



Illinois Power Resources Generating, LLC
1500 Eastport Plaza Drive
Collinsville, IL 62234

August 23, 2024

Illinois Environmental Protection Agency
DWPC – Permits MC#15
Attn: Part 845 Coal Combustion Residual Rule Submittal
1021 North Grand Avenue East
Springfield, IL 62794

Re: Duck Creek Power Plant Bottom Ash Basin; IEPA ID # W0578010001-03

Dear Mr. LeCrone:

In accordance with Title 35 of the Illinois Administrative Code (35 I.A.C.) Section (§) 845.610(b)(3)(D), Illinois Power Resources Generating, LLC is submitting groundwater monitoring data for the Quarter 2, 2024 sampling event at the Duck Creek Power Plant Bottom Ash Basin, identified by Illinois Environmental Protection Agency (IEPA) ID No. W0578010001-03. This data is being submitted and placed in the facility's operating record as required by 35 I.A.C. § 845.800(d)(15) within 60 days of receiving final laboratory analytical data. Results were compared with the groundwater protection standards (GWPSs) described in 35 I.A.C. § 845.600 to determine statistical exceedances of the GWPS.

Sincerely,

A handwritten signature in blue ink, appearing to read "Dianna Tickner", is placed over a faint, light blue rectangular background.

Dianna Tickner, PE, PMP
Senior Director, Demolition and Decommission

Enclosures

Groundwater Monitoring Data and Detected Exceedances, Quarter 2, 2024, Bottom Ash Basin, Duck Creek Power Plant, Canton, Illinois

35 I.A.C. § 845.610(b)(3)(D)
GROUNDWATER MONITORING DATA AND DETECTED EXCEEDANCES
QUARTER 2, 2024
BOTTOM ASH BASIN, DUCK CREEK POWER PLANT, CANTON, ILLINOIS

August 23, 2024

Samples were collected between April 16 and April 18, 2024 and analyzed for the parameters listed in Title 35 of the Illinois Administrative Code (35 I.A.C.) Section (§) 845.600(a), calcium, and turbidity. Final laboratory analytical data was received on June 24, 2024.

The monitoring well locations are included in **Figure 1. Attachment A** summarizes the groundwater elevation data for the Quarter 2, 2024 sampling event. **Table 1** is a summary of the field parameters and analytical results. **Attachment B** contains the associated laboratory analytical reports and field data sheets for the Quarter 2, 2024 sampling event.

Statistical procedures used to evaluate groundwater results are provided in Appendix A of the Groundwater Monitoring Plan¹ provided in the operating permit application. In accordance with 35 I.A.C. § 845.610(b)(3)(B), the Quarter 2, 2024 groundwater monitoring data were evaluated for statistical exceedances over background levels for the constituents listed in 35 I.A.C. § 845.600. **Attachment C** shows the statistically derived values compared to background levels.

In accordance with 35 I.A.C. § 845.610(b)(3)(C), the statistically derived values identified as Statistical Results in **Table 2** were compared with the groundwater protection standards (GWPSs) described in 35 I.A.C. § 845.600 to determine statistical exceedances of the GWPS, as shown in **Table 2**. The date of this submittal is considered to be the date that the exceedances were detected.

TABLES

Table 1	Field Parameters and Analytical Results - Quarter 2, 2024
Table 2	Comparison of Statistical Results to GWPS - Quarter 2, 2024

FIGURES

Figure 1	Monitoring Well Location Map
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ATTACHMENTS

Attachment A	Groundwater Elevation Data - Quarter 2, 2024
Attachment B	Laboratory Reports and Field Data Sheets - Quarter 2, 2024
Attachment C	Comparison of Statistical Results to Background - Quarter 2, 2024

¹ Ramboll Americas Engineering Solutions, Inc. (Ramboll), 2021. *Groundwater Monitoring Plan. Bottom Ash Basin. Duck Creek Power Plant. Canton, Illinois.* October 25, 2021.

TABLES

TABLE 1.
FIELD PARAMETERS AND ANALYTICAL RESULTS - QUARTER 2, 2024

845 QUARTERLY REPORT
DUCK CREEK POWER PLANT
BOTTOM ASH BASIN
CANTON, IL

Well ID	Well Type	Event	Date	Parameter	Result	Unit
BA05	Background	E005	04/18/2024	Antimony, total	0.00043 U	mg/L
BA05	Background	E005	04/18/2024	Arsenic, total	0.00300	mg/L
BA05	Background	E005	04/18/2024	Barium, total	0.0590	mg/L
BA05	Background	E005	04/18/2024	Beryllium, total	0.00059 U	mg/L
BA05	Background	E005	04/18/2024	Boron, total	0.0970	mg/L
BA05	Background	E005	04/18/2024	Cadmium, total	0.00074 U	mg/L
BA05	Background	E005	04/18/2024	Calcium, total	210	mg/L
BA05	Background	E005	04/18/2024	Chloride, total	9.90	mg/L
BA05	Background	E005	04/18/2024	Chromium, total	0.0028 U	mg/L
BA05	Background	E005	04/18/2024	Cobalt, total	0.00073 J	mg/L
BA05	Background	E005	04/18/2024	Dissolved Oxygen	0.320	mg/L
BA05	Background	E005	04/18/2024	Fluoride, total	0.04 U	mg/L
BA05	Background	E005	04/18/2024	Lead, total	0.00022 U	mg/L
BA05	Background	E005	04/18/2024	Lithium, total	0.006 J	mg/L
BA05	Background	E005	04/18/2024	Mercury, total	0.00014 U	mg/L
BA05	Background	E005	04/18/2024	Molybdenum, total	0.00180	mg/L
BA05	Background	E005	04/18/2024	Oxidation Reduction Potential	17.0	mV
BA05	Background	E005	04/18/2024	pH (field)	6.9	SU
BA05	Background	E005	04/18/2024	Radium 226 + Radium 228, total	0.607	pCi/L
BA05	Background	E005	04/18/2024	Selenium, total	0.00074 U	mg/L
BA05	Background	E005	04/18/2024	Specific Conductance @ 25C (field)	1,770	micromhos/cm
BA05	Background	E005	04/18/2024	Sulfate, total	470	mg/L
BA05	Background	E005	04/18/2024	Temperature	12.6	degrees C
BA05	Background	E005	04/18/2024	Thallium, total	0.00038 U	mg/L
BA05	Background	E005	04/18/2024	Total Dissolved Solids	1,100	mg/L
BA05	Background	E005	04/18/2024	Turbidity, field	59.1	NTU
BA06	Background	E005	04/16/2024	Antimony, total	0.00043 U	mg/L
BA06	Background	E005	04/16/2024	Arsenic, total	0.00370	mg/L
BA06	Background	E005	04/16/2024	Barium, total	0.0990	mg/L
BA06	Background	E005	04/16/2024	Beryllium, total	0.00059 U	mg/L
BA06	Background	E005	04/16/2024	Boron, total	13.0	mg/L
BA06	Background	E005	04/16/2024	Cadmium, total	0.00074 U	mg/L
BA06	Background	E005	04/16/2024	Calcium, total	320	mg/L
BA06	Background	E005	04/16/2024	Chloride, total	550	mg/L
BA06	Background	E005	04/16/2024	Chromium, total	0.0028 U	mg/L
BA06	Background	E005	04/16/2024	Cobalt, total	0.00730	mg/L
BA06	Background	E005	04/16/2024	Dissolved Oxygen	2.00	mg/L
BA06	Background	E005	04/16/2024	Fluoride, total	0.308	mg/L
BA06	Background	E005	04/16/2024	Lead, total	0.00140	mg/L
BA06	Background	E005	04/16/2024	Lithium, total	0.006 J	mg/L
BA06	Background	E005	04/16/2024	Mercury, total	0.00014 J	mg/L
BA06	Background	E005	04/16/2024	Molybdenum, total	0.00150	mg/L
BA06	Background	E005	04/16/2024	Oxidation Reduction Potential	11.0	mV
BA06	Background	E005	04/16/2024	pH (field)	6.7	SU
BA06	Background	E005	04/16/2024	Radium 226 + Radium 228, total	1.77	pCi/L
BA06	Background	E005	04/16/2024	Selenium, total	0.00074 U	mg/L

TABLE 1.
FIELD PARAMETERS AND ANALYTICAL RESULTS - QUARTER 2, 2024

845 QUARTERLY REPORT
DUCK CREEK POWER PLANT
BOTTOM ASH BASIN
CANTON, IL

Well ID	Well Type	Event	Date	Parameter	Result	Unit
BA06	Background	E005	04/16/2024	Specific Conductance @ 25C (field)	3,310	micromhos/cm
BA06	Background	E005	04/16/2024	Sulfate, total	380	mg/L
BA06	Background	E005	04/16/2024	Temperature	16.7	degrees C
BA06	Background	E005	04/16/2024	Thallium, total	0.00038 U	mg/L
BA06	Background	E005	04/16/2024	Total Dissolved Solids	1,800	mg/L
BA06	Background	E005	04/16/2024	Turbidity, field	0	NTU
BA01	Compliance	E005	04/16/2024	Antimony, total	0.00043 U	mg/L
BA01	Compliance	E005	04/16/2024	Arsenic, total	0.00071 J	mg/L
BA01	Compliance	E005	04/16/2024	Barium, total	0.130	mg/L
BA01	Compliance	E005	04/16/2024	Beryllium, total	0.00059 U	mg/L
BA01	Compliance	E005	04/16/2024	Boron, total	0.0240	mg/L
BA01	Compliance	E005	04/16/2024	Cadmium, total	0.00074 U	mg/L
BA01	Compliance	E005	04/16/2024	Calcium, total	130	mg/L
BA01	Compliance	E005	04/16/2024	Chloride, total	16.0	mg/L
BA01	Compliance	E005	04/16/2024	Chromium, total	0.0028 U	mg/L
BA01	Compliance	E005	04/16/2024	Cobalt, total	0.00076 J	mg/L
BA01	Compliance	E005	04/16/2024	Dissolved Oxygen	2.10	mg/L
BA01	Compliance	E005	04/16/2024	Fluoride, total	0.185 J	mg/L
BA01	Compliance	E005	04/16/2024	Lead, total	0.00022 U	mg/L
BA01	Compliance	E005	04/16/2024	Lithium, total	0.005 U	mg/L
BA01	Compliance	E005	04/16/2024	Mercury, total	0.00014 U	mg/L
BA01	Compliance	E005	04/16/2024	Molybdenum, total	0.00100	mg/L
BA01	Compliance	E005	04/16/2024	Oxidation Reduction Potential	12.0	mV
BA01	Compliance	E005	04/16/2024	pH (field)	7.0	SU
BA01	Compliance	E005	04/16/2024	Radium 226 + Radium 228, total	1.19	pCi/L
BA01	Compliance	E005	04/16/2024	Selenium, total	0.00074 U	mg/L
BA01	Compliance	E005	04/16/2024	Specific Conductance @ 25C (field)	1,020	micromhos/cm
BA01	Compliance	E005	04/16/2024	Sulfate, total	140	mg/L
BA01	Compliance	E005	04/16/2024	Temperature	16.2	degrees C
BA01	Compliance	E005	04/16/2024	Thallium, total	0.00038 U	mg/L
BA01	Compliance	E005	04/16/2024	Total Dissolved Solids	590	mg/L
BA01	Compliance	E005	04/16/2024	Turbidity, field	0	NTU
BA02	Compliance	E005	04/16/2024	Antimony, total	0.00043 U	mg/L
BA02	Compliance	E005	04/16/2024	Arsenic, total	0.00150	mg/L
BA02	Compliance	E005	04/16/2024	Barium, total	0.200	mg/L
BA02	Compliance	E005	04/16/2024	Beryllium, total	0.00059 U	mg/L
BA02	Compliance	E005	04/16/2024	Boron, total	0.0590	mg/L
BA02	Compliance	E005	04/16/2024	Cadmium, total	0.00074 U	mg/L
BA02	Compliance	E005	04/16/2024	Calcium, total	95.0	mg/L
BA02	Compliance	E005	04/16/2024	Chloride, total	9.40	mg/L
BA02	Compliance	E005	04/16/2024	Chromium, total	0.0028 U	mg/L
BA02	Compliance	E005	04/16/2024	Cobalt, total	0.00048 U	mg/L
BA02	Compliance	E005	04/16/2024	Dissolved Oxygen	1.50	mg/L
BA02	Compliance	E005	04/16/2024	Fluoride, total	0.165 J	mg/L
BA02	Compliance	E005	04/16/2024	Lead, total	0.00022 U	mg/L
BA02	Compliance	E005	04/16/2024	Lithium, total	0.005 U	mg/L

TABLE 1.
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BOTTOM ASH BASIN
CANTON, IL

Well ID	Well Type	Event	Date	Parameter	Result	Unit
BA02	Compliance	E005	04/16/2024	Mercury, total	0.00014 J	mg/L
BA02	Compliance	E005	04/16/2024	Molybdenum, total	0.00450	mg/L
BA02	Compliance	E005	04/16/2024	Oxidation Reduction Potential	225	mV
BA02	Compliance	E005	04/16/2024	pH (field)	7.1	SU
BA02	Compliance	E005	04/16/2024	Radium 226 + Radium 228, total	1.18	pCi/L
BA02	Compliance	E005	04/16/2024	Selenium, total	0.00074 U	mg/L
BA02	Compliance	E005	04/16/2024	Specific Conductance @ 25C (field)	1,000	micromhos/cm
BA02	Compliance	E005	04/16/2024	Sulfate, total	14.0	mg/L
BA02	Compliance	E005	04/16/2024	Temperature	15.1	degrees C
BA02	Compliance	E005	04/16/2024	Thallium, total	0.00038 U	mg/L
BA02	Compliance	E005	04/16/2024	Total Dissolved Solids	490	mg/L
BA02	Compliance	E005	04/16/2024	Turbidity, field	0	NTU
BA02L	Compliance	E005	04/18/2024	Antimony, total	0.00043 U	mg/L
BA02L	Compliance	E005	04/18/2024	Arsenic, total	0.0200	mg/L
BA02L	Compliance	E005	04/18/2024	Barium, total	0.110	mg/L
BA02L	Compliance	E005	04/18/2024	Beryllium, total	0.00059 U	mg/L
BA02L	Compliance	E005	04/18/2024	Boron, total	0.0750	mg/L
BA02L	Compliance	E005	04/18/2024	Cadmium, total	0.00074 U	mg/L
BA02L	Compliance	E005	04/18/2024	Calcium, total	81.0	mg/L
BA02L	Compliance	E005	04/18/2024	Chloride, total	3.20 J+	mg/L
BA02L	Compliance	E005	04/18/2024	Chromium, total	0.0028 U	mg/L
BA02L	Compliance	E005	04/18/2024	Cobalt, total	0.00220	mg/L
BA02L	Compliance	E005	04/18/2024	Dissolved Oxygen	1.00	mg/L
BA02L	Compliance	E005	04/18/2024	Fluoride, total	0.600 J+	mg/L
BA02L	Compliance	E005	04/18/2024	Lead, total	0.00230	mg/L
BA02L	Compliance	E005	04/18/2024	Lithium, total	0.005 U	mg/L
BA02L	Compliance	E005	04/18/2024	Mercury, total	0.00014 U	mg/L
BA02L	Compliance	E005	04/18/2024	Molybdenum, total	0.00170	mg/L
BA02L	Compliance	E005	04/18/2024	Oxidation Reduction Potential	-126	mV
BA02L	Compliance	E005	04/18/2024	pH (field)	7.1	SU
BA02L	Compliance	E005	04/18/2024	Radium 226 + Radium 228, total	0.69	pCi/L
BA02L	Compliance	E005	04/18/2024	Selenium, total	0.00074 U	mg/L
BA02L	Compliance	E005	04/18/2024	Specific Conductance @ 25C (field)	532	micromhos/cm
BA02L	Compliance	E005	04/18/2024	Sulfate, total	2.20 J-	mg/L
BA02L	Compliance	E005	04/18/2024	Temperature	16.3	degrees C
BA02L	Compliance	E005	04/18/2024	Thallium, total	0.00038 U	mg/L
BA02L	Compliance	E005	04/18/2024	Total Dissolved Solids	240	mg/L
BA02L	Compliance	E005	04/18/2024	Turbidity, field	108	NTU
BA03	Compliance	E005	04/18/2024	Antimony, total	0.00043 U	mg/L
BA03	Compliance	E005	04/18/2024	Arsenic, total	0.00069 U	mg/L
BA03	Compliance	E005	04/18/2024	Barium, total	0.140	mg/L
BA03	Compliance	E005	04/18/2024	Beryllium, total	0.00059 U	mg/L
BA03	Compliance	E005	04/18/2024	Boron, total	0.0230	mg/L
BA03	Compliance	E005	04/18/2024	Cadmium, total	0.00074 U	mg/L
BA03	Compliance	E005	04/18/2024	Calcium, total	100	mg/L
BA03	Compliance	E005	04/18/2024	Chloride, total	7.30	mg/L

TABLE 1.
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845 QUARTERLY REPORT
DUCK CREEK POWER PLANT
BOTTOM ASH BASIN
CANTON, IL

Well ID	Well Type	Event	Date	Parameter	Result	Unit
BA03	Compliance	E005	04/18/2024	Chromium, total	0.0028 U	mg/L
BA03	Compliance	E005	04/18/2024	Cobalt, total	0.00048 U	mg/L
BA03	Compliance	E005	04/18/2024	Dissolved Oxygen	0.830	mg/L
BA03	Compliance	E005	04/18/2024	Fluoride, total	0.226 J	mg/L
BA03	Compliance	E005	04/18/2024	Lead, total	0.00022 U	mg/L
BA03	Compliance	E005	04/18/2024	Lithium, total	0.005 U	mg/L
BA03	Compliance	E005	04/18/2024	Mercury, total	0.00014 U	mg/L
BA03	Compliance	E005	04/18/2024	Molybdenum, total	0.00110	mg/L
BA03	Compliance	E005	04/18/2024	Oxidation Reduction Potential	103	mV
BA03	Compliance	E005	04/18/2024	pH (field)	7.0	SU
BA03	Compliance	E005	04/18/2024	Radium 226 + Radium 228, total	0.694	pCi/L
BA03	Compliance	E005	04/18/2024	Selenium, total	0.00210	mg/L
BA03	Compliance	E005	04/18/2024	Specific Conductance @ 25C (field)	879	micromhos/cm
BA03	Compliance	E005	04/18/2024	Sulfate, total	17.0	mg/L
BA03	Compliance	E005	04/18/2024	Temperature	13.6	degrees C
BA03	Compliance	E005	04/18/2024	Thallium, total	0.00038 U	mg/L
BA03	Compliance	E005	04/18/2024	Total Dissolved Solids	420	mg/L
BA03	Compliance	E005	04/18/2024	Turbidity, field	0	NTU
BA03L	Compliance	E005	04/18/2024	Antimony, total	0.00043 U	mg/L
BA03L	Compliance	E005	04/18/2024	Arsenic, total	0.00069 U	mg/L
BA03L	Compliance	E005	04/18/2024	Barium, total	0.120	mg/L
BA03L	Compliance	E005	04/18/2024	Beryllium, total	0.00059 U	mg/L
BA03L	Compliance	E005	04/18/2024	Boron, total	0.400	mg/L
BA03L	Compliance	E005	04/18/2024	Cadmium, total	0.00074 U	mg/L
BA03L	Compliance	E005	04/18/2024	Calcium, total	190	mg/L
BA03L	Compliance	E005	04/18/2024	Chloride, total	21.0	mg/L
BA03L	Compliance	E005	04/18/2024	Chromium, total	0.0028 U	mg/L
BA03L	Compliance	E005	04/18/2024	Cobalt, total	0.00048 U	mg/L
BA03L	Compliance	E005	04/18/2024	Dissolved Oxygen	1.40	mg/L
BA03L	Compliance	E005	04/18/2024	Fluoride, total	0.04 U	mg/L
BA03L	Compliance	E005	04/18/2024	Lead, total	0.00022 U	mg/L
BA03L	Compliance	E005	04/18/2024	Lithium, total	0.005 U	mg/L
BA03L	Compliance	E005	04/18/2024	Mercury, total	0.00014 U	mg/L
BA03L	Compliance	E005	04/18/2024	Molybdenum, total	0.00087 J	mg/L
BA03L	Compliance	E005	04/18/2024	Oxidation Reduction Potential	132	mV
BA03L	Compliance	E005	04/18/2024	pH (field)	6.8	SU
BA03L	Compliance	E005	04/18/2024	Radium 226 + Radium 228, total	0.594	pCi/L
BA03L	Compliance	E005	04/18/2024	Selenium, total	0.00074 U	mg/L
BA03L	Compliance	E005	04/18/2024	Specific Conductance @ 25C (field)	1,590	micromhos/cm
BA03L	Compliance	E005	04/18/2024	Sulfate, total	370	mg/L
BA03L	Compliance	E005	04/18/2024	Temperature	12.5	degrees C
BA03L	Compliance	E005	04/18/2024	Thallium, total	0.00038 U	mg/L
BA03L	Compliance	E005	04/18/2024	Total Dissolved Solids	950	mg/L
BA03L	Compliance	E005	04/18/2024	Turbidity, field	0	NTU
BA04	Compliance	E005	04/18/2024	Antimony, total	0.0016 J	mg/L
BA04	Compliance	E005	04/18/2024	Arsenic, total	0.00069 U	mg/L

