 1.0 | 0.15 | ug/L | | | 01/25/22 15:40 | 1 |

| Surrogate | %Recovery | Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|
| 1,2-Dichloroethane-d4 (Surr) | 105 | | 73 - 122 | | 01/25/22 15:40 | 1 |
| 4-Bromofluorobenzene (Surr) | 107 | | 79 - 119 | | 01/25/22 15:40 | 1 |
| Toluene-d8 (Surr) | 100 | | 80 - 120 | | 01/25/22 15:40 | 1 |

**Client Sample ID: C22010583-007F** — **Lab Sample ID: 280-157947-7**
**Date Collected: 01/17/22 11:58** — **Matrix: Water**
**Date Received: 01/21/22 09:40**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | ND | | 1.0 | 0.15 | ug/L | | | 01/25/22 16:01 | 1 |
| Bromoform | ND | *- | 2.0 | 0.67 | ug/L | | | 01/25/22 16:01 | 1 |
| Chlorodibromomethane | ND | | 1.0 | 0.21 | ug/L | | | 01/25/22 16:01 | 1 |
| **Chloroform** | **0.25** | **J** | 1.0 | 0.22 | ug/L | | | 01/25/22 16:01 | 1 |
| **Trihalomethanes, Total** | **0.25** | **J** | 1.0 | 0.15 | ug/L | | | 01/25/22 16:01 | 1 |

| Surrogate | %Recovery | Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|
| 1,2-Dichloroethane-d4 (Surr) | 102 | | 73 - 122 | | 01/25/22 16:01 | 1 |
| 4-Bromofluorobenzene (Surr) | 105 | | 79 - 119 | | 01/25/22 16:01 | 1 |
| Toluene-d8 (Surr) | 100 | | 80 - 120 | | 01/25/22 16:01 | 1 |

**Client Sample ID: C22010583-008F** — **Lab Sample ID: 280-157947-8**
**Date Collected: 01/17/22 13:19** — **Matrix: Water**
**Date Received: 01/21/22 09:40**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | ND | | 1.0 | 0.15 | ug/L | | | 01/25/22 16:23 | 1 |

## Method: 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

**Client Sample ID: C22010583-008F** — **Lab Sample ID: 280-157947-8**
**Date Collected: 01/17/22 13:19** — **Matrix: Water**
**Date Received: 01/21/22 09:40**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Bromoform | ND | *- | 2.0 | 0.67 | ug/L | | | 01/25/22 16:23 | 1 |
| Chlorodibromomethane | ND | | 1.0 | 0.21 | ug/L | | | 01/25/22 16:23 | 1 |
| Chloroform | ND | | 1.0 | 0.22 | ug/L | | | 01/25/22 16:23 | 1 |
| Trihalomethanes, Total | ND | | 1.0 | 0.15 | ug/L | | | 01/25/22 16:23 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1,2-Dichloroethane-d4 (Surr)* | *102* | | *73 - 122* | | *01/25/22 16:23* | *1* |
| *4-Bromofluorobenzene (Surr)* | *103* | | *79 - 119* | | *01/25/22 16:23* | *1* |
| *Toluene-d8 (Surr)* | *103* | | *80 - 120* | | *01/25/22 16:23* | *1* |

**Client Sample ID: C22010583-009F** — **Lab Sample ID: 280-157947-9**
**Date Collected: 01/17/22 14:08** — **Matrix: Water**
**Date Received: 01/21/22 09:40**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | ND | | 1.0 | 0.15 | ug/L | | | 01/25/22 16:44 | 1 |
| Bromoform | ND | *- | 2.0 | 0.67 | ug/L | | | 01/25/22 16:44 | 1 |
| Chlorodibromomethane | ND | | 1.0 | 0.21 | ug/L | | | 01/25/22 16:44 | 1 |
| **Chloroform** | **0.28** | **J** | 1.0 | 0.22 | ug/L | | | 01/25/22 16:44 | 1 |
| **Trihalomethanes, Total** | **0.28** | **J** | 1.0 | 0.15 | ug/L | | | 01/25/22 16:44 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1,2-Dichloroethane-d4 (Surr)* | *103* | | *73 - 122* | | *01/25/22 16:44* | *1* |
| *4-Bromofluorobenzene (Surr)* | *106* | | *79 - 119* | | *01/25/22 16:44* | *1* |
| *Toluene-d8 (Surr)* | *103* | | *80 - 120* | | *01/25/22 16:44* | *1* |

**Client Sample ID: C22010583-010F** — **Lab Sample ID: 280-157947-10**
**Date Collected: 01/13/22 09:27** — **Matrix: Water**
**Date Received: 01/21/22 09:40**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | ND | | 1.0 | 0.15 | ug/L | | | 01/25/22 17:06 | 1 |
| Bromoform | ND | *- | 2.0 | 0.67 | ug/L | | | 01/25/22 17:06 | 1 |
| Chlorodibromomethane | ND | | 1.0 | 0.21 | ug/L | | | 01/25/22 17:06 | 1 |
| Chloroform | ND | | 1.0 | 0.22 | ug/L | | | 01/25/22 17:06 | 1 |
| Trihalomethanes, Total | ND | | 1.0 | 0.15 | ug/L | | | 01/25/22 17:06 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1,2-Dichloroethane-d4 (Surr)* | *103* | | *73 - 122* | | *01/25/22 17:06* | *1* |
| *4-Bromofluorobenzene (Surr)* | *103* | | *79 - 119* | | *01/25/22 17:06* | *1* |
| *Toluene-d8 (Surr)* | *100* | | *80 - 120* | | *01/25/22 17:06* | *1* |

**Client Sample ID: C22010583-011F** — **Lab Sample ID: 280-157947-11**
**Date Collected: 01/13/22 10:33** — **Matrix: Water**
**Date Received: 01/21/22 09:40**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | ND | | 1.0 | 0.15 | ug/L | | | 01/25/22 17:28 | 1 |
| Bromoform | ND | *- | 2.0 | 0.67 | ug/L | | | 01/25/22 17:28 | 1 |
| Chlorodibromomethane | ND | | 1.0 | 0.21 | ug/L | | | 01/25/22 17:28 | 1 |
| Chloroform | ND | | 1.0 | 0.22 | ug/L | | | 01/25/22 17:28 | 1 |
| Trihalomethanes, Total | ND | | 1.0 | 0.15 | ug/L | | | 01/25/22 17:28 | |

## Method: 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

| Surrogate | %Recovery | Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|
| 1,2-Dichloroethane-d4 (Surr) | 104 | | 73 - 122 | | 01/25/22 17:28 | 1 |
| 4-Bromofluorobenzene (Surr) | 103 | | 79 - 119 | | 01/25/22 17:28 | 1 |
| Toluene-d8 (Surr) | 101 | | 80 - 120 | | 01/25/22 17:28 | 1 |

**Client Sample ID: C22010583-012F** — **Lab Sample ID: 280-157947-12**
**Date Collected: 01/13/22 11:40** — **Matrix: Water**
**Date Received: 01/21/22 09:40**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | ND | | 1.0 | 0.15 | ug/L | | | 01/25/22 17:49 | 1 |
| Bromoform | ND | *- | 2.0 | 0.67 | ug/L | | | 01/25/22 17:49 | 1 |
| Chlorodibromomethane | ND | | 1.0 | 0.21 | ug/L | | | 01/25/22 17:49 | 1 |
| Chloroform | ND | | 1.0 | 0.22 | ug/L | | | 01/25/22 17:49 | 1 |
| Trihalomethanes, Total | ND | | 1.0 | 0.15 | ug/L | | | 01/25/22 17:49 | 1 |

| Surrogate | %Recovery | Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|
| 1,2-Dichloroethane-d4 (Surr) | 104 | | 73 - 122 | | 01/25/22 17:49 | 1 |
| 4-Bromofluorobenzene (Surr) | 104 | | 79 - 119 | | 01/25/22 17:49 | 1 |
| Toluene-d8 (Surr) | 101 | | 80 - 120 | | 01/25/22 17:49 | 1 |

**Client Sample ID: C22010583-013F** — **Lab Sample ID: 280-157947-13**
**Date Collected: 01/13/22 12:10** — **Matrix: Water**
**Date Received: 01/21/22 09:40**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | ND | | 1.0 | 0.15 | ug/L | | | 01/25/22 18:11 | 1 |
| Bromoform | ND | *- | 2.0 | 0.67 | ug/L | | | 01/25/22 18:11 | 1 |
| Chlorodibromomethane | ND | | 1.0 | 0.21 | ug/L | | | 01/25/22 18:11 | 1 |
| Chloroform | ND | | 1.0 | 0.22 | ug/L | | | 01/25/22 18:11 | 1 |
| Trihalomethanes, Total | ND | | 1.0 | 0.15 | ug/L | | | 01/25/22 18:11 | 1 |

| Surrogate | %Recovery | Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|
| 1,2-Dichloroethane-d4 (Surr) | 105 | | 73 - 122 | | 01/25/22 18:11 | 1 |
| 4-Bromofluorobenzene (Surr) | 103 | | 79 - 119 | | 01/25/22 18:11 | 1 |
| Toluene-d8 (Surr) | 102 | | 80 - 120 | | 01/25/22 18:11 | 1 |

**Client Sample ID: C22010583-014F** — **Lab Sample ID: 280-157947-14**
**Date Collected: 01/13/22 12:52** — **Matrix: Water**
**Date Received: 01/21/22 09:40**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | ND | | 1.0 | 0.15 | ug/L | | | 01/25/22 18:32 | 1 |
| Bromoform | ND | *- | 2.0 | 0.67 | ug/L | | | 01/25/22 18:32 | 1 |
| Chlorodibromomethane | ND | | 1.0 | 0.21 | ug/L | | | 01/25/22 18:32 | 1 |
| Chloroform | ND | | 1.0 | 0.22 | ug/L | | | 01/25/22 18:32 | 1 |
| Trihalomethanes, Total | ND | | 1.0 | 0.15 | ug/L | | | 01/25/22 18:32 | 1 |

| Surrogate | %Recovery | Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|
| 1,2-Dichloroethane-d4 (Surr) | 100 | | 73 - 122 | | 01/25/22 18:32 | 1 |
| 4-Bromofluorobenzene (Surr) | 103 | | 79 - 119 | | 01/25/22 18:32 | 1 |
| Toluene-d8 (Surr) | 103 | | 80 - 120 | | 01/25/22 18:32 | 1 |

**Client Sample ID: C22010583-018A** — **Lab Sample ID: 280-157947-15**
**Date Collected: 01/13/22 09:27** — **Matrix: Water**
**Date Received: 01/21/22 09:40**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | ND | | 1.0 | 0.15 | ug/L | | | 01/25/22 18:54 | 1 |

# Client Sample Results

Client: Energy Laboratories, Inc.
Project/Site: 11(e) Byproduct Material

Job ID: 280-157947-1

## Method: 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

**Client Sample ID: C22010583-018A**
**Date Collected: 01/13/22 09:27**
**Date Received: 01/21/22 09:40**

**Lab Sample ID: 280-157947-15**
**Matrix: Water**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Bromoform | ND | *- | 2.0 | 0.67 | ug/L | | | 01/25/22 18:54 | 1 |
| Chlorodibromomethane | ND | | 1.0 | 0.21 | ug/L | | | 01/25/22 18:54 | 1 |
| Chloroform | ND | | 1.0 | 0.22 | ug/L | | | 01/25/22 18:54 | 1 |
| Trihalomethanes, Total | ND | | 1.0 | 0.15 | ug/L | | | 01/25/22 18:54 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1,2-Dichloroethane-d4 (Surr)* | *103* | | *73 - 122* | | *01/25/22 18:54* | *1* |
| *4-Bromofluorobenzene (Surr)* | *104* | | *79 - 119* | | *01/25/22 18:54* | *1* |
| *Toluene-d8 (Surr)* | *101* | | *80 - 120* | | *01/25/22 18:54* | *1* |

# Surrogate Summary

Client: Energy Laboratories, Inc.
Project/Site: 11(e) Byproduct Material

Job ID: 280-157947-1

## Method: 624.1 - Volatile Organic Compounds (GC/MS)

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

| | | Percent Surrogate Recovery (Acceptance Limits) | | |
|---|---|---|---|---|
| | | DCA | BFB | TOL |
| **Lab Sample ID** | **Client Sample ID** | **(73-122)** | **(79-119)** | **(80-120)** |
| 280-157947-1 | C22010583-001F | 102 | 102 | 100 |
| 280-157947-2 | C22010583-002F | 100 | 105 | 101 |
| 280-157947-3 | C22010583-003F | 105 | 103 | 101 |
| 280-157947-4 | C22010583-004F | 101 | 105 | 103 |
| 280-157947-5 | C22010583-005F | 101 | 104 | 102 |
| 280-157947-6 | C22010583-006F | 105 | 107 | 100 |
| 280-157947-7 | C22010583-007F | 102 | 105 | 100 |
| 280-157947-8 | C22010583-008F | 102 | 103 | 103 |
| 280-157947-9 | C22010583-009F | 103 | 106 | 103 |
| 280-157947-10 | C22010583-010F | 103 | 103 | 100 |
| 280-157947-11 | C22010583-011F | 104 | 103 | 101 |
| 280-157947-12 | C22010583-012F | 104 | 104 | 101 |
| 280-157947-13 | C22010583-013F | 105 | 103 | 102 |
| 280-157947-14 | C22010583-014F | 100 | 103 | 103 |
| 280-157947-15 | C22010583-018A | 103 | 104 | 101 |
| 280-157985-A-2 MSD | Matrix Spike Duplicate | 103 | 103 | 102 |
| 280-157985-B-2 MS | Matrix Spike | 103 | 104 | 100 |
| LCS 280-564252/4 | Lab Control Sample | 98 | 101 | 100 |
| LCSD 280-564252/5 | Lab Control Sample Dup | 101 | 101 | 103 |
| MB 280-564252/9 | Method Blank | 102 | 102 | 101 |

**Surrogate Legend**

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
TOL = Toluene-d8 (Surr)

# QC Sample Results

Client: Energy Laboratories, Inc.
Project/Site: 11(e) Byproduct Material

Job ID: 280-157947-1

## Method: 624.1 - Volatile Organic Compounds (GC/MS)

**Lab Sample ID: MB 280-564252/9**
**Matrix: Water**
**Analysis Batch: 564252**

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

| Analyte | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | ND | | 1.0 | 0.15 | ug/L | | | 01/25/22 13:10 | 1 |
| Bromoform | ND | | 2.0 | 0.67 | ug/L | | | 01/25/22 13:10 | 1 |
| Chlorodibromomethane | ND | | 1.0 | 0.21 | ug/L | | | 01/25/22 13:10 | 1 |
| Chloroform | ND | | 1.0 | 0.22 | ug/L | | | 01/25/22 13:10 | 1 |
| Trihalomethanes, Total | ND | | 1.0 | 0.15 | ug/L | | | 01/25/22 13:10 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1,2-Dichloroethane-d4 (Surr)* | *102* | | *73 - 122* | | *01/25/22 13:10* | *1* |
| *4-Bromofluorobenzene (Surr)* | *102* | | *79 - 119* | | *01/25/22 13:10* | *1* |
| *Toluene-d8 (Surr)* | *101* | | *80 - 120* | | *01/25/22 13:10* | *1* |

**Lab Sample ID: LCS 280-564252/4**
**Matrix: Water**
**Analysis Batch: 564252**

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

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|
| Bromodichloromethane | 25.0 | 23.4 | | ug/L | | 93 | 65 - 135 |
| Bromoform | 25.0 | 16.4 | *- | ug/L | | 66 | 70 - 130 |
| Chlorodibromomethane | 25.0 | 19.4 | | ug/L | | 77 | 70 - 135 |
| Chloroform | 25.0 | 24.1 | | ug/L | | 97 | 70 - 135 |

| *Surrogate* | *LCS %Recovery* | *LCS Qualifier* | *Limits* |
|---|---|---|---|
| *1,2-Dichloroethane-d4 (Surr)* | *98* | | *73 - 122* |
| *4-Bromofluorobenzene (Surr)* | *101* | | *79 - 119* |
| *Toluene-d8 (Surr)* | *100* | | *80 - 120* |

**Lab Sample ID: LCSD 280-564252/5**
**Matrix: Water**
**Analysis Batch: 564252**

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

| Analyte | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | 25.0 | 24.9 | | ug/L | | 100 | 65 - 135 | 6 | 30 |
| Bromoform | 25.0 | 18.9 | | ug/L | | 76 | 70 - 130 | 14 | 30 |
| Chlorodibromomethane | 25.0 | 21.9 | | ug/L | | 88 | 70 - 135 | 12 | 30 |
| Chloroform | 25.0 | 25.7 | | ug/L | | 103 | 70 - 135 | 6 | 30 |

| *Surrogate* | *LCSD %Recovery* | *LCSD Qualifier* | *Limits* |
|---|---|---|---|
| *1,2-Dichloroethane-d4 (Surr)* | *101* | | *73 - 122* |
| *4-Bromofluorobenzene (Surr)* | *101* | | *79 - 119* |
| *Toluene-d8 (Surr)* | *103* | | *80 - 120* |

**Lab Sample ID: 280-157985-A-2 MSD**
**Matrix: Water**
**Analysis Batch: 564252**

**Client Sample ID: Matrix Spike Duplicate**
**Prep Type: Total/NA**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | ND | | 25.0 | 26.0 | | ug/L | | 104 | 35 - 155 | 9 | 30 |
| Bromoform | ND | *- | 25.0 | 18.3 | | ug/L | | 73 | 45 - 169 | 12 | 30 |

# QC Sample Results

Client: Energy Laboratories, Inc.
Project/Site: 11(e) Byproduct Material

Job ID: 280-157947-1

## Method: 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: 280-157985-A-2 MSD**
**Matrix: Water**
**Analysis Batch: 564252**

**Client Sample ID: Matrix Spike Duplicate**
**Prep Type: Total/NA**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Chlorodibromomethane | ND | | 25.0 | 21.7 | | ug/L | | 87 | 53 - 149 | 12 | 30 |
| Chloroform | ND | | 25.0 | 27.8 | | ug/L | | 111 | 51 - 138 | 9 | 30 |

| *Surrogate* | *MSD %Recovery* | *MSD Qualifier* | *Limits* |
|---|---|---|---|
| *1,2-Dichloroethane-d4 (Surr)* | *103* | | *73 - 122* |
| *4-Bromofluorobenzene (Surr)* | *103* | | *79 - 119* |
| *Toluene-d8 (Surr)* | *102* | | *80 - 120* |

**Lab Sample ID: 280-157985-B-2 MS**
**Matrix: Water**
**Analysis Batch: 564252**

**Client Sample ID: Matrix Spike**
**Prep Type: Total/NA**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | ND | | 25.0 | 23.8 | | ug/L | | 95 | 35 - 155 |
| Bromoform | ND | *- | 25.0 | 16.2 | | ug/L | | 65 | 45 - 169 |
| Chlorodibromomethane | ND | | 25.0 | 19.2 | | ug/L | | 77 | 53 - 149 |
| Chloroform | ND | | 25.0 | 25.5 | | ug/L | | 102 | 51 - 138 |

| *Surrogate* | *MS %Recovery* | *MS Qualifier* | *Limits* |
|---|---|---|---|
| *1,2-Dichloroethane-d4 (Surr)* | *103* | | *73 - 122* |
| *4-Bromofluorobenzene (Surr)* | *104* | | *79 - 119* |
| *Toluene-d8 (Surr)* | *100* | | *80 - 120* |

# QC Association Summary

Client: Energy Laboratories, Inc.
Project/Site: 11(e) Byproduct Material

Job ID: 280-157947-1

## GC/MS VOA

### Analysis Batch: 564252

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 280-157947-1 | C22010583-001F | Total/NA | Water | 624.1 | |
| 280-157947-2 | C22010583-002F | Total/NA | Water | 624.1 | |
| 280-157947-3 | C22010583-003F | Total/NA | Water | 624.1 | |
| 280-157947-4 | C22010583-004F | Total/NA | Water | 624.1 | |
| 280-157947-5 | C22010583-005F | Total/NA | Water | 624.1 | |
| 280-157947-6 | C22010583-006F | Total/NA | Water | 624.1 | |
| 280-157947-7 | C22010583-007F | Total/NA | Water | 624.1 | |
| 280-157947-8 | C22010583-008F | Total/NA | Water | 624.1 | |
| 280-157947-9 | C22010583-009F | Total/NA | Water | 624.1 | |
| 280-157947-10 | C22010583-010F | Total/NA | Water | 624.1 | |
| 280-157947-11 | C22010583-011F | Total/NA | Water | 624.1 | |
| 280-157947-12 | C22010583-012F | Total/NA | Water | 624.1 | |
| 280-157947-13 | C22010583-013F | Total/NA | Water | 624.1 | |
| 280-157947-14 | C22010583-014F | Total/NA | Water | 624.1 | |
| 280-157947-15 | C22010583-018A | Total/NA | Water | 624.1 | |
| MB 280-564252/9 | Method Blank | Total/NA | Water | 624.1 | |
| LCS 280-564252/4 | Lab Control Sample | Total/NA | Water | 624.1 | |
| LCSD 280-564252/5 | Lab Control Sample Dup | Total/NA | Water | 624.1 | |
| 280-157985-A-2 MSD | Matrix Spike Duplicate | Total/NA | Water | 624.1 | |
| 280-157985-B-2 MS | Matrix Spike | Total/NA | Water | 624.1 | |

# Lab Chronicle

Client: Energy Laboratories, Inc.
Project/Site: 11(e) Byproduct Material

Job ID: 280-157947-1

## Client Sample ID: C22010583-001F — Lab Sample ID: 280-157947-1

Date Collected: 01/13/22 13:42
Date Received: 01/21/22 09:40
Matrix: Water

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 624.1 | | 1 | 5 mL | 5 mL | 564252 | 01/25/22 13:52 | SKL | TAL DEN |

## Client Sample ID: C22010583-002F — Lab Sample ID: 280-157947-2

Date Collected: 01/14/22 10:51
Date Received: 01/21/22 09:40
Matrix: Water

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 624.1 | | 1 | 5 mL | 5 mL | 564252 | 01/25/22 14:14 | SKL | TAL DEN |

## Client Sample ID: C22010583-003F — Lab Sample ID: 280-157947-3

Date Collected: 01/17/22 09:14
Date Received: 01/21/22 09:40
Matrix: Water

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 624.1 | | 1 | 5 mL | 5 mL | 564252 | 01/25/22 14:35 | SKL | TAL DEN |

## Client Sample ID: C22010583-004F — Lab Sample ID: 280-157947-4

Date Collected: 01/17/22 09:48
Date Received: 01/21/22 09:40
Matrix: Water

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 624.1 | | 1 | 5 mL | 5 mL | 564252 | 01/25/22 14:57 | SKL | TAL DEN |

## Client Sample ID: C22010583-005F — Lab Sample ID: 280-157947-5

Date Collected: 01/17/22 10:31
Date Received: 01/21/22 09:40
Matrix: Water

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 624.1 | | 1 | 5 mL | 5 mL | 564252 | 01/25/22 15:18 | SKL | TAL DEN |

## Client Sample ID: C22010583-006F — Lab Sample ID: 280-157947-6

Date Collected: 01/17/22 11:16
Date Received: 01/21/22 09:40
Matrix: Water

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 624.1 | | 1 | 5 mL | 5 mL | 564252 | 01/25/22 15:40 | SKL | TAL DEN |

## Client Sample ID: C22010583-007F — Lab Sample ID: 280-157947-7

Date Collected: 01/17/22 11:58
Date Received: 01/21/22 09:40
Matrix: Water

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 624.1 | | 1 | 5 mL | 5 mL | 564252 | 01/25/22 16:01 | SKL | TAL DEN |

# Lab Chronicle

Client: Energy Laboratories, Inc.
Project/Site: 11(e) Byproduct Material

Job ID: 280-157947-1

**Client Sample ID: C22010583-008F** — **Lab Sample ID: 280-157947-8**
**Date Collected: 01/17/22 13:19** — **Matrix: Water**
**Date Received: 01/21/22 09:40**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 624.1 | | 1 | 5 mL | 5 mL | 564252 | 01/25/22 16:23 | SKL | TAL DEN |

**Client Sample ID: C22010583-009F** — **Lab Sample ID: 280-157947-9**
**Date Collected: 01/17/22 14:08** — **Matrix: Water**
**Date Received: 01/21/22 09:40**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 624.1 | | 1 | 5 mL | 5 mL | 564252 | 01/25/22 16:44 | SKL | TAL DEN |

**Client Sample ID: C22010583-010F** — **Lab Sample ID: 280-157947-10**
**Date Collected: 01/13/22 09:27** — **Matrix: Water**
**Date Received: 01/21/22 09:40**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 624.1 | | 1 | 5 mL | 5 mL | 564252 | 01/25/22 17:06 | SKL | TAL DEN |

**Client Sample ID: C22010583-011F** — **Lab Sample ID: 280-157947-11**
**Date Collected: 01/13/22 10:33** — **Matrix: Water**
**Date Received: 01/21/22 09:40**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 624.1 | | 1 | 5 mL | 5 mL | 564252 | 01/25/22 17:28 | SKL | TAL DEN |

**Client Sample ID: C22010583-012F** — **Lab Sample ID: 280-157947-12**
**Date Collected: 01/13/22 11:40** — **Matrix: Water**
**Date Received: 01/21/22 09:40**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 624.1 | | 1 | 5 mL | 5 mL | 564252 | 01/25/22 17:49 | SKL | TAL DEN |

**Client Sample ID: C22010583-013F** — **Lab Sample ID: 280-157947-13**
**Date Collected: 01/13/22 12:10** — **Matrix: Water**
**Date Received: 01/21/22 09:40**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 624.1 | | 1 | 5 mL | 5 mL | 564252 | 01/25/22 18:11 | SKL | TAL DEN |

**Client Sample ID: C22010583-014F** — **Lab Sample ID: 280-157947-14**
**Date Collected: 01/13/22 12:52** — **Matrix: Water**
**Date Received: 01/21/22 09:40**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 624.1 | | 1 | 5 mL | 5 mL | 564252 | 01/25/22 18:32 | SKL | TAL DEN |

# Lab Chronicle

Client: Energy Laboratories, Inc.
Project/Site: 11(e) Byproduct Material

Job ID: 280-157947-1

**Client Sample ID: C22010583-018A**
**Date Collected: 01/13/22 09:27**
**Date Received: 01/21/22 09:40**

**Lab Sample ID: 280-157947-15**
**Matrix: Water**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 624.1 | | 1 | 5 mL | 5 mL | 564252 | 01/25/22 18:54 | SKL | TAL DEN |

**Laboratory References:**

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

# Accreditation/Certification Summary

Client: Energy Laboratories, Inc.
Project/Site: 11(e) Byproduct Material

Job ID: 280-157947-1

## Laboratory: Eurofins Denver

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

| Authority | Program | Identification Number | Expiration Date |
|---|---|---|---|
| A2LA | Dept. of Defense ELAP | 2907.01 | 10-31-23 |
| A2LA | ISO/IEC 17025 | 2907.01 | 10-31-23 |
| Alabama | State Program | 40730 | 09-30-12 * |
| Alaska (UST) | State | 18-001 | 02-28-22 |
| Arizona | State | AZ0713 | 12-20-22 |
| Arkansas DEQ | State | 19-047-0 | 06-01-22 |
| California | State | 2513 | 01-08-22 * |
| Connecticut | State | PH-0686 | 09-30-22 |
| Florida | NELAP | E87667-57 | 06-30-22 |
| Georgia | State | 4025-011 | 01-08-23 |
| Illinois | NELAP | 2000172019-1 | 04-30-22 |
| Iowa | State | IA#370 | 12-02-22 |
| Kansas | NELAP | E-10166 | 04-30-22 |
| Kentucky (WW) | State | KY98047 | 12-31-22 |
| Louisiana | NELAP | 30785 | 06-30-14 * |
| Louisiana | NELAP | 30785 | 06-30-22 |
| Minnesota | NELAP | 1788752 | 12-31-22 |
| Nevada | State | CO000262020-1 | 07-31-22 |
| New Hampshire | NELAP | 205319 | 04-29-22 |
| New Jersey | NELAP | 190002 | 06-30-22 |
| New York | NELAP | 59923 | 04-01-22 |
| North Carolina (WW/SW) | State | 358 | 12-31-22 |
| North Dakota | State | R-034 | 01-08-22 * |
| Oklahoma | State | 2018-006 | 08-31-22 |
| Oregon | NELAP | 4025-011 | 01-08-23 |
| Pennsylvania | NELAP | 013 | 07-31-22 |
| South Carolina | State | 72002001 | 01-08-23 |
| Texas | NELAP | TX104704183-08-TX | 09-30-09 * |
| Texas | NELAP | T104704183-21-19 | 10-01-22 |
| US Fish & Wildlife | US Federal Programs | 058448 | 07-31-22 |
| USDA | US Federal Programs | P330-20-00065 | 03-06-23 |
| Utah | NELAP | QUAN5 | 06-30-13 * |
| Utah | NELAP | CO000262019-11 | 07-31-22 |
| Virginia | NELAP | 10490 | 06-14-22 |
| Washington | State | C583-19 | 08-03-22 |
| West Virginia DEP | State | 354 | 01-31-22 |
| Wisconsin | State | 999615430 | 08-31-22 |
| Wyoming (UST) | A2LA | 2907.01 | 10-31-22 |

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

# ANALYTICAL SUMMARY REPORT

March 07, 2022

United Nuclear Corporation
PO Box 1088
Gallup, NM 87305-1088

Work Order: C22010739 Quote ID: C6117

Project Name: UNC-SW ALLUVIUM

Energy Laboratories, Inc. Casper WY received the following 11 samples for United Nuclear Corporation on 1/25/2022 for analysis.

| Lab ID | Client Sample ID | Collect Date | Receive Date | Matrix | Test |
|---|---|---|---|---|---|
| C22010739-001 | EPA-28 | 01/18/22 10:36 | 01/25/22 | Aqueous | Metals by ICP/ICPMS, Dissolved<br>Metals by ICP/ICPMS, Total<br>Alkalinity<br>Anion - Cation Balance<br>Anions by Ion Chromatography<br>Nitrogen, Ammonia<br>Nitrogen, Nitrate + Nitrite<br>pH<br>Metals Preparation by EPA 200.2<br>Gross Alpha minus Radon and Uranium, Total<br>Lead 210, Total<br>Radium 226 + Radium 228, Total<br>Radium 226, Total<br>Radium 228, Total<br>Thorium, Isotopic, Total<br>Solids, Total Dissolved<br>Solids, Total Dissolved - Calculated<br>TRACKER SHEET<br>624-Purgeable Organics<br>624-Purgeable Organics |
| C22010739-002 | EPA-28 Duplicate | 01/18/22 11:06 | 01/25/22 | Aqueous | Same As Above |
| C22010739-003 | SBL-1 | 01/18/22 11:46 | 01/25/22 | Aqueous | Same As Above |
| C22010739-004 | 627 | 01/18/22 12:50 | 01/25/22 | Aqueous | Same As Above |
| C22010739-005 | RINSATE | 01/18/22 14:35 | 01/25/22 | Aqueous | Same As Above |
| C22010739-006 | FIELD BLANK | 01/18/22 15:10 | 01/25/22 | Aqueous | Same As Above |
| C22010739-007 | 509-D | 01/18/22 9:22 | 01/25/22 | Aqueous | Same As Above |
| C22010739-008 | EPA-25 | 01/18/22 13:48 | 01/25/22 | Aqueous | Same As Above |
| C22010739-009 | Trip Blank-80352_5_6 | 01/18/22 9:22 | 01/25/22 | Trip Blank | 624-Purgeable Organics |
| C22010739-010 | Trip Blank-80352_4_7_8 | 01/18/22 9:22 | 01/25/22 | Trip Blank | Same As Above |
| C22010739-011 | Trip Blank- 80352_1-3 | 01/18/22 9:22 | 01/25/22 | Trip Blank | Same As Above |

The analyses presented in this report were performed by Energy Laboratories, Inc., 2393 Salt Creek Hwy., Casper, WY 82601, unless otherwise noted. Any exceptions or problems with the analyses are noted in the report package. Any issues encountered during sample receipt are documented in the Work Order Receipt Checklist.

The results as reported relate only to the item(s) submitted for testing. This report shall be used or copied only in its entirety. Energy Laboratories, Inc. is not responsible for the consequences arising from the use of a partial report.

# ANALYTICAL SUMMARY REPORT

If you have any questions regarding these test results, please contact your Project Manager .

Report Approved By:

Wyoming Regional Director

Digitally signed by
Terry Friedlan
Date: 2022.03.07 16:24:20 -07:00

**CLIENT:** United Nuclear Corporation
**Project:** UNC-SW ALLUVIUM
**Work Order:** C22010739

**Report Date:** 03/07/22

# CASE NARRATIVE

Tests associated with analyst identified as ELI-B were subcontracted to Energy Laboratories, 1120 S. 27th St., Billings, MT, EPA Number MT00005.

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22010739 **Report Date:** 02/08/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: A2320 B** | | | | | | | | | Analytical Run: MANTECH_220125A | |
| **Lab ID: ICV** | | Initial Calibration Verification Standard | | | | | | | 01/25/22 11:48 | |
| pH | | 6.87 | s.u. | 0.010 | 100 | 98 | 102 | | | |
| **Method: A2320 B** | | | | | | | | | Batch: R279027 | |
| **Lab ID: MBLK** | | Method Blank | | | | Run: MANTECH_220125A | | | 01/25/22 11:56 | |
| Alkalinity, Total as CaCO3 | | 6 | mg/L | 2 | | | | | | |
| **Lab ID: C22010495-001ADUP** | | Sample Duplicate | | | | Run: MANTECH_220125A | | | 01/25/22 12:37 | |
| Alkalinity, Total as CaCO3 | | 17900 | mg/L | 5.0 | | | | 0.2 | 10 | |
| **Method: A2320 B** | | | | | | | | | Analytical Run: MANTECH_220127A | |
| **Lab ID: ICV** | | Initial Calibration Verification Standard | | | | | | | 01/27/22 11:35 | |
| pH | | 6.83 | s.u. | 0.010 | 100 | 98 | 102 | | | |
| **Method: A2320 B** | | | | | | | | | Batch: R279108 | |
| **Lab ID: MBLK** | | Method Blank | | | | Run: MANTECH_220127A | | | 01/27/22 11:44 | |
| Alkalinity, Total as CaCO3 | | ND | mg/L | 2 | | | | | | |
| **Lab ID: C22010736-001ADUP** | | Sample Duplicate | | | | Run: MANTECH_220127A | | | 01/27/22 12:26 | |
| Alkalinity, Total as CaCO3 | | 225 | mg/L | 5.0 | | | | 0.3 | 10 | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22010739 **Report Date:** 02/08/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: A2540 C** | | | | | | | | | | Batch: TDS220125A |
| **Lab ID: MB-1_220125A** | | Method Blank | | | | Run: BAL-111_220125A | | | 01/25/22 09:47 | |
| Solids, Total Dissolved TDS @ 180 C | | ND | mg/L | 10 | | | | | | |
| **Lab ID: LCS-2_220125A** | | Laboratory Control Sample | | | | Run: BAL-111_220125A | | | 01/25/22 09:50 | |
| Solids, Total Dissolved TDS @ 180 C | | 1000 | mg/L | 20 | 100 | 90 | 110 | | | |
| **Lab ID: C22010738-001A DUP** | | Sample Duplicate | | | | Run: BAL-111_220125A | | | 01/25/22 09:55 | |
| Solids, Total Dissolved TDS @ 180 C | | 6340 | mg/L | 100 | | | | 0.6 | 5 | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22010739 **Report Date:** 02/08/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: A4500-H B** | | | | | | | | | Analytical Run: PHSC_101-C_220125A | |
| **Lab ID: 6.86** | 2 | Initial Calibration Verification Standard | | | | | | | 01/25/22 09:49 | |
| pH | | 6.9 | s.u. | 0.1 | 100 | 98 | 102 | | | |
| pH Measurement Temp | | 19.9 | °C | | | 0 | 0 | | | |
| **Method: A4500-H B** | | | | | | | | | Batch: R278993 | |
| **Lab ID: C22010739-001ADUP** | 2 | Sample Duplicate | | | | Run: PHSC_101-C_220125A | | | 01/25/22 11:44 | |
| pH | | 7.0 | s.u. | 0.1 | | | | 0.1 | 1.5 | |
| pH Measurement Temp | | 15.9 | °C | | | | | | | |
| **Lab ID: C22010739-007ADUP** | 2 | Sample Duplicate | | | | Run: PHSC_101-C_220125A | | | 01/25/22 12:04 | |
| pH | | 6.7 | s.u. | 0.1 | | | | 0.0 | 1.5 | |
| pH Measurement Temp | | 15.6 | °C | | | | | | | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22010739 **Report Date:** 02/08/22

| Analyte | | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Method:** | **E300.0** | | | | | | | | | Analytical Run: IC3-C_220127A | |
| **Lab ID:** | **ICV** | 2 | Initial Calibration Verification Standard | | | | | | | 01/27/22 14:39 | |
| Chloride | | | 10.5 | mg/L | 1.0 | 105 | 90 | 110 | | | |
| Sulfate | | | 41.7 | mg/L | 1.0 | 104 | 90 | 110 | | | |
| **Method:** | **E300.0** | | | | | | | | | Batch: R279141 | |
| **Lab ID:** | **ICB** | 2 | Method Blank | | | | Run: IC3-C_220127A | | | 01/27/22 14:58 | |
| Chloride | | | ND | mg/L | 0.09 | | | | | | |
| Sulfate | | | ND | mg/L | 0.2 | | | | | | |
| **Lab ID:** | **LFB** | 2 | Laboratory Fortified Blank | | | | Run: IC3-C_220127A | | | 01/27/22 15:17 | |
| Chloride | | | 9.90 | mg/L | 1.0 | 103 | 90 | 110 | | | |
| Sulfate | | | 39.0 | mg/L | 1.0 | 101 | 90 | 110 | | | |
| **Lab ID:** | **C22010720-005AMS** | 2 | Sample Matrix Spike | | | | Run: IC3-C_220127A | | | 01/28/22 05:41 | |
| Chloride | | | 106 | mg/L | 1.0 | 103 | 80 | 120 | | | |
| Sulfate | | | 506 | mg/L | 2.1 | 107 | 80 | 120 | | | |
| **Lab ID:** | **C22010720-005AMSD** | 2 | Sample Matrix Spike Duplicate | | | | Run: IC3-C_220127A | | | 01/28/22 06:00 | |
| Chloride | | | 105 | mg/L | 1.0 | 102 | 80 | 120 | 0.7 | 20 | |
| Sulfate | | | 503 | mg/L | 2.1 | 106 | 80 | 120 | 0.6 | 20 | |
| **Lab ID:** | **C22010739-007AMS** | 2 | Sample Matrix Spike | | | | Run: IC3-C_220127A | | | 01/28/22 10:09 | |
| Chloride | | | 525 | mg/L | 2.1 | 96 | 80 | 120 | | | |
| Sulfate | | | 2930 | mg/L | 8.3 | 102 | 80 | 120 | | | |
| **Lab ID:** | **C22010739-007AMSD** | 2 | Sample Matrix Spike Duplicate | | | | Run: IC3-C_220127A | | | 01/28/22 10:28 | |
| Chloride | | | 527 | mg/L | 2.1 | 97 | 80 | 120 | 0.3 | 20 | |
| Sulfate | | | 2930 | mg/L | 8.3 | 102 | 80 | 120 | 0.1 | 20 | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22010739 **Report Date:** 02/08/22

| Analyte | | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Method:** | **E300.0** | | | | | | | | | Analytical Run: IC3-C_220203A | |
| **Lab ID:** | **ICV** | 2 | Initial Calibration Verification Standard | | | | | | | 02/03/22 16:12 | |
| Chloride | | | 9.95 | mg/L | 1.0 | 99 | 90 | 110 | | | |
| Sulfate | | | 40.0 | mg/L | 1.0 | 100 | 90 | 110 | | | |
| **Method:** | **E300.0** | | | | | | | | | | Batch: R279438 |
| **Lab ID:** | **ICB** | 2 | Method Blank | | | | Run: IC3-C_220203A | | | 02/03/22 16:32 | |
| Chloride | | | ND | mg/L | 0.09 | | | | | | |
| Sulfate | | | ND | mg/L | 0.2 | | | | | | |
| **Lab ID:** | **LFB** | 2 | Laboratory Fortified Blank | | | | Run: IC3-C_220203A | | | 02/03/22 16:51 | |
| Chloride | | | 9.69 | mg/L | 1.0 | 101 | 90 | 110 | | | |
| Sulfate | | | 38.7 | mg/L | 1.0 | 101 | 90 | 110 | | | |
| **Lab ID:** | **C22020157-001AMS** | 2 | Sample Matrix Spike | | | | Run: IC3-C_220203A | | | 02/03/22 17:48 | |
| Chloride | | | 39.8 | mg/L | 1.0 | 94 | 80 | 120 | | | |
| Sulfate | | | 283 | mg/L | 1.0 | 88 | 80 | 120 | | | |
| **Lab ID:** | **C22020157-001AMSD** | 2 | Sample Matrix Spike Duplicate | | | | Run: IC3-C_220203A | | | 02/03/22 18:07 | |
| Chloride | | | 40.2 | mg/L | 1.0 | 96 | 80 | 120 | 0.9 | 20 | |
| Sulfate | | | 286 | mg/L | 1.0 | 92 | 80 | 120 | 1.0 | 20 | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22010739 **Report Date:** 02/08/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: E350.1** | | | | | | | | | Analytical Run: FIA201-C_220127B | |
| **Lab ID: ICV** | | Initial Calibration Verification Standard | | | | | | | 01/27/22 14:02 | |
| Nitrogen, Ammonia as N | | 1.06 | mg/L | 0.050 | 106 | 90 | 110 | | | |
| **Method: E350.1** | | | | | | | | | Batch: R279115 | |
| **Lab ID: MBLK** | | Method Blank | | | | Run: FIA201-C_220127B | | | 01/27/22 14:01 | |
| Nitrogen, Ammonia as N | | ND | mg/L | 0.03 | | | | | | |
| **Lab ID: LFB** | | Laboratory Fortified Blank | | | | Run: FIA201-C_220127B | | | 01/27/22 14:04 | |
| Nitrogen, Ammonia as N | | 0.999 | mg/L | 0.050 | 101 | 90 | 110 | | | |
| **Lab ID: C22010739-003DMS** | | Sample Matrix Spike | | | | Run: FIA201-C_220127B | | | 01/27/22 15:14 | |
| Nitrogen, Ammonia as N | | 0.998 | mg/L | 0.050 | 97 | 90 | 110 | | | |
| **Lab ID: C22010739-003DMSD** | | Sample Matrix Spike Duplicate | | | | Run: FIA201-C_220127B | | | 01/27/22 15:15 | |
| Nitrogen, Ammonia as N | | 1.01 | mg/L | 0.050 | 98 | 90 | 110 | 1.2 | 10 | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22010739 **Report Date:** 02/08/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: E353.2** | | | | | | | | | Analytical Run: FIA201-C_220125A | |
| **Lab ID: ICV** | | Initial Calibration Verification Standard | | | | | | | 01/25/22 13:06 | |
| Nitrogen, Nitrate+Nitrite as N | | 0.991 | mg/L | 0.050 | 99 | 90 | 110 | | | |
| **Method: E353.2** | | | | | | | | | Batch: R279028 | |
| **Lab ID: MBLK** | | Method Blank | | | | Run: FIA201-C_220125A | | | 01/25/22 13:08 | |
| Nitrogen, Nitrate+Nitrite as N | | ND | mg/L | 0.01 | | | | | | |
| **Lab ID: LFB** | | Laboratory Fortified Blank | | | | Run: FIA201-C_220125A | | | 01/25/22 13:09 | |
| Nitrogen, Nitrate+Nitrite as N | | 0.959 | mg/L | 0.050 | 97 | 90 | 110 | | | |
| **Lab ID: C22010735-001AMS** | | Sample Matrix Spike | | | | Run: FIA201-C_220125A | | | 01/25/22 14:19 | |
| Nitrogen, Nitrate+Nitrite as N | | 0.976 | mg/L | 0.050 | 98 | 90 | 110 | | | |
| **Lab ID: C22010735-001AMSD** | | Sample Matrix Spike Duplicate | | | | Run: FIA201-C_220125A | | | 01/25/22 14:20 | |
| Nitrogen, Nitrate+Nitrite as N | | 0.976 | mg/L | 0.050 | 98 | 90 | 110 | 0.0 | 10 | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22010739 **Report Date:** 02/09/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: E200.7** | | | | | | | | | Analytical Run: ICP4-C_220203A | |
| **Lab ID: QCS** | 4 | Initial Calibration Verification Standard | | | | | | | 02/03/22 16:31 | |
| Calcium | | 41.1 | mg/L | 0.50 | 103 | 95 | 105 | | | |
| Magnesium | | 41.1 | mg/L | 0.50 | 103 | 95 | 105 | | | |
| Potassium | | 40.8 | mg/L | 0.50 | 102 | 95 | 105 | | | |
| Sodium | | 41.0 | mg/L | 0.53 | 103 | 95 | 105 | | | |
| **Method: E200.7** | | | | | | | | | Batch: R279406 | |
| **Lab ID: LRB** | 4 | Method Blank | | | | Run: ICP4-C_220203A | | | 02/03/22 13:10 | |
| Calcium | | ND | mg/L | 0.1 | | | | | | |
| Magnesium | | ND | mg/L | 0.08 | | | | | | |
| Potassium | | ND | mg/L | 0.2 | | | | | | |
| Sodium | | ND | mg/L | 1 | | | | | | |
| **Lab ID: LFB** | 4 | Laboratory Fortified Blank | | | | Run: ICP4-C_220203A | | | 02/03/22 13:36 | |
| Calcium | | 50.0 | mg/L | 0.50 | 100 | 85 | 115 | | | |
| Magnesium | | 49.6 | mg/L | 0.50 | 99 | 85 | 115 | | | |
| Potassium | | 49.9 | mg/L | 0.50 | 100 | 85 | 115 | | | |
| Sodium | | 49.5 | mg/L | 0.54 | 99 | 85 | 115 | | | |
| **Lab ID: C22010580-001HMS2** | 4 | Sample Matrix Spike | | | | Run: ICP4-C_220203A | | | 02/03/22 16:50 | |
| Calcium | | 121 | mg/L | 1.0 | 101 | 70 | 130 | | | |
| Magnesium | | 69.4 | mg/L | 1.0 | 101 | 70 | 130 | | | |
| Potassium | | 53.2 | mg/L | 1.0 | 102 | 70 | 130 | | | |
| Sodium | | 59.7 | mg/L | 1.0 | 101 | 70 | 130 | | | |
| **Lab ID: C22010580-001HMSD** | 4 | Sample Matrix Spike Duplicate | | | | Run: ICP4-C_220203A | | | 02/03/22 16:57 | |
| Calcium | | 121 | mg/L | 1.0 | 101 | 70 | 130 | 0.0 | 20 | |
| Magnesium | | 70.0 | mg/L | 1.0 | 102 | 70 | 130 | 0.9 | 20 | |
| Potassium | | ND | mg/L | 1.0 | -5 | 70 | 130 | | 20 | S |
| Sodium | | 60.3 | mg/L | 1.0 | 102 | 70 | 130 | 0.9 | 20 | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

S - Spike recovery outside of advisory limits

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22010739 **Report Date:** 02/09/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: E200.8** | | | | | | | | | Analytical Run: ICPMS5-C_220126A | |
| **Lab ID: QCS** | 11 | Initial Calibration Verification Standard | | | | | | | 01/26/22 16:47 | |
| Aluminum | | 0.266 | mg/L | 0.030 | 107 | 90 | 110 | | | |
| Arsenic | | 0.0535 | mg/L | 0.0010 | 107 | 90 | 110 | | | |
| Beryllium | | 0.0259 | mg/L | 0.0010 | 103 | 90 | 110 | | | |
| Cadmium | | 0.0262 | mg/L | 0.0010 | 105 | 90 | 110 | | | |
| Cobalt | | 0.0507 | mg/L | 0.0050 | 101 | 90 | 110 | | | |
| Lead | | 0.0495 | mg/L | 0.0010 | 99 | 90 | 110 | | | |
| Manganese | | 0.261 | mg/L | 0.0010 | 104 | 90 | 110 | | | |
| Nickel | | 0.0536 | mg/L | 0.0050 | 107 | 90 | 110 | | | |
| Selenium | | 0.0534 | mg/L | 0.0010 | 107 | 90 | 110 | | | |
| Uranium | | 0.0206 | mg/L | 0.00030 | 103 | 90 | 110 | | | |
| Vanadium | | 0.0502 | mg/L | 0.010 | 100 | 90 | 110 | | | |
| **Method: E200.8** | | | | | | | | | Batch: 65682 | |
| **Lab ID: MB-65682** | 12 | Method Blank | | | | Run: ICPMS5-C_220126A | | | 01/27/22 16:51 | |
| Aluminum | | ND | mg/L | 0.02 | | | | | | |
| Arsenic | | ND | mg/L | 0.0003 | | | | | | |
| Beryllium | | ND | mg/L | 0.0002 | | | | | | |
| Cadmium | | ND | mg/L | 0.00002 | | | | | | |
| Cobalt | | ND | mg/L | 0.0001 | | | | | | |
| Lead | | ND | mg/L | 0.0001 | | | | | | |
| Manganese | | ND | mg/L | 0.0007 | | | | | | |
| Molybdenum | | ND | mg/L | 0.0001 | | | | | | |
| Nickel | | ND | mg/L | 0.0003 | | | | | | |
| Selenium | | ND | mg/L | 0.0001 | | | | | | |
| Uranium | | ND | mg/L | 0.0003 | | | | | | |
| Vanadium | | ND | mg/L | 0.003 | | | | | | |
| **Lab ID: LCS3-65682** | 12 | Laboratory Control Sample | | | | Run: ICPMS5-C_220126A | | | 01/27/22 16:56 | |
| Aluminum | | 2.41 | mg/L | 0.030 | 96 | 85 | 115 | | | |
| Arsenic | | 0.500 | mg/L | 0.0010 | 100 | 85 | 115 | | | |
| Beryllium | | 0.236 | mg/L | 0.0010 | 94 | 85 | 115 | | | |
| Cadmium | | 0.256 | mg/L | 0.0010 | 102 | 85 | 115 | | | |
| Cobalt | | 0.501 | mg/L | 0.0050 | 100 | 85 | 115 | | | |
| Lead | | 0.509 | mg/L | 0.0010 | 102 | 85 | 115 | | | |
| Manganese | | 2.50 | mg/L | 0.0010 | 100 | 85 | 115 | | | |
| Molybdenum | | 0.560 | mg/L | 0.0010 | 112 | 85 | 115 | | | |
| Nickel | | 0.513 | mg/L | 0.0050 | 103 | 85 | 115 | | | |
| Selenium | | 0.505 | mg/L | 0.0010 | 101 | 85 | 115 | | | |
| Uranium | | 0.511 | mg/L | 0.00030 | 102 | 85 | 115 | | | |
| Vanadium | | 0.496 | mg/L | 0.010 | 99 | 85 | 115 | | | |
| **Lab ID: C22010739-006CMS3** | 12 | Sample Matrix Spike | | | | Run: ICPMS5-C_220126A | | | 01/27/22 18:30 | |
| Aluminum | | 2.41 | mg/L | 0.030 | 95 | 70 | 130 | | | |
| Arsenic | | 0.508 | mg/L | 0.0010 | 102 | 70 | 130 | | | |
| Beryllium | | 0.230 | mg/L | 0.0010 | 92 | 70 | 130 | | | |
| Cadmium | | 0.256 | mg/L | 0.0010 | 103 | 70 | 130 | | | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22010739 **Report Date:** 02/09/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: E200.8** | | | | | | | | | | Batch: 65682 |
| **Lab ID: C22010739-006CMS3** | 12 | Sample Matrix Spike | | | | Run: ICPMS5-C_220126A | | | 01/27/22 18:30 | |
| Cobalt | | 0.500 | mg/L | 0.0050 | 100 | 70 | 130 | | | |
| Lead | | 0.513 | mg/L | 0.0010 | 103 | 70 | 130 | | | |
| Manganese | | 2.53 | mg/L | 0.0010 | 101 | 70 | 130 | | | |
| Molybdenum | | 0.526 | mg/L | 0.0010 | 105 | 70 | 130 | | | |
| Nickel | | 0.504 | mg/L | 0.0050 | 101 | 70 | 130 | | | |
| Selenium | | 0.524 | mg/L | 0.0010 | 105 | 70 | 130 | | | |
| Uranium | | 0.505 | mg/L | 0.00030 | 101 | 70 | 130 | | | |
| Vanadium | | 0.507 | mg/L | 0.010 | 101 | 70 | 130 | | | |
| **Lab ID: C22010739-006CMSD** | 12 | Sample Matrix Spike Duplicate | | | | Run: ICPMS5-C_220126A | | | 01/27/22 18:35 | |
| Aluminum | | 2.41 | mg/L | 0.030 | 95 | 70 | 130 | 0.1 | 20 | |
| Arsenic | | 0.501 | mg/L | 0.0010 | 100 | 70 | 130 | 1.4 | 20 | |
| Beryllium | | 0.230 | mg/L | 0.0010 | 92 | 70 | 130 | 0.1 | 20 | |
| Cadmium | | 0.256 | mg/L | 0.0010 | 102 | 70 | 130 | 0.4 | 20 | |
| Cobalt | | 0.496 | mg/L | 0.0050 | 99 | 70 | 130 | 0.8 | 20 | |
| Lead | | 0.510 | mg/L | 0.0010 | 102 | 70 | 130 | 0.7 | 20 | |
| Manganese | | 2.50 | mg/L | 0.0010 | 100 | 70 | 130 | 1.1 | 20 | |
| Molybdenum | | 0.539 | mg/L | 0.0010 | 108 | 70 | 130 | 2.4 | 20 | |
| Nickel | | 0.501 | mg/L | 0.0050 | 100 | 70 | 130 | 0.5 | 20 | |
| Selenium | | 0.514 | mg/L | 0.0010 | 103 | 70 | 130 | 2.0 | 20 | |
| Uranium | | 0.504 | mg/L | 0.00030 | 101 | 70 | 130 | 0.3 | 20 | |
| Vanadium | | 0.502 | mg/L | 0.010 | 100 | 70 | 130 | 1.0 | 20 | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22010739 **Report Date:** 02/09/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: E200.8** | | | | | | | | | Analytical Run: ICPMS5-C_220131A | |
| **Lab ID: QCS** | 4 | Initial Calibration Verification Standard | | | | | | | 01/31/22 13:08 | |
| Calcium | | 2.44 | mg/L | 0.64 | 97 | 90 | 110 | | | |
| Magnesium | | 2.66 | mg/L | 0.50 | 106 | 90 | 110 | | | |
| Potassium | | 2.52 | mg/L | 0.50 | 101 | 90 | 110 | | | |
| Sodium | | 2.61 | mg/L | 0.50 | 104 | 90 | 110 | | | |
| **Method: E200.8** | | | | | | | | | Batch: R279198 | |
| **Lab ID: LRB** | 4 | Method Blank | | | | Run: ICPMS5-C_220131A | | | 01/31/22 13:35 | |
| Calcium | | ND | mg/L | 0.3 | | | | | | |
| Magnesium | | ND | mg/L | 0.02 | | | | | | |
| Potassium | | ND | mg/L | 0.1 | | | | | | |
| Sodium | | ND | mg/L | 0.3 | | | | | | |
| **Lab ID: LFB** | 4 | Laboratory Fortified Blank | | | | Run: ICPMS5-C_220131A | | | 01/31/22 13:40 | |
| Calcium | | 49.0 | mg/L | 0.66 | 98 | 85 | 115 | | | |
| Magnesium | | 47.9 | mg/L | 0.50 | 96 | 85 | 115 | | | |
| Potassium | | 49.5 | mg/L | 0.50 | 99 | 85 | 115 | | | |
| Sodium | | 48.3 | mg/L | 0.50 | 97 | 85 | 115 | | | |
| **Lab ID: C22010720-003CMS** | 4 | Sample Matrix Spike | | | | Run: ICPMS5-C_220131A | | | 01/31/22 22:22 | |
| Calcium | | 195 | mg/L | 1.0 | 64 | 70 | 130 | | | S |
| Magnesium | | 142 | mg/L | 1.0 | 76 | 70 | 130 | | | |
| Potassium | | 53.6 | mg/L | 1.0 | 97 | 70 | 130 | | | |
| Sodium | | 458 | mg/L | 1.0 | | 70 | 130 | | | A |
| **Lab ID: C22010720-003CMSD** | 4 | Sample Matrix Spike Duplicate | | | | Run: ICPMS5-C_220131A | | | 01/31/22 22:26 | |
| Calcium | | 196 | mg/L | 1.0 | 67 | 70 | 130 | 0.6 | 20 | S |
| Magnesium | | 145 | mg/L | 1.0 | 82 | 70 | 130 | 2.1 | 20 | |
| Potassium | | 53.8 | mg/L | 1.0 | 97 | 70 | 130 | 0.3 | 20 | |
| Sodium | | 463 | mg/L | 1.0 | | 70 | 130 | 1.2 | 20 | A |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

A - Analyte level was greater than four times the spike level - in accordance with the method, percent recovery is not calculated

S - Spike recovery outside of advisory limits

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22010739 **Report Date:** 02/09/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: E200.8** | | | | | | | | | Analytical Run: ICPMS5-C_220201A | |
| **Lab ID: QCS** | 4 | Initial Calibration Verification Standard | | | | | | | 02/01/22 18:58 | |
| Calcium | | 2.67 | mg/L | 0.64 | 107 | 90 | 110 | | | |
| Magnesium | | 2.71 | mg/L | 0.50 | 108 | 90 | 110 | | | |
| Potassium | | 2.59 | mg/L | 0.50 | 104 | 90 | 110 | | | |
| Sodium | | 2.66 | mg/L | 0.50 | 106 | 90 | 110 | | | |
| **Method: E200.8** | | | | | | | | | Batch: 65682 | |
| **Lab ID: MB-65682** | 12 | Method Blank | | | | Run: ICPMS5-C_220201A | | | 02/01/22 19:58 | |
| Aluminum | | ND | mg/L | 0.02 | | | | | | |
| Arsenic | | ND | mg/L | 0.0003 | | | | | | |
| Beryllium | | ND | mg/L | 0.0002 | | | | | | |
| Cadmium | | ND | mg/L | 0.00002 | | | | | | |
| Cobalt | | ND | mg/L | 0.0001 | | | | | | |
| Lead | | ND | mg/L | 0.0001 | | | | | | |
| Manganese | | ND | mg/L | 0.0007 | | | | | | |
| Molybdenum | | ND | mg/L | 0.0001 | | | | | | |
| Nickel | | ND | mg/L | 0.0003 | | | | | | |
| Selenium | | ND | mg/L | 0.0001 | | | | | | |
| Uranium | | ND | mg/L | 0.0003 | | | | | | |
| Vanadium | | ND | mg/L | 0.003 | | | | | | |
| **Method: E200.8** | | | | | | | | | Batch: R279256 | |
| **Lab ID: LRB** | 4 | Method Blank | | | | Run: ICPMS5-C_220201A | | | 02/01/22 19:02 | |
| Calcium | | ND | mg/L | 0.3 | | | | | | |
| Magnesium | | ND | mg/L | 0.02 | | | | | | |
| Potassium | | ND | mg/L | 0.1 | | | | | | |
| Sodium | | ND | mg/L | 0.3 | | | | | | |
| **Lab ID: LFB** | 4 | Laboratory Fortified Blank | | | | Run: ICPMS5-C_220201A | | | 02/01/22 19:07 | |
| Calcium | | 50.7 | mg/L | 0.66 | 101 | 85 | 115 | | | |
| Magnesium | | 48.7 | mg/L | 0.50 | 97 | 85 | 115 | | | |
| Potassium | | 49.2 | mg/L | 0.50 | 98 | 85 | 115 | | | |
| Sodium | | 49.2 | mg/L | 0.50 | 98 | 85 | 115 | | | |
| **Lab ID: C22010739-004BMS** | 4 | Sample Matrix Spike | | | | Run: ICPMS5-C_220201A | | | 02/02/22 01:21 | |
| Calcium | | 777 | mg/L | 3.3 | 92 | 70 | 130 | | | |
| Magnesium | | 467 | mg/L | 1.0 | 96 | 70 | 130 | | | |
| Potassium | | 241 | mg/L | 1.0 | 94 | 70 | 130 | | | |
| Sodium | | 621 | mg/L | 1.6 | 98 | 70 | 130 | | | |
| **Lab ID: C22010739-004BMSD** | 4 | Sample Matrix Spike Duplicate | | | | Run: ICPMS5-C_220201A | | | 02/02/22 01:39 | |
| Calcium | | 765 | mg/L | 3.3 | 87 | 70 | 130 | 1.5 | 20 | |
| Magnesium | | 461 | mg/L | 1.0 | 93 | 70 | 130 | 1.3 | 20 | |
| Potassium | | 241 | mg/L | 1.0 | 94 | 70 | 130 | 0.2 | 20 | |
| Sodium | | 610 | mg/L | 1.6 | 94 | 70 | 130 | 1.7 | 20 | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22010739 **Report Date:** 02/09/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: E200.8** | | | | | | | | | Analytical Run: ICPMS5-C_220207B | |
| **Lab ID: QCS** | 4 | Initial Calibration Verification Standard | | | | | | | 02/08/22 15:46 | |
| Aluminum | | 0.262 | mg/L | 0.030 | 105 | 90 | 110 | | | |
| Molybdenum | | 0.0494 | mg/L | 0.0010 | 99 | 90 | 110 | | | |
| Nickel | | 0.0506 | mg/L | 0.0050 | 101 | 90 | 110 | | | |
| Uranium | | 0.0219 | mg/L | 0.00030 | 109 | 90 | 110 | | | |
| **Method: E200.8** | | | | | | | | | Batch: 65682 | |
| **Lab ID: MB-65682** | 12 | Method Blank | | | | Run: ICPMS5-C_220207B | | | 02/08/22 16:20 | |
| Aluminum | | ND | mg/L | 0.02 | | | | | | |
| Arsenic | | ND | mg/L | 0.0003 | | | | | | |
| Beryllium | | ND | mg/L | 0.0002 | | | | | | |
| Cadmium | | ND | mg/L | 0.00002 | | | | | | |
| Cobalt | | ND | mg/L | 0.0001 | | | | | | |
| Lead | | ND | mg/L | 0.0001 | | | | | | |
| Manganese | | ND | mg/L | 0.0007 | | | | | | |
| Molybdenum | | ND | mg/L | 0.0001 | | | | | | |
| Nickel | | ND | mg/L | 0.0003 | | | | | | |
| Selenium | | ND | mg/L | 0.0001 | | | | | | |
| Uranium | | ND | mg/L | 0.0003 | | | | | | |
| Vanadium | | ND | mg/L | 0.003 | | | | | | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22010739 **Report Date:** 03/04/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: A7500-U C** | | | | | | | | | | Batch: RA-TH-ISO-3386 |
| **Lab ID: MB-RA-TH-ISO-3386** | 3 | Method Blank | | | | Run: EGG-ORTEC_ALL_220201C | | | 02/03/22 16:01 | |
| Thorium 230 | | 0.02 | pCi/L | | | | | | | U |
| Thorium 230 precision (±) | | 0.03 | pCi/L | | | | | | | |
| Thorium 230 MDC | | 0.05 | pCi/L | | | | | | | |
| **Lab ID: LCS-RA-TH-ISO-3386** | 3 | Laboratory Control Sample | | | | Run: EGG-ORTEC_ALL_220201C | | | 02/03/22 16:01 | |
| Thorium 230 | | 9.1 | pCi/L | | 95 | 70 | 130 | | | |
| Thorium 230 precision (±) | | 1.7 | pCi/L | | | | | | | |
| Thorium 230 MDC | | 0.066 | pCi/L | | | | | | | |
| **Lab ID: C22010792-002GDUP** | 3 | Sample Duplicate | | | | Run: EGG-ORTEC_ALL_220201C | | | 02/03/22 16:01 | |
| Thorium 230 | | 0.013 | pCi/L | | | | | 50 | 30 | UR |
| Thorium 230 precision (±) | | 0.049 | pCi/L | | | | | | | |
| Thorium 230 MDC | | 0.093 | pCi/L | | | | | | | |

- Duplicate RPD is outside of the acceptance range for this analysis. However, the RER is less than the limit of 3, the RER result is 0.14.

**Qualifiers:**

RL - Analyte Reporting Limit

R - Relative Percent Difference (RPD) exceeds advisory limit

ND - Not detected at the Reporting Limit (RL)

U - Not detected at Minimum Detectable Concentration (MDC)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22010739 **Report Date:** 03/04/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: E900.1** | | | | | | | | | | Batch: GA-1338 |
| **Lab ID: LCS-GA-1338** | 3 | Laboratory Control Sample | | | | Run: G542M_220126A | | | | 01/31/22 08:28 |
| Gross Alpha minus Rn & U | | 32 | pCi/L | | 92 | 70 | 130 | | | |
| Gross Alpha minus Rn & U Precision (±) | | 6.2 | pCi/L | | | | | | | |
| Gross Alpha minus Rn & U MDC | | 0.49 | pCi/L | | | | | | | |
| **Lab ID: MB-GA-1338** | 3 | Method Blank | | | | Run: G542M_220126A | | | | 01/31/22 08:28 |
| Gross Alpha minus Rn & U | | 0.1 | pCi/L | | | | | | | U |
| Gross Alpha minus Rn & U Precision (±) | | 0.3 | pCi/L | | | | | | | |
| Gross Alpha minus Rn & U MDC | | 0.5 | pCi/L | | | | | | | |
| **Lab ID: C22010739-001EDUP** | 3 | Sample Duplicate | | | | Run: G542M_220126A | | | | 01/31/22 08:28 |
| Gross Alpha minus Rn & U | | 0.37 | pCi/L | | | | | 13 | 30 | U |
| Gross Alpha minus Rn & U Precision (±) | | 0.35 | pCi/L | | | | | | | |
| Gross Alpha minus Rn & U MDC | | 0.48 | pCi/L | | | | | | | |

- The RER result is 0.09.

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

U - Not detected at Minimum Detectable Concentration (MDC)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22010739 **Report Date:** 03/04/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: E903.0** | | | | | | | | | | Batch: RA226-10345 |
| **Lab ID: LCS-RA226-10345** | 3 | Laboratory Control Sample | | | | Run: G5000W_220126B | | | | 02/07/22 10:20 |
| Radium 226 | | 8.9 | pCi/L | | 87 | 70 | 130 | | | |
| Radium 226 precision (±) | | 1.8 | pCi/L | | | | | | | |
| Radium 226 MDC | | 0.18 | pCi/L | | | | | | | |
| **Lab ID: MB-RA226-10345** | 3 | Method Blank | | | | Run: G5000W_220126B | | | | 02/07/22 10:20 |
| Radium 226 | | -0.02 | pCi/L | | | | | | | U |
| Radium 226 precision (±) | | 0.1 | pCi/L | | | | | | | |
| Radium 226 MDC | | 0.2 | pCi/L | | | | | | | |
| **Lab ID: C22010689-001DDUP** | 3 | Sample Duplicate | | | | Run: G5000W_220126B | | | | 02/07/22 10:20 |
| Radium 226 | | 23 | pCi/L | | | | | 21 | 30 | |
| Radium 226 precision (±) | | 4.5 | pCi/L | | | | | | | |
| Radium 226 MDC | | 0.25 | pCi/L | | | | | | | |
| - The RER result is 0.78. | | | | | | | | | | |
| **Method: E903.0** | | | | | | | | | | Batch: RA226-10345R |
| **Lab ID: LCS-RA226-10345** | 3 | Laboratory Control Sample | | | | Run: G5000W_220126C | | | | 03/03/22 16:32 |
| Radium 226 | | 9.1 | pCi/L | | 89 | 70 | 130 | | | |
| Radium 226 precision (±) | | 1.8 | pCi/L | | | | | | | |
| Radium 226 MDC | | 0.15 | pCi/L | | | | | | | |
| **Lab ID: MB-RA226-10345** | 3 | Method Blank | | | | Run: G5000W_220126C | | | | 03/03/22 16:32 |
| Radium 226 | | 0.09 | pCi/L | | | | | | | U |
| Radium 226 precision (±) | | 0.09 | pCi/L | | | | | | | |
| Radium 226 MDC | | 0.1 | pCi/L | | | | | | | |
| **Lab ID: C22010689-001DDUP** | 3 | Sample Duplicate | | | | Run: G5000W_220126C | | | | 03/03/22 16:32 |
| Radium 226 | | 24 | pCi/L | | | | | 21 | 30 | |
| Radium 226 precision (±) | | 4.5 | pCi/L | | | | | | | |
| Radium 226 MDC | | 0.20 | pCi/L | | | | | | | |
| - The RER result is 0.77. | | | | | | | | | | |
| **Method: E903.0** | | | | | | | | | | Batch: RA226-10348R |
| **Lab ID: LCS-RA226-10348** | 3 | Laboratory Control Sample | | | | Run: G5000W_220127C | | | | 02/08/22 12:24 |
| Radium 226 | | 7.3 | pCi/L | | 71 | 70 | 130 | | | |
| Radium 226 precision (±) | | 1.4 | pCi/L | | | | | | | |
| Radium 226 MDC | | 0.15 | pCi/L | | | | | | | |
| **Lab ID: MB-RA226-10348** | 3 | Method Blank | | | | Run: G5000W_220127C | | | | 02/08/22 12:24 |
| Radium 226 | | -0.02 | pCi/L | | | | | | | U |
| Radium 226 precision (±) | | 0.09 | pCi/L | | | | | | | |
| Radium 226 MDC | | 0.1 | pCi/L | | | | | | | |
| **Lab ID: C22010426-001ADUP** | 3 | Sample Duplicate | | | | Run: G5000W_220127C | | | | 02/08/22 12:24 |
| Radium 226 | | 2.6 | pCi/L | | | | | 6.6 | 30 | |
| Radium 226 precision (±) | | 0.56 | pCi/L | | | | | | | |
| Radium 226 MDC | | 0.15 | pCi/L | | | | | | | |
| - The RER result is 0.22. | | | | | | | | | | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

U - Not detected at Minimum Detectable Concentration (MDC)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22010739 **Report Date:** 03/04/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: E909.0** | | | | | | | | | Batch: PB-210-1372 | |
| **Lab ID: LCS-PB-210-1372** | 3 | Laboratory Control Sample | | | | Run: PACKARD 3100TR_220126B | | | 01/31/22 17:45 | |
| Lead 210 | | 15 | pCi/L | | 87 | 70 | 130 | | | |
| Lead 210 precision (±) | | 4.5 | pCi/L | | | | | | | |
| Lead 210 MDC | | 1.4 | pCi/L | | | | | | | |
| **Lab ID: MB-PB-210-1372** | 3 | Method Blank | | | | Run: PACKARD 3100TR_220126B | | | 01/31/22 18:46 | |
| Lead 210 | | -0.4 | pCi/L | | | | | | | U |
| Lead 210 precision (±) | | 0.5 | pCi/L | | | | | | | |
| Lead 210 MDC | | 0.9 | pCi/L | | | | | | | |
| **Lab ID: C22010739-005EDUP** | 3 | Sample Duplicate | | | | Run: PACKARD 3100TR_220126B | | | 02/02/22 11:58 | |
| Lead 210 | | -0.65 | pCi/L | | | | | 110 | 30 | UR |
| Lead 210 precision (±) | | 0.52 | pCi/L | | | | | | | |
| Lead 210 MDC | | 0.88 | pCi/L | | | | | | | |

- Duplicate RPD is outside of the acceptance range for this analysis. However, the RER is less than the limit of 3, the RER result is 0.61.

**Qualifiers:**

RL - Analyte Reporting Limit

R - Relative Percent Difference (RPD) exceeds advisory limit

ND - Not detected at the Reporting Limit (RL)

U - Not detected at Minimum Detectable Concentration (MDC)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22010739 **Report Date:** 03/04/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: RA-05** | | | | | | | | | | Batch: RA228-6710 |
| **Lab ID: LCS-228-RA226-10345** | 3 | Laboratory Control Sample | | | | Run: TENNELEC-4_220126B | | | | 02/01/22 14:50 |
| Radium 228 | | 5.2 | pCi/L | | 79 | 70 | 130 | | | |
| Radium 228 precision (±) | | 1.4 | pCi/L | | | | | | | |
| Radium 228 MDC | | 1.5 | pCi/L | | | | | | | |
| **Lab ID: MB-RA226-10345** | 3 | Method Blank | | | | Run: TENNELEC-4_220126B | | | | 02/01/22 14:50 |
| Radium 228 | | 0.2 | pCi/L | | | | | | | U |
| Radium 228 precision (±) | | 0.9 | pCi/L | | | | | | | |
| Radium 228 MDC | | 1 | pCi/L | | | | | | | |
| **Lab ID: C22010689-001DDUP** | 3 | Sample Duplicate | | | | Run: TENNELEC-4_220126B | | | | 02/01/22 14:19 |
| Radium 228 | | 5.7 | pCi/L | | | | | 1.5 | 30 | |
| Radium 228 precision (±) | | 1.7 | pCi/L | | | | | | | |
| Radium 228 MDC | | 2.0 | pCi/L | | | | | | | |
| - The RER result is 0.04. | | | | | | | | | | |
| **Method: RA-05** | | | | | | | | | | Batch: RA228-6711 |
| **Lab ID: LCS-228-RA226-10348** | 3 | Laboratory Control Sample | | | | Run: TENNELEC-4_220127A | | | | 02/02/22 15:59 |
| Radium 228 | | 8.1 | pCi/L | | 108 | 70 | 130 | | | |
| Radium 228 precision (±) | | 1.6 | pCi/L | | | | | | | |
| Radium 228 MDC | | 0.75 | pCi/L | | | | | | | |
| **Lab ID: MB-RA226-10348** | 3 | Method Blank | | | | Run: TENNELEC-4_220127A | | | | 02/02/22 15:59 |
| Radium 228 | | -0.09 | pCi/L | | | | | | | U |
| Radium 228 precision (±) | | 0.5 | pCi/L | | | | | | | |
| Radium 228 MDC | | 0.8 | pCi/L | | | | | | | |
| **Lab ID: C22010426-001ADUP** | 3 | Sample Duplicate | | | | Run: TENNELEC-4_220127A | | | | 02/02/22 15:59 |
| Radium 228 | | 5.1 | pCi/L | | | | | 13 | 30 | |
| Radium 228 precision (±) | | 1.1 | pCi/L | | | | | | | |
| Radium 228 MDC | | 0.89 | pCi/L | | | | | | | |
| - The RER result is 0.42. | | | | | | | | | | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

U - Not detected at Minimum Detectable Concentration (MDC)

# ANALYTICAL SUMMARY REPORT

February 16, 2022

United Nuclear Corporation
21 Miles NE of Gallup
Gallup, NM 87305

Work Order: C22010715 Quote ID: C6117

Project Name: UNC- Sentinel Wells

Energy Laboratories, Inc. Casper WY received the following 3 samples for United Nuclear Corporation on 1/21/2022 for analysis.

| Lab ID | Client Sample ID | Collect Date | Receive Date | Matrix | Test |
|---|---|---|---|---|---|
| C22010715-001 | SW-3B | 01/19/22 11:00 | 01/21/22 | Aqueous | Metals by ICP/ICPMS, Dissolved<br>Metals by ICP/ICPMS, Total<br>Alkalinity<br>Anion - Cation Balance<br>Anions by Ion Chromatography<br>Nitrogen, Ammonia<br>Nitrogen, Nitrate + Nitrite<br>pH<br>Metals Preparation by EPA 200.2<br>Gross Alpha minus Radon and Uranium, Total<br>Lead 210, Total<br>Radium 226 + Radium 228, Total<br>Radium 226, Total<br>Radium 228, Total<br>Thorium, Isotopic, Total<br>Solids, Total Dissolved<br>Solids, Total Dissolved - Calculated<br>TRACKER SHEET<br>624-Purgeable Organics<br>624-Purgeable Organics |
| C22010715-002 | SW-1B | 01/19/22 14:36 | 01/21/22 | Aqueous | Same As Above |
| C22010715-003 | Trip Blank - 80352 | 01/19/22 11:00 | 01/21/22 | Trip Blank | 624-Purgeable Organics |

The analyses presented in this report were performed by Energy Laboratories, Inc., 2393 Salt Creek Hwy., Casper, WY 82601, unless otherwise noted. Any exceptions or problems with the analyses are noted in the report package. Any issues encountered during sample receipt are documented in the Work Order Receipt Checklist.