TABLE 1.
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845 QUARTERLY REPORT
DUCK CREEK POWER PLANT
BOTTOM ASH BASIN
CANTON, IL

Well ID	Well Type	Event	Date	Parameter	Result	Unit
BA04	Compliance	E005	04/18/2024	Barium, total	0.100	mg/L
BA04	Compliance	E005	04/18/2024	Beryllium, total	0.00059 U	mg/L
BA04	Compliance	E005	04/18/2024	Boron, total	0.540	mg/L
BA04	Compliance	E005	04/18/2024	Cadmium, total	0.00074 U	mg/L
BA04	Compliance	E005	04/18/2024	Calcium, total	140	mg/L
BA04	Compliance	E005	04/18/2024	Chloride, total	49.0	mg/L
BA04	Compliance	E005	04/18/2024	Chromium, total	0.0028 U	mg/L
BA04	Compliance	E005	04/18/2024	Cobalt, total	0.00048 U	mg/L
BA04	Compliance	E005	04/18/2024	Dissolved Oxygen	1.30	mg/L
BA04	Compliance	E005	04/18/2024	Fluoride, total	0.276	mg/L
BA04	Compliance	E005	04/18/2024	Lead, total	0.00022 U	mg/L
BA04	Compliance	E005	04/18/2024	Lithium, total	0.005 U	mg/L
BA04	Compliance	E005	04/18/2024	Mercury, total	0.00014 U	mg/L
BA04	Compliance	E005	04/18/2024	Molybdenum, total	0.00370	mg/L
BA04	Compliance	E005	04/18/2024	Oxidation Reduction Potential	118	mV
BA04	Compliance	E005	04/18/2024	pH (field)	7.1	SU
BA04	Compliance	E005	04/18/2024	Radium 226 + Radium 228, total	0.856	pCi/L
BA04	Compliance	E005	04/18/2024	Selenium, total	0.00074 U	mg/L
BA04	Compliance	E005	04/18/2024	Specific Conductance @ 25C (field)	1,220	micromhos/cm
BA04	Compliance	E005	04/18/2024	Sulfate, total	170	mg/L
BA04	Compliance	E005	04/18/2024	Temperature	14.3	degrees C
BA04	Compliance	E005	04/18/2024	Thallium, total	0.00038 U	mg/L
BA04	Compliance	E005	04/18/2024	Total Dissolved Solids	640	mg/L
BA04	Compliance	E005	04/18/2024	Turbidity, field	0	NTU

Notes:

C = Celsius

cm = centimeter

mg/L = milligrams per liter

mV = millivolts

NTU = Nephelometric Turbidity Units

pCi/L = picocuries per liter

SU = Standard Units

J = The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.

J- = The result is an estimated quantity, but the result may be biased low.

J+ = The result is an estimated quantity, but the result may be biased high.

U = The analyte was analyzed for, but was not detected above the level of the adjusted detection limit or quantitation limit, as appropriate.

TABLE 2.
COMPARISON OF STATISTICAL RESULTS TO GWPS - QUARTER 2, 2024
845 QUARTERLY REPORT
DUICK CREEK POWER PLANT
BOTTOM ASH BASIN
CANTON, IL

Well ID	HSU	Event	Parameter	Units	Date Range	Sample Count	Percent ND	Statistical Calculation	Statistical Result	GWPS	GWPS Source	Compliance Result
BA01	UA	E005	Antimony, total	mg/L	02/05/16 - 04/16/24	13	100	All ND - Last	0.003	0.006	Standard	No Exceedance
BA01	UA	E005	Arsenic, total	mg/L	02/05/16 - 04/16/24	13	31	CI around geomean	0.000941	0.0240	Background	No Exceedance
BA01	UA	E005	Barium, total	mg/L	02/05/16 - 04/16/24	13	0	CB around T-S line	0.0825	2.0	Standard	No Exceedance
BA01	UA	E005	Beryllium, total	mg/L	02/05/16 - 04/16/24	13	100	All ND - Last	0.001	0.004	Standard	No Exceedance
BA01	UA	E005	Boron, total	mg/L	02/05/16 - 04/16/24	25	0	CI around median	0.021	7.90	Background	No Exceedance
BA01	UA	E005	Cadmium, total	mg/L	02/05/16 - 04/16/24	13	100	All ND - Last	0.001	0.005	Standard	No Exceedance
BA01	UA	E005	Chloride, total	mg/L	02/05/16 - 04/16/24	25	0	CB around T-S line	11	700	Background	No Exceedance
BA01	UA	E005	Chromium, total	mg/L	02/05/16 - 04/16/24	13	92	CI around median	0.004	0.1	Standard	No Exceedance
BA01	UA	E005	Cobalt, total	mg/L	02/05/16 - 04/16/24	13	85	CI around median	0.002	0.0300	Background	No Exceedance
BA01	UA	E005	Fluoride, total	mg/L	02/05/16 - 04/16/24	25	60	CI around median	0.25	4.0	Standard	No Exceedance
BA01	UA	E005	Lead, total	mg/L	02/05/16 - 04/16/24	13	46	CI around geomean	0.00131	0.0420	Background	No Exceedance
BA01	UA	E005	Lithium, total	mg/L	02/05/16 - 04/16/24	13	100	All ND - Last	0.02	0.0680	Background	No Exceedance
BA01	UA	E005	Mercury, total	mg/L	02/05/16 - 04/16/24	13	92	Most recent sample	0.0002	0.002	Standard	No Exceedance
BA01	UA	E005	Molybdenum, total	mg/L	02/05/16 - 04/16/24	13	0	CI around geomean	0.00123	0.1	Standard	No Exceedance
BA01	UA	E005	pH (field)	SU	02/05/16 - 04/16/24	29	0	CI around median	6.8/7.0	6.4/9.0	Background/Standard	No Exceedance
BA01	UA	E005	Radium 226 + Radium 228, total	pCi/L	02/05/16 - 04/16/24	13	0	CI around mean	0.505	7.27	Background	No Exceedance
BA01	UA	E005	Selenium, total	mg/L	02/05/16 - 04/16/24	12	100	All ND - Last	0.001	0.05	Standard	No Exceedance
BA01	UA	E005	Sulfate, total	mg/L	02/05/16 - 04/16/24	25	0	CB around linear reg	136	890	Background	No Exceedance
BA01	UA	E005	Thallium, total	mg/L	02/05/16 - 04/16/24	13	100	All ND - Last	0.001	0.002	Standard	No Exceedance
BA01	UA	E005	Total Dissolved Solids	mg/L	02/05/16 - 04/16/24	25	0	CI around mean	540	2,590	Background	No Exceedance
BA02	UA	E005	Antimony, total	mg/L	02/05/16 - 04/16/24	13	100	All ND - Last	0.003	0.006	Standard	No Exceedance
BA02	UA	E005	Arsenic, total	mg/L	02/05/16 - 04/16/24	13	8	CI around mean	0.00188	0.0240	Background	No Exceedance
BA02	UA	E005	Barium, total	mg/L	02/05/16 - 04/16/24	13	0	CI around mean	0.194	2.0	Standard	No Exceedance
BA02	UA	E005	Beryllium, total	mg/L	02/05/16 - 04/16/24	13	92	CI around median	0.001	0.004	Standard	No Exceedance
BA02	UA	E005	Boron, total	mg/L	02/05/16 - 04/16/24	25	0	CB around linear reg	0.0482	7.90	Background	No Exceedance
BA02	UA	E005	Cadmium, total	mg/L	02/05/16 - 04/16/24	13	100	All ND - Last	0.001	0.005	Standard	No Exceedance
BA02	UA	E005	Chloride, total	mg/L	02/05/16 - 04/16/24	25	0	CB around linear reg	9.23	700	Background	No Exceedance

TABLE 2.
COMPARISON OF STATISTICAL RESULTS TO GWPS - QUARTER 2, 2024
845 QUARTERLY REPORT
DUICK CREEK POWER PLANT
BOTTOM ASH BASIN
CANTON, IL

Well ID	HSU	Event	Parameter	Units	Date Range	Sample Count	Percent ND	Statistical Calculation	Statistical Result	GWPS	GWPS Source	Compliance Result
BA02	UA	E005	Chromium, total	mg/L	02/05/16 - 04/16/24	13	100	All ND - Last	0.004	0.1	Standard	No Exceedance
BA02	UA	E005	Cobalt, total	mg/L	02/05/16 - 04/16/24	13	100	All ND - Last	0.002	0.0300	Background	No Exceedance
BA02	UA	E005	Fluoride, total	mg/L	02/05/16 - 04/16/24	25	80	CI around median	0.25	4.0	Standard	No Exceedance
BA02	UA	E005	Lead, total	mg/L	02/05/16 - 04/16/24	13	77	CI around median	0.001	0.0420	Background	No Exceedance
BA02	UA	E005	Lithium, total	mg/L	02/05/16 - 04/16/24	13	100	All ND - Last	0.02	0.0680	Background	No Exceedance
BA02	UA	E005	Mercury, total	mg/L	02/05/16 - 04/16/24	13	92	CI around median	0.0002	0.002	Standard	No Exceedance
BA02	UA	E005	Molybdenum, total	mg/L	02/05/16 - 04/16/24	13	0	CI around mean	0.00403	0.1	Standard	No Exceedance
BA02	UA	E005	pH (field)	SU	02/05/16 - 04/16/24	26	0	CI around median	6.9/7.2	6.4/9.0	Background/Standard	No Exceedance
BA02	UA	E005	Radium 226 + Radium 228, total	pCi/L	02/05/16 - 04/16/24	13	0	CI around mean	0.471	7.27	Background	No Exceedance
BA02	UA	E005	Selenium, total	mg/L	02/05/16 - 04/16/24	13	85	CI around median	0.001	0.05	Standard	No Exceedance
BA02	UA	E005	Sulfate, total	mg/L	02/05/16 - 04/16/24	25	0	CB around linear reg	11.6	890	Background	No Exceedance
BA02	UA	E005	Thallium, total	mg/L	02/05/16 - 04/16/24	13	92	Most recent sample	0.001	0.002	Standard	No Exceedance
BA02	UA	E005	Total Dissolved Solids	mg/L	02/05/16 - 04/16/24	25	0	CB around linear reg	484	2,590	Background	No Exceedance
BA02L	UA/PMP	E005	Antimony, total	mg/L	04/14/21 - 04/18/24	11	100	All ND - Last	0.003	0.006	Standard	No Exceedance
BA02L	UA/PMP	E005	Arsenic, total	mg/L	04/14/21 - 04/18/24	11	0	CI around geomean	0.0103	0.0240	Background	No Exceedance
BA02L	UA/PMP	E005	Barium, total	mg/L	04/14/21 - 04/18/24	11	0	CI around median	0.046	2.0	Standard	No Exceedance
BA02L	UA/PMP	E005	Beryllium, total	mg/L	04/14/21 - 04/18/24	11	100	All ND - Last	0.001	0.004	Standard	No Exceedance
BA02L	UA/PMP	E005	Boron, total	mg/L	04/14/21 - 04/18/24	12	0	CI around mean	0.0753	7.90	Background	No Exceedance
BA02L	UA/PMP	E005	Cadmium, total	mg/L	04/14/21 - 04/18/24	11	100	All ND - Last	0.001	0.005	Standard	No Exceedance
BA02L	UA/PMP	E005	Chloride, total	mg/L	04/14/21 - 04/18/24	12	0	CB around linear reg	1.05	700	Background	No Exceedance
BA02L	UA/PMP	E005	Chromium, total	mg/L	04/14/21 - 04/18/24	11	91	CI around median	0.004	0.1	Standard	No Exceedance
BA02L	UA/PMP	E005	Cobalt, total	mg/L	04/14/21 - 04/18/24	11	73	CI around median	0.002	0.0300	Background	No Exceedance
BA02L	UA/PMP	E005	Fluoride, total	mg/L	04/14/21 - 04/18/24	12	0	CI around median	0.445	4.0	Standard	No Exceedance
BA02L	UA/PMP	E005	Lead, total	mg/L	04/14/21 - 04/18/24	11	64	CI around median	0.001	0.0420	Background	No Exceedance
BA02L	UA/PMP	E005	Lithium, total	mg/L	04/14/21 - 04/18/24	11	100	All ND - Last	0.02	0.0680	Background	No Exceedance
BA02L	UA/PMP	E005	Mercury, total	mg/L	04/14/21 - 04/18/24	11	100	All ND - Last	0.0002	0.002	Standard	No Exceedance
BA02L	UA/PMP	E005	Molybdenum, total	mg/L	04/14/21 - 04/18/24	11	0	CB around linear reg	-0.00194	0.1	Standard	No Exceedance

TABLE 2.
COMPARISON OF STATISTICAL RESULTS TO GWPS - QUARTER 2, 2024
845 QUARTERLY REPORT
DUICK CREEK POWER PLANT
BOTTOM ASH BASIN
CANTON, IL

Well ID	HSU	Event	Parameter	Units	Date Range	Sample Count	Percent ND	Statistical Calculation	Statistical Result	GWPS	GWPS Source	Compliance Result
BA02L	UA/PMP	E005	pH (field)	SU	04/14/21 - 04/18/24	12	0	CI around mean	7.2/7.5	6.4/9.0	Background/Standard	No Exceedance
BA02L	UA/PMP	E005	Radium 226 + Radium 228, total	pCi/L	04/14/21 - 04/18/24	10	0	CI around mean	0.221	7.27	Background	No Exceedance
BA02L	UA/PMP	E005	Selenium, total	mg/L	04/14/21 - 04/18/24	11	100	All ND - Last	0.001	0.05	Standard	No Exceedance
BA02L	UA/PMP	E005	Sulfate, total	mg/L	04/14/21 - 04/18/24	12	8	CI around geomean	1.78	890	Background	No Exceedance
BA02L	UA/PMP	E005	Thallium, total	mg/L	04/14/21 - 04/18/24	11	100	All ND - Last	0.001	0.002	Standard	No Exceedance
BA02L	UA/PMP	E005	Total Dissolved Solids	mg/L	04/14/21 - 04/18/24	12	0	CI around mean	203	2,590	Background	No Exceedance
BA03	UA	E005	Antimony, total	mg/L	02/05/16 - 04/18/24	13	100	All ND - Last	0.003	0.006	Standard	No Exceedance
BA03	UA	E005	Arsenic, total	mg/L	02/05/16 - 04/18/24	13	85	CI around median	0.001	0.0240	Background	No Exceedance
BA03	UA	E005	Barium, total	mg/L	02/05/16 - 04/18/24	13	0	CB around linear reg	0.113	2.0	Standard	No Exceedance
BA03	UA	E005	Beryllium, total	mg/L	02/05/16 - 04/18/24	13	100	All ND - Last	0.001	0.004	Standard	No Exceedance
BA03	UA	E005	Boron, total	mg/L	02/05/16 - 04/18/24	25	0	CI around mean	0.0255	7.90	Background	No Exceedance
BA03	UA	E005	Cadmium, total	mg/L	02/05/16 - 04/18/24	13	100	All ND - Last	0.001	0.005	Standard	No Exceedance
BA03	UA	E005	Chloride, total	mg/L	02/05/16 - 04/18/24	25	0	CI around geomean	5.81	700	Background	No Exceedance
BA03	UA	E005	Chromium, total	mg/L	02/05/16 - 04/18/24	13	85	CI around median	0.004	0.1	Standard	No Exceedance
BA03	UA	E005	Cobalt, total	mg/L	02/05/16 - 04/18/24	13	100	All ND - Last	0.002	0.0300	Background	No Exceedance
BA03	UA	E005	Fluoride, total	mg/L	02/05/16 - 04/18/24	25	56	CI around median	0.25	4.0	Standard	No Exceedance
BA03	UA	E005	Lead, total	mg/L	02/05/16 - 04/18/24	13	69	CI around median	0.001	0.0420	Background	No Exceedance
BA03	UA	E005	Lithium, total	mg/L	02/05/16 - 04/18/24	13	100	All ND - Last	0.02	0.0680	Background	No Exceedance
BA03	UA	E005	Mercury, total	mg/L	02/05/16 - 04/18/24	13	85	CI around median	0.0002	0.002	Standard	No Exceedance
BA03	UA	E005	Molybdenum, total	mg/L	02/05/16 - 04/18/24	13	8	CB around linear reg	-0.000786	0.1	Standard	No Exceedance
BA03	UA	E005	pH (field)	SU	02/05/16 - 04/18/24	27	0	CB around linear reg	6.7/7.1	6.4/9.0	Background/Standard	No Exceedance
BA03	UA	E005	Radium 226 + Radium 228, total	pCi/L	02/05/16 - 04/18/24	13	0	CI around mean	0.59	7.27	Background	No Exceedance
BA03	UA	E005	Selenium, total	mg/L	02/05/16 - 04/18/24	13	38	CI around median	0.001	0.05	Standard	No Exceedance
BA03	UA	E005	Sulfate, total	mg/L	02/05/16 - 04/18/24	25	0	CB around linear reg	14.2	890	Background	No Exceedance
BA03	UA	E005	Thallium, total	mg/L	02/05/16 - 04/18/24	13	100	All ND - Last	0.001	0.002	Standard	No Exceedance
BA03	UA	E005	Total Dissolved Solids	mg/L	02/05/16 - 04/18/24	25	0	CI around mean	415	2,590	Background	No Exceedance
BA03L	UA/PMP	E005	Antimony, total	mg/L	04/14/21 - 04/18/24	13	100	All ND - Last	0.003	0.006	Standard	No Exceedance

TABLE 2.
COMPARISON OF STATISTICAL RESULTS TO GWPS - QUARTER 2, 2024
845 QUARTERLY REPORT
DUICK CREEK POWER PLANT
BOTTOM ASH BASIN
CANTON, IL