The results as reported relate only to the item(s) submitted for testing. This report shall be used or copied only in its entirety. Energy Laboratories, Inc. is not responsible for the consequences arising from the use of a partial report.

If you have any questions regarding these test results, please contact your Project Manager .

Report Approved By:

Wyoming Regional Director

Digitally signed by
Terry Friedlan
Date: 2022.02.16 13:32:06 -07:00

**CLIENT:** United Nuclear Corporation
**Project:** UNC- Sentinel Wells
**Work Order:** C22010715

**Report Date:** 02/16/22

# CASE NARRATIVE

Tests associated with analyst identified as ELI-B were subcontracted to Energy Laboratories, 1120 S. 27th St., Billings, MT, EPA Number MT00005.

# Work Order Sample Summary

**CLIENT:** United Nuclear Corporation
**Project:** UNC- Sentinel Wells
**Work Order:** C22010715 **Report Date:** 02/16/22

| Lab ID | Client Sample ID | Collection Date | Date Received |
|---|---|---|---|
| C22010715-001 | SW-3B | 1/19/2022 11:00:00 AM | 1/21/2022 |
| C22010715-002 | SW-1B | 1/19/2022 2:36:00 PM | 1/21/2022 |
| C22010715-003 | Trip Blank - 80352 | 1/19/2022 11:00:00 AM | 1/21/2022 |

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22010715 **Report Date:** 01/31/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: A2320 B** | | | | | | | | | Analytical Run: MANTECH_220124A | |
| **Lab ID: ICV** | | Initial Calibration Verification Standard | | | | | | | 01/24/22 14:29 | |
| pH | | 6.85 | s.u. | 0.010 | 100 | 98 | 102 | | | |
| **Method: A2320 B** | | | | | | | | | Batch: R278992 | |
| **Lab ID: MBLK** | | Method Blank | | | | Run: MANTECH_220124A | | | 01/24/22 17:31 | |
| Alkalinity, Total as CaCO3 | | ND | mg/L | 2 | | | | | | |
| **Lab ID: C22010672-002ADUP** | | Sample Duplicate | | | | Run: MANTECH_220124A | | | 01/24/22 17:50 | |
| Alkalinity, Total as CaCO3 | | 5.69 | mg/L | 5.0 | | | | 12 | 10 | R |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

R - Relative Percent Difference (RPD) exceeds advisory limit

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22010715 **Report Date:** 01/31/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: A2540 C** | | | | | | | | | Batch: TDS220124B | |
| **Lab ID: MB-1_220124B** | | Method Blank | | | | Run: BAL-111_220124C | | | 01/24/22 12:41 | |
| Solids, Total Dissolved TDS @ 180 C | | ND | mg/L | 10 | | | | | | |
| **Lab ID: LCS-2_220124B** | | Laboratory Control Sample | | | | Run: BAL-111_220124C | | | 01/24/22 12:45 | |
| Solids, Total Dissolved TDS @ 180 C | | 1000 | mg/L | 20 | 100 | 90 | 110 | | | |
| **Lab ID: C22010711-001A DUP** | | Sample Duplicate | | | | Run: BAL-111_220124C | | | 01/24/22 12:49 | |
| Solids, Total Dissolved TDS @ 180 C | | 3160 | mg/L | 40 | | | | 0.0 | 5 | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22010715 **Report Date:** 01/31/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: A4500-H B** | | | | | | | | | Analytical Run: PHSC_101-C_220124A | |
| **Lab ID: 6.86** | 2 | Initial Calibration Verification Standard | | | | | | | 01/24/22 09:27 | |
| pH | | 6.9 | s.u. | 0.1 | 100 | 98 | 102 | | | |
| pH Measurement Temp | | 18.8 | °C | | | 0 | 0 | | | |
| **Method: A4500-H B** | | | | | | | | | | Batch: R278963 |
| **Lab ID: C22010676-001ADUP** | 2 | Sample Duplicate | | | | Run: PHSC_101-C_220124A | | | 01/24/22 10:06 | |
| pH | | 7.9 | s.u. | 0.1 | | | | 0.1 | 1.5 | |
| pH Measurement Temp | | 9.8 | °C | | | | | | | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22010715 **Report Date:** 01/31/22

| Analyte | | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Method:** | **E300.0** | | | | | | | | Analytical Run: IC3-C_220127A | | |
| **Lab ID:** | **ICV** | 2 | Initial Calibration Verification Standard | | | | | | | 01/27/22 14:39 | |
| Chloride | | | 10.5 | mg/L | 1.0 | 105 | 90 | 110 | | | |
| Sulfate | | | 41.7 | mg/L | 1.0 | 104 | 90 | 110 | | | |
| **Method:** | **E300.0** | | | | | | | | | Batch: R279141 | |
| **Lab ID:** | **ICB** | 2 | Method Blank | | | | Run: IC3-C_220127A | | | 01/27/22 14:58 | |
| Chloride | | | ND | mg/L | 0.09 | | | | | | |
| Sulfate | | | ND | mg/L | 0.2 | | | | | | |
| **Lab ID:** | **LFB** | 2 | Laboratory Fortified Blank | | | | Run: IC3-C_220127A | | | 01/27/22 15:17 | |
| Chloride | | | 9.90 | mg/L | 1.0 | 103 | 90 | 110 | | | |
| Sulfate | | | 39.0 | mg/L | 1.0 | 101 | 90 | 110 | | | |
| **Lab ID:** | **C22010707-001AMS** | 2 | Sample Matrix Spike | | | | Run: IC3-C_220127A | | | 01/28/22 01:12 | |
| Chloride | | | 21.6 | mg/L | 1.0 | 105 | 80 | 120 | | | |
| Sulfate | | | 221 | mg/L | 1.0 | 99 | 80 | 120 | | | |
| **Lab ID:** | **C22010707-001AMSD** | 2 | Sample Matrix Spike Duplicate | | | | Run: IC3-C_220127A | | | 01/28/22 01:31 | |
| Chloride | | | 21.5 | mg/L | 1.0 | 105 | 80 | 120 | 0.4 | 20 | |
| Sulfate | | | 220 | mg/L | 1.0 | 98 | 80 | 120 | 0.6 | 20 | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22010715 **Report Date:** 01/31/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: E350.1** | | | | | | | | | Analytical Run: FIA201-C_220127B | |
| **Lab ID: ICV** | | Initial Calibration Verification Standard | | | | | | | 01/27/22 14:02 | |
| Nitrogen, Ammonia as N | | 1.06 | mg/L | 0.050 | 106 | 90 | 110 | | | |
| **Method: E350.1** | | | | | | | | | Batch: R279115 | |
| **Lab ID: MBLK** | | Method Blank | | | | Run: FIA201-C_220127B | | | 01/27/22 14:01 | |
| Nitrogen, Ammonia as N | | ND | mg/L | 0.03 | | | | | | |
| **Lab ID: LFB** | | Laboratory Fortified Blank | | | | Run: FIA201-C_220127B | | | 01/27/22 14:04 | |
| Nitrogen, Ammonia as N | | 0.999 | mg/L | 0.050 | 101 | 90 | 110 | | | |
| **Lab ID: C22010715-002DMS** | | Sample Matrix Spike | | | | Run: FIA201-C_220127B | | | 01/27/22 15:50 | |
| Nitrogen, Ammonia as N | | 7.12 | mg/L | 0.25 | 93 | 90 | 110 | | | |
| **Lab ID: C22010715-002DMSD** | | Sample Matrix Spike Duplicate | | | | Run: FIA201-C_220127B | | | 01/27/22 15:51 | |
| Nitrogen, Ammonia as N | | 7.22 | mg/L | 0.25 | 95 | 90 | 110 | 1.4 | 10 | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22010715 **Report Date:** 01/31/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: E353.2** | | | | | | | | | Analytical Run: FIA201-C_220125A | |
| **Lab ID: ICV** | | Initial Calibration Verification Standard | | | | | | | 01/25/22 13:06 | |
| Nitrogen, Nitrate+Nitrite as N | | 0.991 | mg/L | 0.050 | 99 | 90 | 110 | | | |
| **Method: E353.2** | | | | | | | | | Batch: R279028 | |
| **Lab ID: MBLK** | | Method Blank | | | | Run: FIA201-C_220125A | | | 01/25/22 13:08 | |
| Nitrogen, Nitrate+Nitrite as N | | ND | mg/L | 0.01 | | | | | | |
| **Lab ID: LFB** | | Laboratory Fortified Blank | | | | Run: FIA201-C_220125A | | | 01/25/22 13:09 | |
| Nitrogen, Nitrate+Nitrite as N | | 0.959 | mg/L | 0.050 | 97 | 90 | 110 | | | |
| **Lab ID: C22010715-002DMS** | | Sample Matrix Spike | | | | Run: FIA201-C_220125A | | | 01/25/22 14:03 | |
| Nitrogen, Nitrate+Nitrite as N | | 0.978 | mg/L | 0.050 | 93 | 90 | 110 | | | |
| **Lab ID: C22010715-002DMSD** | | Sample Matrix Spike Duplicate | | | | Run: FIA201-C_220125A | | | 01/25/22 14:04 | |
| Nitrogen, Nitrate+Nitrite as N | | 0.986 | mg/L | 0.050 | 94 | 90 | 110 | 0.8 | 10 | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22010715 **Report Date:** 02/07/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method:** E200.7 | | | | | | | | | Analytical Run: ICP4-C_220201A | |
| **Lab ID:** QCS | | Initial Calibration Verification Standard | | | | | | | 02/01/22 14:44 | |
| Potassium | | 39.6 | mg/L | 0.50 | 99 | 95 | 105 | | | |
| **Method:** E200.7 | | | | | | | | | Batch: R279259 | |
| **Lab ID:** LRB | | Method Blank | | | | Run: ICP4-C_220201A | | | 02/01/22 14:11 | |
| Potassium | | ND | mg/L | 0.2 | | | | | | |
| **Lab ID:** LFB | | Laboratory Fortified Blank | | | | Run: ICP4-C_220201A | | | 02/01/22 14:37 | |
| Potassium | | 47.7 | mg/L | 0.50 | 95 | 85 | 115 | | | |
| **Lab ID:** C22010707-001HMS2 | | Sample Matrix Spike | | | | Run: ICP4-C_220201A | | | 02/02/22 03:07 | |
| Potassium | | 52.6 | mg/L | 1.0 | 101 | 70 | 130 | | | |
| **Lab ID:** C22010707-001HMSD | | Sample Matrix Spike Duplicate | | | | Run: ICP4-C_220201A | | | 02/02/22 03:13 | |
| Potassium | | 54.1 | mg/L | 1.0 | 104 | 70 | 130 | 2.8 | 20 | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22010715 **Report Date:** 02/07/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: E200.8** | | | | | | | | | Analytical Run: ICPMS5-C_220131A | |
| **Lab ID: QCS** | 4 | Initial Calibration Verification Standard | | | | | | | 01/31/22 13:08 | |
| Calcium | | 2.44 | mg/L | 0.64 | 97 | 90 | 110 | | | |
| Magnesium | | 2.66 | mg/L | 0.50 | 106 | 90 | 110 | | | |
| Potassium | | 2.52 | mg/L | 0.50 | 101 | 90 | 110 | | | |
| Sodium | | 2.61 | mg/L | 0.50 | 104 | 90 | 110 | | | |
| **Method: E200.8** | | | | | | | | | Batch: R279198 | |
| **Lab ID: LRB** | 4 | Method Blank | | | | Run: ICPMS5-C_220131A | | | 01/31/22 13:35 | |
| Calcium | | ND | mg/L | 0.3 | | | | | | |
| Magnesium | | ND | mg/L | 0.02 | | | | | | |
| Potassium | | ND | mg/L | 0.1 | | | | | | |
| Sodium | | ND | mg/L | 0.3 | | | | | | |
| **Lab ID: LFB** | 4 | Laboratory Fortified Blank | | | | Run: ICPMS5-C_220131A | | | 01/31/22 13:40 | |
| Calcium | | 49.0 | mg/L | 0.66 | 98 | 85 | 115 | | | |
| Magnesium | | 47.9 | mg/L | 0.50 | 96 | 85 | 115 | | | |
| Potassium | | 49.5 | mg/L | 0.50 | 99 | 85 | 115 | | | |
| Sodium | | 48.3 | mg/L | 0.50 | 97 | 85 | 115 | | | |
| **Lab ID: C22010720-003CMS** | 4 | Sample Matrix Spike | | | | Run: ICPMS5-C_220131A | | | 01/31/22 22:22 | |
| Calcium | | 195 | mg/L | 1.0 | 64 | 70 | 130 | | | S |
| Magnesium | | 142 | mg/L | 1.0 | 76 | 70 | 130 | | | |
| Potassium | | 53.6 | mg/L | 1.0 | 97 | 70 | 130 | | | |
| Sodium | | 458 | mg/L | 1.0 | | 70 | 130 | | | A |
| **Lab ID: C22010720-003CMSD** | 4 | Sample Matrix Spike Duplicate | | | | Run: ICPMS5-C_220131A | | | 01/31/22 22:26 | |
| Calcium | | 196 | mg/L | 1.0 | 67 | 70 | 130 | 0.6 | 20 | S |
| Magnesium | | 145 | mg/L | 1.0 | 82 | 70 | 130 | 2.1 | 20 | |
| Potassium | | 53.8 | mg/L | 1.0 | 97 | 70 | 130 | 0.3 | 20 | |
| Sodium | | 463 | mg/L | 1.0 | | 70 | 130 | 1.2 | 20 | A |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

A - Analyte level was greater than four times the spike level - in accordance with the method, percent recovery is not calculated

S - Spike recovery outside of advisory limits

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22010715 **Report Date:** 02/07/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: E200.8** | | | | | | | | | Analytical Run: ICPMS5-C_220201A | |
| **Lab ID: QCS** | 12 | Initial Calibration Verification Standard | | | | | | | 02/01/22 18:58 | |
| Aluminum | | 0.261 | mg/L | 0.030 | 105 | 90 | 110 | | | |
| Arsenic | | 0.0527 | mg/L | 0.0010 | 105 | 90 | 110 | | | |
| Beryllium | | 0.0262 | mg/L | 0.0010 | 105 | 90 | 110 | | | |
| Cadmium | | 0.0260 | mg/L | 0.0010 | 104 | 90 | 110 | | | |
| Cobalt | | 0.0513 | mg/L | 0.0050 | 103 | 90 | 110 | | | |
| Lead | | 0.0499 | mg/L | 0.0010 | 100 | 90 | 110 | | | |
| Manganese | | 0.253 | mg/L | 0.0010 | 101 | 90 | 110 | | | |
| Molybdenum | | 0.0516 | mg/L | 0.0010 | 103 | 90 | 110 | | | |
| Nickel | | 0.0515 | mg/L | 0.0050 | 103 | 90 | 110 | | | |
| Selenium | | 0.0531 | mg/L | 0.0010 | 106 | 90 | 110 | | | |
| Uranium | | 0.0204 | mg/L | 0.00030 | 102 | 90 | 110 | | | |
| Vanadium | | 0.0497 | mg/L | 0.010 | 99 | 90 | 110 | | | |
| **Method: E200.8** | | | | | | | | | | Batch: 65709 |
| **Lab ID: MB-65709** | 12 | Method Blank | | | | Run: ICPMS5-C_220201A | | | 02/02/22 07:35 | |
| Aluminum | | ND | mg/L | 0.02 | | | | | | |
| Arsenic | | ND | mg/L | 0.0003 | | | | | | |
| Beryllium | | ND | mg/L | 0.0002 | | | | | | |
| Cadmium | | ND | mg/L | 0.00002 | | | | | | |
| Cobalt | | ND | mg/L | 0.0001 | | | | | | |
| Lead | | ND | mg/L | 0.0001 | | | | | | |
| Manganese | | ND | mg/L | 0.0007 | | | | | | |
| Molybdenum | | ND | mg/L | 0.0001 | | | | | | |
| Nickel | | ND | mg/L | 0.0003 | | | | | | |
| Selenium | | ND | mg/L | 0.0001 | | | | | | |
| Uranium | | ND | mg/L | 0.0003 | | | | | | |
| Vanadium | | ND | mg/L | 0.003 | | | | | | |
| **Lab ID: LCS3-65709** | 12 | Laboratory Control Sample | | | | Run: ICPMS5-C_220201A | | | 02/02/22 07:39 | |
| Aluminum | | 2.32 | mg/L | 0.030 | 93 | 85 | 115 | | | |
| Arsenic | | 0.477 | mg/L | 0.0010 | 95 | 85 | 115 | | | |
| Beryllium | | 0.235 | mg/L | 0.0010 | 94 | 85 | 115 | | | |
| Cadmium | | 0.240 | mg/L | 0.0010 | 96 | 85 | 115 | | | |
| Cobalt | | 0.473 | mg/L | 0.0050 | 95 | 85 | 115 | | | |
| Lead | | 0.471 | mg/L | 0.0010 | 94 | 85 | 115 | | | |
| Manganese | | 2.40 | mg/L | 0.0010 | 96 | 85 | 115 | | | |
| Molybdenum | | 0.500 | mg/L | 0.0010 | 100 | 85 | 115 | | | |
| Nickel | | 0.476 | mg/L | 0.0050 | 95 | 85 | 115 | | | |
| Selenium | | 0.466 | mg/L | 0.0010 | 93 | 85 | 115 | | | |
| Uranium | | 0.484 | mg/L | 0.00030 | 97 | 85 | 115 | | | |
| Vanadium | | 0.469 | mg/L | 0.010 | 94 | 85 | 115 | | | |
| **Lab ID: C22010792-001DMS3** | 12 | Sample Matrix Spike | | | | Run: ICPMS5-C_220201A | | | 02/02/22 08:40 | |
| Aluminum | | 2.29 | mg/L | 0.036 | 92 | 70 | 130 | | | |
| Arsenic | | 0.475 | mg/L | 0.0010 | 95 | 70 | 130 | | | |
| Beryllium | | 0.235 | mg/L | 0.0010 | 94 | 70 | 130 | | | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22010715 **Report Date:** 02/07/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method:** E200.8 | | | | | | | | | | Batch: 65709 |
| **Lab ID:** C22010792-001DMS3 | 12 | Sample Matrix Spike | | | | Run: ICPMS5-C_220201A | | | | 02/02/22 08:40 |
| Cadmium | | 0.231 | mg/L | 0.0010 | 92 | 70 | 130 | | | |
| Cobalt | | 0.463 | mg/L | 0.0050 | 93 | 70 | 130 | | | |
| Lead | | 0.468 | mg/L | 0.0010 | 94 | 70 | 130 | | | |
| Manganese | | 2.36 | mg/L | 0.0014 | 93 | 70 | 130 | | | |
| Molybdenum | | 0.514 | mg/L | 0.0014 | 100 | 70 | 130 | | | |
| Nickel | | 0.464 | mg/L | 0.0050 | 93 | 70 | 130 | | | |
| Selenium | | 0.468 | mg/L | 0.0010 | 94 | 70 | 130 | | | |
| Uranium | | 0.485 | mg/L | 0.00054 | 97 | 70 | 130 | | | |
| Vanadium | | 0.467 | mg/L | 0.010 | 93 | 70 | 130 | | | |
| **Lab ID:** C22010792-001DMSD | 12 | Sample Matrix Spike Duplicate | | | | Run: ICPMS5-C_220201A | | | | 02/02/22 08:45 |
| Aluminum | | 2.36 | mg/L | 0.036 | 95 | 70 | 130 | 3.2 | 20 | |
| Arsenic | | 0.501 | mg/L | 0.0010 | 100 | 70 | 130 | 5.3 | 20 | |
| Beryllium | | 0.238 | mg/L | 0.0010 | 95 | 70 | 130 | 1.3 | 20 | |
| Cadmium | | 0.238 | mg/L | 0.0010 | 95 | 70 | 130 | 3.3 | 20 | |
| Cobalt | | 0.474 | mg/L | 0.0050 | 95 | 70 | 130 | 2.3 | 20 | |
| Lead | | 0.481 | mg/L | 0.0010 | 96 | 70 | 130 | 2.8 | 20 | |
| Manganese | | 2.48 | mg/L | 0.0014 | 98 | 70 | 130 | 4.6 | 20 | |
| Molybdenum | | 0.540 | mg/L | 0.0014 | 105 | 70 | 130 | 4.9 | 20 | |
| Nickel | | 0.482 | mg/L | 0.0050 | 96 | 70 | 130 | 3.9 | 20 | |
| Selenium | | 0.478 | mg/L | 0.0010 | 96 | 70 | 130 | 2.1 | 20 | |
| Uranium | | 0.497 | mg/L | 0.00054 | 99 | 70 | 130 | 2.4 | 20 | |
| Vanadium | | 0.489 | mg/L | 0.010 | 98 | 70 | 130 | 4.6 | 20 | |
| **Method:** E200.8 | | | | | | | | | | Analytical Run: ICPMS5-C_220203A |
| **Lab ID:** QCS | | Initial Calibration Verification Standard | | | | | | | | 02/03/22 15:07 |
| Aluminum | | 0.262 | mg/L | 0.030 | 105 | 90 | 110 | | | |
| **Method:** E200.8 | | | | | | | | | | Batch: 65709 |
| **Lab ID:** MB-65709 | 11 | Method Blank | | | | Run: ICPMS5-C_220203A | | | | 02/03/22 15:53 |
| Aluminum | | ND | mg/L | 0.02 | | | | | | |
| Arsenic | | ND | mg/L | 0.0003 | | | | | | |
| Beryllium | | ND | mg/L | 0.0002 | | | | | | |
| Cadmium | | ND | mg/L | 0.00002 | | | | | | |
| Cobalt | | ND | mg/L | 0.0001 | | | | | | |
| Lead | | ND | mg/L | 0.0001 | | | | | | |
| Manganese | | ND | mg/L | 0.0007 | | | | | | |
| Molybdenum | | ND | mg/L | 0.0001 | | | | | | |
| Nickel | | ND | mg/L | 0.0003 | | | | | | |
| Selenium | | ND | mg/L | 0.0001 | | | | | | |
| Vanadium | | ND | mg/L | 0.003 | | | | | | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22010715 **Report Date:** 02/15/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: A7500-U C** | | | | | | | | | Batch: RA-TH-ISO-3383 | |
| **Lab ID: MB-RA-TH-ISO-3383** | 3 | Method Blank | | | | Run: EGG-ORTEC_ALL_220126A | | | 01/31/22 13:30 | |
| Thorium 230 | | 0.03 | pCi/L | | | | | | | U |
| Thorium 230 precision (±) | | 0.04 | pCi/L | | | | | | | |
| Thorium 230 MDC | | 0.07 | pCi/L | | | | | | | |
| **Lab ID: LCS-RA-TH-ISO-3383** | 3 | Laboratory Control Sample | | | | Run: EGG-ORTEC_ALL_220126A | | | 01/31/22 13:30 | |
| Thorium 230 | | 9.3 | pCi/L | | 97 | 70 | 130 | | | |
| Thorium 230 precision (±) | | 1.8 | pCi/L | | | | | | | |
| Thorium 230 MDC | | 0.060 | pCi/L | | | | | | | |
| **Lab ID: C22010647-002FDUP** | 3 | Sample Duplicate | | | | Run: EGG-ORTEC_ALL_220126A | | | 01/31/22 13:30 | |
| Thorium 230 | | 0.026 | pCi/L | | | | | 0.8 | 30 | U |
| Thorium 230 precision (±) | | 0.032 | pCi/L | | | | | | | |
| Thorium 230 MDC | | 0.056 | pCi/L | | | | | | | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

U - Not detected at Minimum Detectable Concentration (MDC)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22010715 **Report Date:** 02/15/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: E900.1** | | | | | | | | | | Batch: GA-1338 |
| **Lab ID: LCS-GA-1338** | 3 | Laboratory Control Sample | | | | Run: G542M_220126A | | | | 01/31/22 08:28 |
| Gross Alpha minus Rn & U | | 32 | pCi/L | | 92 | 70 | 130 | | | |
| Gross Alpha minus Rn & U Precision (±) | | 6.2 | pCi/L | | | | | | | |
| Gross Alpha minus Rn & U MDC | | 0.49 | pCi/L | | | | | | | |
| **Lab ID: MB-GA-1338** | 3 | Method Blank | | | | Run: G542M_220126A | | | | 01/31/22 08:28 |
| Gross Alpha minus Rn & U | | 0.1 | pCi/L | | | | | | | U |
| Gross Alpha minus Rn & U Precision (±) | | 0.3 | pCi/L | | | | | | | |
| Gross Alpha minus Rn & U MDC | | 0.5 | pCi/L | | | | | | | |
| **Lab ID: C22010739-001EDUP** | 3 | Sample Duplicate | | | | Run: G542M_220126A | | | | 01/31/22 08:28 |
| Gross Alpha minus Rn & U | | 0.37 | pCi/L | | | | | 13 | 30 | U |
| Gross Alpha minus Rn & U Precision (±) | | 0.35 | pCi/L | | | | | | | |
| Gross Alpha minus Rn & U MDC | | 0.48 | pCi/L | | | | | | | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

U - Not detected at Minimum Detectable Concentration (MDC)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22010715 **Report Date:** 02/15/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: E903.0** | | | | | | | | | Batch: RA226-10345 | |
| **Lab ID: LCS-RA226-10345** | 3 | Laboratory Control Sample | | | | Run: G5000W_220126B | | | 02/07/22 10:20 | |
| Radium 226 | | 8.9 | pCi/L | | 87 | 70 | 130 | | | |
| Radium 226 precision (±) | | 1.8 | pCi/L | | | | | | | |
| Radium 226 MDC | | 0.18 | pCi/L | | | | | | | |
| **Lab ID: MB-RA226-10345** | 3 | Method Blank | | | | Run: G5000W_220126B | | | 02/07/22 10:20 | |
| Radium 226 | | -0.02 | pCi/L | | | | | | | U |
| Radium 226 precision (±) | | 0.1 | pCi/L | | | | | | | |
| Radium 226 MDC | | 0.2 | pCi/L | | | | | | | |
| **Lab ID: C22010689-001DDUP** | 3 | Sample Duplicate | | | | Run: G5000W_220126B | | | 02/07/22 10:20 | |
| Radium 226 | | 23 | pCi/L | | | | | 21 | 30 | |
| Radium 226 precision (±) | | 4.5 | pCi/L | | | | | | | |
| Radium 226 MDC | | 0.25 | pCi/L | | | | | | | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

U - Not detected at Minimum Detectable Concentration (MDC)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22010715 **Report Date:** 02/15/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: E909.0** | | | | | | | | | Batch: PB-210-1372 | |
| **Lab ID: LCS-PB-210-1372** | 3 | Laboratory Control Sample | | | | Run: PACKARD 3100TR_220126B | | | 01/31/22 17:45 | |
| Lead 210 | | 15 | pCi/L | | 87 | 70 | 130 | | | |
| Lead 210 precision (±) | | 4.5 | pCi/L | | | | | | | |
| Lead 210 MDC | | 1.4 | pCi/L | | | | | | | |
| **Lab ID: MB-PB-210-1372** | 3 | Method Blank | | | | Run: PACKARD 3100TR_220126B | | | 01/31/22 18:46 | |
| Lead 210 | | -0.4 | pCi/L | | | | | | | U |
| Lead 210 precision (±) | | 0.5 | pCi/L | | | | | | | |
| Lead 210 MDC | | 0.9 | pCi/L | | | | | | | |
| **Lab ID: C22010739-005EDUP** | 3 | Sample Duplicate | | | | Run: PACKARD 3100TR_220126B | | | 02/02/22 11:58 | |
| Lead 210 | | -0.65 | pCi/L | | | | | 110 | 30 | UR |
| Lead 210 precision (±) | | 0.52 | pCi/L | | | | | | | |
| Lead 210 MDC | | 0.88 | pCi/L | | | | | | | |

- Duplicate RPD is outside of the acceptance range for this analysis. However, the RER is less than the limit of 3, the RER result is 0.61.

**Qualifiers:**

RL - Analyte Reporting Limit

R - Relative Percent Difference (RPD) exceeds advisory limit

ND - Not detected at the Reporting Limit (RL)

U - Not detected at Minimum Detectable Concentration (MDC)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22010715 **Report Date:** 02/15/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: RA-05** | | | | | | | | | | Batch: RA228-6710 |
| **Lab ID: LCS-228-RA226-10345** | 3 | Laboratory Control Sample | | | | Run: TENNELEC-4_220126B | | | | 02/01/22 14:50 |
| Radium 228 | | 5.2 | pCi/L | | 79 | 70 | 130 | | | |
| Radium 228 precision (±) | | 1.4 | pCi/L | | | | | | | |
| Radium 228 MDC | | 1.5 | pCi/L | | | | | | | |
| **Lab ID: MB-RA226-10345** | 3 | Method Blank | | | | Run: TENNELEC-4_220126B | | | | 02/01/22 14:50 |
| Radium 228 | | 0.2 | pCi/L | | | | | | | U |
| Radium 228 precision (±) | | 0.9 | pCi/L | | | | | | | |
| Radium 228 MDC | | 1 | pCi/L | | | | | | | |
| **Lab ID: C22010689-001DDUP** | 3 | Sample Duplicate | | | | Run: TENNELEC-4_220126B | | | | 02/01/22 14:19 |
| Radium 228 | | 5.7 | pCi/L | | | | | 1.5 | 30 | |
| Radium 228 precision (±) | | 1.7 | pCi/L | | | | | | | |
| Radium 228 MDC | | 2.0 | pCi/L | | | | | | | |
| **Method: RA-05** | | | | | | | | | | Batch: RA228-6721 |
| **Lab ID: LCS-228-RA226-10360** | 3 | Laboratory Control Sample | | | | Run: TENNELEC-4_220209A | | | | 02/14/22 14:40 |
| Radium 228 | | 5.2 | pCi/L | | 80 | 70 | 130 | | | |
| Radium 228 precision (±) | | 1.2 | pCi/L | | | | | | | |
| Radium 228 MDC | | 0.82 | pCi/L | | | | | | | |
| **Lab ID: MB-RA226-10360** | 3 | Method Blank | | | | Run: TENNELEC-4_220209A | | | | 02/14/22 14:40 |
| Radium 228 | | 0.2 | pCi/L | | | | | | | U |
| Radium 228 precision (±) | | 0.6 | pCi/L | | | | | | | |
| Radium 228 MDC | | 1 | pCi/L | | | | | | | |
| **Lab ID: C22020166-001ADUP** | 3 | Sample Duplicate | | | | Run: TENNELEC-4_220209A | | | | 02/14/22 14:40 |
| Radium 228 | | 0.50 | pCi/L | | | | | 21 | 30 | U |
| Radium 228 precision (±) | | 0.57 | pCi/L | | | | | | | |
| Radium 228 MDC | | 0.90 | pCi/L | | | | | | | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

U - Not detected at Minimum Detectable Concentration (MDC)

# QA/QC Summary Report

Prepared by Billings, MT Branch

**Client:** United Nuclear Corporation **Work Order:** C22010715 **Report Date:** 02/07/22

| Analyte | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **Method: E624.1** | | | | | | | | | Analytical Run: R373998 |
| **Lab ID: CCV012622** | Continuing Calibration Verification Standard | | | | | | | | 01/26/22 11:04 |
| Bromodichloromethane | 5.24 | ug/L | 0.50 | 105 | 70 | 130 | | | |
| Bromoform | 4.91 | ug/L | 0.50 | 98 | 70 | 130 | | | |
| Chlorodibromomethane | 5.26 | ug/L | 0.50 | 105 | 70 | 130 | | | |
| Chloroform | 5.26 | ug/L | 0.50 | 105 | 70 | 130 | | | |
| Surr: 1,2-Dichloroethane-d4 | | | 0.50 | 97 | 71 | 139 | | | |
| Surr: p-Bromofluorobenzene | | | 0.50 | 112 | 80 | 127 | | | |
| Surr: Toluene-d8 | | | 0.50 | 110 | 80 | 123 | | | |
| **Method: E624.1** | | | | | | | | | Batch: R373998 |
| **Lab ID: LCS012622** | Laboratory Control Sample | | | | Run: VOA5977B_220126A | | | | 01/26/22 11:58 |
| Bromodichloromethane | 4.89 | ug/L | 0.50 | 98 | 74 | 128 | | | |
| Bromoform | 4.45 | ug/L | 0.50 | 89 | 70 | 130 | | | |
| Chlorodibromomethane | 4.70 | ug/L | 0.50 | 94 | 74 | 125 | | | |
| Chloroform | 4.55 | ug/L | 0.50 | 91 | 70 | 135 | | | |
| Surr: 1,2-Dichloroethane-d4 | | | 0.50 | 94 | 71 | 139 | | | |
| Surr: p-Bromofluorobenzene | | | 0.50 | 110 | 80 | 127 | | | |
| Surr: Toluene-d8 | | | 0.50 | 109 | 80 | 123 | | | |
| **Lab ID: MBLK012622** | Method Blank | | | | Run: VOA5977B_220126A | | | | 01/26/22 13:19 |
| Bromodichloromethane | ND | ug/L | 0.50 | | | | | | |
| Bromoform | ND | ug/L | 0.50 | | | | | | |
| Chlorodibromomethane | ND | ug/L | 0.50 | | | | | | |
| Chloroform | ND | ug/L | 0.50 | | | | | | |
| Surr: 1,2-Dichloroethane-d4 | | | 0.50 | 101 | 71 | 139 | | | |
| Surr: p-Bromofluorobenzene | | | 0.50 | 119 | 80 | 127 | | | |
| Surr: Toluene-d8 | | | 0.50 | 102 | 80 | 123 | | | |
| **Lab ID: B22011617-001AMS** | Sample Matrix Spike | | | | Run: VOA5977B_220126A | | | | 01/27/22 14:19 |
| Bromodichloromethane | 28.5 | ug/L | 2.5 | 114 | 74 | 128 | | | |
| Bromoform | 28.8 | ug/L | 2.5 | 115 | 66 | 128 | | | |
| Chlorodibromomethane | 28.1 | ug/L | 2.5 | 112 | 74 | 125 | | | |
| Chloroform | 26.6 | ug/L | 2.5 | 106 | 68 | 124 | | | |
| Surr: 1,2-Dichloroethane-d4 | | | 2.5 | 109 | 71 | 139 | | | |
| Surr: p-Bromofluorobenzene | | | 2.5 | 110 | 80 | 127 | | | |
| Surr: Toluene-d8 | | | 2.5 | 112 | 80 | 123 | | | |
| **Lab ID: B22011617-001AMSD** | Sample Matrix Spike Duplicate | | | | Run: VOA5977B_220126A | | | | 01/27/22 14:46 |
| Bromodichloromethane | 25.1 | ug/L | 2.5 | 100 | 74 | 128 | 13 | 20 | |
| Bromoform | 26.9 | ug/L | 2.5 | 108 | 66 | 128 | 6.7 | 20 | |
| Chlorodibromomethane | 24.9 | ug/L | 2.5 | 100 | 74 | 125 | 12 | 20 | |
| Chloroform | 23.8 | ug/L | 2.5 | 95 | 68 | 124 | 11 | 20 | |
| Surr: 1,2-Dichloroethane-d4 | | | 2.5 | 107 | 71 | 139 | | | |
| Surr: p-Bromofluorobenzene | | | 2.5 | 114 | 80 | 127 | | | |
| Surr: Toluene-d8 | | | 2.5 | 113 | 80 | 123 | | | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

# APPENDIX – D ( 2 OF 2 )

## SECOND QUARTER

## LABORATORY QUALITY CONTROL AND

## PERFORMANCE REPORT

# ANALYTICAL SUMMARY REPORT

April 29, 2022

United Nuclear Corporation
PO Box 1088
Gallup, NM 87305-1088

Work Order: C22040181 Quote ID: C6117

Project Name: UNC-Zone 1, Zone 3

Energy Laboratories, Inc. Casper WY received the following 5 samples for United Nuclear Corporation on 4/6/2022 for analysis.

| Lab ID | Client Sample ID | Collect Date | Receive Date | Matrix | Test |
|---|---|---|---|---|---|
| C22040181-001 | EPA-2 | 04/04/22 10:50 | 04/06/22 | Aqueous | Metals by ICP/ICPMS, Dissolved<br>Metals by ICP/ICPMS, Total<br>Alkalinity to pH 4.5<br>Anion - Cation Balance<br>Anions by Ion Chromatography<br>Nitrogen, Ammonia<br>Nitrogen, Nitrate + Nitrite<br>pH<br>Metals Preparation by EPA 200.2<br>Gross Alpha minus Radon and Uranium, Total<br>Lead 210, Total<br>Radium 226 + Radium 228, Total<br>Radium 226, Total<br>Radium 228, Total<br>Thorium, Isotopic, Total<br>Solids, Total Dissolved<br>Solids, Total Dissolved - Calculated<br>TRACKER SHEET<br>624-Purgeable Organics<br>624-Purgeable Organics |
| C22040181-002 | EPA Duplicate | 04/04/22 11:20 | 04/06/22 | Aqueous | Metals by ICP/ICPMS, Dissolved<br>Metals by ICP/ICPMS, Total<br>Alkalinity to pH 4.5<br>Anion - Cation Balance<br>Anions by Ion Chromatography<br>Nitrogen, Ammonia<br>Nitrogen, Nitrate + Nitrite<br>pH<br>Metals Preparation by EPA 200.2<br>Gross Alpha minus Radon and Uranium, Total<br>Lead 210, Total<br>Radium 226 + Radium 228, Total<br>Radium 226, Total<br>Radium 228, Total<br>Thorium, Isotopic, Total<br>Solids, Total Dissolved<br>Solids, Total Dissolved - Calculated<br>624-Purgeable Organics<br>624-Purgeable Organics |

# ANALYTICAL SUMMARY REPORT

| | | | | | |
|---|---|---|---|---|---|
| C22040181-003 | 142 | 04/04/22 14:22 | 04/06/22 | Aqueous | Metals by ICP/ICPMS, Dissolved<br>Metals by ICP/ICPMS, Total<br>Alkalinity to pH 4.5<br>Anion - Cation Balance<br>Anions by Ion Chromatography<br>Nitrogen, Ammonia<br>Nitrogen, Nitrate + Nitrite<br>pH<br>Metals Preparation by EPA 200.2<br>Gross Alpha minus Radon and Uranium, Total<br>Lead 210, Total<br>Radium 226 + Radium 228, Total<br>Radium 226, Total<br>Radium 228, Total<br>Thorium, Isotopic, Total<br>Solids, Total Dissolved<br>Solids, Total Dissolved - Calculated<br>TRACKER SHEET<br>624-Purgeable Organics<br>624-Purgeable Organics |
| C22040181-004 | NW-3 | 04/04/22 13:51 | 04/06/22 | Aqueous | Same As Above |
| C22040181-005 | Trip Blank-81031; EPA DUP, 142, NW-3 | 04/04/22 10:50 | 04/06/22 | Trip Blank | 624-Purgeable Organics<br>624-Purgeable Organics |

The analyses presented in this report were performed by Energy Laboratories, Inc., 2393 Salt Creek Hwy., Casper, WY 82601, unless otherwise noted. Any exceptions or problems with the analyses are noted in the report package. Any issues encountered during sample receipt are documented in the Work Order Receipt Checklist.

The results as reported relate only to the item(s) submitted for testing. This report shall be used or copied only in its entirety. Energy Laboratories, Inc. is not responsible for the consequences arising from the use of a partial report.

If you have any questions regarding these test results, please contact your Project Manager .

Report Approved By:

Ashley L Wilson
Project Manager

Digitally signed by
Ashley L. Wilson
Date: 2022.04.29 11:00:39 -06:00

**CLIENT:** United Nuclear Corporation
**Project:** UNC-Zone 1, Zone 3
**Work Order:** C22040181

**Report Date:** 04/29/22

# CASE NARRATIVE

Tests associated with analyst identified as ELI-B were subcontracted to Energy Laboratories, 1120 S. 27th St., Billings, MT, EPA Number MT00005.

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22040181 **Report Date:** 04/27/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: A2320 B** | | | | | | | | | Analytical Run: MANTECH_220407B | |
| **Lab ID: ICV** | Initial Calibration Verification Standard | | | | | | | | 04/07/22 13:49 | |
| pH | | 6.87 | s.u. | 0.010 | 100 | 98 | 102 | | | |
| **Method: A2320 B** | | | | | | | | | Batch: R281267 | |
| **Lab ID: MBLK** | Method Blank | | | | | Run: MANTECH_220407B | | | 04/07/22 16:59 | |
| Alkalinity, Total as CaCO3 | | ND | mg/L | 2 | | | | | | |
| **Lab ID: C22040142-011ADUP** | Sample Duplicate | | | | | Run: MANTECH_220407B | | | 04/07/22 17:19 | |
| Alkalinity, Total as CaCO3 | | 40.3 | mg/L | 5.0 | | | | 0.3 | 10 | |
| **Method: A2320 B** | | | | | | | | | Batch: R281724 | |
| **Lab ID: MBLK** | Method Blank | | | | | Run: MANTECH_220420A | | | 04/20/22 16:38 | |
| Bicarbonate as HCO3 | | ND | mg/L | 2 | | | | | | |
| **Lab ID: C22040181-004ADUP** | Sample Duplicate | | | | | Run: MANTECH_220420A | | | 04/20/22 17:00 | |
| Bicarbonate as HCO3 | | 232 | mg/L | 5.0 | | | | 0.6 | 10 | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22040181 **Report Date:** 04/27/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: A2540 C** | | | | | | | | | | Batch: TDS220408A |
| **Lab ID: MB-1_220408A** | | Method Blank | | | | Run: BAL-111_220408A | | | | 04/08/22 14:29 |
| Solids, Total Dissolved TDS @ 180 C | | ND | mg/L | 10 | | | | | | |
| **Lab ID: LCS-2_220408A** | | Laboratory Control Sample | | | | Run: BAL-111_220408A | | | | 04/08/22 14:29 |
| Solids, Total Dissolved TDS @ 180 C | | 1010 | mg/L | 20 | 101 | 90 | 110 | | | |
| **Lab ID: C22040181-001A DUP** | | Sample Duplicate | | | | Run: BAL-111_220408A | | | | 04/08/22 14:30 |
| Solids, Total Dissolved TDS @ 180 C | | 4000 | mg/L | 39 | | | | 0.6 | 5 | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22040181 **Report Date:** 04/27/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: A4500-H B** | | | | | | | | | Analytical Run: PHSC_101-C_220408A | |
| **Lab ID: 6.86** | 2 | Initial Calibration Verification Standard | | | | | | | 04/08/22 09:31 | |
| pH | | 6.9 | s.u. | 0.1 | 100 | 98 | 102 | | | |
| pH Measurement Temp | | 20.1 | °C | | | 0 | 0 | | | |
| **Method: A4500-H B** | | | | | | | | | Batch: R281257 | |
| **Lab ID: C22040143-001ADUP** | 2 | Sample Duplicate | | | | Run: PHSC_101-C_220408A | | | 04/08/22 10:09 | |
| pH | | 8.4 | s.u. | 0.1 | | | | 0.2 | 1.5 | |
| pH Measurement Temp | | 11.6 | °C | | | | | | | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22040181 **Report Date:** 04/27/22

| Analyte | | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Method:** | **E300.0** | | | | | | | | Analytical Run: IC3-C_220409A | | |
| **Lab ID:** | **ICV** | 2 | Initial Calibration Verification Standard | | | | | | | 04/09/22 12:02 | |
| Chloride | | | 9.88 | mg/L | 1.0 | 99 | 90 | 110 | | | |
| Sulfate | | | 39.7 | mg/L | 1.0 | 99 | 90 | 110 | | | |
| **Method:** | **E300.0** | | | | | | | | | Batch: R281305 | |
| **Lab ID:** | **ICB** | 2 | Method Blank | | | | Run: IC3-C_220409A | | | 04/09/22 12:21 | |
| Chloride | | | ND | mg/L | 0.09 | | | | | | |
| Sulfate | | | ND | mg/L | 0.09 | | | | | | |
| **Lab ID:** | **LFB** | 2 | Laboratory Fortified Blank | | | | Run: IC3-C_220409A | | | 04/09/22 12:40 | |
| Chloride | | | 9.92 | mg/L | 1.0 | 103 | 90 | 110 | | | |
| Sulfate | | | 40.0 | mg/L | 1.0 | 104 | 90 | 110 | | | |
| **Lab ID:** | **C22040181-001AMS** | 2 | Sample Matrix Spike | | | | Run: IC3-C_220409A | | | 04/09/22 22:35 | |
| Chloride | | | 127 | mg/L | 1.0 | 98 | 80 | 120 | | | |
| Sulfate | | | 2840 | mg/L | 4.2 | | 80 | 120 | | | A |
| **Lab ID:** | **C22040181-001AMSD** | 2 | Sample Matrix Spike Duplicate | | | | Run: IC3-C_220409A | | | 04/09/22 22:54 | |
| Chloride | | | 127 | mg/L | 1.0 | 98 | 80 | 120 | 0.2 | 20 | |
| Sulfate | | | 2810 | mg/L | 4.2 | | 80 | 120 | 0.9 | 20 | A |
| **Method:** | **E300.0** | | | | | | | | Analytical Run: IC3-C_220419A | | |
| **Lab ID:** | **ICV** | | Initial Calibration Verification Standard | | | | | | | 04/19/22 16:41 | |
| Sulfate | | | 37.7 | mg/L | 1.0 | 94 | 90 | 110 | | | |
| **Method:** | **E300.0** | | | | | | | | | Batch: R281640 | |
| **Lab ID:** | **ICB** | | Method Blank | | | | Run: IC3-C_220419A | | | 04/19/22 17:00 | |
| Sulfate | | | ND | mg/L | 0.2 | | | | | | |
| **Lab ID:** | **LFB** | | Laboratory Fortified Blank | | | | Run: IC3-C_220419A | | | 04/19/22 17:19 | |
| Sulfate | | | 37.2 | mg/L | 1.0 | 97 | 90 | 110 | | | |
| **Lab ID:** | **C22040278-001AMS** | | Sample Matrix Spike | | | | Run: IC3-C_220419A | | | 04/19/22 18:16 | |
| Sulfate | | | 39.5 | mg/L | 1.0 | 98 | 80 | 120 | | | |
| **Lab ID:** | **C22040278-001AMSD** | | Sample Matrix Spike Duplicate | | | | Run: IC3-C_220419A | | | 04/19/22 18:35 | |
| Sulfate | | | 40.3 | mg/L | 1.0 | 100 | 80 | 120 | 2.1 | 20 | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

A - Analyte level was greater than four times the spike level - in accordance with the method, percent recovery is not calculated

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22040181 **Report Date:** 04/27/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: E350.1** | | | | | | | | | Analytical Run: FIA201-C_220407B | |
| **Lab ID: ICV** | Initial Calibration Verification Standard | | | | | | | | 04/07/22 15:24 | |
| Nitrogen, Ammonia as N | | 1.04 | mg/L | 0.050 | 104 | 90 | 110 | | | |
| **Method: E350.1** | | | | | | | | | Batch: R281240 | |
| **Lab ID: MBLK** | Method Blank | | | | | Run: FIA201-C_220407B | | | 04/07/22 15:23 | |
| Nitrogen, Ammonia as N | | ND | mg/L | 0.03 | | | | | | |
| **Lab ID: LFB** | Laboratory Fortified Blank | | | | | Run: FIA201-C_220407B | | | 04/07/22 15:25 | |
| Nitrogen, Ammonia as N | | 1.01 | mg/L | 0.050 | 102 | 90 | 110 | | | |
| **Lab ID: C22040142-009DMS** | Sample Matrix Spike | | | | | Run: FIA201-C_220407B | | | 04/07/22 15:49 | |
| Nitrogen, Ammonia as N | | 2.13 | mg/L | 0.050 | 75 | 90 | 110 | | | SE |
| **Lab ID: C22040142-009DMSD** | Sample Matrix Spike Duplicate | | | | | Run: FIA201-C_220407B | | | 04/07/22 15:50 | |
| Nitrogen, Ammonia as N | | 2.08 | mg/L | 0.050 | 70 | 90 | 110 | 2.4 | 10 | SE |

**Qualifiers:**

RL - Analyte Reporting Limit

E - Estimated value - result exceeds the instrument upper quantitation limit

ND - Not detected at the Reporting Limit (RL)

S - Spike recovery outside of advisory limits

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22040181 **Report Date:** 04/27/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: E353.2** | | | | | | | | | Analytical Run: FIA201-C_220408A | |
| **Lab ID: ICV** | | Initial Calibration Verification Standard | | | | | | | 04/08/22 11:25 | |
| Nitrogen, Nitrate+Nitrite as N | | 1.01 | mg/L | 0.050 | 101 | 90 | 110 | | | |
| **Method: E353.2** | | | | | | | | | Batch: R281264 | |
| **Lab ID: MBLK** | | Method Blank | | | | Run: FIA201-C_220408A | | | 04/08/22 11:27 | |
| Nitrogen, Nitrate+Nitrite as N | | ND | mg/L | 0.01 | | | | | | |
| **Lab ID: LFB** | | Laboratory Fortified Blank | | | | Run: FIA201-C_220408A | | | 04/08/22 11:28 | |
| Nitrogen, Nitrate+Nitrite as N | | 0.976 | mg/L | 0.050 | 99 | 90 | 110 | | | |
| **Lab ID: C22040167-001AMS** | | Sample Matrix Spike | | | | Run: FIA201-C_220408A | | | 04/08/22 11:32 | |
| Nitrogen, Nitrate+Nitrite as N | | 4.67 | mg/L | 0.050 | 105 | 90 | 110 | | | |
| **Lab ID: C22040167-001AMSD** | | Sample Matrix Spike Duplicate | | | | Run: FIA201-C_220408A | | | 04/08/22 11:33 | |
| Nitrogen, Nitrate+Nitrite as N | | 4.71 | mg/L | 0.050 | 109 | 90 | 110 | 0.9 | 10 | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22040181 **Report Date:** 04/25/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: E200.7** | | | | | | | | | | Batch: 66416 |
| **Lab ID: LCS3-66416** | | Laboratory Control Sample | | | | Run: ICP4-C_220411B | | | | 04/14/22 12:12 |
| Manganese | | 2.67 | mg/L | 0.0010 | 107 | 85 | 115 | | | |
| **Lab ID: C22040181-001CMS3** | | Sample Matrix Spike | | | | Run: ICP4-C_220411B | | | | 04/14/22 12:45 |
| Manganese | | 4.16 | mg/L | 0.0062 | 91 | 70 | 130 | | | |
| **Lab ID: C22040181-001CMSD** | | Sample Matrix Spike Duplicate | | | | Run: ICP4-C_220411B | | | | 04/14/22 12:50 |
| Manganese | | 3.99 | mg/L | 0.0062 | 84 | 70 | 130 | 4.2 | 20 | |
| **Method: E200.7** | | | | | | | | | | Analytical Run: ICP4-C_220411C |
| **Lab ID: QCS** | | Initial Calibration Verification Standard | | | | | | | | 04/17/22 00:27 |
| Calcium | | 42.2 | mg/L | 0.50 | 105 | 95 | 105 | | | |
| **Method: E200.7** | | | | | | | | | | Batch: R281549 |
| **Lab ID: LRB** | | Method Blank | | | | Run: ICP4-C_220411C | | | | 04/17/22 00:01 |
| Calcium | | ND | mg/L | 0.1 | | | | | | |
| **Lab ID: LFB** | | Laboratory Fortified Blank | | | | Run: ICP4-C_220411C | | | | 04/17/22 00:22 |
| Calcium | | 53.1 | mg/L | 0.50 | 106 | 85 | 115 | | | |
| **Lab ID: C22040181-003BMS2** | | Sample Matrix Spike | | | | Run: ICP4-C_220411C | | | | 04/17/22 04:23 |
| Calcium | | 168 | mg/L | 1.0 | 103 | 70 | 130 | | | |
| **Lab ID: C22040181-003BMSD** | | Sample Matrix Spike Duplicate | | | | Run: ICP4-C_220411C | | | | 04/17/22 04:28 |
| Calcium | | 169 | mg/L | 1.0 | 104 | 70 | 130 | 0.5 | 20 | |
| **Method: E200.7** | | | | | | | | | | Analytical Run: ICP4-C_220418A |
| **Lab ID: QCS** | | Initial Calibration Verification Standard | | | | | | | | 04/19/22 15:06 |
| Manganese | | 3.91 | mg/L | 0.010 | 98 | 95 | 105 | | | |
| **Method: E200.7** | | | | | | | | | | Batch: 66416 |
| **Lab ID: MB-66416** | | Method Blank | | | | Run: ICP4-C_220418A | | | | 04/19/22 17:30 |
| Manganese | | 0.0008 | mg/L | 0.0008 | | | | | | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22040181 **Report Date:** 04/25/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method:** E200.7 | | | | | | | | | Analytical Run: ICP4-C_220421B | |
| **Lab ID:** QCS | | Initial Calibration Verification Standard | | | | | | | 04/21/22 17:50 | |
| Calcium | | 38.9 | mg/L | 0.50 | 97 | 95 | 105 | | | |
| **Method:** E200.7 | | | | | | | | | Batch: R281751 | |
| **Lab ID:** LRB | | Method Blank | | | | Run: ICP4-C_220421B | | | 04/21/22 16:38 | |
| Calcium | | ND | mg/L | 0.1 | | | | | | |
| **Lab ID:** LFB | | Laboratory Fortified Blank | | | | Run: ICP4-C_220421B | | | 04/21/22 17:45 | |
| Calcium | | 47.7 | mg/L | 0.50 | 95 | 85 | 115 | | | |
| **Lab ID:** C22031024-001BMS2 | | Sample Matrix Spike | | | | Run: ICP4-C_220421B | | | 04/21/22 19:12 | |
| Calcium | | 470 | mg/L | 2.6 | 93 | 70 | 130 | | | |
| **Lab ID:** C22031024-001BMSD | | Sample Matrix Spike Duplicate | | | | Run: ICP4-C_220421B | | | 04/21/22 19:17 | |
| Calcium | | 466 | mg/L | 2.6 | 93 | 70 | 130 | 0.8 | 20 | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22040181 **Report Date:** 04/25/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: E200.8** | | | | | | | | | Analytical Run: ICPMS5-C_220414A | |
| **Lab ID: QCS** | 3 | Initial Calibration Verification Standard | | | | | | | 04/15/22 18:53 | |
| Magnesium | | 2.62 | mg/L | 0.50 | 105 | 90 | 110 | | | |
| Potassium | | 2.51 | mg/L | 0.50 | 100 | 90 | 110 | | | |
| Sodium | | 2.58 | mg/L | 0.50 | 103 | 90 | 110 | | | |
| **Method: E200.8** | | | | | | | | | Batch: R281497 | |
| **Lab ID: LRB** | 3 | Method Blank | | | | Run: ICPMS5-C_220414A | | | 04/15/22 12:16 | |
| Magnesium | | ND | mg/L | 0.02 | | | | | | |
| Potassium | | ND | mg/L | 0.1 | | | | | | |
| Sodium | | ND | mg/L | 0.3 | | | | | | |
| **Lab ID: LFB** | 3 | Laboratory Fortified Blank | | | | Run: ICPMS5-C_220414A | | | 04/15/22 12:20 | |
| Magnesium | | 47.2 | mg/L | 0.50 | 94 | 85 | 115 | | | |
| Potassium | | 47.5 | mg/L | 0.50 | 95 | 85 | 115 | | | |
| Sodium | | 47.6 | mg/L | 0.50 | 95 | 85 | 115 | | | |
| **Lab ID: C22040142-007BMS** | 3 | Sample Matrix Spike | | | | Run: ICPMS5-C_220414A | | | 04/15/22 20:44 | |
| Magnesium | | 579 | mg/L | 1.0 | 89 | 70 | 130 | | | |
| Potassium | | 235 | mg/L | 1.0 | 91 | 70 | 130 | | | |
| Sodium | | 350 | mg/L | 1.5 | 90 | 70 | 130 | | | |
| **Lab ID: C22040142-007BMSD** | 3 | Sample Matrix Spike Duplicate | | | | Run: ICPMS5-C_220414A | | | 04/15/22 20:49 | |
| Magnesium | | 594 | mg/L | 1.0 | 95 | 70 | 130 | 2.5 | 20 | |
| Potassium | | 241 | mg/L | 1.0 | 93 | 70 | 130 | 2.5 | 20 | |
| Sodium | | 359 | mg/L | 1.5 | 93 | 70 | 130 | 2.3 | 20 | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22040181 **Report Date:** 04/25/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: E200.8** | | | | | | | | | Analytical Run: ICPMS5-C_220418A | |
| **Lab ID: QCS** | 11 | Initial Calibration Verification Standard | | | | | | | 04/20/22 06:33 | |
| Aluminum | | 0.238 | mg/L | 0.030 | 95 | 90 | 110 | | | |
| Arsenic | | 0.0485 | mg/L | 0.0010 | 97 | 90 | 110 | | | |
| Beryllium | | 0.0240 | mg/L | 0.0010 | 96 | 90 | 110 | | | |
| Cadmium | | 0.0244 | mg/L | 0.0010 | 98 | 90 | 110 | | | |
| Cobalt | | 0.0481 | mg/L | 0.0050 | 96 | 90 | 110 | | | |
| Lead | | 0.0468 | mg/L | 0.0010 | 94 | 90 | 110 | | | |
| Manganese | | 0.233 | mg/L | 0.0010 | 93 | 90 | 110 | | | |
| Nickel | | 0.0482 | mg/L | 0.0050 | 96 | 90 | 110 | | | |
| Selenium | | 0.0487 | mg/L | 0.0010 | 97 | 90 | 110 | | | |
| Uranium | | 0.0181 | mg/L | 0.00030 | 91 | 90 | 110 | | | |
| Vanadium | | 0.0460 | mg/L | 0.010 | 92 | 90 | 110 | | | |
| **Method: E200.8** | | | | | | | | | Batch: 66416 | |
| **Lab ID: MB-66416** | 11 | Method Blank | | | | Run: ICPMS5-C_220418A | | | 04/20/22 01:27 | |
| Aluminum | | ND | mg/L | 0.02 | | | | | | |
| Arsenic | | ND | mg/L | 0.0003 | | | | | | |
| Beryllium | | ND | mg/L | 0.0002 | | | | | | |
| Cadmium | | ND | mg/L | 0.00002 | | | | | | |
| Cobalt | | ND | mg/L | 0.0001 | | | | | | |
| Lead | | ND | mg/L | 0.0001 | | | | | | |
| Manganese | | ND | mg/L | 0.0007 | | | | | | |
| Nickel | | ND | mg/L | 0.0003 | | | | | | |
| Selenium | | ND | mg/L | 0.0001 | | | | | | |
| Uranium | | ND | mg/L | 0.0003 | | | | | | |
| Vanadium | | ND | mg/L | 0.003 | | | | | | |
| **Lab ID: LCS3-66416** | 12 | Laboratory Control Sample | | | | Run: ICPMS5-C_220418A | | | 04/20/22 01:32 | |
| Aluminum | | 2.39 | mg/L | 0.030 | 96 | 85 | 115 | | | |
| Arsenic | | 0.451 | mg/L | 0.0010 | 90 | 85 | 115 | | | |
| Beryllium | | 0.245 | mg/L | 0.0010 | 98 | 85 | 115 | | | |
| Cadmium | | 0.239 | mg/L | 0.0010 | 95 | 85 | 115 | | | |
| Cobalt | | 0.469 | mg/L | 0.0050 | 94 | 85 | 115 | | | |
| Lead | | 0.470 | mg/L | 0.0010 | 94 | 85 | 115 | | | |
| Manganese | | 2.35 | mg/L | 0.0010 | 94 | 85 | 115 | | | |
| Molybdenum | | 0.444 | mg/L | 0.0010 | 89 | 85 | 115 | | | |
| Nickel | | 0.473 | mg/L | 0.0050 | 95 | 85 | 115 | | | |
| Selenium | | 0.457 | mg/L | 0.0010 | 91 | 85 | 115 | | | |
| Uranium | | 0.467 | mg/L | 0.00030 | 93 | 85 | 115 | | | |
| Vanadium | | 0.469 | mg/L | 0.010 | 94 | 85 | 115 | | | |
| **Lab ID: C22040181-001CMS3** | 12 | Sample Matrix Spike | | | | Run: ICPMS5-C_220418A | | | 04/20/22 01:54 | |
| Aluminum | | 2.39 | mg/L | 0.036 | 96 | 70 | 130 | | | |
| Arsenic | | 0.487 | mg/L | 0.0010 | 97 | 70 | 130 | | | |
| Beryllium | | 0.236 | mg/L | 0.0010 | 94 | 70 | 130 | | | |
| Cadmium | | 0.231 | mg/L | 0.0010 | 92 | 70 | 130 | | | |
| Cobalt | | 0.470 | mg/L | 0.0050 | 94 | 70 | 130 | | | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22040181 **Report Date:** 04/25/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: E200.8** | | | | | | | | | | Batch: 66416 |
| **Lab ID: C22040181-001CMS3** | 12 | Sample Matrix Spike | | | | Run: ICPMS5-C_220418A | | | | 04/20/22 01:54 |
| Lead | | 0.471 | mg/L | 0.0010 | 94 | 70 | 130 | | | |
| Manganese | | 4.40 | mg/L | 0.0014 | 98 | 70 | 130 | | | |
| Molybdenum | | 0.459 | mg/L | 0.0010 | 91 | 70 | 130 | | | |
| Nickel | | 0.472 | mg/L | 0.0050 | 94 | 70 | 130 | | | |
| Selenium | | 0.505 | mg/L | 0.0010 | 101 | 70 | 130 | | | |
| Uranium | | 0.480 | mg/L | 0.00054 | 96 | 70 | 130 | | | |
| Vanadium | | 0.492 | mg/L | 0.010 | 98 | 70 | 130 | | | |
| **Lab ID: C22040181-001CMSD** | 12 | Sample Matrix Spike Duplicate | | | | Run: ICPMS5-C_220418A | | | | 04/20/22 01:59 |
| Aluminum | | 2.41 | mg/L | 0.036 | 97 | 70 | 130 | 0.8 | 20 | |
| Arsenic | | 0.479 | mg/L | 0.0010 | 95 | 70 | 130 | 1.7 | 20 | |
| Beryllium | | 0.237 | mg/L | 0.0010 | 95 | 70 | 130 | 0.6 | 20 | |
| Cadmium | | 0.226 | mg/L | 0.0010 | 90 | 70 | 130 | 2.3 | 20 | |
| Cobalt | | 0.470 | mg/L | 0.0050 | 94 | 70 | 130 | 0.0 | 20 | |
| Lead | | 0.472 | mg/L | 0.0010 | 94 | 70 | 130 | 0.3 | 20 | |
| Manganese | | 4.30 | mg/L | 0.0014 | 94 | 70 | 130 | 2.3 | 20 | |
| Molybdenum | | 0.460 | mg/L | 0.0010 | 92 | 70 | 130 | 0.3 | 20 | |
| Nickel | | 0.460 | mg/L | 0.0050 | 92 | 70 | 130 | 2.5 | 20 | |
| Selenium | | 0.496 | mg/L | 0.0010 | 99 | 70 | 130 | 1.6 | 20 | |
| Uranium | | 0.478 | mg/L | 0.00054 | 95 | 70 | 130 | 0.5 | 20 | |
| Vanadium | | 0.484 | mg/L | 0.010 | 97 | 70 | 130 | 1.8 | 20 | |
| **Method: E200.8** | | | | | | | | | | Analytical Run: ICPMS5-C_220422A |
| **Lab ID: QCS** | 3 | Initial Calibration Verification Standard | | | | | | | | 04/22/22 17:50 |
| Aluminum | | 0.250 | mg/L | 0.030 | 100 | 90 | 110 | | | |
| Arsenic | | 0.0508 | mg/L | 0.0010 | 102 | 90 | 110 | | | |
| Molybdenum | | 0.0478 | mg/L | 0.0010 | 96 | 90 | 110 | | | |
| **Method: E200.8** | | | | | | | | | | Batch: 66416 |
| **Lab ID: MB-66416** | 3 | Method Blank | | | | Run: ICPMS5-C_220422A | | | | 04/22/22 22:25 |
| Aluminum | | ND | mg/L | 0.02 | | | | | | |
| Arsenic | | ND | mg/L | 0.0003 | | | | | | |
| Molybdenum | | ND | mg/L | 0.0001 | | | | | | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22040181 **Report Date:** 04/21/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: A7500-U C** | | | | | | | | | Batch: RA-TH-ISO-3413 | |
| **Lab ID: MB-RA-TH-ISO-3413** | 3 | Method Blank | | | | Run: EGG-ORTEC_ALL_220412C | | | 04/14/22 15:55 | |
| Thorium 230 | | 0.6 | pCi/L | | | | | | | |
| Thorium 230 precision (±) | | 0.1 | pCi/L | | | | | | | |
| Thorium 230 MDC | | 0.05 | pCi/L | | | | | | | |
| **Lab ID: LCS-RA-TH-ISO-3413** | 3 | Laboratory Control Sample | | | | Run: EGG-ORTEC_ALL_220412C | | | 04/14/22 15:55 | |
| Thorium 230 | | 22 | pCi/L | | 88 | 70 | 130 | | | |
| Thorium 230 precision (±) | | 4.2 | pCi/L | | | | | | | |
| Thorium 230 MDC | | 0.054 | pCi/L | | | | | | | |
| **Lab ID: C22040193-004FDUP** | 3 | Sample Duplicate | | | | Run: EGG-ORTEC_ALL_220412C | | | 04/14/22 15:55 | |
| Thorium 230 | | 0.18 | pCi/L | | | | | 49 | 30 | R |
| Thorium 230 precision (±) | | 0.066 | pCi/L | | | | | | | |
| Thorium 230 MDC | | 0.081 | pCi/L | | | | | | | |

- Duplicate RPD is outside of the acceptance range for this analysis. However, the RER is less than the limit of 3, the RER result is 0.82.

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

R - Relative Percent Difference (RPD) exceeds advisory limit

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22040181 **Report Date:** 04/21/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: E900.1** | | | | | | | | | | Batch: GA-1353 |
| **Lab ID: LCS-GA-1353** | 3 | Laboratory Control Sample | | | | Run: G5000W_220412A | | | | 04/15/22 11:08 |
| Gross Alpha minus Rn & U | | 33 | pCi/L | | 97 | 70 | 130 | | | |
| Gross Alpha minus Rn & U Precision (±) | | 6.6 | pCi/L | | | | | | | |
| Gross Alpha minus Rn & U MDC | | 0.99 | pCi/L | | | | | | | |
| **Lab ID: MB-GA-1353** | 3 | Method Blank | | | | Run: G5000W_220412A | | | | 04/15/22 11:08 |
| Gross Alpha minus Rn & U | | 0.2 | pCi/L | | | | | | | U |
| Gross Alpha minus Rn & U Precision (±) | | 0.6 | pCi/L | | | | | | | |
| Gross Alpha minus Rn & U MDC | | 1 | pCi/L | | | | | | | |
| **Lab ID: C22040193-003FDUP** | 3 | Sample Duplicate | | | | Run: G5000W_220412A | | | | 04/15/22 11:08 |
| Gross Alpha minus Rn & U | | 2.9 | pCi/L | | | | | 36 | 30 | R |
| Gross Alpha minus Rn & U Precision (±) | | 1.0 | pCi/L | | | | | | | |
| Gross Alpha minus Rn & U MDC | | 0.99 | pCi/L | | | | | | | |
| - Duplicate RPD is outside of the acceptance range for this analysis. However, the RER is less than the limit of 3, the RER result is 0.66. | | | | | | | | | | |
| **Lab ID: C22040258-004FDUP** | 3 | Sample Duplicate | | | | Run: G5000W_220412A | | | | 04/15/22 15:08 |
| Gross Alpha minus Rn & U | | 6.5 | pCi/L | | | | | 12 | 30 | |
| Gross Alpha minus Rn & U Precision (±) | | 1.6 | pCi/L | | | | | | | |
| Gross Alpha minus Rn & U MDC | | 0.97 | pCi/L | | | | | | | |
| - The RER result is 0.32. | | | | | | | | | | |

**Qualifiers:**

RL - Analyte Reporting Limit

R - Relative Percent Difference (RPD) exceeds advisory limit

ND - Not detected at the Reporting Limit (RL)

U - Not detected at Minimum Detectable Concentration (MDC)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22040181 **Report Date:** 04/21/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: E903.0** | | | | | | | | | | Batch: RA226-10421 |
| **Lab ID: LCS-RA226-10421** | 3 | Laboratory Control Sample | | | | Run: G542M-2_220408A | | | | 04/19/22 18:11 |
| Radium 226 | | 9.3 | pCi/L | | 91 | 70 | 130 | | | |
| Radium 226 precision (±) | | 1.8 | pCi/L | | | | | | | |
| Radium 226 MDC | | 0.22 | pCi/L | | | | | | | |
| **Lab ID: MB-RA226-10421** | 3 | Method Blank | | | | Run: G542M-2_220408A | | | | 04/19/22 18:11 |
| Radium 226 | | 0.1 | pCi/L | | | | | | | U |
| Radium 226 precision (±) | | 0.1 | pCi/L | | | | | | | |
| Radium 226 MDC | | 0.2 | pCi/L | | | | | | | |
| **Lab ID: C22040245-001EDUP** | 3 | Sample Duplicate | | | | Run: G542M-2_220408A | | | | 04/19/22 18:11 |
| Radium 226 | | 38 | pCi/L | | | | | 22 | 30 | |
| Radium 226 precision (±) | | 7.1 | pCi/L | | | | | | | |
| Radium 226 MDC | | 0.27 | pCi/L | | | | | | | |

- The RER result is 0.82.

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

U - Not detected at Minimum Detectable Concentration (MDC)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22040181 **Report Date:** 04/21/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: E909.0** | | | | | | | | | | Batch: PB-210-1385 |
| **Lab ID: LCS-PB-210-1385** | 3 | Laboratory Control Sample | | | | Run: TRICARB LSC_220409A | | | 04/13/22 16:40 | |
| Lead 210 | | 15 | pCi/L | | 90 | 70 | 130 | | | |
| Lead 210 precision (±) | | 4.7 | pCi/L | | | | | | | |
| Lead 210 MDC | | 1.4 | pCi/L | | | | | | | |
| **Lab ID: MB-PB-210-1385** | 3 | Method Blank | | | | Run: TRICARB LSC_220409A | | | 04/13/22 17:48 | |
| Lead 210 | | 0.2 | pCi/L | | | | | | | U |
| Lead 210 precision (±) | | 0.5 | pCi/L | | | | | | | |
| Lead 210 MDC | | 0.9 | pCi/L | | | | | | | |
| **Lab ID: C22040193-003FDUP** | 3 | Sample Duplicate | | | | Run: TRICARB LSC_220409A | | | 04/14/22 04:29 | |
| Lead 210 | | 0.16 | pCi/L | | | | | 69 | 30 | UR |
| Lead 210 precision (±) | | 0.51 | pCi/L | | | | | | | |
| Lead 210 MDC | | 0.85 | pCi/L | | | | | | | |

- Duplicate RPD is outside of the acceptance range for this analysis. However, the RER is less than the limit of 3, the RER result is 0.23.

**Qualifiers:**

RL - Analyte Reporting Limit

R - Relative Percent Difference (RPD) exceeds advisory limit

ND - Not detected at the Reporting Limit (RL)

U - Not detected at Minimum Detectable Concentration (MDC)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22040181 **Report Date:** 04/21/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: RA-05** | | | | | | | | | | Batch: RA228-6767 |
| **Lab ID: LCS-228-RA226-10421** | 3 | Laboratory Control Sample | | | | Run: G542M_220408A | | | | 04/14/22 13:49 |
| Radium 228 | | 7.4 | pCi/L | | 93 | 70 | 130 | | | |
| Radium 228 precision (±) | | 1.6 | pCi/L | | | | | | | |
| Radium 228 MDC | | 1.2 | pCi/L | | | | | | | |
| **Lab ID: MB-RA226-10421** | 3 | Method Blank | | | | Run: G542M_220408A | | | | 04/14/22 13:49 |
| Radium 228 | | 0.5 | pCi/L | | | | | | | U |
| Radium 228 precision (±) | | 0.7 | pCi/L | | | | | | | |
| Radium 228 MDC | | 1 | pCi/L | | | | | | | |
| **Lab ID: C22040245-001EDUP** | 3 | Sample Duplicate | | | | Run: G542M_220408A | | | | 04/14/22 13:49 |
| Radium 228 | | 2.7 | pCi/L | | | | | 18 | 30 | |
| Radium 228 precision (±) | | 1.0 | pCi/L | | | | | | | |
| Radium 228 MDC | | 1.5 | pCi/L | | | | | | | |

- The RER result is 0.33.