Well ID	HSU	Event	Parameter	Units	Date Range	Sample Count	Percent ND	Statistical Calculation	Statistical Result	GWPS	GWPS Source	Compliance Result
BA03L	UA/PMP	E005	Arsenic, total	mg/L	04/14/21 - 04/18/24	13	77	CI around median	0.001	0.0240	Background	No Exceedance
BA03L	UA/PMP	E005	Barium, total	mg/L	04/14/21 - 04/18/24	13	0	CI around median	0.12	2.0	Standard	No Exceedance
BA03L	UA/PMP	E005	Beryllium, total	mg/L	04/14/21 - 04/18/24	13	92	CI around median	0.001	0.004	Standard	No Exceedance
BA03L	UA/PMP	E005	Boron, total	mg/L	04/14/21 - 04/18/24	14	0	CB around T-S line	0.227	7.90	Background	No Exceedance
BA03L	UA/PMP	E005	Cadmium, total	mg/L	04/14/21 - 04/18/24	13	100	All ND - Last	0.001	0.005	Standard	No Exceedance
BA03L	UA/PMP	E005	Chloride, total	mg/L	04/14/21 - 04/18/24	14	0	CI around mean	18.7	700	Background	No Exceedance
BA03L	UA/PMP	E005	Chromium, total	mg/L	04/14/21 - 04/18/24	13	46	CI around median	0.004	0.1	Standard	No Exceedance
BA03L	UA/PMP	E005	Cobalt, total	mg/L	04/14/21 - 04/18/24	13	85	CI around median	0.002	0.0300	Background	No Exceedance
BA03L	UA/PMP	E005	Fluoride, total	mg/L	04/14/21 - 04/18/24	14	79	CI around median	0.25	4.0	Standard	No Exceedance
BA03L	UA/PMP	E005	Lead, total	mg/L	04/14/21 - 04/18/24	13	54	CI around median	0.001	0.0420	Background	No Exceedance
BA03L	UA/PMP	E005	Lithium, total	mg/L	04/14/21 - 04/18/24	13	92	CI around median	0.02	0.0680	Background	No Exceedance
BA03L	UA/PMP	E005	Mercury, total	mg/L	04/14/21 - 04/18/24	13	85	CI around median	0.0002	0.002	Standard	No Exceedance
BA03L	UA/PMP	E005	Molybdenum, total	mg/L	04/14/21 - 04/18/24	13	38	CI around median	0.001	0.1	Standard	No Exceedance
BA03L	UA/PMP	E005	pH (field)	SU	04/14/21 - 04/18/24	14	0	CI around mean	6.7/6.9	6.4/9.0	Background/Standard	No Exceedance
BA03L	UA/PMP	E005	Radium 226 + Radium 228, total	pCi/L	04/14/21 - 04/18/24	12	0	CI around geomean	0.317	7.27	Background	No Exceedance
BA03L	UA/PMP	E005	Selenium, total	mg/L	04/14/21 - 04/18/24	13	92	CI around median	0.001	0.05	Standard	No Exceedance
BA03L	UA/PMP	E005	Sulfate, total	mg/L	04/14/21 - 04/18/24	14	0	CB around linear reg	369	890	Background	No Exceedance
BA03L	UA/PMP	E005	Thallium, total	mg/L	04/14/21 - 04/18/24	13	100	All ND - Last	0.001	0.002	Standard	No Exceedance
BA03L	UA/PMP	E005	Total Dissolved Solids	mg/L	04/14/21 - 04/18/24	14	0	CI around median	960	2,590	Background	No Exceedance
BA04	UA	E005	Antimony, total	mg/L	02/05/16 - 04/18/24	13	100	All ND - Last	0.003	0.006	Standard	No Exceedance
BA04	UA	E005	Arsenic, total	mg/L	02/05/16 - 04/18/24	13	85	CI around median	0.001	0.0240	Background	No Exceedance
BA04	UA	E005	Barium, total	mg/L	02/05/16 - 04/18/24	13	0	CI around mean	0.1	2.0	Standard	No Exceedance
BA04	UA	E005	Beryllium, total	mg/L	02/05/16 - 04/18/24	13	100	All ND - Last	0.001	0.004	Standard	No Exceedance
BA04	UA	E005	Boron, total	mg/L	02/05/16 - 04/18/24	25	0	CB around T-S line	0.313	7.90	Background	No Exceedance
BA04	UA	E005	Cadmium, total	mg/L	02/05/16 - 04/18/24	13	100	All ND - Last	0.001	0.005	Standard	No Exceedance
BA04	UA	E005	Chloride, total	mg/L	02/05/16 - 04/18/24	25	0	CB around T-S line	42.2	700	Background	No Exceedance
BA04	UA	E005	Chromium, total	mg/L	02/05/16 - 04/18/24	13	100	All ND - Last	0.004	0.1	Standard	No Exceedance

TABLE 2.
COMPARISON OF STATISTICAL RESULTS TO GWPS - QUARTER 2, 2024
845 QUARTERLY REPORT
DUICK CREEK POWER PLANT
BOTTOM ASH BASIN
CANTON, IL

Well ID	HSU	Event	Parameter	Units	Date Range	Sample Count	Percent ND	Statistical Calculation	Statistical Result	GWPS	GWPS Source	Compliance Result
BA04	UA	E005	Cobalt, total	mg/L	02/05/16 - 04/18/24	13	100	All ND - Last	0.002	0.0300	Background	No Exceedance
BA04	UA	E005	Fluoride, total	mg/L	02/05/16 - 04/18/24	25	24	CI around mean	0.275	4.0	Standard	No Exceedance
BA04	UA	E005	Lead, total	mg/L	02/05/16 - 04/18/24	13	92	CI around median	0.001	0.0420	Background	No Exceedance
BA04	UA	E005	Lithium, total	mg/L	02/05/16 - 04/18/24	13	100	All ND - Last	0.02	0.0680	Background	No Exceedance
BA04	UA	E005	Mercury, total	mg/L	02/05/16 - 04/18/24	13	100	All ND - Last	0.0002	0.002	Standard	No Exceedance
BA04	UA	E005	Molybdenum, total	mg/L	02/05/16 - 04/18/24	13	0	CI around geomean	0.00193	0.1	Standard	No Exceedance
BA04	UA	E005	pH (field)	SU	02/05/16 - 04/18/24	26	0	CB around linear reg	6.7/7.1	6.4/9.0	Background/Standard	No Exceedance
BA04	UA	E005	Radium 226 + Radium 228, total	pCi/L	02/05/16 - 04/18/24	13	0	CI around mean	0.467	7.27	Background	No Exceedance
BA04	UA	E005	Selenium, total	mg/L	02/05/16 - 04/18/24	13	92	CI around median	0.001	0.05	Standard	No Exceedance
BA04	UA	E005	Sulfate, total	mg/L	02/05/16 - 04/18/24	25	0	CB around T-S line	144	890	Background	No Exceedance
BA04	UA	E005	Thallium, total	mg/L	02/05/16 - 04/18/24	13	92	CI around median	0.001	0.002	Standard	No Exceedance
BA04	UA	E005	Total Dissolved Solids	mg/L	02/05/16 - 04/18/24	25	0	CB around linear reg	678	2,590	Background	No Exceedance

TABLE 2.
COMPARISON OF STATISTICAL RESULTS TO GWPS - QUARTER 2, 2024
845 QUARTERLY REPORT
DUICK CREEK POWER PLANT
BOTTOM ASH BASIN
CANTON, IL

Notes:

Compliance Result:

No Exceedance: the statistical result did not exceed the GWPS.

HSU = hydrostratigraphic unit:

UA = Uppermost Aquifer

UA/PMP = Uppermost Aquifer/Potential Migration Pathway

mg/L = milligrams per liter

ND = non-detect

pc/L = picocuries per liter

SU = standard units

Sample Count = number of samples from Sampled Date Range used to calculate the Statistical Result

Statistical Calculation = method used to calculate the statistical result:

All ND - Last = All results were below the reporting limit, and the last determined reporting limit is shown

CB around T-S line = Confidence band around Thiel-Sen line

CB around linear reg = Confidence band around linear regression

CI around geomean = Confidence interval around the geometric mean

CI around mean = Confidence interval around the mean

CI around median = Confidence interval around the median

Most recent sample = Result for the most recently collected sample used due to insufficient data

Statistical Result = calculated in accordance with the Statistical Analysis Plan using constituent concentrations observed at each monitoring well during all sampling events within the specified date range

For pH, the values presented are the lower / upper limits

GWPS = Groundwater Protection Standard

GWPS Source:

Standard = standard specified in 35 I.A.C. § 845.600(a)(1)

Background = background concentration (see cover page for additional information)

FIGURES



- BACKGROUND WELL
- COMPLIANCE WELL
- REGULATED UNIT (SUBJECT UNIT)

Monitoring Well Location Map

BOTTOM ASH BASIN
DUCK CREEK POWER PLANT
CANTON, ILLINOIS

FIGURE 1

RAMBOLL AMERICAS
ENGINEERING SOLUTIONS, INC.



ATTACHMENTS

**ATTACHMENT A
GROUNDWATER ELEVATION DATA
QUARTER 2, 2024**

ATTACHMENT A.
GROUNDWATER ELEVATION DATA - QUARTER 2, 2024
845 QUARTERLY REPORT
DUCK CREEK POWER PLANT
BOTTOM ASH BASIN
CANTON, IL

Well ID	Well Type	Date	Depth to Groundwater (feet BMP)	Groundwater Elevation (feet NAVD88)
BA01	Compliance	04/12/2024	12.25	575.01
BA02	Compliance	04/12/2024	5.87	574.23
BA02L	Compliance	04/12/2024	5.72	574.36
BA03	Compliance	04/12/2024	4.84	573.67
BA03L	Compliance	04/12/2024	4.38	573.54
BA04	Compliance	04/12/2024	4.15	574.21
BA05	Background	04/12/2024	15.12	580.57
BA06	Background	04/12/2024	19.60	575.90

Notes:
BMP = below measuring point
NAVD88 = North American Vertical Datum of 1988

**ATTACHMENT B
LABORATORY REPORTS AND FIELD DATA SHEETS
QUARTER 2, 2024**



Pace Analytical Services, LLC
2231 W. Altorfer Drive
Peoria, IL 61615
(800)752-6651

June 12, 2024

Daryl Johnson
Vistra - Duck Creek
17751 North Cilco Road
Canton, IL 61520-8761

Dear Daryl Johnson:

Please find enclosed the analytical results for the sample(s) the laboratory received. All testing is performed according to our current TNI accreditations unless otherwise noted. This report cannot be reproduced, except in full, without the written permission of Pace Analytical Services, LLC.

If you have any questions regarding your report, please contact your project manager. Quality and timely data is of the utmost importance to us.

Pace Analytical Services appreciates the opportunity to provide you with analytical expertise. We are always trying to improve our customer service and we welcome you to contact the General Manager, Lisa Grant, with any feedback you have about your experience with our laboratory at 309-683-1764 or lisa.grant@pacelabs.com.

Sincerely,

A handwritten signature in green ink that reads "Diane Billings".

Diane Billings
Project Manager



SAMPLE RECEIPT CHECK LIST

Items not applicable will be marked as in compliance

Work Order	HD03060
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YES	Samples received within temperature compliance when applicable
YES	COC present upon sample receipt
YES	COC completed & legible
YES	Sampler name & signature present
YES	Unique sample IDs assigned
YES	Sample collection location recorded
YES	Date & time collected recorded on COC
YES	Relinquished by client signature on COC
YES	COC & labels match
YES	Sample labels are legible
YES	Appropriate bottle(s) received
YES	Sufficient sample volume received
YES	Sample containers received undamaged
NO	Zero headspace, <6 mm present in VOA vials
NO	Trip blank(s) received
YES	All non-field analyses received within holding times
YES	Short hold time analysis
YES	Current PDC COC submitted
NO	Case narrative provided

Work Order HD03616

YES	Samples received within temperature compliance when applicable
YES	COC present upon sample receipt
YES	COC completed & legible
YES	Sampler name & signature present
YES	Unique sample IDs assigned
YES	Sample collection location recorded
YES	Date & time collected recorded on COC
YES	Relinquished by client signature on COC
YES	COC & labels match
YES	Sample labels are legible
YES	Appropriate bottle(s) received
YES	Sufficient sample volume received
YES	Sample containers received undamaged
NO	Zero headspace, <6 mm present in VOA vials
NO	Trip blank(s) received
YES	All non-field analyses received within holding times
NO	Short hold time analysis
YES	Current PDC COC submitted
NO	Case narrative provided

ANALYTICAL RESULTS

Sample: HD03060-01
Name: BA01
Matrix: Ground Water - Grab

Sampled: 04/16/24 12:57
Received: 04/16/24 16:09
PO #: 2438773/2438768

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Anions - PIA									
Chloride	16	mg/L	Q4	04/26/24 16:27	5	5.0	04/26/24 16:27	JSM	EPA 300.0 REV 2.1
Fluoride	< 0.250	mg/L		04/26/24 15:36	1	0.250	04/26/24 15:36	JSM	EPA 300.0 REV 2.1
Sulfate	140	mg/L	Q4	04/26/24 16:44	25	25	04/26/24 16:44	JSM	EPA 300.0 REV 2.1
Field - PIA									
Depth, From Measuring Point	12.52	Feet		04/16/24 12:57	1		04/16/24 12:57	FIELD	Field*
Dissolved oxygen, Field	2.1	mg/L		04/16/24 12:57	1		04/16/24 12:57	FIELD	Field*
Oxidation Reduction Potential	12.0	mV		04/16/24 12:57	1	-500	04/16/24 12:57	FIELD	Field*
pH, Field Measured	7.02	pH Units		04/16/24 12:57	1		04/16/24 12:57	FIELD	Field*
Specific Conductance, Field Measured	1020	umhos/cm		04/16/24 12:57	1		04/16/24 12:57	FIELD	Field*
Temperature, Field Measured	16.2	°C		04/16/24 12:57	1		04/16/24 12:57	FIELD	Field*
Temperature, Field Measured	61.1	°F		04/16/24 12:57	1		04/16/24 12:57	FIELD	Field*
Turbidity, Field Measured	< 0.00	NTU		04/16/24 12:57	1	0.00	04/16/24 12:57	FIELD	Field*
General Chemistry - PIA									
Alkalinity - bicarbonate as CaCO3	380	mg/L		04/23/24 08:03	1	10	04/23/24 08:03	TMS	SM 2320B 1997*
Alkalinity - carbonate as CaCO3	< 10	mg/L		04/23/24 08:03	1	10	04/23/24 08:03	TMS	SM 2320B 1997*
Soluble General Chemistry - PIA									
Solids - total dissolved solids (TDS)	590	mg/L		04/19/24 13:59	1	17	04/19/24 15:52	TMS	SM 2540C
Total Metals - PIA									
Antimony	< 3.0	ug/L		04/17/24 07:50	5	3.0	04/18/24 16:38	TJJ	EPA 6020A
Arsenic	< 1.0	ug/L		04/17/24 07:50	5	1.0	04/18/24 16:38	TJJ	EPA 6020A
Barium	130	ug/L		04/17/24 07:50	5	1.0	04/18/24 16:38	TJJ	EPA 6020A
Beryllium	< 1.0	ug/L		04/17/24 07:50	5	1.0	04/19/24 14:27	TJJ	EPA 6020A
Boron	24	ug/L		04/17/24 07:50	5	10	04/19/24 14:27	TJJ	EPA 6020A
Cadmium	< 1.0	ug/L		04/17/24 07:50	5	1.0	04/18/24 16:38	TJJ	EPA 6020A
Calcium	130	mg/L		04/17/24 07:50	5	0.20	04/18/24 16:38	TJJ	EPA 6020A
Chromium	< 4.0	ug/L		04/17/24 07:50	5	4.0	04/18/24 16:38	TJJ	EPA 6020A
Cobalt	< 2.0	ug/L		04/17/24 07:50	5	2.0	04/18/24 16:38	TJJ	EPA 6020A
Lead	< 1.0	ug/L		04/17/24 07:50	5	1.0	04/18/24 16:38	TJJ	EPA 6020A
Magnesium	60	mg/L		04/17/24 07:50	5	0.10	04/18/24 16:38	TJJ	EPA 6020A
Mercury	< 0.20	ug/L		04/17/24 07:50	5	0.20	04/22/24 14:07	TJJ	EPA 6020A
Molybdenum	1.0	ug/L		04/17/24 07:50	5	1.0	04/18/24 16:38	TJJ	EPA 6020A

ANALYTICAL RESULTS

Sample: HD03060-01

Name: BA01

Matrix: Ground Water - Grab

Sampled: 04/16/24 12:57

Received: 04/16/24 16:09

PO #: 2438773/2438768

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Potassium	0.66	mg/L		04/17/24 07:50	5	0.10	04/18/24 16:38	TJJ	EPA 6020A
Selenium	< 1.0	ug/L		04/17/24 07:50	5	1.0	04/18/24 16:38	TJJ	EPA 6020A
Sodium	11	mg/L		04/17/24 07:50	5	0.10	04/19/24 14:27	TJJ	EPA 6020A
Thallium	< 1.0	ug/L		04/17/24 07:50	5	1.0	04/18/24 16:38	TJJ	EPA 6020A
Lithium	< 0.020	mg/L		04/17/24 07:50	1	0.020	04/19/24 08:50	LAM	EPA 6010B

ANALYTICAL RESULTS

Sample: HD03060-02
Name: BA01 Dup
Matrix: Ground Water - Grab

Sampled: 04/16/24 12:57
Received: 04/16/24 16:09
PO #: 2438773/2438768

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Anions - PIA									
Chloride	16	mg/L		04/26/24 17:18	5	5.0	04/26/24 17:18	JSM	EPA 300.0 REV 2.1
Fluoride	< 0.250	mg/L		04/26/24 17:01	1	0.250	04/26/24 17:01	JSM	EPA 300.0 REV 2.1
Sulfate	150	mg/L		04/26/24 17:36	25	25	04/26/24 17:36	JSM	EPA 300.0 REV 2.1
Field - PIA									
Depth, From Measuring Point	12.52	Feet		04/16/24 12:57	1		04/16/24 12:57	FIELD	Field*
Dissolved oxygen, Field	2.1	mg/L		04/16/24 12:57	1		04/16/24 12:57	FIELD	Field*
Oxidation Reduction Potential	12.0	mV		04/16/24 12:57	1	-500	04/16/24 12:57	FIELD	Field*
pH, Field Measured	7.02	pH Units		04/16/24 12:57	1		04/16/24 12:57	FIELD	Field*
Specific Conductance, Field Measured	1020	umhos/cm		04/16/24 12:57	1		04/16/24 12:57	FIELD	Field*
Temperature, Field Measured	61.1	°F		04/16/24 12:57	1		04/16/24 12:57	FIELD	Field*
Temperature, Field Measured	16.2	°C		04/16/24 12:57	1		04/16/24 12:57	FIELD	Field*
Turbidity, Field Measured	< 0.00	NTU		04/16/24 12:57	1	0.00	04/16/24 12:57	FIELD	Field*
General Chemistry - PIA									
Alkalinity - bicarbonate as CaCO3	390	mg/L		04/23/24 08:03	1	10	04/23/24 08:03	TMS	SM 2320B 1997*
Alkalinity - carbonate as CaCO3	< 10	mg/L		04/23/24 08:03	1	10	04/23/24 08:03	TMS	SM 2320B 1997*
Soluble General Chemistry - PIA									
Solids - total dissolved solids (TDS)	580	mg/L		04/19/24 14:01	1	17	04/19/24 14:58	TMS	SM 2540C
Total Metals - PIA									
Antimony	< 3.0	ug/L		04/17/24 07:50	5	3.0	04/18/24 16:42	TJJ	EPA 6020A
Arsenic	< 1.0	ug/L		04/17/24 07:50	5	1.0	04/18/24 16:42	TJJ	EPA 6020A
Barium	130	ug/L		04/17/24 07:50	5	1.0	04/18/24 16:42	TJJ	EPA 6020A
Beryllium	< 1.0	ug/L		04/17/24 07:50	5	1.0	04/19/24 14:31	TJJ	EPA 6020A
Boron	23	ug/L		04/17/24 07:50	5	10	04/19/24 14:31	TJJ	EPA 6020A
Cadmium	< 1.0	ug/L		04/17/24 07:50	5	1.0	04/18/24 16:42	TJJ	EPA 6020A
Calcium	120	mg/L		04/17/24 07:50	5	0.20	04/18/24 16:42	TJJ	EPA 6020A
Chromium	< 4.0	ug/L		04/17/24 07:50	5	4.0	04/18/24 16:42	TJJ	EPA 6020A
Cobalt	< 2.0	ug/L		04/17/24 07:50	5	2.0	04/18/24 16:42	TJJ	EPA 6020A
Lead	< 1.0	ug/L		04/17/24 07:50	5	1.0	04/18/24 16:42	TJJ	EPA 6020A
Magnesium	60	mg/L		04/17/24 07:50	5	0.10	04/18/24 16:42	TJJ	EPA 6020A
Mercury	< 0.20	ug/L		04/17/24 07:50	5	0.20	04/18/24 16:42	TJJ	EPA 6020A
Molybdenum	1.0	ug/L		04/17/24 07:50	5	1.0	04/18/24 16:42	TJJ	EPA 6020A