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

U - Not detected at Minimum Detectable Concentration (MDC)

# QA/QC Summary Report

Prepared by Billings, MT Branch

**Client:** United Nuclear Corporation **Work Order:** C22040181 **Report Date:** 04/14/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: E624.1** | | | | | | | | | | Analytical Run: R378666 |
| **Lab ID: CCV041122** | 7 | Continuing Calibration Verification Standard | | | | | | | | 04/11/22 10:26 |
| Bromodichloromethane | | 5.62 | ug/L | 0.50 | 112 | 70 | 130 | | | |
| Bromoform | | 5.59 | ug/L | 0.50 | 112 | 70 | 130 | | | |
| Chlorodibromomethane | | 5.37 | ug/L | 0.50 | 107 | 70 | 130 | | | |
| Chloroform | | 5.06 | ug/L | 0.50 | 101 | 70 | 130 | | | |
| Surr: 1,2-Dichloroethane-d4 | | | | 0.50 | 98 | 71 | 139 | | | |
| Surr: p-Bromofluorobenzene | | | | 0.50 | 102 | 80 | 127 | | | |
| Surr: Toluene-d8 | | | | 0.50 | 105 | 80 | 123 | | | |
| **Method: E624.1** | | | | | | | | | | Batch: R378666 |
| **Lab ID: LCS041122** | 7 | Laboratory Control Sample | | | | Run: 5971A.I_220411A | | | | 04/11/22 11:20 |
| Bromodichloromethane | | 5.61 | ug/L | 0.50 | 112 | 74 | 128 | | | |
| Bromoform | | 5.15 | ug/L | 0.50 | 103 | 70 | 130 | | | |
| Chlorodibromomethane | | 5.04 | ug/L | 0.50 | 101 | 74 | 125 | | | |
| Chloroform | | 4.92 | ug/L | 0.50 | 98 | 70 | 135 | | | |
| Surr: 1,2-Dichloroethane-d4 | | | | 0.50 | 102 | 71 | 139 | | | |
| Surr: p-Bromofluorobenzene | | | | 0.50 | 104 | 80 | 127 | | | |
| Surr: Toluene-d8 | | | | 0.50 | 105 | 80 | 123 | | | |
| **Lab ID: MBLK041122** | 7 | Method Blank | | | | Run: 5971A.I_220411A | | | | 04/11/22 12:42 |
| Bromodichloromethane | | ND | ug/L | 0.50 | | | | | | |
| Bromoform | | ND | ug/L | 0.50 | | | | | | |
| Chlorodibromomethane | | ND | ug/L | 0.50 | | | | | | |
| Chloroform | | ND | ug/L | 0.50 | | | | | | |
| Surr: 1,2-Dichloroethane-d4 | | | | 0.50 | 99 | 71 | 139 | | | |
| Surr: p-Bromofluorobenzene | | | | 0.50 | 106 | 80 | 127 | | | |
| Surr: Toluene-d8 | | | | 0.50 | 107 | 80 | 123 | | | |
| **Lab ID: B22040642-001FMS** | 7 | Sample Matrix Spike | | | | Run: 5971A.I_220411A | | | | 04/11/22 19:27 |
| Bromodichloromethane | | 5.84 | ug/L | 0.50 | 117 | 74 | 128 | | | |
| Bromoform | | 5.42 | ug/L | 0.50 | 108 | 66 | 128 | | | |
| Chlorodibromomethane | | 5.19 | ug/L | 0.50 | 104 | 74 | 125 | | | |
| Chloroform | | 4.99 | ug/L | 0.50 | 100 | 68 | 124 | | | |
| Surr: 1,2-Dichloroethane-d4 | | | | 0.50 | 99 | 71 | 139 | | | |
| Surr: p-Bromofluorobenzene | | | | 0.50 | 103 | 80 | 127 | | | |
| Surr: Toluene-d8 | | | | 0.50 | 103 | 80 | 123 | | | |
| **Lab ID: B22040642-001FMSD** | 7 | Sample Matrix Spike Duplicate | | | | Run: 5971A.I_220411A | | | | 04/11/22 19:54 |
| Bromodichloromethane | | 4.86 | ug/L | 0.50 | 97 | 74 | 128 | 18 | 20 | |
| Bromoform | | 4.84 | ug/L | 0.50 | 97 | 66 | 128 | 11 | 20 | |
| Chlorodibromomethane | | 4.52 | ug/L | 0.50 | 90 | 74 | 125 | 14 | 20 | |
| Chloroform | | 4.35 | ug/L | 0.50 | 87 | 68 | 124 | 14 | 20 | |
| Surr: 1,2-Dichloroethane-d4 | | | | 0.50 | 101 | 71 | 139 | | | |
| Surr: p-Bromofluorobenzene | | | | 0.50 | 107 | 80 | 127 | | | |
| Surr: Toluene-d8 | | | | 0.50 | 106 | 80 | 123 | | | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

# ANALYTICAL SUMMARY REPORT

May 04, 2022

United Nuclear Corporation
PO Box 1088
Gallup, NM 87305-1088

Work Order: C22040256 Quote ID: C6117

Project Name: UNC-Zone 3, Swalluvium

Energy Laboratories, Inc. Casper WY received the following 10 samples for United Nuclear Corporation on 4/7/2022 for analysis.

| Lab ID | Client Sample ID | Collect Date | Receive Date | Matrix | Test |
|---|---|---|---|---|---|
| C22040256-001 | EPA-4 | 04/05/22 11:25 | 04/07/22 | Aqueous | Metals by ICP/ICPMS, Dissolved<br>Metals by ICP/ICPMS, Total<br>Alkalinity to pH 4.5<br>Anion - Cation Balance<br>Anions by Ion Chromatography<br>Nitrogen, Ammonia<br>Nitrogen, Nitrate + Nitrite<br>pH<br>Metals Preparation by EPA 200.2<br>Gross Alpha minus Radon and Uranium, Total<br>Lead 210, Total<br>Radium 226 + Radium 228, Total<br>Radium 226, Total<br>Radium 228, Total<br>Thorium, Isotopic, Total<br>Solids, Total Dissolved<br>Solids, Total Dissolved - Calculated<br>TRACKER SHEET<br>624-Purgeable Organics<br>624-Purgeable Organics |
| C22040256-002 | EPA-5 | 04/05/22 12:27 | 04/07/22 | Aqueous | Same As Above |
| C22040256-003 | SBL-1 | 04/05/22 13:48 | 04/07/22 | Aqueous | Same As Above |
| C22040256-004 | RINSATE | 04/05/22 14:30 | 04/07/22 | Aqueous | Metals by ICP/ICPMS, Dissolved<br>Metals by ICP/ICPMS, Total<br>Alkalinity to pH 4.5<br>Anion - Cation Balance<br>Anions by Ion Chromatography<br>Nitrogen, Ammonia<br>Nitrogen, Nitrate + Nitrite<br>pH<br>Metals Preparation by EPA 200.2<br>Gross Alpha minus Radon and Uranium, Total<br>Lead 210, Total<br>Radium 226 + Radium 228, Total<br>Radium 226, Total<br>Radium 228, Total<br>Thorium, Isotopic, Total<br>Solids, Total Dissolved<br>Solids, Total Dissolved - Calculated<br>624-Purgeable Organics<br>624-Purgeable Organics |
| C22040256-005 | FIELD BLANK | 04/05/22 15:30 | 04/07/22 | Aqueous | Same As Above |

# ANALYTICAL SUMMARY REPORT

| | | | | | |
|---|---|---|---|---|---|
| C22040256-006 | TRIP BLANK - 81031 , EPA-4/EPA-5 | 04/05/22 11:25 | 04/07/22 | Aqueous | 624-Purgeable Organics |
| C22040256-007 | TRIP BLANK - 80352, SBL-1/Rinsate/Field Blank | 04/05/22 13:48 | 04/07/22 | Trip Blank | Same As Above |
| C22040256-008 | NBL-2 | 04/05/22 10:10 | 04/07/22 | Aqueous | Alkalinity to pH 4.5<br>Anions by Ion Chromatography<br>pH<br>Solids, Total Dissolved |
| C22040256-009 | NW-4 | 04/05/22 10:39 | 04/07/22 | Aqueous | Same As Above |
| C22040256-010 | RW-A | 04/05/22 10:52 | 04/07/22 | Aqueous | Same As Above |

The analyses presented in this report were performed by Energy Laboratories, Inc., 2393 Salt Creek Hwy., Casper, WY 82601, unless otherwise noted. Any exceptions or problems with the analyses are noted in the report package. Any issues encountered during sample receipt are documented in the Work Order Receipt Checklist.

The results as reported relate only to the item(s) submitted for testing. This report shall be used or copied only in its entirety. Energy Laboratories, Inc. is not responsible for the consequences arising from the use of a partial report.

If you have any questions regarding these test results, please contact your Project Manager .

Report Approved By:

Ashley L. Wilson
Project Manager

Digitally signed by
Ashley L. Wilson
Date: 2022.05.04 11:57:24 -06:00

**CLIENT:** United Nuclear Corporation
**Project:** UNC-Zone 3, Swalluvium
**Work Order:** C22040256

**Report Date:** 05/04/22

# CASE NARRATIVE

Tests associated with analyst identified as ELI-B were subcontracted to Energy Laboratories, 1120 S. 27th St., Billings, MT, EPA Number MT00005.

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22040256 **Report Date:** 04/21/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: A2320 B** | | | | | | | | | Analytical Run: MANTECH_220411A | |
| **Lab ID: ICV** | Initial Calibration Verification Standard | | | | | | | | 04/11/22 12:00 | |
| pH | | 6.84 | s.u. | 0.010 | 100 | 98 | 102 | | | |
| **Method: A2320 B** | | | | | | | | | Batch: R281349 | |
| **Lab ID: MBLK** | Method Blank | | | | | Run: MANTECH_220411A | | | 04/11/22 12:09 | |
| Alkalinity, Total as CaCO3 | | ND | mg/L | 2 | | | | | | |
| **Lab ID: C22040256-005ADUP** | Sample Duplicate | | | | | Run: MANTECH_220411A | | | 04/11/22 13:43 | |
| Alkalinity, Total as CaCO3 | | ND | mg/L | 5.0 | | | | | 10 | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22040256 **Report Date:** 04/21/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: A2540 C** | | | | | | | | | | Batch: TDS220408A |
| **Lab ID: MB-25_220408A** | | Method Blank | | | | Run: BAL-111_220408A | | | | 04/08/22 14:41 |
| Solids, Total Dissolved TDS @ 180 C | | ND | mg/L | 10 | | | | | | |
| **Lab ID: LCS-26_220408A** | | Laboratory Control Sample | | | | Run: BAL-111_220408A | | | | 04/08/22 14:41 |
| Solids, Total Dissolved TDS @ 180 C | | 999 | mg/L | 20 | 100 | 90 | 110 | | | |
| **Lab ID: C22040245-001A DUP** | | Sample Duplicate | | | | Run: BAL-111_220408A | | | | 04/08/22 14:42 |
| Solids, Total Dissolved TDS @ 180 C | | 1830 | mg/L | 20 | | | | 0.2 | 5 | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22040256 **Report Date:** 04/21/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: A4500-H B** | | | | | | | | | Analytical Run: PHSC_101-C_220408A | |
| **Lab ID: 6.86** | 2 | Initial Calibration Verification Standard | | | | | | | 04/08/22 09:31 | |
| pH | | 6.9 | s.u. | 0.1 | 100 | 98 | 102 | | | |
| pH Measurement Temp | | 20.1 | °C | | | 0 | 0 | | | |
| **Method: A4500-H B** | | | | | | | | | | Batch: R281257 |
| **Lab ID: C22040256-005ADUP** | 2 | Sample Duplicate | | | | Run: PHSC_101-C_220408A | | | 04/08/22 12:33 | |
| pH | | 5.9 | s.u. | 0.1 | | | | 0.2 | 1.5 | |
| pH Measurement Temp | | 18.1 | °C | | | | | | | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22040256 **Report Date:** 04/21/22

| Analyte | | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Method:** | **E300.0** | | | | | | | | | Analytical Run: IC3-C_220411A | |
| **Lab ID:** | **ICV** | 2 | Initial Calibration Verification Standard | | | | | | | 04/11/22 10:53 | |
| Chloride | | | 9.82 | mg/L | 1.0 | 98 | 90 | 110 | | | |
| Sulfate | | | 40.3 | mg/L | 1.0 | 101 | 90 | 110 | | | |
| **Method:** | **E300.0** | | | | | | | | | Batch: R281352 | |
| **Lab ID:** | **ICB** | 2 | Method Blank | | | | Run: IC3-C_220411A | | | 04/11/22 11:12 | |
| Chloride | | | ND | mg/L | 0.09 | | | | | | |
| Sulfate | | | ND | mg/L | 0.09 | | | | | | |
| **Lab ID:** | **LFB** | 2 | Laboratory Fortified Blank | | | | Run: IC3-C_220411A | | | 04/11/22 11:31 | |
| Chloride | | | 9.69 | mg/L | 1.0 | 101 | 90 | 110 | | | |
| Sulfate | | | 39.6 | mg/L | 1.0 | 103 | 90 | 110 | | | |
| **Lab ID:** | **C22040241-001AMS** | 2 | Sample Matrix Spike | | | | Run: IC3-C_220411A | | | 04/11/22 12:29 | |
| Chloride | | | 763 | mg/L | 2.1 | 73 | 80 | 120 | | | S |
| Sulfate | | | 3140 | mg/L | 8.3 | 85 | 80 | 120 | | | |
| **Lab ID:** | **C22040241-001AMSD** | 2 | Sample Matrix Spike Duplicate | | | | Run: IC3-C_220411A | | | 04/11/22 12:48 | |
| Chloride | | | 777 | mg/L | 2.1 | 80 | 80 | 120 | 1.9 | 20 | |
| Sulfate | | | 3200 | mg/L | 8.3 | 93 | 80 | 120 | 1.9 | 20 | |
| **Lab ID:** | **C22040256-002AMS** | 2 | Sample Matrix Spike | | | | Run: IC3-C_220411A | | | 04/11/22 16:57 | |
| Chloride | | | 295 | mg/L | 2.1 | 97 | 80 | 120 | | | |
| Sulfate | | | 4110 | mg/L | 8.3 | | 80 | 120 | | | A |
| **Lab ID:** | **C22040256-002AMSD** | 2 | Sample Matrix Spike Duplicate | | | | Run: IC3-C_220411A | | | 04/11/22 17:16 | |
| Chloride | | | 291 | mg/L | 2.1 | 95 | 80 | 120 | 1.5 | 20 | |
| Sulfate | | | 4040 | mg/L | 8.3 | | 80 | 120 | 1.9 | 20 | A |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

A - Analyte level was greater than four times the spike level - in accordance with the method, percent recovery is not calculated

S - Spike recovery outside of advisory limits

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22040256 **Report Date:** 04/21/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: E350.1** | | | | | | | | | Analytical Run: FIA201-C_220413B | |
| **Lab ID: ICV** | | Initial Calibration Verification Standard | | | | | | | 04/13/22 10:38 | |
| Nitrogen, Ammonia as N | | 1.03 | mg/L | 0.050 | 103 | 90 | 110 | | | |
| **Method: E350.1** | | | | | | | | | Batch: R281421 | |
| **Lab ID: MBLK** | | Method Blank | | | | Run: FIA201-C_220413B | | | 04/13/22 10:37 | |
| Nitrogen, Ammonia as N | | ND | mg/L | 0.03 | | | | | | |
| **Lab ID: LFB** | | Laboratory Fortified Blank | | | | Run: FIA201-C_220413B | | | 04/13/22 10:41 | |
| Nitrogen, Ammonia as N | | 0.995 | mg/L | 0.050 | 101 | 90 | 110 | | | |
| **Lab ID: C22040256-001DMS** | | Sample Matrix Spike | | | | Run: FIA201-C_220413B | | | 04/13/22 10:46 | |
| Nitrogen, Ammonia as N | | 1.13 | mg/L | 0.050 | 99 | 90 | 110 | | | |
| **Lab ID: C22040256-001DMSD** | | Sample Matrix Spike Duplicate | | | | Run: FIA201-C_220413B | | | 04/13/22 10:47 | |
| Nitrogen, Ammonia as N | | 1.11 | mg/L | 0.050 | 97 | 90 | 110 | 1.8 | 10 | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22040256 **Report Date:** 04/21/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: E353.2** | | | | | | | | | Analytical Run: FIA201-C_220408A | |
| **Lab ID: ICV** | | Initial Calibration Verification Standard | | | | | | | 04/08/22 11:25 | |
| Nitrogen, Nitrate+Nitrite as N | | 1.01 | mg/L | 0.050 | 101 | 90 | 110 | | | |
| **Method: E353.2** | | | | | | | | | Batch: R281264 | |
| **Lab ID: MBLK** | | Method Blank | | | | Run: FIA201-C_220408A | | | 04/08/22 11:27 | |
| Nitrogen, Nitrate+Nitrite as N | | ND | mg/L | 0.01 | | | | | | |
| **Lab ID: LFB** | | Laboratory Fortified Blank | | | | Run: FIA201-C_220408A | | | 04/08/22 11:28 | |
| Nitrogen, Nitrate+Nitrite as N | | 0.976 | mg/L | 0.050 | 99 | 90 | 110 | | | |
| **Lab ID: C22040256-003DMS** | | Sample Matrix Spike | | | | Run: FIA201-C_220408A | | | 04/08/22 12:22 | |
| Nitrogen, Nitrate+Nitrite as N | | 40.6 | mg/L | 0.20 | 96 | 90 | 110 | | | |
| **Lab ID: C22040256-003DMSD** | | Sample Matrix Spike Duplicate | | | | Run: FIA201-C_220408A | | | 04/08/22 12:23 | |
| Nitrogen, Nitrate+Nitrite as N | | 41.1 | mg/L | 0.20 | 101 | 90 | 110 | 1.2 | 10 | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22040256 **Report Date:** 04/29/22

| Analyte | | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Method:** | **E200.7** | | | | | | | | | Analytical Run: ICP4-C_220421B | |
| **Lab ID:** | **QCS** | 3 | Initial Calibration Verification Standard | | | | | | | 04/21/22 17:50 | |
| Calcium | | | 38.9 | mg/L | 0.50 | 97 | 95 | 105 | | | |
| Magnesium | | | 38.7 | mg/L | 0.50 | 97 | 95 | 105 | | | |
| Sodium | | | 38.4 | mg/L | 0.53 | 96 | 95 | 105 | | | |
| **Method:** | **E200.7** | | | | | | | | | Batch: R281751 | |
| **Lab ID:** | **LRB** | 3 | Method Blank | | | | Run: ICP4-C_220421B | | | 04/21/22 16:38 | |
| Calcium | | | ND | mg/L | 0.1 | | | | | | |
| Magnesium | | | ND | mg/L | 0.08 | | | | | | |
| Sodium | | | ND | mg/L | 1 | | | | | | |
| **Lab ID:** | **LFB** | 3 | Laboratory Fortified Blank | | | | Run: ICP4-C_220421B | | | 04/21/22 17:45 | |
| Calcium | | | 47.7 | mg/L | 0.50 | 95 | 85 | 115 | | | |
| Magnesium | | | 47.5 | mg/L | 0.50 | 95 | 85 | 115 | | | |
| Sodium | | | 47.1 | mg/L | 0.54 | 94 | 85 | 115 | | | |
| **Lab ID:** | **C22031024-001BMS2** | 3 | Sample Matrix Spike | | | | Run: ICP4-C_220421B | | | 04/21/22 19:12 | |
| Calcium | | | 470 | mg/L | 2.6 | 93 | 70 | 130 | | | |
| Magnesium | | | 461 | mg/L | 1.0 | 92 | 70 | 130 | | | |
| Sodium | | | 2300 | mg/L | 5.4 | 67 | 70 | 130 | | | S |
| **Lab ID:** | **C22031024-001BMSD** | 3 | Sample Matrix Spike Duplicate | | | | Run: ICP4-C_220421B | | | 04/21/22 19:17 | |
| Calcium | | | 466 | mg/L | 2.6 | 93 | 70 | 130 | 0.8 | 20 | |
| Magnesium | | | 458 | mg/L | 1.0 | 91 | 70 | 130 | 0.6 | 20 | |
| Sodium | | | 2310 | mg/L | 5.4 | 69 | 70 | 130 | 0.3 | 20 | S |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

S - Spike recovery outside of advisory limits

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22040256 **Report Date:** 04/29/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: E200.8** | | | | | | | | | Analytical Run: ICPMS5-C_220418A | |
| **Lab ID: QCS** | 4 | Initial Calibration Verification Standard | | | | | | | | 04/18/22 21:26 |
| Calcium | | 2.41 | mg/L | 0.50 | 96 | 90 | 110 | | | |
| Magnesium | | 2.59 | mg/L | 0.50 | 104 | 90 | 110 | | | |
| Potassium | | 2.51 | mg/L | 0.50 | 100 | 90 | 110 | | | |
| Sodium | | 2.46 | mg/L | 0.50 | 98 | 90 | 110 | | | |
| **Lab ID: QCS** | 10 | Initial Calibration Verification Standard | | | | | | | | 04/20/22 06:33 |
| Aluminum | | 0.238 | mg/L | 0.030 | 95 | 90 | 110 | | | |
| Arsenic | | 0.0485 | mg/L | 0.0010 | 97 | 90 | 110 | | | |
| Beryllium | | 0.0240 | mg/L | 0.0010 | 96 | 90 | 110 | | | |
| Cadmium | | 0.0244 | mg/L | 0.0010 | 98 | 90 | 110 | | | |
| Cobalt | | 0.0481 | mg/L | 0.0050 | 96 | 90 | 110 | | | |
| Lead | | 0.0468 | mg/L | 0.0010 | 94 | 90 | 110 | | | |
| Manganese | | 0.233 | mg/L | 0.0010 | 93 | 90 | 110 | | | |
| Nickel | | 0.0482 | mg/L | 0.0050 | 96 | 90 | 110 | | | |
| Selenium | | 0.0487 | mg/L | 0.0010 | 97 | 90 | 110 | | | |
| Vanadium | | 0.0460 | mg/L | 0.010 | 92 | 90 | 110 | | | |
| **Method: E200.8** | | | | | | | | | | Batch: 66436 |
| **Lab ID: MB-66436** | 10 | Method Blank | | | | Run: ICPMS5-C_220418A | | | | 04/20/22 02:52 |
| Aluminum | | ND | mg/L | 0.02 | | | | | | |
| Arsenic | | ND | mg/L | 0.0003 | | | | | | |
| Beryllium | | ND | mg/L | 0.0002 | | | | | | |
| Cadmium | | ND | mg/L | 0.00002 | | | | | | |
| Cobalt | | ND | mg/L | 0.0001 | | | | | | |
| Lead | | ND | mg/L | 0.0001 | | | | | | |
| Manganese | | ND | mg/L | 0.0007 | | | | | | |
| Nickel | | ND | mg/L | 0.0003 | | | | | | |
| Selenium | | ND | mg/L | 0.0001 | | | | | | |
| Vanadium | | ND | mg/L | 0.003 | | | | | | |
| **Lab ID: LCS3-66436** | 12 | Laboratory Control Sample | | | | Run: ICPMS5-C_220418A | | | | 04/20/22 02:58 |
| Aluminum | | 2.42 | mg/L | 0.030 | 97 | 85 | 115 | | | |
| Arsenic | | 0.476 | mg/L | 0.0010 | 95 | 85 | 115 | | | |
| Beryllium | | 0.245 | mg/L | 0.0010 | 98 | 85 | 115 | | | |
| Cadmium | | 0.243 | mg/L | 0.0010 | 97 | 85 | 115 | | | |
| Cobalt | | 0.477 | mg/L | 0.0050 | 95 | 85 | 115 | | | |
| Lead | | 0.474 | mg/L | 0.0010 | 95 | 85 | 115 | | | |
| Manganese | | 2.42 | mg/L | 0.0010 | 97 | 85 | 115 | | | |
| Molybdenum | | 0.449 | mg/L | 0.0010 | 90 | 85 | 115 | | | |
| Nickel | | 0.486 | mg/L | 0.0050 | 97 | 85 | 115 | | | |
| Selenium | | 0.457 | mg/L | 0.0010 | 91 | 85 | 115 | | | |
| Uranium | | 0.463 | mg/L | 0.00030 | 93 | 85 | 115 | | | |
| Vanadium | | 0.485 | mg/L | 0.010 | 97 | 85 | 115 | | | |
| **Lab ID: C22040256-004CMS3** | 12 | Sample Matrix Spike | | | | Run: ICPMS5-C_220418A | | | | 04/20/22 05:37 |
| Aluminum | | 2.28 | mg/L | 0.030 | 91 | 70 | 130 | | | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22040256 **Report Date:** 04/29/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: E200.8** | | | | | | | | | | Batch: 66436 |
| **Lab ID: C22040256-004CMS3** | 12 | Sample Matrix Spike | | | | Run: ICPMS5-C_220418A | | | | 04/20/22 05:37 |
| Arsenic | | 0.456 | mg/L | 0.0010 | 91 | 70 | 130 | | | |
| Beryllium | | 0.227 | mg/L | 0.0010 | 91 | 70 | 130 | | | |
| Cadmium | | 0.232 | mg/L | 0.0010 | 93 | 70 | 130 | | | |
| Cobalt | | 0.461 | mg/L | 0.0050 | 92 | 70 | 130 | | | |
| Lead | | 0.470 | mg/L | 0.0010 | 94 | 70 | 130 | | | |
| Manganese | | 2.25 | mg/L | 0.0010 | 89 | 70 | 130 | | | |
| Molybdenum | | 0.442 | mg/L | 0.0010 | 88 | 70 | 130 | | | |
| Nickel | | 0.454 | mg/L | 0.0050 | 91 | 70 | 130 | | | |
| Selenium | | 0.460 | mg/L | 0.0010 | 92 | 70 | 130 | | | |
| Uranium | | 0.455 | mg/L | 0.00030 | 91 | 70 | 130 | | | |
| Vanadium | | 0.450 | mg/L | 0.010 | 90 | 70 | 130 | | | |
| **Lab ID: C22040256-004CMSD** | 12 | Sample Matrix Spike Duplicate | | | | Run: ICPMS5-C_220418A | | | | 04/20/22 05:42 |
| Aluminum | | 2.31 | mg/L | 0.030 | 92 | 70 | 130 | 1.1 | 20 | |
| Arsenic | | 0.456 | mg/L | 0.0010 | 91 | 70 | 130 | 0.1 | 20 | |
| Beryllium | | 0.230 | mg/L | 0.0010 | 92 | 70 | 130 | 1.1 | 20 | |
| Cadmium | | 0.232 | mg/L | 0.0010 | 93 | 70 | 130 | 0.0 | 20 | |
| Cobalt | | 0.463 | mg/L | 0.0050 | 93 | 70 | 130 | 0.3 | 20 | |
| Lead | | 0.467 | mg/L | 0.0010 | 93 | 70 | 130 | 0.7 | 20 | |
| Manganese | | 2.26 | mg/L | 0.0010 | 90 | 70 | 130 | 0.4 | 20 | |
| Molybdenum | | 0.447 | mg/L | 0.0010 | 89 | 70 | 130 | 1.2 | 20 | |
| Nickel | | 0.454 | mg/L | 0.0050 | 91 | 70 | 130 | 0 | 20 | |
| Selenium | | 0.452 | mg/L | 0.0010 | 90 | 70 | 130 | 1.7 | 20 | |
| Uranium | | 0.458 | mg/L | 0.00030 | 92 | 70 | 130 | 0.6 | 20 | |
| Vanadium | | 0.454 | mg/L | 0.010 | 91 | 70 | 130 | 0.8 | 20 | |
| **Method: E200.8** | | | | | | | | | | Batch: R281593 |
| **Lab ID: LRB** | 4 | Method Blank | | | | Run: ICPMS5-C_220418A | | | | 04/18/22 21:58 |
| Calcium | | ND | mg/L | 0.3 | | | | | | |
| Magnesium | | ND | mg/L | 0.02 | | | | | | |
| Potassium | | ND | mg/L | 0.1 | | | | | | |
| Sodium | | ND | mg/L | 0.3 | | | | | | |
| **Lab ID: LFB** | 4 | Laboratory Fortified Blank | | | | Run: ICPMS5-C_220418A | | | | 04/18/22 22:03 |
| Calcium | | 48.7 | mg/L | 0.50 | 97 | 85 | 115 | | | |
| Magnesium | | 47.3 | mg/L | 0.50 | 95 | 85 | 115 | | | |
| Potassium | | 48.1 | mg/L | 0.50 | 96 | 85 | 115 | | | |
| Sodium | | 47.4 | mg/L | 0.50 | 95 | 85 | 115 | | | |
| **Lab ID: C22040258-004BMS** | 4 | Sample Matrix Spike | | | | Run: ICPMS5-C_220418A | | | | 04/19/22 05:16 |
| Calcium | | 344 | mg/L | 1.0 | 104 | 70 | 130 | | | |
| Magnesium | | 125 | mg/L | 1.0 | 86 | 70 | 130 | | | |
| Potassium | | 89.2 | mg/L | 1.0 | 85 | 70 | 130 | | | |
| Sodium | | 162 | mg/L | 1.0 | 88 | 70 | 130 | | | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22040256 **Report Date:** 04/29/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: E200.8** | | | | | | | | | | Batch: R281593 |
| **Lab ID: C22040258-004BMSD** | 4 | Sample Matrix Spike Duplicate | | | | Run: ICPMS5-C_220418A | | | | 04/19/22 05:21 |
| Calcium | | 335 | mg/L | 1.0 | 95 | 70 | 130 | 2.6 | 20 | |
| Magnesium | | 123 | mg/L | 1.0 | 85 | 70 | 130 | 1.3 | 20 | |
| Potassium | | 87.8 | mg/L | 1.0 | 84 | 70 | 130 | 1.6 | 20 | |
| Sodium | | 160 | mg/L | 1.0 | 86 | 70 | 130 | 1.5 | 20 | |
| **Method: E200.8** | | | | | | | | | | Analytical Run: ICPMS5-C_220421A |
| **Lab ID: QCS** | | Initial Calibration Verification Standard | | | | | | | | 04/21/22 16:48 |
| Calcium | | 2.37 | mg/L | 0.50 | 95 | 90 | 110 | | | |
| **Method: E200.8** | | | | | | | | | | Batch: R281744 |
| **Lab ID: LRB** | | Method Blank | | | | Run: ICPMS5-C_220421A | | | | 04/21/22 09:16 |
| Calcium | | ND | mg/L | 0.3 | | | | | | |
| **Lab ID: LFB** | | Laboratory Fortified Blank | | | | Run: ICPMS5-C_220421A | | | | 04/21/22 09:21 |
| Calcium | | 45.7 | mg/L | 0.50 | 91 | 85 | 115 | | | |
| **Lab ID: C22040258-002BMS** | | Sample Matrix Spike | | | | Run: ICPMS5-C_220421A | | | | 04/21/22 20:15 |
| Calcium | | 241 | mg/L | 1.0 | 92 | 70 | 130 | | | |
| **Lab ID: C22040258-002BMSD** | | Sample Matrix Spike Duplicate | | | | Run: ICPMS5-C_220421A | | | | 04/21/22 20:39 |
| Calcium | | 242 | mg/L | 1.0 | 93 | 70 | 130 | 0.5 | 20 | |
| **Method: E200.8** | | | | | | | | | | Analytical Run: ICPMS5-C_220422A |
| **Lab ID: QCS** | 4 | Initial Calibration Verification Standard | | | | | | | | 04/22/22 17:50 |
| Aluminum | | 0.250 | mg/L | 0.030 | 100 | 90 | 110 | | | |
| Manganese | | 0.244 | mg/L | 0.0010 | 98 | 90 | 110 | | | |
| Molybdenum | | 0.0478 | mg/L | 0.0010 | 96 | 90 | 110 | | | |
| Uranium | | 0.0188 | mg/L | 0.00030 | 94 | 90 | 110 | | | |
| **Method: E200.8** | | | | | | | | | | Batch: 66436 |
| **Lab ID: MB-66436** | 4 | Method Blank | | | | Run: ICPMS5-C_220422A | | | | 04/22/22 23:58 |
| Aluminum | | 0.007 | mg/L | 0.002 | | | | | | |
| Manganese | | 0.0003 | mg/L | 0.0002 | | | | | | |
| Molybdenum | | 0.00007 | mg/L | 0.00005 | | | | | | |
| Uranium | | 0.00004 | mg/L | 0.00001 | | | | | | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22040256 **Report Date:** 04/29/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: E200.8** | | | | | | | | | Analytical Run: ICPMS5-C_220426A | |
| **Lab ID: QCS** | 4 | Initial Calibration Verification Standard | | | | | | | 04/27/22 02:08 | |
| Arsenic | | 0.0505 | mg/L | 0.0010 | 101 | 90 | 110 | | | |
| Manganese | | 0.243 | mg/L | 0.0010 | 97 | 90 | 110 | | | |
| Molybdenum | | 0.0473 | mg/L | 0.0010 | 95 | 90 | 110 | | | |
| Uranium | | 0.0188 | mg/L | 0.00030 | 94 | 90 | 110 | | | |
| **Method: E200.8** | | | | | | | | | Batch: 66436 | |
| **Lab ID: MB-66436** | 4 | Method Blank | | | | Run: ICPMS5-C_220426A | | | 04/27/22 03:58 | |
| Arsenic | | ND | mg/L | 0.0003 | | | | | | |
| Manganese | | ND | mg/L | 0.0007 | | | | | | |
| Molybdenum | | ND | mg/L | 0.0001 | | | | | | |
| Uranium | | ND | mg/L | 0.0003 | | | | | | |
| **Method: E200.8** | | | | | | | | | Analytical Run: ICPMS5-C_220428A | |
| **Lab ID: QCS** | | Initial Calibration Verification Standard | | | | | | | 04/28/22 18:09 | |
| Manganese | | 0.244 | mg/L | 0.0010 | 98 | 90 | 110 | | | |
| **Method: E200.8** | | | | | | | | | Batch: 66436 | |
| **Lab ID: MB-66436** | | Method Blank | | | | Run: ICPMS5-C_220428A | | | 04/28/22 19:04 | |
| Manganese | | ND | mg/L | 0.0007 | | | | | | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22040256 **Report Date:** 04/20/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: A7500-U C** | | | | | | | | | Batch: RA-TH-ISO-3413 | |
| **Lab ID: MB-RA-TH-ISO-3413** | 3 | Method Blank | | | | Run: EGG-ORTEC_ALL_220412C | | | 04/14/22 15:55 | |
| Thorium 230 | | 0.6 | pCi/L | | | | | | | |
| Thorium 230 precision (±) | | 0.1 | pCi/L | | | | | | | |
| Thorium 230 MDC | | 0.05 | pCi/L | | | | | | | |
| **Lab ID: LCS-RA-TH-ISO-3413** | 3 | Laboratory Control Sample | | | | Run: EGG-ORTEC_ALL_220412C | | | 04/14/22 15:55 | |
| Thorium 230 | | 22 | pCi/L | | 88 | 70 | 130 | | | |
| Thorium 230 precision (±) | | 4.2 | pCi/L | | | | | | | |
| Thorium 230 MDC | | 0.054 | pCi/L | | | | | | | |
| **Lab ID: C22040193-004FDUP** | 3 | Sample Duplicate | | | | Run: EGG-ORTEC_ALL_220412C | | | 04/14/22 15:55 | |
| Thorium 230 | | 0.18 | pCi/L | | | | | 49 | 30 | R |
| Thorium 230 precision (±) | | 0.066 | pCi/L | | | | | | | |
| Thorium 230 MDC | | 0.081 | pCi/L | | | | | | | |

- Duplicate RPD is outside of the acceptance range for this analysis. However, the RER is less than the limit of 3, the RER result is 0.82.

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

R - Relative Percent Difference (RPD) exceeds advisory limit

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22040256 **Report Date:** 04/20/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: E900.1** | | | | | | | | | | Batch: GA-1353 |
| **Lab ID: LCS-GA-1353** | 3 | Laboratory Control Sample | | | | Run: G5000W_220412A | | | | 04/15/22 11:08 |
| Gross Alpha minus Rn & U | | 33 | pCi/L | | 97 | 70 | 130 | | | |
| Gross Alpha minus Rn & U Precision (±) | | 6.6 | pCi/L | | | | | | | |
| Gross Alpha minus Rn & U MDC | | 0.99 | pCi/L | | | | | | | |
| **Lab ID: MB-GA-1353** | 3 | Method Blank | | | | Run: G5000W_220412A | | | | 04/15/22 11:08 |
| Gross Alpha minus Rn & U | | 0.2 | pCi/L | | | | | | | U |
| Gross Alpha minus Rn & U Precision (±) | | 0.6 | pCi/L | | | | | | | |
| Gross Alpha minus Rn & U MDC | | 1 | pCi/L | | | | | | | |
| **Lab ID: C22040193-003FDUP** | 3 | Sample Duplicate | | | | Run: G5000W_220412A | | | | 04/15/22 11:08 |
| Gross Alpha minus Rn & U | | 2.9 | pCi/L | | | | | 36 | 30 | R |
| Gross Alpha minus Rn & U Precision (±) | | 1.0 | pCi/L | | | | | | | |
| Gross Alpha minus Rn & U MDC | | 0.99 | pCi/L | | | | | | | |
| - Duplicate RPD is outside of the acceptance range for this analysis. However, the RER is less than the limit of 3, the RER result is 0.66. | | | | | | | | | | |
| **Lab ID: C22040258-004FDUP** | 3 | Sample Duplicate | | | | Run: G5000W_220412A | | | | 04/15/22 15:08 |
| Gross Alpha minus Rn & U | | 6.5 | pCi/L | | | | | 12 | 30 | |
| Gross Alpha minus Rn & U Precision (±) | | 1.6 | pCi/L | | | | | | | |
| Gross Alpha minus Rn & U MDC | | 0.97 | pCi/L | | | | | | | |
| - The RER result is 0.32. | | | | | | | | | | |

**Qualifiers:**

RL - Analyte Reporting Limit

R - Relative Percent Difference (RPD) exceeds advisory limit

ND - Not detected at the Reporting Limit (RL)

U - Not detected at Minimum Detectable Concentration (MDC)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22040256 **Report Date:** 04/20/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: E903.0** | | | | | | | | | Batch: RA226-10422 | |
| **Lab ID: LCS-RA226-10422** | 3 | Laboratory Control Sample | | | | Run: G5000W_220408B | | | 04/19/22 12:41 | |
| Radium 226 | | 11 | pCi/L | | 104 | 70 | 130 | | | |
| Radium 226 precision (±) | | 2.1 | pCi/L | | | | | | | |
| Radium 226 MDC | | 0.27 | pCi/L | | | | | | | |
| **Lab ID: MB-RA226-10422** | 3 | Method Blank | | | | Run: G5000W_220408B | | | 04/19/22 12:41 | |
| Radium 226 | | 0.03 | pCi/L | | | | | | | U |
| Radium 226 precision (±) | | 0.2 | pCi/L | | | | | | | |
| Radium 226 MDC | | 0.3 | pCi/L | | | | | | | |
| **Lab ID: C22040258-001FDUP** | 3 | Sample Duplicate | | | | Run: G5000W_220408B | | | 04/19/22 14:16 | |
| Radium 226 | | 3.1 | pCi/L | | | | | 4.6 | 30 | |
| Radium 226 precision (±) | | 0.68 | pCi/L | | | | | | | |
| Radium 226 MDC | | 0.25 | pCi/L | | | | | | | |

- The RER result is 0.15.

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

U - Not detected at Minimum Detectable Concentration (MDC)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22040256 **Report Date:** 04/20/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: E909.0** | | | | | | | | | Batch: PB-210-1385 | |
| **Lab ID: LCS-PB-210-1385** | 3 | Laboratory Control Sample | | | | Run: TRICARB LSC_220409A | | | 04/13/22 16:40 | |
| Lead 210 | | 15 | pCi/L | | 90 | 70 | 130 | | | |
| Lead 210 precision (±) | | 4.7 | pCi/L | | | | | | | |
| Lead 210 MDC | | 1.4 | pCi/L | | | | | | | |
| **Lab ID: MB-PB-210-1385** | 3 | Method Blank | | | | Run: TRICARB LSC_220409A | | | 04/13/22 17:48 | |
| Lead 210 | | 0.2 | pCi/L | | | | | | | U |
| Lead 210 precision (±) | | 0.5 | pCi/L | | | | | | | |
| Lead 210 MDC | | 0.9 | pCi/L | | | | | | | |
| **Lab ID: C22040193-003FDUP** | 3 | Sample Duplicate | | | | Run: TRICARB LSC_220409A | | | 04/14/22 04:29 | |
| Lead 210 | | 0.16 | pCi/L | | | | | 69 | 30 | UR |
| Lead 210 precision (±) | | 0.51 | pCi/L | | | | | | | |
| Lead 210 MDC | | 0.85 | pCi/L | | | | | | | |

- Duplicate RPD is outside of the acceptance range for this analysis. However, the RER is less than the limit of 3, the RER result is 0.23.

**Qualifiers:**

RL - Analyte Reporting Limit

R - Relative Percent Difference (RPD) exceeds advisory limit

ND - Not detected at the Reporting Limit (RL)

U - Not detected at Minimum Detectable Concentration (MDC)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22040256 **Report Date:** 04/20/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: RA-05** | | | | | | | | | | Batch: RA228-6768 |
| **Lab ID: LCS-228-RA226-10422** | 3 | Laboratory Control Sample | | | | Run: G5000W_220408A | | | | 04/14/22 15:28 |
| Radium 228 | | 8.2 | pCi/L | | 102 | 70 | 130 | | | |
| Radium 228 precision (±) | | 1.8 | pCi/L | | | | | | | |
| Radium 228 MDC | | 1.1 | pCi/L | | | | | | | |
| **Lab ID: MB-RA226-10422** | 3 | Method Blank | | | | Run: G5000W_220408A | | | | 04/14/22 15:28 |
| Radium 228 | | -0.02 | pCi/L | | | | | | | U |
| Radium 228 precision (±) | | 0.7 | pCi/L | | | | | | | |
| Radium 228 MDC | | 1 | pCi/L | | | | | | | |
| **Lab ID: C22040258-001FDUP** | 3 | Sample Duplicate | | | | Run: G5000W_220408A | | | | 04/14/22 15:28 |
| Radium 228 | | 4.1 | pCi/L | | | | | | | |
| Radium 228 precision (±) | | 1.1 | pCi/L | | | | | | | |
| Radium 228 MDC | | 1.1 | pCi/L | | | | | | | |

- The RER result is 0.33.

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

U - Not detected at Minimum Detectable Concentration (MDC)

# QA/QC Summary Report

Prepared by Billings, MT Branch

**Client:** United Nuclear Corporation **Work Order:** C22040256 **Report Date:** 04/14/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: E624.1** | | | | | | | | | | Analytical Run: R378666 |
| **Lab ID: CCV041122** | 7 | Continuing Calibration Verification Standard | | | | | | | | 04/11/22 10:26 |
| Bromodichloromethane | | 5.62 | ug/L | 0.50 | 112 | 70 | 130 | | | |
| Bromoform | | 5.59 | ug/L | 0.50 | 112 | 70 | 130 | | | |
| Chlorodibromomethane | | 5.37 | ug/L | 0.50 | 107 | 70 | 130 | | | |
| Chloroform | | 5.06 | ug/L | 0.50 | 101 | 70 | 130 | | | |
| Surr: 1,2-Dichloroethane-d4 | | | | 0.50 | 98 | 71 | 139 | | | |
| Surr: p-Bromofluorobenzene | | | | 0.50 | 102 | 80 | 127 | | | |
| Surr: Toluene-d8 | | | | 0.50 | 105 | 80 | 123 | | | |
| **Method: E624.1** | | | | | | | | | | Batch: R378666 |
| **Lab ID: LCS041122** | 7 | Laboratory Control Sample | | | | Run: 5971A.I_220411A | | | | 04/11/22 11:20 |
| Bromodichloromethane | | 5.61 | ug/L | 0.50 | 112 | 74 | 128 | | | |
| Bromoform | | 5.15 | ug/L | 0.50 | 103 | 70 | 130 | | | |
| Chlorodibromomethane | | 5.04 | ug/L | 0.50 | 101 | 74 | 125 | | | |
| Chloroform | | 4.92 | ug/L | 0.50 | 98 | 70 | 135 | | | |
| Surr: 1,2-Dichloroethane-d4 | | | | 0.50 | 102 | 71 | 139 | | | |
| Surr: p-Bromofluorobenzene | | | | 0.50 | 104 | 80 | 127 | | | |
| Surr: Toluene-d8 | | | | 0.50 | 105 | 80 | 123 | | | |
| **Lab ID: MBLK041122** | 7 | Method Blank | | | | Run: 5971A.I_220411A | | | | 04/11/22 12:42 |
| Bromodichloromethane | | ND | ug/L | 0.50 | | | | | | |
| Bromoform | | ND | ug/L | 0.50 | | | | | | |
| Chlorodibromomethane | | ND | ug/L | 0.50 | | | | | | |
| Chloroform | | ND | ug/L | 0.50 | | | | | | |
| Surr: 1,2-Dichloroethane-d4 | | | | 0.50 | 99 | 71 | 139 | | | |
| Surr: p-Bromofluorobenzene | | | | 0.50 | 106 | 80 | 127 | | | |
| Surr: Toluene-d8 | | | | 0.50 | 107 | 80 | 123 | | | |
| **Lab ID: C22040256-001FMS** | 7 | Sample Matrix Spike | | | | Run: 5971A.I_220411A | | | | 04/11/22 19:27 |
| Bromodichloromethane | | 5.84 | ug/L | 0.50 | 117 | 74 | 128 | | | |
| Bromoform | | 5.42 | ug/L | 0.50 | 108 | 66 | 128 | | | |
| Chlorodibromomethane | | 5.19 | ug/L | 0.50 | 104 | 74 | 125 | | | |
| Chloroform | | 4.99 | ug/L | 0.50 | 100 | 68 | 124 | | | |
| Surr: 1,2-Dichloroethane-d4 | | | | 0.50 | 99 | 71 | 139 | | | |
| Surr: p-Bromofluorobenzene | | | | 0.50 | 103 | 80 | 127 | | | |
| Surr: Toluene-d8 | | | | 0.50 | 103 | 80 | 123 | | | |
| **Lab ID: C22040256-001FMSD** | 7 | Sample Matrix Spike Duplicate | | | | Run: 5971A.I_220411A | | | | 04/11/22 19:54 |
| Bromodichloromethane | | 4.86 | ug/L | 0.50 | 97 | 74 | 128 | 18 | 20 | |
| Bromoform | | 4.84 | ug/L | 0.50 | 97 | 66 | 128 | 11 | 20 | |
| Chlorodibromomethane | | 4.52 | ug/L | 0.50 | 90 | 74 | 125 | 14 | 20 | |
| Chloroform | | 4.35 | ug/L | 0.50 | 87 | 68 | 124 | 14 | 20 | |
| Surr: 1,2-Dichloroethane-d4 | | | | 0.50 | 101 | 71 | 139 | | | |
| Surr: p-Bromofluorobenzene | | | | 0.50 | 107 | 80 | 127 | | | |
| Surr: Toluene-d8 | | | | 0.50 | 106 | 80 | 123 | | | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

# ANALYTICAL SUMMARY REPORT

June 03, 2022

United Nuclear Corporation
PO Box 1088
Gallup, NM 87305-1088

Work Order: C22040142 Quote ID: C6117

Project Name: UNC-Zone 1 and Zone 3

Energy Laboratories, Inc. Casper WY received the following 16 samples for United Nuclear Corporation on 4/5/2022 for analysis.

| Lab ID | Client Sample ID | Collect Date | Receive Date | Matrix | Test |
|---|---|---|---|---|---|
| C22040142-001 | 614 | 03/31/22 9:08 | 04/05/22 | Aqueous | Metals by ICP/ICPMS, Dissolved<br>Metals by ICP/ICPMS, Total<br>Alkalinity to pH 4.5<br>Anion - Cation Balance<br>Anions by Ion Chromatography<br>Nitrogen, Ammonia<br>Nitrogen, Nitrate + Nitrite<br>pH<br>Metals Preparation by EPA 200.2<br>Gross Alpha minus Radon and Uranium, Total<br>pH Check for Nitric Radiochem FIRST<br>Lead 210, Total<br>Radium 226 + Radium 228, Total<br>Radium 226, Total<br>Radium 228, Total<br>Thorium, Isotopic, Total<br>Solids, Total Dissolved<br>Solids, Total Dissolved - Calculated<br>TRACKER SHEET<br>624-Purgeable Organics<br>624-Purgeable Organics |
| C22040142-002 | 515-A | 03/31/22 10:42 | 04/05/22 | Aqueous | Metals by ICP/ICPMS, Dissolved<br>Metals by ICP/ICPMS, Total<br>Alkalinity to pH 4.5<br>Anion - Cation Balance<br>Anions by Ion Chromatography<br>Nitrogen, Ammonia<br>Nitrogen, Nitrate + Nitrite<br>pH<br>Metals Preparation by EPA 200.2<br>Gross Alpha minus Radon and Uranium, Total<br>Lead 210, Total<br>Radium 226 + Radium 228, Total<br>Radium 226, Total<br>Radium 228, Total<br>Thorium, Isotopic, Total<br>Solids, Total Dissolved<br>Solids, Total Dissolved - Calculated<br>TRACKER SHEET<br>624-Purgeable Organics<br>624-Purgeable Organics |
| C22040142-003 | 604 | 03/31/22 11:46 | 04/05/22 | Aqueous | Same As Above |
| C22040142-004 | EPA-7 | 03/31/22 12:40 | 04/05/22 | Aqueous | Same As Above |

# ANALYTICAL SUMMARY REPORT

| | | | | | |
|---|---|---|---|---|---|
| C22040142-005 | 613 | 03/31/22 13:31 | 04/05/22 | Aqueous | Metals by ICP/ICPMS, Dissolved<br>Metals by ICP/ICPMS, Total<br>Acidity to pH 8.3<br>Alkalinity to pH 4.5<br>Anion - Cation Balance<br>Anions by Ion Chromatography<br>Nitrogen, Ammonia<br>Nitrogen, Nitrate + Nitrite<br>pH<br>Metals Preparation by EPA 200.2<br>Gross Alpha minus Radon and Uranium, Total<br>Lead 210, Total<br>Radium 226 + Radium 228, Total<br>Radium 226, Total<br>Radium 228, Total<br>Thorium, Isotopic, Total<br>Solids, Total Dissolved<br>Solids, Total Dissolved - Calculated<br>TRACKER SHEET<br>624-Purgeable Organics<br>624-Purgeable Organics |
| C22040142-006 | EPA-14 | 03/31/22 14:13 | 04/05/22 | Aqueous | Metals by ICP/ICPMS, Dissolved<br>Metals by ICP/ICPMS, Total<br>Alkalinity to pH 4.5<br>Anion - Cation Balance<br>Anions by Ion Chromatography<br>Nitrogen, Ammonia<br>Nitrogen, Nitrate + Nitrite<br>pH<br>Metals Preparation by EPA 200.2<br>Gross Alpha minus Radon and Uranium, Total<br>Lead 210, Total<br>Radium 226 + Radium 228, Total<br>Radium 226, Total<br>Radium 228, Total<br>Thorium, Isotopic, Total<br>Solids, Total Dissolved<br>Solids, Total Dissolved - Calculated<br>TRACKER SHEET<br>624-Purgeable Organics<br>624-Purgeable Organics |

# ANALYTICAL SUMMARY REPORT

| | | | | | |
|---|---|---|---|---|---|
| C22040142-007 | 717 | 04/01/22 9:22 | 04/05/22 | Aqueous | Metals by ICP/ICPMS, Dissolved<br>Metals by ICP/ICPMS, Total<br>Acidity to pH 8.3<br>Alkalinity to pH 4.5<br>Anion - Cation Balance<br>Anions by Ion Chromatography<br>Nitrogen, Ammonia<br>Nitrogen, Nitrate + Nitrite<br>pH<br>Metals Preparation by EPA 200.2<br>Gross Alpha minus Radon and Uranium, Total<br>Lead 210, Total<br>Radium 226 + Radium 228, Total<br>Radium 226, Total<br>Radium 228, Total<br>Thorium, Isotopic, Total<br>Solids, Total Dissolved<br>Solids, Total Dissolved - Calculated<br>TRACKER SHEET<br>624-Purgeable Organics<br>624-Purgeable Organics |
| C22040142-008 | 717 Duplicate | 04/01/22 10:13 | 04/05/22 | Aqueous | Same As Above |
| C22040142-009 | 708 | 04/01/22 10:52 | 04/05/22 | Aqueous | Same As Above |
| C22040142-010 | 711 | 04/01/22 11:45 | 04/05/22 | Aqueous | Same As Above |
| C22040142-011 | EPA-13 | 04/01/22 13:06 | 04/05/22 | Aqueous | Metals by ICP/ICPMS, Dissolved<br>Metals by ICP/ICPMS, Total<br>Alkalinity to pH 4.5<br>Anion - Cation Balance<br>Anions by Ion Chromatography<br>Nitrogen, Ammonia<br>Nitrogen, Nitrate + Nitrite<br>pH<br>Metals Preparation by EPA 200.2<br>Gross Alpha minus Radon and Uranium, Total<br>Lead 210, Total<br>Radium 226 + Radium 228, Total<br>Radium 226, Total<br>Radium 228, Total<br>Thorium, Isotopic, Total<br>Solids, Total Dissolved<br>Solids, Total Dissolved - Calculated<br>TRACKER SHEET<br>624-Purgeable Organics<br>624-Purgeable Organics |
| C22040142-012 | 719 | 04/01/22 14:23 | 04/05/22 | Aqueous | Same As Above |
| C22040142-013 | Trip Blank 1-80352; 515-A, 708, 717 Duplicate | 03/31/22 10:42 | 04/05/22 | Trip Blank | 624-Purgeable Organics<br>624-Purgeable Organics |
| C22040142-014 | Trip Blank 2-80352; 604, 614, 717 | 03/31/22 9:08 | 04/05/22 | Trip Blank | Same As Above |
| C22040142-015 | Trip Blank 3-79121; EPA-7, 719, 711 | 03/31/22 12:40 | 04/05/22 | Trip Blank | Same As Above |
| C22040142-016 | Trip Blank 4-80352; 613, EPA-14, EPA-13 | 03/31/22 13:31 | 04/05/22 | Trip Blank | Same As Above |

The analyses presented in this report were performed by Energy Laboratories, Inc., 2393 Salt Creek Hwy., Casper, WY 82601, unless otherwise noted. Any exceptions or problems with the analyses are noted in the report package. Any issues encountered during sample receipt are documented in the Work Order Receipt Checklist.

# ANALYTICAL SUMMARY REPORT

The results as reported relate only to the item(s) submitted for testing. This report shall be used or copied only in its entirety. Energy Laboratories, Inc. is not responsible for the consequences arising from the use of a partial report.

If you have any questions regarding these test results, please contact your Project Manager .

Report Approved By:

Ashley L. Wilson
Project Manager

Digitally signed by
Ashley L. Wilson
Date: 2022.06.03 13:08:39 -06:00

**CLIENT:** United Nuclear Corporation
**Project:** UNC-Zone 1 and Zone 3
**Work Order:** C22040142

**Report Date:** 06/03/22

# CASE NARRATIVE

Tests associated with analyst identified as ELI-B were subcontracted to Energy Laboratories, 1120 S. 27th St., Billings, MT, EPA Number MT00005.

Tests associated with analyst identified as "etad" were subcontracted to Eurofins Test America, 4955 Yarrow St, Arvada, CO 80002, TEL (303) 736-0100. Please see attached data packet for details.

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22040142 **Report Date:** 05/30/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: A2310 B** | | | | | | | | | Analytical Run: ACIDITY_220413A | |
| **Lab ID: ICV** | | Initial Calibration Verification Standard | | | | | | | 04/13/22 13:31 | |
| pH | | 6.83 | s.u. | 0.010 | 100 | 98 | 102 | | | |
| **Method: A2310 B** | | | | | | | | | Batch: ACID220413_A | |
| **Lab ID: MBLK** | | Method Blank | | | | Run: ACIDITY_220413A | | | 04/13/22 13:36 | |
| Acidity, Total as CaCO3 | | 2 | mg/L | | | | | | | |
| **Lab ID: LCS** | | Laboratory Control Sample | | | | Run: ACIDITY_220413A | | | 04/13/22 13:46 | |
| Acidity, Total as CaCO3 | | 805 | mg/L | | 103 | 90 | 110 | | | |
| **Lab ID: C22040142-005A DUP** | | Sample Duplicate | | | | Run: ACIDITY_220413A | | | 04/13/22 14:02 | |
| Acidity, Total as CaCO3 | | 3250 | mg/L | | | | | 2.8 | 10 | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22040142 **Report Date:** 05/30/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: A2320 B** | | | | | | | | | Analytical Run: MANTECH_220407B | |
| **Lab ID: ICV** | | Initial Calibration Verification Standard | | | | | | | 04/07/22 13:49 | |
| pH | | 6.87 | s.u. | 0.010 | 100 | 98 | 102 | | | |
| **Method: A2320 B** | | | | | | | | | Batch: R281267 | |
| **Lab ID: MBLK** | | Method Blank | | | | Run: MANTECH_220407B | | | 04/07/22 13:58 | |
| Alkalinity, Total as CaCO3 | | ND | mg/L | 2 | | | | | | |
| **Lab ID: C22040142-001ADUP** | | Sample Duplicate | | | | Run: MANTECH_220407B | | | 04/07/22 16:01 | |
| Alkalinity, Total as CaCO3 | | 1200 | mg/L | 5.0 | | | | 0.1 | 10 | |
| **Lab ID: MBLK** | | Method Blank | | | | Run: MANTECH_220407B | | | 04/07/22 16:59 | |
| Alkalinity, Total as CaCO3 | | ND | mg/L | 2 | | | | | | |
| **Lab ID: C22040142-011ADUP** | | Sample Duplicate | | | | Run: MANTECH_220407B | | | 04/07/22 17:19 | |
| Alkalinity, Total as CaCO3 | | 40.3 | mg/L | 5.0 | | | | 0.3 | 10 | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22040142 **Report Date:** 05/30/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: A2540 C** | | | | | | | | | Batch: TDS220406A | |
| **Lab ID: MB-1_220406A** | | Method Blank | | | | Run: BAL-111_220406A | | | 04/06/22 14:52 | |
| Solids, Total Dissolved TDS @ 180 C | | ND | mg/L | 10 | | | | | | |
| **Lab ID: LCS-2_220406A** | | Laboratory Control Sample | | | | Run: BAL-111_220406A | | | 04/06/22 14:53 | |
| Solids, Total Dissolved TDS @ 180 C | | 1010 | mg/L | 20 | 101 | 90 | 110 | | | |
| **Lab ID: C22040088-001A DUP** | | Sample Duplicate | | | | Run: BAL-111_220406A | | | 04/06/22 14:54 | |
| Solids, Total Dissolved TDS @ 180 C | | 188 | mg/L | 20 | | | | 0 | 5 | |
| **Lab ID: C22040140-004A DUP** | | Sample Duplicate | | | | Run: BAL-111_220406A | | | 04/06/22 14:57 | |
| Solids, Total Dissolved TDS @ 180 C | | 1590 | mg/L | 20 | | | | 0.2 | 5 | |
| **Lab ID: MB-25_220406A** | | Method Blank | | | | Run: BAL-111_220406A | | | 04/06/22 15:01 | |
| Solids, Total Dissolved TDS @ 180 C | | ND | mg/L | 10 | | | | | | |
| **Lab ID: LCS-26_220406A** | | Laboratory Control Sample | | | | Run: BAL-111_220406A | | | 04/06/22 15:01 | |
| Solids, Total Dissolved TDS @ 180 C | | 1010 | mg/L | 20 | 101 | 90 | 110 | | | |
| **Lab ID: C22040142-010A DUP** | | Sample Duplicate | | | | Run: BAL-111_220406A | | | 04/06/22 15:02 | |
| Solids, Total Dissolved TDS @ 180 C | | 5950 | mg/L | 39 | | | | 0.1 | 5 | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22040142 **Report Date:** 05/30/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: A4500-H B** | | | | | | | | Analytical Run: PHSC_101-C_220406A | | |
| **Lab ID: 6.86** | 2 | Initial Calibration Verification Standard | | | | | | | 04/06/22 08:20 | |
| pH | | 6.9 | s.u. | 0.1 | 100 | 98 | 102 | | | |
| pH Measurement Temp | | 20.1 | °C | | | 0 | 0 | | | |
| **Method: A4500-H B** | | | | | | | | | Batch: R281184 | |
| **Lab ID: C22040141-001ADUP** | 2 | Sample Duplicate | | | | Run: PHSC_101-C_220406A | | | 04/06/22 11:46 | |
| pH | | 7.9 | s.u. | 0.1 | | | | 0.0 | 1.5 | |
| pH Measurement Temp | | 14.5 | °C | | | | | | | |
| **Lab ID: C22040142-010ADUP** | 2 | Sample Duplicate | | | | Run: PHSC_101-C_220406A | | | 04/06/22 12:17 | |
| pH | | 3.3 | s.u. | 0.1 | | | | 0.0 | 1.5 | |
| pH Measurement Temp | | 16.3 | °C | | | | | | | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22040142 **Report Date:** 05/30/22

| Analyte | | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Method:** | **E300.0** | | | | | | | | Analytical Run: IC3-C_220409A | | |
| **Lab ID:** | **ICV** | 2 | Initial Calibration Verification Standard | | | | | | | 04/09/22 12:02 | |
| Chloride | | | 9.88 | mg/L | 1.0 | 99 | 90 | 110 | | | |
| Sulfate | | | 39.7 | mg/L | 1.0 | 99 | 90 | 110 | | | |
| **Method:** | **E300.0** | | | | | | | | | Batch: R281305 | |
| **Lab ID:** | **ICB** | 2 | Method Blank | | | | Run: IC3-C_220409A | | | 04/09/22 12:21 | |
| Chloride | | | ND | mg/L | 0.09 | | | | | | |
| Sulfate | | | ND | mg/L | 0.09 | | | | | | |
| **Lab ID:** | **LFB** | 2 | Laboratory Fortified Blank | | | | Run: IC3-C_220409A | | | 04/09/22 12:40 | |
| Chloride | | | 9.92 | mg/L | 1.0 | 103 | 90 | 110 | | | |
| Sulfate | | | 40.0 | mg/L | 1.0 | 104 | 90 | 110 | | | |
| **Lab ID:** | **C22040141-001AMS** | 2 | Sample Matrix Spike | | | | Run: IC3-C_220409A | | | 04/09/22 13:38 | |
| Chloride | | | 10.4 | mg/L | 1.0 | 99 | 80 | 120 | | | |
| Sulfate | | | 49.3 | mg/L | 1.0 | 102 | 80 | 120 | | | |
| **Lab ID:** | **C22040141-001AMSD** | 2 | Sample Matrix Spike Duplicate | | | | Run: IC3-C_220409A | | | 04/09/22 13:57 | |
| Chloride | | | 10.6 | mg/L | 1.0 | 101 | 80 | 120 | 1.5 | 20 | |
| Sulfate | | | 49.6 | mg/L | 1.0 | 102 | 80 | 120 | 0.6 | 20 | |
| **Lab ID:** | **C22040142-006AMS** | 2 | Sample Matrix Spike | | | | Run: IC3-C_220409A | | | 04/09/22 18:06 | |
| Chloride | | | 141 | mg/L | 1.0 | 93 | 80 | 120 | | | |
| Sulfate | | | 2720 | mg/L | 4.2 | | 80 | 120 | | | A |
| **Lab ID:** | **C22040142-006AMSD** | 2 | Sample Matrix Spike Duplicate | | | | Run: IC3-C_220409A | | | 04/09/22 18:25 | |
| Chloride | | | 145 | mg/L | 1.0 | 97 | 80 | 120 | 3.1 | 20 | |
| Sulfate | | | 2770 | mg/L | 4.2 | | 80 | 120 | 1.9 | 20 | A |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

A - Analyte level was greater than four times the spike level - in accordance with the method, percent recovery is not calculated

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22040142 **Report Date:** 05/30/22

| Analyte | | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Method:** | **E300.0** | | | | | | | | | Analytical Run: IC3-C_220414A | |
| **Lab ID:** | **ICV** | 2 | Initial Calibration Verification Standard | | | | | | | 04/14/22 09:51 | |
| Chloride | | | 9.30 | mg/L | 1.0 | 93 | 90 | 110 | | | |
| Sulfate | | | 37.4 | mg/L | 1.0 | 94 | 90 | 110 | | | |
| **Method:** | **E300.0** | | | | | | | | | Batch: R281553 | |
| **Lab ID:** | **ICB** | 2 | Method Blank | | | | Run: IC3-C_220414A | | | 04/14/22 10:10 | |
| Chloride | | | ND | mg/L | 0.01 | | | | | | |
| Sulfate | | | ND | mg/L | 0.2 | | | | | | |
| **Lab ID:** | **LFB** | 2 | Laboratory Fortified Blank | | | | Run: IC3-C_220414A | | | 04/14/22 10:29 | |
| Chloride | | | 9.26 | mg/L | 1.0 | 96 | 90 | 110 | | | |
| Sulfate | | | 37.3 | mg/L | 1.0 | 97 | 90 | 110 | | | |
| **Lab ID:** | **C22040142-007AMS** | 2 | Sample Matrix Spike | | | | Run: IC3-C_220414A | | | 04/14/22 11:27 | |
| Chloride | | | 218 | mg/L | 2.1 | 93 | 80 | 120 | | | |
| Sulfate | | | 4650 | mg/L | 8.3 | | 80 | 120 | | | A |
| **Lab ID:** | **C22040142-007AMSD** | 2 | Sample Matrix Spike Duplicate | | | | Run: IC3-C_220414A | | | 04/14/22 11:46 | |
| Chloride | | | 221 | mg/L | 2.1 | 94 | 80 | 120 | 1.2 | 20 | |
| Sulfate | | | 4670 | mg/L | 8.3 | | 80 | 120 | 0.4 | 20 | A |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

A - Analyte level was greater than four times the spike level - in accordance with the method, percent recovery is not calculated

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22040142 **Report Date:** 05/30/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: E350.1** | | | | | | | | | Analytical Run: FIA201-C_220407B | |
| **Lab ID: ICV** | | Initial Calibration Verification Standard | | | | | | | 04/07/22 15:24 | |
| Nitrogen, Ammonia as N | | 1.04 | mg/L | 0.050 | 104 | 90 | 110 | | | |
| **Method: E350.1** | | | | | | | | | Batch: R281240 | |
| **Lab ID: MBLK** | | Method Blank | | | | Run: FIA201-C_220407B | | | 04/07/22 15:23 | |
| Nitrogen, Ammonia as N | | ND | mg/L | 0.03 | | | | | | |
| **Lab ID: LFB** | | Laboratory Fortified Blank | | | | Run: FIA201-C_220407B | | | 04/07/22 15:25 | |
| Nitrogen, Ammonia as N | | 1.01 | mg/L | 0.050 | 102 | 90 | 110 | | | |
| **Lab ID: C22040142-001DMS** | | Sample Matrix Spike | | | | Run: FIA201-C_220407B | | | 04/07/22 15:31 | |
| Nitrogen, Ammonia as N | | 77.5 | mg/L | 1.3 | 97 | 90 | 110 | | | E |
| **Lab ID: C22040142-001DMSD** | | Sample Matrix Spike Duplicate | | | | Run: FIA201-C_220407B | | | 04/07/22 15:32 | |
| Nitrogen, Ammonia as N | | 78.5 | mg/L | 1.3 | 101 | 90 | 110 | 1.3 | 10 | E |
| **Lab ID: C22040142-009DMS** | | Sample Matrix Spike | | | | Run: FIA201-C_220407B | | | 04/07/22 15:49 | |
| Nitrogen, Ammonia as N | | 2.13 | mg/L | 0.050 | 75 | 90 | 110 | | | SE |
| **Lab ID: C22040142-009DMSD** | | Sample Matrix Spike Duplicate | | | | Run: FIA201-C_220407B | | | 04/07/22 15:50 | |
| Nitrogen, Ammonia as N | | 2.08 | mg/L | 0.050 | 70 | 90 | 110 | 2.4 | 10 | SE |
| **Lab ID: C22040188-001DMS** | | Sample Matrix Spike | | | | Run: FIA201-C_220407B | | | 04/07/22 16:07 | |
| Nitrogen, Ammonia as N | | 10.7 | mg/L | 0.25 | 102 | 90 | 110 | | | E |
| **Lab ID: C22040188-001DMSD** | | Sample Matrix Spike Duplicate | | | | Run: FIA201-C_220407B | | | 04/07/22 16:08 | |
| Nitrogen, Ammonia as N | | 10.5 | mg/L | 0.25 | 99 | 90 | 110 | 1.4 | 10 | E |

**Qualifiers:**

RL - Analyte Reporting Limit

E - Estimated value - result exceeds the instrument upper quantitation limit

ND - Not detected at the Reporting Limit (RL)

S - Spike recovery outside of advisory limits

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22040142 **Report Date:** 05/30/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: E353.2** | | | | | | | | | Analytical Run: FIA201-C_220406A | |
| **Lab ID: ICV** | | Initial Calibration Verification Standard | | | | | | | 04/06/22 11:48 | |
| Nitrogen, Nitrate+Nitrite as N | | 1.03 | mg/L | 0.050 | 103 | 90 | 110 | | | |
| **Method: E353.2** | | | | | | | | | Batch: R281190 | |
| **Lab ID: MBLK** | | Method Blank | | | | Run: FIA201-C_220406A | | | 04/06/22 11:49 | |
| Nitrogen, Nitrate+Nitrite as N | | ND | mg/L | 0.01 | | | | | | |
| **Lab ID: LFB** | | Laboratory Fortified Blank | | | | Run: FIA201-C_220406A | | | 04/06/22 11:50 | |
| Nitrogen, Nitrate+Nitrite as N | | 1.01 | mg/L | 0.050 | 102 | 90 | 110 | | | |
| **Lab ID: C22040142-001DMS** | | Sample Matrix Spike | | | | Run: FIA201-C_220406A | | | 04/06/22 12:25 | |
| Nitrogen, Nitrate+Nitrite as N | | 243 | mg/L | 2.0 | 109 | 90 | 110 | | | |
| **Lab ID: C22040142-001DMSD** | | Sample Matrix Spike Duplicate | | | | Run: FIA201-C_220406A | | | 04/06/22 12:26 | |
| Nitrogen, Nitrate+Nitrite as N | | 240 | mg/L | 2.0 | 106 | 90 | 110 | 1.3 | 10 | |
| **Lab ID: C22040142-011DMS** | | Sample Matrix Spike | | | | Run: FIA201-C_220406A | | | 04/06/22 12:31 | |
| Nitrogen, Nitrate+Nitrite as N | | 1.02 | mg/L | 0.050 | 98 | 90 | 110 | | | |
| **Lab ID: C22040142-011DMSD** | | Sample Matrix Spike Duplicate | | | | Run: FIA201-C_220406A | | | 04/06/22 12:32 | |
| Nitrogen, Nitrate+Nitrite as N | | 1.04 | mg/L | 0.050 | 100 | 90 | 110 | 2.0 | 10 | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22040142 **Report Date:** 06/01/22

| Analyte | | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Method:** | **E200.7** | | | | | | | | | Analytical Run: ICP4-C_220408A | |
| **Lab ID:** | **QCS** | 4 | Initial Calibration Verification Standard | | | | | | | 04/08/22 11:36 | |
| Calcium | | | 38.6 | mg/L | 0.50 | 96 | 95 | 105 | | | |
| Magnesium | | | 38.3 | mg/L | 0.50 | 96 | 95 | 105 | | | |
| Potassium | | | 38.0 | mg/L | 0.50 | 95 | 95 | 105 | | | |
| Sodium | | | 38.3 | mg/L | 0.53 | 96 | 95 | 105 | | | |
| **Lab ID:** | **CCV** | 4 | Continuing Calibration Verification Standard | | | | | | | 04/08/22 19:24 | |
| Calcium | | | 26.3 | mg/L | 0.50 | 105 | 90 | 110 | | | |
| Magnesium | | | 25.5 | mg/L | 0.50 | 102 | 90 | 110 | | | |
| Potassium | | | 25.8 | mg/L | 0.50 | 103 | 90 | 110 | | | |
| Sodium | | | 25.9 | mg/L | 0.53 | 104 | 90 | 110 | | | |
| **Lab ID:** | **CCV** | 4 | Continuing Calibration Verification Standard | | | | | | | 04/08/22 20:22 | |
| Calcium | | | 23.6 | mg/L | 0.50 | 94 | 90 | 110 | | | |
| Magnesium | | | 23.0 | mg/L | 0.50 | 92 | 90 | 110 | | | |
| Potassium | | | 23.6 | mg/L | 0.50 | 95 | 90 | 110 | | | |
| Sodium | | | 23.3 | mg/L | 0.53 | 93 | 90 | 110 | | | |
| **Method:** | **E200.7** | | | | | | | | | | Batch: R281284 |
| **Lab ID:** | **LRB** | 4 | Method Blank | | | | Run: ICP4-C_220408A | | | 04/08/22 11:12 | |
| Calcium | | | ND | mg/L | 0.1 | | | | | | |
| Magnesium | | | ND | mg/L | 0.08 | | | | | | |
| Potassium | | | ND | mg/L | 0.2 | | | | | | |
| Sodium | | | ND | mg/L | 1 | | | | | | |
| **Lab ID:** | **LFB** | 4 | Laboratory Fortified Blank | | | | Run: ICP4-C_220408A | | | 04/08/22 11:31 | |
| Calcium | | | 49.6 | mg/L | 0.50 | 99 | 85 | 115 | | | |
| Magnesium | | | 49.3 | mg/L | 0.50 | 99 | 85 | 115 | | | |
| Potassium | | | 48.6 | mg/L | 0.50 | 97 | 85 | 115 | | | |
| Sodium | | | 49.1 | mg/L | 0.54 | 98 | 85 | 115 | | | |
| **Lab ID:** | **C22040142-006BMS2** | 4 | Sample Matrix Spike | | | | Run: ICP4-C_220408A | | | 04/08/22 20:08 | |
| Calcium | | | 554 | mg/L | 1.3 | 30 | 70 | 130 | | | S |
| Magnesium | | | 393 | mg/L | 1.0 | 51 | 70 | 130 | | | S |
| Potassium | | | 207 | mg/L | 1.3 | 80 | 70 | 130 | | | |
| Sodium | | | 302 | mg/L | 2.7 | 65 | 70 | 130 | | | S |
| **Lab ID:** | **C22040142-006BMSD** | 4 | Sample Matrix Spike Duplicate | | | | Run: ICP4-C_220408A | | | 04/08/22 20:13 | |
| Calcium | | | 611 | mg/L | 1.3 | 53 | 70 | 130 | 9.7 | 20 | S |
| Magnesium | | | 430 | mg/L | 1.0 | 66 | 70 | 130 | 9.0 | 20 | S |
| Potassium | | | 221 | mg/L | 1.3 | 85 | 70 | 130 | 6.2 | 20 | |
| Sodium | | | 326 | mg/L | 2.7 | 75 | 70 | 130 | 7.6 | 20 | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