ANALYTICAL RESULTS

Sample: HD03060-02

Name: BA01 Dup

Matrix: Ground Water - Grab

Sampled: 04/16/24 12:57

Received: 04/16/24 16:09

PO #: 2438773/2438768

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Potassium	0.67	mg/L		04/17/24 07:50	5	0.10	04/18/24 16:42	TJJ	EPA 6020A
Selenium	< 1.0	ug/L		04/17/24 07:50	5	1.0	04/18/24 16:42	TJJ	EPA 6020A
Sodium	11	mg/L		04/17/24 07:50	5	0.10	04/19/24 14:31	TJJ	EPA 6020A
Thallium	< 1.0	ug/L		04/17/24 07:50	5	1.0	04/18/24 16:42	TJJ	EPA 6020A
Lithium	< 0.020	mg/L		04/17/24 07:50	1	0.020	04/18/24 15:34	LAM	EPA 6010B

ANALYTICAL RESULTS

Sample: HD03060-03
Name: BA02
Matrix: Ground Water - Grab

Sampled: 04/16/24 11:30
Received: 04/16/24 16:09
PO #: 2438773/2438768

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Anions - PIA									
Chloride	9.4	mg/L	Q4	04/26/24 19:18	5	5.0	04/26/24 19:18	JSM	EPA 300.0 REV 2.1
Fluoride	< 0.250	mg/L		04/26/24 17:53	1	0.250	04/26/24 17:53	JSM	EPA 300.0 REV 2.1
Sulfate	14	mg/L	Q4	04/26/24 19:18	5	5.0	04/26/24 19:18	JSM	EPA 300.0 REV 2.1
Field - PIA									
Depth, From Measuring Point	6.47	Feet		04/16/24 11:30	1		04/16/24 11:30	FIELD	Field*
Dissolved oxygen, Field	1.5	mg/L		04/16/24 11:30	1		04/16/24 11:30	FIELD	Field*
Oxidation Reduction Potential	225	mV		04/16/24 11:30	1	-500	04/16/24 11:30	FIELD	Field*
pH, Field Measured	7.07	pH Units		04/16/24 11:30	1		04/16/24 11:30	FIELD	Field*
Specific Conductance, Field Measured	1000	umhos/cm		04/16/24 11:30	1		04/16/24 11:30	FIELD	Field*
Temperature, Field Measured	59.2	°F		04/16/24 11:30	1		04/16/24 11:30	FIELD	Field*
Temperature, Field Measured	15.1	°C		04/16/24 11:30	1		04/16/24 11:30	FIELD	Field*
Turbidity, Field Measured	< 0.00	NTU		04/16/24 11:30	1	0.00	04/16/24 11:30	FIELD	Field*
General Chemistry - PIA									
Alkalinity - bicarbonate as CaCO3	480	mg/L		04/23/24 08:03	1	10	04/23/24 08:03	TMS	SM 2320B 1997*
Alkalinity - carbonate as CaCO3	< 10	mg/L		04/23/24 08:03	1	10	04/23/24 08:03	TMS	SM 2320B 1997*
Soluble General Chemistry - PIA									
Solids - total dissolved solids (TDS)	490	mg/L		04/19/24 14:01	1	17	04/19/24 14:58	TMS	SM 2540C
Total Metals - PIA									
Antimony	< 3.0	ug/L		04/17/24 07:50	5	3.0	04/18/24 16:46	TJJ	EPA 6020A
Arsenic	1.5	ug/L		04/17/24 07:50	5	1.0	04/18/24 16:46	TJJ	EPA 6020A
Barium	200	ug/L		04/17/24 07:50	5	1.0	04/18/24 16:46	TJJ	EPA 6020A
Beryllium	< 1.0	ug/L		04/17/24 07:50	5	1.0	04/19/24 14:35	TJJ	EPA 6020A
Boron	59	ug/L		04/17/24 07:50	5	10	04/19/24 14:35	TJJ	EPA 6020A
Cadmium	< 1.0	ug/L		04/17/24 07:50	5	1.0	04/18/24 16:46	TJJ	EPA 6020A
Calcium	95	mg/L		04/17/24 07:50	5	0.20	04/18/24 16:46	TJJ	EPA 6020A
Chromium	< 4.0	ug/L		04/17/24 07:50	5	4.0	04/18/24 16:46	TJJ	EPA 6020A
Cobalt	< 2.0	ug/L		04/17/24 07:50	5	2.0	04/18/24 16:46	TJJ	EPA 6020A
Lead	< 1.0	ug/L		04/17/24 07:50	5	1.0	04/18/24 16:46	TJJ	EPA 6020A
Magnesium	44	mg/L		04/17/24 07:50	5	0.10	04/18/24 16:46	TJJ	EPA 6020A
Mercury	< 0.20	ug/L		04/17/24 07:50	5	0.20	04/18/24 16:46	TJJ	EPA 6020A
Molybdenum	4.5	ug/L		04/17/24 07:50	5	1.0	04/18/24 16:46	TJJ	EPA 6020A

ANALYTICAL RESULTS

Sample: HD03060-03

Name: BA02

Matrix: Ground Water - Grab

Sampled: 04/16/24 11:30

Received: 04/16/24 16:09

PO #: 2438773/2438768

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Potassium	1.2	mg/L		04/17/24 07:50	5	0.10	04/18/24 16:46	TJJ	EPA 6020A
Selenium	< 1.0	ug/L		04/17/24 07:50	5	1.0	04/18/24 16:46	TJJ	EPA 6020A
Sodium	52	mg/L		04/17/24 07:50	5	0.10	04/19/24 14:35	TJJ	EPA 6020A
Thallium	< 1.0	ug/L		04/17/24 07:50	5	1.0	04/18/24 16:46	TJJ	EPA 6020A
Lithium	< 0.020	mg/L		04/17/24 07:50	1	0.020	04/18/24 15:36	LAM	EPA 6010B

ANALYTICAL RESULTS

Sample: HD03060-04
Name: BA06
Matrix: Ground Water - Grab

Sampled: 04/16/24 14:32
Received: 04/16/24 16:09
PO #: 2438773/2438768

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Anions - PIA									
Chloride	550	mg/L		04/26/24 19:35	100	100	04/26/24 19:35	JSM	EPA 300.0 REV 2.1
Sulfate	380	mg/L		04/26/24 19:35	100	100	04/26/24 19:35	JSM	EPA 300.0 REV 2.1
Field - PIA									
Depth, From Measuring Point	19.6	Feet		04/16/24 14:32	1		04/16/24 14:32	FIELD	Field*
Dissolved oxygen, Field	2.0	mg/L		04/16/24 14:32	1		04/16/24 14:32	FIELD	Field*
Oxidation Reduction Potential	11.0	mV		04/16/24 14:32	1	-500	04/16/24 14:32	FIELD	Field*
pH, Field Measured	6.65	pH Units		04/16/24 14:32	1		04/16/24 14:32	FIELD	Field*
Specific Conductance, Field Measured	3310	umhos/cm		04/16/24 14:32	1		04/16/24 14:32	FIELD	Field*
Temperature, Field Measured	62.1	°F		04/16/24 14:32	1		04/16/24 14:32	FIELD	Field*
Temperature, Field Measured	16.7	°C		04/16/24 14:32	1		04/16/24 14:32	FIELD	Field*
Turbidity, Field Measured	< 0.00	NTU		04/16/24 14:32	1	0.00	04/16/24 14:32	FIELD	Field*
General Chemistry - PIA									
Alkalinity - bicarbonate as CaCO ₃	440	mg/L		04/23/24 08:03	1	10	04/23/24 08:03	TMS	SM 2320B 1997*
Alkalinity - carbonate as CaCO ₃	< 10	mg/L		04/23/24 08:03	1	10	04/23/24 08:03	TMS	SM 2320B 1997*
Fluoride	0.308	mg/L		05/01/24 13:09	1	0.250	05/01/24 13:09	JMD2	SM 4500F C 1997
Soluble General Chemistry - PIA									
Solids - total dissolved solids (TDS)	1800	mg/L		04/19/24 14:01	1	17	04/19/24 14:58	TMS	SM 2540C
Total Metals - PIA									
Antimony	< 3.0	ug/L		04/17/24 07:50	5	3.0	04/18/24 16:50	TJJ	EPA 6020A
Arsenic	3.7	ug/L		04/17/24 07:50	5	1.0	04/18/24 16:50	TJJ	EPA 6020A
Barium	99	ug/L		04/17/24 07:50	5	1.0	04/18/24 16:50	TJJ	EPA 6020A
Beryllium	< 1.0	ug/L		04/17/24 07:50	5	1.0	04/24/24 11:10	TJJ	EPA 6020A
Boron	13000	ug/L		04/17/24 07:50	10	20	04/19/24 14:39	TJJ	EPA 6020A
Cadmium	< 1.0	ug/L		04/17/24 07:50	5	1.0	04/18/24 16:50	TJJ	EPA 6020A
Calcium	320	mg/L		04/17/24 07:50	5	0.20	04/18/24 16:50	TJJ	EPA 6020A
Chromium	< 4.0	ug/L		04/17/24 07:50	5	4.0	04/18/24 16:50	TJJ	EPA 6020A
Cobalt	7.3	ug/L		04/17/24 07:50	5	2.0	04/18/24 16:50	TJJ	EPA 6020A
Lead	1.4	ug/L		04/17/24 07:50	5	1.0	04/18/24 16:50	TJJ	EPA 6020A
Magnesium	200	mg/L		04/17/24 07:50	5	0.10	04/18/24 16:50	TJJ	EPA 6020A
Mercury	< 0.20	ug/L		04/17/24 07:50	5	0.20	04/18/24 16:50	TJJ	EPA 6020A
Molybdenum	1.5	ug/L		04/17/24 07:50	5	1.0	04/18/24 16:50	TJJ	EPA 6020A

ANALYTICAL RESULTS

Sample: HD03060-04

Name: BA06

Matrix: Ground Water - Grab

Sampled: 04/16/24 14:32

Received: 04/16/24 16:09

PO #: 2438773/2438768

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Potassium	0.68	mg/L		04/17/24 07:50	5	0.10	04/18/24 16:50	TJJ	EPA 6020A
Selenium	< 1.0	ug/L		04/17/24 07:50	5	1.0	04/18/24 16:50	TJJ	EPA 6020A
Sodium	17	mg/L		04/17/24 07:50	10	0.20	04/19/24 14:39	TJJ	EPA 6020A
Thallium	< 1.0	ug/L		04/17/24 07:50	5	1.0	04/18/24 16:50	TJJ	EPA 6020A
Lithium	< 0.020	mg/L		04/17/24 07:50	1	0.020	04/18/24 15:37	LAM	EPA 6010B

ANALYTICAL RESULTS

Sample: HD03616-01
Name: BA02L
Matrix: Ground Water - Grab

Sampled: 04/18/24 12:20
Received: 04/18/24 16:35
PO #: 2438773/2438768

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Anions - PIA									
Chloride	3.2	mg/L		04/29/24 16:06	1	1.0	04/29/24 16:06	JSM	EPA 300.0 REV 2.1
Sulfate	2.2	mg/L	Q2	04/29/24 16:06	1	1.0	04/29/24 16:06	JSM	EPA 300.0 REV 2.1
Field - PIA									
Depth, From Measuring Point	6.84	Feet		04/18/24 12:20	1		04/18/24 12:20	FIELD	Field*
Dissolved oxygen, Field	1.0	mg/L		04/18/24 12:20	1		04/18/24 12:20	FIELD	Field*
Oxidation Reduction Potential	-126	mV		04/18/24 12:20	1	-500	04/18/24 12:20	FIELD	Field*
pH, Field Measured	7.07	pH Units		04/18/24 12:20	1		04/18/24 12:20	FIELD	Field*
Specific Conductance, Field Measured	532.0	umhos/cm		04/18/24 12:20	1		04/18/24 12:20	FIELD	Field*
Temperature, Field Measured	61.4	°F		04/18/24 12:20	1		04/18/24 12:20	FIELD	Field*
Temperature, Field Measured	16.3	°C		04/18/24 12:20	1		04/18/24 12:20	FIELD	Field*
Turbidity, Field Measured	108	NTU		04/18/24 12:20	1	0.00	04/18/24 12:20	FIELD	Field*
General Chemistry - PIA									
Alkalinity - bicarbonate as CaCO ₃	260	mg/L		04/23/24 08:03	1	2.0	04/23/24 08:03	TMS	SM 2320B 1997*
Alkalinity - carbonate as CaCO ₃	< 2.0	mg/L		04/23/24 08:03	1	2.0	04/23/24 08:03	TMS	SM 2320B 1997*
Fluoride	0.600	mg/L		04/22/24 16:33	1	0.250	04/22/24 16:33	TTH	SM 4500F C 1997
Soluble General Chemistry - PIA									
Solids - total dissolved solids (TDS)	240	mg/L		04/23/24 09:07	1	17	04/23/24 10:22	OGS	SM 2540C
Total Metals - PIA									
Antimony	< 3.0	ug/L		04/22/24 09:24	5	3.0	04/22/24 17:54	TJJ	EPA 6020A
Arsenic	20	ug/L		04/22/24 09:24	5	1.0	04/24/24 15:13	TJJ	EPA 6020A
Barium	110	ug/L		04/22/24 09:24	5	1.0	04/22/24 17:54	TJJ	EPA 6020A
Beryllium	< 1.0	ug/L		04/22/24 09:24	5	1.0	04/24/24 15:13	TJJ	EPA 6020A
Boron	75	ug/L		04/22/24 09:24	5	10	04/24/24 15:13	TJJ	EPA 6020A
Cadmium	< 1.0	ug/L		04/22/24 09:24	5	1.0	04/22/24 17:54	TJJ	EPA 6020A
Calcium	81	mg/L		04/22/24 09:24	5	0.20	04/22/24 17:54	TJJ	EPA 6020A
Chromium	< 4.0	ug/L		04/22/24 09:24	5	4.0	04/22/24 17:54	TJJ	EPA 6020A
Cobalt	2.2	ug/L		04/22/24 09:24	5	2.0	04/22/24 17:54	TJJ	EPA 6020A
Lead	2.3	ug/L		04/22/24 09:24	5	1.0	04/22/24 17:54	TJJ	EPA 6020A
Magnesium	32	mg/L		04/22/24 09:24	5	0.10	04/22/24 17:54	TJJ	EPA 6020A
Mercury	< 0.20	ug/L		04/22/24 09:24	5	0.20	04/22/24 17:54	TJJ	EPA 6020A
Molybdenum	1.7	ug/L		04/22/24 09:24	5	1.0	04/22/24 17:54	TJJ	EPA 6020A

ANALYTICAL RESULTS

Sample: HD03616-01

Name: BA02L

Matrix: Ground Water - Grab

Sampled: 04/18/24 12:20

Received: 04/18/24 16:35

PO #: 2438773/2438768

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Potassium	0.60	mg/L		04/22/24 09:24	5	0.10	04/22/24 17:54	TJJ	EPA 6020A
Selenium	< 1.0	ug/L		04/22/24 09:24	5	1.0	04/22/24 17:54	TJJ	EPA 6020A
Sodium	3.5	mg/L		04/22/24 09:24	5	0.10	04/22/24 17:54	TJJ	EPA 6020A
Thallium	< 1.0	ug/L		04/22/24 09:24	5	1.0	04/22/24 17:54	TJJ	EPA 6020A
Lithium	< 0.020	mg/L		04/22/24 09:24	1	0.020	04/30/24 13:26	LAM	EPA 6010B

ANALYTICAL RESULTS

Sample: HD03616-02
Name: BA03
Matrix: Ground Water - Grab

Sampled: 04/18/24 12:44
Received: 04/18/24 16:35
PO #: 2438773/2438768

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Anions - PIA									
Chloride	7.3	mg/L		05/04/24 01:32	1	1.0	05/04/24 01:32	JSM	EPA 300.0 REV 2.1
Fluoride	< 0.250	mg/L		04/29/24 16:42	1	0.250	04/29/24 16:42	JSM	EPA 300.0 REV 2.1
Sulfate	17	mg/L	Q4	04/29/24 17:00	10	10	04/29/24 17:00	JSM	EPA 300.0 REV 2.1
Field - PIA									
Depth, From Measuring Point	6.3	Feet		04/18/24 12:44	1		04/18/24 12:44	FIELD	Field*
Dissolved oxygen, Field	0.83	mg/L		04/18/24 12:44	1		04/18/24 12:44	FIELD	Field*
Oxidation Reduction Potential	103	mV		04/18/24 12:44	1	-500	04/18/24 12:44	FIELD	Field*
pH, Field Measured	7.03	pH Units		04/18/24 12:44	1		04/18/24 12:44	FIELD	Field*
Specific Conductance, Field Measured	879.0	umhos/cm		04/18/24 12:44	1		04/18/24 12:44	FIELD	Field*
Temperature, Field Measured	13.6	°C		04/18/24 12:44	1		04/18/24 12:44	FIELD	Field*
Temperature, Field Measured	56.4	°F		04/18/24 12:44	1		04/18/24 12:44	FIELD	Field*
Turbidity, Field Measured	< 0.00	NTU		04/18/24 12:44	1	0.00	04/18/24 12:44	FIELD	Field*
General Chemistry - PIA									
Alkalinity - bicarbonate as CaCO3	450	mg/L		04/23/24 08:03	1	2.0	04/23/24 08:03	TMS	SM 2320B 1997*
Alkalinity - carbonate as CaCO3	< 2.0	mg/L		04/23/24 08:03	1	2.0	04/23/24 08:03	TMS	SM 2320B 1997*
Soluble General Chemistry - PIA									
Solids - total dissolved solids (TDS)	420	mg/L		04/23/24 09:07	1	17	04/23/24 10:22	OGS	SM 2540C
Total Metals - PIA									
Antimony	< 3.0	ug/L		04/22/24 09:24	5	3.0	04/22/24 17:57	TJJ	EPA 6020A
Arsenic	< 1.0	ug/L		04/22/24 09:24	5	1.0	04/24/24 15:17	TJJ	EPA 6020A
Barium	140	ug/L		04/22/24 09:24	5	1.0	04/22/24 17:57	TJJ	EPA 6020A
Beryllium	< 1.0	ug/L		04/22/24 09:24	5	1.0	04/24/24 15:17	TJJ	EPA 6020A
Boron	23	ug/L		04/22/24 09:24	5	10	04/24/24 15:17	TJJ	EPA 6020A
Cadmium	< 1.0	ug/L		04/22/24 09:24	5	1.0	04/22/24 17:57	TJJ	EPA 6020A
Calcium	100	mg/L		04/22/24 09:24	5	0.20	04/22/24 17:57	TJJ	EPA 6020A
Chromium	< 4.0	ug/L		04/22/24 09:24	5	4.0	04/22/24 17:57	TJJ	EPA 6020A
Cobalt	< 2.0	ug/L		04/22/24 09:24	5	2.0	04/22/24 17:57	TJJ	EPA 6020A
Lead	< 1.0	ug/L		04/22/24 09:24	5	1.0	04/22/24 17:57	TJJ	EPA 6020A
Magnesium	54	mg/L		04/22/24 09:24	5	0.10	04/22/24 17:57	TJJ	EPA 6020A
Mercury	< 0.20	ug/L		04/22/24 09:24	5	0.20	04/22/24 17:57	TJJ	EPA 6020A
Molybdenum	1.1	ug/L		04/22/24 09:24	5	1.0	04/22/24 17:57	TJJ	EPA 6020A

ANALYTICAL RESULTS

Sample: HD03616-02
Name: BA03
Matrix: Ground Water - Grab

Sampled: 04/18/24 12:44
Received: 04/18/24 16:35
PO #: 2438773/2438768

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Potassium	0.63	mg/L		04/22/24 09:24	5	0.10	04/22/24 17:57	TJJ	EPA 6020A
Selenium	2.1	ug/L		04/22/24 09:24	5	1.0	04/22/24 17:57	TJJ	EPA 6020A
Sodium	6.6	mg/L		04/22/24 09:24	5	0.10	04/22/24 17:57	TJJ	EPA 6020A
Thallium	< 1.0	ug/L		04/22/24 09:24	5	1.0	04/22/24 17:57	TJJ	EPA 6020A
Lithium	< 0.020	mg/L		04/22/24 09:24	1	0.020	04/30/24 13:27	LAM	EPA 6010B

ANALYTICAL RESULTS

Sample: HD03616-03
Name: BA03L
Matrix: Ground Water - Grab

Sampled: 04/18/24 14:01
Received: 04/18/24 16:35
PO #: 2438773/2438768

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Anions - PIA									
Chloride	21	mg/L		04/29/24 17:36	5	5.0	04/29/24 17:36	JSM	EPA 300.0 REV 2.1
Fluoride	< 0.250	mg/L		04/29/24 17:18	1	0.250	04/29/24 17:18	JSM	EPA 300.0 REV 2.1
Sulfate	370	mg/L		04/29/24 17:54	50	50	04/29/24 17:54	JSM	EPA 300.0 REV 2.1
Field - PIA									
Depth, From Measuring Point	5.86	Feet		04/18/24 14:01	1		04/18/24 14:01	FIELD	Field*
Dissolved oxygen, Field	1.4	mg/L		04/18/24 14:01	1		04/18/24 14:01	FIELD	Field*
Oxidation Reduction Potential	132	mV		04/18/24 14:01	1	-500	04/18/24 14:01	FIELD	Field*
pH, Field Measured	6.81	pH Units		04/18/24 14:01	1		04/18/24 14:01	FIELD	Field*
Specific Conductance, Field Measured	1590	umhos/cm		04/18/24 14:01	1		04/18/24 14:01	FIELD	Field*
Temperature, Field Measured	12.5	°C		04/18/24 14:01	1		04/18/24 14:01	FIELD	Field*
Temperature, Field Measured	54.5	°F		04/18/24 14:01	1		04/18/24 14:01	FIELD	Field*
Turbidity, Field Measured	< 0.00	NTU		04/18/24 14:01	1	0.00	04/18/24 14:01	FIELD	Field*
General Chemistry - PIA									
Alkalinity - bicarbonate as CaCO3	480	mg/L		04/23/24 08:03	1	2.0	04/23/24 08:03	TMS	SM 2320B 1997*
Alkalinity - carbonate as CaCO3	< 2.0	mg/L		04/23/24 08:03	1	2.0	04/23/24 08:03	TMS	SM 2320B 1997*
Soluble General Chemistry - PIA									
Solids - total dissolved solids (TDS)	950	mg/L		04/23/24 09:07	1	17	04/23/24 10:22	OGS	SM 2540C
Total Metals - PIA									
Antimony	< 3.0	ug/L		04/22/24 09:24	5	3.0	04/22/24 18:01	TJJ	EPA 6020A
Arsenic	< 1.0	ug/L		04/22/24 09:24	5	1.0	04/24/24 15:33	TJJ	EPA 6020A
Barium	120	ug/L		04/22/24 09:24	5	1.0	04/22/24 18:01	TJJ	EPA 6020A
Beryllium	< 1.0	ug/L		04/22/24 09:24	5	1.0	04/24/24 15:33	TJJ	EPA 6020A
Boron	400	ug/L		04/22/24 09:24	5	10	04/24/24 15:33	TJJ	EPA 6020A
Cadmium	< 1.0	ug/L		04/22/24 09:24	5	1.0	04/22/24 18:01	TJJ	EPA 6020A
Calcium	190	mg/L		04/22/24 09:24	5	0.20	04/22/24 18:01	TJJ	EPA 6020A
Chromium	< 4.0	ug/L		04/22/24 09:24	5	4.0	04/22/24 18:01	TJJ	EPA 6020A
Cobalt	< 2.0	ug/L		04/22/24 09:24	5	2.0	04/22/24 18:01	TJJ	EPA 6020A
Lead	< 1.0	ug/L		04/22/24 09:24	5	1.0	04/22/24 18:01	TJJ	EPA 6020A
Magnesium	100	mg/L		04/22/24 09:24	5	0.10	04/22/24 18:01	TJJ	EPA 6020A
Mercury	< 0.20	ug/L		04/22/24 09:24	5	0.20	04/22/24 18:01	TJJ	EPA 6020A
Molybdenum	< 1.0	ug/L		04/22/24 09:24	5	1.0	04/22/24 18:01	TJJ	EPA 6020A

ANALYTICAL RESULTS

Sample: HD03616-03
Name: BA03L
Matrix: Ground Water - Grab

Sampled: 04/18/24 14:01
Received: 04/18/24 16:35
PO #: 2438773/2438768

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Potassium	0.28	mg/L		04/22/24 09:24	5	0.10	04/22/24 18:01	TJJ	EPA 6020A
Selenium	< 1.0	ug/L		04/22/24 09:24	5	1.0	04/22/24 18:01	TJJ	EPA 6020A
Sodium	19	mg/L		04/22/24 09:24	5	0.10	04/22/24 18:01	TJJ	EPA 6020A
Thallium	< 1.0	ug/L		04/22/24 09:24	5	1.0	04/22/24 18:01	TJJ	EPA 6020A
Lithium	< 0.020	mg/L		04/22/24 09:24	1	0.020	04/30/24 13:28	LAM	EPA 6010B

ANALYTICAL RESULTS

Sample: HD03616-04
Name: BA04
Matrix: Ground Water - Grab

Sampled: 04/18/24 15:08
Received: 04/18/24 16:35
PO #: 2438773/2438768

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Anions - PIA									
Chloride	49	mg/L		04/29/24 19:06	25	25	04/29/24 19:06	JSM	EPA 300.0 REV 2.1
Fluoride	0.276	mg/L		04/29/24 18:48	1	0.250	04/29/24 18:48	JSM	EPA 300.0 REV 2.1
Sulfate	170	mg/L		04/29/24 19:06	25	25	04/29/24 19:06	JSM	EPA 300.0 REV 2.1
Field - PIA									
Depth, From Measuring Point	4.81	Feet		04/18/24 15:08	1		04/18/24 15:08	FIELD	Field*
Dissolved oxygen, Field	1.3	mg/L		04/18/24 15:08	1		04/18/24 15:08	FIELD	Field*
Oxidation Reduction Potential	118	mV		04/18/24 15:08	1	-500	04/18/24 15:08	FIELD	Field*
pH, Field Measured	7.10	pH Units		04/18/24 15:08	1		04/18/24 15:08	FIELD	Field*
Specific Conductance, Field Measured	1220	umhos/cm		04/18/24 15:08	1		04/18/24 15:08	FIELD	Field*
Temperature, Field Measured	57.7	°F		04/18/24 15:08	1		04/18/24 15:08	FIELD	Field*
Temperature, Field Measured	14.3	°C		04/18/24 15:08	1		04/18/24 15:08	FIELD	Field*
Turbidity, Field Measured	< 0.00	NTU		04/18/24 15:08	1	0.00	04/18/24 15:08	FIELD	Field*
General Chemistry - PIA									
Alkalinity - bicarbonate as CaCO3	400	mg/L		04/23/24 08:03	1	2.0	04/23/24 08:03	TMS	SM 2320B 1997*
Alkalinity - carbonate as CaCO3	< 2.0	mg/L		04/23/24 08:03	1	2.0	04/23/24 08:03	TMS	SM 2320B 1997*
Soluble General Chemistry - PIA									
Solids - total dissolved solids (TDS)	640	mg/L		04/23/24 09:07	1	17	04/23/24 10:22	OGS	SM 2540C
Total Metals - PIA									
Antimony	< 3.0	ug/L		04/22/24 09:24	5	3.0	04/22/24 18:05	TJJ	EPA 6020A
Arsenic	< 1.0	ug/L		04/22/24 09:24	5	1.0	04/24/24 15:37	TJJ	EPA 6020A
Barium	100	ug/L		04/22/24 09:24	5	1.0	04/22/24 18:05	TJJ	EPA 6020A
Beryllium	< 1.0	ug/L		04/22/24 09:24	5	1.0	04/24/24 15:37	TJJ	EPA 6020A
Boron	540	ug/L		04/22/24 09:24	5	10	04/24/24 15:37	TJJ	EPA 6020A
Cadmium	< 1.0	ug/L		04/22/24 09:24	5	1.0	04/22/24 18:05	TJJ	EPA 6020A
Calcium	140	mg/L		04/22/24 09:24	5	0.20	04/22/24 18:05	TJJ	EPA 6020A
Chromium	< 4.0	ug/L		04/22/24 09:24	5	4.0	04/22/24 18:05	TJJ	EPA 6020A
Cobalt	< 2.0	ug/L		04/22/24 09:24	5	2.0	04/22/24 18:05	TJJ	EPA 6020A
Lead	< 1.0	ug/L		04/22/24 09:24	5	1.0	04/22/24 18:05	TJJ	EPA 6020A
Magnesium	72	mg/L		04/22/24 09:24	5	0.10	04/22/24 18:05	TJJ	EPA 6020A
Mercury	< 0.20	ug/L		04/22/24 09:24	5	0.20	04/22/24 18:05	TJJ	EPA 6020A
Molybdenum	3.7	ug/L		04/22/24 09:24	5	1.0	04/22/24 18:05	TJJ	EPA 6020A

ANALYTICAL RESULTS

Sample: HD03616-04
Name: BA04
Matrix: Ground Water - Grab

Sampled: 04/18/24 15:08
Received: 04/18/24 16:35
PO #: 2438773/2438768

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Potassium	0.93	mg/L		04/22/24 09:24	5	0.10	04/22/24 18:05	TJJ	EPA 6020A
Selenium	< 1.0	ug/L		04/22/24 09:24	5	1.0	04/22/24 18:05	TJJ	EPA 6020A
Sodium	13	mg/L		04/22/24 09:24	5	0.10	04/22/24 18:05	TJJ	EPA 6020A
Thallium	< 1.0	ug/L		04/22/24 09:24	5	1.0	04/22/24 18:05	TJJ	EPA 6020A
Lithium	< 0.020	mg/L		04/22/24 09:24	1	0.020	04/30/24 13:30	LAM	EPA 6010B

ANALYTICAL RESULTS

Sample: HD03616-05
Name: BA05
Matrix: Ground Water - Grab

Sampled: 04/18/24 11:33
Received: 04/18/24 16:35
PO #: 2438773/2438768

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Anions - PIA									
Chloride	9.9	mg/L		04/29/24 19:43	5	5.0	04/29/24 19:43	JSM	EPA 300.0 REV 2.1
Fluoride	< 0.250	mg/L		04/29/24 19:24	1	0.250	04/29/24 19:24	JSM	EPA 300.0 REV 2.1
Sulfate	470	mg/L		04/29/24 20:01	100	100	04/29/24 20:01	JSM	EPA 300.0 REV 2.1
Field - PIA									
Depth, From Measuring Point	15.94	Feet		04/18/24 11:33	1		04/18/24 11:33	FIELD	Field*
Dissolved oxygen, Field	0.32	mg/L		04/18/24 11:33	1		04/18/24 11:33	FIELD	Field*
Oxidation Reduction Potential	17.0	mV		04/18/24 11:33	1	-500	04/18/24 11:33	FIELD	Field*
pH, Field Measured	6.90	pH Units		04/18/24 11:33	1		04/18/24 11:33	FIELD	Field*
Specific Conductance, Field Measured	1770	umhos/cm		04/18/24 11:33	1		04/18/24 11:33	FIELD	Field*
Temperature, Field Measured	54.7	°F		04/18/24 11:33	1		04/18/24 11:33	FIELD	Field*
Temperature, Field Measured	12.6	°C		04/18/24 11:33	1		04/18/24 11:33	FIELD	Field*
Turbidity, Field Measured	59.1	NTU		04/18/24 11:33	1	0.00	04/18/24 11:33	FIELD	Field*
General Chemistry - PIA									
Alkalinity - bicarbonate as CaCO3	450	mg/L		04/23/24 08:03	1	2.0	04/23/24 08:03	TMS	SM 2320B 1997*
Alkalinity - carbonate as CaCO3	< 2.0	mg/L		04/23/24 08:03	1	2.0	04/23/24 08:03	TMS	SM 2320B 1997*
Soluble General Chemistry - PIA									
Solids - total dissolved solids (TDS)	1100	mg/L		04/23/24 09:07	1	17	04/23/24 10:22	OGS	SM 2540C
Total Metals - PIA									
Antimony	< 3.0	ug/L		04/22/24 09:24	5	3.0	04/29/24 17:35	TJJ	EPA 6020A
Arsenic	3.0	ug/L		04/22/24 09:24	5	1.0	04/24/24 15:41	TJJ	EPA 6020A
Barium	59	ug/L		04/22/24 09:24	5	1.0	04/29/24 17:35	TJJ	EPA 6020A
Beryllium	< 1.0	ug/L		04/22/24 09:24	5	1.0	04/24/24 15:41	TJJ	EPA 6020A
Boron	97	ug/L		04/22/24 09:24	5	10	04/24/24 15:41	TJJ	EPA 6020A
Cadmium	< 1.0	ug/L		04/22/24 09:24	5	1.0	04/22/24 18:21	TJJ	EPA 6020A
Calcium	210	mg/L		04/22/24 09:24	5	0.20	04/22/24 18:21	TJJ	EPA 6020A
Chromium	< 4.0	ug/L		04/22/24 09:24	5	4.0	04/22/24 18:21	TJJ	EPA 6020A
Cobalt	< 2.0	ug/L		04/22/24 09:24	5	2.0	04/22/24 18:21	TJJ	EPA 6020A
Lead	< 1.0	ug/L		04/22/24 09:24	5	1.0	04/29/24 17:35	TJJ	EPA 6020A
Magnesium	100	mg/L		04/22/24 09:24	5	0.10	04/22/24 18:21	TJJ	EPA 6020A
Mercury	< 0.20	ug/L		04/22/24 09:24	5	0.20	04/29/24 17:35	TJJ	EPA 6020A
Molybdenum	1.8	ug/L		04/22/24 09:24	5	1.0	04/22/24 18:21	TJJ	EPA 6020A

ANALYTICAL RESULTS

Sample: HD03616-05

Name: BA05

Matrix: Ground Water - Grab

Sampled: 04/18/24 11:33

Received: 04/18/24 16:35

PO #: 2438773/2438768

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Potassium	2.4	mg/L		04/22/24 09:24	5	0.10	04/22/24 18:21	TJJ	EPA 6020A
Selenium	< 1.0	ug/L		04/22/24 09:24	5	1.0	04/22/24 18:21	TJJ	EPA 6020A
Sodium	42	mg/L		04/22/24 09:24	5	0.10	04/22/24 18:21	TJJ	EPA 6020A
Thallium	< 1.0	ug/L		04/22/24 09:24	5	1.0	04/29/24 17:35	TJJ	EPA 6020A
Lithium	< 0.020	mg/L		04/22/24 09:24	1	0.020	04/30/24 14:45	LAM	EPA 6010B

QC SAMPLE RESULTS

Parameter	Result	Unit	Qual	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
<u>Batch B430700 - SW 3015 - EPA 6010B</u>									
Blank (B430700-BLK1)				Prepared: 04/17/24 Analyzed: 04/19/24					
Lithium	< 0.020	mg/L							
LCS (B430700-BS1)				Prepared: 04/17/24 Analyzed: 04/19/24					
Lithium	0.559	mg/L		0.5556		101	80-120		
Matrix Spike (B430700-MS1)				Prepared: 04/17/24 Analyzed: 04/19/24					
Lithium	0.593	mg/L		0.5556	ND	107	75-125		
Matrix Spike Dup (B430700-MSD1)				Prepared: 04/17/24 Analyzed: 04/19/24					
Lithium	0.585	mg/L		0.5556	ND	105	75-125	1	20
<u>Batch B430700 - SW 3015 - EPA 6020A</u>									
Blank (B430700-BLK1)				Prepared: 04/17/24 Analyzed: 04/18/24					
Antimony	< 3.0	ug/L							
Arsenic	< 1.0	ug/L							
Barium	< 1.0	ug/L							
Beryllium	< 1.0	ug/L							
Boron	< 10	ug/L							
Cadmium	< 1.0	ug/L							
Calcium	< 0.20	mg/L							
Chromium	< 4.0	ug/L							
Cobalt	< 2.0	ug/L							
Lead	< 1.0	ug/L							
Magnesium	< 0.10	mg/L							
Mercury	< 0.20	ug/L							
Molybdenum	< 1.0	ug/L							
Potassium	< 0.10	mg/L							
Selenium	< 1.0	ug/L							
Sodium	< 0.10	mg/L							
Thallium	< 1.0	ug/L							
LCS (B430700-BS1)				Prepared: 04/17/24 Analyzed: 04/18/24					
Antimony	561	ug/L		555.6		101	80-120		
Arsenic	553	ug/L		555.6		100	80-120		
Barium	559	ug/L		555.6		101	80-120		
Beryllium	574	ug/L		555.6		103	80-120		
Boron	544	ug/L		555.6		98	80-120		
Cadmium	574	ug/L		555.6		103	80-120		
Calcium	5.94	mg/L		5.556		107	80-120		
Chromium	571	ug/L		555.6		103	80-120		
Cobalt	567	ug/L		555.6		102	80-120		
Lead	557	ug/L		555.6		100	80-120		
Magnesium	6.02	mg/L		5.556		108	80-120		
Mercury	56.6	ug/L		55.56		102	80-120		
Molybdenum	546	ug/L		555.6		98	80-120		
Potassium	5.82	mg/L		5.556		105	80-120		
Selenium	566	ug/L		555.6		102	80-120		
Sodium	6.10	mg/L		5.556		110	80-120		