S - Spike recovery outside of advisory limits

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22040142 **Report Date:** 06/01/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: E200.7** | | | | | | | | | Analytical Run: ICP4-C_220411B | |
| **Lab ID: QCS** | | Initial Calibration Verification Standard | | | | | | | 04/13/22 16:49 | |
| Magnesium | | 39.3 | mg/L | 0.50 | 98 | 95 | 105 | | | |
| **Lab ID: CCV** | | Continuing Calibration Verification Standard | | | | | | | 04/15/22 01:19 | |
| Magnesium | | 25.4 | mg/L | 0.50 | 102 | 90 | 110 | | | |
| **Lab ID: CCV** | | Continuing Calibration Verification Standard | | | | | | | 04/15/22 02:25 | |
| Magnesium | | 22.6 | mg/L | 0.50 | 90 | 90 | 110 | | | |
| **Method: E200.7** | | | | | | | | | | Batch: R281471 |
| **Lab ID: LFB** | | Laboratory Fortified Blank | | | | Run: ICP4-C_220411B | | | | 04/13/22 16:44 |
| Magnesium | | 50.7 | mg/L | 0.50 | 101 | 85 | 115 | | | |
| **Lab ID: LRB** | | Method Blank | | | | Run: ICP4-C_220411B | | | | 04/13/22 17:46 |
| Magnesium | | ND | mg/L | 0.08 | | | | | | |
| **Lab ID: C22040142-012BMS2** | | Sample Matrix Spike | | | | Run: ICP4-C_220411B | | | | 04/15/22 03:04 |
| Magnesium | | 1110 | mg/L | 1.0 | 96 | 70 | 130 | | | |
| **Lab ID: C22040142-012BMSD** | | Sample Matrix Spike Duplicate | | | | Run: ICP4-C_220411B | | | | 04/15/22 03:09 |
| Magnesium | | 1120 | mg/L | 1.0 | 98 | 70 | 130 | 0.8 | 20 | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22040142 **Report Date:** 06/01/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: E200.7** | | | | | | | | | Analytical Run: ICP4-C_220411C | |
| **Lab ID: QCS** | 4 | Initial Calibration Verification Standard | | | | | | | 04/17/22 00:27 | |
| Calcium | | 42.2 | mg/L | 0.50 | 105 | 95 | 105 | | | |
| Magnesium | | 41.7 | mg/L | 0.50 | 104 | 95 | 105 | | | |
| Potassium | | 41.1 | mg/L | 0.50 | 103 | 95 | 105 | | | |
| Sodium | | 40.3 | mg/L | 0.53 | 101 | 95 | 105 | | | |
| **Lab ID: CCV** | 4 | Continuing Calibration Verification Standard | | | | | | | 04/17/22 01:54 | |
| Calcium | | 27.6 | mg/L | 0.50 | 110 | 90 | 110 | | | |
| Magnesium | | 27.0 | mg/L | 0.50 | 108 | 90 | 110 | | | |
| Potassium | | 26.9 | mg/L | 0.50 | 108 | 90 | 110 | | | |
| Sodium | | 26.4 | mg/L | 0.53 | 106 | 90 | 110 | | | |
| **Lab ID: CCV** | 4 | Continuing Calibration Verification Standard | | | | | | | 04/17/22 03:12 | |
| Calcium | | 25.6 | mg/L | 0.50 | 102 | 90 | 110 | | | |
| Magnesium | | 25.2 | mg/L | 0.50 | 101 | 90 | 110 | | | |
| Potassium | | 24.8 | mg/L | 0.50 | 99 | 90 | 110 | | | |
| Sodium | | 23.9 | mg/L | 0.53 | 96 | 90 | 110 | | | |
| **Lab ID: CCV** | 4 | Continuing Calibration Verification Standard | | | | | | | 04/17/22 04:13 | |
| Calcium | | 25.6 | mg/L | 0.50 | 102 | 90 | 110 | | | |
| Magnesium | | 25.4 | mg/L | 0.50 | 102 | 90 | 110 | | | |
| Potassium | | 24.8 | mg/L | 0.50 | 99 | 90 | 110 | | | |
| Sodium | | 23.9 | mg/L | 0.53 | 96 | 90 | 110 | | | |
| **Method: E200.7** | | | | | | | | | | Batch: R281549 |
| **Lab ID: LRB** | 4 | Method Blank | | | | Run: ICP4-C_220411C | | | 04/17/22 00:01 | |
| Calcium | | ND | mg/L | 0.1 | | | | | | |
| Magnesium | | ND | mg/L | 0.08 | | | | | | |
| Potassium | | ND | mg/L | 0.2 | | | | | | |
| Sodium | | ND | mg/L | 1 | | | | | | |
| **Lab ID: LFB** | 4 | Laboratory Fortified Blank | | | | Run: ICP4-C_220411C | | | 04/17/22 00:22 | |
| Calcium | | 53.1 | mg/L | 0.50 | 106 | 85 | 115 | | | |
| Magnesium | | 52.7 | mg/L | 0.50 | 105 | 85 | 115 | | | |
| Potassium | | 51.8 | mg/L | 0.50 | 104 | 85 | 115 | | | |
| Sodium | | 51.1 | mg/L | 0.54 | 102 | 85 | 115 | | | |
| **Lab ID: C22040140-004BMS2** | 4 | Sample Matrix Spike | | | | Run: ICP4-C_220411C | | | 04/17/22 02:57 | |
| Calcium | | 561 | mg/L | 1.3 | 93 | 70 | 130 | | | |
| Magnesium | | 275 | mg/L | 1.0 | 100 | 70 | 130 | | | |
| Potassium | | 254 | mg/L | 1.3 | 99 | 70 | 130 | | | |
| Sodium | | 320 | mg/L | 2.7 | 96 | 70 | 130 | | | |
| **Lab ID: C22040140-004BMSD** | 4 | Sample Matrix Spike Duplicate | | | | Run: ICP4-C_220411C | | | 04/17/22 03:02 | |
| Calcium | | 572 | mg/L | 1.3 | 97 | 70 | 130 | 1.9 | 20 | |
| Magnesium | | 282 | mg/L | 1.0 | 103 | 70 | 130 | 2.4 | 20 | |
| Potassium | | 259 | mg/L | 1.3 | 102 | 70 | 130 | 2.3 | 20 | |
| Sodium | | 327 | mg/L | 2.7 | 98 | 70 | 130 | 2.0 | 20 | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22040142 **Report Date:** 06/01/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: E200.7** | | | | | | | | | Analytical Run: ICP4-C_220421B | |
| **Lab ID: QCS** | | Initial Calibration Verification Standard | | | | | | | 04/21/22 17:50 | |
| Potassium | | 38.7 | mg/L | 0.50 | 97 | 95 | 105 | | | |
| **Lab ID: CCV** | | Continuing Calibration Verification Standard | | | | | | | 04/21/22 18:31 | |
| Potassium | | 24.3 | mg/L | 0.50 | 97 | 90 | 110 | | | |
| **Lab ID: CCV** | | Continuing Calibration Verification Standard | | | | | | | 04/21/22 19:32 | |
| Potassium | | 23.6 | mg/L | 0.50 | 94 | 90 | 110 | | | |
| **Method: E200.7** | | | | | | | | | | Batch: R281751 |
| **Lab ID: LRB** | | Method Blank | | | | Run: ICP4-C_220421B | | | 04/21/22 16:38 | |
| Potassium | | ND | mg/L | 0.2 | | | | | | |
| **Lab ID: LFB** | | Laboratory Fortified Blank | | | | Run: ICP4-C_220421B | | | 04/21/22 17:45 | |
| Potassium | | 47.6 | mg/L | 0.50 | 95 | 85 | 115 | | | |
| **Lab ID: C22031024-001BMS2** | | Sample Matrix Spike | | | | Run: ICP4-C_220421B | | | 04/21/22 19:12 | |
| Potassium | | 472 | mg/L | 2.6 | 93 | 70 | 130 | | | |
| **Lab ID: C22031024-001BMSD** | | Sample Matrix Spike Duplicate | | | | Run: ICP4-C_220421B | | | 04/21/22 19:17 | |
| Potassium | | 471 | mg/L | 2.6 | 93 | 70 | 130 | 0.2 | 20 | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22040142 **Report Date:** 06/01/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: E200.8** | | | | | | | | | Analytical Run: ICPMS5-C_220414A | |
| **Lab ID: QCS** | 3 | Initial Calibration Verification Standard | | | | | | | | 04/15/22 18:53 |
| Magnesium | | 2.62 | mg/L | 0.50 | 105 | 90 | 110 | | | |
| Potassium | | 2.51 | mg/L | 0.50 | 100 | 90 | 110 | | | |
| Sodium | | 2.58 | mg/L | 0.50 | 103 | 90 | 110 | | | |
| **Lab ID: CCV** | 3 | Continuing Calibration Verification Standard | | | | | | | | 04/15/22 20:14 |
| Magnesium | | 12.8 | mg/L | 0.50 | 102 | 90 | 110 | | | |
| Potassium | | 12.4 | mg/L | 0.50 | 99 | 90 | 110 | | | |
| Sodium | | 12.8 | mg/L | 0.50 | 102 | 90 | 110 | | | |
| **Lab ID: CCV** | 3 | Continuing Calibration Verification Standard | | | | | | | | 04/15/22 21:25 |
| Magnesium | | 12.3 | mg/L | 0.50 | 98 | 90 | 110 | | | |
| Potassium | | 12.0 | mg/L | 0.50 | 96 | 90 | 110 | | | |
| Sodium | | 12.2 | mg/L | 0.50 | 98 | 90 | 110 | | | |
| **Lab ID: QCS** | 15 | Initial Calibration Verification Standard | | | | | | | | 04/16/22 14:17 |
| Aluminum | | 0.255 | mg/L | 0.030 | 102 | 90 | 110 | | | |
| Arsenic | | 0.0522 | mg/L | 0.0010 | 104 | 90 | 110 | | | |
| Beryllium | | 0.0255 | mg/L | 0.0010 | 102 | 90 | 110 | | | |
| Cadmium | | 0.0258 | mg/L | 0.0010 | 103 | 90 | 110 | | | |
| Cobalt | | 0.0512 | mg/L | 0.0050 | 102 | 90 | 110 | | | |
| Lead | | 0.0492 | mg/L | 0.0010 | 98 | 90 | 110 | | | |
| Magnesium | | 2.64 | mg/L | 0.50 | 105 | 90 | 110 | | | |
| Manganese | | 0.252 | mg/L | 0.0010 | 101 | 90 | 110 | | | |
| Molybdenum | | 0.0478 | mg/L | 0.0010 | 96 | 90 | 110 | | | |
| Nickel | | 0.0516 | mg/L | 0.0050 | 103 | 90 | 110 | | | |
| Potassium | | 2.56 | mg/L | 0.50 | 102 | 90 | 110 | | | |
| Selenium | | 0.0518 | mg/L | 0.0010 | 104 | 90 | 110 | | | |
| Sodium | | 2.59 | mg/L | 0.50 | 104 | 90 | 110 | | | |
| Uranium | | 0.0200 | mg/L | 0.00030 | 100 | 90 | 110 | | | |
| Vanadium | | 0.0493 | mg/L | 0.010 | 99 | 90 | 110 | | | |
| **Lab ID: CCV** | 15 | Continuing Calibration Verification Standard | | | | | | | | 04/16/22 05:36 |
| Aluminum | | 0.0535 | mg/L | 0.030 | 107 | 90 | 110 | | | |
| Arsenic | | 0.0502 | mg/L | 0.0010 | 100 | 90 | 110 | | | |
| Beryllium | | 0.0531 | mg/L | 0.0010 | 106 | 90 | 110 | | | |
| Cadmium | | 0.0503 | mg/L | 0.0010 | 101 | 90 | 110 | | | |
| Cobalt | | 0.0522 | mg/L | 0.0050 | 104 | 90 | 110 | | | |
| Lead | | 0.0505 | mg/L | 0.0010 | 101 | 90 | 110 | | | |
| Magnesium | | 13.1 | mg/L | 0.50 | 104 | 90 | 110 | | | |
| Manganese | | 0.0499 | mg/L | 0.0010 | 100 | 90 | 110 | | | |
| Molybdenum | | 0.0489 | mg/L | 0.0010 | 98 | 90 | 110 | | | |
| Nickel | | 0.0509 | mg/L | 0.0050 | 102 | 90 | 110 | | | |
| Potassium | | 13.2 | mg/L | 0.50 | 105 | 90 | 110 | | | |
| Selenium | | 0.0501 | mg/L | 0.0010 | 100 | 90 | 110 | | | |
| Sodium | | 13.3 | mg/L | 0.50 | 106 | 90 | 110 | | | |
| Uranium | | 0.0499 | mg/L | 0.00030 | 100 | 90 | 110 | | | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22040142 **Report Date:** 06/01/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: E200.8** | | | | | | | | | Analytical Run: ICPMS5-C_220414A | |
| **Lab ID: CCV** | 15 | Continuing Calibration Verification Standard | | | | | | | 04/16/22 05:36 | |
| Vanadium | | 0.0509 | mg/L | 0.010 | 102 | 90 | 110 | | | |
| **Lab ID: CCV** | 15 | Continuing Calibration Verification Standard | | | | | | | 04/16/22 06:57 | |
| Aluminum | | 0.0535 | mg/L | 0.030 | 107 | 90 | 110 | | | |
| Arsenic | | 0.0499 | mg/L | 0.0010 | 100 | 90 | 110 | | | |
| Beryllium | | 0.0503 | mg/L | 0.0010 | 101 | 90 | 110 | | | |
| Cadmium | | 0.0491 | mg/L | 0.0010 | 98 | 90 | 110 | | | |
| Cobalt | | 0.0513 | mg/L | 0.0050 | 103 | 90 | 110 | | | |
| Lead | | 0.0494 | mg/L | 0.0010 | 99 | 90 | 110 | | | |
| Magnesium | | 13.0 | mg/L | 0.50 | 104 | 90 | 110 | | | |
| Manganese | | 0.0494 | mg/L | 0.0010 | 99 | 90 | 110 | | | |
| Molybdenum | | 0.0474 | mg/L | 0.0010 | 95 | 90 | 110 | | | |
| Nickel | | 0.0505 | mg/L | 0.0050 | 101 | 90 | 110 | | | |
| Potassium | | 13.1 | mg/L | 0.50 | 105 | 90 | 110 | | | |
| Selenium | | 0.0495 | mg/L | 0.0010 | 99 | 90 | 110 | | | |
| Sodium | | 13.2 | mg/L | 0.50 | 106 | 90 | 110 | | | |
| Uranium | | 0.0490 | mg/L | 0.00030 | 98 | 90 | 110 | | | |
| Vanadium | | 0.0501 | mg/L | 0.010 | 100 | 90 | 110 | | | |
| **Lab ID: CCV** | 15 | Continuing Calibration Verification Standard | | | | | | | 04/16/22 13:41 | |
| Aluminum | | 0.0497 | mg/L | 0.030 | 99 | 90 | 110 | | | |
| Arsenic | | 0.0491 | mg/L | 0.0010 | 98 | 90 | 110 | | | |
| Beryllium | | 0.0474 | mg/L | 0.0010 | 95 | 90 | 110 | | | |
| Cadmium | | 0.0488 | mg/L | 0.0010 | 98 | 90 | 110 | | | |
| Cobalt | | 0.0501 | mg/L | 0.0050 | 100 | 90 | 110 | | | |
| Lead | | 0.0493 | mg/L | 0.0010 | 99 | 90 | 110 | | | |
| Magnesium | | 12.5 | mg/L | 0.50 | 100 | 90 | 110 | | | |
| Manganese | | 0.0490 | mg/L | 0.0010 | 98 | 90 | 110 | | | |
| Molybdenum | | 0.0467 | mg/L | 0.0010 | 93 | 90 | 110 | | | |
| Nickel | | 0.0495 | mg/L | 0.0050 | 99 | 90 | 110 | | | |
| Potassium | | 13.0 | mg/L | 0.50 | 104 | 90 | 110 | | | |
| Selenium | | 0.0506 | mg/L | 0.0010 | 101 | 90 | 110 | | | |
| Sodium | | 12.6 | mg/L | 0.50 | 100 | 90 | 110 | | | |
| Uranium | | 0.0478 | mg/L | 0.00030 | 96 | 90 | 110 | | | |
| Vanadium | | 0.0489 | mg/L | 0.010 | 98 | 90 | 110 | | | |
| **Method: E200.8** | | | | | | | | | | Batch: 66398 |
| **Lab ID: MB-66398** | 12 | Method Blank | | | | Run: ICPMS5-C_220414A | | | 04/16/22 04:50 | |
| Aluminum | | ND | mg/L | 0.02 | | | | | | |
| Arsenic | | ND | mg/L | 0.0003 | | | | | | |
| Beryllium | | ND | mg/L | 0.0002 | | | | | | |
| Cadmium | | ND | mg/L | 0.00002 | | | | | | |
| Cobalt | | ND | mg/L | 0.0001 | | | | | | |
| Lead | | ND | mg/L | 0.0001 | | | | | | |
| Manganese | | ND | mg/L | 0.0007 | | | | | | |
| Molybdenum | | 0.0001 | mg/L | 0.0001 | | | | | | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22040142 **Report Date:** 06/01/22

| Analyte | | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Method:** | **E200.8** | | | | | | | | | | Batch: 66398 |
| **Lab ID:** | **MB-66398** | 12 | Method Blank | | | | Run: ICPMS5-C_220414A | | | | 04/16/22 04:50 |
| Nickel | | | ND | mg/L | 0.0003 | | | | | | |
| Selenium | | | ND | mg/L | 0.0001 | | | | | | |
| Uranium | | | ND | mg/L | 0.0003 | | | | | | |
| Vanadium | | | ND | mg/L | 0.003 | | | | | | |
| **Lab ID:** | **LCS3-66398** | 12 | Laboratory Control Sample | | | | Run: ICPMS5-C_220414A | | | | 04/16/22 04:56 |
| Aluminum | | | 2.57 | mg/L | 0.030 | 103 | 85 | 115 | | | |
| Arsenic | | | 0.508 | mg/L | 0.0010 | 102 | 85 | 115 | | | |
| Beryllium | | | 0.254 | mg/L | 0.0010 | 101 | 85 | 115 | | | |
| Cadmium | | | 0.252 | mg/L | 0.0010 | 101 | 85 | 115 | | | |
| Cobalt | | | 0.510 | mg/L | 0.0050 | 102 | 85 | 115 | | | |
| Lead | | | 0.495 | mg/L | 0.0010 | 99 | 85 | 115 | | | |
| Manganese | | | 2.52 | mg/L | 0.0010 | 101 | 85 | 115 | | | |
| Molybdenum | | | 0.489 | mg/L | 0.0010 | 98 | 85 | 115 | | | |
| Nickel | | | 0.509 | mg/L | 0.0050 | 102 | 85 | 115 | | | |
| Selenium | | | 0.480 | mg/L | 0.0010 | 96 | 85 | 115 | | | |
| Uranium | | | 0.480 | mg/L | 0.00030 | 96 | 85 | 115 | | | |
| Vanadium | | | 0.519 | mg/L | 0.010 | 104 | 85 | 115 | | | |
| **Lab ID:** | **C22040097-001AMS3** | 12 | Sample Matrix Spike | | | | Run: ICPMS5-C_220414A | | | | 04/16/22 05:24 |
| Aluminum | | | 3.58 | mg/L | 0.091 | 111 | 70 | 130 | | | |
| Arsenic | | | 0.524 | mg/L | 0.0014 | 104 | 70 | 130 | | | |
| Beryllium | | | 0.265 | mg/L | 0.0010 | 106 | 70 | 130 | | | |
| Cadmium | | | 0.254 | mg/L | 0.0010 | 101 | 70 | 130 | | | |
| Cobalt | | | 0.518 | mg/L | 0.0050 | 103 | 70 | 130 | | | |
| Lead | | | 0.504 | mg/L | 0.0010 | 101 | 70 | 130 | | | |
| Manganese | | | 2.56 | mg/L | 0.0035 | 101 | 70 | 130 | | | |
| Molybdenum | | | 0.496 | mg/L | 0.0010 | 97 | 70 | 130 | | | |
| Nickel | | | 0.518 | mg/L | 0.0050 | 103 | 70 | 130 | | | |
| Selenium | | | 0.515 | mg/L | 0.0010 | 102 | 70 | 130 | | | |
| Uranium | | | 0.504 | mg/L | 0.0013 | 98 | 70 | 130 | | | |
| Vanadium | | | 0.536 | mg/L | 0.013 | 103 | 70 | 130 | | | |
| **Lab ID:** | **C22040097-001AMSD** | 12 | Sample Matrix Spike Duplicate | | | | Run: ICPMS5-C_220414A | | | | 04/16/22 05:53 |
| Aluminum | | | 3.56 | mg/L | 0.091 | 110 | 70 | 130 | 0.7 | 20 | |
| Arsenic | | | 0.524 | mg/L | 0.0014 | 104 | 70 | 130 | 0.2 | 20 | |
| Beryllium | | | 0.262 | mg/L | 0.0010 | 105 | 70 | 130 | 1.2 | 20 | |
| Cadmium | | | 0.251 | mg/L | 0.0010 | 101 | 70 | 130 | 1.0 | 20 | |
| Cobalt | | | 0.518 | mg/L | 0.0050 | 103 | 70 | 130 | 0.1 | 20 | |
| Lead | | | 0.501 | mg/L | 0.0010 | 100 | 70 | 130 | 0.6 | 20 | |
| Manganese | | | 2.56 | mg/L | 0.0035 | 101 | 70 | 130 | 0.3 | 20 | |
| Molybdenum | | | 0.500 | mg/L | 0.0010 | 98 | 70 | 130 | 1.0 | 20 | |
| Nickel | | | 0.518 | mg/L | 0.0050 | 103 | 70 | 130 | 0.1 | 20 | |
| Selenium | | | 0.513 | mg/L | 0.0010 | 101 | 70 | 130 | 0.4 | 20 | |
| Uranium | | | 0.505 | mg/L | 0.0013 | 99 | 70 | 130 | 0.1 | 20 | |
| Vanadium | | | 0.536 | mg/L | 0.013 | 103 | 70 | 130 | 0.0 | 20 | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22040142 **Report Date:** 06/01/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: E200.8** | | | | | | | | | | Batch: 66398 |
| **Lab ID: C22040097-001AMSD** | 12 | Sample Matrix Spike Duplicate | | | | Run: ICPMS5-C_220414A | | | 04/16/22 05:53 | |
| **Lab ID: C22040142-007CMS3** | 12 | Sample Matrix Spike | | | | Run: ICPMS5-C_220414A | | | 04/16/22 07:14 | |
| Aluminum | | 165 | mg/L | 0.091 | | 70 | 130 | | | A |
| Arsenic | | 0.512 | mg/L | 0.0014 | 100 | 70 | 130 | | | |
| Beryllium | | 0.368 | mg/L | 0.0010 | 94 | 70 | 130 | | | |
| Cadmium | | 0.258 | mg/L | 0.0010 | 98 | 70 | 130 | | | |
| Cobalt | | 1.39 | mg/L | 0.0050 | 98 | 70 | 130 | | | |
| Lead | | 0.530 | mg/L | 0.0010 | 99 | 70 | 130 | | | |
| Manganese | | 15.9 | mg/L | 0.0058 | | 70 | 130 | | | A |
| Molybdenum | | 0.472 | mg/L | 0.0010 | 95 | 70 | 130 | | | |
| Nickel | | 1.46 | mg/L | 0.0050 | 95 | 70 | 130 | | | |
| Selenium | | 0.534 | mg/L | 0.0010 | 105 | 70 | 130 | | | |
| Uranium | | 1.06 | mg/L | 0.0013 | 97 | 70 | 130 | | | |
| Vanadium | | 0.508 | mg/L | 0.010 | 102 | 70 | 130 | | | |
| **Lab ID: C22040142-007CMSD** | 12 | Sample Matrix Spike Duplicate | | | | Run: ICPMS5-C_220414A | | | 04/16/22 07:20 | |
| Aluminum | | 168 | mg/L | 0.091 | | 70 | 130 | 1.6 | 20 | A |
| Arsenic | | 0.506 | mg/L | 0.0014 | 99 | 70 | 130 | 1.1 | 20 | |
| Beryllium | | 0.371 | mg/L | 0.0010 | 96 | 70 | 130 | 1.0 | 20 | |
| Cadmium | | 0.258 | mg/L | 0.0010 | 99 | 70 | 130 | 0.1 | 20 | |
| Cobalt | | 1.40 | mg/L | 0.0050 | 101 | 70 | 130 | 1.1 | 20 | |
| Lead | | 0.532 | mg/L | 0.0010 | 99 | 70 | 130 | 0.5 | 20 | |
| Manganese | | 16.2 | mg/L | 0.0058 | | 70 | 130 | 1.7 | 20 | A |
| Molybdenum | | 0.474 | mg/L | 0.0010 | 95 | 70 | 130 | 0.4 | 20 | |
| Nickel | | 1.45 | mg/L | 0.0050 | 93 | 70 | 130 | 0.7 | 20 | |
| Selenium | | 0.535 | mg/L | 0.0010 | 106 | 70 | 130 | 0.2 | 20 | |
| Uranium | | 1.07 | mg/L | 0.0013 | 99 | 70 | 130 | 1.2 | 20 | |
| Vanadium | | 0.514 | mg/L | 0.010 | 103 | 70 | 130 | 1.1 | 20 | |
| **Method: E200.8** | | | | | | | | | | Batch: R281497 |
| **Lab ID: LRB** | 3 | Method Blank | | | | Run: ICPMS5-C_220414A | | | 04/15/22 12:16 | |
| Magnesium | | ND | mg/L | 0.02 | | | | | | |
| Potassium | | ND | mg/L | 0.1 | | | | | | |
| Sodium | | ND | mg/L | 0.3 | | | | | | |
| **Lab ID: LFB** | 3 | Laboratory Fortified Blank | | | | Run: ICPMS5-C_220414A | | | 04/15/22 12:20 | |
| Magnesium | | 47.2 | mg/L | 0.50 | 94 | 85 | 115 | | | |
| Potassium | | 47.5 | mg/L | 0.50 | 95 | 85 | 115 | | | |
| Sodium | | 47.6 | mg/L | 0.50 | 95 | 85 | 115 | | | |
| **Lab ID: C22040142-007BMS** | 3 | Sample Matrix Spike | | | | Run: ICPMS5-C_220414A | | | 04/15/22 20:44 | |
| Magnesium | | 579 | mg/L | 1.0 | 89 | 70 | 130 | | | |
| Potassium | | 235 | mg/L | 1.0 | 91 | 70 | 130 | | | |
| Sodium | | 350 | mg/L | 1.5 | 90 | 70 | 130 | | | |
| **Lab ID: C22040142-007BMSD** | 3 | Sample Matrix Spike Duplicate | | | | Run: ICPMS5-C_220414A | | | 04/15/22 20:49 | |
| Magnesium | | 594 | mg/L | 1.0 | 95 | 70 | 130 | 2.5 | 20 | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

A - Analyte level was greater than four times the spike level - in accordance with the method, percent recovery is not calculated

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22040142 **Report Date:** 06/01/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method:** E200.8 | | | | | | | | | | Batch: R281497 |
| **Lab ID:** C22040142-007BMSD | 3 | Sample Matrix Spike Duplicate | | | | Run: ICPMS5-C_220414A | | | 04/15/22 20:49 | |
| Potassium | | 241 | mg/L | 1.0 | 93 | 70 | 130 | 2.5 | 20 | |
| Sodium | | 359 | mg/L | 1.5 | 93 | 70 | 130 | 2.3 | 20 | |
| **Method:** E200.8 | | | | | | | | | | Analytical Run: ICPMS5-C_220418A |
| **Lab ID:** QCS | 6 | Initial Calibration Verification Standard | | | | | | | 04/20/22 06:33 | |
| Aluminum | | 0.238 | mg/L | 0.030 | 95 | 90 | 110 | | | |
| Beryllium | | 0.0240 | mg/L | 0.0010 | 96 | 90 | 110 | | | |
| Cobalt | | 0.0481 | mg/L | 0.0050 | 96 | 90 | 110 | | | |
| Lead | | 0.0468 | mg/L | 0.0010 | 94 | 90 | 110 | | | |
| Nickel | | 0.0482 | mg/L | 0.0050 | 96 | 90 | 110 | | | |
| Selenium | | 0.0487 | mg/L | 0.0010 | 97 | 90 | 110 | | | |
| **Lab ID:** CCV | 6 | Continuing Calibration Verification Standard | | | | | | | 04/19/22 23:53 | |
| Aluminum | | 0.0477 | mg/L | 0.030 | 95 | 90 | 110 | | | |
| Beryllium | | 0.0514 | mg/L | 0.0010 | 103 | 90 | 110 | | | |
| Cobalt | | 0.0479 | mg/L | 0.0050 | 96 | 90 | 110 | | | |
| Lead | | 0.0458 | mg/L | 0.0010 | 91 | 90 | 110 | | | |
| Nickel | | 0.0452 | mg/L | 0.0050 | 90 | 90 | 110 | | | |
| Selenium | | 0.0504 | mg/L | 0.0010 | 101 | 90 | 110 | | | |
| **Lab ID:** CCV | 6 | Continuing Calibration Verification Standard | | | | | | | 04/20/22 01:06 | |
| Aluminum | | 0.0499 | mg/L | 0.030 | 100 | 90 | 110 | | | |
| Beryllium | | 0.0476 | mg/L | 0.0010 | 95 | 90 | 110 | | | |
| Cobalt | | 0.0469 | mg/L | 0.0050 | 94 | 90 | 110 | | | |
| Lead | | 0.0457 | mg/L | 0.0010 | 91 | 90 | 110 | | | |
| Nickel | | 0.0470 | mg/L | 0.0050 | 94 | 90 | 110 | | | |
| Selenium | | 0.0474 | mg/L | 0.0010 | 95 | 90 | 110 | | | |
| **Lab ID:** CCV | 6 | Continuing Calibration Verification Standard | | | | | | | 04/20/22 02:20 | |
| Aluminum | | 0.0484 | mg/L | 0.030 | 97 | 90 | 110 | | | |
| Beryllium | | 0.0502 | mg/L | 0.0010 | 100 | 90 | 110 | | | |
| Cobalt | | 0.0471 | mg/L | 0.0050 | 94 | 90 | 110 | | | |
| Lead | | 0.0460 | mg/L | 0.0010 | 92 | 90 | 110 | | | |
| Nickel | | 0.0477 | mg/L | 0.0050 | 95 | 90 | 110 | | | |
| Selenium | | 0.0448 | mg/L | 0.0010 | 90 | 90 | 110 | | | |
| **Method:** E200.8 | | | | | | | | | | Batch: 66398 |
| **Lab ID:** MB-66398 | 6 | Method Blank | | | | Run: ICPMS5-C_220418A | | | 04/20/22 00:19 | |
| Aluminum | | ND | mg/L | 0.02 | | | | | | |
| Beryllium | | ND | mg/L | 0.0002 | | | | | | |
| Cobalt | | ND | mg/L | 0.0001 | | | | | | |
| Lead | | ND | mg/L | 0.0001 | | | | | | |
| Nickel | | ND | mg/L | 0.0003 | | | | | | |
| Selenium | | ND | mg/L | 0.0001 | | | | | | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22040142 **Report Date:** 06/01/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method:** E200.8 | | | | | | | | | Analytical Run: ICPMS5-C_220421A | |
| **Lab ID:** QCS | | Initial Calibration Verification Standard | | | | | | | 04/21/22 16:48 | |
| Calcium | | 2.37 | mg/L | 0.50 | 95 | 90 | 110 | | | |
| **Lab ID:** CCV | | Continuing Calibration Verification Standard | | | | | | | 04/21/22 18:11 | |
| Calcium | | 12.0 | mg/L | 0.50 | 96 | 90 | 110 | | | |
| **Lab ID:** CCV | | Continuing Calibration Verification Standard | | | | | | | 04/21/22 19:20 | |
| Calcium | | 12.1 | mg/L | 0.50 | 97 | 90 | 110 | | | |
| **Method:** E200.8 | | | | | | | | | Batch: R281744 | |
| **Lab ID:** LRB | | Method Blank | | | | Run: ICPMS5-C_220421A | | | 04/21/22 09:16 | |
| Calcium | | ND | mg/L | 0.3 | | | | | | |
| **Lab ID:** LFB | | Laboratory Fortified Blank | | | | Run: ICPMS5-C_220421A | | | 04/21/22 09:21 | |
| Calcium | | 45.7 | mg/L | 0.50 | 91 | 85 | 115 | | | |
| **Lab ID:** C22040193-002BMS | | Sample Matrix Spike | | | | Run: ICPMS5-C_220421A | | | 04/21/22 18:52 | |
| Calcium | | 177 | mg/L | 1.0 | 94 | 70 | 130 | | | |
| **Lab ID:** C22040193-002BMSD | | Sample Matrix Spike Duplicate | | | | Run: ICPMS5-C_220421A | | | 04/21/22 18:57 | |
| Calcium | | 175 | mg/L | 1.0 | 93 | 70 | 130 | 0.7 | 20 | |
| **Method:** E200.8 | | | | | | | | | Analytical Run: ICPMS5-C_220422A | |
| **Lab ID:** QCS | 3 | Initial Calibration Verification Standard | | | | | | | 04/22/22 17:50 | |
| Aluminum | | 0.250 | mg/L | 0.030 | 100 | 90 | 110 | | | |
| Arsenic | | 0.0508 | mg/L | 0.0010 | 102 | 90 | 110 | | | |
| Molybdenum | | 0.0478 | mg/L | 0.0010 | 96 | 90 | 110 | | | |
| **Lab ID:** CCV | 3 | Continuing Calibration Verification Standard | | | | | | | 04/22/22 20:39 | |
| Aluminum | | 0.0475 | mg/L | 0.030 | 95 | 90 | 110 | | | |
| Arsenic | | 0.0492 | mg/L | 0.0010 | 98 | 90 | 110 | | | |
| Molybdenum | | 0.0466 | mg/L | 0.0010 | 93 | 90 | 110 | | | |
| **Lab ID:** CCV | 3 | Continuing Calibration Verification Standard | | | | | | | 04/22/22 22:07 | |
| Aluminum | | 0.0466 | mg/L | 0.030 | 93 | 90 | 110 | | | |
| Arsenic | | 0.0487 | mg/L | 0.0010 | 97 | 90 | 110 | | | |
| Molybdenum | | 0.0467 | mg/L | 0.0010 | 93 | 90 | 110 | | | |
| **Lab ID:** CCV | 3 | Continuing Calibration Verification Standard | | | | | | | 04/22/22 23:11 | |
| Aluminum | | 0.0459 | mg/L | 0.030 | 92 | 90 | 110 | | | |
| Arsenic | | 0.0470 | mg/L | 0.0010 | 94 | 90 | 110 | | | |
| Molybdenum | | 0.0458 | mg/L | 0.0010 | 92 | 90 | 110 | | | |
| **Method:** E200.8 | | | | | | | | | Batch: 66398 | |
| **Lab ID:** MB-66398 | 3 | Method Blank | | | | Run: ICPMS5-C_220422A | | | 04/22/22 21:35 | |
| Aluminum | | ND | mg/L | 0.02 | | | | | | |
| Arsenic | | ND | mg/L | 0.0003 | | | | | | |
| Molybdenum | | ND | mg/L | 0.0001 | | | | | | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22040142 **Report Date:** 06/01/22

| Analyte | | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Method:** | **E200.8** | | | | | | | | | Analytical Run: ICPMS5-C_220426A | |
| **Lab ID:** | **QCS** | | Initial Calibration Verification Standard | | | | | | | 04/26/22 17:02 | |
| Uranium | | | 0.0189 | mg/L | 0.00030 | 95 | 90 | 110 | | | |
| **Lab ID:** | **CCV** | | Continuing Calibration Verification Standard | | | | | | | 04/26/22 17:48 | |
| Uranium | | | 0.0482 | mg/L | 0.00030 | 96 | 90 | 110 | | | |
| **Lab ID:** | **CCV** | | Continuing Calibration Verification Standard | | | | | | | 04/26/22 18:58 | |
| Uranium | | | 0.0476 | mg/L | 0.00030 | 95 | 90 | 110 | | | |
| **Method:** | **E200.8** | | | | | | | | | | Batch: 66398 |
| **Lab ID:** | **MB-66398** | | Method Blank | | | | Run: ICPMS5-C_220426A | | | 04/26/22 18:30 | |
| Uranium | | | ND | mg/L | 0.0003 | | | | | | |
| **Method:** | **E200.8** | | | | | | | | | Analytical Run: ICPMS5-C_220428A | |
| **Lab ID:** | **QCS** | 2 | Initial Calibration Verification Standard | | | | | | | 04/29/22 11:24 | |
| Aluminum | | | 0.255 | mg/L | 0.030 | 102 | 90 | 110 | | | |
| Manganese | | | 0.246 | mg/L | 0.0010 | 98 | 90 | 110 | | | |
| **Lab ID:** | **CCV** | 2 | Continuing Calibration Verification Standard | | | | | | | 04/29/22 11:34 | |
| Aluminum | | | 0.0509 | mg/L | 0.030 | 102 | 90 | 110 | | | |
| Manganese | | | 0.0482 | mg/L | 0.0010 | 96 | 90 | 110 | | | |
| **Lab ID:** | **CCV** | 2 | Continuing Calibration Verification Standard | | | | | | | 04/29/22 12:53 | |
| Aluminum | | | 0.0501 | mg/L | 0.030 | 100 | 90 | 110 | | | |
| Manganese | | | 0.0483 | mg/L | 0.0010 | 97 | 90 | 110 | | | |
| **Method:** | **E200.8** | | | | | | | | | | Batch: 66398 |
| **Lab ID:** | **MB-66398** | 2 | Method Blank | | | | Run: ICPMS5-C_220428A | | | 04/28/22 18:41 | |
| Aluminum | | | ND | mg/L | 0.02 | | | | | | |
| Manganese | | | ND | mg/L | 0.0007 | | | | | | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22040142 **Report Date:** 04/26/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: A7500-U C** | | | | | | | | | | Batch: RA-TH-ISO-3412 |
| **Lab ID: MB-RA-TH-ISO-3412** | 3 | Method Blank | | | | Run: EGG-ORTEC_ALL_220411A | | | | 04/13/22 13:44 |
| Thorium 230 | | 0.02 | pCi/L | | | | | | | U |
| Thorium 230 precision (±) | | 0.03 | pCi/L | | | | | | | |
| Thorium 230 MDC | | 0.05 | pCi/L | | | | | | | |
| **Lab ID: LCS-RA-TH-ISO-3412** | 3 | Laboratory Control Sample | | | | Run: EGG-ORTEC_ALL_220411A | | | | 04/13/22 13:44 |
| Thorium 230 | | 22 | pCi/L | | 89 | 70 | 130 | | | |
| Thorium 230 precision (±) | | 4.3 | pCi/L | | | | | | | |
| Thorium 230 MDC | | 0.056 | pCi/L | | | | | | | |
| **Lab ID: C22040140-002FDUP** | 3 | Sample Duplicate | | | | Run: EGG-ORTEC_ALL_220411A | | | | 04/13/22 13:44 |
| Thorium 230 | | -0.0065 | pCi/L | | | | | 520 | 30 | UR |
| Thorium 230 precision (±) | | 0.034 | pCi/L | | | | | | | |
| Thorium 230 MDC | | 0.071 | pCi/L | | | | | | | |
| - Duplicate RPD is outside of the acceptance range for this analysis. However, the RER is less than the limit of 3, the RER result is 0.48. | | | | | | | | | | |
| **Method: A7500-U C** | | | | | | | | | | Batch: RA-TH-ISO-3414R |
| **Lab ID: MB-RA-TH-ISO-3414** | 3 | Method Blank | | | | Run: EGG-ORTEC_ALL_220413A | | | | 04/18/22 13:49 |
| Thorium 230 | | 0.9 | pCi/L | | | | | | | |
| Thorium 230 precision (±) | | 0.2 | pCi/L | | | | | | | |
| Thorium 230 MDC | | 0.09 | pCi/L | | | | | | | |
| **Lab ID: LCS-RA-TH-ISO-3414** | 3 | Laboratory Control Sample | | | | Run: EGG-ORTEC_ALL_220413A | | | | 04/18/22 13:49 |
| Thorium 230 | | 27 | pCi/L | | 107 | 70 | 130 | | | |
| Thorium 230 precision (±) | | 5.1 | pCi/L | | | | | | | |
| Thorium 230 MDC | | 0.091 | pCi/L | | | | | | | |
| **Lab ID: C22040188-001EDUP** | 3 | Sample Duplicate | | | | Run: EGG-ORTEC_ALL_220413A | | | | 04/18/22 13:49 |
| Thorium 230 | | 14 | pCi/L | | | | | 7.7 | 30 | |
| Thorium 230 precision (±) | | 2.7 | pCi/L | | | | | | | |
| Thorium 230 MDC | | 0.19 | pCi/L | | | | | | | |
| - The RER result is 0.29. | | | | | | | | | | |
| **Method: A7500-U C** | | | | | | | | | | Batch: RA-TH-ISO-3416 |
| **Lab ID: MB-RA-TH-ISO-3416** | 3 | Method Blank | | | | Run: EGG-ORTEC_ALL_220414A | | | | 04/19/22 13:08 |
| Thorium 230 | | 0.1 | pCi/L | | | | | | | |
| Thorium 230 precision (±) | | 0.05 | pCi/L | | | | | | | |
| Thorium 230 MDC | | 0.07 | pCi/L | | | | | | | |
| **Lab ID: LCS-RA-TH-ISO-3416** | 3 | Laboratory Control Sample | | | | Run: EGG-ORTEC_ALL_220414A | | | | 04/19/22 13:07 |
| Thorium 230 | | 23 | pCi/L | | 92 | 70 | 130 | | | |
| Thorium 230 precision (±) | | 4.4 | pCi/L | | | | | | | |
| Thorium 230 MDC | | 0.061 | pCi/L | | | | | | | |
| **Lab ID: C22040309-001EDUP** | 3 | Sample Duplicate | | | | Run: EGG-ORTEC_ALL_220414A | | | | 04/19/22 13:08 |
| Thorium 230 | | 0.066 | pCi/L | | | | | 54 | 30 | UR |
| Thorium 230 precision (±) | | 0.046 | pCi/L | | | | | | | |
| Thorium 230 MDC | | 0.070 | pCi/L | | | | | | | |
| - Duplicate RPD is outside of the acceptance range for this analysis. However, the RER is less than the limit of 3, the RER result is 0.68. | | | | | | | | | | |

**Qualifiers:**

RL - Analyte Reporting Limit

R - Relative Percent Difference (RPD) exceeds advisory limit

ND - Not detected at the Reporting Limit (RL)

U - Not detected at Minimum Detectable Concentration (MDC)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22040142 **Report Date:** 04/26/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: E900.1** | | | | | | | | | | Batch: GA-1352 |
| **Lab ID: LCS-GA-1352** | 3 | Laboratory Control Sample | | | | Run: G542M-2_220406A | | | | 04/12/22 13:19 |
| Gross Alpha minus Rn & U | | 34 | pCi/L | | 100 | 70 | 130 | | | |
| Gross Alpha minus Rn & U Precision (±) | | 6.7 | pCi/L | | | | | | | |
| Gross Alpha minus Rn & U MDC | | 0.69 | pCi/L | | | | | | | |
| **Lab ID: MB-GA-1352** | 3 | Method Blank | | | | Run: G542M-2_220406A | | | | 04/12/22 13:19 |
| Gross Alpha minus Rn & U | | 0.2 | pCi/L | | | | | | | U |
| Gross Alpha minus Rn & U Precision (±) | | 0.4 | pCi/L | | | | | | | |
| Gross Alpha minus Rn & U MDC | | 0.7 | pCi/L | | | | | | | |
| **Lab ID: C22040140-001FDUP** | 3 | Sample Duplicate | | | | Run: G542M-2_220406A | | | | 04/12/22 13:19 |
| Gross Alpha minus Rn & U | | 1.8 | pCi/L | | | | | 22 | 30 | |
| Gross Alpha minus Rn & U Precision (±) | | 0.69 | pCi/L | | | | | | | |
| Gross Alpha minus Rn & U MDC | | 0.69 | pCi/L | | | | | | | |

- The RER result is 0.39.

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

U - Not detected at Minimum Detectable Concentration (MDC)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22040142 **Report Date:** 04/26/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: E903.0** | | | | | | | | | | Batch: RA226-10416 |
| **Lab ID: LCS-RA226-10416** | 3 | Laboratory Control Sample | | | | Run: G542M-2_220406C | | | | 04/17/22 10:41 |
| Radium 226 | | 12 | pCi/L | | 117 | 70 | 130 | | | |
| Radium 226 precision (±) | | 2.3 | pCi/L | | | | | | | |
| Radium 226 MDC | | 0.25 | pCi/L | | | | | | | |
| **Lab ID: MB-RA226-10416** | 3 | Method Blank | | | | Run: G542M-2_220406C | | | | 04/17/22 10:41 |
| Radium 226 | | -0.03 | pCi/L | | | | | | | U |
| Radium 226 precision (±) | | 0.1 | pCi/L | | | | | | | |
| Radium 226 MDC | | 0.2 | pCi/L | | | | | | | |
| **Lab ID: C22040131-001BDUP** | 3 | Sample Duplicate | | | | Run: G542M-2_220406C | | | | 04/17/22 10:41 |
| Radium 226 | | 0.11 | pCi/L | | | | | 17 | 30 | U |
| Radium 226 precision (±) | | 0.12 | pCi/L | | | | | | | |
| Radium 226 MDC | | 0.19 | pCi/L | | | | | | | |

- The RER result is 0.12.

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

U - Not detected at Minimum Detectable Concentration (MDC)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22040142 **Report Date:** 04/26/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: E909.0** | | | | | | | | | | Batch: PB-210-1382 |
| **Lab ID: LCS-PB-210-1382** | 3 | Laboratory Control Sample | | | | Run: TRICARB LSC_220406A | | | 04/08/22 16:42 | |
| Lead 210 | | 18 | pCi/L | | 105 | 70 | 130 | | | |
| Lead 210 precision (±) | | 5.5 | pCi/L | | | | | | | |
| Lead 210 MDC | | 1.6 | pCi/L | | | | | | | |
| **Lab ID: MB-PB-210-1382** | 3 | Method Blank | | | | Run: TRICARB LSC_220406A | | | 04/08/22 17:41 | |
| Lead 210 | | -0.9 | pCi/L | | | | | | | U |
| Lead 210 precision (±) | | 0.5 | pCi/L | | | | | | | |
| Lead 210 MDC | | 0.9 | pCi/L | | | | | | | |
| **Lab ID: C22040140-002FDUP** | 3 | Sample Duplicate | | | | Run: TRICARB LSC_220406A | | | 04/09/22 22:38 | |
| Lead 210 | | 2.4 | pCi/L | | | | | 17 | 30 | |
| Lead 210 precision (±) | | 0.99 | pCi/L | | | | | | | |
| Lead 210 MDC | | 1.1 | pCi/L | | | | | | | |
| - The RER result is 0.30. | | | | | | | | | | |
| **Method: E909.0** | | | | | | | | | | Batch: PB-210-1385 |
| **Lab ID: LCS-PB-210-1385** | 3 | Laboratory Control Sample | | | | Run: TRICARB LSC_220409A | | | 04/13/22 16:40 | |
| Lead 210 | | 15 | pCi/L | | 90 | 70 | 130 | | | |
| Lead 210 precision (±) | | 4.7 | pCi/L | | | | | | | |
| Lead 210 MDC | | 1.4 | pCi/L | | | | | | | |
| **Lab ID: MB-PB-210-1385** | 3 | Method Blank | | | | Run: TRICARB LSC_220409A | | | 04/13/22 17:48 | |
| Lead 210 | | 0.2 | pCi/L | | | | | | | U |
| Lead 210 precision (±) | | 0.5 | pCi/L | | | | | | | |
| Lead 210 MDC | | 0.9 | pCi/L | | | | | | | |
| **Lab ID: C22040193-003FDUP** | 3 | Sample Duplicate | | | | Run: TRICARB LSC_220409A | | | 04/14/22 04:29 | |
| Lead 210 | | 0.16 | pCi/L | | | | | 69 | 30 | UR |
| Lead 210 precision (±) | | 0.51 | pCi/L | | | | | | | |
| Lead 210 MDC | | 0.85 | pCi/L | | | | | | | |
| - Duplicate RPD is outside of the acceptance range for this analysis. However, the RER is less than the limit of 3, the RER result is 0.23. | | | | | | | | | | |

**Qualifiers:**

RL - Analyte Reporting Limit

R - Relative Percent Difference (RPD) exceeds advisory limit

ND - Not detected at the Reporting Limit (RL)

U - Not detected at Minimum Detectable Concentration (MDC)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22040142 **Report Date:** 04/26/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: RA-05** | | | | | | | | | | Batch: RA228-6764 |
| **Lab ID: LCS-228-RA226-10416** | 3 | Laboratory Control Sample | | | | Run: G5000W_220406A | | | | 04/12/22 14:41 |
| Radium 228 | | 10 | pCi/L | | 126 | 70 | 130 | | | |
| Radium 228 precision (±) | | 2.1 | pCi/L | | | | | | | |
| Radium 228 MDC | | 1.2 | pCi/L | | | | | | | |
| **Lab ID: MB-RA226-10416** | 3 | Method Blank | | | | Run: G5000W_220406A | | | | 04/12/22 14:41 |
| Radium 228 | | -0.07 | pCi/L | | | | | | | U |
| Radium 228 precision (±) | | 0.8 | pCi/L | | | | | | | |
| Radium 228 MDC | | 1 | pCi/L | | | | | | | |
| **Lab ID: C22040131-001BDUP** | 3 | Sample Duplicate | | | | Run: G5000W_220406A | | | | 04/12/22 14:41 |
| Radium 228 | | 0.17 | pCi/L | | | | | 91 | 30 | UR |
| Radium 228 precision (±) | | 0.71 | pCi/L | | | | | | | |
| Radium 228 MDC | | 1.2 | pCi/L | | | | | | | |
| - Duplicate RPD is outside of the acceptance range for this analysis. However, the RER is less than the limit of 3, the RER result is 0.28. | | | | | | | | | | |
| **Method: RA-05** | | | | | | | | | | Batch: RA228-6778 |
| **Lab ID: LCS-228-RA228-6778** | 3 | Laboratory Control Sample | | | | Run: TENNELEC-4_220419A | | | | 04/25/22 15:57 |
| Radium 228 | | 7.2 | pCi/L | | 100 | 70 | 130 | | | |
| Radium 228 precision (±) | | 1.6 | pCi/L | | | | | | | |
| Radium 228 MDC | | 1.0 | pCi/L | | | | | | | |
| **Lab ID: MB-228-RA228-6778** | 3 | Method Blank | | | | Run: TENNELEC-4_220419A | | | | 04/25/22 15:57 |
| Radium 228 | | -0.04 | pCi/L | | | | | | | U |
| Radium 228 precision (±) | | 0.6 | pCi/L | | | | | | | |
| Radium 228 MDC | | 1 | pCi/L | | | | | | | |
| **Lab ID: C22040625-006ADUP** | 3 | Sample Duplicate | | | | Run: TENNELEC-4_220419A | | | | 04/25/22 15:57 |
| Radium 228 | | -0.18 | pCi/L | | | | | 190 | 30 | UR |
| Radium 228 precision (±) | | 0.58 | pCi/L | | | | | | | |
| Radium 228 MDC | | 0.98 | pCi/L | | | | | | | |
| - Duplicate RPD is outside of the acceptance range for this analysis. However, the RER is less than the limit of 3, the RER result is 0.21. | | | | | | | | | | |

**Qualifiers:**

RL - Analyte Reporting Limit

R - Relative Percent Difference (RPD) exceeds advisory limit

ND - Not detected at the Reporting Limit (RL)

U - Not detected at Minimum Detectable Concentration (MDC)

eurofins | Environment Testing America

# ANALYTICAL REPORT

Eurofins Denver
4955 Yarrow Street
Arvada, CO 80002
Tel: (303)736-0100

Laboratory Job ID: 280-160713-1
Client Project/Site: 11(e) Byproduct Material

For:
Energy Laboratories, Inc.
400 W Boxelder Rd
Gillette, Wyoming 82718

Attn: Casper Reporting

*Authorized for release by:*
*4/18/2022 12:58:01 PM*

Dylan Bieniulis, Project Manager I
(303)736-0138
Dylan.Bieniulis@et.eurofinsus.com

LINKS

Review your project results through Total Access

Have a Question? Ask The Expert

Visit us at: www.eurofinsus.com/Env

*The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.*

*This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.*

*Results relate only to the items tested and the sample(s) as received by the laboratory.*

# Table of Contents

Cover Page . . . . . 1
Table of Contents . . . . . 2
Definitions . . . . . 3
Case Narrative . . . . . 4
Detection Summary . . . . . 5
Method Summary . . . . . 7
Sample Summary . . . . . 8
Client Sample Results . . . . . 9
Surrogate Summary . . . . . 14
QC Sample Results . . . . . 15
QC Association . . . . . 19
Chronicle . . . . . 20
Certification Summary . . . . . 23
Chain of Custody . . . . . 24
Receipt Checklists . . . . . 28

# Definitions/Glossary

Client: Energy Laboratories, Inc.
Project/Site: 11(e) Byproduct Material

Job ID: 280-160713-1

## Qualifiers

### GC/MS VOA

| Qualifier | Qualifier Description |
|---|---|
| J | Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value. |
| S1- | Surrogate recovery exceeds control limits, low biased. |

## Glossary

| Abbreviation | These commonly used abbreviations may or may not be present in this report. |
|---|---|
| ¤ | Listed under the "D" column to designate that the result is reported on a dry weight basis |
| %R | Percent Recovery |
| CFL | Contains Free Liquid |
| CFU | Colony Forming Unit |
| CNF | Contains No Free Liquid |
| DER | Duplicate Error Ratio (normalized absolute difference) |
| Dil Fac | Dilution Factor |
| DL | Detection Limit (DoD/DOE) |
| DL, RA, RE, IN | Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample |
| DLC | Decision Level Concentration (Radiochemistry) |
| EDL | Estimated Detection Limit (Dioxin) |
| LOD | Limit of Detection (DoD/DOE) |
| LOQ | Limit of Quantitation (DoD/DOE) |
| MCL | EPA recommended "Maximum Contaminant Level" |
| MDA | Minimum Detectable Activity (Radiochemistry) |
| MDC | Minimum Detectable Concentration (Radiochemistry) |
| MDL | Method Detection Limit |
| ML | Minimum Level (Dioxin) |
| MPN | Most Probable Number |
| MQL | Method Quantitation Limit |
| NC | Not Calculated |
| ND | Not Detected at the reporting limit (or MDL or EDL if shown) |
| NEG | Negative / Absent |
| POS | Positive / Present |
| PQL | Practical Quantitation Limit |
| PRES | Presumptive |
| QC | Quality Control |
| RER | Relative Error Ratio (Radiochemistry) |
| RL | Reporting Limit or Requested Limit (Radiochemistry) |
| RPD | Relative Percent Difference, a measure of the relative difference between two points |
| TEF | Toxicity Equivalent Factor (Dioxin) |
| TEQ | Toxicity Equivalent Quotient (Dioxin) |
| TNTC | Too Numerous To Count |

## Job ID: 280-160713-1

**Laboratory: Eurofins Denver**

**Narrative**

# CASE NARRATIVE

## Client: Energy Laboratories, Inc.

## Project: 11(e) Byproduct Material

## Report Number: 280-160713-1

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

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

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

**RECEIPT**

The samples were received on 04/07/2022; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was 1.9 C.

**VOLATILE ORGANIC COMPOUNDS BY GC/MS**

Samples C22040142-001 (280-160713-1), C22040142-002 (280-160713-2), C22040142-003 (280-160713-3), C22040142-004 (280-160713-4), C22040142-005 (280-160713-5), C22040142-006 (280-160713-6), C22040142-007 (280-160713-7), C22040142-008 (280-160713-8), C22040142-009 (280-160713-9), C22040142-010 (280-160713-10), C22040142-011 (280-160713-11), C22040142-012 (280-160713-12), C22040142-013 (280-160713-13), C22040142-014 (280-160713-14), C22040142-015 (280-160713-15) and C22040142-016 (280-160713-16) were analyzed for Volatile Organic Compounds by GC/MS in accordance with 624.1 40CFR136A. The samples were analyzed on 04/13/2022 and 04/14/2022.

4-Bromofluorobenzene (Surr) failed the surrogate recovery criteria low for C22040142-001 (280-160713-1). This sample did not contain any target analytes associated with the out of control surrogate; therefore, re-extraction and/or re-analysis was not performed. Refer to the QC report for details.

The method requirement for no headspace was not met. The following volatile sample was analyzed with significant headspace the sample container(s): (280-160457-D-1 MS). Significant headspace is defined as a bubble greater than 6 mm in diameter.

Sample C22040142-002 (280-160713-2)[4X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

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

# Detection Summary

Client: Energy Laboratories, Inc.
Project/Site: 11(e) Byproduct Material

Job ID: 280-160713-1

## Client Sample ID: C22040142-001 — Lab Sample ID: 280-160713-1

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| Chloroform | 99 | | 1.0 | 0.22 | ug/L | 1 | | 624.1 | Total/NA |
| Trihalomethanes, Total | 99 | | 1.0 | 0.15 | ug/L | 1 | | 624.1 | Total/NA |

## Client Sample ID: C22040142-002 — Lab Sample ID: 280-160713-2

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| Chloroform | 320 | | 4.0 | 0.88 | ug/L | 4 | | 624.1 | Total/NA |
| Trihalomethanes, Total | 320 | | 4.0 | 0.61 | ug/L | 4 | | 624.1 | Total/NA |

## Client Sample ID: C22040142-003 — Lab Sample ID: 280-160713-3

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| Chloroform | 9.4 | | 1.0 | 0.22 | ug/L | 1 | | 624.1 | Total/NA |
| Trihalomethanes, Total | 9.4 | | 1.0 | 0.15 | ug/L | 1 | | 624.1 | Total/NA |

## Client Sample ID: C22040142-004 — Lab Sample ID: 280-160713-4

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| Chloroform | 0.63 | J | 1.0 | 0.22 | ug/L | 1 | | 624.1 | Total/NA |
| Trihalomethanes, Total | 0.63 | J | 1.0 | 0.15 | ug/L | 1 | | 624.1 | Total/NA |

## Client Sample ID: C22040142-005 — Lab Sample ID: 280-160713-5

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| Chloroform | 39 | | 1.0 | 0.22 | ug/L | 1 | | 624.1 | Total/NA |
| Trihalomethanes, Total | 39 | | 1.0 | 0.15 | ug/L | 1 | | 624.1 | Total/NA |

## Client Sample ID: C22040142-006 — Lab Sample ID: 280-160713-6

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| Chloroform | 0.73 | J | 1.0 | 0.22 | ug/L | 1 | | 624.1 | Total/NA |
| Trihalomethanes, Total | 0.73 | J | 1.0 | 0.15 | ug/L | 1 | | 624.1 | Total/NA |

## Client Sample ID: C22040142-007 — Lab Sample ID: 280-160713-7

No Detections.

## Client Sample ID: C22040142-008 — Lab Sample ID: 280-160713-8

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| Chloroform | 0.55 | J | 1.0 | 0.22 | ug/L | 1 | | 624.1 | Total/NA |
| Trihalomethanes, Total | 0.55 | J | 1.0 | 0.15 | ug/L | 1 | | 624.1 | Total/NA |

## Client Sample ID: C22040142-009 — Lab Sample ID: 280-160713-9

No Detections.

## Client Sample ID: C22040142-010 — Lab Sample ID: 280-160713-10

No Detections.

## Client Sample ID: C22040142-011 — Lab Sample ID: 280-160713-11

No Detections.

## Client Sample ID: C22040142-012 — Lab Sample ID: 280-160713-12

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins Denver

# Detection Summary

Client: Energy Laboratories, Inc.
Project/Site: 11(e) Byproduct Material

Job ID: 280-160713-1

**Client Sample ID: C22040142-013** **Lab Sample ID: 280-160713-13**

No Detections.

**Client Sample ID: C22040142-014** **Lab Sample ID: 280-160713-14**

No Detections.

**Client Sample ID: C22040142-015** **Lab Sample ID: 280-160713-15**

No Detections.

**Client Sample ID: C22040142-016** **Lab Sample ID: 280-160713-16**

No Detections.

This Detection Summary does not include radiochemical test results.

# Method Summary

Client: Energy Laboratories, Inc.
Project/Site: 11(e) Byproduct Material

Job ID: 280-160713-1

| Method | Method Description | Protocol | Laboratory |
|---|---|---|---|
| 624.1 | Volatile Organic Compounds (GC/MS) | 40CFR136A | TAL DEN |

**Protocol References:**

40CFR136A = "Methods for Organic Chemical Analysis of Municipal Industrial Wastewater", 40CFR, Part 136, Appendix A, October 26, 1984 and subsequent revisions.

**Laboratory References:**

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

# Sample Summary

Client: Energy Laboratories, Inc.
Project/Site: 11(e) Byproduct Material

Job ID: 280-160713-1

| Lab Sample ID | Client Sample ID | Matrix | Collected | Received |
|---|---|---|---|---|
| 280-160713-1 | C22040142-001 | Water | 03/31/22 09:08 | 04/07/22 09:45 |
| 280-160713-2 | C22040142-002 | Water | 03/31/22 10:42 | 04/07/22 09:45 |
| 280-160713-3 | C22040142-003 | Water | 03/31/22 11:46 | 04/07/22 09:45 |
| 280-160713-4 | C22040142-004 | Water | 03/31/22 12:40 | 04/07/22 09:45 |
| 280-160713-5 | C22040142-005 | Water | 03/31/22 13:31 | 04/07/22 09:45 |
| 280-160713-6 | C22040142-006 | Water | 03/31/22 14:13 | 04/07/22 09:45 |
| 280-160713-7 | C22040142-007 | Water | 04/01/22 09:22 | 04/07/22 09:45 |
| 280-160713-8 | C22040142-008 | Water | 04/01/22 10:13 | 04/07/22 09:45 |
| 280-160713-9 | C22040142-009 | Water | 04/01/22 10:52 | 04/07/22 09:45 |
| 280-160713-10 | C22040142-010 | Water | 04/01/22 11:45 | 04/07/22 09:45 |
| 280-160713-11 | C22040142-011 | Water | 04/01/22 13:06 | 04/07/22 09:45 |
| 280-160713-12 | C22040142-012 | Water | 04/01/22 14:23 | 04/07/22 09:45 |
| 280-160713-13 | C22040142-013 | Water | 03/31/22 10:42 | 04/07/22 09:45 |
| 280-160713-14 | C22040142-014 | Water | 03/31/22 09:08 | 04/07/22 09:45 |
| 280-160713-15 | C22040142-015 | Water | 03/31/22 12:40 | 04/07/22 09:45 |
| 280-160713-16 | C22040142-016 | Water | 03/31/22 13:31 | 04/07/22 09:45 |

# Client Sample Results

Client: Energy Laboratories, Inc.
Project/Site: 11(e) Byproduct Material

Job ID: 280-160713-1

## Method: 624.1 - Volatile Organic Compounds (GC/MS)

**Client Sample ID: C22040142-001**
**Date Collected: 03/31/22 09:08**
**Date Received: 04/07/22 09:45**

**Lab Sample ID: 280-160713-1**
**Matrix: Water**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | ND | | 1.0 | 0.15 | ug/L | | | 04/13/22 14:53 | 1 |
| Bromoform | ND | | 2.0 | 0.67 | ug/L | | | 04/13/22 14:53 | 1 |
| Chlorodibromomethane | ND | | 1.0 | 0.21 | ug/L | | | 04/13/22 14:53 | 1 |
| **Chloroform** | **99** | | 1.0 | 0.22 | ug/L | | | 04/13/22 14:53 | 1 |
| **Trihalomethanes, Total** | **99** | | 1.0 | 0.15 | ug/L | | | 04/13/22 14:53 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1,2-Dichloroethane-d4 (Surr)* | *98* | | *73 - 122* | | *04/13/22 14:53* | *1* |
| *4-Bromofluorobenzene (Surr)* | *74* | *S1-* | *79 - 119* | | *04/13/22 14:53* | *1* |
| *Toluene-d8 (Surr)* | *100* | | *80 - 120* | | *04/13/22 14:53* | *1* |

**Client Sample ID: C22040142-002**
**Date Collected: 03/31/22 10:42**
**Date Received: 04/07/22 09:45**

**Lab Sample ID: 280-160713-2**
**Matrix: Water**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | ND | | 4.0 | 0.61 | ug/L | | | 04/13/22 15:14 | 4 |
| Bromoform | ND | | 8.0 | 2.7 | ug/L | | | 04/13/22 15:14 | 4 |
| Chlorodibromomethane | ND | | 4.0 | 0.86 | ug/L | | | 04/13/22 15:14 | 4 |
| **Chloroform** | **320** | | 4.0 | 0.88 | ug/L | | | 04/13/22 15:14 | 4 |
| **Trihalomethanes, Total** | **320** | | 4.0 | 0.61 | ug/L | | | 04/13/22 15:14 | 4 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1,2-Dichloroethane-d4 (Surr)* | *90* | | *73 - 122* | | *04/13/22 15:14* | *4* |
| *4-Bromofluorobenzene (Surr)* | *96* | | *79 - 119* | | *04/13/22 15:14* | *4* |
| *Toluene-d8 (Surr)* | *99* | | *80 - 120* | | *04/13/22 15:14* | *4* |

**Client Sample ID: C22040142-003**
**Date Collected: 03/31/22 11:46**
**Date Received: 04/07/22 09:45**

**Lab Sample ID: 280-160713-3**
**Matrix: Water**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | ND | | 1.0 | 0.15 | ug/L | | | 04/13/22 15:36 | 1 |
| Bromoform | ND | | 2.0 | 0.67 | ug/L | | | 04/13/22 15:36 | 1 |
| Chlorodibromomethane | ND | | 1.0 | 0.21 | ug/L | | | 04/13/22 15:36 | 1 |
| **Chloroform** | **9.4** | | 1.0 | 0.22 | ug/L | | | 04/13/22 15:36 | 1 |
| **Trihalomethanes, Total** | **9.4** | | 1.0 | 0.15 | ug/L | | | 04/13/22 15:36 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1,2-Dichloroethane-d4 (Surr)* | *90* | | *73 - 122* | | *04/13/22 15:36* | *1* |
| *4-Bromofluorobenzene (Surr)* | *99* | | *79 - 119* | | *04/13/22 15:36* | *1* |
| *Toluene-d8 (Surr)* | *100* | | *80 - 120* | | *04/13/22 15:36* | *1* |

**Client Sample ID: C22040142-004**
**Date Collected: 03/31/22 12:40**
**Date Received: 04/07/22 09:45**

**Lab Sample ID: 280-160713-4**
**Matrix: Water**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | ND | | 1.0 | 0.15 | ug/L | | | 04/13/22 15:58 | 1 |
| Bromoform | ND | | 2.0 | 0.67 | ug/L | | | 04/13/22 15:58 | 1 |
| Chlorodibromomethane | ND | | 1.0 | 0.21 | ug/L | | | 04/13/22 15:58 | 1 |
| **Chloroform** | **0.63** | **J** | 1.0 | 0.22 | ug/L | | | 04/13/22 15:58 | |
| **Trihalomethanes, Total** | **0.63** | **J** | 1.0 | 0.15 | ug/L | | | 04/13/22 15:58 | 1 |

## Method: 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

| Surrogate | %Recovery | Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|
| 1,2-Dichloroethane-d4 (Surr) | 98 | | 73 - 122 | | 04/13/22 15:58 | 1 |
| 4-Bromofluorobenzene (Surr) | 96 | | 79 - 119 | | 04/13/22 15:58 | 1 |
| Toluene-d8 (Surr) | 99 | | 80 - 120 | | 04/13/22 15:58 | 1 |

**Client Sample ID: C22040142-005** **Lab Sample ID: 280-160713-5**
**Date Collected: 03/31/22 13:31** **Matrix: Water**
**Date Received: 04/07/22 09:45**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | ND | | 1.0 | 0.15 | ug/L | | | 04/13/22 16:19 | 1 |
| Bromoform | ND | | 2.0 | 0.67 | ug/L | | | 04/13/22 16:19 | 1 |
| Chlorodibromomethane | ND | | 1.0 | 0.21 | ug/L | | | 04/13/22 16:19 | 1 |
| **Chloroform** | **39** | | 1.0 | 0.22 | ug/L | | | 04/13/22 16:19 | 1 |
| **Trihalomethanes, Total** | **39** | | 1.0 | 0.15 | ug/L | | | 04/13/22 16:19 | 1 |

| Surrogate | %Recovery | Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|
| 1,2-Dichloroethane-d4 (Surr) | 92 | | 73 - 122 | | 04/13/22 16:19 | 1 |
| 4-Bromofluorobenzene (Surr) | 89 | | 79 - 119 | | 04/13/22 16:19 | 1 |
| Toluene-d8 (Surr) | 96 | | 80 - 120 | | 04/13/22 16:19 | 1 |

**Client Sample ID: C22040142-006** **Lab Sample ID: 280-160713-6**
**Date Collected: 03/31/22 14:13** **Matrix: Water**
**Date Received: 04/07/22 09:45**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | ND | | 1.0 | 0.15 | ug/L | | | 04/13/22 16:41 | 1 |
| Bromoform | ND | | 2.0 | 0.67 | ug/L | | | 04/13/22 16:41 | 1 |
| Chlorodibromomethane | ND | | 1.0 | 0.21 | ug/L | | | 04/13/22 16:41 | 1 |
| **Chloroform** | **0.73** | **J** | 1.0 | 0.22 | ug/L | | | 04/13/22 16:41 | 1 |
| **Trihalomethanes, Total** | **0.73** | **J** | 1.0 | 0.15 | ug/L | | | 04/13/22 16:41 | 1 |

| Surrogate | %Recovery | Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|
| 1,2-Dichloroethane-d4 (Surr) | 91 | | 73 - 122 | | 04/13/22 16:41 | 1 |
| 4-Bromofluorobenzene (Surr) | 94 | | 79 - 119 | | 04/13/22 16:41 | 1 |
| Toluene-d8 (Surr) | 100 | | 80 - 120 | | 04/13/22 16:41 | 1 |

**Client Sample ID: C22040142-007** **Lab Sample ID: 280-160713-7**
**Date Collected: 04/01/22 09:22** **Matrix: Water**
**Date Received: 04/07/22 09:45**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | ND | | 1.0 | 0.15 | ug/L | | | 04/13/22 17:02 | 1 |
| Bromoform | ND | | 2.0 | 0.67 | ug/L | | | 04/13/22 17:02 | 1 |
| Chlorodibromomethane | ND | | 1.0 | 0.21 | ug/L | | | 04/13/22 17:02 | 1 |
| Chloroform | ND | | 1.0 | 0.22 | ug/L | | | 04/13/22 17:02 | 1 |
| Trihalomethanes, Total | ND | | 1.0 | 0.15 | ug/L | | | 04/13/22 17:02 | 1 |

| Surrogate | %Recovery | Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|
| 1,2-Dichloroethane-d4 (Surr) | 109 | | 73 - 122 | | 04/13/22 17:02 | 1 |
| 4-Bromofluorobenzene (Surr) | 95 | | 79 - 119 | | 04/13/22 17:02 | 1 |
| Toluene-d8 (Surr) | 80 | | 80 - 120 | | 04/13/22 17:02 | 1 |

**Client Sample ID: C22040142-008** **Lab Sample ID: 280-160713-8**
**Date Collected: 04/01/22 10:13** **Matrix: Water**
**Date Received: 04/07/22 09:45**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | ND | | 1.0 | 0.15 | ug/L | | | 04/14/22 03:05 | 1 |

## Method: 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

**Client Sample ID: C22040142-008** — **Lab Sample ID: 280-160713-8**
**Date Collected: 04/01/22 10:13** — **Matrix: Water**
**Date Received: 04/07/22 09:45**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Bromoform | ND | | 2.0 | 0.67 | ug/L | | | 04/14/22 03:05 | 1 |
| Chlorodibromomethane | ND | | 1.0 | 0.21 | ug/L | | | 04/14/22 03:05 | 1 |
| **Chloroform** | **0.55** | **J** | 1.0 | 0.22 | ug/L | | | 04/14/22 03:05 | 1 |
| **Trihalomethanes, Total** | **0.55** | **J** | 1.0 | 0.15 | ug/L | | | 04/14/22 03:05 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1,2-Dichloroethane-d4 (Surr)* | *103* | | *73 - 122* | | *04/14/22 03:05* | *1* |
| *4-Bromofluorobenzene (Surr)* | *98* | | *79 - 119* | | *04/14/22 03:05* | *1* |
| *Toluene-d8 (Surr)* | *98* | | *80 - 120* | | *04/14/22 03:05* | *1* |

**Client Sample ID: C22040142-009** — **Lab Sample ID: 280-160713-9**
**Date Collected: 04/01/22 10:52** — **Matrix: Water**
**Date Received: 04/07/22 09:45**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | ND | | 1.0 | 0.15 | ug/L | | | 04/14/22 03:26 | 1 |
| Bromoform | ND | | 2.0 | 0.67 | ug/L | | | 04/14/22 03:26 | 1 |
| Chlorodibromomethane | ND | | 1.0 | 0.21 | ug/L | | | 04/14/22 03:26 | 1 |
| Chloroform | ND | | 1.0 | 0.22 | ug/L | | | 04/14/22 03:26 | 1 |
| Trihalomethanes, Total | ND | | 1.0 | 0.15 | ug/L | | | 04/14/22 03:26 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1,2-Dichloroethane-d4 (Surr)* | *102* | | *73 - 122* | | *04/14/22 03:26* | *1* |
| *4-Bromofluorobenzene (Surr)* | *97* | | *79 - 119* | | *04/14/22 03:26* | *1* |
| *Toluene-d8 (Surr)* | *98* | | *80 - 120* | | *04/14/22 03:26* | *1* |

**Client Sample ID: C22040142-010** — **Lab Sample ID: 280-160713-10**
**Date Collected: 04/01/22 11:45** — **Matrix: Water**
**Date Received: 04/07/22 09:45**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | ND | | 1.0 | 0.15 | ug/L | | | 04/14/22 03:47 | 1 |
| Bromoform | ND | | 2.0 | 0.67 | ug/L | | | 04/14/22 03:47 | 1 |
| Chlorodibromomethane | ND | | 1.0 | 0.21 | ug/L | | | 04/14/22 03:47 | 1 |
| Chloroform | ND | | 1.0 | 0.22 | ug/L | | | 04/14/22 03:47 | 1 |
| Trihalomethanes, Total | ND | | 1.0 | 0.15 | ug/L | | | 04/14/22 03:47 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1,2-Dichloroethane-d4 (Surr)* | *105* | | *73 - 122* | | *04/14/22 03:47* | *1* |
| *4-Bromofluorobenzene (Surr)* | *97* | | *79 - 119* | | *04/14/22 03:47* | *1* |
| *Toluene-d8 (Surr)* | *96* | | *80 - 120* | | *04/14/22 03:47* | *1* |

**Client Sample ID: C22040142-011** — **Lab Sample ID: 280-160713-11**
**Date Collected: 04/01/22 13:06** — **Matrix: Water**
**Date Received: 04/07/22 09:45**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | ND | | 1.0 | 0.15 | ug/L | | | 04/14/22 04:09 | 1 |
| Bromoform | ND | | 2.0 | 0.67 | ug/L | | | 04/14/22 04:09 | 1 |
| Chlorodibromomethane | ND | | 1.0 | 0.21 | ug/L | | | 04/14/22 04:09 | 1 |
| Chloroform | ND | | 1.0 | 0.22 | ug/L | | | 04/14/22 04:09 | 1 |
| Trihalomethanes, Total | ND | | 1.0 | 0.15 | ug/L | | | 04/14/22 04:09 | |

## Method: 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

| Surrogate | %Recovery | Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|
| 1,2-Dichloroethane-d4 (Surr) | 105 | | 73 - 122 | | 04/14/22 04:09 | 1 |
| 4-Bromofluorobenzene (Surr) | 98 | | 79 - 119 | | 04/14/22 04:09 | 1 |
| Toluene-d8 (Surr) | 98 | | 80 - 120 | | 04/14/22 04:09 | 1 |

**Client Sample ID: C22040142-012** **Lab Sample ID: 280-160713-12**
**Date Collected: 04/01/22 14:23** **Matrix: Water**
**Date Received: 04/07/22 09:45**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | ND | | 1.0 | 0.15 | ug/L | | | 04/14/22 04:30 | 1 |
| Bromoform | ND | | 2.0 | 0.67 | ug/L | | | 04/14/22 04:30 | 1 |
| Chlorodibromomethane | ND | | 1.0 | 0.21 | ug/L | | | 04/14/22 04:30 | 1 |
| Chloroform | ND | | 1.0 | 0.22 | ug/L | | | 04/14/22 04:30 | 1 |
| Trihalomethanes, Total | ND | | 1.0 | 0.15 | ug/L | | | 04/14/22 04:30 | 1 |

| Surrogate | %Recovery | Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|
| 1,2-Dichloroethane-d4 (Surr) | 105 | | 73 - 122 | | 04/14/22 04:30 | 1 |
| 4-Bromofluorobenzene (Surr) | 98 | | 79 - 119 | | 04/14/22 04:30 | 1 |
| Toluene-d8 (Surr) | 97 | | 80 - 120 | | 04/14/22 04:30 | 1 |

**Client Sample ID: C22040142-013** **Lab Sample ID: 280-160713-13**
**Date Collected: 03/31/22 10:42** **Matrix: Water**
**Date Received: 04/07/22 09:45**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | ND | | 1.0 | 0.15 | ug/L | | | 04/13/22 14:49 | 1 |
| Bromoform | ND | | 2.0 | 0.67 | ug/L | | | 04/13/22 14:49 | 1 |
| Chlorodibromomethane | ND | | 1.0 | 0.21 | ug/L | | | 04/13/22 14:49 | 1 |
| Chloroform | ND | | 1.0 | 0.22 | ug/L | | | 04/13/22 14:49 | 1 |
| Trihalomethanes, Total | ND | | 1.0 | 0.15 | ug/L | | | 04/13/22 14:49 | 1 |

| Surrogate | %Recovery | Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|
| 1,2-Dichloroethane-d4 (Surr) | 103 | | 73 - 122 | | 04/13/22 14:49 | 1 |
| 4-Bromofluorobenzene (Surr) | 98 | | 79 - 119 | | 04/13/22 14:49 | 1 |
| Toluene-d8 (Surr) | 102 | | 80 - 120 | | 04/13/22 14:49 | 1 |