QC SAMPLE RESULTS

Parameter	Result	Unit	Qual	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
LCS (B430700-BS1)				Prepared: 04/17/24 Analyzed: 04/18/24					
Thallium	533	ug/L		555.6		96	80-120		
Matrix Spike (B430700-MS1)				Sample: HD03060-01		Prepared: 04/17/24 Analyzed: 04/18/24			
Antimony	572	ug/L		555.6	ND	103	75-125		
Arsenic	570	ug/L		555.6	0.706	102	75-125		
Barium	695	ug/L		555.6	131	102	75-125		
Beryllium	584	ug/L		555.6	ND	105	75-125		
Boron	581	ug/L		555.6	23.8	100	75-125		
Cadmium	579	ug/L		555.6	ND	104	75-125		
Calcium	130	mg/L		5.556	125	83	75-125		
Chromium	573	ug/L		555.6	ND	103	75-125		
Cobalt	556	ug/L		555.6	0.756	100	75-125		
Lead	555	ug/L		555.6	ND	100	75-125		
Magnesium	65.2	mg/L		5.556	59.9	95	75-125		
Mercury	58.7	ug/L		55.56	ND	106	75-125		
Molybdenum	560	ug/L		555.6	1.01	101	75-125		
Potassium	6.56	mg/L		5.556	0.661	106	75-125		
Selenium	580	ug/L		555.6	ND	104	75-125		
Sodium	17.0	mg/L		5.556	11.1	106	75-125		
Thallium	534	ug/L		555.6	ND	96	75-125		
Matrix Spike Dup (B430700-MSD1)				Sample: HD03060-01		Prepared: 04/17/24 Analyzed: 04/18/24			
Antimony	569	ug/L		555.6	ND	102	75-125	0.6	20
Arsenic	564	ug/L		555.6	0.706	101	75-125	1	20
Barium	688	ug/L		555.6	131	100	75-125	1	20
Beryllium	584	ug/L		555.6	ND	105	75-125	0.02	20
Boron	588	ug/L		555.6	23.8	101	75-125	1	20
Cadmium	574	ug/L		555.6	ND	103	75-125	0.9	20
Calcium	130	mg/L		5.556	125	83	75-125	0.03	20
Chromium	567	ug/L		555.6	ND	102	75-125	1	20
Cobalt	547	ug/L		555.6	0.756	98	75-125	2	20
Lead	555	ug/L		555.6	ND	100	75-125	0.06	20
Magnesium	65.7	mg/L		5.556	59.9	104	75-125	0.7	20
Mercury	58.0	ug/L		55.56	ND	104	75-125	1	20
Molybdenum	553	ug/L		555.6	1.01	99	75-125	1	20
Potassium	6.53	mg/L		5.556	0.661	106	75-125	0.5	20
Selenium	572	ug/L		555.6	ND	103	75-125	1	20
Sodium	17.0	mg/L		5.556	11.1	106	75-125	0.04	20
Thallium	533	ug/L		555.6	ND	96	75-125	0.2	20
<u>Batch B430992 - No Prep - SM 2540C</u>									
Blank (B430992-BLK1)				Prepared & Analyzed: 04/19/24					
Solids - total dissolved solids (TDS)	< 17	mg/L							
LCS (B430992-BS1)				Prepared & Analyzed: 04/19/24					
Solids - total dissolved solids (TDS)	920	mg/L		1000		92	84.9-109		
Duplicate (B430992-DUP2)				Sample: HD03060-01		Prepared & Analyzed: 04/19/24			
Solids - total dissolved solids (TDS)	595	mg/L			590			0.8	5
<u>Batch B430993 - No Prep - SM 2540C</u>									

QC SAMPLE RESULTS

Parameter	Result	Unit	Qual	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Blank (B430993-BLK1)				Prepared & Analyzed: 04/19/24					
Solids - total dissolved solids (TDS)	< 17	mg/L							
LCS (B430993-BS1)				Prepared & Analyzed: 04/19/24					
Solids - total dissolved solids (TDS)	957	mg/L		1000		96	84.9-109		
Duplicate (B430993-DUP1)				Prepared & Analyzed: 04/19/24					
	Sample: HD03060-11								
Solids - total dissolved solids (TDS)	535	mg/L			555			4	5
<u>Batch B431072 - SW 3015 - EPA 6010B</u>									
Blank (B431072-BLK1)				Prepared: 04/22/24 Analyzed: 04/30/24					
Lithium	< 0.020	mg/L							
LCS (B431072-BS1)				Prepared: 04/22/24 Analyzed: 04/30/24					
Lithium	0.637	mg/L		0.5556		115	80-120		
<u>Batch B431072 - SW 3015 - EPA 6020A</u>									
Blank (B431072-BLK1)				Prepared & Analyzed: 04/22/24					
Antimony	< 3.0	ug/L							
Arsenic	< 1.0	ug/L							
Barium	< 1.0	ug/L							
Beryllium	< 1.0	ug/L							
Boron	< 10	ug/L							
Cadmium	< 1.0	ug/L							
Calcium	< 0.20	mg/L							
Chromium	< 4.0	ug/L							
Cobalt	< 2.0	ug/L							
Lead	< 1.0	ug/L							
Magnesium	< 0.10	mg/L							
Mercury	< 0.20	ug/L							
Molybdenum	< 1.0	ug/L							
Potassium	< 0.10	mg/L							
Selenium	< 1.0	ug/L							
Sodium	< 0.10	mg/L							
Thallium	< 1.0	ug/L							
LCS (B431072-BS1)				Prepared & Analyzed: 04/22/24					
Antimony	513	ug/L		555.6		92	80-120		
Arsenic	591	ug/L		555.6		106	80-120		
Barium	527	ug/L		555.6		95	80-120		
Beryllium	584	ug/L		555.6		105	80-120		
Boron	542	ug/L		555.6		98	80-120		
Cadmium	538	ug/L		555.6		97	80-120		
Calcium	5.99	mg/L		5.556		108	80-120		
Chromium	570	ug/L		555.6		103	80-120		
Cobalt	519	ug/L		555.6		93	80-120		
Lead	600	ug/L		555.6		108	80-120		
Magnesium	6.33	mg/L		5.556		114	80-120		
Mercury	48.6	ug/L		55.56		87	80-120		
Molybdenum	522	ug/L		555.6		94	80-120		
Potassium	6.00	mg/L		5.556		108	80-120		
Selenium	549	ug/L		555.6		99	80-120		

QC SAMPLE RESULTS

Parameter	Result	Unit	Qual	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
LCS (B431072-BS1)				Prepared & Analyzed: 04/22/24					
Sodium	5.80	mg/L		5.556		104	80-120		
Thallium	591	ug/L		555.6		106	80-120		
<u>Batch B431110 - No Prep - SM 4500F C 1997</u>									
Calibration Check (B431110-CCV1)				Prepared & Analyzed: 04/22/24					
Fluoride	0.691	mg/L		0.7000		99	90-110		
Matrix Spike (B431110-MS7)				Sample: HD03616-01		Prepared & Analyzed: 04/22/24			
Fluoride	1.61	mg/L		1.000	0.600	101	80-120		
Matrix Spike Dup (B431110-MSD7)				Sample: HD03616-01		Prepared & Analyzed: 04/22/24			
Fluoride	1.62	mg/L		1.000	0.600	102	80-120	0.5	20
<u>Batch B431186 - No Prep - SM 2540C</u>									
Blank (B431186-BLK1)				Prepared & Analyzed: 04/23/24					
Solids - total dissolved solids (TDS)	< 17	mg/L							
LCS (B431186-BS1)				Prepared & Analyzed: 04/23/24					
Solids - total dissolved solids (TDS)	927	mg/L		1000		93	84.9-109		
Duplicate (B431186-DUP2)				Sample: HD03616-01		Prepared & Analyzed: 04/23/24			
Solids - total dissolved solids (TDS)	230	mg/L			240			4	5
<u>Batch B431222 - No Prep - SM 2320B 1997</u>									
Blank (B431222-BLK1)				Prepared & Analyzed: 04/23/24					
Alkalinity - carbonate as CaCO3	< 2.0	mg/L							
Alkalinity - bicarbonate as CaCO3	2.50	mg/L							
Blank (B431222-BLK2)				Prepared & Analyzed: 04/23/24					
Alkalinity - bicarbonate as CaCO3	2.50	mg/L							
Alkalinity - carbonate as CaCO3	< 2.0	mg/L							
Blank (B431222-BLK3)				Prepared & Analyzed: 04/23/24					
Alkalinity - bicarbonate as CaCO3	2.50	mg/L							
Alkalinity - carbonate as CaCO3	< 2.0	mg/L							
Duplicate (B431222-DUP1)				Sample: HD03060-01		Prepared & Analyzed: 04/23/24			
Alkalinity - carbonate as CaCO3	< 10	mg/L			ND				10
Alkalinity - bicarbonate as CaCO3	412	mg/L			375			10	10
Duplicate (B431222-DUP2)				Sample: HD03060-11		Prepared & Analyzed: 04/23/24			
Alkalinity - carbonate as CaCO3	< 10	mg/L			ND				10
Alkalinity - bicarbonate as CaCO3	512	mg/L			500			2	10
Duplicate (B431222-DUP5)				Sample: HD03616-01		Prepared & Analyzed: 04/23/24			
Alkalinity - bicarbonate as CaCO3	250	mg/L			262			5	10
Alkalinity - carbonate as CaCO3	< 2.0	mg/L			ND				10
Duplicate (B431222-DUP6)				Sample: HD03616-11		Prepared & Analyzed: 04/23/24			
Alkalinity - bicarbonate as CaCO3	512	mg/L			525			2	10
Alkalinity - carbonate as CaCO3	< 2.0	mg/L			ND				10
<u>Batch B431641 - IC No Prep - EPA 300.0 REV 2.1</u>									
Calibration Blank (B431641-CCB1)				Prepared & Analyzed: 04/26/24					
Chloride	0.0781	mg/L							
Fluoride	0.00	mg/L							
Sulfate	0.00	mg/L							

QC SAMPLE RESULTS

Parameter	Result	Unit	Qual	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Calibration Check (B431641-CCV1)				Prepared & Analyzed: 04/26/24					
Fluoride	5.40	mg/L		5.000		108	90-110		
Chloride	5.07	mg/L		5.000		101	90-110		
Sulfate	5.17	mg/L		5.000		103	90-110		
Matrix Spike (B431641-MS1)				Sample: HD03060-01		Prepared & Analyzed: 04/26/24			
Sulfate	1.00E9	mg/L	Q4	1.500	145	NR	80-120		
Chloride	1.0E9	mg/L	Q4	1.500	16	NR	80-120		
Fluoride	1.73	mg/L		1.500	0.185	103	80-120		
Matrix Spike (B431641-MS2)				Sample: HD03060-03		Prepared & Analyzed: 04/26/24			
Fluoride	1.70	mg/L		1.500	0.165	102	80-120		
Sulfate	1.00E9	mg/L	Q4	1.500	13.7	NR	80-120		
Chloride	1.0E9	mg/L	Q4	1.500	9.4	NR	80-120		
Matrix Spike Dup (B431641-MSD1)				Sample: HD03060-01		Prepared & Analyzed: 04/26/24			
Fluoride	1.77	mg/L		1.500	0.185	106	80-120	2	20
Chloride	1.0E9	mg/L	Q4	1.500	16	NR	80-120	0	20
Sulfate	1.00E9	mg/L	Q4	1.500	145	NR	80-120	0	20
Matrix Spike Dup (B431641-MSD2)				Sample: HD03060-03		Prepared & Analyzed: 04/26/24			
Sulfate	1.00E9	mg/L	Q4	1.500	13.7	NR	80-120	0	20
Chloride	1.0E9	mg/L	Q4	1.500	9.4	NR	80-120	0	20
Fluoride	1.70	mg/L		1.500	0.165	103	80-120	0.3	20
<u>Batch B431761 - IC No Prep - EPA 300.0 REV 2.1</u>									
Calibration Blank (B431761-CCB1)				Prepared & Analyzed: 04/29/24					
Sulfate	0.00	mg/L							
Chloride	0.650	mg/L							
Fluoride	0.00	mg/L							
Calibration Check (B431761-CCV1)				Prepared & Analyzed: 04/29/24					
Fluoride	5.05	mg/L		5.000		101	90-110		
Sulfate	4.89	mg/L		5.000		98	90-110		
Chloride	4.82	mg/L		5.000		96	90-110		
Matrix Spike (B431761-MS1)				Sample: HD03616-01		Prepared & Analyzed: 04/30/24			
Sulfate	3.83	mg/L		1.500	2.20	108	80-120		
Chloride	4.6	mg/L		1.500	3.2	98	80-120		
Matrix Spike (B431761-MS2)				Sample: HD03616-02		Prepared & Analyzed: 04/30/24			
Fluoride	1.67	mg/L		1.500	0.226	96	80-120		
Sulfate	1.00E9	mg/L	Q4	1.500	17.5	NR	80-120		
Matrix Spike Dup (B431761-MSD1)				Sample: HD03616-01		Prepared & Analyzed: 04/30/24			
Chloride	4.7	mg/L		1.500	3.2	102	80-120	1	20
Sulfate	< 1.0	mg/L	Q2	1.500	2.20	NR	80-120		20
Matrix Spike Dup (B431761-MSD2)				Sample: HD03616-02		Prepared & Analyzed: 04/30/24			
Sulfate	1.00E9	mg/L	Q4	1.500	17.5	NR	80-120	0	20
Fluoride	1.61	mg/L		1.500	0.226	92	80-120	4	20
<u>Batch B432240 - IC No Prep - EPA 300.0 REV 2.1</u>									
Calibration Blank (B432240-CCB2)				Prepared & Analyzed: 05/03/24					
Chloride	0.695	mg/L							
Calibration Check (B432240-CCV2)				Prepared & Analyzed: 05/03/24					
Chloride	5.15	mg/L		5.000		103	90-110		

NOTES

Specifications regarding method revisions and method modifications used for analysis are available upon request. Please contact your project manager.

* Not a TNI accredited analyte

Certifications

CHI - McHenry, IL - 4314-A W. Crystal Lake Road, McHenry, IL 60050

TNI Accreditation for Drinking Water and Wastewater Fields of Testing through IL EPA Accreditation No. 100279

Illinois Department of Public Health Bacterial Analysis in Drinking Water Approved Laboratory Registry No. 17556

PIA - Peoria, IL - 2231 W. Altorfer Drive, Peoria, IL 61615

TNI Accreditation for Drinking Water, Wastewater, Solid and Hazardous Material Fields of Testing through IL EPA Accreditation No. 100230

Illinois Department of Public Health Bacterial Analysis in Drinking Water Approved Laboratory Registry No. 17553

Drinking Water Certifications/Accreditations: Iowa (240); Kansas (E-10338); Missouri (870)

Wastewater Certifications/Accreditations: Arkansas (88-0677); Iowa (240); Kansas (E-10338)

Solid and Hazardous Material Certifications/Accreditations: Arkansas (88-0677); Iowa (240); Kansas (E-10338)

SPMO - Springfield, MO - 1805 W Sunset Street, Springfield, MO 65807

USEPA DMR-QA Program

STL - Hazelwood, MO - 944 Anglum Rd, Hazelwood, MO 63042

TNI Accreditation for Wastewater, Solid and Hazardous Material Fields of Testing through KS KDHE Certification No. E-10389

TNI Accreditation for Wastewater, Solid and Hazardous Material Fields of Testing through IL EPA Accreditation No. - 200080

Illinois Department of Public Health Bacterial Analysis in Drinking Water Approved Laboratory, Registry No. 171050

Missouri Department of Natural Resources - Certificate of Approval for Microbiological Laboratory Service - No. 1050

Qualifiers

- Q2 Matrix Spike Duplicate failed % recovery acceptance limits. The associated blank spike recovery was acceptable.
- Q4 The matrix spike recovery result is unusable since the analyte concentration in the sample is greater than four times the spike level. The associated blank spike was acceptable.



Certified by: Diane Billings, Project Manager



CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:	
Company:	Vistra Corp-Duck Creek	Report To:	Brian Voelker	Attention:	Brian Voelker
Address:	17751 North Cilco Rd	Copy To:	Sam Davies: samantha.davies@vistracorp.com	Company Name:	Vistra Corp
	Canton, IL 61520		Daryl Johnson: Robert.Johnson@vistracorp.com	Address:	see Section A
Email To:	Brian.Voelker@VistraCorp.com	Purchase Order No.:		Quote Reference:	
Phone:	(217) 753-8911	Project Name:		Project Manager:	
	Fax:	Project Number:	2285	Profile #:	
Requested Due Date/TAT:		10 day			

REGULATORY AGENCY	
NPDES	GROUND WATER
UST	RCRA
OTHER	DRINKING WATER
Site Location	IL
STATE:	

ITEM #	Section D Required Client Information	Valid Matrix Codes MATRIX CODE DW WATER WT WASTE WATER WW PRODUCT P SOIL/SOLID S OIL OL WIFE W OTHER OT TISSUE TS	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED DATE TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives Unpreserved H ₂ SO ₄ HNO ₃ HCl NaOH Na ₂ S ₂ O ₃ Methanol Other	Analysis Test Y/N	Requested Analysis Filtered (Y/N)										Project No./ Lab I.D.
1	0202		WTG	G	4/16/24	1500	5	X												
2	02045		WTG	G	4/16/24	1412	5	X												
3	0212		WTG	G	4/16/24	1120	5	X												
4	0206A		WTG	G	4/16/24	1205	5	X												
5	0214D		WTG	G	4/16/24	1258	5	X												
6	0214		WTG	G	4/16/24	1022	5	X												
7																				
8																				
9																				
10																				
11																				
12																				
13																				
14																				
15																				
16																				

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
DC-24Q1 Rev 0		4/16/24	1609	Cathy P. Jener	4/16/24	1609	Temp in °C Receives on Cooler (Y/N) Custody Sealed (Y/N) Samples Intact (Y/N)
SAMPLER NAME AND SIGNATURE				DATE SIGNED (MM/DD/YYYY): 04/16/24			
PRINT Name of SAMPLER: Aaron Kimberlin							
SIGNATURE of SAMPLER:							

SUBCONTRACT ORDER
Transfer Chain of Custody

Pace Analytical Services, LLC

HD03060

SENDING LABORATORY

PDC Laboratories, Inc.
2231 W Altorfer Dr
Peoria, IL 61615
(800) 752-6651

RECEIVING LABORATORY

Pace Analytical Services, LLC - Hazelwood
944 Anglum Road
Hazelwood, MO 63042
(314) 432-0550

Sample: HD03060-05
Name: G03L

Sampled: 04/16/24 11:42
Matrix: Ground Water
Preservative: Cool <6

Analysis	Due	Expires	Comments
02-M8260 GW G2	04/29/24 16:00	04/30/24 11:42	

Sample: HD03060-06
Name: G04L

Sampled: 04/16/24 13:25
Matrix: Ground Water
Preservative: Cool <6

Analysis	Due	Expires	Comments
02-M8260 GW G2	04/29/24 16:00	04/30/24 13:25	

Sample: HD03060-07
Name: G07L

Sampled: 04/16/24 14:47
Matrix: Ground Water
Preservative: Cool <6

Analysis	Due	Expires	Comments
02-M8260 GW G2	04/29/24 16:00	04/30/24 14:47	

IR Gun # 65 Correction Factor (Deg C) -4

Observed Temp (Deg C) 9.7 Corrected Temp (Deg C) 9.0

Delivery Method: FedEx UPS Walk-in USPS Other

Please email results to Diane Billings at diane.billings@pacelabs.com

Date Shipped: 4/22/24 Total # of Containers: 5 Sample Origin (State): IL PO #: _____

Turn-Around Time Requested ☐ NORMAL ☐ RUSH Date Results Needed: _____

Relinquished By <u>[Signature]</u>	Date/Time <u>4/22/24 0500</u>	Received By <u>[Signature]</u>	Date/Time <u>4-22-24 650</u>	Sample Temperature Upon Receipt _____ °C
Relinquished By <u>[Signature]</u>	Date/Time <u>4-22-24</u>	Received By <u>[Signature]</u>	Date/Time <u>4/22/24 1030</u>	Sample(s) Received on Ice <u>Y or N</u>
				Proper Bottles Received in Good Condition <u>Y or N</u>
				Bottles Filled with Adequate Volume <u>Y or N</u>
				Samples Received Within Hold Time <u>Y or N</u>
				Date/Time Taken From Sample Bottle <u>Y or N</u>

SAR-3: Episodic Depth to Groundwater Measurements

All DTWs on SAR-3 must be collected within 24 hours.

Plant: DC

Event: DC-24Q2 Rev 1

Well	Unique ID	Unit Numt	Unit Name	Date	Time	Measured Depth to Water (ft bmp)	Comments + Total Depths	Initials
BA01C	DC-BA01!C	205	BAB	4/12/24	1202	11.65	DB	BG
BA01L	DC-BA01!L	205	BAB		1200	7.80	DB	
G02D	DC-G02&D	204	LF		1002	20.65	38.06 - DT	
G02L	DC-G02!L	204	LF		0958	7.27	18.00 - Pump Removed	
G03L	DC-G03!L	204	LF		0950	5.11	26.49	
G03S	DC-G03#S	204	LF		0954	4.66	DB	
G04L	DC-G04!L	204	LF		0940	13.16	16.90 - Pump Removed	
G04S	DC-G04#S	204	LF		0945	9.71	DB	
G06L	DC-G06!L	204	LF		1045	19.22	25.34	
G06S	DC-G06#S	204	LF		1049	19.34	DB	
G07L	DC-G07!L	204	LF		1052	18.99	23.45	
G08L	DC-G08!L	204	LF		1055	18.50	23.07	
G09L	DC-G09!L	204	LF		1057	19.42	23.54	
G09S	DC-G09#S	204	LF		1100	19.64	DB	
G12L	DC-G12!L	204	LF		1115	18.30	DB	
G12S	DC-G12#S	204	LF		1117	20.20	DB	
G14L	DC-G14!L	204	LF		1123	20.46	26.86	
G15L	DC-G15!L	204	LF		1136	23.16	34.43	
G15S	DC-G15#S	204	LF		1140	23.51	DB	
G16L	DC-G16!L	204	LF		1145	21.92	DB	
G50L	DC-G50!L	203	GMF		1045	10.16	DB	
G51L	DC-G51!L	203	GMF		1031	9.64	DT	
G52L	DC-G52!L	203	GMF		1021	22.30	DB	

SAR-3: Episodic Depth to Groundwater Measurements

All DTWs on SAR-3 must be collected within 24 hours.

Plant: DC

Event: DC-24Q2 Rev 1

Well	Unique ID	Unit Numt	Unit Name	Date	Time	Measured Depth to Water (ft bmp)	Comments + Total Depth	Initials
G52S	DC-G52#S	203	GMF	4/12/24	1024	28.61	DB	BG
G53L	DC-G53!L	203	GMF		1059	9.34	DB	
G53S	DC-G53#S	203	GMF		1056	10.73	DB	
G55L	DC-G55!L	203	GMF		0924	19.56	DB	
G55S	DC-G55#S	203	GMF		0924	19.27	DB	
G56L	DC-G56!L	203	GMF		1311	16.54	25.43	
G56S	DC-G56#S	203	GMF		1309	16.81	DB	
G57L	DC-G57!L	203	GMF		1250	18.66	29.26	
G58L	DC-G58!L	203	GMF		1242	22.63	33.80	
G58S	DC-G58#S	203	GMF		1239	22.64	DB	
G59L	DC-G59!L	203	GMF		1237	19.29	35.32	
G59S	DC-G59#S	203	GMF		1234	31.71	DB	
G61S	DC-G61#S	203	GMF		1204	16.73	DB	
G62L	DC-G62!L	203	GMF		1153	18.64	33.52	
G63L	DC-G63!L	203	GMF		1134	21.74 12.74	31.00	BG 5/17/24
G63S	DC-G63#S	203	GMF		1130	22.08	DB	
G65L	DC-G65!L	203	GMF		1328	16.50	25.20	
G65S	DC-G65#S	203	GMF		1325	16.80	DB	
G66L	DC-G66!L	203	GMF		1323	12.41	22.83	
G66S	DC-G66#S	203	GMF		1320	12.76	DB	
G67L	DC-G67!L	203	GMF		1315	10.73	20.09 - Pump Removed	
G67S	DC-G67#S	203	GMF		1317	11.48	DB	
G68L	DC-G68!L	203	GMF		1011	12.55	17.09	

SAR-3: Episodic Depth to Groundwater Measurements

All DTWs on SAR-3 must be collected within 24 hours.

Plant: DC

Event: DC-24Q2 Rev 1

Well	Unique ID	Unit Numt	Unit Name	Date	Time	Measured Depth to Water (ft bmp)	Comments + Total Depth	Initials
G68S	DC-G68#S	203	GMF	4/12/24	1007	13.42	DB	BG
G69L	DC-G69!L	203	GMF		0959	10.26	27.84	
G69S	DC-G69#S	203	GMF		1002	13.90	DB	
G70L	DC-G70!L	203	GMF		1306	13.67	DB	
G71L	DC-G71!L	203	GMF		1308	17.57	32.95	
G71S	DC-G71#S	203	GMF		1310	18.53	DB	
G72L	DC-G72!L	203	GMF		1313	18.42	28.05	
G73L	DC-G73!L	203	GMF		1319	23.76	DB	
L103	DC-L103	204	LF		1135	1.17		
OM05S	DC-OM05#S	201-202	AP1/2		1036	21.22	25.72 ^{No ID} No Cap	
OM08	DC-OM08	201-202	AP1/2		1232	12.07	26.90	
OM09	DC-OM09	201-202	AP1/2		1242	3.13	Water Pump	
OM10	DC-OM10	201-202	AP1/2		0951	5.19	20.00	
OM15	DC-OM15	201-202	AP1/2		0942	20.37	51.11	
OM22S	DC-OM22#S	201-202	AP1/2		1251	17.09	40.19	
OM23S	DC-OM23#S	201-202	AP1/2		1310	40.60	46.07	
OM25D	DC-OM25&D	201-202	AP1/2		1322	57.49	77.40	
OR03S	DC-OR03#S	201-202	AP1/2		1306	45.39	60.50	
OR05D	DC-OR05&D	201-202	AP1/2		1034	20.57	49.80	
OR14S	DC-OR14#S	201-202	AP1/2		1026	5.83	24.34	
OR18	DC-OR18	201-202	AP1/2		0927	18.07	53.00	
OM26	DC-OM26	201-202	AP1/2		1154	29.29	61.58	
OM27	DC-OM27	201-202	AP1/2		1122	32.65	61.78	

SAR-3: Episodic Depth to Groundwater Measurements

All DTWs on SAR-3 must be collected within 24 hours.

Plant: DC

Event: DC-24Q2 Rev 1

Well	Unique ID	Unit Numt	Unit Name	Date	Time	Measured Depth to Water (ft bmp)	Comments + Total Depths	Initials
OM28	DC-OM28	201-202	AP1/2	4/12/24	1128	47.58	68.88	BG
P01I	DC-P01#I	204	LF		1013	7.89	23.35 40.97 BG 4/12/24	
P01L	DC-P01#L	204	LF		1015	7.98	29 23.35 BG 4/12/24	
P01S	DC-P01#S	204	LF		1018	7.89	29.66	
P02S	DC-P02#S	204	LF		1007	7.28	DB-G02S	
P04S	DC-P04#S	204	LF		0945	9.71	DB-G04S	
P05D	DC-P05&D	204	LF		0925	5.45	45.61-DT	
P05S	DC-P05#S	204	LF		0930	4.66	DB	
P05L	DC-P05#L	204	LF		0935	4.85	14.60-DT	
P36D	DC-P36&D	204	LF		1035	10.50	51.36	
P36L	DC-P36#L	204	LF		1033	9.27	DB	
P36S	DC-P36#S	204	LF		1030	9.59	31.42	
P37D	DC-P37&D	204	LF		1103	13.88	43.22-DT	
P37L	DC-P37#L	204	LF		1106	12.72	DB	
P38L	DC-P38#L	204	LF		1128	11.47	19.74	
P38S	DC-P38#S	204	LF		1126	10.96	31.42-DT	
P39D	DC-P39&D	204	LF		1151	11.13	42.64-DT	
P39L	DC-P39#L	204	LF		1155	4.12	15.10-DT	
P39S	DC-P39#S	204	LF		1159	3.79	26.25-DT	
P40L	DC-P40#L	204	LF		1206	4.90	20.36-DT	
P40S	DC-P40#S	204	LF		1209	4.07	35.31-DT	
P41D	DC-P41&D	204	LF		1235	39.20	69.09-DT	
P41L	DC-P41#L	204	LF		1237	3.07	12.01	

SAR-3: Episodic Depth to Groundwater Measurements

All DTWs on SAR-3 must be collected within 24 hours.

Plant: DC

Event: DC-24Q2 Rev 1

Well	Unique ID	Unit Numt	Unit Name	Date	Time	Measured Depth to Water (ft bmp)	Comments + Total Depths	Initials
P41S	DC-P41#S	204	LF	4/12/24	1240	6.02	31.52-DT	BC
P42D	DC-P42&D	204	LF		1230	37.20	76.56	
P42I1	DC-P42#I1	204	LF		1227	3.32	42.28	
P42I2	DC-P42#I2	204	LF		1225	31.75	57.37	
P42L	DC-P42#L	204	LF		1222	3.23	20.32-Well Broken	
P42S	DC-P42#S	204	LF		1219	3.03	31.52	
P52	DC-P52	203	GMF		1303	11.37	28.24	
P57L	DC-P57#L	203	GMF		1402	14.04	22.50	
P57S	DC-P57#S	203	GMF		1404	13.77	34.34	
P60	DC-P60	203	GMF		1229	19.58	37.32	
P61	DC-P61	203	GMF		1159	5.67	21.52	
P62	DC-P62	203	GMF		1149	7.88	19.09	
P63	DC-P63	203	GMF		1144	11.35	20.44	
P64	DC-P64	203	GMF		1109	10.60	18.86	
R10L	DC-R10#L	204	LF		1340	19.19	27.20	
R11L	DC-R11#L	204	LF		1112	18.20	26.48-Soft Bottom	
R13L	DC-R13#L	204	LF		1120	18.95	29.88	
R61L	DC-R61#L	203	GMF		1208	16.97	31.42	
R72S	DC-R72#S	203	GMF		1316	18.25	37.72	
T43L	DC-T43#L	204	LF		1038	6.23	DB	
T44L	DC-T44#L	204	LF		1040	8.70	DB	
T45L	DC-T45#L	204	LF		1042	6.36	DB	
T46L	DC-T46#L	204	LF		1026	6.17	DB	

SAR-3: Episodic Depth to Groundwater Measurements

All DTWs on SAR-3 must be collected within 24 hours.

Plant: DC

Event: DC-24Q2 Rev 1

Well	Unique ID	Unit Numt	Unit Name	Date	Time	Measured Depth to Water (ft bmp)	Comments + Total Depth	Initials
X301	DC-X301-leachate	203	GMF	4/12/24	1420	-	N/A	BG
XTPW02	DC-XTPW02-pore	203	GMF	4/12/24	1330	Dry	6.97	BG

U:6/19/23 GKJ

SAR-4: Depth to Groundwater Measurements - On-site Transducer Downloads
All episodic water levels on SAR-3 and SAR-4 must be collected within a 24 hour period.
Transducer data on SAR-4 form may be collected at anytime during the sampling event.

Plant: DC
Event: DC-24Q2 Rev 0

Well	Unique ID	Unit Number	Unit Name	Date	Time	Measured Depth to Water (ft bmp)	On-site Transducer Data					Comments	Initials
							Data Logger Serial No.	Does Data Match?	WL Reading on Transducer (ft)	Data down-loaded?	Batt (H/M/L/R)		
BA01	DC-BA01	205	BAB	4/12/24	1157	12.25	21615533	✓	575.23	✓	H	+ Total Depth Dedicated B	BG
BA02	DC-BA02	205	BAB		1129	5.87	21615636		574.38				
BA02L	DC-BA02IL	205	BAB		1149	5.72	21615682		574.35				
BA03	DC-BA03	205	BAB		1115	4.84	21615637		573.83				
BA03L	DC-BA03IL	205	BAB		1119	4.38	21615687		573.58				
BA04	DC-BA04	205	BAB		1108	4.15	21615631		574.28				
BA05	DC-BA05#	205	BAB		1219	15.12	21615540		580.71				
BA06	DC-BA06	205	BAB		1214	19.60	21615525		576.33				
G02S	DC-G02#S	204	LF		1007	7.28	21615554		614.59				
G50S	DC-G50#S	203	GMF		1039	11.31	21615535		612.51				
G51S	DC-G51#S	203	GMF		1035	9.06	21615691		608.58				
G54L	DC-G54IL	203	GMF		0932	22.38	21615690		600.53			40.15-No Pump	BG
G54S	DC-G54#S	203	GMF		0940	23.56	21615684		599.73			Dedicated B	
G57S	DC-G57#S	203	GMF		1248	18.36	21615683		604.27				
G60L	DC-G60IL	203	GMF		1225	8.12	21615678		607.14				
G60S	DC-G60#S	203	GMF		1221	21.83	21615677		593.15				
G64L	DC-G64IL	203	GMF		1126	19.74	21615688		602.66				
G64S	DC-G64#S	203	GMF		1120	21.76	21615632	—	601.39	—			

SAR-4: Depth to Groundwater Measurements - On-site Transducer Downloads
All episodic water levels on SAR-3 and SAR-4 must be collected within a 24 hour period.
Transducer data on SAR-4 form may be collected at anytime during the sampling event.

Plant: DC
Event: DC-24Q2 Rev 0

Well	Unique ID	Unit Number	Unit Name	Date	Time	Measured Depth to Water (ft bmp)	On-site Transducer Data					Comments	Initials
							Data Logger Serial No.	Does Data Match?	WL Reading on Transducer (ft)	Data downloaded?	Batt (H/M/L/R)		
OM01	DC-OM01	201-AP1/202 2	4/12/24		1246	8.86	21615685	Y	586.40	Y	H	+ Total Depth 27.62 - Telling BG	
OM04S	DC-OM04#S	201-AP1/202 2			0957	17.49	21615542	Y	589.72	Y	H	35.85	
OM07	DC-OM07	201-AP1/202 2			1057	12.13	21615541	N/A	N/A	N/A	N/A	29.97	
OM12	DC-OM12	201-AP1/202 2			1214	15.32	21615527	N/A	N/A	N/A	N/A	43.01	
OM16	DC-OM16	201-AP1/202 2			1014	27.49	21615539	Y	580.36	Y	H	43.67	
OM17	DC-OM17	201-AP1/202 2			1001	10.56	21615693		581.20			17.25	
OM21	DC-OM21	201-AP1/202 2			1013	8.70	21615593		597.67			60.49	
OM22D	DC-OM22&D	201-AP1/202 2			1254	16.83	21615592		582.27			65.17	
OM23D	DC-OM23&D	201-AP1/202 2			1305	27.70	21615591		575.58			82.95	
OM24D	DC-OM24&D	201-AP1/202 2			1333	2.46	21615522		574.50			20.14	
OM25S	DC-OM25#S	201-AP1/202 2			1325	58.09	21615681		570.91			64.03	
OR02	DC-OR02	201-AP1/202 2			1254	4.43	21615679		596.87			22.52 - Soft Bottom	
OR03D	DC-OR03&D	201-AP1/202 2			1303	44.88	21615577		583.02			77.75	
OR04D	DC-OR04&D	201-AP1/202 2			0938	20.07	21615570		587.59			68.07	
OR06A	DC-OR06IA	201-AP1/202 2			1050	12.64	21615692		582.77			26.05	
OR11	DC-OR11	201-AP1/202 2			1029	29.68	21615686		566.56			40.57	
OR13S	DC-OR13#S	201-AP1/202 2			1230	11.43	21615676		591.10			29.53	
OR13D	DC-OR13&D	201-AP1/202 2			1234	12.15	21564135		590.39			50.17	

SAR-4: Depth to Groundwater Measurements - On-site Transducer Downloads

All episodic water levels on SAR-3 and SAR-4 must be collected within a 24 hour period.
Transducer data on SAR-4 form may be collected at anytime during the sampling event.