**Client Sample ID: C22040142-014** **Lab Sample ID: 280-160713-14**
**Date Collected: 03/31/22 09:08** **Matrix: Water**
**Date Received: 04/07/22 09:45**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | ND | | 1.0 | 0.15 | ug/L | | | 04/13/22 15:10 | 1 |
| Bromoform | ND | | 2.0 | 0.67 | ug/L | | | 04/13/22 15:10 | 1 |
| Chlorodibromomethane | ND | | 1.0 | 0.21 | ug/L | | | 04/13/22 15:10 | 1 |
| Chloroform | ND | | 1.0 | 0.22 | ug/L | | | 04/13/22 15:10 | 1 |
| Trihalomethanes, Total | ND | | 1.0 | 0.15 | ug/L | | | 04/13/22 15:10 | 1 |

| Surrogate | %Recovery | Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|
| 1,2-Dichloroethane-d4 (Surr) | 102 | | 73 - 122 | | 04/13/22 15:10 | 1 |
| 4-Bromofluorobenzene (Surr) | 97 | | 79 - 119 | | 04/13/22 15:10 | 1 |
| Toluene-d8 (Surr) | 100 | | 80 - 120 | | 04/13/22 15:10 | 1 |

**Client Sample ID: C22040142-015** **Lab Sample ID: 280-160713-15**
**Date Collected: 03/31/22 12:40** **Matrix: Water**
**Date Received: 04/07/22 09:45**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | ND | | 1.0 | 0.15 | ug/L | | | 04/13/22 15:31 | 1 |

## Method: 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

**Client Sample ID: C22040142-015**
**Date Collected: 03/31/22 12:40**
**Date Received: 04/07/22 09:45**

**Lab Sample ID: 280-160713-15**
**Matrix: Water**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Bromoform | ND | | 2.0 | 0.67 | ug/L | | | 04/13/22 15:31 | 1 |
| Chlorodibromomethane | ND | | 1.0 | 0.21 | ug/L | | | 04/13/22 15:31 | 1 |
| Chloroform | ND | | 1.0 | 0.22 | ug/L | | | 04/13/22 15:31 | 1 |
| Trihalomethanes, Total | ND | | 1.0 | 0.15 | ug/L | | | 04/13/22 15:31 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1,2-Dichloroethane-d4 (Surr)* | *104* | | *73 - 122* | | *04/13/22 15:31* | *1* |
| *4-Bromofluorobenzene (Surr)* | *98* | | *79 - 119* | | *04/13/22 15:31* | *1* |
| *Toluene-d8 (Surr)* | *99* | | *80 - 120* | | *04/13/22 15:31* | *1* |

**Client Sample ID: C22040142-016**
**Date Collected: 03/31/22 13:31**
**Date Received: 04/07/22 09:45**

**Lab Sample ID: 280-160713-16**
**Matrix: Water**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | ND | | 1.0 | 0.15 | ug/L | | | 04/13/22 15:52 | 1 |
| Bromoform | ND | | 2.0 | 0.67 | ug/L | | | 04/13/22 15:52 | 1 |
| Chlorodibromomethane | ND | | 1.0 | 0.21 | ug/L | | | 04/13/22 15:52 | 1 |
| Chloroform | ND | | 1.0 | 0.22 | ug/L | | | 04/13/22 15:52 | 1 |
| Trihalomethanes, Total | ND | | 1.0 | 0.15 | ug/L | | | 04/13/22 15:52 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1,2-Dichloroethane-d4 (Surr)* | *103* | | *73 - 122* | | *04/13/22 15:52* | *1* |
| *4-Bromofluorobenzene (Surr)* | *98* | | *79 - 119* | | *04/13/22 15:52* | *1* |
| *Toluene-d8 (Surr)* | *100* | | *80 - 120* | | *04/13/22 15:52* | *1* |

# Surrogate Summary

Client: Energy Laboratories, Inc.
Project/Site: 11(e) Byproduct Material

Job ID: 280-160713-1

## Method: 624.1 - Volatile Organic Compounds (GC/MS)

**Matrix: Water**

**Prep Type: Total/NA**

| | | Percent Surrogate Recovery (Acceptance Limits) | | |
|---|---|---|---|---|
| | | DCA | BFB | TOL |
| **Lab Sample ID** | **Client Sample ID** | **(73-122)** | **(79-119)** | **(80-120)** |
| 280-160457-D-1 MS | Matrix Spike | 95 | 100 | 100 |
| 280-160457-D-1 MSD | Matrix Spike Duplicate | 99 | 98 | 99 |
| 280-160713-1 | C22040142-001 | 98 | 74 S1- | 100 |
| 280-160713-2 | C22040142-002 | 90 | 96 | 99 |
| 280-160713-3 | C22040142-003 | 90 | 99 | 100 |
| 280-160713-4 | C22040142-004 | 98 | 96 | 99 |
| 280-160713-5 | C22040142-005 | 92 | 89 | 96 |
| 280-160713-6 | C22040142-006 | 91 | 94 | 100 |
| 280-160713-7 | C22040142-007 | 109 | 95 | 80 |
| 280-160713-8 | C22040142-008 | 103 | 98 | 98 |
| 280-160713-9 | C22040142-009 | 102 | 97 | 98 |
| 280-160713-10 | C22040142-010 | 105 | 97 | 96 |
| 280-160713-11 | C22040142-011 | 105 | 98 | 98 |
| 280-160713-12 | C22040142-012 | 105 | 98 | 97 |
| 280-160713-13 | C22040142-013 | 103 | 98 | 102 |
| 280-160713-14 | C22040142-014 | 102 | 97 | 100 |
| 280-160713-15 | C22040142-015 | 104 | 98 | 99 |
| 280-160713-16 | C22040142-016 | 103 | 98 | 100 |
| LCS 280-571683/6 | Lab Control Sample | 87 | 94 | 100 |
| LCS 280-571685/1002 | Lab Control Sample | 97 | 97 | 102 |
| LCS 280-571802/1002 | Lab Control Sample | 99 | 100 | 101 |
| LCSD 280-571683/7 | Lab Control Sample Dup | 89 | 96 | 99 |
| LCSD 280-571685/4 | Lab Control Sample Dup | 94 | 101 | 99 |
| LCSD 280-571802/4 | Lab Control Sample Dup | 98 | 99 | 101 |
| MB 280-571683/11 | Method Blank | 108 | 101 | 99 |
| MB 280-571685/7 | Method Blank | 101 | 98 | 98 |
| MB 280-571802/7 | Method Blank | 102 | 99 | 99 |

**Surrogate Legend**

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
TOL = Toluene-d8 (Surr)

# QC Sample Results

Client: Energy Laboratories, Inc.
Project/Site: 11(e) Byproduct Material

Job ID: 280-160713-1

## Method: 624.1 - Volatile Organic Compounds (GC/MS)

**Lab Sample ID: MB 280-571683/11**
**Matrix: Water**
**Analysis Batch: 571683**

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

| Analyte | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | ND | | 1.0 | 0.15 | ug/L | | | 04/13/22 09:50 | 1 |
| Bromoform | ND | | 2.0 | 0.67 | ug/L | | | 04/13/22 09:50 | 1 |
| Chlorodibromomethane | ND | | 1.0 | 0.21 | ug/L | | | 04/13/22 09:50 | 1 |
| Chloroform | ND | | 1.0 | 0.22 | ug/L | | | 04/13/22 09:50 | 1 |
| Trihalomethanes, Total | ND | | 1.0 | 0.15 | ug/L | | | 04/13/22 09:50 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1,2-Dichloroethane-d4 (Surr)* | *108* | | *73 - 122* | | *04/13/22 09:50* | *1* |
| *4-Bromofluorobenzene (Surr)* | *101* | | *79 - 119* | | *04/13/22 09:50* | *1* |
| *Toluene-d8 (Surr)* | *99* | | *80 - 120* | | *04/13/22 09:50* | *1* |

**Lab Sample ID: LCS 280-571683/6**
**Matrix: Water**
**Analysis Batch: 571683**

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

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits |
|---|---|---|---|---|---|---|---|
| Bromodichloromethane | 25.0 | 20.9 | | ug/L | | 84 | 65 - 135 |
| Bromoform | 25.0 | 23.3 | | ug/L | | 93 | 70 - 130 |
| Chlorodibromomethane | 25.0 | 22.2 | | ug/L | | 89 | 70 - 135 |
| Chloroform | 25.0 | 20.8 | | ug/L | | 83 | 70 - 135 |

| *Surrogate* | *LCS %Recovery* | *LCS Qualifier* | *Limits* |
|---|---|---|---|
| *1,2-Dichloroethane-d4 (Surr)* | *87* | | *73 - 122* |
| *4-Bromofluorobenzene (Surr)* | *94* | | *79 - 119* |
| *Toluene-d8 (Surr)* | *100* | | *80 - 120* |

**Lab Sample ID: LCSD 280-571683/7**
**Matrix: Water**
**Analysis Batch: 571683**

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

| Analyte | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | 25.0 | 21.1 | | ug/L | | 84 | 65 - 135 | 1 | 30 |
| Bromoform | 25.0 | 23.3 | | ug/L | | 93 | 70 - 130 | 0 | 30 |
| Chlorodibromomethane | 25.0 | 22.6 | | ug/L | | 90 | 70 - 135 | 2 | 30 |
| Chloroform | 25.0 | 20.9 | | ug/L | | 84 | 70 - 135 | 0 | 30 |

| *Surrogate* | *LCSD %Recovery* | *LCSD Qualifier* | *Limits* |
|---|---|---|---|
| *1,2-Dichloroethane-d4 (Surr)* | *89* | | *73 - 122* |
| *4-Bromofluorobenzene (Surr)* | *96* | | *79 - 119* |
| *Toluene-d8 (Surr)* | *99* | | *80 - 120* |

**Lab Sample ID: MB 280-571685/7**
**Matrix: Water**
**Analysis Batch: 571685**

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

| Analyte | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | ND | | 1.0 | 0.15 | ug/L | | | 04/13/22 08:51 | 1 |
| Bromoform | ND | | 2.0 | 0.67 | ug/L | | | 04/13/22 08:51 | 1 |

## Method: 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: MB 280-571685/7**
**Matrix: Water**
**Analysis Batch: 571685**

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

| Analyte | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Chlorodibromomethane | ND | | 1.0 | 0.21 | ug/L | | | 04/13/22 08:51 | 1 |
| Chloroform | ND | | 1.0 | 0.22 | ug/L | | | 04/13/22 08:51 | 1 |
| Trihalomethanes, Total | ND | | 1.0 | 0.15 | ug/L | | | 04/13/22 08:51 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1,2-Dichloroethane-d4 (Surr)* | *101* | | *73 - 122* | | *04/13/22 08:51* | *1* |
| *4-Bromofluorobenzene (Surr)* | *98* | | *79 - 119* | | *04/13/22 08:51* | *1* |
| *Toluene-d8 (Surr)* | *98* | | *80 - 120* | | *04/13/22 08:51* | *1* |

**Lab Sample ID: LCS 280-571685/1002**
**Matrix: Water**
**Analysis Batch: 571685**

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

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits |
|---|---|---|---|---|---|---|---|
| Bromodichloromethane | 50.0 | 47.0 | | ug/L | | 94 | 65 - 135 |
| Bromoform | 50.0 | 57.1 | | ug/L | | 114 | 70 - 130 |
| Chlorodibromomethane | 50.0 | 52.1 | | ug/L | | 104 | 70 - 135 |
| Chloroform | 50.0 | 46.9 | | ug/L | | 94 | 70 - 135 |

| *Surrogate* | *LCS %Recovery* | *LCS Qualifier* | *Limits* |
|---|---|---|---|
| *1,2-Dichloroethane-d4 (Surr)* | *97* | | *73 - 122* |
| *4-Bromofluorobenzene (Surr)* | *97* | | *79 - 119* |
| *Toluene-d8 (Surr)* | *102* | | *80 - 120* |

**Lab Sample ID: LCSD 280-571685/4**
**Matrix: Water**
**Analysis Batch: 571685**

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

| Analyte | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | 50.0 | 51.4 | | ug/L | | 103 | 65 - 135 | 9 | 30 |
| Bromoform | 50.0 | 61.3 | | ug/L | | 123 | 70 - 130 | 7 | 30 |
| Chlorodibromomethane | 50.0 | 57.1 | | ug/L | | 114 | 70 - 135 | 9 | 30 |
| Chloroform | 50.0 | 50.6 | | ug/L | | 101 | 70 - 135 | 8 | 30 |

| *Surrogate* | *LCSD %Recovery* | *LCSD Qualifier* | *Limits* |
|---|---|---|---|
| *1,2-Dichloroethane-d4 (Surr)* | *94* | | *73 - 122* |
| *4-Bromofluorobenzene (Surr)* | *101* | | *79 - 119* |
| *Toluene-d8 (Surr)* | *99* | | *80 - 120* |

**Lab Sample ID: 280-160457-D-1 MS**
**Matrix: Water**
**Analysis Batch: 571685**

**Client Sample ID: Matrix Spike**
**Prep Type: Total/NA**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec Limits |
|---|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | ND | | 100 | 91.6 | | ug/L | | 92 | 35 - 155 |
| Bromoform | ND | | 100 | 112 | | ug/L | | 112 | 45 - 169 |
| Chlorodibromomethane | ND | | 100 | 105 | | ug/L | | 105 | 53 - 149 |
| Chloroform | ND | | 100 | 106 | | ug/L | | 106 | 51 - 138 |

## Method: 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

| Surrogate | MS %Recovery | MS Qualifier | Limits |
|---|---|---|---|
| 1,2-Dichloroethane-d4 (Surr) | 95 | | 73 - 122 |
| 4-Bromofluorobenzene (Surr) | 100 | | 79 - 119 |
| Toluene-d8 (Surr) | 100 | | 80 - 120 |

**Lab Sample ID: 280-160457-D-1 MSD** — **Client Sample ID: Matrix Spike Duplicate**
**Matrix: Water** — **Prep Type: Total/NA**
**Analysis Batch: 571685**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | ND | | 100 | 100 | | ug/L | | 100 | 35 - 155 | 9 | 30 |
| Bromoform | ND | | 100 | 113 | | ug/L | | 113 | 45 - 169 | 1 | 30 |
| Chlorodibromomethane | ND | | 100 | 105 | | ug/L | | 105 | 53 - 149 | 1 | 30 |
| Chloroform | ND | | 100 | 105 | | ug/L | | 105 | 51 - 138 | 0 | 30 |

| Surrogate | MSD %Recovery | MSD Qualifier | Limits |
|---|---|---|---|
| 1,2-Dichloroethane-d4 (Surr) | 99 | | 73 - 122 |
| 4-Bromofluorobenzene (Surr) | 98 | | 79 - 119 |
| Toluene-d8 (Surr) | 99 | | 80 - 120 |

**Lab Sample ID: MB 280-571802/7** — **Client Sample ID: Method Blank**
**Matrix: Water** — **Prep Type: Total/NA**
**Analysis Batch: 571802**

| Analyte | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | ND | | 1.0 | 0.15 | ug/L | | | 04/13/22 21:47 | 1 |
| Bromoform | ND | | 2.0 | 0.67 | ug/L | | | 04/13/22 21:47 | 1 |
| Chlorodibromomethane | ND | | 1.0 | 0.21 | ug/L | | | 04/13/22 21:47 | 1 |
| Chloroform | ND | | 1.0 | 0.22 | ug/L | | | 04/13/22 21:47 | 1 |
| Trihalomethanes, Total | ND | | 1.0 | 0.15 | ug/L | | | 04/13/22 21:47 | 1 |

| Surrogate | MB %Recovery | MB Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|
| 1,2-Dichloroethane-d4 (Surr) | 102 | | 73 - 122 | | 04/13/22 21:47 | 1 |
| 4-Bromofluorobenzene (Surr) | 99 | | 79 - 119 | | 04/13/22 21:47 | 1 |
| Toluene-d8 (Surr) | 99 | | 80 - 120 | | 04/13/22 21:47 | 1 |

**Lab Sample ID: LCS 280-571802/1002** — **Client Sample ID: Lab Control Sample**
**Matrix: Water** — **Prep Type: Total/NA**
**Analysis Batch: 571802**

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits |
|---|---|---|---|---|---|---|---|
| Bromodichloromethane | 25.0 | 23.6 | | ug/L | | 94 | 65 - 135 |
| Bromoform | 25.0 | 26.2 | | ug/L | | 105 | 70 - 130 |
| Chlorodibromomethane | 25.0 | 25.1 | | ug/L | | 100 | 70 - 135 |
| Chloroform | 25.0 | 23.4 | | ug/L | | 94 | 70 - 135 |

| Surrogate | LCS %Recovery | LCS Qualifier | Limits |
|---|---|---|---|
| 1,2-Dichloroethane-d4 (Surr) | 99 | | 73 - 122 |
| 4-Bromofluorobenzene (Surr) | 100 | | 79 - 119 |
| Toluene-d8 (Surr) | 101 | | 80 - 120 |

# QC Sample Results

Client: Energy Laboratories, Inc.
Project/Site: 11(e) Byproduct Material

Job ID: 280-160713-1

## Method: 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: LCSD 280-571802/4**
**Matrix: Water**
**Analysis Batch: 571802**

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

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | | | 25.0 | 25.6 | | ug/L | | 102 | 65 - 135 | 8 | 30 |
| Bromoform | | | 25.0 | 29.4 | | ug/L | | 118 | 70 - 130 | 12 | 30 |
| Chlorodibromomethane | | | 25.0 | 26.3 | | ug/L | | 105 | 70 - 135 | 5 | 30 |
| Chloroform | | | 25.0 | 25.8 | | ug/L | | 103 | 70 - 135 | 10 | 30 |

| *Surrogate* | *LCSD %Recovery* | *LCSD Qualifier* | *Limits* |
|---|---|---|---|
| *1,2-Dichloroethane-d4 (Surr)* | *98* | | *73 - 122* |
| *4-Bromofluorobenzene (Surr)* | *99* | | *79 - 119* |
| *Toluene-d8 (Surr)* | *101* | | *80 - 120* |

# QC Association Summary

Client: Energy Laboratories, Inc.
Project/Site: 11(e) Byproduct Material

Job ID: 280-160713-1

## GC/MS VOA

### Analysis Batch: 571683

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 280-160713-1 | C22040142-001 | Total/NA | Water | 624.1 | |
| 280-160713-2 | C22040142-002 | Total/NA | Water | 624.1 | |
| 280-160713-3 | C22040142-003 | Total/NA | Water | 624.1 | |
| 280-160713-4 | C22040142-004 | Total/NA | Water | 624.1 | |
| 280-160713-5 | C22040142-005 | Total/NA | Water | 624.1 | |
| 280-160713-6 | C22040142-006 | Total/NA | Water | 624.1 | |
| 280-160713-7 | C22040142-007 | Total/NA | Water | 624.1 | |
| MB 280-571683/11 | Method Blank | Total/NA | Water | 624.1 | |
| LCS 280-571683/6 | Lab Control Sample | Total/NA | Water | 624.1 | |
| LCSD 280-571683/7 | Lab Control Sample Dup | Total/NA | Water | 624.1 | |

### Analysis Batch: 571685

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 280-160713-13 | C22040142-013 | Total/NA | Water | 624.1 | |
| 280-160713-14 | C22040142-014 | Total/NA | Water | 624.1 | |
| 280-160713-15 | C22040142-015 | Total/NA | Water | 624.1 | |
| 280-160713-16 | C22040142-016 | Total/NA | Water | 624.1 | |
| MB 280-571685/7 | Method Blank | Total/NA | Water | 624.1 | |
| LCS 280-571685/1002 | Lab Control Sample | Total/NA | Water | 624.1 | |
| LCSD 280-571685/4 | Lab Control Sample Dup | Total/NA | Water | 624.1 | |
| 280-160457-D-1 MS | Matrix Spike | Total/NA | Water | 624.1 | |
| 280-160457-D-1 MSD | Matrix Spike Duplicate | Total/NA | Water | 624.1 | |

### Analysis Batch: 571802

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 280-160713-8 | C22040142-008 | Total/NA | Water | 624.1 | |
| 280-160713-9 | C22040142-009 | Total/NA | Water | 624.1 | |
| 280-160713-10 | C22040142-010 | Total/NA | Water | 624.1 | |
| 280-160713-11 | C22040142-011 | Total/NA | Water | 624.1 | |
| 280-160713-12 | C22040142-012 | Total/NA | Water | 624.1 | |
| MB 280-571802/7 | Method Blank | Total/NA | Water | 624.1 | |
| LCS 280-571802/1002 | Lab Control Sample | Total/NA | Water | 624.1 | |
| LCSD 280-571802/4 | Lab Control Sample Dup | Total/NA | Water | 624.1 | |

# Lab Chronicle

Client: Energy Laboratories, Inc.
Project/Site: 11(e) Byproduct Material

Job ID: 280-160713-1

## Client Sample ID: C22040142-001 — Lab Sample ID: 280-160713-1

Date Collected: 03/31/22 09:08
Date Received: 04/07/22 09:45
Matrix: Water

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 624.1 | | 1 | 5 mL | 5 mL | 571683 | 04/13/22 14:53 | TAW | TAL DEN |

## Client Sample ID: C22040142-002 — Lab Sample ID: 280-160713-2

Date Collected: 03/31/22 10:42
Date Received: 04/07/22 09:45
Matrix: Water

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 624.1 | | 4 | 5 mL | 5 mL | 571683 | 04/13/22 15:14 | TAW | TAL DEN |

## Client Sample ID: C22040142-003 — Lab Sample ID: 280-160713-3

Date Collected: 03/31/22 11:46
Date Received: 04/07/22 09:45
Matrix: Water

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 624.1 | | 1 | 5 mL | 5 mL | 571683 | 04/13/22 15:36 | TAW | TAL DEN |

## Client Sample ID: C22040142-004 — Lab Sample ID: 280-160713-4

Date Collected: 03/31/22 12:40
Date Received: 04/07/22 09:45
Matrix: Water

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 624.1 | | 1 | 5 mL | 5 mL | 571683 | 04/13/22 15:58 | TAW | TAL DEN |

## Client Sample ID: C22040142-005 — Lab Sample ID: 280-160713-5

Date Collected: 03/31/22 13:31
Date Received: 04/07/22 09:45
Matrix: Water

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 624.1 | | 1 | 5 mL | 5 mL | 571683 | 04/13/22 16:19 | TAW | TAL DEN |

## Client Sample ID: C22040142-006 — Lab Sample ID: 280-160713-6

Date Collected: 03/31/22 14:13
Date Received: 04/07/22 09:45
Matrix: Water

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 624.1 | | 1 | 5 mL | 5 mL | 571683 | 04/13/22 16:41 | TAW | TAL DEN |

## Client Sample ID: C22040142-007 — Lab Sample ID: 280-160713-7

Date Collected: 04/01/22 09:22
Date Received: 04/07/22 09:45
Matrix: Water

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 624.1 | | 1 | 5 mL | 5 mL | 571683 | 04/13/22 17:02 | TAW | TAL DEN |

# Lab Chronicle

Client: Energy Laboratories, Inc.
Project/Site: 11(e) Byproduct Material

Job ID: 280-160713-1

**Client Sample ID: C22040142-008** — **Lab Sample ID: 280-160713-8**
**Date Collected: 04/01/22 10:13** — **Matrix: Water**
**Date Received: 04/07/22 09:45**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 624.1 | | 1 | 5 mL | 5 mL | 571802 | 04/14/22 03:05 | SGB | TAL DEN |

**Client Sample ID: C22040142-009** — **Lab Sample ID: 280-160713-9**
**Date Collected: 04/01/22 10:52** — **Matrix: Water**
**Date Received: 04/07/22 09:45**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 624.1 | | 1 | 5 mL | 5 mL | 571802 | 04/14/22 03:26 | SGB | TAL DEN |

**Client Sample ID: C22040142-010** — **Lab Sample ID: 280-160713-10**
**Date Collected: 04/01/22 11:45** — **Matrix: Water**
**Date Received: 04/07/22 09:45**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 624.1 | | 1 | 5 mL | 5 mL | 571802 | 04/14/22 03:47 | SGB | TAL DEN |

**Client Sample ID: C22040142-011** — **Lab Sample ID: 280-160713-11**
**Date Collected: 04/01/22 13:06** — **Matrix: Water**
**Date Received: 04/07/22 09:45**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 624.1 | | 1 | 5 mL | 5 mL | 571802 | 04/14/22 04:09 | SGB | TAL DEN |

**Client Sample ID: C22040142-012** — **Lab Sample ID: 280-160713-12**
**Date Collected: 04/01/22 14:23** — **Matrix: Water**
**Date Received: 04/07/22 09:45**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 624.1 | | 1 | 5 mL | 5 mL | 571802 | 04/14/22 04:30 | SGB | TAL DEN |

**Client Sample ID: C22040142-013** — **Lab Sample ID: 280-160713-13**
**Date Collected: 03/31/22 10:42** — **Matrix: Water**
**Date Received: 04/07/22 09:45**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 624.1 | | 1 | 5 mL | 5 mL | 571685 | 04/13/22 14:49 | MD | TAL DEN |

**Client Sample ID: C22040142-014** — **Lab Sample ID: 280-160713-14**
**Date Collected: 03/31/22 09:08** — **Matrix: Water**
**Date Received: 04/07/22 09:45**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 624.1 | | 1 | 5 mL | 5 mL | 571685 | 04/13/22 15:10 | MD | TAL DEN |

# Lab Chronicle

Client: Energy Laboratories, Inc.
Project/Site: 11(e) Byproduct Material

Job ID: 280-160713-1

## Client Sample ID: C22040142-015

**Lab Sample ID: 280-160713-15**

**Date Collected: 03/31/22 12:40**
**Date Received: 04/07/22 09:45**

**Matrix: Water**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 624.1 | | 1 | 5 mL | 5 mL | 571685 | 04/13/22 15:31 | MD | TAL DEN |

## Client Sample ID: C22040142-016

**Lab Sample ID: 280-160713-16**

**Date Collected: 03/31/22 13:31**
**Date Received: 04/07/22 09:45**

**Matrix: Water**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 624.1 | | 1 | 5 mL | 5 mL | 571685 | 04/13/22 15:52 | MD | TAL DEN |

**Laboratory References:**

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

# Accreditation/Certification Summary

Client: Energy Laboratories, Inc.
Project/Site: 11(e) Byproduct Material

Job ID: 280-160713-1

## Laboratory: Eurofins Denver

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

| Authority | Program | Identification Number | Expiration Date |
|---|---|---|---|
| A2LA | Dept. of Defense ELAP | 2907.01 | 10-31-23 |
| A2LA | ISO/IEC 17025 | 2907.01 | 10-31-23 |
| Alabama | State Program | 40730 | 09-30-12 * |
| Alaska (UST) | State | 18-001 | 02-08-23 |
| Arizona | State | AZ0713 | 12-20-22 |
| Arkansas DEQ | State | 19-047-0 | 06-01-22 |
| California | State | 2513 | 01-09-23 |
| Connecticut | State | PH-0686 | 09-30-22 |
| Florida | NELAP | E87667-57 | 06-30-22 |
| Georgia | State | 4025-011 | 01-08-23 |
| Illinois | NELAP | 2000172019-1 | 04-30-22 |
| Iowa | State | IA#370 | 12-02-22 |
| Kansas | NELAP | E-10166 | 04-30-22 |
| Kentucky (WW) | State | KY98047 | 12-31-22 |
| Louisiana | NELAP | 30785 | 06-30-14 * |
| Louisiana | NELAP | 30785 | 06-30-22 |
| Minnesota | NELAP | 1788752 | 12-31-22 |
| Nevada | State | CO000262020-1 | 07-31-22 |
| New Hampshire | NELAP | 205319 | 04-29-22 |
| New Jersey | NELAP | 190002 | 06-30-22 |
| North Carolina (WW/SW) | State | 358 | 12-31-22 |
| North Dakota | State | R-034 | 01-09-23 |
| Oklahoma | NELAP | 8614 | 08-31-22 |
| Oregon | NELAP | 4025-011 | 01-08-23 |
| Pennsylvania | NELAP | 013 | 07-31-22 |
| South Carolina | State | 72002001 | 01-08-23 |
| Texas | NELAP | TX104704183-08-TX | 09-30-09 * |
| Texas | NELAP | T104704183-21-19 | 10-01-22 |
| US Fish & Wildlife | US Federal Programs | 058448 | 07-31-22 |
| USDA | US Federal Programs | P330-20-00065 | 03-06-23 |
| Utah | NELAP | QUAN5 | 06-30-13 * |
| Utah | NELAP | CO000262019-11 | 07-31-22 |
| Virginia | NELAP | 10490 | 06-14-22 |
| Washington | State | C583-19 | 08-03-22 |
| West Virginia DEP | State | 354 | 04-30-22 |
| Wisconsin | State | 999615430 | 08-31-22 |
| Wyoming (UST) | A2LA | 2907.01 | 10-31-22 |

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

# ANALYTICAL SUMMARY REPORT

April 29, 2022

United Nuclear Corporation
PO Box 1088
Gallup, NM 87305-1088

Work Order: C22040188 Quote ID: C6117

Project Name: UNC-Zone 3

Energy Laboratories, Inc. Casper WY received the following 3 samples for United Nuclear Corporation on 4/6/2022 for analysis.

| Lab ID | Client Sample ID | Collect Date | Receive Date | Matrix | Test |
|---|---|---|---|---|---|
| C22040188-001 | 517 | 04/04/22 9:28 | 04/06/22 | Aqueous | Metals by ICP/ICPMS, Dissolved<br>Metals by ICP/ICPMS, Total<br>Acidity to pH 8.3<br>Alkalinity to pH 4.5<br>Anion - Cation Balance<br>Anions by Ion Chromatography<br>Nitrogen, Ammonia<br>Nitrogen, Nitrate + Nitrite<br>pH<br>Metals Preparation by EPA 200.2<br>Gross Alpha minus Radon and Uranium, Total<br>Lead 210, Total<br>Radium 226 + Radium 228, Total<br>Radium 226, Total<br>Radium 228, Total<br>Thorium, Isotopic, Total<br>Solids, Total Dissolved<br>Solids, Total Dissolved - Calculated<br>TRACKER SHEET<br>624-Purgeable Organics<br>624-Purgeable Organics |
| C22040188-002 | MW-7 | 04/04/22 12:10 | 04/06/22 | Aqueous | Same As Above |
| C22040188-003 | Trip Blank-81031 | 04/04/22 9:28 | 04/06/22 | Trip Blank | 624-Purgeable Organics<br>624-Purgeable Organics |

The analyses presented in this report were performed by Energy Laboratories, Inc., 2393 Salt Creek Hwy., Casper, WY 82601, unless otherwise noted. Any exceptions or problems with the analyses are noted in the report package. Any issues encountered during sample receipt are documented in the Work Order Receipt Checklist.

The results as reported relate only to the item(s) submitted for testing. This report shall be used or copied only in its entirety. Energy Laboratories, Inc. is not responsible for the consequences arising from the use of a partial report.

If you have any questions regarding these test results, please contact your Project Manager .

Report Approved By:

Ashley Wilson
Project Manager

Digitally signed by Ashley L. Wilson
Date: 2022.05.04 16:49:05 -06:00

**CLIENT:** United Nuclear Corporation
**Project:** UNC-Zone 3
**Work Order:** C22040188

**Report Date:** 04/29/22

# CASE NARRATIVE

Tests associated with analyst identified as ELI-B were subcontracted to Energy Laboratories, 1120 S. 27th St., Billings, MT, EPA Number MT00005.

Tests associated with analyst identified as "etad" were subcontracted to Eurofins Test America, 4955 Yarrow St, Arvada, CO 80002, TEL (303) 736-0100. Please see attached data packet for details.

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22040188 **Report Date:** 04/14/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: A2310 B** | | | | | | | | | Analytical Run: ACIDITY_220413A | |
| **Lab ID: ICV** | | Initial Calibration Verification Standard | | | | | | | 04/13/22 13:31 | |
| pH | | 6.83 | s.u. | 0.010 | 100 | 98 | 102 | | | |
| **Method: A2310 B** | | | | | | | | | Batch: ACID220413_A | |
| **Lab ID: MBLK** | | Method Blank | | | | Run: ACIDITY_220413A | | | 04/13/22 13:36 | |
| Acidity, Total as CaCO3 | | 2 | mg/L | | | | | | | |
| **Lab ID: LCS** | | Laboratory Control Sample | | | | Run: ACIDITY_220413A | | | 04/13/22 13:46 | |
| Acidity, Total as CaCO3 | | 805 | mg/L | | 103 | 90 | 110 | | | |
| **Lab ID: C22040142-005A DUP** | | Sample Duplicate | | | | Run: ACIDITY_220413A | | | 04/13/22 14:02 | |
| Acidity, Total as CaCO3 | | 3250 | mg/L | | | | | 2.8 | 10 | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22040188 **Report Date:** 04/14/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: A2320 B** | | | | | | | | | Analytical Run: MANTECH_220407B | |
| **Lab ID: ICV** | | Initial Calibration Verification Standard | | | | | | | 04/07/22 13:49 | |
| pH | | 6.87 | s.u. | 0.010 | 100 | 98 | 102 | | | |
| **Method: A2320 B** | | | | | | | | | Batch: R281267 | |
| **Lab ID: MBLK** | | Method Blank | | | | Run: MANTECH_220407B | | | 04/07/22 16:59 | |
| Alkalinity, Total as CaCO3 | | ND | mg/L | 2 | | | | | | |
| **Lab ID: C22040142-011ADUP** | | Sample Duplicate | | | | Run: MANTECH_220407B | | | 04/07/22 17:19 | |
| Alkalinity, Total as CaCO3 | | 40.3 | mg/L | 5.0 | | | | 0.4 | 10 | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22040188 **Report Date:** 04/14/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: A2540 C** | | | | | | | | | Batch: TDS220408A | |
| **Lab ID: MB-1_220408A** | | Method Blank | | | | Run: BAL-111_220408A | | | 04/08/22 14:29 | |
| Solids, Total Dissolved TDS @ 180 C | | ND | mg/L | 10 | | | | | | |
| **Lab ID: LCS-2_220408A** | | Laboratory Control Sample | | | | Run: BAL-111_220408A | | | 04/08/22 14:29 | |
| Solids, Total Dissolved TDS @ 180 C | | 1010 | mg/L | 20 | 101 | 90 | 110 | | | |
| **Lab ID: C22040181-001A DUP** | | Sample Duplicate | | | | Run: BAL-111_220408A | | | 04/08/22 14:30 | |
| Solids, Total Dissolved TDS @ 180 C | | 4000 | mg/L | 39 | | | | 0.6 | 5 | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22040188 **Report Date:** 04/14/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: A4500-H B** | | | | | | | | | Analytical Run: PHSC_101-C_220408A | |
| **Lab ID: 6.86** | 2 | Initial Calibration Verification Standard | | | | | | | 04/08/22 09:31 | |
| pH | | 6.9 | s.u. | 0.1 | 100 | 98 | 102 | | | |
| pH Measurement Temp | | 20.1 | °C | | | 0 | 0 | | | |
| **Method: A4500-H B** | | | | | | | | | Batch: R281257 | |
| **Lab ID: C22040143-001ADUP** | 2 | Sample Duplicate | | | | Run: PHSC_101-C_220408A | | | 04/08/22 10:09 | |
| pH | | 8.4 | s.u. | 0.1 | | | | 0.2 | 1.5 | |
| pH Measurement Temp | | 11.6 | °C | | | | | | | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22040188 **Report Date:** 04/14/22

| Analyte | | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Method:** | **E300.0** | | | | | | | | | Analytical Run: IC3-C_220409A | |
| **Lab ID:** | **ICV** | 2 | Initial Calibration Verification Standard | | | | | | | 04/09/22 12:02 | |
| Chloride | | | 9.88 | mg/L | 1.0 | 99 | 90 | 110 | | | |
| Sulfate | | | 39.7 | mg/L | 1.0 | 99 | 90 | 110 | | | |
| **Method:** | **E300.0** | | | | | | | | | Batch: R281305 | |
| **Lab ID:** | **ICB** | 2 | Method Blank | | | | Run: IC3-C_220409A | | | 04/09/22 12:21 | |
| Chloride | | | ND | mg/L | 0.09 | | | | | | |
| Sulfate | | | ND | mg/L | 0.09 | | | | | | |
| **Lab ID:** | **LFB** | 2 | Laboratory Fortified Blank | | | | Run: IC3-C_220409A | | | 04/09/22 12:40 | |
| Chloride | | | 9.92 | mg/L | 1.0 | 103 | 90 | 110 | | | |
| Sulfate | | | 40.0 | mg/L | 1.0 | 104 | 90 | 110 | | | |
| **Lab ID:** | **C22040181-001AMS** | 2 | Sample Matrix Spike | | | | Run: IC3-C_220409A | | | 04/09/22 22:35 | |
| Chloride | | | 127 | mg/L | 1.0 | 98 | 80 | 120 | | | |
| Sulfate | | | 2840 | mg/L | 4.2 | | 80 | 120 | | | A |
| **Lab ID:** | **C22040181-001AMSD** | 2 | Sample Matrix Spike Duplicate | | | | Run: IC3-C_220409A | | | 04/09/22 22:54 | |
| Chloride | | | 127 | mg/L | 1.0 | 98 | 80 | 120 | 0.2 | 20 | |
| Sulfate | | | 2810 | mg/L | 4.2 | | 80 | 120 | 0.9 | 20 | A |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

A - Analyte level was greater than four times the spike level - in accordance with the method, percent recovery is not calculated

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22040188 **Report Date:** 04/14/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: E350.1** | | | | | | | | | Analytical Run: FIA201-C_220407B | |
| **Lab ID: ICV** | | Initial Calibration Verification Standard | | | | | | | 04/07/22 15:24 | |
| Nitrogen, Ammonia as N | | 1.04 | mg/L | 0.050 | 104 | 90 | 110 | | | |
| **Method: E350.1** | | | | | | | | | Batch: R281240 | |
| **Lab ID: MBLK** | | Method Blank | | | | Run: FIA201-C_220407B | | | 04/07/22 15:23 | |
| Nitrogen, Ammonia as N | | ND | mg/L | 0.03 | | | | | | |
| **Lab ID: LFB** | | Laboratory Fortified Blank | | | | Run: FIA201-C_220407B | | | 04/07/22 15:25 | |
| Nitrogen, Ammonia as N | | 1.01 | mg/L | 0.050 | 102 | 90 | 110 | | | |
| **Lab ID: C22040188-001DMS** | | Sample Matrix Spike | | | | Run: FIA201-C_220407B | | | 04/07/22 16:07 | |
| Nitrogen, Ammonia as N | | 10.7 | mg/L | 0.25 | 102 | 90 | 110 | | | E |
| **Lab ID: C22040188-001DMSD** | | Sample Matrix Spike Duplicate | | | | Run: FIA201-C_220407B | | | 04/07/22 16:08 | |
| Nitrogen, Ammonia as N | | 10.5 | mg/L | 0.25 | 99 | 90 | 110 | 1.4 | 10 | E |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

E - Estimated value - result exceeds the instrument upper quantitation limit

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22040188 **Report Date:** 04/14/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: E353.2** | | | | | | | | | Analytical Run: FIA201-C_220408A | |
| **Lab ID: ICV** | | Initial Calibration Verification Standard | | | | | | | 04/08/22 11:25 | |
| Nitrogen, Nitrate+Nitrite as N | | 1.01 | mg/L | 0.050 | 101 | 90 | 110 | | | |
| **Method: E353.2** | | | | | | | | | Batch: R281264 | |
| **Lab ID: MBLK** | | Method Blank | | | | Run: FIA201-C_220408A | | | 04/08/22 11:27 | |
| Nitrogen, Nitrate+Nitrite as N | | ND | mg/L | 0.01 | | | | | | |
| **Lab ID: LFB** | | Laboratory Fortified Blank | | | | Run: FIA201-C_220408A | | | 04/08/22 11:28 | |
| Nitrogen, Nitrate+Nitrite as N | | 0.976 | mg/L | 0.050 | 99 | 90 | 110 | | | |
| **Lab ID: C22040188-001DMS** | | Sample Matrix Spike | | | | Run: FIA201-C_220408A | | | 04/08/22 11:48 | |
| Nitrogen, Nitrate+Nitrite as N | | 0.860 | mg/L | 0.050 | 84 | 90 | 110 | | | S |
| **Lab ID: C22040188-001DMSD** | | Sample Matrix Spike Duplicate | | | | Run: FIA201-C_220408A | | | 04/08/22 11:49 | |
| Nitrogen, Nitrate+Nitrite as N | | 0.856 | mg/L | 0.050 | 84 | 90 | 110 | 0.4 | 10 | S |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

S - Spike recovery outside of advisory limits

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22040188 **Report Date:** 04/26/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: E200.7** | | | | | | | | | | Batch: 66416 |
| **Lab ID: LCS3-66416** | 2 | Laboratory Control Sample | | | | Run: ICP4-C_220411B | | | | 04/14/22 12:12 |
| Manganese | | 2.67 | mg/L | 0.0010 | 107 | 85 | 115 | | | |
| Nickel | | 0.531 | mg/L | 0.010 | 106 | 85 | 115 | | | |
| **Lab ID: C22040181-001CMS3** | 2 | Sample Matrix Spike | | | | Run: ICP4-C_220411B | | | | 04/14/22 12:45 |
| Manganese | | 4.16 | mg/L | 0.0062 | 91 | 70 | 130 | | | |
| Nickel | | 0.425 | mg/L | 0.12 | 85 | 70 | 130 | | | |
| **Lab ID: C22040181-001CMSD** | 2 | Sample Matrix Spike Duplicate | | | | Run: ICP4-C_220411B | | | | 04/14/22 12:50 |
| Manganese | | 3.99 | mg/L | 0.0062 | 84 | 70 | 130 | 4.2 | 20 | |
| Nickel | | 0.425 | mg/L | 0.12 | 85 | 70 | 130 | 0 | 20 | |
| **Method: E200.7** | | | | | | | | | | Analytical Run: ICP4-C_220418A |
| **Lab ID: QCS** | 2 | Initial Calibration Verification Standard | | | | | | | | 04/19/22 15:06 |
| Manganese | | 3.91 | mg/L | 0.010 | 98 | 95 | 105 | | | |
| Nickel | | 0.764 | mg/L | 0.050 | 96 | 95 | 105 | | | |
| **Method: E200.7** | | | | | | | | | | Batch: 66416 |
| **Lab ID: MB-66416** | 2 | Method Blank | | | | Run: ICP4-C_220418A | | | | 04/19/22 17:30 |
| Manganese | | 0.0008 | mg/L | 0.0008 | | | | | | |
| Nickel | | 0.009 | mg/L | 0.004 | | | | | | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22040188 **Report Date:** 04/26/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: E200.8** | | | | | | | | | Analytical Run: ICPMS5-C_220414A | |
| **Lab ID: QCS** | 3 | Initial Calibration Verification Standard | | | | | | | 04/15/22 18:53 | |
| Magnesium | | 2.62 | mg/L | 0.50 | 105 | 90 | 110 | | | |
| Potassium | | 2.51 | mg/L | 0.50 | 100 | 90 | 110 | | | |
| Sodium | | 2.58 | mg/L | 0.50 | 103 | 90 | 110 | | | |
| **Method: E200.8** | | | | | | | | | Batch: R281497 | |
| **Lab ID: LRB** | 3 | Method Blank | | | | Run: ICPMS5-C_220414A | | | 04/15/22 12:16 | |
| Magnesium | | ND | mg/L | 0.02 | | | | | | |
| Potassium | | ND | mg/L | 0.1 | | | | | | |
| Sodium | | ND | mg/L | 0.3 | | | | | | |
| **Lab ID: LFB** | 3 | Laboratory Fortified Blank | | | | Run: ICPMS5-C_220414A | | | 04/15/22 12:20 | |
| Magnesium | | 47.2 | mg/L | 0.50 | 94 | 85 | 115 | | | |
| Potassium | | 47.5 | mg/L | 0.50 | 95 | 85 | 115 | | | |
| Sodium | | 47.6 | mg/L | 0.50 | 95 | 85 | 115 | | | |
| **Lab ID: C22040188-002BMS** | 3 | Sample Matrix Spike | | | | Run: ICPMS5-C_220414A | | | 04/15/22 22:12 | |
| Magnesium | | 691 | mg/L | 1.0 | 88 | 70 | 130 | | | |
| Potassium | | 240 | mg/L | 1.0 | 92 | 70 | 130 | | | |
| Sodium | | 360 | mg/L | 1.5 | 90 | 70 | 130 | | | |
| **Lab ID: C22040188-002BMSD** | 3 | Sample Matrix Spike Duplicate | | | | Run: ICPMS5-C_220414A | | | 04/15/22 22:17 | |
| Magnesium | | 687 | mg/L | 1.0 | 87 | 70 | 130 | 0.6 | 20 | |
| Potassium | | 239 | mg/L | 1.0 | 92 | 70 | 130 | 0.3 | 20 | |
| Sodium | | 357 | mg/L | 1.5 | 89 | 70 | 130 | 0.8 | 20 | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22040188 **Report Date:** 04/26/22

| Analyte | | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Method:** | **E200.8** | | | | | | | | | Analytical Run: ICPMS5-C_220418A | |
| **Lab ID:** | **QCS** | 2 | Initial Calibration Verification Standard | | | | | | | | 04/18/22 21:26 |
| Calcium | | | 2.41 | mg/L | 0.50 | 96 | 90 | 110 | | | |
| Sodium | | | 2.46 | mg/L | 0.50 | 98 | 90 | 110 | | | |
| **Lab ID:** | **QCS** | 9 | Initial Calibration Verification Standard | | | | | | | | 04/20/22 06:33 |
| Aluminum | | | 0.238 | mg/L | 0.030 | 95 | 90 | 110 | | | |
| Arsenic | | | 0.0485 | mg/L | 0.0010 | 97 | 90 | 110 | | | |
| Beryllium | | | 0.0240 | mg/L | 0.0010 | 96 | 90 | 110 | | | |
| Cadmium | | | 0.0244 | mg/L | 0.0010 | 98 | 90 | 110 | | | |
| Cobalt | | | 0.0481 | mg/L | 0.0050 | 96 | 90 | 110 | | | |
| Lead | | | 0.0468 | mg/L | 0.0010 | 94 | 90 | 110 | | | |
| Selenium | | | 0.0487 | mg/L | 0.0010 | 97 | 90 | 110 | | | |
| Uranium | | | 0.0181 | mg/L | 0.00030 | 91 | 90 | 110 | | | |
| Vanadium | | | 0.0460 | mg/L | 0.010 | 92 | 90 | 110 | | | |
| **Method:** | **E200.8** | | | | | | | | | | Batch: 66416 |
| **Lab ID:** | **MB-66416** | 9 | Method Blank | | | | Run: ICPMS5-C_220418A | | | | 04/20/22 01:27 |
| Aluminum | | | ND | mg/L | 0.02 | | | | | | |
| Arsenic | | | ND | mg/L | 0.0003 | | | | | | |
| Beryllium | | | ND | mg/L | 0.0002 | | | | | | |
| Cadmium | | | ND | mg/L | 0.00002 | | | | | | |
| Cobalt | | | ND | mg/L | 0.0001 | | | | | | |
| Lead | | | ND | mg/L | 0.0001 | | | | | | |
| Selenium | | | ND | mg/L | 0.0001 | | | | | | |
| Uranium | | | ND | mg/L | 0.0003 | | | | | | |
| Vanadium | | | ND | mg/L | 0.003 | | | | | | |
| **Lab ID:** | **LCS3-66416** | 10 | Laboratory Control Sample | | | | Run: ICPMS5-C_220418A | | | | 04/20/22 01:32 |
| Aluminum | | | 2.39 | mg/L | 0.030 | 96 | 85 | 115 | | | |
| Arsenic | | | 0.451 | mg/L | 0.0010 | 90 | 85 | 115 | | | |
| Beryllium | | | 0.245 | mg/L | 0.0010 | 98 | 85 | 115 | | | |
| Cadmium | | | 0.239 | mg/L | 0.0010 | 95 | 85 | 115 | | | |
| Cobalt | | | 0.469 | mg/L | 0.0050 | 94 | 85 | 115 | | | |
| Lead | | | 0.470 | mg/L | 0.0010 | 94 | 85 | 115 | | | |
| Molybdenum | | | 0.444 | mg/L | 0.0010 | 89 | 85 | 115 | | | |
| Selenium | | | 0.457 | mg/L | 0.0010 | 91 | 85 | 115 | | | |
| Uranium | | | 0.467 | mg/L | 0.00030 | 93 | 85 | 115 | | | |
| Vanadium | | | 0.469 | mg/L | 0.010 | 94 | 85 | 115 | | | |
| **Lab ID:** | **C22040181-001CMS3** | 10 | Sample Matrix Spike | | | | Run: ICPMS5-C_220418A | | | | 04/20/22 01:54 |
| Aluminum | | | 2.39 | mg/L | 0.036 | 96 | 70 | 130 | | | |
| Arsenic | | | 0.487 | mg/L | 0.0010 | 97 | 70 | 130 | | | |
| Beryllium | | | 0.236 | mg/L | 0.0010 | 94 | 70 | 130 | | | |
| Cadmium | | | 0.231 | mg/L | 0.0010 | 92 | 70 | 130 | | | |
| Cobalt | | | 0.470 | mg/L | 0.0050 | 94 | 70 | 130 | | | |
| Lead | | | 0.471 | mg/L | 0.0010 | 94 | 70 | 130 | | | |
| Molybdenum | | | 0.459 | mg/L | 0.0010 | 91 | 70 | 130 | | | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22040188 **Report Date:** 04/26/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: E200.8** | | | | | | | | | | Batch: 66416 |
| **Lab ID: C22040181-001CMS3** | 10 | Sample Matrix Spike | | | | Run: ICPMS5-C_220418A | | | | 04/20/22 01:54 |
| Selenium | | 0.505 | mg/L | 0.0010 | 101 | 70 | 130 | | | |
| Uranium | | 0.480 | mg/L | 0.00054 | 96 | 70 | 130 | | | |
| Vanadium | | 0.492 | mg/L | 0.010 | 98 | 70 | 130 | | | |
| **Lab ID: C22040181-001CMSD** | 10 | Sample Matrix Spike Duplicate | | | | Run: ICPMS5-C_220418A | | | | 04/20/22 01:59 |
| Aluminum | | 2.41 | mg/L | 0.036 | 97 | 70 | 130 | 0.8 | 20 | |
| Arsenic | | 0.479 | mg/L | 0.0010 | 95 | 70 | 130 | 1.7 | 20 | |
| Beryllium | | 0.237 | mg/L | 0.0010 | 95 | 70 | 130 | 0.6 | 20 | |
| Cadmium | | 0.226 | mg/L | 0.0010 | 90 | 70 | 130 | 2.3 | 20 | |
| Cobalt | | 0.470 | mg/L | 0.0050 | 94 | 70 | 130 | 0.0 | 20 | |
| Lead | | 0.472 | mg/L | 0.0010 | 94 | 70 | 130 | 0.3 | 20 | |
| Molybdenum | | 0.460 | mg/L | 0.0010 | 92 | 70 | 130 | 0.3 | 20 | |
| Selenium | | 0.496 | mg/L | 0.0010 | 99 | 70 | 130 | 1.6 | 20 | |
| Uranium | | 0.478 | mg/L | 0.00054 | 95 | 70 | 130 | 0.5 | 20 | |
| Vanadium | | 0.484 | mg/L | 0.010 | 97 | 70 | 130 | 1.8 | 20 | |
| **Method: E200.8** | | | | | | | | | | Batch: R281593 |
| **Lab ID: LRB** | 2 | Method Blank | | | | Run: ICPMS5-C_220418A | | | | 04/18/22 21:58 |
| Calcium | | ND | mg/L | 0.3 | | | | | | |
| Sodium | | ND | mg/L | 0.3 | | | | | | |
| **Lab ID: LFB** | 2 | Laboratory Fortified Blank | | | | Run: ICPMS5-C_220418A | | | | 04/18/22 22:03 |
| Calcium | | 48.7 | mg/L | 0.50 | 97 | 85 | 115 | | | |
| Sodium | | 47.4 | mg/L | 0.50 | 95 | 85 | 115 | | | |
| **Lab ID: C22040181-004BMS** | 2 | Sample Matrix Spike | | | | Run: ICPMS5-C_220418A | | | | 04/19/22 02:21 |
| Calcium | | 821 | mg/L | 1.4 | 101 | 70 | 130 | | | |
| Sodium | | 368 | mg/L | 1.5 | 91 | 70 | 130 | | | |
| **Lab ID: C22040181-004BMSD** | 2 | Sample Matrix Spike Duplicate | | | | Run: ICPMS5-C_220418A | | | | 04/19/22 02:26 |
| Calcium | | 803 | mg/L | 1.4 | 94 | 70 | 130 | 2.3 | 20 | |
| Sodium | | 372 | mg/L | 1.5 | 93 | 70 | 130 | 1.2 | 20 | |
| **Method: E200.8** | | | | | | | | | | Analytical Run: ICPMS5-C_220422A |
| **Lab ID: QCS** | 2 | Initial Calibration Verification Standard | | | | | | | | 04/22/22 17:50 |
| Aluminum | | 0.250 | mg/L | 0.030 | 100 | 90 | 110 | | | |
| Molybdenum | | 0.0478 | mg/L | 0.0010 | 96 | 90 | 110 | | | |
| **Method: E200.8** | | | | | | | | | | Batch: 66416 |
| **Lab ID: MB-66416** | 2 | Method Blank | | | | Run: ICPMS5-C_220422A | | | | 04/22/22 22:25 |
| Aluminum | | ND | mg/L | 0.02 | | | | | | |
| Molybdenum | | ND | mg/L | 0.0001 | | | | | | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22040188 **Report Date:** 04/21/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: A7500-U C** | | | | | | | | | | Batch: RA-TH-ISO-3414R |
| **Lab ID: MB-RA-TH-ISO-3414** | 3 | Method Blank | | | | Run: EGG-ORTEC_ALL_220413A | | | 04/18/22 13:49 | |
| Thorium 230 | | 0.9 | pCi/L | | | | | | | |
| Thorium 230 precision (±) | | 0.2 | pCi/L | | | | | | | |
| Thorium 230 MDC | | 0.09 | pCi/L | | | | | | | |
| **Lab ID: LCS-RA-TH-ISO-3414** | 3 | Laboratory Control Sample | | | | Run: EGG-ORTEC_ALL_220413A | | | 04/18/22 13:49 | |
| Thorium 230 | | 27 | pCi/L | | 107 | 70 | 130 | | | |
| Thorium 230 precision (±) | | 5.1 | pCi/L | | | | | | | |
| Thorium 230 MDC | | 0.091 | pCi/L | | | | | | | |
| **Lab ID: C22040188-001EDUP** | 3 | Sample Duplicate | | | | Run: EGG-ORTEC_ALL_220413A | | | 04/18/22 13:49 | |
| Thorium 230 | | 14 | pCi/L | | | | | 7.7 | 30 | |
| Thorium 230 precision (±) | | 2.7 | pCi/L | | | | | | | |
| Thorium 230 MDC | | 0.19 | pCi/L | | | | | | | |

- The RER result is 0.29.

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22040188 **Report Date:** 04/21/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: E900.1** | | | | | | | | | | Batch: GA-1353 |
| **Lab ID: LCS-GA-1353** | 3 | Laboratory Control Sample | | | | Run: G5000W_220412A | | | | 04/15/22 11:08 |
| Gross Alpha minus Rn & U | | 33 | pCi/L | | 97 | 70 | 130 | | | |
| Gross Alpha minus Rn & U Precision (±) | | 6.6 | pCi/L | | | | | | | |
| Gross Alpha minus Rn & U MDC | | 0.99 | pCi/L | | | | | | | |
| **Lab ID: MB-GA-1353** | 3 | Method Blank | | | | Run: G5000W_220412A | | | | 04/15/22 11:08 |
| Gross Alpha minus Rn & U | | 0.2 | pCi/L | | | | | | | U |
| Gross Alpha minus Rn & U Precision (±) | | 0.6 | pCi/L | | | | | | | |
| Gross Alpha minus Rn & U MDC | | 1 | pCi/L | | | | | | | |
| **Lab ID: C22040193-003FDUP** | 3 | Sample Duplicate | | | | Run: G5000W_220412A | | | | 04/15/22 11:08 |
| Gross Alpha minus Rn & U | | 2.9 | pCi/L | | | | | 36 | 30 | R |
| Gross Alpha minus Rn & U Precision (±) | | 1.0 | pCi/L | | | | | | | |
| Gross Alpha minus Rn & U MDC | | 0.99 | pCi/L | | | | | | | |
| - Duplicate RPD is outside of the acceptance range for this analysis. However, the RER is less than the limit of 3, the RER result is 0.66. | | | | | | | | | | |
| **Lab ID: C22040258-004FDUP** | 3 | Sample Duplicate | | | | Run: G5000W_220412A | | | | 04/15/22 15:08 |
| Gross Alpha minus Rn & U | | 6.5 | pCi/L | | | | | 12 | 30 | |
| Gross Alpha minus Rn & U Precision (±) | | 1.6 | pCi/L | | | | | | | |
| Gross Alpha minus Rn & U MDC | | 0.97 | pCi/L | | | | | | | |
| - The RER result is 0.32. | | | | | | | | | | |

**Qualifiers:**

RL - Analyte Reporting Limit

R - Relative Percent Difference (RPD) exceeds advisory limit

ND - Not detected at the Reporting Limit (RL)

U - Not detected at Minimum Detectable Concentration (MDC)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22040188 **Report Date:** 04/21/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: E903.0** | | | | | | | | | | Batch: RA226-10421 |
| **Lab ID: LCS-RA226-10421** | 3 | Laboratory Control Sample | | | | Run: G542M-2_220408A | | | | 04/19/22 18:11 |
| Radium 226 | | 9.3 | pCi/L | | 91 | 70 | 130 | | | |
| Radium 226 precision (±) | | 1.8 | pCi/L | | | | | | | |
| Radium 226 MDC | | 0.22 | pCi/L | | | | | | | |
| **Lab ID: MB-RA226-10421** | 3 | Method Blank | | | | Run: G542M-2_220408A | | | | 04/19/22 18:11 |
| Radium 226 | | 0.1 | pCi/L | | | | | | | U |
| Radium 226 precision (±) | | 0.1 | pCi/L | | | | | | | |
| Radium 226 MDC | | 0.2 | pCi/L | | | | | | | |
| **Lab ID: C22040245-001EDUP** | 3 | Sample Duplicate | | | | Run: G542M-2_220408A | | | | 04/19/22 18:11 |
| Radium 226 | | 38 | pCi/L | | | | | 22 | 30 | |
| Radium 226 precision (±) | | 7.1 | pCi/L | | | | | | | |
| Radium 226 MDC | | 0.27 | pCi/L | | | | | | | |

- The RER result is 0.82.

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

U - Not detected at Minimum Detectable Concentration (MDC)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22040188 **Report Date:** 04/21/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: E909.0** | | | | | | | | | | Batch: PB-210-1385 |
| **Lab ID: LCS-PB-210-1385** | 3 | Laboratory Control Sample | | | | Run: TRICARB LSC_220409A | | | 04/13/22 16:40 | |
| Lead 210 | | 15 | pCi/L | | 90 | 70 | 130 | | | |
| Lead 210 precision (±) | | 4.7 | pCi/L | | | | | | | |
| Lead 210 MDC | | 1.4 | pCi/L | | | | | | | |
| **Lab ID: MB-PB-210-1385** | 3 | Method Blank | | | | Run: TRICARB LSC_220409A | | | 04/13/22 17:48 | |
| Lead 210 | | 0.2 | pCi/L | | | | | | | U |
| Lead 210 precision (±) | | 0.5 | pCi/L | | | | | | | |
| Lead 210 MDC | | 0.9 | pCi/L | | | | | | | |
| **Lab ID: C22040193-003FDUP** | 3 | Sample Duplicate | | | | Run: TRICARB LSC_220409A | | | 04/14/22 04:29 | |
| Lead 210 | | 0.16 | pCi/L | | | | | 69 | 30 | UR |
| Lead 210 precision (±) | | 0.51 | pCi/L | | | | | | | |
| Lead 210 MDC | | 0.85 | pCi/L | | | | | | | |

- Duplicate RPD is outside of the acceptance range for this analysis. However, the RER is less than the limit of 3, the RER result is 0.23.

**Qualifiers:**

RL - Analyte Reporting Limit

R - Relative Percent Difference (RPD) exceeds advisory limit

ND - Not detected at the Reporting Limit (RL)

U - Not detected at Minimum Detectable Concentration (MDC)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22040188 **Report Date:** 04/21/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: RA-05** | | | | | | | | | | Batch: RA228-6767 |
| **Lab ID: LCS-228-RA226-10421** | 3 | Laboratory Control Sample | | | | Run: G542M_220408A | | | | 04/14/22 13:49 |
| Radium 228 | | 7.4 | pCi/L | | 93 | 70 | 130 | | | |
| Radium 228 precision (±) | | 1.6 | pCi/L | | | | | | | |
| Radium 228 MDC | | 1.2 | pCi/L | | | | | | | |
| **Lab ID: MB-RA226-10421** | 3 | Method Blank | | | | Run: G542M_220408A | | | | 04/14/22 13:49 |
| Radium 228 | | 0.5 | pCi/L | | | | | | | U |
| Radium 228 precision (±) | | 0.7 | pCi/L | | | | | | | |
| Radium 228 MDC | | 1 | pCi/L | | | | | | | |
| **Lab ID: C22040245-001EDUP** | 3 | Sample Duplicate | | | | Run: G542M_220408A | | | | 04/14/22 13:49 |
| Radium 228 | | 2.7 | pCi/L | | | | | 18 | 30 | |
| Radium 228 precision (±) | | 1.0 | pCi/L | | | | | | | |
| Radium 228 MDC | | 1.5 | pCi/L | | | | | | | |

- The RER result is 0.33.

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

U - Not detected at Minimum Detectable Concentration (MDC)

eurofins | Environment Testing America

# ANALYTICAL REPORT

Eurofins Denver
4955 Yarrow Street
Arvada, CO 80002
Tel: (303)736-0100

Laboratory Job ID: 280-160792-1
Client Project/Site: 11(e) Byproduct Material

For:
Energy Laboratories, Inc.
400 W Boxelder Rd
Gillette, Wyoming 82718

Attn: Casper Reporting

*Authorized for release by:*
*4/18/2022 10:47:55 AM*

Dylan Bieniulis, Project Manager I
(303)736-0138
Dylan.Bieniulis@et.eurofinsus.com

LINKS
Review your project results through TotalAccess
Have a Question? Ask The Expert
Visit us at: www.eurofinsus.com/Env

*The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.*

*This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.*

*Results relate only to the items tested and the sample(s) as received by the laboratory.*

# Table of Contents

Cover Page . . . . . 1
Table of Contents . . . . . 2
Definitions . . . . . 3
Case Narrative . . . . . 4
Detection Summary . . . . . 5
Method Summary . . . . . 6
Sample Summary . . . . . 7
Client Sample Results . . . . . 8
Surrogate Summary . . . . . 9
QC Sample Results . . . . . 10
QC Association . . . . . 11
Chronicle . . . . . 12
Certification Summary . . . . . 13
Chain of Custody . . . . . 14
Receipt Checklists . . . . . 16

# Definitions/Glossary

Client: Energy Laboratories, Inc.
Project/Site: 11(e) Byproduct Material

Job ID: 280-160792-1

## Glossary

| Abbreviation | These commonly used abbreviations may or may not be present in this report. |
|---|---|
| ¤ | Listed under the "D" column to designate that the result is reported on a dry weight basis |
| %R | Percent Recovery |
| CFL | Contains Free Liquid |
| CFU | Colony Forming Unit |
| CNF | Contains No Free Liquid |
| DER | Duplicate Error Ratio (normalized absolute difference) |
| Dil Fac | Dilution Factor |
| DL | Detection Limit (DoD/DOE) |
| DL, RA, RE, IN | Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample |
| DLC | Decision Level Concentration (Radiochemistry) |
| EDL | Estimated Detection Limit (Dioxin) |
| LOD | Limit of Detection (DoD/DOE) |
| LOQ | Limit of Quantitation (DoD/DOE) |
| MCL | EPA recommended "Maximum Contaminant Level" |
| MDA | Minimum Detectable Activity (Radiochemistry) |
| MDC | Minimum Detectable Concentration (Radiochemistry) |
| MDL | Method Detection Limit |
| ML | Minimum Level (Dioxin) |
| MPN | Most Probable Number |
| MQL | Method Quantitation Limit |
| NC | Not Calculated |
| ND | Not Detected at the reporting limit (or MDL or EDL if shown) |
| NEG | Negative / Absent |
| POS | Positive / Present |
| PQL | Practical Quantitation Limit |
| PRES | Presumptive |
| QC | Quality Control |
| RER | Relative Error Ratio (Radiochemistry) |
| RL | Reporting Limit or Requested Limit (Radiochemistry) |
| RPD | Relative Percent Difference, a measure of the relative difference between two points |
| TEF | Toxicity Equivalent Factor (Dioxin) |
| TEQ | Toxicity Equivalent Quotient (Dioxin) |
| TNTC | Too Numerous To Count |

## Job ID: 280-160792-1

**Laboratory: Eurofins Denver**

**Narrative**

# CASE NARRATIVE

## Client: Energy Laboratories, Inc.

## Project: 11(e) Byproduct Material

## Report Number: 280-160792-1

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

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

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

**RECEIPT**
The samples were received on 04/08/2022; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was 4.3 C.

**VOLATILE ORGANIC COMPOUNDS BY GC/MS**
Samples C22040188-001 (280-160792-1), C22040188-002 (280-160792-2) and C22040188-003 (280-160792-3) were analyzed for Volatile Organic Compounds by GC/MS in accordance with 624.1 40CFR136A. The samples were analyzed on 04/15/2022.

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

# Detection Summary

Client: Energy Laboratories, Inc.
Project/Site: 11(e) Byproduct Material

Job ID: 280-160792-1

## Client Sample ID: C22040188-001 — Lab Sample ID: 280-160792-1

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| Chloroform | 3.4 | | 1.0 | 0.22 | ug/L | 1 | | 624.1 | Total/NA |
| Trihalomethanes, Total | 3.4 | | 1.0 | 0.15 | ug/L | 1 | | 624.1 | Total/NA |

## Client Sample ID: C22040188-002 — Lab Sample ID: 280-160792-2

No Detections.

## Client Sample ID: C22040188-003 — Lab Sample ID: 280-160792-3

No Detections.

This Detection Summary does not include radiochemical test results.

# Method Summary

Client: Energy Laboratories, Inc.
Project/Site: 11(e) Byproduct Material

Job ID: 280-160792-1

| Method | Method Description | Protocol | Laboratory |
|---|---|---|---|
| 624.1 | Volatile Organic Compounds (GC/MS) | 40CFR136A | TAL DEN |

**Protocol References:**

40CFR136A = "Methods for Organic Chemical Analysis of Municipal Industrial Wastewater", 40CFR, Part 136, Appendix A, October 26, 1984 and subsequent revisions.

**Laboratory References:**

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

# Sample Summary

Client: Energy Laboratories, Inc.
Project/Site: 11(e) Byproduct Material

Job ID: 280-160792-1

| Lab Sample ID | Client Sample ID | Matrix | Collected | Received |
|---|---|---|---|---|
| 280-160792-1 | C22040188-001 | Water | 04/04/22 09:28 | 04/08/22 10:00 |
| 280-160792-2 | C22040188-002 | Water | 04/04/22 12:10 | 04/08/22 10:00 |
| 280-160792-3 | C22040188-003 | Water | 04/04/22 09:28 | 04/08/22 10:00 |

# Client Sample Results

Client: Energy Laboratories, Inc.
Project/Site: 11(e) Byproduct Material

Job ID: 280-160792-1

## Method: 624.1 - Volatile Organic Compounds (GC/MS)

**Client Sample ID: C22040188-001**
**Date Collected: 04/04/22 09:28**
**Date Received: 04/08/22 10:00**

**Lab Sample ID: 280-160792-1**
**Matrix: Water**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | ND | | 1.0 | 0.15 | ug/L | | | 04/15/22 21:34 | 1 |
| Bromoform | ND | | 2.0 | 0.67 | ug/L | | | 04/15/22 21:34 | 1 |
| Chlorodibromomethane | ND | | 1.0 | 0.21 | ug/L | | | 04/15/22 21:34 | 1 |
| **Chloroform** | **3.4** | | 1.0 | 0.22 | ug/L | | | 04/15/22 21:34 | 1 |
| **Trihalomethanes, Total** | **3.4** | | 1.0 | 0.15 | ug/L | | | 04/15/22 21:34 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1,2-Dichloroethane-d4 (Surr)* | *106* | | *73 - 122* | | *04/15/22 21:34* | *1* |
| *4-Bromofluorobenzene (Surr)* | *101* | | *79 - 119* | | *04/15/22 21:34* | *1* |
| *Toluene-d8 (Surr)* | *103* | | *80 - 120* | | *04/15/22 21:34* | *1* |

**Client Sample ID: C22040188-002**
**Date Collected: 04/04/22 12:10**
**Date Received: 04/08/22 10:00**

**Lab Sample ID: 280-160792-2**
**Matrix: Water**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | ND | | 1.0 | 0.15 | ug/L | | | 04/15/22 21:55 | 1 |
| Bromoform | ND | | 2.0 | 0.67 | ug/L | | | 04/15/22 21:55 | 1 |
| Chlorodibromomethane | ND | | 1.0 | 0.21 | ug/L | | | 04/15/22 21:55 | 1 |
| Chloroform | ND | | 1.0 | 0.22 | ug/L | | | 04/15/22 21:55 | 1 |
| Trihalomethanes, Total | ND | | 1.0 | 0.15 | ug/L | | | 04/15/22 21:55 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1,2-Dichloroethane-d4 (Surr)* | *108* | | *73 - 122* | | *04/15/22 21:55* | *1* |
| *4-Bromofluorobenzene (Surr)* | *104* | | *79 - 119* | | *04/15/22 21:55* | *1* |
| *Toluene-d8 (Surr)* | *104* | | *80 - 120* | | *04/15/22 21:55* | *1* |

**Client Sample ID: C22040188-003**
**Date Collected: 04/04/22 09:28**
**Date Received: 04/08/22 10:00**

**Lab Sample ID: 280-160792-3**
**Matrix: Water**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | ND | | 1.0 | 0.15 | ug/L | | | 04/15/22 19:47 | 1 |
| Bromoform | ND | | 2.0 | 0.67 | ug/L | | | 04/15/22 19:47 | 1 |
| Chlorodibromomethane | ND | | 1.0 | 0.21 | ug/L | | | 04/15/22 19:47 | 1 |
| Chloroform | ND | | 1.0 | 0.22 | ug/L | | | 04/15/22 19:47 | 1 |
| Trihalomethanes, Total | ND | | 1.0 | 0.15 | ug/L | | | 04/15/22 19:47 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1,2-Dichloroethane-d4 (Surr)* | *104* | | *73 - 122* | | *04/15/22 19:47* | *1* |
| *4-Bromofluorobenzene (Surr)* | *102* | | *79 - 119* | | *04/15/22 19:47* | *1* |
| *Toluene-d8 (Surr)* | *104* | | *80 - 120* | | *04/15/22 19:47* | *1* |

# Surrogate Summary

Client: Energy Laboratories, Inc.
Project/Site: 11(e) Byproduct Material

Job ID: 280-160792-1

## Method: 624.1 - Volatile Organic Compounds (GC/MS)

**Matrix: Water**

**Prep Type: Total/NA**

| | | Percent Surrogate Recovery (Acceptance Limits) | | |
|---|---|---|---|---|
| | | DCA | BFB | TOL |
| **Lab Sample ID** | **Client Sample ID** | **(73-122)** | **(79-119)** | **(80-120)** |
| 280-160792-1 | C22040188-001 | 106 | 101 | 103 |
| 280-160792-2 | C22040188-002 | 108 | 104 | 104 |
| 280-160792-3 | C22040188-003 | 104 | 102 | 104 |
| LCS 280-572065/1002 | Lab Control Sample | 101 | 103 | 105 |
| LCSD 280-572065/6 | Lab Control Sample Dup | 98 | 103 | 105 |
| MB 280-572065/10 | Method Blank | 104 | 102 | 104 |

**Surrogate Legend**

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
TOL = Toluene-d8 (Surr)

# QC Sample Results

Client: Energy Laboratories, Inc.
Project/Site: 11(e) Byproduct Material

Job ID: 280-160792-1

## Method: 624.1 - Volatile Organic Compounds (GC/MS)

**Lab Sample ID: MB 280-572065/10**
**Matrix: Water**
**Analysis Batch: 572065**

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

| Analyte | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | ND | | 1.0 | 0.15 | ug/L | | | 04/15/22 19:25 | 1 |
| Bromoform | ND | | 2.0 | 0.67 | ug/L | | | 04/15/22 19:25 | 1 |
| Chlorodibromomethane | ND | | 1.0 | 0.21 | ug/L | | | 04/15/22 19:25 | 1 |
| Chloroform | ND | | 1.0 | 0.22 | ug/L | | | 04/15/22 19:25 | 1 |
| Trihalomethanes, Total | ND | | 1.0 | 0.15 | ug/L | | | 04/15/22 19:25 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1,2-Dichloroethane-d4 (Surr)* | *104* | | *73 - 122* | | *04/15/22 19:25* | *1* |
| *4-Bromofluorobenzene (Surr)* | *102* | | *79 - 119* | | *04/15/22 19:25* | *1* |
| *Toluene-d8 (Surr)* | *104* | | *80 - 120* | | *04/15/22 19:25* | *1* |

**Lab Sample ID: LCS 280-572065/1002**
**Matrix: Water**
**Analysis Batch: 572065**

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

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits |
|---|---|---|---|---|---|---|---|
| Bromodichloromethane | 50.0 | 48.8 | | ug/L | | 98 | 65 - 135 |
| Bromoform | 50.0 | 43.4 | | ug/L | | 87 | 70 - 130 |
| Chlorodibromomethane | 50.0 | 52.0 | | ug/L | | 104 | 70 - 135 |
| Chloroform | 50.0 | 47.6 | | ug/L | | 95 | 70 - 135 |

| *Surrogate* | *LCS %Recovery* | *LCS Qualifier* | *Limits* |
|---|---|---|---|
| *1,2-Dichloroethane-d4 (Surr)* | *101* | | *73 - 122* |
| *4-Bromofluorobenzene (Surr)* | *103* | | *79 - 119* |
| *Toluene-d8 (Surr)* | *105* | | *80 - 120* |

**Lab Sample ID: LCSD 280-572065/6**
**Matrix: Water**
**Analysis Batch: 572065**

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

| Analyte | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | 50.0 | 49.5 | | ug/L | | 99 | 65 - 135 | 1 | 30 |
| Bromoform | 50.0 | 45.1 | | ug/L | | 90 | 70 - 130 | 4 | 30 |
| Chlorodibromomethane | 50.0 | 54.1 | | ug/L | | 108 | 70 - 135 | 4 | 30 |
| Chloroform | 50.0 | 48.9 | | ug/L | | 98 | 70 - 135 | 3 | 30 |

| *Surrogate* | *LCSD %Recovery* | *LCSD Qualifier* | *Limits* |
|---|---|---|---|
| *1,2-Dichloroethane-d4 (Surr)* | *98* | | *73 - 122* |
| *4-Bromofluorobenzene (Surr)* | *103* | | *79 - 119* |
| *Toluene-d8 (Surr)* | *105* | | *80 - 120* |

# QC Association Summary

Client: Energy Laboratories, Inc.
Project/Site: 11(e) Byproduct Material

Job ID: 280-160792-1

## GC/MS VOA

### Analysis Batch: 572065

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 280-160792-1 | C22040188-001 | Total/NA | Water | 624.1 | |
| 280-160792-2 | C22040188-002 | Total/NA | Water | 624.1 | |
| 280-160792-3 | C22040188-003 | Total/NA | Water | 624.1 | |
| MB 280-572065/10 | Method Blank | Total/NA | Water | 624.1 | |
| LCS 280-572065/1002 | Lab Control Sample | Total/NA | Water | 624.1 | |
| LCSD 280-572065/6 | Lab Control Sample Dup | Total/NA | Water | 624.1 | |

# Lab Chronicle

Client: Energy Laboratories, Inc.
Project/Site: 11(e) Byproduct Material

Job ID: 280-160792-1

## Client Sample ID: C22040188-001

**Lab Sample ID: 280-160792-1**

**Date Collected: 04/04/22 09:28**
**Matrix: Water**
**Date Received: 04/08/22 10:00**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 624.1 | | 1 | 5 mL | 5 mL | 572065 | 04/15/22 21:34 | AJP | TAL DEN |

## Client Sample ID: C22040188-002

**Lab Sample ID: 280-160792-2**

**Date Collected: 04/04/22 12:10**
**Matrix: Water**
**Date Received: 04/08/22 10:00**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 624.1 | | 1 | 5 mL | 5 mL | 572065 | 04/15/22 21:55 | AJP | TAL DEN |

## Client Sample ID: C22040188-003

**Lab Sample ID: 280-160792-3**

**Date Collected: 04/04/22 09:28**
**Matrix: Water**
**Date Received: 04/08/22 10:00**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 624.1 | | 1 | 5 mL | 5 mL | 572065 | 04/15/22 19:47 | AJP | TAL DEN |

**Laboratory References:**

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

# Accreditation/Certification Summary

Client: Energy Laboratories, Inc.
Project/Site: 11(e) Byproduct Material

Job ID: 280-160792-1

## Laboratory: Eurofins Denver

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

| Authority | Program | Identification Number | Expiration Date |
|---|---|---|---|
| A2LA | Dept. of Defense ELAP | 2907.01 | 10-31-23 |
| A2LA | ISO/IEC 17025 | 2907.01 | 10-31-23 |
| Alabama | State Program | 40730 | 09-30-12 * |
| Alaska (UST) | State | 18-001 | 02-08-23 |
| Arizona | State | AZ0713 | 12-20-22 |
| Arkansas DEQ | State | 19-047-0 | 06-01-22 |
| California | State | 2513 | 01-09-23 |
| Connecticut | State | PH-0686 | 09-30-22 |
| Florida | NELAP | E87667-57 | 06-30-22 |
| Georgia | State | 4025-011 | 01-08-23 |
| Illinois | NELAP | 2000172019-1 | 04-30-22 |
| Iowa | State | IA#370 | 12-02-22 |
| Kansas | NELAP | E-10166 | 04-30-22 |
| Kentucky (WW) | State | KY98047 | 12-31-22 |
| Louisiana | NELAP | 30785 | 06-30-14 * |
| Louisiana | NELAP | 30785 | 06-30-22 |
| Minnesota | NELAP | 1788752 | 12-31-22 |
| Nevada | State | CO000262020-1 | 07-31-22 |
| New Hampshire | NELAP | 205319 | 04-29-22 |
| New Jersey | NELAP | 190002 | 06-30-22 |
| North Carolina (WW/SW) | State | 358 | 12-31-22 |
| North Dakota | State | R-034 | 01-09-23 |
| Oklahoma | NELAP | 8614 | 08-31-22 |
| Oregon | NELAP | 4025-011 | 01-08-23 |
| Pennsylvania | NELAP | 013 | 07-31-22 |
| South Carolina | State | 72002001 | 01-08-23 |
| Texas | NELAP | TX104704183-08-TX | 09-30-09 * |
| Texas | NELAP | T104704183-21-19 | 10-01-22 |
| US Fish & Wildlife | US Federal Programs | 058448 | 07-31-22 |
| USDA | US Federal Programs | P330-20-00065 | 03-06-23 |
| Utah | NELAP | QUAN5 | 06-30-13 * |
| Utah | NELAP | CO000262019-11 | 07-31-22 |
| Virginia | NELAP | 10490 | 06-14-22 |
| Washington | State | C583-19 | 08-03-22 |
| West Virginia DEP | State | 354 | 04-30-22 |
| Wisconsin | State | 999615430 | 08-31-22 |
| Wyoming (UST) | A2LA | 2907.01 | 10-31-22 |

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

# ANALYTICAL SUMMARY REPORT

June 18, 2022

United Nuclear Corporation
PO Box 1088
Gallup, NM 87305-1088

Work Order: C22040413 Quote ID: C6117

Project Name: UNC-SW Alluvium

Energy Laboratories, Inc. Casper WY received the following 15 samples for United Nuclear Corporation on 4/12/2022 for analysis.

| Lab ID | Client Sample ID | Collect Date | Receive Date | Matrix | Test |
|---|---|---|---|---|---|
| C22040413-001 | 509-D | 04/07/22 9:12 | 04/12/22 | Aqueous | Metals by ICP/ICPMS, Dissolved<br>Metals by ICP/ICPMS, Total<br>Alkalinity to pH 4.5<br>Anion - Cation Balance<br>Anions by Ion Chromatography<br>Nitrogen, Ammonia<br>Nitrogen, Nitrate + Nitrite<br>pH<br>Metals Preparation by EPA 200.2<br>Gross Alpha minus Radon and Uranium, Total<br>Lead 210, Total<br>Radium 226 + Radium 228, Total<br>Radium 226, Total<br>Radium 228, Total<br>Thorium, Isotopic, Total<br>Solids, Total Dissolved<br>Solids, Total Dissolved - Calculated<br>TRACKER SHEET<br>624-Purgeable Organics<br>624-Purgeable Organics |
| C22040413-002 | EPA-23 | 04/07/22 10:35 | 04/12/22 | Aqueous | Same As Above |
| C22040413-003 | 803 | 04/07/22 11:18 | 04/12/22 | Aqueous | Same As Above |
| C22040413-004 | 808 | 04/07/22 12:20 | 04/12/22 | Aqueous | Same As Above |
| C22040413-005 | 802 | 04/07/22 13:05 | 04/12/22 | Aqueous | Same As Above |
| C22040413-006 | 632 | 04/07/22 13:45 | 04/12/22 | Aqueous | Same As Above |
| C22040413-007 | 801 | 04/07/22 14:25 | 04/12/22 | Aqueous | Same As Above |
| C22040413-008 | GW-1 | 04/07/22 15:30 | 04/12/22 | Aqueous | Same As Above |
| C22040413-009 | 624 | 04/08/22 10:35 | 04/12/22 | Aqueous | Same As Above |
| C22040413-010 | EPA-25 | 04/08/22 12:33 | 04/12/22 | Aqueous | Same As Above |
| C22040413-011 | Trip Blank 1-80352; Field Blank, 509-D, 803 | 04/07/22 9:12 | 04/12/22 | Trip Blank | 624-Purgeable Organics<br>624-Purgeable Organics |
| C22040413-012 | Trip Blank 3-80352; 808, 632, EPA-23 | 04/07/22 10:35 | 04/12/22 | Trip Blank | Same As Above |
| C22040413-013 | Trip Blank 4-80352; EPA-28, 801, 802 | 04/07/22 13:05 | 04/12/22 | Trip Blank | Same As Above |
| C22040413-014 | Trip Blank 5-80352; EPA-28 DUP, GW-1, 624 | 04/07/22 15:30 | 04/12/22 | Trip Blank | Same As Above |

# ANALYTICAL SUMMARY REPORT

| | | | | | |
|---|---|---|---|---|---|
| C22040413-015 | Trip Blank 6-81031; Rinsate, 627, EPA-25 | 04/08/22 11:36 | 04/12/22 | Trip Blank | Same As Above |

The analyses presented in this report were performed by Energy Laboratories, Inc., 2393 Salt Creek Hwy., Casper, WY 82601, unless otherwise noted. Any exceptions or problems with the analyses are noted in the report package. Any issues encountered during sample receipt are documented in the Work Order Receipt Checklist.

The results as reported relate only to the item(s) submitted for testing. This report shall be used or copied only in its entirety. Energy Laboratories, Inc. is not responsible for the consequences arising from the use of a partial report.

If you have any questions regarding these test results, please contact your Project Manager .

Report Approved By:

Lisa Bradley
Vice President - Director of Laboratory Operations

Digitally signed by
Lisa Bradley
Date: 2022.06.18 10:33:50 -06:00

**CLIENT:** United Nuclear Corporation
**Project:** UNC-SW Alluvium
**Work Order:** C22040413

**Report Date:** 06/18/22

# CASE NARRATIVE

Tests associated with analyst identified as "etad" were subcontracted to Eurofins Test America, 4955 Yarrow St, Arvada, CO 80002, TEL (303) 736-0100. Please see attached data packet for details.

# Work Order Sample Summary

**CLIENT:** United Nuclear Corporation
**Project:** UNC-SW Alluvium
**Work Order:** C22040413 **Report Date:** 06/18/22

| Lab ID | Client Sample ID | Collection Date | Date Received |
|---|---|---|---|
| C22040413-001 | 509-D | 4/7/2022 9:12:00 AM | 4/12/2022 |
| C22040413-002 | EPA-23 | 4/7/2022 10:35:00 AM | 4/12/2022 |
| C22040413-003 | 803 | 4/7/2022 11:18:00 AM | 4/12/2022 |
| C22040413-004 | 808 | 4/7/2022 12:20:00 PM | 4/12/2022 |
| C22040413-005 | 802 | 4/7/2022 1:05:00 PM | 4/12/2022 |
| C22040413-006 | 632 | 4/7/2022 1:45:00 PM | 4/12/2022 |
| C22040413-007 | 801 | 4/7/2022 2:25:00 PM | 4/12/2022 |
| C22040413-008 | GW-1 | 4/7/2022 3:30:00 PM | 4/12/2022 |
| C22040413-009 | 624 | 4/8/2022 10:35:00 AM | 4/12/2022 |
| C22040413-010 | EPA-25 | 4/8/2022 12:33:00 PM | 4/12/2022 |
| C22040413-011 | Trip Blank 1-80352; Field Blank, 509-D, 80 | 4/7/2022 9:12:00 AM | 4/12/2022 |
| C22040413-012 | Trip Blank 3-80352; 808, 632, EPA-23 | 4/7/2022 10:35:00 AM | 4/12/2022 |
| C22040413-013 | Trip Blank 4-80352; EPA-28, 801, 802 | 4/7/2022 1:05:00 PM | 4/12/2022 |
| C22040413-014 | Trip Blank 5-80352; EPA-28 DUP, GW-1, 6 | 4/7/2022 3:30:00 PM | 4/12/2022 |
| C22040413-015 | Trip Blank 6-81031; Rinsate, 627, EPA-25 | 4/8/2022 11:36:00 AM | 4/12/2022 |

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22040413 **Report Date:** 04/21/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: A2320 B** | | | | | | | | | Analytical Run: MANTECH_220413A | |
| **Lab ID: ICV** | Initial Calibration Verification Standard | | | | | | | | 04/13/22 16:01 | |
| pH | | 6.83 | s.u. | 0.010 | 100 | 98 | 102 | | | |
| **Method: A2320 B** | | | | | | | | | Batch: R281464 | |
| **Lab ID: MBLK** | Method Blank | | | | | Run: MANTECH_220413A | | | 04/13/22 16:10 | |
| Bicarbonate as HCO3 | | ND | mg/L | 2 | | | | | | |
| **Lab ID: MBLK** | Method Blank | | | | | Run: MANTECH_220413A | | | 04/13/22 19:20 | |
| Alkalinity, Total as CaCO3 | | ND | mg/L | 2 | | | | | | |
| **Lab ID: C22040413-009ADUP** | Sample Duplicate | | | | | Run: MANTECH_220413A | | | 04/13/22 21:31 | |
| Alkalinity, Total as CaCO3 | | 1340 | mg/L | 5.0 | | | | 0.2 | 10 | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22040413 **Report Date:** 04/21/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: A2540 C** | | | | | | | | | | Batch: TDS220414A |
| **Lab ID: MB-25_220414A** | | Method Blank | | | | Run: BAL-111_220414A | | | | 04/14/22 12:32 |
| Solids, Total Dissolved TDS @ 180 C | | ND | mg/L | 10 | | | | | | |
| **Lab ID: LCS-26_220414A** | | Laboratory Control Sample | | | | Run: BAL-111_220414A | | | | 04/14/22 12:32 |
| Solids, Total Dissolved TDS @ 180 C | | 1010 | mg/L | 20 | 101 | 90 | 110 | | | |
| **Lab ID: C22040413-002A DUP** | | Sample Duplicate | | | | Run: BAL-111_220414A | | | | 04/14/22 12:33 |
| Solids, Total Dissolved TDS @ 180 C | | 5660 | mg/L | 39 | | | | 0.2 | 5 | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22040413 **Report Date:** 04/21/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: A4500-H B** | | | | | | | | | Analytical Run: PHSC_101-C_220414A | |
| **Lab ID: 6.86** | 2 | Initial Calibration Verification Standard | | | | | | | 04/14/22 10:19 | |
| pH | | 6.9 | s.u. | 0.1 | 100 | 98 | 102 | | | |
| pH Measurement Temp | | 19.5 | °C | | | 0 | 0 | | | |
| **Method: A4500-H B** | | | | | | | | | | Batch: R281467 |
| **Lab ID: C22040413-006ADUP** | 2 | Sample Duplicate | | | | Run: PHSC_101-C_220414A | | | 04/14/22 11:40 | |
| pH | | 6.7 | s.u. | 0.1 | | | | 0.1 | 1.5 | |
| pH Measurement Temp | | 13.0 | °C | | | | | | | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22040413 **Report Date:** 04/21/22

| Analyte | | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Method:** | **E300.0** | | | | | | | | | Analytical Run: IC3-C_220414A | |
| **Lab ID:** | **ICV** | 2 | Initial Calibration Verification Standard | | | | | | | 04/14/22 09:51 | |
| Chloride | | | 9.30 | mg/L | 1.0 | 93 | 90 | 110 | | | |
| Sulfate | | | 37.4 | mg/L | 1.0 | 94 | 90 | 110 | | | |
| **Method:** | **E300.0** | | | | | | | | | Batch: R281553 | |
| **Lab ID:** | **ICB** | 2 | Method Blank | | | | Run: IC3-C_220414A | | | 04/14/22 10:10 | |
| Chloride | | | ND | mg/L | 0.01 | | | | | | |
| Sulfate | | | ND | mg/L | 0.2 | | | | | | |
| **Lab ID:** | **LFB** | 2 | Laboratory Fortified Blank | | | | Run: IC3-C_220414A | | | 04/14/22 10:29 | |
| Chloride | | | 9.26 | mg/L | 1.0 | 96 | 90 | 110 | | | |
| Sulfate | | | 37.3 | mg/L | 1.0 | 97 | 90 | 110 | | | |
| **Lab ID:** | **C22040390-004AMS** | 2 | Sample Matrix Spike | | | | Run: IC3-C_220414A | | | 04/15/22 09:49 | |
| Chloride | | | 9.84 | mg/L | 1.0 | 98 | 80 | 120 | | | |
| Sulfate | | | 39.8 | mg/L | 1.0 | 99 | 80 | 120 | | | |
| **Lab ID:** | **C22040390-004AMSD** | 2 | Sample Matrix Spike Duplicate | | | | Run: IC3-C_220414A | | | 04/15/22 10:08 | |
| Chloride | | | 10.1 | mg/L | 1.0 | 101 | 80 | 120 | 2.7 | 20 | |
| Sulfate | | | 41.2 | mg/L | 1.0 | 102 | 80 | 120 | 3.3 | 20 | |
| **Lab ID:** | **C22040413-009AMS** | 2 | Sample Matrix Spike | | | | Run: IC3-C_220414A | | | 04/15/22 14:18 | |
| Chloride | | | 412 | mg/L | 2.1 | 92 | 80 | 120 | | | |
| Sulfate | | | 3070 | mg/L | 8.3 | 94 | 80 | 120 | | | |
| **Lab ID:** | **C22040413-009AMSD** | 2 | Sample Matrix Spike Duplicate | | | | Run: IC3-C_220414A | | | 04/15/22 14:37 | |
| Chloride | | | 412 | mg/L | 2.1 | 92 | 80 | 120 | 0.1 | 20 | |
| Sulfate | | | 3030 | mg/L | 8.3 | 90 | 80 | 120 | 1.1 | 20 | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22040413 **Report Date:** 04/21/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: E350.1** | | | | | | | | | Analytical Run: FIA201-C_220415A | |
| **Lab ID: ICV** | | Initial Calibration Verification Standard | | | | | | | 04/15/22 11:32 | |
| Nitrogen, Ammonia as N | | 0.996 | mg/L | 0.050 | 100 | 90 | 110 | | | |
| **Method: E350.1** | | | | | | | | | Batch: R281514 | |
| **Lab ID: MBLK** | | Method Blank | | | | Run: FIA201-C_220415A | | | 04/15/22 11:30 | |
| Nitrogen, Ammonia as N | | ND | mg/L | 0.03 | | | | | | |
| **Lab ID: LFB** | | Laboratory Fortified Blank | | | | Run: FIA201-C_220415A | | | 04/15/22 11:33 | |
| Nitrogen, Ammonia as N | | 0.972 | mg/L | 0.050 | 98 | 90 | 110 | | | |
| **Lab ID: C22040390-001DMS** | | Sample Matrix Spike | | | | Run: FIA201-C_220415A | | | 04/15/22 11:35 | |
| Nitrogen, Ammonia as N | | 0.866 | mg/L | 0.050 | 87 | 90 | 110 | | | S |
| **Lab ID: C22040390-001DMSD** | | Sample Matrix Spike Duplicate | | | | Run: FIA201-C_220415A | | | 04/15/22 11:37 | |
| Nitrogen, Ammonia as N | | 0.833 | mg/L | 0.050 | 83 | 90 | 110 | 3.8 | 10 | S |
| **Lab ID: C22040413-006DMS** | | Sample Matrix Spike | | | | Run: FIA201-C_220415A | | | 04/15/22 11:52 | |
| Nitrogen, Ammonia as N | | 0.639 | mg/L | 0.050 | 64 | 90 | 110 | | | S |
| **Lab ID: C22040413-006DMSD** | | Sample Matrix Spike Duplicate | | | | Run: FIA201-C_220415A | | | 04/15/22 11:53 | |
| Nitrogen, Ammonia as N | | 0.629 | mg/L | 0.050 | 63 | 90 | 110 | 1.6 | 10 | S |
| **Lab ID: C22040495-002DMS** | | Sample Matrix Spike | | | | Run: FIA201-C_220415A | | | 04/15/22 12:59 | |
| Nitrogen, Ammonia as N | | 0.825 | mg/L | 0.050 | 83 | 90 | 110 | | | S |
| **Lab ID: C22040495-002DMSD** | | Sample Matrix Spike Duplicate | | | | Run: FIA201-C_220415A | | | 04/15/22 13:00 | |
| Nitrogen, Ammonia as N | | 0.844 | mg/L | 0.050 | 84 | 90 | 110 | 2.3 | 10 | S |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

S - Spike recovery outside of advisory limits

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22040413 **Report Date:** 04/21/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: E353.2** | | | | | | | | | Analytical Run: FIA201-C_220414B | |
| **Lab ID: ICV** | | Initial Calibration Verification Standard | | | | | | | 04/14/22 14:06 | |
| Nitrogen, Nitrate+Nitrite as N | | 1.01 | mg/L | 0.050 | 101 | 90 | 110 | | | |
| **Method: E353.2** | | | | | | | | | Batch: R281476 | |
| **Lab ID: MBLK** | | Method Blank | | | | Run: FIA201-C_220414B | | | 04/14/22 14:07 | |
| Nitrogen, Nitrate+Nitrite as N | | ND | mg/L | 0.01 | | | | | | |
| **Lab ID: LFB** | | Laboratory Fortified Blank | | | | Run: FIA201-C_220414B | | | 04/14/22 14:09 | |
| Nitrogen, Nitrate+Nitrite as N | | 1.00 | mg/L | 0.050 | 101 | 90 | 110 | | | |
| **Lab ID: C22040390-004DMS** | | Sample Matrix Spike | | | | Run: FIA201-C_220414B | | | 04/14/22 14:46 | |
| Nitrogen, Nitrate+Nitrite as N | | 1.09 | mg/L | 0.050 | 109 | 90 | 110 | | | |
| **Lab ID: C22040390-004DMSD** | | Sample Matrix Spike Duplicate | | | | Run: FIA201-C_220414B | | | 04/14/22 14:47 | |
| Nitrogen, Nitrate+Nitrite as N | | 1.05 | mg/L | 0.050 | 105 | 90 | 110 | 3.8 | 10 | |
| **Lab ID: C22040413-009DMS** | | Sample Matrix Spike | | | | Run: FIA201-C_220414B | | | 04/14/22 15:02 | |
| Nitrogen, Nitrate+Nitrite as N | | 125 | mg/L | 1.0 | 103 | 90 | 110 | | | |
| **Lab ID: C22040413-009DMSD** | | Sample Matrix Spike Duplicate | | | | Run: FIA201-C_220414B | | | 04/14/22 15:03 | |
| Nitrogen, Nitrate+Nitrite as N | | 125 | mg/L | 1.0 | 104 | 90 | 110 | 0.4 | 10 | |
| **Lab ID: C22040413-008DMS** | | Sample Matrix Spike | | | | Run: FIA201-C_220414B | | | 04/14/22 17:31 | |
| Nitrogen, Nitrate+Nitrite as N | | 92.7 | mg/L | 0.50 | 77 | 90 | 110 | | | S |
| **Lab ID: C22040413-008DMSD** | | Sample Matrix Spike Duplicate | | | | Run: FIA201-C_220414B | | | 04/14/22 17:32 | |
| Nitrogen, Nitrate+Nitrite as N | | 91.4 | mg/L | 0.50 | 72 | 90 | 110 | 1.4 | 10 | S |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

S - Spike recovery outside of advisory limits

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22040413 **Report Date:** 06/15/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method:** E200.7 | | | | | | | | | Analytical Run: ICP4-C_220506A | |
| **Lab ID:** QCS | | Initial Calibration Verification Standard | | | | | | | 05/06/22 07:12 | |
| Beryllium | | 0.381 | mg/L | 0.010 | 95 | 95 | 105 | | | |
| **Lab ID:** CCV | | Continuing Calibration Verification Standard | | | | | | | 05/06/22 10:43 | |
| Beryllium | | 1.22 | mg/L | 0.010 | 97 | 90 | 110 | | | |
| **Lab ID:** CCV | | Continuing Calibration Verification Standard | | | | | | | 05/06/22 11:44 | |
| Beryllium | | 1.15 | mg/L | 0.010 | 92 | 90 | 110 | | | |
| **Lab ID:** CCV | | Continuing Calibration Verification Standard | | | | | | | 05/06/22 12:20 | |
| Beryllium | | 1.18 | mg/L | 0.010 | 95 | 90 | 110 | | | |
| **Lab ID:** CCV | | Continuing Calibration Verification Standard | | | | | | | 05/06/22 13:21 | |
| Beryllium | | 1.28 | mg/L | 0.010 | 102 | 90 | 110 | | | |
| **Method:** E200.7 | | | | | | | | | | Batch: 66489 |
| **Lab ID:** MB-66489 | | Method Blank | | | | Run: ICP4-C_220506A | | | 05/06/22 11:08 | |
| Beryllium | | ND | mg/L | 0.0002 | | | | | | |
| **Lab ID:** LCS3-66489 | | Laboratory Control Sample | | | | Run: ICP4-C_220506A | | | 05/06/22 11:13 | |
| Beryllium | | 0.248 | mg/L | 0.0010 | 99 | 85 | 115 | | | |
| **Lab ID:** C22040413-005CDIL | | Serial Dilution | | | | Run: ICP4-C_220506A | | | 05/06/22 12:35 | |
| Beryllium | | 0.00475 | mg/L | 0.0047 | | 0 | 0 | | | N |
| **Lab ID:** C22040413-005CMS3 | | Sample Matrix Spike | | | | Run: ICP4-C_220506A | | | 05/06/22 12:40 | |
| Beryllium | | 0.244 | mg/L | 0.0010 | 98 | 70 | 130 | | | |
| **Lab ID:** C22040413-005CMSD | | Sample Matrix Spike Duplicate | | | | Run: ICP4-C_220506A | | | 05/06/22 12:45 | |
| Beryllium | | 0.247 | mg/L | 0.0010 | 99 | 70 | 130 | 1.2 | 20 | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

N - Analyte concentration was not sufficiently high to calculate a Relative Percent Difference (RPD) for the serial dilution test

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22040413 **Report Date:** 06/15/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method:** E200.7 | | | | | | | | | Analytical Run: ICP4-C_220529A | |
| **Lab ID:** QCS | | Initial Calibration Verification Standard | | | | | | | 05/29/22 23:49 | |
| Potassium | | 42.5 | mg/L | 0.50 | 106 | 90 | 110 | | | |
| **Lab ID:** CCV | | Continuing Calibration Verification Standard | | | | | | | 05/30/22 01:10 | |
| Potassium | | 27.4 | mg/L | 0.50 | 109 | 90 | 110 | | | |
| **Lab ID:** CCV | | Continuing Calibration Verification Standard | | | | | | | 05/30/22 02:07 | |
| Potassium | | 27.3 | mg/L | 0.50 | 109 | 90 | 110 | | | |
| **Method:** E200.7 | | | | | | | | | | Batch: R283118 |
| **Lab ID:** LRB | | Method Blank | | | | Run: ICP4-C_220529A | | | 05/29/22 23:25 | |
| Potassium | | ND | mg/L | 0.2 | | | | | | |
| **Lab ID:** LFB | | Laboratory Fortified Blank | | | | Run: ICP4-C_220529A | | | 05/29/22 23:45 | |
| Potassium | | 53.5 | mg/L | 0.50 | 107 | 85 | 115 | | | |
| **Lab ID:** C22040413-008BMS2 | | Sample Matrix Spike | | | | Run: ICP4-C_220529A | | | 05/30/22 01:34 | |
| Potassium | | 582 | mg/L | 2.0 | 114 | 70 | 130 | | | |
| **Lab ID:** C22040413-008BMSD | | Sample Matrix Spike Duplicate | | | | Run: ICP4-C_220529A | | | 05/30/22 01:38 | |
| Potassium | | 572 | mg/L | 2.0 | 112 | 70 | 130 | 1.7 | 20 | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22040413 **Report Date:** 06/15/22

| Analyte | | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Method:** | **E200.7** | | | | | | | | | Analytical Run: ICP4-C_220531A | |
| **Lab ID:** | **QCS** | 2 | Initial Calibration Verification Standard | | | | | | | 05/31/22 09:31 | |
| Calcium | | | 39.9 | mg/L | 0.50 | 100 | 95 | 105 | | | |
| Potassium | | | 39.5 | mg/L | 0.50 | 99 | 95 | 105 | | | |
| **Lab ID:** | **CCV** | 2 | Continuing Calibration Verification Standard | | | | | | | 05/31/22 10:12 | |
| Calcium | | | 25.1 | mg/L | 0.50 | 100 | 90 | 110 | | | |
| Potassium | | | 25.3 | mg/L | 0.50 | 101 | 90 | 110 | | | |
| **Lab ID:** | **CCV** | 2 | Continuing Calibration Verification Standard | | | | | | | 05/31/22 11:02 | |
| Calcium | | | 24.9 | mg/L | 0.50 | 100 | 90 | 110 | | | |
| Potassium | | | 25.3 | mg/L | 0.50 | 101 | 90 | 110 | | | |
| **Method:** | **E200.7** | | | | | | | | | | Batch: R283124 |
| **Lab ID:** | **LRB** | 2 | Method Blank | | | | Run: ICP4-C_220531A | | | 05/31/22 08:10 | |
| Calcium | | | ND | mg/L | 0.1 | | | | | | |
| Potassium | | | ND | mg/L | 0.2 | | | | | | |
| **Lab ID:** | **LFB** | 2 | Laboratory Fortified Blank | | | | Run: ICP4-C_220531A | | | 05/31/22 08:27 | |
| Calcium | | | 48.4 | mg/L | 0.50 | 97 | 85 | 115 | | | |
| Potassium | | | 48.1 | mg/L | 0.50 | 96 | 85 | 115 | | | |
| **Lab ID:** | **C22040436-002CMS2** | 2 | Sample Matrix Spike | | | | Run: ICP4-C_220531A | | | 05/31/22 10:37 | |
| Calcium | | | 286 | mg/L | 0.52 | 107 | 70 | 130 | | | |
| Potassium | | | 277 | mg/L | 0.99 | 110 | 70 | 130 | | | |
| **Lab ID:** | **C22040436-002CMSD** | 2 | Sample Matrix Spike Duplicate | | | | Run: ICP4-C_220531A | | | 05/31/22 10:42 | |
| Calcium | | | 277 | mg/L | 0.52 | 104 | 70 | 130 | 3.0 | 20 | |
| Potassium | | | 265 | mg/L | 0.99 | 105 | 70 | 130 | 4.3 | 20 | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22040413 **Report Date:** 06/15/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: E200.8** | | | | | | | | | Analytical Run: ICPMS5-C_220421A | |
| **Lab ID: QCS** | 3 | Initial Calibration Verification Standard | | | | | | | 04/21/22 16:48 | |
| Calcium | | 2.37 | mg/L | 0.50 | 95 | 90 | 110 | | | |
| Magnesium | | 2.60 | mg/L | 0.50 | 104 | 90 | 110 | | | |
| Sodium | | 2.47 | mg/L | 0.50 | 99 | 90 | 110 | | | |
| **Lab ID: CCV** | 3 | Continuing Calibration Verification Standard | | | | | | | 04/22/22 03:38 | |
| Calcium | | 11.5 | mg/L | 0.50 | 92 | 90 | 110 | | | |
| Magnesium | | 11.6 | mg/L | 0.50 | 93 | 90 | 110 | | | |
| Sodium | | 11.4 | mg/L | 0.50 | 91 | 90 | 110 | | | |
| **Lab ID: CCV** | 3 | Continuing Calibration Verification Standard | | | | | | | 04/22/22 04:54 | |
| Calcium | | 11.6 | mg/L | 0.50 | 93 | 90 | 110 | | | |
| Magnesium | | 12.3 | mg/L | 0.50 | 98 | 90 | 110 | | | |
| Sodium | | 12.0 | mg/L | 0.50 | 96 | 90 | 110 | | | |
| **Lab ID: CCV** | 3 | Continuing Calibration Verification Standard | | | | | | | 04/22/22 06:06 | |
| Calcium | | 11.5 | mg/L | 0.50 | 92 | 90 | 110 | | | |
| Magnesium | | 11.7 | mg/L | 0.50 | 94 | 90 | 110 | | | |
| Sodium | | 12.3 | mg/L | 0.50 | 99 | 90 | 110 | | | |
| **Method: E200.8** | | | | | | | | | | Batch: R281744 |
| **Lab ID: LRB** | 3 | Method Blank | | | | Run: ICPMS5-C_220421A | | | 04/21/22 09:16 | |
| Calcium | | ND | mg/L | 0.3 | | | | | | |
| Magnesium | | ND | mg/L | 0.02 | | | | | | |
| Sodium | | ND | mg/L | 0.3 | | | | | | |
| **Lab ID: LFB** | 3 | Laboratory Fortified Blank | | | | Run: ICPMS5-C_220421A | | | 04/21/22 09:21 | |
| Calcium | | 45.7 | mg/L | 0.50 | 91 | 85 | 115 | | | |
| Magnesium | | 46.4 | mg/L | 0.50 | 93 | 85 | 115 | | | |
| Sodium | | 46.6 | mg/L | 0.50 | 93 | 85 | 115 | | | |
| **Lab ID: C22040413-006BMS** | 3 | Sample Matrix Spike | | | | Run: ICPMS5-C_220421A | | | 04/22/22 04:29 | |
| Calcium | | 1040 | mg/L | 2.7 | 93 | 70 | 130 | | | |
| Magnesium | | 1130 | mg/L | 1.0 | 92 | 70 | 130 | | | |
| Sodium | | 795 | mg/L | 2.9 | 92 | 70 | 130 | | | |
| **Lab ID: C22040413-006BMSD** | 3 | Sample Matrix Spike Duplicate | | | | Run: ICPMS5-C_220421A | | | 04/22/22 04:34 | |
| Calcium | | 1050 | mg/L | 2.7 | 96 | 70 | 130 | 1.2 | 20 | |
| Magnesium | | 1150 | mg/L | 1.0 | 95 | 70 | 130 | 1.4 | 20 | |
| Sodium | | 806 | mg/L | 2.9 | 94 | 70 | 130 | 1.3 | 20 | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22040413 **Report Date:** 06/15/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: E200.8** | | | | | | | | | Analytical Run: ICPMS5-C_220422A | |
| **Lab ID: QCS** | 2 | Initial Calibration Verification Standard | | | | | | | 04/22/22 17:50 | |
| Magnesium | | 2.57 | mg/L | 0.50 | 103 | 90 | 110 | | | |
| Sodium | | 2.57 | mg/L | 0.50 | 103 | 90 | 110 | | | |
| **Lab ID: CCV** | 2 | Continuing Calibration Verification Standard | | | | | | | 04/23/22 01:21 | |
| Magnesium | | 11.6 | mg/L | 0.50 | 93 | 90 | 110 | | | |
| Sodium | | 11.6 | mg/L | 0.50 | 93 | 90 | 110 | | | |
| **Lab ID: CCV** | 2 | Continuing Calibration Verification Standard | | | | | | | 04/23/22 02:25 | |
| Magnesium | | 11.8 | mg/L | 0.50 | 94 | 90 | 110 | | | |
| Sodium | | 11.9 | mg/L | 0.50 | 95 | 90 | 110 | | | |
| **Method: E200.8** | | | | | | | | | | Batch: R281795 |
| **Lab ID: LRB** | 2 | Method Blank | | | | Run: ICPMS5-C_220422A | | | 04/22/22 18:39 | |
| Magnesium | | ND | mg/L | 0.02 | | | | | | |
| Sodium | | ND | mg/L | 0.3 | | | | | | |
| **Lab ID: LFB** | 2 | Laboratory Fortified Blank | | | | Run: ICPMS5-C_220422A | | | 04/22/22 18:44 | |
| Magnesium | | 49.5 | mg/L | 0.50 | 99 | 85 | 115 | | | |
| Sodium | | 49.7 | mg/L | 0.50 | 99 | 85 | 115 | | | |
| **Lab ID: C22040413-004BMS** | 2 | Sample Matrix Spike | | | | Run: ICPMS5-C_220422A | | | 04/23/22 02:53 | |
| Magnesium | | 1150 | mg/L | 1.0 | 85 | 70 | 130 | | | |
| Sodium | | 759 | mg/L | 2.9 | 89 | 70 | 130 | | | |
| **Lab ID: C22040413-004BMSD** | 2 | Sample Matrix Spike Duplicate | | | | Run: ICPMS5-C_220422A | | | 04/23/22 02:58 | |
| Magnesium | | 1130 | mg/L | 1.0 | 82 | 70 | 130 | 1.3 | 20 | |
| Sodium | | 749 | mg/L | 2.9 | 87 | 70 | 130 | 1.3 | 20 | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22040413 **Report Date:** 06/15/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: E200.8** | | | | | | | | | Analytical Run: ICPMS5-C_220425A | |
| **Lab ID: QCS** | 10 | Initial Calibration Verification Standard | | | | | | | 04/25/22 12:00 | |
| Arsenic | | 0.0495 | mg/L | 0.0010 | 99 | 90 | 110 | | | |
| Beryllium | | 0.0242 | mg/L | 0.0010 | 97 | 90 | 110 | | | |
| Cadmium | | 0.0245 | mg/L | 0.0010 | 98 | 90 | 110 | | | |
| Cobalt | | 0.0482 | mg/L | 0.0050 | 96 | 90 | 110 | | | |
| Lead | | 0.0474 | mg/L | 0.0010 | 95 | 90 | 110 | | | |
| Manganese | | 0.242 | mg/L | 0.0010 | 97 | 90 | 110 | | | |
| Molybdenum | | 0.0454 | mg/L | 0.0010 | 91 | 90 | 110 | | | |
| Nickel | | 0.0497 | mg/L | 0.0050 | 99 | 90 | 110 | | | |
| Uranium | | 0.0190 | mg/L | 0.00030 | 95 | 90 | 110 | | | |
| Vanadium | | 0.0471 | mg/L | 0.010 | 94 | 90 | 110 | | | |
| **Lab ID: CCV** | 10 | Continuing Calibration Verification Standard | | | | | | | 04/25/22 14:19 | |
| Arsenic | | 0.0526 | mg/L | 0.0010 | 105 | 90 | 110 | | | |
| Beryllium | | 0.0495 | mg/L | 0.0010 | 99 | 90 | 110 | | | |
| Cadmium | | 0.0535 | mg/L | 0.0010 | 107 | 90 | 110 | | | |
| Cobalt | | 0.0524 | mg/L | 0.0050 | 105 | 90 | 110 | | | |
| Lead | | 0.0526 | mg/L | 0.0010 | 105 | 90 | 110 | | | |
| Manganese | | 0.0522 | mg/L | 0.0010 | 104 | 90 | 110 | | | |
| Molybdenum | | 0.0501 | mg/L | 0.0010 | 100 | 90 | 110 | | | |
| Nickel | | 0.0544 | mg/L | 0.0050 | 109 | 90 | 110 | | | |
| Uranium | | 0.0520 | mg/L | 0.00030 | 104 | 90 | 110 | | | |
| Vanadium | | 0.0527 | mg/L | 0.010 | 105 | 90 | 110 | | | |
| **Lab ID: CCV** | 10 | Continuing Calibration Verification Standard | | | | | | | 04/25/22 15:23 | |
| Arsenic | | 0.0531 | mg/L | 0.0010 | 106 | 90 | 110 | | | |
| Beryllium | | 0.0473 | mg/L | 0.0010 | 95 | 90 | 110 | | | |
| Cadmium | | 0.0544 | mg/L | 0.0010 | 109 | 90 | 110 | | | |
| Cobalt | | 0.0532 | mg/L | 0.0050 | 106 | 90 | 110 | | | |
| Lead | | 0.0537 | mg/L | 0.0010 | 107 | 90 | 110 | | | |
| Manganese | | 0.0511 | mg/L | 0.0010 | 102 | 90 | 110 | | | |
| Molybdenum | | 0.0509 | mg/L | 0.0010 | 102 | 90 | 110 | | | |
| Nickel | | 0.0535 | mg/L | 0.0050 | 107 | 90 | 110 | | | |
| Uranium | | 0.0523 | mg/L | 0.00030 | 105 | 90 | 110 | | | |
| Vanadium | | 0.0521 | mg/L | 0.010 | 104 | 90 | 110 | | | |
| **Method: E200.8** | | | | | | | | | | Batch: 66489 |
| **Lab ID: MB-66489** | 12 | Method Blank | | | | Run: ICPMS5-C_220425A | | | 04/25/22 13:42 | |
| Aluminum | | ND | mg/L | 0.02 | | | | | | |
| Arsenic | | ND | mg/L | 0.0003 | | | | | | |
| Beryllium | | ND | mg/L | 0.0002 | | | | | | |
| Cadmium | | ND | mg/L | 0.00002 | | | | | | |
| Cobalt | | ND | mg/L | 0.0001 | | | | | | |
| Lead | | ND | mg/L | 0.0001 | | | | | | |
| Manganese | | ND | mg/L | 0.0007 | | | | | | |
| Molybdenum | | ND | mg/L | 0.0001 | | | | | | |
| Nickel | | ND | mg/L | 0.0003 | | | | | | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22040413 **Report Date:** 06/15/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: E200.8** | | | | | | | | | | Batch: 66489 |
| **Lab ID: MB-66489** | 12 | Method Blank | | | | Run: ICPMS5-C_220425A | | | | 04/25/22 13:42 |
| Selenium | | ND | mg/L | 0.0001 | | | | | | |
| Uranium | | ND | mg/L | 0.0003 | | | | | | |
| Vanadium | | ND | mg/L | 0.003 | | | | | | |
| **Lab ID: LCS3-66489** | 12 | Laboratory Control Sample | | | | Run: ICPMS5-C_220425A | | | | 04/25/22 13:47 |
| Aluminum | | 2.75 | mg/L | 0.030 | 110 | 85 | 115 | | | |
| Arsenic | | 0.547 | mg/L | 0.0010 | 109 | 85 | 115 | | | |
| Beryllium | | 0.253 | mg/L | 0.0010 | 101 | 85 | 115 | | | |
| Cadmium | | 0.273 | mg/L | 0.0010 | 109 | 85 | 115 | | | |
| Cobalt | | 0.557 | mg/L | 0.0050 | 111 | 85 | 115 | | | |
| Lead | | 0.553 | mg/L | 0.0010 | 111 | 85 | 115 | | | |
| Manganese | | 2.79 | mg/L | 0.0010 | 112 | 85 | 115 | | | |
| Molybdenum | | 0.534 | mg/L | 0.0010 | 107 | 85 | 115 | | | |
| Nickel | | 0.557 | mg/L | 0.0050 | 111 | 85 | 115 | | | |
| Selenium | | 0.541 | mg/L | 0.0010 | 108 | 85 | 115 | | | |
| Uranium | | 0.530 | mg/L | 0.00030 | 106 | 85 | 115 | | | |
| Vanadium | | 0.562 | mg/L | 0.010 | 112 | 85 | 115 | | | |
| **Lab ID: C22040413-005CDIL** | 12 | Serial Dilution | | | | Run: ICPMS5-C_220425A | | | | 04/25/22 15:14 |
| Aluminum | | ND | mg/L | 0.91 | | 0 | 0 | | | |
| Arsenic | | ND | mg/L | 0.014 | | 0 | 0 | | | |
| Beryllium | | ND | mg/L | 0.0094 | | 0 | 0 | | | |
| Cadmium | | ND | mg/L | 0.0050 | | 0 | 0 | | | |
| Cobalt | | ND | mg/L | 0.0050 | | 0 | 0 | | | |
| Lead | | ND | mg/L | 0.0050 | | 0 | 0 | | | |
| Manganese | | 1.59 | mg/L | 0.035 | | 0 | 0 | | | |
| Molybdenum | | ND | mg/L | 0.0054 | | 0 | 0 | | | |
| Nickel | | ND | mg/L | 0.017 | | 0 | 0 | | | |
| Selenium | | ND | mg/L | 0.0073 | | 0 | 0 | | | |
| Uranium | | 0.139 | mg/L | 0.013 | | 0 | 0 | | | |
| Vanadium | | ND | mg/L | 0.065 | | 0 | 0 | | | |
| **Lab ID: C22040413-005CMS3** | 12 | Sample Matrix Spike | | | | Run: ICPMS5-C_220425A | | | | 04/25/22 15:37 |
| Aluminum | | 2.48 | mg/L | 0.18 | 99 | 70 | 130 | | | |
| Arsenic | | 0.545 | mg/L | 0.0028 | 109 | 70 | 130 | | | |
| Beryllium | | 0.232 | mg/L | 0.0019 | 93 | 70 | 130 | | | |
| Cadmium | | 0.266 | mg/L | 0.0010 | 106 | 70 | 130 | | | |
| Cobalt | | 0.531 | mg/L | 0.0050 | 105 | 70 | 130 | | | |
| Lead | | 0.549 | mg/L | 0.0010 | 110 | 70 | 130 | | | |
| Manganese | | 4.04 | mg/L | 0.0070 | 99 | 70 | 130 | | | |
| Molybdenum | | 0.527 | mg/L | 0.0011 | 105 | 70 | 130 | | | |
| Nickel | | 0.544 | mg/L | 0.0050 | 107 | 70 | 130 | | | |
| Selenium | | 0.580 | mg/L | 0.0015 | 116 | 70 | 130 | | | |
| Uranium | | 0.664 | mg/L | 0.0027 | 103 | 70 | 130 | | | |
| Vanadium | | 0.517 | mg/L | 0.013 | 103 | 70 | 130 | | | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22040413 **Report Date:** 06/15/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method:** E200.8 | | | | | | | | | | Batch: 66489 |
| **Lab ID:** C22040413-005CMSD | 12 | Sample Matrix Spike Duplicate | | | | Run: ICPMS5-C_220425A | | | | 04/25/22 15:42 |
| Aluminum | | 2.57 | mg/L | 0.18 | 103 | 70 | 130 | 3.4 | 20 | |
| Arsenic | | 0.579 | mg/L | 0.0028 | 116 | 70 | 130 | 6.0 | 20 | |
| Beryllium | | 0.240 | mg/L | 0.0019 | 96 | 70 | 130 | 3.5 | 20 | |
| Cadmium | | 0.283 | mg/L | 0.0010 | 113 | 70 | 130 | 6.4 | 20 | |
| Cobalt | | 0.540 | mg/L | 0.0050 | 107 | 70 | 130 | 1.8 | 20 | |
| Lead | | 0.556 | mg/L | 0.0010 | 111 | 70 | 130 | 1.3 | 20 | |
| Manganese | | 4.30 | mg/L | 0.0070 | 110 | 70 | 130 | 6.5 | 20 | |
| Molybdenum | | 0.540 | mg/L | 0.0011 | 108 | 70 | 130 | 2.5 | 20 | |
| Nickel | | 0.580 | mg/L | 0.0050 | 114 | 70 | 130 | 6.6 | 20 | |
| Selenium | | 0.620 | mg/L | 0.0015 | 124 | 70 | 130 | 6.7 | 20 | |
| Uranium | | 0.685 | mg/L | 0.0027 | 107 | 70 | 130 | 3.1 | 20 | |
| Vanadium | | 0.572 | mg/L | 0.025 | 114 | 70 | 130 | 10 | 20 | |
| **Method:** E200.8 | | | | | | | | | | Analytical Run: ICPMS5-C_220426A |
| **Lab ID:** QCS | 3 | Initial Calibration Verification Standard | | | | | | | | 04/27/22 02:08 |
| Arsenic | | 0.0505 | mg/L | 0.0010 | 101 | 90 | 110 | | | |
| Lead | | 0.0485 | mg/L | 0.0010 | 97 | 90 | 110 | | | |
| Selenium | | 0.0516 | mg/L | 0.0010 | 103 | 90 | 110 | | | |
| **Lab ID:** CCV | 3 | Continuing Calibration Verification Standard | | | | | | | | 04/27/22 05:12 |
| Arsenic | | 0.0483 | mg/L | 0.0010 | 97 | 90 | 110 | | | |
| Lead | | 0.0476 | mg/L | 0.0010 | 95 | 90 | 110 | | | |
| Selenium | | 0.0508 | mg/L | 0.0010 | 102 | 90 | 110 | | | |
| **Lab ID:** CCV | 3 | Continuing Calibration Verification Standard | | | | | | | | 04/27/22 05:12 |
| Arsenic | | 0.0483 | mg/L | 0.0010 | 97 | 90 | 110 | | | |
| Lead | | 0.0476 | mg/L | 0.0010 | 95 | 90 | 110 | | | |
| Selenium | | 0.0508 | mg/L | 0.0010 | 102 | 90 | 110 | | | |
| **Lab ID:** CCV | 3 | Continuing Calibration Verification Standard | | | | | | | | 04/27/22 06:12 |
| Arsenic | | 0.0458 | mg/L | 0.0010 | 92 | 90 | 110 | | | |
| Lead | | 0.0472 | mg/L | 0.0010 | 94 | 90 | 110 | | | |
| Selenium | | 0.0482 | mg/L | 0.0010 | 96 | 90 | 110 | | | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22040413 **Report Date:** 06/15/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: E200.8** | | | | | | | | | Analytical Run: ICPMS5-C_220428A | |
| **Lab ID: QCS** | 4 | Initial Calibration Verification Standard | | | | | | | 04/28/22 18:09 | |
| Arsenic | | 0.0508 | mg/L | 0.0010 | 102 | 90 | 110 | | | |
| Lead | | 0.0521 | mg/L | 0.0010 | 104 | 90 | 110 | | | |
| Selenium | | 0.0499 | mg/L | 0.0010 | 100 | 90 | 110 | | | |
| Uranium | | 0.0200 | mg/L | 0.00030 | 100 | 90 | 110 | | | |
| **Lab ID: CCV** | 4 | Continuing Calibration Verification Standard | | | | | | | 04/29/22 02:04 | |
| Arsenic | | 0.0498 | mg/L | 0.0010 | 100 | 90 | 110 | | | |
| Lead | | 0.0526 | mg/L | 0.0010 | 105 | 90 | 110 | | | |
| Selenium | | 0.0501 | mg/L | 0.0010 | 100 | 90 | 110 | | | |
| Uranium | | 0.0503 | mg/L | 0.00030 | 101 | 90 | 110 | | | |
| **Lab ID: CCV** | 4 | Continuing Calibration Verification Standard | | | | | | | 04/29/22 03:09 | |
| Arsenic | | 0.0467 | mg/L | 0.0010 | 93 | 90 | 110 | | | |
| Lead | | 0.0503 | mg/L | 0.0010 | 101 | 90 | 110 | | | |
| Selenium | | 0.0463 | mg/L | 0.0010 | 93 | 90 | 110 | | | |
| Uranium | | 0.0477 | mg/L | 0.00030 | 95 | 90 | 110 | | | |
| **Method: E200.8** | | | | | | | | | Analytical Run: ICPMS5-C_220505A | |
| **Lab ID: QCS** | 2 | Initial Calibration Verification Standard | | | | | | | 05/06/22 10:08 | |
| Molybdenum | | 0.0506 | mg/L | 0.0010 | 101 | 90 | 110 | | | |
| Nickel | | 0.0544 | mg/L | 0.0050 | 109 | 90 | 110 | | | |
| **Lab ID: CCV** | 2 | Continuing Calibration Verification Standard | | | | | | | 05/07/22 01:43 | |
| Molybdenum | | 0.0491 | mg/L | 0.0010 | 98 | 90 | 110 | | | |
| Nickel | | 0.0505 | mg/L | 0.0050 | 101 | 90 | 110 | | | |
| **Lab ID: CCV** | 2 | Continuing Calibration Verification Standard | | | | | | | 05/07/22 04:21 | |
| Molybdenum | | 0.0504 | mg/L | 0.0010 | 101 | 90 | 110 | | | |
| Nickel | | 0.0453 | mg/L | 0.0050 | 91 | 90 | 110 | | | |
| **Method: E200.8** | | | | | | | | | Analytical Run: ICPMS5-C_220513A | |
| **Lab ID: QCS** | 2 | Initial Calibration Verification Standard | | | | | | | 05/13/22 15:48 | |
| Aluminum | | 0.260 | mg/L | 0.030 | 104 | 90 | 110 | | | |
| Nickel | | 0.0531 | mg/L | 0.0050 | 106 | 90 | 110 | | | |
| **Lab ID: CCV** | 2 | Continuing Calibration Verification Standard | | | | | | | 05/13/22 20:28 | |
| Aluminum | | 0.0502 | mg/L | 0.030 | 100 | 90 | 110 | | | |
| Nickel | | 0.0502 | mg/L | 0.0050 | 100 | 90 | 110 | | | |
| **Lab ID: CCV** | 2 | Continuing Calibration Verification Standard | | | | | | | 05/13/22 19:24 | |
| Aluminum | | 0.0508 | mg/L | 0.030 | 102 | 90 | 110 | | | |
| Nickel | | 0.0506 | mg/L | 0.0050 | 101 | 90 | 110 | | | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22040413 **Report Date:** 06/15/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method:** E200.8 | | | | | | | | | Analytical Run: ICPMS5-C_220601A | |
| **Lab ID:** QCS | | Initial Calibration Verification Standard | | | | | | | 06/01/22 19:03 | |
| Manganese | | 0.251 | mg/L | 0.0010 | 100 | 90 | 110 | | | |
| **Lab ID:** CCV | | Continuing Calibration Verification Standard | | | | | | | 06/02/22 04:32 | |
| Manganese | | 0.0500 | mg/L | 0.0010 | 100 | 90 | 110 | | | |
| **Lab ID:** CCV | | Continuing Calibration Verification Standard | | | | | | | 06/02/22 06:20 | |
| Manganese | | 0.0495 | mg/L | 0.0010 | 99 | 90 | 110 | | | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22040413 **Report Date:** 06/15/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method:** E200.8 | | | | | | | | | Analytical Run: ICPMS5-C_220613A | |
| **Lab ID:** QCS | | Initial Calibration Verification Standard | | | | | | | 06/13/22 23:20 | |
| Aluminum | | 0.248 | mg/L | 0.030 | 99 | 90 | 110 | | | |
| **Lab ID:** CCV | | Continuing Calibration Verification Standard | | | | | | | 06/14/22 02:04 | |
| Aluminum | | 0.0480 | mg/L | 0.030 | 96 | 90 | 110 | | | |
| **Lab ID:** CCV | | Continuing Calibration Verification Standard | | | | | | | 06/14/22 03:52 | |
| Aluminum | | 0.0481 | mg/L | 0.030 | 96 | 90 | 110 | | | |
| **Lab ID:** CCV | | Continuing Calibration Verification Standard | | | | | | | 06/14/22 05:36 | |
| Aluminum | | 0.0468 | mg/L | 0.030 | 94 | 90 | 110 | | | |
| **Method:** E200.8 | | | | | | | | | Batch: 66489 | |
| **Lab ID:** LCS3-66489 | 12 | Laboratory Control Sample | | | | Run: ICPMS5-C_220613A | | | 06/14/22 01:37 | |
| Aluminum | | 2.38 | mg/L | 0.030 | 95 | 85 | 115 | | | |
| Arsenic | | 0.483 | mg/L | 0.0010 | 97 | 85 | 115 | | | |
| Beryllium | | 0.242 | mg/L | 0.0010 | 97 | 85 | 115 | | | |
| Cadmium | | 0.255 | mg/L | 0.0010 | 102 | 85 | 115 | | | |
| Cobalt | | 0.492 | mg/L | 0.0050 | 98 | 85 | 115 | | | |
| Lead | | 0.497 | mg/L | 0.0010 | 99 | 85 | 115 | | | |
| Manganese | | 2.48 | mg/L | 0.0010 | 99 | 85 | 115 | | | |
| Molybdenum | | 0.477 | mg/L | 0.0010 | 95 | 85 | 115 | | | |
| Nickel | | 0.507 | mg/L | 0.0050 | 101 | 85 | 115 | | | |
| Selenium | | 0.488 | mg/L | 0.0010 | 98 | 85 | 115 | | | |
| Uranium | | 0.488 | mg/L | 0.00030 | 98 | 85 | 115 | | | |
| Vanadium | | 0.503 | mg/L | 0.010 | 101 | 85 | 115 | | | |
| **Lab ID:** C22040413-005CMS3 | 12 | Sample Matrix Spike | | | | Run: ICPMS5-C_220613A | | | 06/14/22 03:25 | |
| Aluminum | | 2.41 | mg/L | 0.091 | 96 | 70 | 130 | | | |
| Arsenic | | 0.497 | mg/L | 0.0014 | 99 | 70 | 130 | | | |
| Beryllium | | 0.235 | mg/L | 0.0010 | 94 | 70 | 130 | | | |
| Cadmium | | 0.252 | mg/L | 0.0010 | 101 | 70 | 130 | | | |
| Cobalt | | 0.490 | mg/L | 0.0050 | 97 | 70 | 130 | | | |
| Lead | | 0.489 | mg/L | 0.0010 | 98 | 70 | 130 | | | |
| Manganese | | 3.86 | mg/L | 0.0035 | 99 | 70 | 130 | | | |
| Molybdenum | | 0.482 | mg/L | 0.0010 | 96 | 70 | 130 | | | |
| Nickel | | 0.516 | mg/L | 0.0050 | 102 | 70 | 130 | | | |
| Selenium | | 0.530 | mg/L | 0.0010 | 106 | 70 | 130 | | | |
| Uranium | | 0.624 | mg/L | 0.0013 | 99 | 70 | 130 | | | |
| Vanadium | | 0.519 | mg/L | 0.013 | 104 | 70 | 130 | | | |
| **Lab ID:** C22040413-005CMSD | 12 | Sample Matrix Spike Duplicate | | | | Run: ICPMS5-C_220613A | | | 06/14/22 03:31 | |
| Aluminum | | 2.39 | mg/L | 0.091 | 96 | 70 | 130 | 0.8 | 20 | |
| Arsenic | | 0.489 | mg/L | 0.0014 | 98 | 70 | 130 | 1.6 | 20 | |
| Beryllium | | 0.232 | mg/L | 0.0010 | 93 | 70 | 130 | 1.5 | 20 | |
| Cadmium | | 0.250 | mg/L | 0.0010 | 100 | 70 | 130 | 0.9 | 20 | |
| Cobalt | | 0.481 | mg/L | 0.0050 | 95 | 70 | 130 | 1.9 | 20 | |
| Lead | | 0.483 | mg/L | 0.0010 | 97 | 70 | 130 | 1.1 | 20 | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22040413 **Report Date:** 06/15/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: E200.8** | | | | | | | | | | Batch: 66489 |
| **Lab ID: C22040413-005CMSD** | 12 | Sample Matrix Spike Duplicate | | | | Run: ICPMS5-C_220613A | | | | 06/14/22 03:31 |
| Manganese | | 3.84 | mg/L | 0.0035 | 98 | 70 | 130 | 0.6 | 20 | |
| Molybdenum | | 0.471 | mg/L | 0.0010 | 94 | 70 | 130 | 2.3 | 20 | |
| Nickel | | 0.504 | mg/L | 0.0050 | 99 | 70 | 130 | 2.2 | 20 | |
| Selenium | | 0.528 | mg/L | 0.0010 | 105 | 70 | 130 | 0.4 | 20 | |
| Uranium | | 0.624 | mg/L | 0.0013 | 99 | 70 | 130 | 0.2 | 20 | |
| Vanadium | | 0.520 | mg/L | 0.013 | 104 | 70 | 130 | 0.1 | 20 | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22040413 **Report Date:** 05/09/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: A7500-U C** | | | | | | | | | | Batch: RA-TH-ISO-3418 |
| **Lab ID: MB-RA-TH-ISO-3418** | 3 | Method Blank | | | | Run: EGG-ORTEC_ALL_220419A | | | 04/21/22 13:52 | |
| Thorium 230 | | 0.08 | pCi/L | | | | | | | |
| Thorium 230 precision (±) | | 0.04 | pCi/L | | | | | | | |
| Thorium 230 MDC | | 0.06 | pCi/L | | | | | | | |
| **Lab ID: LCS-RA-TH-ISO-3418** | 3 | Laboratory Control Sample | | | | Run: EGG-ORTEC_ALL_220419A | | | 04/21/22 13:52 | |
| Thorium 230 | | 22 | pCi/L | | 89 | 70 | 130 | | | |
| Thorium 230 precision (±) | | 4.2 | pCi/L | | | | | | | |
| Thorium 230 MDC | | 0.047 | pCi/L | | | | | | | |
| **Lab ID: C22040385-004FDUP** | 3 | Sample Duplicate | | | | Run: EGG-ORTEC_ALL_220419A | | | 04/21/22 13:52 | |
| Thorium 230 | | 0.11 | pCi/L | | | | | 19 | 30 | |
| Thorium 230 precision (±) | | 0.053 | pCi/L | | | | | | | |
| Thorium 230 MDC | | 0.074 | pCi/L | | | | | | | |
| - The RER result for Th 230 is 0.29. | | | | | | | | | | |
| **Method: A7500-U C** | | | | | | | | | | Batch: RA-TH-ISO-3419 |
| **Lab ID: MB-RA-TH-ISO-3419** | 3 | Method Blank | | | | Run: EGG-ORTEC_ALL_220420A | | | 04/25/22 14:02 | |
| Thorium 230 | | 0.2 | pCi/L | | | | | | | |
| Thorium 230 precision (±) | | 0.05 | pCi/L | | | | | | | |
| Thorium 230 MDC | | 0.05 | pCi/L | | | | | | | |
| **Lab ID: LCS-RA-TH-ISO-3419** | 3 | Laboratory Control Sample | | | | Run: EGG-ORTEC_ALL_220420A | | | 04/25/22 14:02 | |
| Thorium 230 | | 22 | pCi/L | | 87 | 70 | 130 | | | |
| Thorium 230 precision (±) | | 4.2 | pCi/L | | | | | | | |
| Thorium 230 MDC | | 0.054 | pCi/L | | | | | | | |
| **Lab ID: C22040436-001GDUP** | 3 | Sample Duplicate | | | | Run: EGG-ORTEC_ALL_220420A | | | 04/25/22 14:02 | |
| Thorium 230 | | 0.21 | pCi/L | | | | | 33 | 30 | R |
| Thorium 230 precision (±) | | 0.096 | pCi/L | | | | | | | |
| Thorium 230 MDC | | 0.12 | pCi/L | | | | | | | |
| - Duplicate RPD is outside of the acceptance range for this analysis. However, the RER is less than the limit of 3, the RER result is 0.53. | | | | | | | | | | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

R - Relative Percent Difference (RPD) exceeds advisory limit

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22040413 **Report Date:** 05/09/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: E900.1** | | | | | | | | | | Batch: GA-1355 |
| **Lab ID: LCS-GA-1355** | 3 | Laboratory Control Sample | | | | Run: G542M_220420B | | | | 04/25/22 14:36 |
| Gross Alpha minus Rn & U | | 38 | pCi/L | | 112 | 70 | 130 | | | |
| Gross Alpha minus Rn & U Precision (±) | | 7.5 | pCi/L | | | | | | | |
| Gross Alpha minus Rn & U MDC | | 0.70 | pCi/L | | | | | | | |
| **Lab ID: MB-GA-1355** | 3 | Method Blank | | | | Run: G542M_220420B | | | | 04/25/22 14:36 |
| Gross Alpha minus Rn & U | | -0.04 | pCi/L | | | | | | | U |
| Gross Alpha minus Rn & U Precision (±) | | 0.4 | pCi/L | | | | | | | |
| Gross Alpha minus Rn & U MDC | | 0.7 | pCi/L | | | | | | | |
| **Lab ID: C22040504-001FDUP** | 3 | Sample Duplicate | | | | Run: G542M_220420B | | | | 04/25/22 16:19 |
| Gross Alpha minus Rn & U | | 5.6 | pCi/L | | | | | 12 | 30 | |
| Gross Alpha minus Rn & U Precision (±) | | 1.4 | pCi/L | | | | | | | |
| Gross Alpha minus Rn & U MDC | | 0.69 | pCi/L | | | | | | | |

- The RER result is 0.36.

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

U - Not detected at Minimum Detectable Concentration (MDC)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22040413 **Report Date:** 05/09/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: E903.0** | | | | | | | | | Batch: RA226-10430R | |
| **Lab ID: LCS-RA226-10430** | 3 | Laboratory Control Sample | | | | Run: G5000W_220414C | | | 04/26/22 15:32 | |
| Radium 226 | | 7.9 | pCi/L | | 78 | 70 | 130 | | | |
| Radium 226 precision (±) | | 1.6 | pCi/L | | | | | | | |
| Radium 226 MDC | | 0.28 | pCi/L | | | | | | | |
| **Lab ID: MB-RA226-10430** | 3 | Method Blank | | | | Run: G5000W_220414C | | | 04/26/22 15:32 | |
| Radium 226 | | 0.002 | pCi/L | | | | | | | U |
| Radium 226 precision (±) | | 0.1 | pCi/L | | | | | | | |
| Radium 226 MDC | | 0.3 | pCi/L | | | | | | | |
| **Method: E903.0** | | | | | | | | | Batch: RA226-10430R | |
| **Lab ID: C22040390-001EDUP** | 3 | Sample Duplicate | | | | Run: G5000W_220414D | | | 04/28/22 21:19 | |
| Radium 226 | | 0.29 | pCi/L | | | | | 35 | 30 | R |
| Radium 226 precision (±) | | 0.094 | pCi/L | | | | | | | |
| Radium 226 MDC | | 0.13 | pCi/L | | | | | | | |

- Duplicate RPD is outside of the acceptance range for this analysis. However, the RER is less than the limit of 3, the RER result is 0.84.

**Qualifiers:**

RL - Analyte Reporting Limit

R - Relative Percent Difference (RPD) exceeds advisory limit

ND - Not detected at the Reporting Limit (RL)

U - Not detected at Minimum Detectable Concentration (MDC)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22040413 **Report Date:** 05/09/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: E909.0** | | | | | | | | | | Batch: PB-210-1390 |
| **Lab ID: LCS-PB-210-1390** | 3 | Laboratory Control Sample | | | | Run: HIDEX 300SL_220415A | | | 04/21/22 16:21 | |
| Lead 210 | | 17 | pCi/L | | 97 | 70 | 130 | | | |
| Lead 210 precision (±) | | 4.9 | pCi/L | | | | | | | |
| Lead 210 MDC | | 1.3 | pCi/L | | | | | | | |
| **Lab ID: MB-PB-210-1390** | 3 | Method Blank | | | | Run: HIDEX 300SL_220415A | | | 04/21/22 16:21 | |
| Lead 210 | | 0.4 | pCi/L | | | | | | | U |
| Lead 210 precision (±) | | 0.7 | pCi/L | | | | | | | |
| Lead 210 MDC | | 1 | pCi/L | | | | | | | |
| **Lab ID: C22040385-004FDUP** | 3 | Sample Duplicate | | | | Run: HIDEX 300SL_220415A | | | 04/21/22 16:21 | |
| Lead 210 | | 1.2 | pCi/L | | | | | 43 | 30 | UR |
| Lead 210 precision (±) | | 0.79 | pCi/L | | | | | | | |
| Lead 210 MDC | | 1.2 | pCi/L | | | | | | | |

- Duplicate RPD is outside of the acceptance range for this analysis. However, the RER is less than the limit of 3, the RER result is 0.39.

**Qualifiers:**

RL - Analyte Reporting Limit

R - Relative Percent Difference (RPD) exceeds advisory limit

ND - Not detected at the Reporting Limit (RL)

U - Not detected at Minimum Detectable Concentration (MDC)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22040413 **Report Date:** 05/09/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: RA-05** | | | | | | | | | | Batch: RA228-6784 |
| **Lab ID: LCS-228-RA228-6784** | 3 | Laboratory Control Sample | | | | Run: TENNELEC-4_220414D | | | 05/05/22 12:30 | |
| Radium 228 | | 7.0 | pCi/L | | 89 | 70 | 130 | | | |
| Radium 228 precision (±) | | 1.7 | pCi/L | | | | | | | |
| Radium 228 MDC | | 1.4 | pCi/L | | | | | | | |
| **Lab ID: MB-228-RA228-6784** | 3 | Method Blank | | | | Run: TENNELEC-4_220414D | | | 05/05/22 12:30 | |
| Radium 228 | | 0.4 | pCi/L | | | | | | | U |
| Radium 228 precision (±) | | 0.9 | pCi/L | | | | | | | |
| Radium 228 MDC | | 2 | pCi/L | | | | | | | |
| **Lab ID: C22040390-001EDUP** | 3 | Sample Duplicate | | | | Run: TENNELEC-4_220414D | | | 05/05/22 12:30 | |
| Radium 228 | | -0.072 | pCi/L | | | | | 270 | 30 | UR |
| Radium 228 precision (±) | | 0.91 | pCi/L | | | | | | | |
| Radium 228 MDC | | 1.6 | pCi/L | | | | | | | |

- Duplicate RPD is outside of the acceptance range for this analysis. However, the RER is less than the limit of 3, the RER result is 0.41.

**Qualifiers:**

RL - Analyte Reporting Limit

R - Relative Percent Difference (RPD) exceeds advisory limit

ND - Not detected at the Reporting Limit (RL)

U - Not detected at Minimum Detectable Concentration (MDC)

eurofins | Environment Testing America

# ANALYTICAL REPORT

Eurofins Denver
4955 Yarrow Street
Arvada, CO 80002
Tel: (303)736-0100

Laboratory Job ID: 280-161093-1
Client Project/Site: 11(e) Byproduct Material

For:
Energy Laboratories, Inc.
400 W Boxelder Rd
Gillette, Wyoming 82718

Attn: Casper Reporting

*Authorized for release by:*
*4/22/2022 1:05:07 PM*

Dylan Bieniulis, Project Manager I
(303)736-0138
Dylan.Bieniulis@et.eurofinsus.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at:
www.eurofinsus.com/Env

*The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.*

*This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.*

*Results relate only to the items tested and the sample(s) as received by the laboratory.*

# Table of Contents

Cover Page . . . . . 1
Table of Contents . . . . . 2
Definitions . . . . . 3
Case Narrative . . . . . 4
Detection Summary . . . . . 5
Method Summary . . . . . 7
Sample Summary . . . . . 8
Client Sample Results . . . . . 9
Surrogate Summary . . . . . 14
QC Sample Results . . . . . 15
QC Association . . . . . 16
Chronicle . . . . . 17
Certification Summary . . . . . 20
Chain of Custody . . . . . 21
Receipt Checklists . . . . . 25

# Definitions/Glossary

Client: Energy Laboratories, Inc.
Project/Site: 11(e) Byproduct Material

Job ID: 280-161093-1

## Qualifiers

### GC/MS VOA

| Qualifier | Qualifier Description |
|---|---|
| J | Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value. |

## Glossary

| Abbreviation | These commonly used abbreviations may or may not be present in this report. |
|---|---|
| ¤ | Listed under the "D" column to designate that the result is reported on a dry weight basis |
| %R | Percent Recovery |
| CFL | Contains Free Liquid |
| CFU | Colony Forming Unit |
| CNF | Contains No Free Liquid |
| DER | Duplicate Error Ratio (normalized absolute difference) |
| Dil Fac | Dilution Factor |
| DL | Detection Limit (DoD/DOE) |
| DL, RA, RE, IN | Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample |
| DLC | Decision Level Concentration (Radiochemistry) |
| EDL | Estimated Detection Limit (Dioxin) |
| LOD | Limit of Detection (DoD/DOE) |
| LOQ | Limit of Quantitation (DoD/DOE) |
| MCL | EPA recommended "Maximum Contaminant Level" |
| MDA | Minimum Detectable Activity (Radiochemistry) |
| MDC | Minimum Detectable Concentration (Radiochemistry) |
| MDL | Method Detection Limit |
| ML | Minimum Level (Dioxin) |
| MPN | Most Probable Number |
| MQL | Method Quantitation Limit |
| NC | Not Calculated |
| ND | Not Detected at the reporting limit (or MDL or EDL if shown) |
| NEG | Negative / Absent |
| POS | Positive / Present |
| PQL | Practical Quantitation Limit |
| PRES | Presumptive |
| QC | Quality Control |
| RER | Relative Error Ratio (Radiochemistry) |
| RL | Reporting Limit or Requested Limit (Radiochemistry) |
| RPD | Relative Percent Difference, a measure of the relative difference between two points |
| TEF | Toxicity Equivalent Factor (Dioxin) |
| TEQ | Toxicity Equivalent Quotient (Dioxin) |
| TNTC | Too Numerous To Count |

## Job ID: 280-161093-1

**Laboratory: Eurofins Denver**

**Narrative**

# CASE NARRATIVE

## Client: Energy Laboratories, Inc.

## Project: 11(e) Byproduct Material

## Report Number: 280-161093-1

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

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

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

**RECEIPT**
The samples were received on 04/15/2022; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was 3.2 C.

**VOLATILE ORGANIC COMPOUNDS BY GC/MS**
Samples C22040413-001 (280-161093-1), C22040413-002 (280-161093-2), C22040413-003 (280-161093-3), C22040413-004 (280-161093-4), C22040413-005 (280-161093-5), C22040413-006 (280-161093-6), C22040413-007 (280-161093-7), C22040413-008 (280-161093-8), C22040413-009 (280-161093-9), C22040413-010 (280-161093-10), C22040413-011 (280-161093-11), C22040413-012 (280-161093-12), C22040413-013 (280-161093-13), C22040413-014 (280-161093-14) and C22040413-015 (280-161093-15) were analyzed for Volatile Organic Compounds by GC/MS in accordance with 624.1 40CFR136A. The samples were analyzed on 04/21/2022.

The method requirement for no headspace was not met. The following volatile samples were analyzed with significant headspac in the sample container: C22040413-004 (280-161093-4), C22040413-005 (280-161093-5) and C22040413-006 (280-161093-6 Significant headspace is defined as a bubble greater than 6 mm in diameter.

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

# Detection Summary

Client: Energy Laboratories, Inc.
Project/Site: 11(e) Byproduct Material

Job ID: 280-161093-1

## Client Sample ID: C22040413-001 — Lab Sample ID: 280-161093-1

No Detections.

## Client Sample ID: C22040413-002 — Lab Sample ID: 280-161093-2

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| Chloroform | 0.72 | J | 1.0 | 0.22 | ug/L | 1 | | 624.1 | Total/NA |
| Trihalomethanes, Total | 0.72 | J | 1.0 | 0.15 | ug/L | 1 | | 624.1 | Total/NA |

## Client Sample ID: C22040413-003 — Lab Sample ID: 280-161093-3

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| Chloroform | 0.28 | J | 1.0 | 0.22 | ug/L | 1 | | 624.1 | Total/NA |
| Trihalomethanes, Total | 0.28 | J | 1.0 | 0.15 | ug/L | 1 | | 624.1 | Total/NA |

## Client Sample ID: C22040413-004 — Lab Sample ID: 280-161093-4

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| Chloroform | 0.51 | J | 1.0 | 0.22 | ug/L | 1 | | 624.1 | Total/NA |
| Trihalomethanes, Total | 0.51 | J | 1.0 | 0.15 | ug/L | 1 | | 624.1 | Total/NA |

## Client Sample ID: C22040413-005 — Lab Sample ID: 280-161093-5

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| Chloroform | 0.98 | J | 1.0 | 0.22 | ug/L | 1 | | 624.1 | Total/NA |
| Trihalomethanes, Total | 0.98 | J | 1.0 | 0.15 | ug/L | 1 | | 624.1 | Total/NA |

## Client Sample ID: C22040413-006 — Lab Sample ID: 280-161093-6

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| Chloroform | 0.52 | J | 1.0 | 0.22 | ug/L | 1 | | 624.1 | Total/NA |
| Trihalomethanes, Total | 0.52 | J | 1.0 | 0.15 | ug/L | 1 | | 624.1 | Total/NA |

## Client Sample ID: C22040413-007 — Lab Sample ID: 280-161093-7

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| Chloroform | 0.34 | J | 1.0 | 0.22 | ug/L | 1 | | 624.1 | Total/NA |
| Trihalomethanes, Total | 0.34 | J | 1.0 | 0.15 | ug/L | 1 | | 624.1 | Total/NA |

## Client Sample ID: C22040413-008 — Lab Sample ID: 280-161093-8

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| Chloroform | 0.29 | J | 1.0 | 0.22 | ug/L | 1 | | 624.1 | Total/NA |
| Trihalomethanes, Total | 0.29 | J | 1.0 | 0.15 | ug/L | 1 | | 624.1 | Total/NA |

## Client Sample ID: C22040413-009 — Lab Sample ID: 280-161093-9

No Detections.

## Client Sample ID: C22040413-010 — Lab Sample ID: 280-161093-10

No Detections.

## Client Sample ID: C22040413-011 — Lab Sample ID: 280-161093-11

No Detections.

## Client Sample ID: C22040413-012 — Lab Sample ID: 280-161093-12

No Detections.

This Detection Summary does not include radiochemical test results.

# Detection Summary

Client: Energy Laboratories, Inc.
Project/Site: 11(e) Byproduct Material

Job ID: 280-161093-1

## Client Sample ID: C22040413-013 — Lab Sample ID: 280-161093-13

No Detections.

## Client Sample ID: C22040413-014 — Lab Sample ID: 280-161093-14

No Detections.

## Client Sample ID: C22040413-015 — Lab Sample ID: 280-161093-15

No Detections.

This Detection Summary does not include radiochemical test results.

# Method Summary

Client: Energy Laboratories, Inc.
Project/Site: 11(e) Byproduct Material

Job ID: 280-161093-1

| Method | Method Description | Protocol | Laboratory |
|---|---|---|---|
| 624.1 | Volatile Organic Compounds (GC/MS) | 40CFR136A | TAL DEN |

**Protocol References:**

40CFR136A = "Methods for Organic Chemical Analysis of Municipal Industrial Wastewater", 40CFR, Part 136, Appendix A, October 26, 1984 and subsequent revisions.

**Laboratory References:**

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

# Sample Summary

Client: Energy Laboratories, Inc.
Project/Site: 11(e) Byproduct Material

Job ID: 280-161093-1

| Lab Sample ID | Client Sample ID | Matrix | Collected | Received |
|---|---|---|---|---|
| 280-161093-1 | C22040413-001 | Water | 04/07/22 09:12 | 04/15/22 09:50 |
| 280-161093-2 | C22040413-002 | Water | 04/07/22 10:35 | 04/15/22 09:50 |
| 280-161093-3 | C22040413-003 | Water | 04/07/22 11:18 | 04/15/22 09:50 |
| 280-161093-4 | C22040413-004 | Water | 04/07/22 12:20 | 04/15/22 09:50 |
| 280-161093-5 | C22040413-005 | Water | 04/07/22 13:05 | 04/15/22 09:50 |
| 280-161093-6 | C22040413-006 | Water | 04/07/22 13:45 | 04/15/22 09:50 |
| 280-161093-7 | C22040413-007 | Water | 04/07/22 14:25 | 04/15/22 09:50 |
| 280-161093-8 | C22040413-008 | Water | 04/07/22 15:30 | 04/15/22 09:50 |
| 280-161093-9 | C22040413-009 | Water | 04/08/22 10:35 | 04/15/22 09:50 |
| 280-161093-10 | C22040413-010 | Water | 04/08/22 12:33 | 04/15/22 09:50 |
| 280-161093-11 | C22040413-011 | Water | 04/07/22 09:12 | 04/15/22 09:50 |
| 280-161093-12 | C22040413-012 | Water | 04/07/22 10:35 | 04/15/22 09:50 |
| 280-161093-13 | C22040413-013 | Water | 04/07/22 13:05 | 04/15/22 09:50 |
| 280-161093-14 | C22040413-014 | Water | 04/07/22 15:30 | 04/15/22 09:50 |
| 280-161093-15 | C22040413-015 | Water | 04/08/22 11:36 | 04/15/22 09:50 |

# Client Sample Results

Client: Energy Laboratories, Inc.
Project/Site: 11(e) Byproduct Material

Job ID: 280-161093-1

## Method: 624.1 - Volatile Organic Compounds (GC/MS)

**Client Sample ID: C22040413-001** — **Lab Sample ID: 280-161093-1**
**Date Collected: 04/07/22 09:12** — **Matrix: Water**
**Date Received: 04/15/22 09:50**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | ND | | 1.0 | 0.15 | ug/L | | | 04/21/22 10:17 | 1 |
| Bromoform | ND | | 2.0 | 0.67 | ug/L | | | 04/21/22 10:17 | 1 |
| Chlorodibromomethane | ND | | 1.0 | 0.21 | ug/L | | | 04/21/22 10:17 | 1 |
| Chloroform | ND | | 1.0 | 0.22 | ug/L | | | 04/21/22 10:17 | 1 |
| Trihalomethanes, Total | ND | | 1.0 | 0.15 | ug/L | | | 04/21/22 10:17 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1,2-Dichloroethane-d4 (Surr)* | *95* | | *73 - 122* | | *04/21/22 10:17* | *1* |
| *4-Bromofluorobenzene (Surr)* | *96* | | *79 - 119* | | *04/21/22 10:17* | *1* |
| *Toluene-d8 (Surr)* | *101* | | *80 - 120* | | *04/21/22 10:17* | *1* |

**Client Sample ID: C22040413-002** — **Lab Sample ID: 280-161093-2**
**Date Collected: 04/07/22 10:35** — **Matrix: Water**
**Date Received: 04/15/22 09:50**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | ND | | 1.0 | 0.15 | ug/L | | | 04/21/22 10:39 | 1 |
| Bromoform | ND | | 2.0 | 0.67 | ug/L | | | 04/21/22 10:39 | 1 |
| Chlorodibromomethane | ND | | 1.0 | 0.21 | ug/L | | | 04/21/22 10:39 | 1 |
| **Chloroform** | **0.72** | **J** | 1.0 | 0.22 | ug/L | | | 04/21/22 10:39 | 1 |
| **Trihalomethanes, Total** | **0.72** | **J** | 1.0 | 0.15 | ug/L | | | 04/21/22 10:39 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1,2-Dichloroethane-d4 (Surr)* | *97* | | *73 - 122* | | *04/21/22 10:39* | *1* |
| *4-Bromofluorobenzene (Surr)* | *94* | | *79 - 119* | | *04/21/22 10:39* | *1* |
| *Toluene-d8 (Surr)* | *102* | | *80 - 120* | | *04/21/22 10:39* | *1* |

**Client Sample ID: C22040413-003** — **Lab Sample ID: 280-161093-3**
**Date Collected: 04/07/22 11:18** — **Matrix: Water**
**Date Received: 04/15/22 09:50**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | ND | | 1.0 | 0.15 | ug/L | | | 04/21/22 11:00 | 1 |
| Bromoform | ND | | 2.0 | 0.67 | ug/L | | | 04/21/22 11:00 | 1 |
| Chlorodibromomethane | ND | | 1.0 | 0.21 | ug/L | | | 04/21/22 11:00 | 1 |
| **Chloroform** | **0.28** | **J** | 1.0 | 0.22 | ug/L | | | 04/21/22 11:00 | 1 |
| **Trihalomethanes, Total** | **0.28** | **J** | 1.0 | 0.15 | ug/L | | | 04/21/22 11:00 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1,2-Dichloroethane-d4 (Surr)* | *96* | | *73 - 122* | | *04/21/22 11:00* | *1* |
| *4-Bromofluorobenzene (Surr)* | *94* | | *79 - 119* | | *04/21/22 11:00* | *1* |
| *Toluene-d8 (Surr)* | *101* | | *80 - 120* | | *04/21/22 11:00* | *1* |

**Client Sample ID: C22040413-004** — **Lab Sample ID: 280-161093-4**
**Date Collected: 04/07/22 12:20** — **Matrix: Water**
**Date Received: 04/15/22 09:50**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | ND | | 1.0 | 0.15 | ug/L | | | 04/21/22 11:21 | 1 |
| Bromoform | ND | | 2.0 | 0.67 | ug/L | | | 04/21/22 11:21 | 1 |
| Chlorodibromomethane | ND | | 1.0 | 0.21 | ug/L | | | 04/21/22 11:21 | 1 |
| **Chloroform** | **0.51** | **J** | 1.0 | 0.22 | ug/L | | | 04/21/22 11:21 | 1 |
| **Trihalomethanes, Total** | **0.51** | **J** | 1.0 | 0.15 | ug/L | | | 04/21/22 11:21 | 1 |

## Method: 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

| Surrogate | %Recovery | Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|
| 1,2-Dichloroethane-d4 (Surr) | 99 | | 73 - 122 | | 04/21/22 11:21 | 1 |
| 4-Bromofluorobenzene (Surr) | 96 | | 79 - 119 | | 04/21/22 11:21 | 1 |
| Toluene-d8 (Surr) | 100 | | 80 - 120 | | 04/21/22 11:21 | 1 |

**Client Sample ID: C22040413-005** **Lab Sample ID: 280-161093-5**
**Date Collected: 04/07/22 13:05** **Matrix: Water**
**Date Received: 04/15/22 09:50**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | ND | | 1.0 | 0.15 | ug/L | | | 04/21/22 11:43 | 1 |
| Bromoform | ND | | 2.0 | 0.67 | ug/L | | | 04/21/22 11:43 | 1 |
| Chlorodibromomethane | ND | | 1.0 | 0.21 | ug/L | | | 04/21/22 11:43 | 1 |
| **Chloroform** | **0.98** | **J** | 1.0 | 0.22 | ug/L | | | 04/21/22 11:43 | 1 |
| **Trihalomethanes, Total** | **0.98** | **J** | 1.0 | 0.15 | ug/L | | | 04/21/22 11:43 | 1 |

| Surrogate | %Recovery | Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|
| 1,2-Dichloroethane-d4 (Surr) | 99 | | 73 - 122 | | 04/21/22 11:43 | 1 |
| 4-Bromofluorobenzene (Surr) | 95 | | 79 - 119 | | 04/21/22 11:43 | 1 |
| Toluene-d8 (Surr) | 103 | | 80 - 120 | | 04/21/22 11:43 | 1 |

**Client Sample ID: C22040413-006** **Lab Sample ID: 280-161093-6**
**Date Collected: 04/07/22 13:45** **Matrix: Water**
**Date Received: 04/15/22 09:50**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | ND | | 1.0 | 0.15 | ug/L | | | 04/21/22 12:04 | 1 |
| Bromoform | ND | | 2.0 | 0.67 | ug/L | | | 04/21/22 12:04 | 1 |
| Chlorodibromomethane | ND | | 1.0 | 0.21 | ug/L | | | 04/21/22 12:04 | 1 |
| **Chloroform** | **0.52** | **J** | 1.0 | 0.22 | ug/L | | | 04/21/22 12:04 | 1 |
| **Trihalomethanes, Total** | **0.52** | **J** | 1.0 | 0.15 | ug/L | | | 04/21/22 12:04 | 1 |

| Surrogate | %Recovery | Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|
| 1,2-Dichloroethane-d4 (Surr) | 95 | | 73 - 122 | | 04/21/22 12:04 | 1 |
| 4-Bromofluorobenzene (Surr) | 93 | | 79 - 119 | | 04/21/22 12:04 | 1 |
| Toluene-d8 (Surr) | 101 | | 80 - 120 | | 04/21/22 12:04 | 1 |

**Client Sample ID: C22040413-007** **Lab Sample ID: 280-161093-7**
**Date Collected: 04/07/22 14:25** **Matrix: Water**
**Date Received: 04/15/22 09:50**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | ND | | 1.0 | 0.15 | ug/L | | | 04/21/22 12:26 | 1 |
| Bromoform | ND | | 2.0 | 0.67 | ug/L | | | 04/21/22 12:26 | 1 |
| Chlorodibromomethane | ND | | 1.0 | 0.21 | ug/L | | | 04/21/22 12:26 | 1 |
| **Chloroform** | **0.34** | **J** | 1.0 | 0.22 | ug/L | | | 04/21/22 12:26 | 1 |
| **Trihalomethanes, Total** | **0.34** | **J** | 1.0 | 0.15 | ug/L | | | 04/21/22 12:26 | 1 |

| Surrogate | %Recovery | Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|
| 1,2-Dichloroethane-d4 (Surr) | 97 | | 73 - 122 | | 04/21/22 12:26 | 1 |
| 4-Bromofluorobenzene (Surr) | 96 | | 79 - 119 | | 04/21/22 12:26 | 1 |
| Toluene-d8 (Surr) | 102 | | 80 - 120 | | 04/21/22 12:26 | 1 |

**Client Sample ID: C22040413-008** **Lab Sample ID: 280-161093-8**
**Date Collected: 04/07/22 15:30** **Matrix: Water**
**Date Received: 04/15/22 09:50**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | ND | | 1.0 | 0.15 | ug/L | | | 04/21/22 12:47 | 1 |

## Method: 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

**Client Sample ID: C22040413-008** — **Lab Sample ID: 280-161093-8**
**Date Collected: 04/07/22 15:30** — **Matrix: Water**
**Date Received: 04/15/22 09:50**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Bromoform | ND | | 2.0 | 0.67 | ug/L | | | 04/21/22 12:47 | 1 |
| Chlorodibromomethane | ND | | 1.0 | 0.21 | ug/L | | | 04/21/22 12:47 | 1 |
| **Chloroform** | **0.29** | **J** | 1.0 | 0.22 | ug/L | | | 04/21/22 12:47 | 1 |
| **Trihalomethanes, Total** | **0.29** | **J** | 1.0 | 0.15 | ug/L | | | 04/21/22 12:47 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1,2-Dichloroethane-d4 (Surr)* | *98* | | *73 - 122* | | *04/21/22 12:47* | *1* |
| *4-Bromofluorobenzene (Surr)* | *95* | | *79 - 119* | | *04/21/22 12:47* | *1* |
| *Toluene-d8 (Surr)* | *101* | | *80 - 120* | | *04/21/22 12:47* | *1* |

**Client Sample ID: C22040413-009** — **Lab Sample ID: 280-161093-9**
**Date Collected: 04/08/22 10:35** — **Matrix: Water**
**Date Received: 04/15/22 09:50**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | ND | | 1.0 | 0.15 | ug/L | | | 04/21/22 13:09 | 1 |
| Bromoform | ND | | 2.0 | 0.67 | ug/L | | | 04/21/22 13:09 | 1 |
| Chlorodibromomethane | ND | | 1.0 | 0.21 | ug/L | | | 04/21/22 13:09 | 1 |
| Chloroform | ND | | 1.0 | 0.22 | ug/L | | | 04/21/22 13:09 | 1 |
| Trihalomethanes, Total | ND | | 1.0 | 0.15 | ug/L | | | 04/21/22 13:09 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1,2-Dichloroethane-d4 (Surr)* | *99* | | *73 - 122* | | *04/21/22 13:09* | *1* |
| *4-Bromofluorobenzene (Surr)* | *97* | | *79 - 119* | | *04/21/22 13:09* | *1* |
| *Toluene-d8 (Surr)* | *100* | | *80 - 120* | | *04/21/22 13:09* | *1* |

**Client Sample ID: C22040413-010** — **Lab Sample ID: 280-161093-10**
**Date Collected: 04/08/22 12:33** — **Matrix: Water**
**Date Received: 04/15/22 09:50**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | ND | | 1.0 | 0.15 | ug/L | | | 04/21/22 13:30 | 1 |
| Bromoform | ND | | 2.0 | 0.67 | ug/L | | | 04/21/22 13:30 | 1 |
| Chlorodibromomethane | ND | | 1.0 | 0.21 | ug/L | | | 04/21/22 13:30 | 1 |
| Chloroform | ND | | 1.0 | 0.22 | ug/L | | | 04/21/22 13:30 | 1 |
| Trihalomethanes, Total | ND | | 1.0 | 0.15 | ug/L | | | 04/21/22 13:30 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1,2-Dichloroethane-d4 (Surr)* | *97* | | *73 - 122* | | *04/21/22 13:30* | *1* |
| *4-Bromofluorobenzene (Surr)* | *95* | | *79 - 119* | | *04/21/22 13:30* | *1* |
| *Toluene-d8 (Surr)* | *99* | | *80 - 120* | | *04/21/22 13:30* | *1* |

**Client Sample ID: C22040413-011** — **Lab Sample ID: 280-161093-11**
**Date Collected: 04/07/22 09:12** — **Matrix: Water**
**Date Received: 04/15/22 09:50**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | ND | | 1.0 | 0.15 | ug/L | | | 04/21/22 13:52 | 1 |
| Bromoform | ND | | 2.0 | 0.67 | ug/L | | | 04/21/22 13:52 | 1 |
| Chlorodibromomethane | ND | | 1.0 | 0.21 | ug/L | | | 04/21/22 13:52 | 1 |
| Chloroform | ND | | 1.0 | 0.22 | ug/L | | | 04/21/22 13:52 | 1 |
| Trihalomethanes, Total | ND | | 1.0 | 0.15 | ug/L | | | 04/21/22 13:52 | 1 |

## Method: 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

| Surrogate | %Recovery | Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|
| 1,2-Dichloroethane-d4 (Surr) | 97 | | 73 - 122 | | 04/21/22 13:52 | 1 |
| 4-Bromofluorobenzene (Surr) | 96 | | 79 - 119 | | 04/21/22 13:52 | 1 |
| Toluene-d8 (Surr) | 102 | | 80 - 120 | | 04/21/22 13:52 | 1 |

**Client Sample ID: C22040413-012** **Lab Sample ID: 280-161093-12**
**Date Collected: 04/07/22 10:35** **Matrix: Water**
**Date Received: 04/15/22 09:50**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | ND | | 1.0 | 0.15 | ug/L | | | 04/21/22 14:13 | 1 |
| Bromoform | ND | | 2.0 | 0.67 | ug/L | | | 04/21/22 14:13 | 1 |
| Chlorodibromomethane | ND | | 1.0 | 0.21 | ug/L | | | 04/21/22 14:13 | 1 |
| Chloroform | ND | | 1.0 | 0.22 | ug/L | | | 04/21/22 14:13 | 1 |
| Trihalomethanes, Total | ND | | 1.0 | 0.15 | ug/L | | | 04/21/22 14:13 | 1 |

| Surrogate | %Recovery | Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|
| 1,2-Dichloroethane-d4 (Surr) | 97 | | 73 - 122 | | 04/21/22 14:13 | 1 |
| 4-Bromofluorobenzene (Surr) | 94 | | 79 - 119 | | 04/21/22 14:13 | 1 |
| Toluene-d8 (Surr) | 101 | | 80 - 120 | | 04/21/22 14:13 | 1 |

**Client Sample ID: C22040413-013** **Lab Sample ID: 280-161093-13**
**Date Collected: 04/07/22 13:05** **Matrix: Water**
**Date Received: 04/15/22 09:50**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | ND | | 1.0 | 0.15 | ug/L | | | 04/21/22 14:35 | 1 |
| Bromoform | ND | | 2.0 | 0.67 | ug/L | | | 04/21/22 14:35 | 1 |
| Chlorodibromomethane | ND | | 1.0 | 0.21 | ug/L | | | 04/21/22 14:35 | 1 |
| Chloroform | ND | | 1.0 | 0.22 | ug/L | | | 04/21/22 14:35 | 1 |
| Trihalomethanes, Total | ND | | 1.0 | 0.15 | ug/L | | | 04/21/22 14:35 | 1 |

| Surrogate | %Recovery | Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|
| 1,2-Dichloroethane-d4 (Surr) | 99 | | 73 - 122 | | 04/21/22 14:35 | 1 |
| 4-Bromofluorobenzene (Surr) | 95 | | 79 - 119 | | 04/21/22 14:35 | 1 |
| Toluene-d8 (Surr) | 101 | | 80 - 120 | | 04/21/22 14:35 | 1 |

**Client Sample ID: C22040413-014** **Lab Sample ID: 280-161093-14**
**Date Collected: 04/07/22 15:30** **Matrix: Water**
**Date Received: 04/15/22 09:50**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | ND | | 1.0 | 0.15 | ug/L | | | 04/21/22 14:56 | 1 |
| Bromoform | ND | | 2.0 | 0.67 | ug/L | | | 04/21/22 14:56 | 1 |
| Chlorodibromomethane | ND | | 1.0 | 0.21 | ug/L | | | 04/21/22 14:56 | 1 |
| Chloroform | ND | | 1.0 | 0.22 | ug/L | | | 04/21/22 14:56 | 1 |
| Trihalomethanes, Total | ND | | 1.0 | 0.15 | ug/L | | | 04/21/22 14:56 | 1 |

| Surrogate | %Recovery | Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|
| 1,2-Dichloroethane-d4 (Surr) | 100 | | 73 - 122 | | 04/21/22 14:56 | 1 |
| 4-Bromofluorobenzene (Surr) | 97 | | 79 - 119 | | 04/21/22 14:56 | 1 |
| Toluene-d8 (Surr) | 100 | | 80 - 120 | | 04/21/22 14:56 | 1 |

**Client Sample ID: C22040413-015** **Lab Sample ID: 280-161093-15**
**Date Collected: 04/08/22 11:36** **Matrix: Water**
**Date Received: 04/15/22 09:50**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | ND | | 1.0 | 0.15 | ug/L | | | 04/21/22 15:18 | 1 |

# Client Sample Results

Client: Energy Laboratories, Inc.
Project/Site: 11(e) Byproduct Material

Job ID: 280-161093-1

## Method: 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

**Client Sample ID: C22040413-015**
**Date Collected: 04/08/22 11:36**
**Date Received: 04/15/22 09:50**

**Lab Sample ID: 280-161093-15**
**Matrix: Water**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Bromoform | ND | | 2.0 | 0.67 | ug/L | | | 04/21/22 15:18 | 1 |
| Chlorodibromomethane | ND | | 1.0 | 0.21 | ug/L | | | 04/21/22 15:18 | 1 |
| Chloroform | ND | | 1.0 | 0.22 | ug/L | | | 04/21/22 15:18 | 1 |
| Trihalomethanes, Total | ND | | 1.0 | 0.15 | ug/L | | | 04/21/22 15:18 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1,2-Dichloroethane-d4 (Surr)* | *98* | | *73 - 122* | | *04/21/22 15:18* | *1* |
| *4-Bromofluorobenzene (Surr)* | *94* | | *79 - 119* | | *04/21/22 15:18* | *1* |
| *Toluene-d8 (Surr)* | *100* | | *80 - 120* | | *04/21/22 15:18* | *1* |

# Surrogate Summary

Client: Energy Laboratories, Inc.
Project/Site: 11(e) Byproduct Material

Job ID: 280-161093-1

## Method: 624.1 - Volatile Organic Compounds (GC/MS)

**Matrix: Water**

**Prep Type: Total/NA**

| | | Percent Surrogate Recovery (Acceptance Limits) | | |
|---|---|---|---|---|
| | | DCA | BFB | TOL |
| **Lab Sample ID** | **Client Sample ID** | **(73-122)** | **(79-119)** | **(80-120)** |
| 280-161093-1 | C22040413-001 | 95 | 96 | 101 |
| 280-161093-2 | C22040413-002 | 97 | 94 | 102 |
| 280-161093-3 | C22040413-003 | 96 | 94 | 101 |
| 280-161093-4 | C22040413-004 | 99 | 96 | 100 |
| 280-161093-5 | C22040413-005 | 99 | 95 | 103 |
| 280-161093-6 | C22040413-006 | 95 | 93 | 101 |
| 280-161093-7 | C22040413-007 | 97 | 96 | 102 |
| 280-161093-8 | C22040413-008 | 98 | 95 | 101 |
| 280-161093-9 | C22040413-009 | 99 | 97 | 100 |
| 280-161093-10 | C22040413-010 | 97 | 95 | 99 |
| 280-161093-11 | C22040413-011 | 97 | 96 | 102 |
| 280-161093-12 | C22040413-012 | 97 | 94 | 101 |
| 280-161093-13 | C22040413-013 | 99 | 95 | 101 |
| 280-161093-14 | C22040413-014 | 100 | 97 | 100 |
| 280-161093-15 | C22040413-015 | 98 | 94 | 100 |
| LCS 280-572511/4 | Lab Control Sample | 96 | 93 | 101 |
| LCSD 280-572511/5 | Lab Control Sample Dup | 93 | 94 | 103 |
| MB 280-572511/9 | Method Blank | 95 | 94 | 102 |

**Surrogate Legend**

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
TOL = Toluene-d8 (Surr)

# QC Sample Results

Client: Energy Laboratories, Inc.
Project/Site: 11(e) Byproduct Material

Job ID: 280-161093-1

## Method: 624.1 - Volatile Organic Compounds (GC/MS)

**Lab Sample ID: MB 280-572511/9**
**Matrix: Water**
**Analysis Batch: 572511**

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

| Analyte | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | ND | | 1.0 | 0.15 | ug/L | | | 04/21/22 09:27 | 1 |
| Bromoform | ND | | 2.0 | 0.67 | ug/L | | | 04/21/22 09:27 | 1 |
| Chlorodibromomethane | ND | | 1.0 | 0.21 | ug/L | | | 04/21/22 09:27 | 1 |
| Chloroform | ND | | 1.0 | 0.22 | ug/L | | | 04/21/22 09:27 | 1 |
| Trihalomethanes, Total | ND | | 1.0 | 0.15 | ug/L | | | 04/21/22 09:27 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1,2-Dichloroethane-d4 (Surr)* | *95* | | *73 - 122* | | *04/21/22 09:27* | *1* |
| *4-Bromofluorobenzene (Surr)* | *94* | | *79 - 119* | | *04/21/22 09:27* | *1* |
| *Toluene-d8 (Surr)* | *102* | | *80 - 120* | | *04/21/22 09:27* | *1* |

**Lab Sample ID: LCS 280-572511/4**
**Matrix: Water**
**Analysis Batch: 572511**

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

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits |
|---|---|---|---|---|---|---|---|
| Bromodichloromethane | 25.0 | 27.5 | | ug/L | | 110 | 65 - 135 |
| Bromoform | 25.0 | 24.0 | | ug/L | | 96 | 70 - 130 |
| Chlorodibromomethane | 25.0 | 29.3 | | ug/L | | 117 | 70 - 135 |
| Chloroform | 25.0 | 27.0 | | ug/L | | 108 | 70 - 135 |

| *Surrogate* | *LCS %Recovery* | *LCS Qualifier* | *Limits* |
|---|---|---|---|
| *1,2-Dichloroethane-d4 (Surr)* | *96* | | *73 - 122* |
| *4-Bromofluorobenzene (Surr)* | *93* | | *79 - 119* |
| *Toluene-d8 (Surr)* | *101* | | *80 - 120* |

**Lab Sample ID: LCSD 280-572511/5**
**Matrix: Water**
**Analysis Batch: 572511**

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

| Analyte | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | 25.0 | 26.6 | | ug/L | | 106 | 65 - 135 | 3 | 30 |
| Bromoform | 25.0 | 24.6 | | ug/L | | 98 | 70 - 130 | 2 | 30 |
| Chlorodibromomethane | 25.0 | 29.1 | | ug/L | | 116 | 70 - 135 | 1 | 30 |
| Chloroform | 25.0 | 25.8 | | ug/L | | 103 | 70 - 135 | 4 | 30 |

| *Surrogate* | *LCSD %Recovery* | *LCSD Qualifier* | *Limits* |
|---|---|---|---|
| *1,2-Dichloroethane-d4 (Surr)* | *93* | | *73 - 122* |
| *4-Bromofluorobenzene (Surr)* | *94* | | *79 - 119* |
| *Toluene-d8 (Surr)* | *103* | | *80 - 120* |

# QC Association Summary

Client: Energy Laboratories, Inc.
Project/Site: 11(e) Byproduct Material

Job ID: 280-161093-1

## GC/MS VOA

### Analysis Batch: 572511

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 280-161093-1 | C22040413-001 | Total/NA | Water | 624.1 | |
| 280-161093-2 | C22040413-002 | Total/NA | Water | 624.1 | |
| 280-161093-3 | C22040413-003 | Total/NA | Water | 624.1 | |
| 280-161093-4 | C22040413-004 | Total/NA | Water | 624.1 | |
| 280-161093-5 | C22040413-005 | Total/NA | Water | 624.1 | |
| 280-161093-6 | C22040413-006 | Total/NA | Water | 624.1 | |
| 280-161093-7 | C22040413-007 | Total/NA | Water | 624.1 | |
| 280-161093-8 | C22040413-008 | Total/NA | Water | 624.1 | |
| 280-161093-9 | C22040413-009 | Total/NA | Water | 624.1 | |
| 280-161093-10 | C22040413-010 | Total/NA | Water | 624.1 | |
| 280-161093-11 | C22040413-011 | Total/NA | Water | 624.1 | |
| 280-161093-12 | C22040413-012 | Total/NA | Water | 624.1 | |
| 280-161093-13 | C22040413-013 | Total/NA | Water | 624.1 | |
| 280-161093-14 | C22040413-014 | Total/NA | Water | 624.1 | |
| 280-161093-15 | C22040413-015 | Total/NA | Water | 624.1 | |
| MB 280-572511/9 | Method Blank | Total/NA | Water | 624.1 | |
| LCS 280-572511/4 | Lab Control Sample | Total/NA | Water | 624.1 | |
| LCSD 280-572511/5 | Lab Control Sample Dup | Total/NA | Water | 624.1 | |

# Lab Chronicle

Client: Energy Laboratories, Inc.
Project/Site: 11(e) Byproduct Material

Job ID: 280-161093-1

## Client Sample ID: C22040413-001
**Lab Sample ID: 280-161093-1**
Date Collected: 04/07/22 09:12
Matrix: Water
Date Received: 04/15/22 09:50

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 624.1 | | 1 | 5 mL | 5 mL | 572511 | 04/21/22 10:17 | TAW | TAL DEN |

## Client Sample ID: C22040413-002
**Lab Sample ID: 280-161093-2**
Date Collected: 04/07/22 10:35
Matrix: Water
Date Received: 04/15/22 09:50

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 624.1 | | 1 | 5 mL | 5 mL | 572511 | 04/21/22 10:39 | TAW | TAL DEN |

## Client Sample ID: C22040413-003
**Lab Sample ID: 280-161093-3**
Date Collected: 04/07/22 11:18
Matrix: Water
Date Received: 04/15/22 09:50

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 624.1 | | 1 | 5 mL | 5 mL | 572511 | 04/21/22 11:00 | TAW | TAL DEN |

## Client Sample ID: C22040413-004
**Lab Sample ID: 280-161093-4**
Date Collected: 04/07/22 12:20
Matrix: Water
Date Received: 04/15/22 09:50

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 624.1 | | 1 | 5 mL | 5 mL | 572511 | 04/21/22 11:21 | TAW | TAL DEN |

## Client Sample ID: C22040413-005
**Lab Sample ID: 280-161093-5**
Date Collected: 04/07/22 13:05
Matrix: Water
Date Received: 04/15/22 09:50

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 624.1 | | 1 | 5 mL | 5 mL | 572511 | 04/21/22 11:43 | TAW | TAL DEN |

## Client Sample ID: C22040413-006
**Lab Sample ID: 280-161093-6**
Date Collected: 04/07/22 13:45
Matrix: Water
Date Received: 04/15/22 09:50

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 624.1 | | 1 | 5 mL | 5 mL | 572511 | 04/21/22 12:04 | TAW | TAL DEN |

## Client Sample ID: C22040413-007
**Lab Sample ID: 280-161093-7**
Date Collected: 04/07/22 14:25
Matrix: Water
Date Received: 04/15/22 09:50

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 624.1 | | 1 | 5 mL | 5 mL | 572511 | 04/21/22 12:26 | TAW | TAL DEN |

# Lab Chronicle

Client: Energy Laboratories, Inc.
Project/Site: 11(e) Byproduct Material

Job ID: 280-161093-1

**Client Sample ID: C22040413-008** — **Lab Sample ID: 280-161093-8**
**Date Collected: 04/07/22 15:30** — **Matrix: Water**
**Date Received: 04/15/22 09:50**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 624.1 | | 1 | 5 mL | 5 mL | 572511 | 04/21/22 12:47 | TAW | TAL DEN |

**Client Sample ID: C22040413-009** — **Lab Sample ID: 280-161093-9**
**Date Collected: 04/08/22 10:35** — **Matrix: Water**
**Date Received: 04/15/22 09:50**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 624.1 | | 1 | 5 mL | 5 mL | 572511 | 04/21/22 13:09 | TAW | TAL DEN |

**Client Sample ID: C22040413-010** — **Lab Sample ID: 280-161093-10**
**Date Collected: 04/08/22 12:33** — **Matrix: Water**
**Date Received: 04/15/22 09:50**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 624.1 | | 1 | 5 mL | 5 mL | 572511 | 04/21/22 13:30 | TAW | TAL DEN |

**Client Sample ID: C22040413-011** — **Lab Sample ID: 280-161093-11**
**Date Collected: 04/07/22 09:12** — **Matrix: Water**
**Date Received: 04/15/22 09:50**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 624.1 | | 1 | 5 mL | 5 mL | 572511 | 04/21/22 13:52 | TAW | TAL DEN |

**Client Sample ID: C22040413-012** — **Lab Sample ID: 280-161093-12**
**Date Collected: 04/07/22 10:35** — **Matrix: Water**
**Date Received: 04/15/22 09:50**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 624.1 | | 1 | 5 mL | 5 mL | 572511 | 04/21/22 14:13 | TAW | TAL DEN |

**Client Sample ID: C22040413-013** — **Lab Sample ID: 280-161093-13**
**Date Collected: 04/07/22 13:05** — **Matrix: Water**
**Date Received: 04/15/22 09:50**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 624.1 | | 1 | 5 mL | 5 mL | 572511 | 04/21/22 14:35 | TAW | TAL DEN |

**Client Sample ID: C22040413-014** — **Lab Sample ID: 280-161093-14**
**Date Collected: 04/07/22 15:30** — **Matrix: Water**
**Date Received: 04/15/22 09:50**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 624.1 | | 1 | 5 mL | 5 mL | 572511 | 04/21/22 14:56 | TAW | TAL DEN |

# Lab Chronicle

Client: Energy Laboratories, Inc.
Project/Site: 11(e) Byproduct Material

Job ID: 280-161093-1

**Client Sample ID: C22040413-015**
**Date Collected: 04/08/22 11:36**
**Date Received: 04/15/22 09:50**

**Lab Sample ID: 280-161093-15**
**Matrix: Water**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 624.1 | | 1 | 5 mL | 5 mL | 572511 | 04/21/22 15:18 | TAW | TAL DEN |

**Laboratory References:**

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

# Accreditation/Certification Summary

Client: Energy Laboratories, Inc.
Project/Site: 11(e) Byproduct Material

Job ID: 280-161093-1

## Laboratory: Eurofins Denver

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

| Authority | Program | Identification Number | Expiration Date |
|---|---|---|---|
| A2LA | Dept. of Defense ELAP | 2907.01 | 10-31-23 |
| A2LA | ISO/IEC 17025 | 2907.01 | 10-31-23 |
| Alabama | State Program | 40730 | 09-30-12 * |
| Alaska (UST) | State | 18-001 | 02-08-23 |
| Arizona | State | AZ0713 | 12-20-22 |
| Arkansas DEQ | State | 19-047-0 | 06-01-22 |
| California | State | 2513 | 01-09-23 |
| Connecticut | State | PH-0686 | 09-30-22 |
| Florida | NELAP | E87667-57 | 06-30-22 |
| Georgia | State | 4025-011 | 01-08-23 |
| Illinois | NELAP | 2000172019-1 | 04-30-23 |
| Iowa | State | IA#370 | 12-02-22 |
| Kansas | NELAP | E-10166 | 04-30-22 |
| Kentucky (WW) | State | KY98047 | 12-31-22 |
| Louisiana | NELAP | 30785 | 06-30-14 * |
| Louisiana | NELAP | 30785 | 06-30-22 |
| Minnesota | NELAP | 1788752 | 12-31-22 |
| Nevada | State | CO000262020-1 | 07-31-22 |
| New Hampshire | NELAP | 205319 | 04-29-22 |
| New Jersey | NELAP | 190002 | 06-30-22 |
| New York | NELAP | 59923 | 04-01-23 |
| North Carolina (WW/SW) | State | 358 | 12-31-22 |
| North Dakota | State | R-034 | 01-08-23 |
| Oklahoma | NELAP | 8614 | 08-31-22 |
| Oregon | NELAP | 4025-011 | 01-08-23 |
| Pennsylvania | NELAP | 013 | 07-31-22 |
| South Carolina | State | 72002001 | 01-08-23 |
| Texas | NELAP | TX104704183-08-TX | 09-30-09 * |
| Texas | NELAP | T104704183-21-19 | 10-01-22 |
| US Fish & Wildlife | US Federal Programs | 058448 | 07-31-22 |
| USDA | US Federal Programs | P330-20-00065 | 03-06-23 |
| Utah | NELAP | QUAN5 | 06-30-13 * |
| Utah | NELAP | CO000262019-11 | 07-31-22 |
| Virginia | NELAP | 10490 | 06-14-22 |
| Washington | State | C583-19 | 08-03-22 |
| West Virginia DEP | State | 354 | 11-30-22 |
| Wisconsin | State | 999615430 | 08-31-22 |
| Wyoming (UST) | A2LA | 2907.01 | 10-31-22 |

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

# ANALYTICAL SUMMARY REPORT

June 18, 2022

United Nuclear Corporation
PO Box 1088
Gallup, NM 87305-1088

Work Order: C22040390 Quote ID: C6117

Project Name: UNC-SW Alluvium

Energy Laboratories, Inc. Casper WY received the following 5 samples for United Nuclear Corporation on 4/12/2022 for analysis.

| Lab ID | Client Sample ID | Collect Date | Receive Date | Matrix | Test |
|---|---|---|---|---|---|
| C22040390-001 | EPA-28 | 04/08/22 9:27 | 04/12/22 | Aqueous | Metals by ICP/ICPMS, Dissolved<br>Metals by ICP/ICPMS, Total<br>Alkalinity to pH 4.5<br>Anion - Cation Balance<br>Anions by Ion Chromatography<br>Nitrogen, Ammonia<br>Nitrogen, Nitrate + Nitrite<br>pH<br>Metals Preparation by EPA 200.2<br>Gross Alpha minus Radon and Uranium, Total<br>Lead 210, Total<br>Radium 226 + Radium 228, Total<br>Radium 226, Total<br>Radium 228, Total<br>Thorium, Isotopic, Total<br>Solids, Total Dissolved<br>Solids, Total Dissolved - Calculated<br>TRACKER SHEET<br>624-Purgeable Organics<br>624-Purgeable Organics |
| C22040390-002 | EPA-28 Duplicate | 04/08/22 9:56 | 04/12/22 | Aqueous | Same As Above |
| C22040390-003 | 627 | 04/08/22 11:36 | 04/12/22 | Aqueous | Same As Above |
| C22040390-004 | Rinsate | 04/08/22 13:15 | 04/12/22 | Aqueous | Metals by ICP/ICPMS, Dissolved<br>Metals by ICP/ICPMS, Total<br>Alkalinity to pH 4.5<br>Anion - Cation Balance<br>Anions by Ion Chromatography<br>Nitrogen, Ammonia<br>Nitrogen, Nitrate + Nitrite<br>pH<br>Metals Preparation by EPA 200.2<br>Gross Alpha minus Radon and Uranium, Total<br>Lead 210, Total<br>Radium 226 + Radium 228, Total<br>Radium 226, Total<br>Radium 228, Total<br>Thorium, Isotopic, Total<br>Solids, Total Dissolved<br>Solids, Total Dissolved - Calculated<br>624-Purgeable Organics<br>624-Purgeable Organics |
| C22040390-005 | Field Blank | 04/08/22 13:45 | 04/12/22 | Aqueous | Same As Above |

# ANALYTICAL SUMMARY REPORT

The analyses presented in this report were performed by Energy Laboratories, Inc., 2393 Salt Creek Hwy., Casper, WY 82601, unless otherwise noted. Any exceptions or problems with the analyses are noted in the report package. Any issues encountered during sample receipt are documented in the Work Order Receipt Checklist.

The results as reported relate only to the item(s) submitted for testing. This report shall be used or copied only in its entirety. Energy Laboratories, Inc. is not responsible for the consequences arising from the use of a partial report.

If you have any questions regarding these test results, please contact your Project Manager .

Report Approved By:

Lisa Bradley
Vice President - Director of Laboratory Operations

Digitally signed by
Lisa Bradley
Date: 2022.06.18 11:24:54 -06:00

**CLIENT:** United Nuclear Corporation
**Project:** UNC-SW Alluvium
**Work Order:** C22040390

**Report Date:** 06/18/22

# CASE NARRATIVE

Tests associated with analyst identified as ELI-B were subcontracted to Energy Laboratories, 1120 S. 27th St., Billings, MT, EPA Number MT00005.

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22040390 **Report Date:** 04/21/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: A2320 B** | | | | | | | | | Analytical Run: MANTECH_220413A | |
| **Lab ID: ICV** | | Initial Calibration Verification Standard | | | | | | | 04/13/22 16:01 | |
| pH | | 6.83 | s.u. | 0.010 | 100 | 98 | 102 | | | |
| **Method: A2320 B** | | | | | | | | | Batch: R281464 | |
| **Lab ID: MBLK** | | Method Blank | | | | Run: MANTECH_220413A | | | 04/13/22 19:20 | |
| Alkalinity, Total as CaCO3 | | ND | mg/L | 2 | | | | | | |
| **Lab ID: C22040390-004ADUP** | | Sample Duplicate | | | | Run: MANTECH_220413A | | | 04/13/22 19:37 | |
| Alkalinity, Total as CaCO3 | | ND | mg/L | 5.0 | | | | | 10 | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22040390 **Report Date:** 04/21/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: A2540 C** | | | | | | | | | | Batch: TDS220414A |
| **Lab ID: MB-1_220414A** | | Method Blank | | | | Run: BAL-111_220414A | | | | 04/14/22 12:25 |
| Solids, Total Dissolved TDS @ 180 C | | ND | mg/L | 10 | | | | | | |
| **Lab ID: LCS-2_220414A** | | Laboratory Control Sample | | | | Run: BAL-111_220414A | | | | 04/14/22 12:25 |
| Solids, Total Dissolved TDS @ 180 C | | 1000 | mg/L | 20 | 100 | 90 | 110 | | | |
| **Lab ID: C22040385-001A DUP** | | Sample Duplicate | | | | Run: BAL-111_220414A | | | | 04/14/22 12:28 |
| Solids, Total Dissolved TDS @ 180 C | | 876 | mg/L | 20 | | | | 0 | 5 | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22040390 **Report Date:** 04/21/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: A4500-H B** | | | | | | | | | Analytical Run: PHSC_101-C_220414A | |
| **Lab ID: 6.86** | 2 | Initial Calibration Verification Standard | | | | | | | 04/14/22 10:19 | |
| pH | | 6.9 | s.u. | 0.1 | 100 | 98 | 102 | | | |
| pH Measurement Temp | | 19.5 | °C | | | 0 | 0 | | | |
| **Method: A4500-H B** | | | | | | | | | | Batch: R281467 |
| **Lab ID: C22040390-001ADUP** | 2 | Sample Duplicate | | | | Run: PHSC_101-C_220414A | | | 04/14/22 11:08 | |
| pH | | 7.0 | s.u. | 0.1 | | | | 0.0 | 1.5 | |
| pH Measurement Temp | | 10.7 | °C | | | | | | | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22040390 **Report Date:** 04/21/22

| Analyte | | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Method:** | **E300.0** | | | | | | | | | Analytical Run: IC3-C_220414A | |
| **Lab ID:** | **ICV** | 2 | Initial Calibration Verification Standard | | | | | | | 04/14/22 09:51 | |
| Chloride | | | 9.30 | mg/L | 1.0 | 93 | 90 | 110 | | | |
| Sulfate | | | 37.4 | mg/L | 1.0 | 94 | 90 | 110 | | | |
| **Method:** | **E300.0** | | | | | | | | | Batch: R281553 | |
| **Lab ID:** | **ICB** | 2 | Method Blank | | | | Run: IC3-C_220414A | | | 04/14/22 10:10 | |
| Chloride | | | ND | mg/L | 0.01 | | | | | | |
| Sulfate | | | ND | mg/L | 0.2 | | | | | | |
| **Lab ID:** | **LFB** | 2 | Laboratory Fortified Blank | | | | Run: IC3-C_220414A | | | 04/14/22 10:29 | |
| Chloride | | | 9.26 | mg/L | 1.0 | 96 | 90 | 110 | | | |
| Sulfate | | | 37.3 | mg/L | 1.0 | 97 | 90 | 110 | | | |
| **Lab ID:** | **C22040390-004AMS** | 2 | Sample Matrix Spike | | | | Run: IC3-C_220414A | | | 04/15/22 09:49 | |
| Chloride | | | 9.84 | mg/L | 1.0 | 98 | 80 | 120 | | | |
| Sulfate | | | 39.8 | mg/L | 1.0 | 99 | 80 | 120 | | | |
| **Lab ID:** | **C22040390-004AMSD** | 2 | Sample Matrix Spike Duplicate | | | | Run: IC3-C_220414A | | | 04/15/22 10:08 | |
| Chloride | | | 10.1 | mg/L | 1.0 | 101 | 80 | 120 | 2.7 | 20 | |
| Sulfate | | | 41.2 | mg/L | 1.0 | 102 | 80 | 120 | 3.3 | 20 | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22040390 **Report Date:** 04/21/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: E350.1** | | | | | | | | | Analytical Run: FIA201-C_220415A | |
| **Lab ID: ICV** | Initial Calibration Verification Standard | | | | | | | | 04/15/22 11:32 | |
| Nitrogen, Ammonia as N | | 0.996 | mg/L | 0.050 | 100 | 90 | 110 | | | |
| **Method: E350.1** | | | | | | | | | Batch: R281514 | |
| **Lab ID: MBLK** | Method Blank | | | | | Run: FIA201-C_220415A | | | 04/15/22 11:30 | |
| Nitrogen, Ammonia as N | | ND | mg/L | 0.03 | | | | | | |
| **Lab ID: LFB** | Laboratory Fortified Blank | | | | | Run: FIA201-C_220415A | | | 04/15/22 11:33 | |
| Nitrogen, Ammonia as N | | 0.972 | mg/L | 0.050 | 98 | 90 | 110 | | | |
| **Lab ID: C22040390-001DMS** | Sample Matrix Spike | | | | | Run: FIA201-C_220415A | | | 04/15/22 11:35 | |
| Nitrogen, Ammonia as N | | 0.866 | mg/L | 0.050 | 87 | 90 | 110 | | | S |
| **Lab ID: C22040390-001DMSD** | Sample Matrix Spike Duplicate | | | | | Run: FIA201-C_220415A | | | 04/15/22 11:37 | |
| Nitrogen, Ammonia as N | | 0.833 | mg/L | 0.050 | 83 | 90 | 110 | 3.8 | 10 | S |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

S - Spike recovery outside of advisory limits

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22040390 **Report Date:** 04/21/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: E353.2** | | | | | | | | | Analytical Run: FIA201-C_220414B | |
| **Lab ID: ICV** | | Initial Calibration Verification Standard | | | | | | | 04/14/22 14:06 | |
| Nitrogen, Nitrate+Nitrite as N | | 1.01 | mg/L | 0.050 | 101 | 90 | 110 | | | |
| **Method: E353.2** | | | | | | | | | Batch: R281476 | |
| **Lab ID: MBLK** | | Method Blank | | | | Run: FIA201-C_220414B | | | 04/14/22 14:07 | |
| Nitrogen, Nitrate+Nitrite as N | | ND | mg/L | 0.01 | | | | | | |
| **Lab ID: LFB** | | Laboratory Fortified Blank | | | | Run: FIA201-C_220414B | | | 04/14/22 14:09 | |
| Nitrogen, Nitrate+Nitrite as N | | 1.00 | mg/L | 0.050 | 101 | 90 | 110 | | | |
| **Lab ID: C22040390-004DMS** | | Sample Matrix Spike | | | | Run: FIA201-C_220414B | | | 04/14/22 14:46 | |
| Nitrogen, Nitrate+Nitrite as N | | 1.09 | mg/L | 0.050 | 109 | 90 | 110 | | | |
| **Lab ID: C22040390-004DMSD** | | Sample Matrix Spike Duplicate | | | | Run: FIA201-C_220414B | | | 04/14/22 14:47 | |
| Nitrogen, Nitrate+Nitrite as N | | 1.05 | mg/L | 0.050 | 105 | 90 | 110 | 3.8 | 10 | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22040390 **Report Date:** 06/15/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: E200.7** | | | | | | | | | Analytical Run: ICP4-C_220421A | |
| **Lab ID: QCS** | 4 | Initial Calibration Verification Standard | | | | | | | 04/21/22 09:28 | |
| Calcium | | 41.9 | mg/L | 0.50 | 105 | 95 | 105 | | | |
| Magnesium | | 41.5 | mg/L | 0.50 | 104 | 95 | 105 | | | |
| Potassium | | 41.4 | mg/L | 0.50 | 103 | 95 | 105 | | | |
| Sodium | | 41.2 | mg/L | 0.53 | 103 | 95 | 105 | | | |
| **Lab ID: CCV** | 4 | Continuing Calibration Verification Standard | | | | | | | 04/21/22 09:54 | |
| Calcium | | 25.8 | mg/L | 0.50 | 103 | 95 | 105 | | | |
| Magnesium | | 25.9 | mg/L | 0.50 | 103 | 95 | 105 | | | |
| Potassium | | 25.7 | mg/L | 0.50 | 103 | 95 | 105 | | | |
| Sodium | | 26.0 | mg/L | 0.97 | 104 | 95 | 105 | | | |
| **Lab ID: CCV** | 4 | Continuing Calibration Verification Standard | | | | | | | 04/21/22 10:55 | |
| Calcium | | 27.1 | mg/L | 0.50 | 108 | 90 | 110 | | | |
| Magnesium | | 26.5 | mg/L | 0.50 | 106 | 90 | 110 | | | |
| Potassium | | 26.6 | mg/L | 0.50 | 107 | 90 | 110 | | | |
| Sodium | | 26.2 | mg/L | 0.53 | 105 | 90 | 110 | | | |
| **Method: E200.7** | | | | | | | | | | Batch: R281720 |
| **Lab ID: LRB** | 4 | Method Blank | | | | Run: ICP4-C_220421A | | | 04/21/22 09:02 | |
| Calcium | | ND | mg/L | 0.1 | | | | | | |
| Magnesium | | ND | mg/L | 0.08 | | | | | | |
| Potassium | | ND | mg/L | 0.2 | | | | | | |
| Sodium | | ND | mg/L | 1 | | | | | | |
| **Lab ID: LFB** | 4 | Laboratory Fortified Blank | | | | Run: ICP4-C_220421A | | | 04/21/22 09:23 | |
| Calcium | | 55.1 | mg/L | 0.50 | 110 | 85 | 115 | | | |
| Magnesium | | 54.0 | mg/L | 0.50 | 108 | 85 | 115 | | | |
| Potassium | | 53.8 | mg/L | 0.50 | 108 | 85 | 115 | | | |
| Sodium | | 55.4 | mg/L | 0.54 | 111 | 85 | 115 | | | |
| **Lab ID: C22040390-005BDIL** | 4 | Serial Dilution | | | | Run: ICP4-C_220421A | | | 04/21/22 10:40 | |
| Calcium | | 1.11 | mg/L | 1.3 | | | | | 10 | N |
| Magnesium | | ND | mg/L | 1.0 | | | | | 10 | |
| Potassium | | ND | mg/L | 1.2 | | | | | 10 | |
| Sodium | | ND | mg/L | 2.6 | | | | | 10 | |
| **Lab ID: C22040390-005BMS2** | 4 | Sample Matrix Spike | | | | Run: ICP4-C_220421A | | | 04/21/22 10:45 | |
| Calcium | | 55.4 | mg/L | 1.0 | 111 | 70 | 130 | | | |
| Magnesium | | 56.1 | mg/L | 1.0 | 112 | 70 | 130 | | | |
| Potassium | | 54.5 | mg/L | 1.0 | 109 | 70 | 130 | | | |
| Sodium | | 55.8 | mg/L | 1.0 | 111 | 70 | 130 | | | |
| **Lab ID: C22040390-005BMSD** | 4 | Sample Matrix Spike Duplicate | | | | Run: ICP4-C_220421A | | | 04/21/22 10:50 | |
| Calcium | | 54.8 | mg/L | 1.0 | 110 | 70 | 130 | 1.1 | 20 | |
| Magnesium | | 56.2 | mg/L | 1.0 | 112 | 70 | 130 | 0.2 | 20 | |
| Potassium | | 54.2 | mg/L | 1.0 | 108 | 70 | 130 | 0.7 | 20 | |
| Sodium | | 56.0 | mg/L | 1.0 | 112 | 70 | 130 | 0.4 | 20 | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

N - Analyte concentration was not sufficiently high to calculate a Relative Percent Difference (RPD) for the serial dilution test

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22040390 **Report Date:** 06/15/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method:** E200.7 | | | | | | | | | Analytical Run: ICP4-C_220422B | |
| **Lab ID:** QCS | | Initial Calibration Verification Standard | | | | | | | 04/26/22 14:32 | |
| Potassium | | 38.6 | mg/L | 0.50 | 96 | 90 | 110 | | | |
| **Lab ID:** CCV | | Continuing Calibration Verification Standard | | | | | | | 04/28/22 01:16 | |
| Potassium | | 25.5 | mg/L | 0.50 | 102 | 90 | 110 | | | |
| **Lab ID:** CCV | | Continuing Calibration Verification Standard | | | | | | | 04/28/22 02:12 | |
| Potassium | | 24.0 | mg/L | 0.50 | 96 | 90 | 110 | | | |
| **Method:** E200.7 | | | | | | | | | Batch: R281887 | |
| **Lab ID:** LRB | | Method Blank | | | | Run: ICP4-C_220422B | | | 04/26/22 14:06 | |
| Potassium | | ND | mg/L | 0.2 | | | | | | |
| **Lab ID:** LFB | | Laboratory Fortified Blank | | | | Run: ICP4-C_220422B | | | 04/26/22 14:27 | |
| Potassium | | 46.5 | mg/L | 0.50 | 93 | 85 | 115 | | | |
| **Lab ID:** C22040805-020BDIL | | Serial Dilution | | | | Run: ICP4-C_220422B | | | 04/27/22 21:28 | |
| Potassium | | 5.28 | mg/L | 1.9 | | | | | 10 | N |
| **Lab ID:** C22040805-020BMS2 | | Sample Matrix Spike | | | | Run: ICP4-C_220422B | | | 04/27/22 21:33 | |
| Potassium | | 114 | mg/L | 1.0 | 108 | 70 | 130 | | | |
| **Lab ID:** C22040805-020BMSD | | Sample Matrix Spike Duplicate | | | | Run: ICP4-C_220422B | | | 04/27/22 21:48 | |
| Potassium | | 121 | mg/L | 1.0 | 115 | 70 | 130 | 5.8 | 20 | |
| **Method:** E200.7 | | | | | | | | | Analytical Run: ICP4-C_220529A | |
| **Lab ID:** QCS | | Initial Calibration Verification Standard | | | | | | | 05/29/22 23:49 | |
| Sodium | | 43.7 | mg/L | 0.97 | 109 | 90 | 110 | | | |
| **Lab ID:** CCV | | Continuing Calibration Verification Standard | | | | | | | 05/30/22 00:13 | |
| Sodium | | 27.0 | mg/L | 0.97 | 108 | 90 | 110 | | | |
| **Lab ID:** CCV | | Continuing Calibration Verification Standard | | | | | | | 05/30/22 01:10 | |
| Sodium | | 27.4 | mg/L | 0.97 | 110 | 90 | 110 | | | |
| **Method:** E200.7 | | | | | | | | | Batch: R283118 | |
| **Lab ID:** LRB | | Method Blank | | | | Run: ICP4-C_220529A | | | 05/29/22 23:25 | |
| Sodium | | ND | mg/L | 1 | | | | | | |
| **Lab ID:** LFB | | Laboratory Fortified Blank | | | | Run: ICP4-C_220529A | | | 05/29/22 23:45 | |
| Sodium | | 54.8 | mg/L | 1.0 | 110 | 85 | 115 | | | |
| **Lab ID:** C22040284-001BMS2 | | Sample Matrix Spike | | | | Run: ICP4-C_220529A | | | 05/30/22 00:28 | |
| Sodium | | 57.3 | mg/L | 1.0 | 115 | 70 | 130 | | | |
| **Lab ID:** C22040284-001BMSD | | Sample Matrix Spike Duplicate | | | | Run: ICP4-C_220529A | | | 05/30/22 00:32 | |
| Sodium | | 56.5 | mg/L | 1.0 | 113 | 70 | 130 | 1.3 | 20 | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

N - Analyte concentration was not sufficiently high to calculate a Relative Percent Difference (RPD) for the serial dilution test

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22040390 **Report Date:** 06/15/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: E200.7** | | | | | | | | | Analytical Run: ICP4-C_220531A | |
| **Lab ID: CCV** | 3 | Continuing Calibration Verification Standard | | | | | | | 05/31/22 09:23 | |
| Calcium | | 25.0 | mg/L | 0.50 | 100 | 95 | 105 | | | |
| Magnesium | | 25.5 | mg/L | 0.50 | 102 | 95 | 105 | | | |
| Potassium | | 24.6 | mg/L | 0.50 | 99 | 95 | 105 | | | |
| **Lab ID: QCS** | 3 | Initial Calibration Verification Standard | | | | | | | 05/31/22 09:31 | |
| Calcium | | 39.9 | mg/L | 0.50 | 100 | 95 | 105 | | | |
| Magnesium | | 41.5 | mg/L | 0.50 | 104 | 95 | 105 | | | |
| Potassium | | 39.5 | mg/L | 0.50 | 99 | 95 | 105 | | | |
| **Lab ID: CCV** | 3 | Continuing Calibration Verification Standard | | | | | | | 05/31/22 10:12 | |
| Calcium | | 25.1 | mg/L | 0.50 | 100 | 90 | 110 | | | |
| Magnesium | | 26.5 | mg/L | 0.50 | 106 | 90 | 110 | | | |
| Potassium | | 25.3 | mg/L | 0.50 | 101 | 90 | 110 | | | |
| **Method: E200.7** | | | | | | | | | | Batch: R283124 |
| **Lab ID: LRB** | 3 | Method Blank | | | | Run: ICP4-C_220531A | | | 05/31/22 08:10 | |
| Calcium | | ND | mg/L | 0.1 | | | | | | |
| Magnesium | | ND | mg/L | 0.08 | | | | | | |
| Potassium | | ND | mg/L | 0.2 | | | | | | |
| **Lab ID: LFB** | 3 | Laboratory Fortified Blank | | | | Run: ICP4-C_220531A | | | 05/31/22 08:27 | |
| Calcium | | 48.4 | mg/L | 0.50 | 97 | 85 | 115 | | | |
| Magnesium | | 46.7 | mg/L | 0.50 | 93 | 85 | 115 | | | |
| Potassium | | 48.1 | mg/L | 0.50 | 96 | 85 | 115 | | | |
| **Lab ID: C22040284-001BMS2** | 3 | Sample Matrix Spike | | | | Run: ICP4-C_220531A | | | 05/31/22 09:39 | |
| Calcium | | 52.6 | mg/L | 1.0 | 105 | 70 | 130 | | | |
| Magnesium | | 54.8 | mg/L | 1.0 | 110 | 70 | 130 | | | |
| Potassium | | 52.7 | mg/L | 1.0 | 105 | 70 | 130 | | | |
| **Lab ID: C22040284-001BMSD** | 3 | Sample Matrix Spike Duplicate | | | | Run: ICP4-C_220531A | | | 05/31/22 09:43 | |
| Calcium | | 52.2 | mg/L | 1.0 | 104 | 70 | 130 | 0.8 | 20 | |
| Magnesium | | 53.7 | mg/L | 1.0 | 107 | 70 | 130 | 2.1 | 20 | |
| Potassium | | 52.5 | mg/L | 1.0 | 105 | 70 | 130 | 0.4 | 20 | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22040390 **Report Date:** 06/15/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method:** E200.8 | | | | | | | | | Analytical Run: ICPMS5-C_220425A | |
| **Lab ID:** QCS | 11 | Initial Calibration Verification Standard | | | | | | | | 04/25/22 12:00 |
| Aluminum | | 0.240 | mg/L | 0.030 | 96 | 90 | 110 | | | |
| Arsenic | | 0.0495 | mg/L | 0.0010 | 99 | 90 | 110 | | | |
| Beryllium | | 0.0242 | mg/L | 0.0010 | 97 | 90 | 110 | | | |
| Cadmium | | 0.0245 | mg/L | 0.0010 | 98 | 90 | 110 | | | |
| Cobalt | | 0.0482 | mg/L | 0.0050 | 96 | 90 | 110 | | | |
| Lead | | 0.0474 | mg/L | 0.0010 | 95 | 90 | 110 | | | |
| Manganese | | 0.242 | mg/L | 0.0010 | 97 | 90 | 110 | | | |
| Molybdenum | | 0.0454 | mg/L | 0.0010 | 91 | 90 | 110 | | | |
| Nickel | | 0.0497 | mg/L | 0.0050 | 99 | 90 | 110 | | | |
| Uranium | | 0.0190 | mg/L | 0.00030 | 95 | 90 | 110 | | | |
| Vanadium | | 0.0471 | mg/L | 0.010 | 94 | 90 | 110 | | | |
| **Lab ID:** CCV | 10 | Continuing Calibration Verification Standard | | | | | | | | 04/25/22 13:14 |
| Aluminum | | 0.0532 | mg/L | 0.030 | 106 | 90 | 110 | | | |
| Arsenic | | 0.0542 | mg/L | 0.0010 | 108 | 90 | 110 | | | |
| Beryllium | | 0.0501 | mg/L | 0.0010 | 100 | 90 | 110 | | | |
| Cadmium | | 0.0534 | mg/L | 0.0010 | 107 | 90 | 110 | | | |
| Lead | | 0.0534 | mg/L | 0.0010 | 107 | 90 | 110 | | | |
| Manganese | | 0.0549 | mg/L | 0.0010 | 110 | 90 | 110 | | | |
| Molybdenum | | 0.0518 | mg/L | 0.0010 | 104 | 90 | 110 | | | |
| Nickel | | 0.0552 | mg/L | 0.0050 | 110 | 90 | 110 | | | |
| Uranium | | 0.0518 | mg/L | 0.00030 | 104 | 90 | 110 | | | |
| Vanadium | | 0.0545 | mg/L | 0.010 | 109 | 90 | 110 | | | |
| **Lab ID:** CCV | 11 | Continuing Calibration Verification Standard | | | | | | | | 04/25/22 14:19 |
| Aluminum | | 0.0502 | mg/L | 0.030 | 100 | 90 | 110 | | | |
| Arsenic | | 0.0526 | mg/L | 0.0010 | 105 | 90 | 110 | | | |
| Beryllium | | 0.0495 | mg/L | 0.0010 | 99 | 90 | 110 | | | |
| Cadmium | | 0.0535 | mg/L | 0.0010 | 107 | 90 | 110 | | | |
| Cobalt | | 0.0524 | mg/L | 0.0050 | 105 | 90 | 110 | | | |
| Lead | | 0.0526 | mg/L | 0.0010 | 105 | 90 | 110 | | | |
| Manganese | | 0.0522 | mg/L | 0.0010 | 104 | 90 | 110 | | | |
| Molybdenum | | 0.0501 | mg/L | 0.0010 | 100 | 90 | 110 | | | |
| Nickel | | 0.0544 | mg/L | 0.0050 | 109 | 90 | 110 | | | |
| Uranium | | 0.0520 | mg/L | 0.00030 | 104 | 90 | 110 | | | |
| Vanadium | | 0.0527 | mg/L | 0.010 | 105 | 90 | 110 | | | |
| **Lab ID:** CCV | 11 | Continuing Calibration Verification Standard | | | | | | | | 04/25/22 15:23 |
| Aluminum | | 0.0495 | mg/L | 0.030 | 99 | 90 | 110 | | | |
| Arsenic | | 0.0531 | mg/L | 0.0010 | 106 | 90 | 110 | | | |
| Beryllium | | 0.0473 | mg/L | 0.0010 | 95 | 90 | 110 | | | |
| Cadmium | | 0.0544 | mg/L | 0.0010 | 109 | 90 | 110 | | | |
| Cobalt | | 0.0532 | mg/L | 0.0050 | 106 | 90 | 110 | | | |
| Lead | | 0.0537 | mg/L | 0.0010 | 107 | 90 | 110 | | | |
| Manganese | | 0.0511 | mg/L | 0.0010 | 102 | 90 | 110 | | | |
| Molybdenum | | 0.0509 | mg/L | 0.0010 | 102 | 90 | 110 | | | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22040390 **Report Date:** 06/15/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: E200.8** | | | | | | | | | Analytical Run: ICPMS5-C_220425A | |
| **Lab ID: CCV** | 11 | Continuing Calibration Verification Standard | | | | | | | 04/25/22 15:23 | |
| Nickel | | 0.0535 | mg/L | 0.0050 | 107 | 90 | 110 | | | |
| Uranium | | 0.0523 | mg/L | 0.00030 | 105 | 90 | 110 | | | |
| Vanadium | | 0.0521 | mg/L | 0.010 | 104 | 90 | 110 | | | |
| **Method: E200.8** | | | | | | | | | Batch: 66489 | |
| **Lab ID: MB-66489** | 11 | Method Blank | | | | Run: ICPMS5-C_220425A | | | 04/25/22 13:42 | |
| Aluminum | | ND | mg/L | 0.02 | | | | | | |
| Arsenic | | ND | mg/L | 0.0003 | | | | | | |
| Beryllium | | ND | mg/L | 0.0002 | | | | | | |
| Cadmium | | ND | mg/L | 0.00002 | | | | | | |
| Cobalt | | ND | mg/L | 0.0001 | | | | | | |
| Lead | | ND | mg/L | 0.0001 | | | | | | |
| Manganese | | ND | mg/L | 0.0007 | | | | | | |
| Molybdenum | | ND | mg/L | 0.0001 | | | | | | |
| Nickel | | ND | mg/L | 0.0003 | | | | | | |
| Uranium | | ND | mg/L | 0.0003 | | | | | | |
| Vanadium | | ND | mg/L | 0.003 | | | | | | |
| **Lab ID: LCS3-66489** | 12 | Laboratory Control Sample | | | | Run: ICPMS5-C_220425A | | | 04/25/22 13:47 | |
| Aluminum | | 2.75 | mg/L | 0.030 | 110 | 85 | 115 | | | |
| Arsenic | | 0.547 | mg/L | 0.0010 | 109 | 85 | 115 | | | |
| Beryllium | | 0.253 | mg/L | 0.0010 | 101 | 85 | 115 | | | |
| Cadmium | | 0.273 | mg/L | 0.0010 | 109 | 85 | 115 | | | |
| Cobalt | | 0.557 | mg/L | 0.0050 | 111 | 85 | 115 | | | |
| Lead | | 0.553 | mg/L | 0.0010 | 111 | 85 | 115 | | | |
| Manganese | | 2.79 | mg/L | 0.0010 | 112 | 85 | 115 | | | |
| Molybdenum | | 0.534 | mg/L | 0.0010 | 107 | 85 | 115 | | | |
| Nickel | | 0.557 | mg/L | 0.0050 | 111 | 85 | 115 | | | |
| Selenium | | 0.541 | mg/L | 0.0010 | 108 | 85 | 115 | | | |
| Uranium | | 0.530 | mg/L | 0.00030 | 106 | 85 | 115 | | | |
| Vanadium | | 0.562 | mg/L | 0.010 | 112 | 85 | 115 | | | |
| **Lab ID: C22040390-001CDIL** | 12 | Serial Dilution | | | | Run: ICPMS5-C_220425A | | | 04/25/22 14:00 | |
| Aluminum | | ND | mg/L | 0.45 | | 0 | 0 | | | |
| Arsenic | | ND | mg/L | 0.0071 | | 0 | 0 | | | |
| Beryllium | | ND | mg/L | 0.0047 | | 0 | 0 | | | |
| Cadmium | | ND | mg/L | 0.0025 | | 0 | 0 | | | |
| Cobalt | | 0.00440 | mg/L | 0.0050 | | 0 | 0 | | | N |
| Lead | | ND | mg/L | 0.0025 | | 0 | 0 | | | |
| Manganese | | 0.853 | mg/L | 0.017 | | 0 | 0 | | | |
| Molybdenum | | ND | mg/L | 0.0027 | | 0 | 0 | | | |
| Nickel | | 0.0132 | mg/L | 0.0085 | | 0 | 0 | | | N |
| Selenium | | ND | mg/L | 0.0036 | | 0 | 0 | | | |
| Uranium | | 0.0144 | mg/L | 0.0067 | | 0 | 0 | | | N |
| Vanadium | | ND | mg/L | 0.063 | | 0 | 0 | | | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

N - Analyte concentration was not sufficiently high to calculate a Relative Percent Difference (RPD) for the serial dilution test

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22040390 **Report Date:** 06/15/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method:** E200.8 | | | | | | | | | | Batch: 66489 |
| **Lab ID:** C22040390-001CMS3 | 12 | Sample Matrix Spike | | | | Run: ICPMS5-C_220425A | | | | 04/25/22 14:05 |
| Aluminum | | 3.04 | mg/L | 0.091 | 112 | 70 | 130 | | | |
| Arsenic | | 0.560 | mg/L | 0.0014 | 112 | 70 | 130 | | | |
| Beryllium | | 0.247 | mg/L | 0.0010 | 99 | 70 | 130 | | | |
| Cadmium | | 0.269 | mg/L | 0.0010 | 108 | 70 | 130 | | | |
| Cobalt | | 0.538 | mg/L | 0.0050 | 107 | 70 | 130 | | | |
| Lead | | 0.544 | mg/L | 0.0010 | 109 | 70 | 130 | | | |
| Manganese | | 3.53 | mg/L | 0.0035 | 106 | 70 | 130 | | | |
| Molybdenum | | 0.531 | mg/L | 0.0010 | 106 | 70 | 130 | | | |
| Nickel | | 0.565 | mg/L | 0.0050 | 111 | 70 | 130 | | | |
| Selenium | | 0.598 | mg/L | 0.0010 | 120 | 70 | 130 | | | |
| Uranium | | 0.550 | mg/L | 0.0013 | 107 | 70 | 130 | | | |
| Vanadium | | 0.564 | mg/L | 0.013 | 113 | 70 | 130 | | | |
| **Lab ID:** C22040390-001CMSD | 12 | Sample Matrix Spike Duplicate | | | | Run: ICPMS5-C_220425A | | | | 04/25/22 14:10 |
| Aluminum | | 3.04 | mg/L | 0.091 | 112 | 70 | 130 | 0 | 20 | |
| Arsenic | | 0.570 | mg/L | 0.0014 | 114 | 70 | 130 | 1.8 | 20 | |
| Beryllium | | 0.247 | mg/L | 0.0010 | 99 | 70 | 130 | 0 | 20 | |
| Cadmium | | 0.276 | mg/L | 0.0010 | 110 | 70 | 130 | 2.4 | 20 | |
| Cobalt | | 0.534 | mg/L | 0.0050 | 106 | 70 | 130 | 0.7 | 20 | |
| Lead | | 0.547 | mg/L | 0.0010 | 109 | 70 | 130 | 0.5 | 20 | |
| Manganese | | 3.55 | mg/L | 0.0035 | 107 | 70 | 130 | 0.6 | 20 | |
| Molybdenum | | 0.528 | mg/L | 0.0010 | 105 | 70 | 130 | 0.7 | 20 | |
| Nickel | | 0.578 | mg/L | 0.0050 | 113 | 70 | 130 | 2.3 | 20 | |
| Selenium | | 0.596 | mg/L | 0.0010 | 119 | 70 | 130 | 0.3 | 20 | |
| Uranium | | 0.554 | mg/L | 0.0013 | 108 | 70 | 130 | 0.9 | 20 | |
| Vanadium | | 0.576 | mg/L | 0.013 | 115 | 70 | 130 | 2.2 | 20 | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22040390 **Report Date:** 06/15/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: E200.8** | | | | | | | | | Analytical Run: ICPMS5-C_220426A | |
| **Lab ID: QCS** | 6 | Initial Calibration Verification Standard | | | | | | | 04/27/22 02:08 | |
| Calcium | | 2.36 | mg/L | 0.50 | 94 | 90 | 110 | | | |
| Cobalt | | 0.0483 | mg/L | 0.0050 | 97 | 90 | 110 | | | |
| Magnesium | | 2.62 | mg/L | 0.50 | 105 | 90 | 110 | | | |
| Manganese | | 0.243 | mg/L | 0.0010 | 97 | 90 | 110 | | | |
| Selenium | | 0.0516 | mg/L | 0.0010 | 103 | 90 | 110 | | | |
| Sodium | | 2.57 | mg/L | 0.50 | 103 | 90 | 110 | | | |
| **Lab ID: CCV** | 5 | Continuing Calibration Verification Standard | | | | | | | 04/26/22 19:58 | |
| Calcium | | 11.5 | mg/L | 0.50 | 92 | 90 | 110 | | | |
| Magnesium | | 11.9 | mg/L | 0.50 | 95 | 90 | 110 | | | |
| Manganese | | 0.0450 | mg/L | 0.0010 | 90 | 90 | 110 | | | |
| Selenium | | 0.0496 | mg/L | 0.0010 | 99 | 90 | 110 | | | |
| Sodium | | 12.0 | mg/L | 0.50 | 96 | 90 | 110 | | | |
| **Lab ID: CCV** | 5 | Continuing Calibration Verification Standard | | | | | | | 04/26/22 20:58 | |
| Calcium | | 11.4 | mg/L | 0.50 | 91 | 90 | 110 | | | |
| Magnesium | | 11.8 | mg/L | 0.50 | 95 | 90 | 110 | | | |
| Manganese | | 0.0464 | mg/L | 0.0010 | 93 | 90 | 110 | | | |
| Selenium | | 0.0483 | mg/L | 0.0010 | 97 | 90 | 110 | | | |
| Sodium | | 12.0 | mg/L | 0.50 | 96 | 90 | 110 | | | |
| **Lab ID: CCV** | 6 | Continuing Calibration Verification Standard | | | | | | | 04/27/22 05:12 | |
| Calcium | | 12.2 | mg/L | 0.50 | 98 | 90 | 110 | | | |
| Cobalt | | 0.0479 | mg/L | 0.0050 | 96 | 90 | 110 | | | |
| Magnesium | | 12.0 | mg/L | 0.50 | 96 | 90 | 110 | | | |
| Manganese | | 0.0473 | mg/L | 0.0010 | 95 | 90 | 110 | | | |
| Selenium | | 0.0508 | mg/L | 0.0010 | 102 | 90 | 110 | | | |
| Sodium | | 12.2 | mg/L | 0.50 | 97 | 90 | 110 | | | |
| **Lab ID: CCV** | 6 | Continuing Calibration Verification Standard | | | | | | | 04/27/22 06:12 | |
| Calcium | | 12.0 | mg/L | 0.50 | 96 | 90 | 110 | | | |
| Cobalt | | 0.0463 | mg/L | 0.0050 | 93 | 90 | 110 | | | |
| Magnesium | | 11.4 | mg/L | 0.50 | 91 | 90 | 110 | | | |
| Manganese | | 0.0467 | mg/L | 0.0010 | 93 | 90 | 110 | | | |
| Selenium | | 0.0482 | mg/L | 0.0010 | 96 | 90 | 110 | | | |
| Sodium | | 11.7 | mg/L | 0.50 | 93 | 90 | 110 | | | |
| **Method: E200.8** | | | | | | | | | Batch: 66489 | |
| **Lab ID: MB-66489** | 3 | Method Blank | | | | Run: ICPMS5-C_220426A | | | 04/27/22 04:44 | |
| Cobalt | | ND | mg/L | 0.0001 | | | | | | |
| Manganese | | ND | mg/L | 0.0007 | | | | | | |
| Selenium | | ND | mg/L | 0.0001 | | | | | | |
| **Method: E200.8** | | | | | | | | | Batch: R281898 | |
| **Lab ID: LRB** | 3 | Method Blank | | | | Run: ICPMS5-C_220426A | | | 04/26/22 17:21 | |
| Calcium | | ND | mg/L | 0.3 | | | | | | |
| Magnesium | | ND | mg/L | 0.02 | | | | | | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22040390 **Report Date:** 06/15/22

| Analyte | | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Method:** | **E200.8** | | | | | | | | | Batch: R281898 | |
| **Lab ID:** | **LRB** | 3 | Method Blank | | | | Run: ICPMS5-C_220426A | | | 04/26/22 17:21 | |
| Sodium | | | ND | mg/L | 0.3 | | | | | | |
| **Lab ID:** | **LFB** | 3 | Laboratory Fortified Blank | | | | Run: ICPMS5-C_220426A | | | 04/26/22 17:25 | |
| Calcium | | | 47.5 | mg/L | 0.50 | 95 | 85 | 115 | | | |
| Magnesium | | | 45.9 | mg/L | 0.50 | 92 | 85 | 115 | | | |
| Sodium | | | 45.9 | mg/L | 0.50 | 92 | 85 | 115 | | | |
| **Lab ID:** | **C22040390-002BDIL** | 3 | Serial Dilution | | | | Run: ICPMS5-C_220426A | | | 04/26/22 20:11 | |
| Calcium | | | 522 | mg/L | 6.6 | | | | 2.4 | 10 | |
| Magnesium | | | 427 | mg/L | 1.0 | | | | 3.8 | 10 | |
| Sodium | | | 222 | mg/L | 7.1 | | | | 4.3 | 10 | |
| **Lab ID:** | **C22040390-002BMS** | 3 | Sample Matrix Spike | | | | Run: ICPMS5-C_220426A | | | 04/26/22 20:16 | |
| Calcium | | | 735 | mg/L | 1.4 | 93 | 70 | 130 | | | |
| Magnesium | | | 632 | mg/L | 1.0 | 91 | 70 | 130 | | | |
| Sodium | | | 442 | mg/L | 1.5 | 95 | 70 | 130 | | | |
| **Lab ID:** | **C22040390-002BMSD** | 3 | Sample Matrix Spike Duplicate | | | | Run: ICPMS5-C_220426A | | | 04/26/22 20:21 | |
| Calcium | | | 736 | mg/L | 1.4 | 93 | 70 | 130 | 0.1 | 20 | |
| Magnesium | | | 638 | mg/L | 1.0 | 93 | 70 | 130 | 0.8 | 20 | |
| Sodium | | | 444 | mg/L | 1.5 | 95 | 70 | 130 | 0.3 | 20 | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22040390 **Report Date:** 06/15/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: E200.8** | | | | | | | | | Analytical Run: ICPMS5-C_220428A | |
| **Lab ID: QCS** | 5 | Initial Calibration Verification Standard | | | | | | | 04/28/22 18:09 | |
| Aluminum | | 0.238 | mg/L | 0.030 | 95 | 90 | 110 | | | |
| Molybdenum | | 0.0464 | mg/L | 0.0010 | 93 | 90 | 110 | | | |
| Nickel | | 0.0505 | mg/L | 0.0050 | 101 | 90 | 110 | | | |
| Potassium | | 2.46 | mg/L | 0.50 | 98 | 90 | 110 | | | |
| Vanadium | | 0.0478 | mg/L | 0.010 | 96 | 90 | 110 | | | |
| **Lab ID: CCV** | 5 | Continuing Calibration Verification Standard | | | | | | | 04/28/22 19:37 | |
| Aluminum | | 0.0477 | mg/L | 0.030 | 95 | 90 | 110 | | | |
| Molybdenum | | 0.0465 | mg/L | 0.0010 | 93 | 90 | 110 | | | |
| Nickel | | 0.0490 | mg/L | 0.0050 | 98 | 90 | 110 | | | |
| Potassium | | 11.8 | mg/L | 0.50 | 94 | 90 | 110 | | | |
| Vanadium | | 0.0483 | mg/L | 0.010 | 97 | 90 | 110 | | | |
| **Lab ID: CCV** | 5 | Continuing Calibration Verification Standard | | | | | | | 04/28/22 20:41 | |
| Aluminum | | 0.0462 | mg/L | 0.030 | 92 | 90 | 110 | | | |
| Molybdenum | | 0.0457 | mg/L | 0.0010 | 91 | 90 | 110 | | | |
| Nickel | | 0.0479 | mg/L | 0.0050 | 96 | 90 | 110 | | | |
| Potassium | | 11.4 | mg/L | 0.50 | 91 | 90 | 110 | | | |
| Vanadium | | 0.0474 | mg/L | 0.010 | 95 | 90 | 110 | | | |
| **Lab ID: CCV** | 5 | Continuing Calibration Verification Standard | | | | | | | 04/29/22 00:59 | |
| Aluminum | | 0.0455 | mg/L | 0.030 | 91 | 90 | 110 | | | |
| Molybdenum | | 0.0449 | mg/L | 0.0010 | 90 | 90 | 110 | | | |
| Nickel | | 0.0490 | mg/L | 0.0050 | 98 | 90 | 110 | | | |
| Potassium | | 11.2 | mg/L | 0.50 | 90 | 90 | 110 | | | |
| Vanadium | | 0.0476 | mg/L | 0.010 | 95 | 90 | 110 | | | |
| **Lab ID: CCV** | 5 | Continuing Calibration Verification Standard | | | | | | | 04/29/22 02:04 | |
| Aluminum | | 0.0469 | mg/L | 0.030 | 94 | 90 | 110 | | | |
| Molybdenum | | 0.0467 | mg/L | 0.0010 | 93 | 90 | 110 | | | |
| Nickel | | 0.0496 | mg/L | 0.0050 | 99 | 90 | 110 | | | |
| Potassium | | 11.6 | mg/L | 0.50 | 93 | 90 | 110 | | | |
| Vanadium | | 0.0488 | mg/L | 0.010 | 98 | 90 | 110 | | | |
| **Method: E200.8** | | | | | | | | | Batch: 66489 | |
| **Lab ID: MB-66489** | 4 | Method Blank | | | | Run: ICPMS5-C_220428A | | | 04/29/22 01:50 | |
| Aluminum | | ND | mg/L | 0.02 | | | | | | |
| Molybdenum | | ND | mg/L | 0.0001 | | | | | | |
| Nickel | | ND | mg/L | 0.0003 | | | | | | |
| Vanadium | | ND | mg/L | 0.003 | | | | | | |
| **Method: E200.8** | | | | | | | | | Batch: R282006 | |
| **Lab ID: LRB** | | Method Blank | | | | Run: ICPMS5-C_220428A | | | 04/28/22 14:39 | |
| Potassium | | ND | mg/L | 0.1 | | | | | | |
| **Lab ID: LFB** | | Laboratory Fortified Blank | | | | Run: ICPMS5-C_220428A | | | 04/28/22 14:43 | |
| Potassium | | 47.5 | mg/L | 0.50 | 95 | 85 | 115 | | | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22040390 **Report Date:** 06/15/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method:** E200.8 | | | | | | | | | | Batch: R282006 |
| **Lab ID:** C22040523-002CDIL | | Serial Dilution | | | | Run: ICPMS5-C_220428A | | | | 04/28/22 20:55 |
| Potassium | | 2.07 | mg/L | 1.0 | | | | | 10 | N |
| **Lab ID:** C22040523-002CMS | | Sample Matrix Spike | | | | Run: ICPMS5-C_220428A | | | | 04/28/22 21:00 |
| Potassium | | 48.6 | mg/L | 1.0 | 93 | 70 | 130 | | | |
| **Lab ID:** C22040523-002CMSD | | Sample Matrix Spike Duplicate | | | | Run: ICPMS5-C_220428A | | | | 04/28/22 21:04 |
| Potassium | | 48.7 | mg/L | 1.0 | 93 | 70 | 130 | 0.1 | 20 | |
| **Method:** E200.8 | | | | | | | | | | Analytical Run: ICPMS5-C_220505A |
| **Lab ID:** QCS | 2 | Initial Calibration Verification Standard | | | | | | | | 05/06/22 10:08 |
| Aluminum | | 0.263 | mg/L | 0.030 | 105 | 90 | 110 | | | |
| Vanadium | | 0.0513 | mg/L | 0.010 | 103 | 90 | 110 | | | |
| **Lab ID:** CCV | 2 | Continuing Calibration Verification Standard | | | | | | | | 05/06/22 22:56 |
| Aluminum | | 0.0531 | mg/L | 0.030 | 106 | 90 | 110 | | | |
| Vanadium | | 0.0498 | mg/L | 0.010 | 100 | 90 | 110 | | | |
| **Lab ID:** CCV | 2 | Continuing Calibration Verification Standard | | | | | | | | 05/07/22 01:43 |
| Aluminum | | 0.0468 | mg/L | 0.030 | 94 | 90 | 110 | | | |
| Vanadium | | 0.0468 | mg/L | 0.010 | 94 | 90 | 110 | | | |
| **Method:** E200.8 | | | | | | | | | | Batch: 66489 |
| **Lab ID:** MB-66489 | 2 | Method Blank | | | | Run: ICPMS5-C_220505A | | | | 05/06/22 23:46 |
| Aluminum | | ND | mg/L | 0.02 | | | | | | |
| Vanadium | | ND | mg/L | 0.003 | | | | | | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

N - Analyte concentration was not sufficiently high to calculate a Relative Percent Difference (RPD) for the serial dilution test

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22040390 **Report Date:** 06/15/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method:** E200.8 | | | | | | | | | Analytical Run: ICPMS5-C_220613A | |
| **Lab ID:** QCS | | Initial Calibration Verification Standard | | | | | | | 06/13/22 23:20 | |
| Aluminum | | 0.248 | mg/L | 0.030 | 99 | 90 | 110 | | | |
| **Lab ID:** CCV | | Continuing Calibration Verification Standard | | | | | | | 06/14/22 00:31 | |
| Aluminum | | 0.0515 | mg/L | 0.030 | 103 | 90 | 110 | | | |
| **Lab ID:** CCV | | Continuing Calibration Verification Standard | | | | | | | 06/14/22 02:04 | |
| Aluminum | | 0.0480 | mg/L | 0.030 | 96 | 90 | 110 | | | |
| **Method:** E200.8 | | | | | | | | | Batch: 66489 | |
| **Lab ID:** LCS3-66489 | 12 | Laboratory Control Sample | | | | Run: ICPMS5-C_220613A | | | 06/14/22 01:37 | |
| Aluminum | | 2.38 | mg/L | 0.030 | 95 | 85 | 115 | | | |
| Arsenic | | 0.483 | mg/L | 0.0010 | 97 | 85 | 115 | | | |
| Beryllium | | 0.242 | mg/L | 0.0010 | 97 | 85 | 115 | | | |
| Cadmium | | 0.255 | mg/L | 0.0010 | 102 | 85 | 115 | | | |
| Cobalt | | 0.492 | mg/L | 0.0050 | 98 | 85 | 115 | | | |
| Lead | | 0.497 | mg/L | 0.0010 | 99 | 85 | 115 | | | |
| Manganese | | 2.48 | mg/L | 0.0010 | 99 | 85 | 115 | | | |
| Molybdenum | | 0.477 | mg/L | 0.0010 | 95 | 85 | 115 | | | |
| Nickel | | 0.507 | mg/L | 0.0050 | 101 | 85 | 115 | | | |
| Selenium | | 0.488 | mg/L | 0.0010 | 98 | 85 | 115 | | | |
| Uranium | | 0.488 | mg/L | 0.00030 | 98 | 85 | 115 | | | |
| Vanadium | | 0.503 | mg/L | 0.010 | 101 | 85 | 115 | | | |
| **Lab ID:** C22040390-001CMS3 | 12 | Sample Matrix Spike | | | | Run: ICPMS5-C_220613A | | | 06/14/22 01:53 | |
| Aluminum | | 2.90 | mg/L | 0.091 | 108 | 70 | 130 | | | |
| Arsenic | | 0.500 | mg/L | 0.0014 | 100 | 70 | 130 | | | |
| Beryllium | | 0.243 | mg/L | 0.0010 | 97 | 70 | 130 | | | |
| Cadmium | | 0.255 | mg/L | 0.0010 | 102 | 70 | 130 | | | |
| Cobalt | | 0.497 | mg/L | 0.0050 | 98 | 70 | 130 | | | |
| Lead | | 0.488 | mg/L | 0.0010 | 98 | 70 | 130 | | | |
| Manganese | | 3.20 | mg/L | 0.0035 | 98 | 70 | 130 | | | |
| Molybdenum | | 0.481 | mg/L | 0.0010 | 96 | 70 | 130 | | | |
| Nickel | | 0.522 | mg/L | 0.0050 | 102 | 70 | 130 | | | |
| Selenium | | 0.542 | mg/L | 0.0010 | 108 | 70 | 130 | | | |
| Uranium | | 0.506 | mg/L | 0.0013 | 99 | 70 | 130 | | | |
| Vanadium | | 0.518 | mg/L | 0.013 | 104 | 70 | 130 | | | |
| **Lab ID:** C22040390-001CMSD | 12 | Sample Matrix Spike Duplicate | | | | Run: ICPMS5-C_220613A | | | 06/14/22 02:15 | |
| Aluminum | | 2.87 | mg/L | 0.091 | 107 | 70 | 130 | 0.9 | 20 | |
| Arsenic | | 0.502 | mg/L | 0.0014 | 100 | 70 | 130 | 0.2 | 20 | |
| Beryllium | | 0.240 | mg/L | 0.0010 | 96 | 70 | 130 | 1.2 | 20 | |
| Cadmium | | 0.256 | mg/L | 0.0010 | 102 | 70 | 130 | 0.1 | 20 | |
| Cobalt | | 0.487 | mg/L | 0.0050 | 96 | 70 | 130 | 2.0 | 20 | |
| Lead | | 0.488 | mg/L | 0.0010 | 98 | 70 | 130 | 0.1 | 20 | |
| Manganese | | 3.18 | mg/L | 0.0035 | 97 | 70 | 130 | 0.8 | 20 | |
| Molybdenum | | 0.475 | mg/L | 0.0010 | 95 | 70 | 130 | 1.3 | 20 | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22040390 **Report Date:** 06/15/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method:** E200.8 | | | | | | | | | | Batch: 66489 |
| **Lab ID:** C22040390-001CMSD | 12 | Sample Matrix Spike Duplicate | | | | Run: ICPMS5-C_220613A | | | 06/14/22 02:15 | |
| Nickel | | 0.523 | mg/L | 0.0050 | 103 | 70 | 130 | 0.3 | 20 | |
| Selenium | | 0.540 | mg/L | 0.0010 | 108 | 70 | 130 | 0.6 | 20 | |
| Uranium | | 0.504 | mg/L | 0.0013 | 98 | 70 | 130 | 0.4 | 20 | |
| Vanadium | | 0.524 | mg/L | 0.013 | 105 | 70 | 130 | 1.2 | 20 | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22040390 **Report Date:** 05/20/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: A7500-U C** | | | | | | | | | | Batch: RA-TH-ISO-3418 |
| **Lab ID: MB-RA-TH-ISO-3418** | 3 | Method Blank | | | | Run: EGG-ORTEC_ALL_220419A | | | 04/21/22 13:52 | |
| Thorium 230 | | 0.08 | pCi/L | | | | | | | |
| Thorium 230 precision (±) | | 0.04 | pCi/L | | | | | | | |
| Thorium 230 MDC | | 0.06 | pCi/L | | | | | | | |
| **Lab ID: LCS-RA-TH-ISO-3418** | 3 | Laboratory Control Sample | | | | Run: EGG-ORTEC_ALL_220419A | | | 04/21/22 13:52 | |
| Thorium 230 | | 22 | pCi/L | | 89 | 70 | 130 | | | |
| Thorium 230 precision (±) | | 4.2 | pCi/L | | | | | | | |
| Thorium 230 MDC | | 0.047 | pCi/L | | | | | | | |
| **Lab ID: C22040385-004FDUP** | 3 | Sample Duplicate | | | | Run: EGG-ORTEC_ALL_220419A | | | 04/21/22 13:52 | |
| Thorium 230 | | 0.11 | pCi/L | | | | | 19 | 30 | |
| Thorium 230 precision (±) | | 0.053 | pCi/L | | | | | | | |
| Thorium 230 MDC | | 0.074 | pCi/L | | | | | | | |

- The RER result for Th 230 is 0.29.

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22040390 **Report Date:** 05/20/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: E900.1** | | | | | | | | | | Batch: GA-1354R |
| **Lab ID: LCS-GA-1354** | 3 | Laboratory Control Sample | | | | Run: G542M-2_220419B | | | 04/26/22 12:35 | |
| Gross Alpha minus Rn & U | | 40 | pCi/L | | 117 | 70 | 130 | | | |
| Gross Alpha minus Rn & U Precision (±) | | 7.7 | pCi/L | | | | | | | |
| Gross Alpha minus Rn & U MDC | | 0.57 | pCi/L | | | | | | | |
| **Lab ID: MB-GA-1354** | 3 | Method Blank | | | | Run: G542M-2_220419B | | | 04/26/22 12:36 | |
| Gross Alpha minus Rn & U | | 0.2 | pCi/L | | | | | | | U |
| Gross Alpha minus Rn & U Precision (±) | | 0.3 | pCi/L | | | | | | | |
| Gross Alpha minus Rn & U MDC | | 0.6 | pCi/L | | | | | | | |
| **Lab ID: C22040362-001DDUP** | 3 | Sample Duplicate | | | | Run: G542M-2_220419B | | | 04/26/22 12:36 | |
| Gross Alpha minus Rn & U | | 0.70 | pCi/L | | | | | 62 | 30 | R |
| Gross Alpha minus Rn & U Precision (±) | | 0.38 | pCi/L | | | | | | | |
| Gross Alpha minus Rn & U MDC | | 0.57 | pCi/L | | | | | | | |

- Duplicate RPD is outside of the acceptance range for this analysis. However, the RER is less than the limit of 3, the RER result is 0.64.

**Qualifiers:**

RL - Analyte Reporting Limit

R - Relative Percent Difference (RPD) exceeds advisory limit

ND - Not detected at the Reporting Limit (RL)

U - Not detected at Minimum Detectable Concentration (MDC)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22040390 **Report Date:** 05/20/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: E903.0** | | | | | | | | | Batch: RA226-10430R | |
| **Lab ID: LCS-RA226-10430** | 3 | Laboratory Control Sample | | | | Run: G5000W_220414C | | | 04/26/22 15:32 | |
| Radium 226 | | 7.9 | pCi/L | | 78 | 70 | 130 | | | |
| Radium 226 precision (±) | | 1.6 | pCi/L | | | | | | | |
| Radium 226 MDC | | 0.28 | pCi/L | | | | | | | |
| **Lab ID: MB-RA226-10430** | 3 | Method Blank | | | | Run: G5000W_220414C | | | 04/26/22 15:32 | |
| Radium 226 | | 0.002 | pCi/L | | | | | | | U |
| Radium 226 precision (±) | | 0.1 | pCi/L | | | | | | | |
| Radium 226 MDC | | 0.3 | pCi/L | | | | | | | |
| **Method: E903.0** | | | | | | | | | Batch: RA226-10430R | |
| **Lab ID: C22040390-001EDUP** | 3 | Sample Duplicate | | | | Run: G5000W_220414D | | | 04/28/22 21:19 | |
| Radium 226 | | 0.29 | pCi/L | | | | | 35 | 30 | R |
| Radium 226 precision (±) | | 0.094 | pCi/L | | | | | | | |
| Radium 226 MDC | | 0.13 | pCi/L | | | | | | | |
| - Duplicate RPD is outside of the acceptance range for this analysis. However, the RER is less than the limit of 3, the RER result is 0.84. | | | | | | | | | | |
| **Method: E903.0** | | | | | | | | | Batch: RA226-10453 | |
| **Lab ID: LCS-RA226-10453** | 3 | Laboratory Control Sample | | | | Run: G5000W_220503D | | | 05/16/22 12:43 | |
| Radium 226 | | 11 | pCi/L | | 109 | 70 | 130 | | | |
| Radium 226 precision (±) | | 2.2 | pCi/L | | | | | | | |
| Radium 226 MDC | | 0.20 | pCi/L | | | | | | | |
| **Lab ID: MB-RA226-10453** | 3 | Method Blank | | | | Run: G5000W_220503D | | | 05/16/22 12:43 | |
| Radium 226 | | 0.08 | pCi/L | | | | | | | U |
| Radium 226 precision (±) | | 0.1 | pCi/L | | | | | | | |
| Radium 226 MDC | | 0.2 | pCi/L | | | | | | | |
| **Lab ID: C22040887-002BMS** | 3 | Sample Matrix Spike | | | | Run: G5000W_220503D | | | 05/16/22 12:43 | |
| Radium 226 | | 12 | pCi/L | | 116 | 70 | 130 | | | |
| Radium 226 precision (±) | | 2.4 | pCi/L | | | | | | | |
| Radium 226 MDC | | 0.19 | pCi/L | | | | | | | |
| **Lab ID: C22040887-002BMSD** | 3 | Sample Matrix Spike Duplicate | | | | Run: G5000W_220503D | | | 05/16/22 12:43 | |
| Radium 226 | | 12 | pCi/L | | 109 | 70 | 130 | 6.0 | 30 | |
| Radium 226 precision (±) | | 2.3 | pCi/L | | | | | | | |
| Radium 226 MDC | | 0.19 | pCi/L | | | | | | | |
| - The RER result is 0.22. | | | | | | | | | | |

**Qualifiers:**

RL - Analyte Reporting Limit

R - Relative Percent Difference (RPD) exceeds advisory limit

ND - Not detected at the Reporting Limit (RL)

U - Not detected at Minimum Detectable Concentration (MDC)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22040390 **Report Date:** 05/20/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: E909.0** | | | | | | | | | | Batch: PB-210-1390 |
| **Lab ID: LCS-PB-210-1390** | 3 | Laboratory Control Sample | | | | Run: HIDEX 300SL_220415A | | | 04/21/22 16:21 | |
| Lead 210 | | 17 | pCi/L | | 97 | 70 | 130 | | | |
| Lead 210 precision (±) | | 4.9 | pCi/L | | | | | | | |
| Lead 210 MDC | | 1.3 | pCi/L | | | | | | | |
| **Lab ID: MB-PB-210-1390** | 3 | Method Blank | | | | Run: HIDEX 300SL_220415A | | | 04/21/22 16:21 | |
| Lead 210 | | 0.4 | pCi/L | | | | | | | U |
| Lead 210 precision (±) | | 0.7 | pCi/L | | | | | | | |
| Lead 210 MDC | | 1 | pCi/L | | | | | | | |
| **Lab ID: C22040385-004FDUP** | 3 | Sample Duplicate | | | | Run: HIDEX 300SL_220415A | | | 04/21/22 16:21 | |
| Lead 210 | | 1.2 | pCi/L | | | | | 43 | 30 | UR |
| Lead 210 precision (±) | | 0.79 | pCi/L | | | | | | | |
| Lead 210 MDC | | 1.2 | pCi/L | | | | | | | |

- Duplicate RPD is outside of the acceptance range for this analysis. However, the RER is less than the limit of 3, the RER result is 0.39.

**Qualifiers:**

RL - Analyte Reporting Limit

R - Relative Percent Difference (RPD) exceeds advisory limit

ND - Not detected at the Reporting Limit (RL)

U - Not detected at Minimum Detectable Concentration (MDC)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22040390 **Report Date:** 05/20/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: RA-05** | | | | | | | | | | Batch: RA228-6784 |
| **Lab ID: LCS-228-RA228-6784** | 3 | Laboratory Control Sample | | | | Run: TENNELEC-4_220414D | | | 05/05/22 12:30 | |
| Radium 228 | | 7.0 | pCi/L | | 89 | 70 | 130 | | | |
| Radium 228 precision (±) | | 1.7 | pCi/L | | | | | | | |
| Radium 228 MDC | | 1.4 | pCi/L | | | | | | | |
| **Lab ID: MB-228-RA228-6784** | 3 | Method Blank | | | | Run: TENNELEC-4_220414D | | | 05/05/22 12:30 | |
| Radium 228 | | 0.4 | pCi/L | | | | | | | U |
| Radium 228 precision (±) | | 0.9 | pCi/L | | | | | | | |
| Radium 228 MDC | | 2 | pCi/L | | | | | | | |
| **Lab ID: C22040390-001EDUP** | 3 | Sample Duplicate | | | | Run: TENNELEC-4_220414D | | | 05/05/22 12:30 | |
| Radium 228 | | -0.072 | pCi/L | | | | | 270 | 30 | UR |
| Radium 228 precision (±) | | 0.91 | pCi/L | | | | | | | |
| Radium 228 MDC | | 1.6 | pCi/L | | | | | | | |

- Duplicate RPD is outside of the acceptance range for this analysis. However, the RER is less than the limit of 3, the RER result is 0.41.

**Qualifiers:**

RL - Analyte Reporting Limit

R - Relative Percent Difference (RPD) exceeds advisory limit

ND - Not detected at the Reporting Limit (RL)

U - Not detected at Minimum Detectable Concentration (MDC)

# QA/QC Summary Report

Prepared by Billings, MT Branch

**Client:** United Nuclear Corporation **Work Order:** C22040390 **Report Date:** 04/20/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: E624.1** | | | | | | | | | | Analytical Run: R378922 |
| **Lab ID: CCV041722** | 7 | Continuing Calibration Verification Standard | | | | | | | | 04/17/22 12:44 |
| Bromodichloromethane | | 5.77 | ug/L | 0.50 | 115 | 70 | 130 | | | |
| Bromoform | | 5.36 | ug/L | 0.50 | 107 | 70 | 130 | | | |
| Chlorodibromomethane | | 5.38 | ug/L | 0.50 | 108 | 70 | 130 | | | |
| Chloroform | | 5.27 | ug/L | 0.50 | 105 | 70 | 130 | | | |
| Surr: 1,2-Dichloroethane-d4 | | | | 0.50 | 101 | 71 | 139 | | | |
| Surr: p-Bromofluorobenzene | | | | 0.50 | 105 | 80 | 127 | | | |
| Surr: Toluene-d8 | | | | 0.50 | 110 | 80 | 123 | | | |
| **Method: E624.1** | | | | | | | | | | Batch: R378922 |
| **Lab ID: LCS041722** | 7 | Laboratory Control Sample | | | | Run: 5971A.I_220417A | | | | 04/17/22 13:11 |
| Bromodichloromethane | | 6.22 | ug/L | 0.50 | 124 | 74 | 128 | | | |
| Bromoform | | 5.63 | ug/L | 0.50 | 113 | 70 | 130 | | | |
| Chlorodibromomethane | | 5.60 | ug/L | 0.50 | 112 | 74 | 125 | | | |
| Chloroform | | 5.36 | ug/L | 0.50 | 107 | 70 | 135 | | | |
| Surr: 1,2-Dichloroethane-d4 | | | | 0.50 | 99 | 71 | 139 | | | |
| Surr: p-Bromofluorobenzene | | | | 0.50 | 103 | 80 | 127 | | | |
| Surr: Toluene-d8 | | | | 0.50 | 107 | 80 | 123 | | | |
| **Lab ID: MBLK041722** | 7 | Method Blank | | | | Run: 5971A.I_220417A | | | | 04/17/22 14:05 |
| Bromodichloromethane | | ND | ug/L | 0.50 | | | | | | |
| Bromoform | | ND | ug/L | 0.50 | | | | | | |
| Chlorodibromomethane | | ND | ug/L | 0.50 | | | | | | |
| Chloroform | | ND | ug/L | 0.50 | | | | | | |
| Surr: 1,2-Dichloroethane-d4 | | | | 0.50 | 101 | 71 | 139 | | | |
| Surr: p-Bromofluorobenzene | | | | 0.50 | 103 | 80 | 127 | | | |
| Surr: Toluene-d8 | | | | 0.50 | 109 | 80 | 123 | | | |
| **Lab ID: B22041105-001FMS** | 7 | Sample Matrix Spike | | | | Run: 5971A.I_220417A | | | | 04/17/22 19:12 |
| Bromodichloromethane | | 6.29 | ug/L | 0.50 | 126 | 74 | 128 | | | |
| Bromoform | | 5.58 | ug/L | 0.50 | 112 | 66 | 128 | | | |
| Chlorodibromomethane | | 5.60 | ug/L | 0.50 | 112 | 74 | 125 | | | |
| Chloroform | | 5.53 | ug/L | 0.50 | 111 | 68 | 124 | | | |
| Surr: 1,2-Dichloroethane-d4 | | | | 0.50 | 104 | 71 | 139 | | | |
| Surr: p-Bromofluorobenzene | | | | 0.50 | 103 | 80 | 127 | | | |
| Surr: Toluene-d8 | | | | 0.50 | 107 | 80 | 123 | | | |
| **Lab ID: B22041105-001FMSD** | 7 | Sample Matrix Spike Duplicate | | | | Run: 5971A.I_220417A | | | | 04/17/22 19:40 |
| Bromodichloromethane | | 6.42 | ug/L | 0.50 | 128 | 74 | 128 | 2.0 | 20 | |
| Bromoform | | 5.54 | ug/L | 0.50 | 111 | 66 | 128 | 0.8 | 20 | |
| Chlorodibromomethane | | 5.63 | ug/L | 0.50 | 113 | 74 | 125 | 0.6 | 20 | |
| Chloroform | | 5.46 | ug/L | 0.50 | 109 | 68 | 124 | 1.4 | 20 | |
| Surr: 1,2-Dichloroethane-d4 | | | | 0.50 | 102 | 71 | 139 | | | |
| Surr: p-Bromofluorobenzene | | | | 0.50 | 102 | 80 | 127 | | | |
| Surr: Toluene-d8 | | | | 0.50 | 109 | 80 | 123 | | | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

# ANALYTICAL SUMMARY REPORT

June 18, 2022

United Nuclear Corporation
PO Box 1088
Gallup, NM 87305-1088

Work Order: C22040416 Quote ID: C6117

Project Name: UNC-Sentinel Wells

Energy Laboratories, Inc. Casper WY received the following 3 samples for United Nuclear Corporation on 4/12/2022 for analysis.

| Lab ID | Client Sample ID | Collect Date | Receive Date | Matrix | Test |
|---|---|---|---|---|---|
| C22040416-001 | SW-1B | 04/11/22 10:15 | 04/12/22 | Aqueous | Metals by ICP/ICPMS, Dissolved<br>Metals by ICP/ICPMS, Total<br>Alkalinity to pH 4.5<br>Anion - Cation Balance<br>Anions by Ion Chromatography<br>Nitrogen, Ammonia<br>Nitrogen, Nitrate + Nitrite<br>pH<br>Metals Preparation by EPA 200.2<br>Gross Alpha minus Radon and Uranium, Total<br>Lead 210, Total<br>Radium 226 + Radium 228, Total<br>Radium 226, Total<br>Radium 228, Total<br>Thorium, Isotopic, Total<br>Solids, Total Dissolved<br>Solids, Total Dissolved - Calculated<br>TRACKER SHEET<br>624-Purgeable Organics<br>624-Purgeable Organics |
| C22040416-002 | SW-3B | 04/11/22 11:20 | 04/12/22 | Aqueous | Same As Above |
| C22040416-003 | Trip Blank-80352 | 04/11/22 10:15 | 04/12/22 | Trip Blank | 624-Purgeable Organics<br>624-Purgeable Organics |

The analyses presented in this report were performed by Energy Laboratories, Inc., 2393 Salt Creek Hwy., Casper, WY 82601, unless otherwise noted. Any exceptions or problems with the analyses are noted in the report package. Any issues encountered during sample receipt are documented in the Work Order Receipt Checklist.

The results as reported relate only to the item(s) submitted for testing. This report shall be used or copied only in its entirety. Energy Laboratories, Inc. is not responsible for the consequences arising from the use of a partial report.

If you have any questions regarding these test results, please contact your Project Manager .

Report Approved By:

Lisa Bradley
Vice President - Director of Laboratory Operations

Digitally signed by
Lisa Bradley
Date: 2022.06.18 11:34:36 -06:00

**CLIENT:** United Nuclear Corporation
**Project:** UNC-Sentinel Wells
**Work Order:** C22040416

**Report Date:** 06/18/22

# CASE NARRATIVE

Tests associated with analyst identified as ELI-B were subcontracted to Energy Laboratories, 1120 S. 27th St., Billings, MT, EPA Number MT00005.

# Work Order Sample Summary

**CLIENT:** United Nuclear Corporation
**Project:** UNC-Sentinel Wells
**Work Order:** C22040416 **Report Date:** 06/18/22

| Lab ID | Client Sample ID | Collection Date | Date Received |
|---|---|---|---|
| C22040416-001 | SW-1B | 4/11/2022 10:15:00 AM | 4/12/2022 |
| C22040416-002 | SW-3B | 4/11/2022 11:20:00 AM | 4/12/2022 |
| C22040416-003 | Trip Blank-80352 | 4/11/2022 10:15:00 AM | 4/12/2022 |

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22040416 **Report Date:** 04/21/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: A2320 B** | | | | | | | | | Analytical Run: MANTECH_220413A | |
| **Lab ID: ICV** | | Initial Calibration Verification Standard | | | | | | | 04/13/22 16:01 | |
| pH | | 6.83 | s.u. | 0.010 | 100 | 98 | 102 | | | |
| **Method: A2320 B** | | | | | | | | | Batch: R281464 | |
| **Lab ID: MBLK** | | Method Blank | | | | Run: MANTECH_220413A | | | 04/13/22 19:20 | |
| Alkalinity, Total as CaCO3 | | ND | mg/L | 2 | | | | | | |
| **Lab ID: C22040413-009ADUP** | | Sample Duplicate | | | | Run: MANTECH_220413A | | | 04/13/22 21:31 | |
| Alkalinity, Total as CaCO3 | | 1340 | mg/L | 5.0 | | | | 0.2 | 10 | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22040416 **Report Date:** 04/21/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: A2540 C** | | | | | | | | | | Batch: TDS220414A |
| **Lab ID: MB-25_220414A** | Method Blank | | | | | Run: BAL-111_220414A | | | 04/14/22 12:32 | |
| Solids, Total Dissolved TDS @ 180 C | | ND | mg/L | 10 | | | | | | |
| **Lab ID: LCS-26_220414A** | Laboratory Control Sample | | | | | Run: BAL-111_220414A | | | 04/14/22 12:32 | |
| Solids, Total Dissolved TDS @ 180 C | | 1010 | mg/L | 20 | 101 | 90 | 110 | | | |
| **Lab ID: C22040416-002A DUP** | Sample Duplicate | | | | | Run: BAL-111_220414A | | | 04/14/22 12:36 | |
| Solids, Total Dissolved TDS @ 180 C | | 782 | mg/L | 20 | | | | 0.3 | 5 | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22040416 **Report Date:** 04/21/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: A4500-H B** | | | | | | | | | Analytical Run: PHSC_101-C_220414A | |
| **Lab ID: 6.86** | 2 | Initial Calibration Verification Standard | | | | | | | 04/14/22 10:19 | |
| pH | | 6.9 | s.u. | 0.1 | 100 | 98 | 102 | | | |
| pH Measurement Temp | | 19.5 | °C | | | 0 | 0 | | | |
| **Method: A4500-H B** | | | | | | | | | | Batch: R281467 |
| **Lab ID: C22040413-006ADUP** | 2 | Sample Duplicate | | | | Run: PHSC_101-C_220414A | | | 04/14/22 11:40 | |
| pH | | 6.7 | s.u. | 0.1 | | | | 0.1 | 1.5 | |
| pH Measurement Temp | | 13.0 | °C | | | | | | | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22040416 **Report Date:** 04/21/22

| Analyte | | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Method:** | **E300.0** | | | | | | | | | Analytical Run: IC3-C_220414A | |
| **Lab ID:** | **ICV** | 2 | Initial Calibration Verification Standard | | | | | | | 04/14/22 09:51 | |
| Chloride | | | 9.30 | mg/L | 1.0 | 93 | 90 | 110 | | | |
| Sulfate | | | 37.4 | mg/L | 1.0 | 94 | 90 | 110 | | | |
| **Method:** | **E300.0** | | | | | | | | | Batch: R281553 | |
| **Lab ID:** | **ICB** | 2 | Method Blank | | | | Run: IC3-C_220414A | | | 04/14/22 10:10 | |
| Chloride | | | ND | mg/L | 0.01 | | | | | | |
| Sulfate | | | ND | mg/L | 0.2 | | | | | | |
| **Lab ID:** | **LFB** | 2 | Laboratory Fortified Blank | | | | Run: IC3-C_220414A | | | 04/14/22 10:29 | |
| Chloride | | | 9.26 | mg/L | 1.0 | 96 | 90 | 110 | | | |
| Sulfate | | | 37.3 | mg/L | 1.0 | 97 | 90 | 110 | | | |
| **Lab ID:** | **C22040413-009AMS** | 2 | Sample Matrix Spike | | | | Run: IC3-C_220414A | | | 04/15/22 14:18 | |
| Chloride | | | 412 | mg/L | 2.1 | 92 | 80 | 120 | | | |
| Sulfate | | | 3070 | mg/L | 8.3 | 94 | 80 | 120 | | | |
| **Lab ID:** | **C22040413-009AMSD** | 2 | Sample Matrix Spike Duplicate | | | | Run: IC3-C_220414A | | | 04/15/22 14:37 | |
| Chloride | | | 412 | mg/L | 2.1 | 92 | 80 | 120 | 0.1 | 20 | |
| Sulfate | | | 3030 | mg/L | 8.3 | 90 | 80 | 120 | 1.1 | 20 | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22040416 **Report Date:** 04/21/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: E350.1** | | | | | | | | | Analytical Run: FIA201-C_220415A | |
| **Lab ID: ICV** | | Initial Calibration Verification Standard | | | | | | | 04/15/22 11:32 | |
| Nitrogen, Ammonia as N | | 0.996 | mg/L | 0.050 | 100 | 90 | 110 | | | |
| **Method: E350.1** | | | | | | | | | Batch: R281514 | |
| **Lab ID: MBLK** | | Method Blank | | | | Run: FIA201-C_220415A | | | 04/15/22 11:30 | |
| Nitrogen, Ammonia as N | | ND | mg/L | 0.03 | | | | | | |
| **Lab ID: LFB** | | Laboratory Fortified Blank | | | | Run: FIA201-C_220415A | | | 04/15/22 11:33 | |
| Nitrogen, Ammonia as N | | 0.972 | mg/L | 0.050 | 98 | 90 | 110 | | | |
| **Lab ID: C22040413-006DMS** | | Sample Matrix Spike | | | | Run: FIA201-C_220415A | | | 04/15/22 11:52 | |
| Nitrogen, Ammonia as N | | 0.639 | mg/L | 0.050 | 64 | 90 | 110 | | | S |
| **Lab ID: C22040413-006DMSD** | | Sample Matrix Spike Duplicate | | | | Run: FIA201-C_220415A | | | 04/15/22 11:53 | |
| Nitrogen, Ammonia as N | | 0.629 | mg/L | 0.050 | 63 | 90 | 110 | 1.6 | 10 | S |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

S - Spike recovery outside of advisory limits

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22040416 **Report Date:** 04/21/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: E353.2** | | | | | | | | | Analytical Run: FIA201-C_220414B | |
| **Lab ID: ICV** | | Initial Calibration Verification Standard | | | | | | | 04/14/22 14:06 | |
| Nitrogen, Nitrate+Nitrite as N | | 1.01 | mg/L | 0.050 | 101 | 90 | 110 | | | |
| **Method: E353.2** | | | | | | | | | Batch: R281476 | |
| **Lab ID: MBLK** | | Method Blank | | | | Run: FIA201-C_220414B | | | 04/14/22 14:07 | |
| Nitrogen, Nitrate+Nitrite as N | | ND | mg/L | 0.01 | | | | | | |
| **Lab ID: LFB** | | Laboratory Fortified Blank | | | | Run: FIA201-C_220414B | | | 04/14/22 14:09 | |
| Nitrogen, Nitrate+Nitrite as N | | 1.00 | mg/L | 0.050 | 101 | 90 | 110 | | | |
| **Lab ID: C22040413-009DMS** | | Sample Matrix Spike | | | | Run: FIA201-C_220414B | | | 04/14/22 15:02 | |
| Nitrogen, Nitrate+Nitrite as N | | 125 | mg/L | 1.0 | 103 | 90 | 110 | | | |
| **Lab ID: C22040413-009DMSD** | | Sample Matrix Spike Duplicate | | | | Run: FIA201-C_220414B | | | 04/14/22 15:03 | |
| Nitrogen, Nitrate+Nitrite as N | | 125 | mg/L | 1.0 | 104 | 90 | 110 | 0.4 | 10 | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22040416 **Report Date:** 06/10/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: E200.7** | | | | | | | | | Analytical Run: ICP4-C_220422B | |
| **Lab ID: QCS** | 4 | Initial Calibration Verification Standard | | | | | | | 04/26/22 14:32 | |
| Calcium | | 38.8 | mg/L | 0.50 | 97 | 90 | 110 | | | |
| Magnesium | | 37.9 | mg/L | 0.50 | 95 | 90 | 110 | | | |
| Potassium | | 38.6 | mg/L | 0.50 | 96 | 90 | 110 | | | |
| Sodium | | 38.2 | mg/L | 0.97 | 96 | 90 | 110 | | | |
| **Lab ID: CCV** | 4 | Continuing Calibration Verification Standard | | | | | | | 04/28/22 10:10 | |
| Calcium | | 26.1 | mg/L | 0.50 | 104 | 90 | 110 | | | |
| Magnesium | | 26.1 | mg/L | 0.50 | 104 | 90 | 110 | | | |
| Potassium | | 25.7 | mg/L | 0.50 | 103 | 90 | 110 | | | |
| Sodium | | 26.0 | mg/L | 0.97 | 104 | 90 | 110 | | | |
| **Lab ID: CCV** | 4 | Continuing Calibration Verification Standard | | | | | | | 04/28/22 11:11 | |
| Calcium | | 26.7 | mg/L | 0.50 | 107 | 90 | 110 | | | |
| Magnesium | | 26.6 | mg/L | 0.50 | 106 | 90 | 110 | | | |
| Potassium | | 26.2 | mg/L | 0.50 | 105 | 90 | 110 | | | |
| Sodium | | 26.8 | mg/L | 0.97 | 107 | 90 | 110 | | | |
| **Method: E200.7** | | | | | | | | | | Batch: R281887 |
| **Lab ID: LRB** | 4 | Method Blank | | | | Run: ICP4-C_220422B | | | 04/26/22 14:06 | |
| Calcium | | ND | mg/L | 0.1 | | | | | | |
| Magnesium | | ND | mg/L | 0.08 | | | | | | |
| Potassium | | ND | mg/L | 0.2 | | | | | | |
| Sodium | | ND | mg/L | 1 | | | | | | |
| **Lab ID: LFB** | 4 | Laboratory Fortified Blank | | | | Run: ICP4-C_220422B | | | 04/26/22 14:27 | |
| Calcium | | 46.6 | mg/L | 0.50 | 93 | 85 | 115 | | | |
| Magnesium | | 45.9 | mg/L | 0.50 | 92 | 85 | 115 | | | |
| Potassium | | 46.5 | mg/L | 0.50 | 93 | 85 | 115 | | | |
| Sodium | | 45.7 | mg/L | 1.0 | 91 | 85 | 115 | | | |
| **Lab ID: C22040805-020BMS2** | 4 | Sample Matrix Spike | | | | Run: ICP4-C_220422B | | | 04/27/22 21:33 | |
| Calcium | | 460 | mg/L | 1.0 | 95 | 70 | 130 | | | |
| Magnesium | | 214 | mg/L | 1.0 | 106 | 70 | 130 | | | |
| Potassium | | 114 | mg/L | 1.0 | 108 | 70 | 130 | | | |
| Sodium | | 452 | mg/L | 2.0 | 91 | 70 | 130 | | | |
| **Lab ID: C22040805-020BMSD** | 4 | Sample Matrix Spike Duplicate | | | | Run: ICP4-C_220422B | | | 04/27/22 21:48 | |
| Calcium | | 484 | mg/L | 1.0 | 119 | 70 | 130 | 5.0 | 20 | |
| Magnesium | | 226 | mg/L | 1.0 | 118 | 70 | 130 | 5.6 | 20 | |
| Potassium | | 121 | mg/L | 1.0 | 115 | 70 | 130 | 5.8 | 20 | |
| Sodium | | 474 | mg/L | 2.0 | 113 | 70 | 130 | 4.8 | 20 | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22040416 **Report Date:** 06/10/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: E200.7** | | | | | | | | | Analytical Run: ICP4-C_220529A | |
| **Lab ID: QCS** | | Initial Calibration Verification Standard | | | | | | | 05/29/22 23:49 | |
| Potassium | | 42.5 | mg/L | 0.50 | 106 | 90 | 110 | | | |
| **Lab ID: CCV** | | Continuing Calibration Verification Standard | | | | | | | 05/30/22 01:10 | |
| Potassium | | 27.4 | mg/L | 0.50 | 109 | 90 | 110 | | | |
| **Lab ID: CCV** | | Continuing Calibration Verification Standard | | | | | | | 05/30/22 02:07 | |
| Potassium | | 27.3 | mg/L | 0.50 | 109 | 90 | 110 | | | |
| **Method: E200.7** | | | | | | | | | | Batch: R283118 |
| **Lab ID: LRB** | | Method Blank | | | | Run: ICP4-C_220529A | | | 05/29/22 23:25 | |
| Potassium | | ND | mg/L | 0.2 | | | | | | |
| **Lab ID: LFB** | | Laboratory Fortified Blank | | | | Run: ICP4-C_220529A | | | 05/29/22 23:45 | |
| Potassium | | 53.5 | mg/L | 0.50 | 107 | 85 | 115 | | | |
| **Lab ID: C22040413-008BMS2** | | Sample Matrix Spike | | | | Run: ICP4-C_220529A | | | 05/30/22 01:34 | |
| Potassium | | 582 | mg/L | 2.0 | 114 | 70 | 130 | | | |
| **Lab ID: C22040413-008BMSD** | | Sample Matrix Spike Duplicate | | | | Run: ICP4-C_220529A | | | 05/30/22 01:38 | |
| Potassium | | 572 | mg/L | 2.0 | 112 | 70 | 130 | 1.7 | 20 | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22040416 **Report Date:** 06/10/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: E200.8** | | | | | | | | | Analytical Run: ICPMS5-C_220421A | |
| **Lab ID: QCS** | 3 | Initial Calibration Verification Standard | | | | | | | 04/21/22 16:48 | |
| Calcium | | 2.37 | mg/L | 0.50 | 95 | 90 | 110 | | | |
| Magnesium | | 2.60 | mg/L | 0.50 | 104 | 90 | 110 | | | |
| Sodium | | 2.47 | mg/L | 0.50 | 99 | 90 | 110 | | | |
| **Lab ID: CCV** | 3 | Continuing Calibration Verification Standard | | | | | | | 04/22/22 04:54 | |
| Calcium | | 11.6 | mg/L | 0.50 | 93 | 90 | 110 | | | |
| Magnesium | | 12.3 | mg/L | 0.50 | 98 | 90 | 110 | | | |
| Sodium | | 12.0 | mg/L | 0.50 | 96 | 90 | 110 | | | |
| **Lab ID: CCV** | 3 | Continuing Calibration Verification Standard | | | | | | | 04/22/22 06:06 | |
| Calcium | | 11.5 | mg/L | 0.50 | 92 | 90 | 110 | | | |
| Magnesium | | 11.7 | mg/L | 0.50 | 94 | 90 | 110 | | | |
| Sodium | | 12.3 | mg/L | 0.50 | 99 | 90 | 110 | | | |
| **Method: E200.8** | | | | | | | | | | Batch: R281744 |
| **Lab ID: LRB** | 3 | Method Blank | | | | Run: ICPMS5-C_220421A | | | 04/21/22 09:16 | |
| Calcium | | ND | mg/L | 0.3 | | | | | | |
| Magnesium | | ND | mg/L | 0.02 | | | | | | |
| Sodium | | ND | mg/L | 0.3 | | | | | | |
| **Lab ID: LFB** | 3 | Laboratory Fortified Blank | | | | Run: ICPMS5-C_220421A | | | 04/21/22 09:21 | |
| Calcium | | 45.7 | mg/L | 0.50 | 91 | 85 | 115 | | | |
| Magnesium | | 46.4 | mg/L | 0.50 | 93 | 85 | 115 | | | |
| Sodium | | 46.6 | mg/L | 0.50 | 93 | 85 | 115 | | | |
| **Lab ID: C22040413-006BMS** | 3 | Sample Matrix Spike | | | | Run: ICPMS5-C_220421A | | | 04/22/22 04:29 | |
| Calcium | | 1040 | mg/L | 2.7 | 93 | 70 | 130 | | | |
| Magnesium | | 1130 | mg/L | 1.0 | 92 | 70 | 130 | | | |
| Sodium | | 795 | mg/L | 2.9 | 92 | 70 | 130 | | | |
| **Lab ID: C22040413-006BMSD** | 3 | Sample Matrix Spike Duplicate | | | | Run: ICPMS5-C_220421A | | | 04/22/22 04:34 | |
| Calcium | | 1050 | mg/L | 2.7 | 96 | 70 | 130 | 1.2 | 20 | |
| Magnesium | | 1150 | mg/L | 1.0 | 95 | 70 | 130 | 1.4 | 20 | |
| Sodium | | 806 | mg/L | 2.9 | 94 | 70 | 130 | 1.3 | 20 | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22040416 **Report Date:** 06/10/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: E200.8** | | | | | | | | | Analytical Run: ICPMS5-C_220425A | |
| **Lab ID: QCS** | 8 | Initial Calibration Verification Standard | | | | | | | | 04/25/22 12:00 |
| Aluminum | | 0.240 | mg/L | 0.030 | 96 | 90 | 110 | | | |
| Arsenic | | 0.0495 | mg/L | 0.0010 | 99 | 90 | 110 | | | |
| Beryllium | | 0.0242 | mg/L | 0.0010 | 97 | 90 | 110 | | | |
| Cadmium | | 0.0245 | mg/L | 0.0010 | 98 | 90 | 110 | | | |
| Cobalt | | 0.0482 | mg/L | 0.0050 | 96 | 90 | 110 | | | |
| Manganese | | 0.242 | mg/L | 0.0010 | 97 | 90 | 110 | | | |
| Molybdenum | | 0.0454 | mg/L | 0.0010 | 91 | 90 | 110 | | | |
| Vanadium | | 0.0471 | mg/L | 0.010 | 94 | 90 | 110 | | | |
| **Lab ID: CCV** | 8 | Continuing Calibration Verification Standard | | | | | | | | 04/25/22 15:23 |
| Aluminum | | 0.0495 | mg/L | 0.030 | 99 | 90 | 110 | | | |
| Arsenic | | 0.0531 | mg/L | 0.0010 | 106 | 90 | 110 | | | |
| Beryllium | | 0.0473 | mg/L | 0.0010 | 95 | 90 | 110 | | | |
| Cadmium | | 0.0544 | mg/L | 0.0010 | 109 | 90 | 110 | | | |
| Cobalt | | 0.0532 | mg/L | 0.0050 | 106 | 90 | 110 | | | |
| Manganese | | 0.0511 | mg/L | 0.0010 | 102 | 90 | 110 | | | |
| Molybdenum | | 0.0509 | mg/L | 0.0010 | 102 | 90 | 110 | | | |
| Vanadium | | 0.0521 | mg/L | 0.010 | 104 | 90 | 110 | | | |
| **Lab ID: CCV** | 8 | Continuing Calibration Verification Standard | | | | | | | | 04/25/22 16:28 |
| Aluminum | | 0.0500 | mg/L | 0.030 | 100 | 90 | 110 | | | |
| Arsenic | | 0.0549 | mg/L | 0.0010 | 110 | 90 | 110 | | | |
| Beryllium | | 0.0475 | mg/L | 0.0010 | 95 | 90 | 110 | | | |
| Cadmium | | 0.0547 | mg/L | 0.0010 | 109 | 90 | 110 | | | |
| Cobalt | | 0.0542 | mg/L | 0.0050 | 108 | 90 | 110 | | | |
| Manganese | | 0.0531 | mg/L | 0.0010 | 106 | 90 | 110 | | | |
| Molybdenum | | 0.0517 | mg/L | 0.0010 | 103 | 90 | 110 | | | |
| Vanadium | | 0.0539 | mg/L | 0.010 | 108 | 90 | 110 | | | |
| **Method: E200.8** | | | | | | | | | | Batch: 66489 |
| **Lab ID: MB-66489** | 12 | Method Blank | | | | Run: ICPMS5-C_220425A | | | | 04/25/22 13:42 |
| Aluminum | | ND | mg/L | 0.02 | | | | | | |
| Arsenic | | ND | mg/L | 0.0003 | | | | | | |
| Beryllium | | ND | mg/L | 0.0002 | | | | | | |
| Cadmium | | ND | mg/L | 0.00002 | | | | | | |
| Cobalt | | ND | mg/L | 0.0001 | | | | | | |
| Lead | | ND | mg/L | 0.0001 | | | | | | |
| Manganese | | ND | mg/L | 0.0007 | | | | | | |
| Molybdenum | | ND | mg/L | 0.0001 | | | | | | |
| Nickel | | ND | mg/L | 0.0003 | | | | | | |
| Selenium | | ND | mg/L | 0.0001 | | | | | | |
| Uranium | | ND | mg/L | 0.0003 | | | | | | |
| Vanadium | | ND | mg/L | 0.003 | | | | | | |
| **Lab ID: LCS3-66489** | 12 | Laboratory Control Sample | | | | Run: ICPMS5-C_220425A | | | | 04/25/22 13:47 |
| Aluminum | | 2.75 | mg/L | 0.030 | 110 | 85 | 115 | | | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22040416 **Report Date:** 06/10/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method:** E200.8 | | | | | | | | | | Batch: 66489 |
| **Lab ID:** LCS3-66489 | 12 | Laboratory Control Sample | | | | Run: ICPMS5-C_220425A | | | | 04/25/22 13:47 |
| Arsenic | | 0.547 | mg/L | 0.0010 | 109 | 85 | 115 | | | |
| Beryllium | | 0.253 | mg/L | 0.0010 | 101 | 85 | 115 | | | |
| Cadmium | | 0.273 | mg/L | 0.0010 | 109 | 85 | 115 | | | |
| Cobalt | | 0.557 | mg/L | 0.0050 | 111 | 85 | 115 | | | |
| Lead | | 0.553 | mg/L | 0.0010 | 111 | 85 | 115 | | | |
| Manganese | | 2.79 | mg/L | 0.0010 | 112 | 85 | 115 | | | |
| Molybdenum | | 0.534 | mg/L | 0.0010 | 107 | 85 | 115 | | | |
| Nickel | | 0.557 | mg/L | 0.0050 | 111 | 85 | 115 | | | |
| Selenium | | 0.541 | mg/L | 0.0010 | 108 | 85 | 115 | | | |
| Uranium | | 0.530 | mg/L | 0.00030 | 106 | 85 | 115 | | | |
| Vanadium | | 0.562 | mg/L | 0.010 | 112 | 85 | 115 | | | |
| **Lab ID:** C22040413-005CDIL | 12 | Serial Dilution | | | | Run: ICPMS5-C_220425A | | | | 04/25/22 15:14 |
| Aluminum | | ND | mg/L | 0.91 | | 0 | 0 | | | |
| Arsenic | | ND | mg/L | 0.014 | | 0 | 0 | | | |
| Beryllium | | ND | mg/L | 0.0094 | | 0 | 0 | | | |
| Cadmium | | ND | mg/L | 0.0050 | | 0 | 0 | | | |
| Cobalt | | ND | mg/L | 0.0050 | | 0 | 0 | | | |
| Lead | | ND | mg/L | 0.0050 | | 0 | 0 | | | |
| Manganese | | 1.59 | mg/L | 0.035 | | 0 | 0 | | | |
| Molybdenum | | ND | mg/L | 0.0054 | | 0 | 0 | | | |
| Nickel | | ND | mg/L | 0.017 | | 0 | 0 | | | |
| Selenium | | ND | mg/L | 0.0073 | | 0 | 0 | | | |
| Uranium | | 0.139 | mg/L | 0.013 | | 0 | 0 | | | |
| Vanadium | | ND | mg/L | 0.065 | | 0 | 0 | | | |
| **Lab ID:** C22040413-005CMS3 | 12 | Sample Matrix Spike | | | | Run: ICPMS5-C_220425A | | | | 04/25/22 15:37 |
| Aluminum | | 2.48 | mg/L | 0.18 | 99 | 70 | 130 | | | |
| Arsenic | | 0.545 | mg/L | 0.0028 | 109 | 70 | 130 | | | |
| Beryllium | | 0.232 | mg/L | 0.0019 | 93 | 70 | 130 | | | |
| Cadmium | | 0.266 | mg/L | 0.0010 | 106 | 70 | 130 | | | |
| Cobalt | | 0.531 | mg/L | 0.0050 | 105 | 70 | 130 | | | |
| Lead | | 0.549 | mg/L | 0.0010 | 110 | 70 | 130 | | | |
| Manganese | | 4.04 | mg/L | 0.0070 | 99 | 70 | 130 | | | |
| Molybdenum | | 0.527 | mg/L | 0.0011 | 105 | 70 | 130 | | | |
| Nickel | | 0.544 | mg/L | 0.0050 | 107 | 70 | 130 | | | |
| Selenium | | 0.580 | mg/L | 0.0015 | 116 | 70 | 130 | | | |
| Uranium | | 0.664 | mg/L | 0.0027 | 103 | 70 | 130 | | | |
| Vanadium | | 0.517 | mg/L | 0.013 | 103 | 70 | 130 | | | |
| **Lab ID:** C22040413-005CMSD | 12 | Sample Matrix Spike Duplicate | | | | Run: ICPMS5-C_220425A | | | | 04/25/22 15:42 |
| Aluminum | | 2.57 | mg/L | 0.18 | 103 | 70 | 130 | 3.4 | 20 | |
| Arsenic | | 0.579 | mg/L | 0.0028 | 116 | 70 | 130 | 6.0 | 20 | |
| Beryllium | | 0.240 | mg/L | 0.0019 | 96 | 70 | 130 | 3.5 | 20 | |
| Cadmium | | 0.283 | mg/L | 0.0010 | 113 | 70 | 130 | 6.4 | 20 | |
| Cobalt | | 0.540 | mg/L | 0.0050 | 107 | 70 | 130 | 1.8 | 20 | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22040416 **Report Date:** 06/10/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: E200.8** | | | | | | | | | | Batch: 66489 |
| **Lab ID: C22040413-005CMSD** | 12 | Sample Matrix Spike Duplicate | | | | Run: ICPMS5-C_220425A | | | | 04/25/22 15:42 |
| Lead | | 0.556 | mg/L | 0.0010 | 111 | 70 | 130 | 1.3 | 20 | |
| Manganese | | 4.30 | mg/L | 0.0070 | 110 | 70 | 130 | 6.5 | 20 | |
| Molybdenum | | 0.540 | mg/L | 0.0011 | 108 | 70 | 130 | 2.5 | 20 | |
| Nickel | | 0.580 | mg/L | 0.0050 | 114 | 70 | 130 | 6.6 | 20 | |
| Selenium | | 0.620 | mg/L | 0.0015 | 124 | 70 | 130 | 6.7 | 20 | |
| Uranium | | 0.685 | mg/L | 0.0027 | 107 | 70 | 130 | 3.1 | 20 | |
| Vanadium | | 0.572 | mg/L | 0.025 | 114 | 70 | 130 | 10 | 20 | |
| **Method: E200.8** | | | | | | | | | | Analytical Run: ICPMS5-C_220428A |
| **Lab ID: QCS** | 4 | Initial Calibration Verification Standard | | | | | | | | 04/28/22 18:09 |
| Lead | | 0.0521 | mg/L | 0.0010 | 104 | 90 | 110 | | | |
| Nickel | | 0.0505 | mg/L | 0.0050 | 101 | 90 | 110 | | | |
| Selenium | | 0.0499 | mg/L | 0.0010 | 100 | 90 | 110 | | | |
| Uranium | | 0.0200 | mg/L | 0.00030 | 100 | 90 | 110 | | | |
| **Lab ID: CCV** | 4 | Continuing Calibration Verification Standard | | | | | | | | 04/29/22 03:50 |
| Lead | | 0.0512 | mg/L | 0.0010 | 102 | 90 | 110 | | | |
| Nickel | | 0.0449 | mg/L | 0.0050 | 90 | 90 | 110 | | | |
| Selenium | | 0.0474 | mg/L | 0.0010 | 95 | 90 | 110 | | | |
| Uranium | | 0.0481 | mg/L | 0.00030 | 96 | 90 | 110 | | | |
| **Lab ID: CCV** | 4 | Continuing Calibration Verification Standard | | | | | | | | 04/29/22 04:55 |
| Lead | | 0.0540 | mg/L | 0.0010 | 108 | 90 | 110 | | | |
| Nickel | | 0.0472 | mg/L | 0.0050 | 94 | 90 | 110 | | | |
| Selenium | | 0.0508 | mg/L | 0.0010 | 102 | 90 | 110 | | | |
| Uranium | | 0.0509 | mg/L | 0.00030 | 102 | 90 | 110 | | | |
| **Method: E200.8** | | | | | | | | | | Batch: 66489 |
| **Lab ID: MB-66489** | 9 | Method Blank | | | | Run: ICPMS5-C_220428A | | | | 04/29/22 01:50 |
| Arsenic | | ND | mg/L | 0.0003 | | | | | | |
| Cadmium | | ND | mg/L | 0.00002 | | | | | | |
| Lead | | ND | mg/L | 0.0001 | | | | | | |
| Manganese | | ND | mg/L | 0.0007 | | | | | | |
| Molybdenum | | ND | mg/L | 0.0001 | | | | | | |
| Nickel | | ND | mg/L | 0.0003 | | | | | | |
| Selenium | | ND | mg/L | 0.0001 | | | | | | |
| Uranium | | ND | mg/L | 0.0003 | | | | | | |
| Vanadium | | ND | mg/L | 0.003 | | | | | | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22040416 **Report Date:** 06/10/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: E200.8** | | | | | | | | | Analytical Run: ICPMS5-C_220505A | |
| **Lab ID: QCS** | | Initial Calibration Verification Standard | | | | | | | 05/06/22 10:08 | |
| Nickel | | 0.0544 | mg/L | 0.0050 | 109 | 90 | 110 | | | |
| **Lab ID: CCV** | | Continuing Calibration Verification Standard | | | | | | | 05/07/22 04:21 | |
| Nickel | | 0.0453 | mg/L | 0.0050 | 91 | 90 | 110 | | | |
| **Lab ID: CCV** | | Continuing Calibration Verification Standard | | | | | | | 05/07/22 05:21 | |
| Nickel | | 0.0482 | mg/L | 0.0050 | 96 | 90 | 110 | | | |
| **Method: E200.8** | | | | | | | | | | Batch: 66489 |
| **Lab ID: LCS3-66489** | 9 | Laboratory Control Sample | | | | Run: ICPMS5-C_220505A | | | 05/05/22 16:01 | |
| Arsenic | | 0.491 | mg/L | 0.0010 | 98 | 85 | 115 | | | |
| Cadmium | | 0.250 | mg/L | 0.0010 | 100 | 85 | 115 | | | |
| Lead | | 0.441 | mg/L | 0.0010 | 88 | 85 | 115 | | | |
| Manganese | | 2.37 | mg/L | 0.0010 | 95 | 85 | 115 | | | |
| Molybdenum | | 0.485 | mg/L | 0.0010 | 97 | 85 | 115 | | | |
| Nickel | | 0.496 | mg/L | 0.0050 | 99 | 85 | 115 | | | |
| Selenium | | 0.484 | mg/L | 0.0010 | 97 | 85 | 115 | | | |
| Uranium | | 0.425 | mg/L | 0.00030 | 85 | 85 | 115 | | | |
| Vanadium | | 0.497 | mg/L | 0.010 | 99 | 85 | 115 | | | |
| **Lab ID: MB-66489** | 12 | Method Blank | | | | Run: ICPMS5-C_220505A | | | 05/06/22 23:46 | |
| Aluminum | | ND | mg/L | 0.02 | | | | | | |
| Arsenic | | ND | mg/L | 0.0003 | | | | | | |
| Beryllium | | ND | mg/L | 0.0002 | | | | | | |
| Cadmium | | ND | mg/L | 0.00002 | | | | | | |
| Cobalt | | ND | mg/L | 0.0001 | | | | | | |
| Lead | | ND | mg/L | 0.0001 | | | | | | |
| Manganese | | ND | mg/L | 0.0007 | | | | | | |
| Molybdenum | | ND | mg/L | 0.0001 | | | | | | |
| Nickel | | ND | mg/L | 0.0003 | | | | | | |
| Selenium | | ND | mg/L | 0.0001 | | | | | | |
| Uranium | | ND | mg/L | 0.0003 | | | | | | |
| Vanadium | | ND | mg/L | 0.003 | | | | | | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22040416 **Report Date:** 05/19/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: A7500-U C** | | | | | | | | | Batch: RA-TH-ISO-3419 | |
| **Lab ID: MB-RA-TH-ISO-3419** | 3 | Method Blank | | | | Run: EGG-ORTEC_ALL_220420A | | | 04/25/22 14:02 | |
| Thorium 230 | | 0.2 | pCi/L | | | | | | | |
| Thorium 230 precision (±) | | 0.05 | pCi/L | | | | | | | |
| Thorium 230 MDC | | 0.05 | pCi/L | | | | | | | |
| **Lab ID: LCS-RA-TH-ISO-3419** | 3 | Laboratory Control Sample | | | | Run: EGG-ORTEC_ALL_220420A | | | 04/25/22 14:02 | |
| Thorium 230 | | 22 | pCi/L | | 87 | 70 | 130 | | | |
| Thorium 230 precision (±) | | 4.2 | pCi/L | | | | | | | |
| Thorium 230 MDC | | 0.054 | pCi/L | | | | | | | |
| **Lab ID: C22040436-001GDUP** | 3 | Sample Duplicate | | | | Run: EGG-ORTEC_ALL_220420A | | | 04/25/22 14:02 | |
| Thorium 230 | | 0.21 | pCi/L | | | | | 33 | 30 | R |
| Thorium 230 precision (±) | | 0.096 | pCi/L | | | | | | | |
| Thorium 230 MDC | | 0.12 | pCi/L | | | | | | | |

- Duplicate RPD is outside of the acceptance range for this analysis. However, the RER is less than the limit of 3, the RER result is 0.53.

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

R - Relative Percent Difference (RPD) exceeds advisory limit

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22040416 **Report Date:** 05/19/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: E900.1** | | | | | | | | | | Batch: GA-1355 |
| **Lab ID: LCS-GA-1355** | 3 | Laboratory Control Sample | | | | Run: G542M_220420B | | | | 04/25/22 14:36 |
| Gross Alpha minus Rn & U | | 38 | pCi/L | | 112 | 70 | 130 | | | |
| Gross Alpha minus Rn & U Precision (±) | | 7.5 | pCi/L | | | | | | | |
| Gross Alpha minus Rn & U MDC | | 0.70 | pCi/L | | | | | | | |
| **Lab ID: MB-GA-1355** | 3 | Method Blank | | | | Run: G542M_220420B | | | | 04/25/22 14:36 |
| Gross Alpha minus Rn & U | | -0.04 | pCi/L | | | | | | | U |
| Gross Alpha minus Rn & U Precision (±) | | 0.4 | pCi/L | | | | | | | |
| Gross Alpha minus Rn & U MDC | | 0.7 | pCi/L | | | | | | | |
| **Lab ID: C22040504-001FDUP** | 3 | Sample Duplicate | | | | Run: G542M_220420B | | | | 04/25/22 16:19 |
| Gross Alpha minus Rn & U | | 5.6 | pCi/L | | | | | 12 | 30 | |
| Gross Alpha minus Rn & U Precision (±) | | 1.4 | pCi/L | | | | | | | |
| Gross Alpha minus Rn & U MDC | | 0.69 | pCi/L | | | | | | | |

- The RER result is 0.36.

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

U - Not detected at Minimum Detectable Concentration (MDC)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22040416 **Report Date:** 05/19/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: E903.0** | | | | | | | | | | Batch: RA226-10430R |
| **Lab ID: LCS-RA226-10430** | 3 | Laboratory Control Sample | | | | Run: G5000W_220414C | | | | 04/26/22 15:32 |
| Radium 226 | | 7.9 | pCi/L | | 78 | 70 | 130 | | | |
| Radium 226 precision (±) | | 1.6 | pCi/L | | | | | | | |
| Radium 226 MDC | | 0.28 | pCi/L | | | | | | | |
| **Lab ID: MB-RA226-10430** | 3 | Method Blank | | | | Run: G5000W_220414C | | | | 04/26/22 15:32 |
| Radium 226 | | 0.002 | pCi/L | | | | | | | U |
| Radium 226 precision (±) | | 0.1 | pCi/L | | | | | | | |
| Radium 226 MDC | | 0.3 | pCi/L | | | | | | | |
| **Method: E903.0** | | | | | | | | | | Batch: RA226-10430R |
| **Lab ID: C22040390-001EDUP** | 3 | Sample Duplicate | | | | Run: G5000W_220414D | | | | 04/28/22 21:19 |
| Radium 226 | | 0.29 | pCi/L | | | | | 35 | 30 | R |
| Radium 226 precision (±) | | 0.094 | pCi/L | | | | | | | |
| Radium 226 MDC | | 0.13 | pCi/L | | | | | | | |

- Duplicate RPD is outside of the acceptance range for this analysis. However, the RER is less than the limit of 3, the RER result is 0.84.

**Qualifiers:**

RL - Analyte Reporting Limit

R - Relative Percent Difference (RPD) exceeds advisory limit

ND - Not detected at the Reporting Limit (RL)

U - Not detected at Minimum Detectable Concentration (MDC)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22040416 **Report Date:** 05/19/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: E909.0** | | | | | | | | | | Batch: PB-210-1390 |
| **Lab ID: LCS-PB-210-1390** | 3 | Laboratory Control Sample | | | | Run: HIDEX 300SL_220415A | | | | 04/21/22 16:21 |
| Lead 210 | | 17 | pCi/L | | 97 | 70 | 130 | | | |
| Lead 210 precision (±) | | 4.9 | pCi/L | | | | | | | |
| Lead 210 MDC | | 1.3 | pCi/L | | | | | | | |
| **Lab ID: MB-PB-210-1390** | 3 | Method Blank | | | | Run: HIDEX 300SL_220415A | | | | 04/21/22 16:21 |
| Lead 210 | | 0.4 | pCi/L | | | | | | | U |
| Lead 210 precision (±) | | 0.7 | pCi/L | | | | | | | |
| Lead 210 MDC | | 1 | pCi/L | | | | | | | |
| **Lab ID: C22040385-004FDUP** | 3 | Sample Duplicate | | | | Run: HIDEX 300SL_220415A | | | | 04/21/22 16:21 |
| Lead 210 | | 1.2 | pCi/L | | | | | 43 | 30 | UR |
| Lead 210 precision (±) | | 0.79 | pCi/L | | | | | | | |
| Lead 210 MDC | | 1.2 | pCi/L | | | | | | | |

- Duplicate RPD is outside of the acceptance range for this analysis. However, the RER is less than the limit of 3, the RER result is 0.39.

**Qualifiers:**

RL - Analyte Reporting Limit

R - Relative Percent Difference (RPD) exceeds advisory limit

ND - Not detected at the Reporting Limit (RL)

U - Not detected at Minimum Detectable Concentration (MDC)

# QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** United Nuclear Corporation **Work Order:** C22040416 **Report Date:** 05/19/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: RA-05** | | | | | | | | | Batch: RA228-6801 | |
| **Lab ID: LCS-228-RA226-10468** | 3 | Laboratory Control Sample | | | | Run: G5000W_220509A | | | 05/17/22 16:08 | |
| Radium 228 | | 8.4 | pCi/L | | 107 | 70 | 130 | | | |
| Radium 228 precision (±) | | 1.8 | pCi/L | | | | | | | |
| Radium 228 MDC | | 1.2 | pCi/L | | | | | | | |
| **Lab ID: MB-RA226-10468** | 3 | Method Blank | | | | Run: G5000W_220509A | | | 05/17/22 16:08 | |
| Radium 228 | | -0.4 | pCi/L | | | | | | | U |
| Radium 228 precision (±) | | 0.7 | pCi/L | | | | | | | |
| Radium 228 MDC | | 1 | pCi/L | | | | | | | |
| **Lab ID: C22050320-001CDUP** | 3 | Sample Duplicate | | | | Run: G5000W_220509A | | | 05/17/22 16:08 | |
| Radium 228 | | 0.12 | pCi/L | | | | | 150 | 30 | UR |
| Radium 228 precision (±) | | 0.81 | pCi/L | | | | | | | |
| Radium 228 MDC | | 1.4 | pCi/L | | | | | | | |

- Duplicate RPD is outside of the acceptance range for this analysis. However, the RER is less than or equal to the limit of 3, the RER result is 0.58.

**Qualifiers:**

RL - Analyte Reporting Limit

R - Relative Percent Difference (RPD) exceeds advisory limit

ND - Not detected at the Reporting Limit (RL)

U - Not detected at Minimum Detectable Concentration (MDC)

# QA/QC Summary Report

Prepared by Billings, MT Branch

**Client:** United Nuclear Corporation **Work Order:** C22040416 **Report Date:** 04/20/22

| Analyte | Count | Result | Units | RL | %REC | Low Limit | High Limit | RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| **Method: E624.1** | | | | | | | | | | Analytical Run: R378922 |
| **Lab ID: CCV041722** | 7 | Continuing Calibration Verification Standard | | | | | | | | 04/17/22 12:44 |
| Bromodichloromethane | | 5.77 | ug/L | 0.50 | 115 | 70 | 130 | | | |
| Bromoform | | 5.36 | ug/L | 0.50 | 107 | 70 | 130 | | | |
| Chlorodibromomethane | | 5.38 | ug/L | 0.50 | 108 | 70 | 130 | | | |
| Chloroform | | 5.27 | ug/L | 0.50 | 105 | 70 | 130 | | | |
| Surr: 1,2-Dichloroethane-d4 | | | | 0.50 | 101 | 71 | 139 | | | |
| Surr: p-Bromofluorobenzene | | | | 0.50 | 105 | 80 | 127 | | | |
| Surr: Toluene-d8 | | | | 0.50 | 110 | 80 | 123 | | | |
| **Method: E624.1** | | | | | | | | | | Batch: R378922 |
| **Lab ID: LCS041722** | 7 | Laboratory Control Sample | | | | Run: 5971A.I_220417A | | | | 04/17/22 13:11 |
| Bromodichloromethane | | 6.22 | ug/L | 0.50 | 124 | 74 | 128 | | | |
| Bromoform | | 5.63 | ug/L | 0.50 | 113 | 70 | 130 | | | |
| Chlorodibromomethane | | 5.60 | ug/L | 0.50 | 112 | 74 | 125 | | | |
| Chloroform | | 5.36 | ug/L | 0.50 | 107 | 70 | 135 | | | |
| Surr: 1,2-Dichloroethane-d4 | | | | 0.50 | 99 | 71 | 139 | | | |
| Surr: p-Bromofluorobenzene | | | | 0.50 | 103 | 80 | 127 | | | |
| Surr: Toluene-d8 | | | | 0.50 | 107 | 80 | 123 | | | |
| **Lab ID: MBLK041722** | 7 | Method Blank | | | | Run: 5971A.I_220417A | | | | 04/17/22 14:05 |
| Bromodichloromethane | | ND | ug/L | 0.50 | | | | | | |
| Bromoform | | ND | ug/L | 0.50 | | | | | | |
| Chlorodibromomethane | | ND | ug/L | 0.50 | | | | | | |
| Chloroform | | ND | ug/L | 0.50 | | | | | | |
| Surr: 1,2-Dichloroethane-d4 | | | | 0.50 | 101 | 71 | 139 | | | |
| Surr: p-Bromofluorobenzene | | | | 0.50 | 103 | 80 | 127 | | | |
| Surr: Toluene-d8 | | | | 0.50 | 109 | 80 | 123 | | | |
| **Lab ID: C22040416-001FMS** | 7 | Sample Matrix Spike | | | | Run: 5971A.I_220417A | | | | 04/17/22 19:12 |
| Bromodichloromethane | | 6.29 | ug/L | 0.50 | 126 | 74 | 128 | | | |
| Bromoform | | 5.58 | ug/L | 0.50 | 112 | 66 | 128 | | | |
| Chlorodibromomethane | | 5.60 | ug/L | 0.50 | 112 | 74 | 125 | | | |
| Chloroform | | 5.53 | ug/L | 0.50 | 111 | 68 | 124 | | | |
| Surr: 1,2-Dichloroethane-d4 | | | | 0.50 | 104 | 71 | 139 | | | |
| Surr: p-Bromofluorobenzene | | | | 0.50 | 103 | 80 | 127 | | | |
| Surr: Toluene-d8 | | | | 0.50 | 107 | 80 | 123 | | | |
| **Lab ID: C22040416-001FMSD** | 7 | Sample Matrix Spike Duplicate | | | | Run: 5971A.I_220417A | | | | 04/17/22 19:40 |
| Bromodichloromethane | | 6.42 | ug/L | 0.50 | 128 | 74 | 128 | 2.0 | 20 | |
| Bromoform | | 5.54 | ug/L | 0.50 | 111 | 66 | 128 | 0.8 | 20 | |
| Chlorodibromomethane | | 5.63 | ug/L | 0.50 | 113 | 74 | 125 | 0.6 | 20 | |
| Chloroform | | 5.46 | ug/L | 0.50 | 109 | 68 | 124 | 1.4 | 20 | |
| Surr: 1,2-Dichloroethane-d4 | | | | 0.50 | 102 | 71 | 139 | | | |
| Surr: p-Bromofluorobenzene | | | | 0.50 | 102 | 80 | 127 | | | |
| Surr: Toluene-d8 | | | | 0.50 | 109 | 80 | 123 | | | |

**Qualifiers:**

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)