Plant: DC

Event: DC-24Q2 Rev 0

Well	Unique ID	Unit Number	Unit Name	Date	Time	Measured Depth to Water (ft bmp)	On-site Transducer Data					Comments	Initials
							Data Logger Serial No.	Does Data Match?	WL Reading on Transducer (ft)	Data down-loaded?	Batt (H/M/L/R)		
OR14D	DC-OR14&D	201-AP1/ 202 2	4/12/24		1022	8.80	21615611	✓	590.35	✓	H	48.73	BG
OR19	DC-OR19	201-AP1/ 202 2	1		1223	20.93	21615634	✓	576.87	✓	L	54.92	✓
OR20	DC-OR20	201-AP1/ 202 2	1		1049	20.44	21615610	✓	567.07	✓	✓	57.34	✓

Notes:

Batt = battery
bmp = below measuring point
ft = feet
H = high
L = low
M = medium
R = replaced

Duck Creek

WELL/SAMPLE POINT BA01

Purge Method: low flow / blaster

Date: 4/16/2024 Start Time: 1147 Finish/Sample Time: 1257

Well Depth (Bottom) From MP: _____ ft Min. Purge Volume: 1000 mL

Depth to Water From MP: 12.52 ft Total Purge Volume: 1400 mL

Water Column Length: _____ ft

Well Water Volume: _____ L Total Drawdown: 0.05 ft

Reading (Units)	Time	Depth ft.	Flow Rate mL/min	pH s.u.	Spec Cond umhos/cm	Temp deg C	ORP mV	DO mg/L	Turb NTU
1	1156	12.54	200	7.09	1030	16.28	15	2.23	0.0
2	1158	12.54	200	7.03	1030	16.25	12	2.14	0.0
3	1200	12.54	200	7.02	1020	16.19	12	2.10	0.0
4									
5									
Stabilization	NA	NA	NA	± 0.2	± 3%	± 0.2	± 20	± 10% or 0.2	NA

Field Meter: Horiba

Sample Appearance:

Odor: ☒ None ☐ Slight ☐ Mod. ☐ Strong

Color: ☒ None ☐ Slight ☐ Mod. ☐ Strong

Turb: ☒ None ☐ Slight ☐ Mod ☐ Strong

Well Integrity	Yes	No
Well has ID sign	☒	
Casing locked/secure	☒	
Well cap fits securely.	☒	
Good seal/drainage	☒	
Well has weep holes		☒

BOTTLE INFORMATION:

Unfiltered	
Qty	Bottles
	VOAs (C,V, 40mL, HCL)
	VOAS (C,V, 40mL)
	Organics (A,G,U 1000mL)
	Organics (A,G,U 500mL)
	TOC (A,V 40mL, H2SO4)
	TOX (A,G 500mL, H2SO4)
121	Metals (P,250mL, HNO3)
	Cyanide (P, 250mL, NaOH)
121	General (P,1000mL)
	General (P, 500 mL)
	Ammonia (P, 250mL, H2SO4)
121	Rad (P, 2.5L, HNO3)

414
APP
4/16/24

Filtered	
Qty	Bottles
121	Metals (P,250mL, HNO3)
	Ammonia (P,250mL, H2SO4)
	General (P,500mL)
	General (P,1000mL)
	TOC (A,V, 40mL, H2SO4)

Final DTW: 12.57 ft

Comments Check pH if reading is below 6.9

Field Dup. Filled here

Sampler's Signature: _____

Duck Creek

WELL/SAMPLE POINT BA02

Purge Method: low flow / bladder

Date: 4/16/2024 Start Time: 1016 Finish/Sample Time: 1130

Well Depth (Bottom) From MP: _____ ft

Min. Purge Volume: 1000 mL

Depth to Water From MP: 6.47 ft

Total Purge Volume: 1600 mL

Water Column Length: _____ ft

Well Water Volume: _____ L

Total Drawdown: 2.63 ft

Reading (Units)	Time	Depth ft.	Flow Rate mL/min	pH s.u.	Spec Cond umhos/cm	Temp deg C	ORP mV	DO mg/L	Turb NTU
1	1034	7.54	100	7.25	1030	15.26	225	1.62	0.0
2	1037	7.65	100	7.13	1010	15.18	227	1.70	0.0
3	1040	7.87	100	7.07	1000	15.12	225	1.52	0.0
4									
5									
Stabilization	NA	NA	NA	± 0.2	± 3%	± 0.2	± 20	± 10% or 0.2	NA

Field Meter: Horiba

Sample Appearance:

Odor: ☒ None ☐ Slight ☐ Mod. ☐ Strong

Color: ☐ None ☒ Slight ☐ Mod. ☐ Strong

Turb: ☐ None ☒ Slight ☐ Mod ☐ Strong

Well Integrity	Yes	No
Well has ID sign	☒	
Casing locked/secure	☒	
Well cap fits securely.	☒	
Good seal/drainage	☒	
Well has weep holes		☒

BOTTLE INFORMATION:

Unfiltered	
Qty	Bottles
	VOAs (C,V, 40mL, HCL)
	VOAs (C,V, 40mL)
	Organics (A,G,U 1000mL)
	Organics (A,G,U 500mL)
	TOC (A,V 40mL, H2SO4)
	TOX (A,G 500mL, H2SO4)
1	Metals (P,250mL, HNO3)
	Cyanide (P, 250mL, NaOH)
1	General (P,1000mL)
	General (P, 500 mL)
	Ammonia (P, 250mL, H2SO4)
1	Rad (P, 2.5L, HNO3)

Filtered	
Qty	Bottles
	Metals (P,250mL, HNO3)
	Ammonia (P,250mL, H2SO4)
	General (P,500mL)
1	General (P,1000mL)
	TOC (A,V, 40mL, H2SO4)

Final DTW: 9.10 ft

Comments Check pH if reading is below 6.9

Sampler's Signature: _____

Duck Creek

WELL/SAMPLE POINT BA02L

Purge Method: Peristaltic pump

Date: 4/18/24 Start Time: 1125 Finish/Sample Time: 1220

Well Depth (Bottom) From MP: 14.35 ft Min. Purge Volume: - mL

Depth to Water From MP: 6.84 ft Total Purge Volume: 800 mL

Water Column Length: 7.51 ft

Well Water Volume: 4.55 L Total Drawdown: 1.61 ft

Reading (Units)	Time	Depth ft.	Flow Rate mL/min	pH s.u.	Spec Cond umhos/cm	Temp deg C	ORP mV	DO mg/L	Turb NTU
1	1131	7.55	100	7.07	547	16.42	-128.1	1.01	117.28
2	1132	7.68	100	7.07	539	16.37	-119.0	0.97	98.76
3	1134	7.81	100	7.07	532	16.33	-126.4	1.04	108.45
4									
5									
Stabilization	NA	NA	NA	± 0.2	± 3%	± 0.2	± 20	± 10% or 0.2	NA

Field Meter: Aquatroll 600

Sample Appearance:

Odor: ☐ None ☐ Slight ☒ Mod. ☐ Strong

Color: ☐ None ☒ Slight ☐ Mod. ☐ Strong

Turb: ☐ None ☐ Slight ☒ Mod ☐ Strong

Well Integrity	Yes	No
Well has ID sign	☒	☐
Casing locked/secure	☒	☐
Well cap fits securely.	☒	☐
Good seal/drainage	☒	☐
Well has weep holes	☒	☐

BOTTLE INFORMATION:

Unfiltered	
Qty	Bottles
	VOAs (C,V, 40mL, HCL)
	VOAs (C,V, 40mL)
	Organics (A,G,U 1000mL)
	Organics (A,G,U 500mL)
	TOC (A,V 40mL, H2SO4)
	TOX (A,G 500mL, H2SO4)
1	Metals (P,250mL, HNO3)
	Cyanide (P, 250mL, NaOH)
1	General (P,1000mL)
	General (P, 500 mL)
	Ammonia (P, 250mL, H2SO4)
1	Rad (P, 2.5L, HNO3)

(4)

Filtered	
Qty	Bottles
	Metals (P,250mL, HNO3)
	Ammonia (P,250mL, H2SO4)
	General (P,500mL)
1	General (P,1000mL)
	TOC (A,V, 40mL, H2SO4)

Final DTW: 8.45 ft

Comments Check pH if reading is below 6.9 or above 7.7

Installed peristaltic tubing

Sampler's Signature: [Signature]

Duck Creek

WELL/SAMPLE POINT **BA03**

Purge Method: low flow / bladder

Date: 4/18/2024 Start Time: 1148 Finish/Sample Time: 1244

Well Depth (Bottom) From MP: _____ ft Min. Purge Volume: 1000 mL

Depth to Water From MP: 6.30 ft Total Purge Volume: 1950 mL

Water Column Length: _____ ft

Well Water Volume: _____ L Total Drawdown: 0.70 ft

APP 4/15/24

Reading (Units)	Time	Depth ft.	Flow Rate mL/min	pH s.u.	Spec Cond umhos/cm	Temp deg C	ORP mV	DO mg/L	Turb NTU
1	1203	6.74	100 150	7.17	879	13.75	99	1.00	0.0
2	1206	6.74	100 150	7.07	886	13.62	102	0.93	0.0
3	1209	6.74	100 150	7.03	879	13.58	103	0.83	0.0
4									
5									
Stabilization	NA	NA	NA	± 0.2	± 3%	± 0.2	± 20	± 10% or 0.2	NA

Field Meter: H01:60

Sample Appearance:

Odor: ☒ None ☐ Slight ☐ Mod. ☐ Strong

Color: ☒ None ☐ Slight ☐ Mod. ☐ Strong

Turb: ☒ None ☐ Slight ☐ Mod ☐ Strong

Well Integrity	Yes	No
Well has ID sign	☒	☐
Casing locked/secure	☒	☐
Well cap fits securely.	☒	☐
Good seal/drainage	☒	☐
Well has weep holes	☐	☒

BOTTLE INFORMATION:

Unfiltered	
Qty	Bottles
	VOAs (C,V, 40mL, HCL)
	VOAs (C,V, 40mL)
	Organics (A,G,U 1000mL)
	Organics (A,G,U 500mL)
	TOC (A,V 40mL, H2SO4)
	TOX (A,G 500mL, H2SO4)
1	Metals (P,250mL, HNO3)
	Cyanide (P, 250mL, NaOH)
1	General (P,1000mL)
	General (P, 500 mL)
	Ammonia (P, 250mL, H2SO4)
1	Rad (P, 2.5L, HNO3)

(4)

Filtered	
Qty	Bottles
	Metals (P,250mL, HNO3)
	Ammonia (P,250mL, H2SO4)
	General (P,500mL)
1	General (P,1000mL)
	TOC (A,V, 40mL, H2SO4)

Final DTW: 7.00 ft

Comments **Check pH if reading is below 6.9 or above 7.7**

Sampler's Signature: _____

Duck Creek

WELL/SAMPLE POINT BA03L

Purge Method: 10v Flow / bladder

Date: 4/18/2024 Start Time: 1503 Finish/Sample Time: 1401

Well Depth (Bottom) From MP: _____ ft

Min. Purge Volume: 1000 mL

Depth to Water From MP: 5.86 ft

Total Purge Volume: 1950 ~~1600~~ mL APP

Water Column Length: _____ ft

Well Water Volume: _____ L

Total Drawdown: 0.15 ft

Reading	Time	Depth	Flow Rate	pH	Spec Cond	Temp	ORP	DO	Turb
(Units)		ft.	mL/min	s.u.	umhos/cm	deg C	mV	mg/L	NTU
1	1310	6.01	150	6.84	1590	12.68	130	1.31	0.0
2	1322	6.01	150	6.83	1590	12.55	132	1.41	0.0
3	1325	6.01	150	6.81	1590	12.50	132	1.35	0.0
4									
5									
Stabilization	NA	NA	NA	± 0.2	± 3%	± 0.2	± 20	± 10% or 0.2	NA

Field Meter: Horiba

Sample Appearance:

Odor: ☒ None ☐ Slight ☐ Mod. ☐ Strong

Color: ☒ None ☐ Slight ☐ Mod. ☐ Strong

Turb: ☒ None ☐ Slight ☐ Mod ☐ Strong

Well Integrity	Yes	No
Well has ID sign	☒	
Casing locked/secure	☒	
Well cap fits securely.	☒	
Good seal/drainage	☒	
Well has weep holes	☒	

BOTTLE INFORMATION:

Unfiltered	
Qty	Bottles
	VOAs (C,V, 40mL, HCL)
	VOAs (C,V, 40mL)
	Organics (A,G,U 1000mL)
	Organics (A,G,U 500mL)
	TOC (A,V 40mL, H2SO4)
	TOX (A,G 500mL, H2SO4)
1	Metals (P,250mL, HNO3)
	Cyanide (P, 250mL, NaOH)
1	General (P, 1000mL)
	General (P, 500 mL)
	Ammonia (P, 250mL, H2SO4)
1	Rad (P, 2.5L, HNO3)

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Filtered	
Qty	Bottles
+	Metals (P,250mL, HNO3)
	Ammonia (P,250mL, H2SO4)
	General (P,500mL)
1	General (P, 1000mL)
	TOC (A,V, 40mL, H2SO4)

Final DTW: 6.01 ft

Comments Check pH if reading is below 6.9

reading was 6.86

pH check with AT600

Sampler's Signature: _____

Duck Creek

WELL/SAMPLE POINT BA04

Purge Method: low flow / bladder

Date: 4/18/2024 Start Time: 1415 Finish/Sample Time: 1508

Well Depth (Bottom) From MP: _____ ft

Min. Purge Volume: 1000 mL

Depth to Water From MP: 4.81 ft

Total Purge Volume: 1250 mL

Water Column Length: _____ ft

Well Water Volume: _____ L

Total Drawdown: 0.09 ft

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Reading (Units)	Time	Depth ft.	Flow Rate mL/min	pH s.u.	Spec Cond umhos/cm	Temp deg C	ORP mV	DO mg/L	Turb NTU
1	1427	4.85	150	7.20	1210	14.33	120	1.38	0.0
2	1430	4.85	150	7.16	1230	14.31	121	1.34	0.0
3	1433	4.85	150	7.10	1220	14.26	118	1.27	0.0
4									
5									
Stabilization	NA	NA	NA	± 0.2	± 3%	± 0.2	± 20	± 10% or 0.2	NA

Field Meter: Horiba

Sample Appearance:

Odor: ☒ None ☐ Slight ☐ Mod. ☐ Strong

Color: ☒ None ☐ Slight ☐ Mod. ☐ Strong

Turb: ☒ None ☐ Slight ☐ Mod ☐ Strong

Well Integrity	Yes	No
Well has ID sign	☒	☐
Casing locked/secure	☒	☐
Well cap fits securely.	☐	☒
Good seal/drainage	☒	☐
Well has weep holes	☒	☐

BOTTLE INFORMATION:

Unfiltered	
Qty	Bottles
	VOAs (C,V, 40mL, HCL)
	VOAS (C,V, 40mL)
	Organics (A,G,U 1000mL)
	Organics (A,G,U 500mL)
	TOC (A,V 40mL, H2SO4)
	TOX (A,G 500mL, H2SO4)
1	Metals (P,250mL, HNO3)
	Cyanide (P, 250mL, NaOH)
1	General (P,1000mL)
	General (P, 500 mL)
	Ammonia (P, 250mL, H2SO4)
1	Rad (P, 2.5L, HNO3)

(4)

Filtered	
Qty	Bottles
	Metals (P,250mL, HNO3)
	Ammonia (P,250mL, H2SO4)
	General (P,500mL)
1	General (P,1000mL)
	TOC (A,V, 40mL, H2SO4)

Final DTW: 4.90 ft

Comments **Check pH if reading is below 6.9**

Sampler's Signature: _____

Duck Creek

WELL/SAMPLE POINT **BA05**

Purge Method: low flow / bladder

Date: 4/18/2024 Start Time: 1014 Finish/Sample Time: 1133

Well Depth (Bottom) From MP: _____ ft Min. Purge Volume: 1000 mL

Depth to Water From MP: 15.94 ft Total Purge Volume: 2100 mL

Water Column Length: _____ ft

Well Water Volume: _____ L Total Drawdown: 1.91 ft

Reading (Units)	Time	Depth ft.	Flow Rate mL/min	pH s.u.	Spec Cond umhos/cm	Temp deg C	ORP mV	DO mg/L	Turb NTU
1	1031	17.82	100	7.04	1770	12.77	179	0.46	57.6
2	1034	17.85	100	7.00	1770	12.62	150	0.41	60.0
3	1037	17.85	100	6.94	1770	12.63	32	0.39	52.8
4	1040	17.85	100	6.92	1770	12.66	24	0.36	60.2
5	1043	17.85	100	6.90	1720	12.61	17	0.32	59.1
Stabilization	NA	NA	NA	± 0.2	± 3%	± 0.2	± 20	± 10% or 0.2	NA

Field Meter: Horiba

Sample Appearance:

Odor: ☒ None ☐ Slight ☐ Mod. ☐ Strong

Color: ☒ None ☐ Slight ☐ Mod. ☐ Strong

Turb: ☐ None ☒ Slight ☐ Mod ☐ Strong

Well Integrity	Yes	No
Well has ID sign	☒	☐
Casing locked/secure	☒	☐
Well cap fits securely.	☐	☒
Good seal/drainage	☒	☐
Well has weep holes	☒	☐

BOTTLE INFORMATION:

Unfiltered	
Qty	Bottles
	VOAs (C,V, 40mL, HCL)
	VOAs (C,V, 40mL)
	Organics (A,G,U 1000mL)
	Organics (A,G,U 500mL)
	TOC (A,V 40mL, H2SO4)
	TOX (A,G 500mL, H2SO4)
1	Metals (P,250mL, HNO3)
	Cyanide (P, 250mL, NaOH)
1	General (P,1000mL)
	General (P, 500 mL)
	Ammonia (P, 250mL, H2SO4)
1	Rad (P, 2.5L, HNO3)

(18)

Filtered	
Qty	Bottles
	Metals (P,250mL, HNO3)
	Ammonia (P,250mL, H2SO4)
	General (P,500mL)
1	General (P,1000mL)
	TOC (A,V, 40mL, H2SO4)

Final DTW: 17.85 ft

Comments Check pH if reading is below 6.9 or above 7.7

Sampler's Signature: _____

Duck Creek

WELL/SAMPLE POINT BA06

Purge Method: low flow / bladder

Date: 4/16/2024 Start Time: 1313 Finish/Sample Time: 1432

Well Depth (Bottom) From MP: _____ ft Min. Purge Volume: 1000 mL

Depth to Water From MP: 19.60 ft Total Purge Volume: 1600 mL

Water Column Length: _____ ft

Well Water Volume: _____ L Total Drawdown: 3.53 ft

Reading (Units)	Time	Depth ft.	Flow Rate mL/min	pH s.u.	Spec Cond umhos/cm	Temp deg C	ORP mV	DO mg/L	Turb NTU
1	1325	20.60	100	6.68	3280	16.82	24	2.20	0.0
2	1328	21.11	100	6.67	3290	16.80	18	2.15	0.0
3	1331	21.45	100	6.65	3310	16.73	11	2.04	0.0
4									
5									
Stabilization	NA	NA	NA	± 0.2	± 3%	± 0.2	± 20	± 10% or 0.2	NA

Field Meter: Horiba

Sample Appearance:

Odor: ☒ None ☐ Slight ☐ Mod. ☐ Strong

Color: ☒ None ☐ Slight ☐ Mod. ☐ Strong

Turb: ☒ None ☐ Slight ☐ Mod ☐ Strong

Well Integrity	Yes	No
Well has ID sign	☒	
Casing locked/secure	☒	
Well cap fits securely.	☒	
Good seal/drainage	☒	
Well has weep holes	☒	

BOTTLE INFORMATION:

Unfiltered	
Qty	Bottles
	VOAs (C,V, 40mL, HCL)
	VOAS (C,V, 40mL)
	Organics (A,G,U 1000mL)
	Organics (A,G,U 500mL)
	TOC (A,V 40mL, H2SO4)
	TOX (A,G 500mL, H2SO4)
	Metals (P,250mL, HNO3)
	Cyanide (P, 250mL, NaOH)
	General (P,1000mL)
	General (P, 500 mL)
	Ammonia (P, 250mL, H2SO4)
	Rad (P, 2.5L, HNO3)

Filtered	
Qty	Bottles
	Metals (P,250mL, HNO3)
	Ammonia (P,250mL, H2SO4)
	General (P,500mL)
	General (P,1000mL)
	TOC (A,V, 40mL, H2SO4)

Final DTW: 23.13 ft

Comments **Check pH if reading is below 6.9 or above 7.7**

Second pH check was 6.62 - with
AQ600

Sampler's Signature: _____

Checked
86
4/17/24

Multiparameter Meter Field Calibration Checklist									
Field Personnel: <u>Bryan Amberton</u>					Location: <u>Duck Creek</u>				
Weather:					Environment: <u>grass, soil</u>				
Multiparameter Water Meter		Make: <u>HoriGen</u>	Model: <u>V5000</u>	Serial Number: <u>PW26YJ13</u>					
Water Level Meter		Make: <u>Horn</u>	Model: <u>D:ppu7</u>	Serial Number: <u>79 FF 211192AB</u>					
Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading	Manufacturer	Lot#	Exp.
pH 4.00a	<u>4.25</u>	s.u.	±0.1 s.u.	<u>P</u>	<u>YES</u>	<u>4.00</u>	MSI	023067-01	3/14/2025
pH 7.00a	<u>7.07</u>	s.u.	±0.1 s.u.	<u>P</u>	<u>NO</u>	<u>-</u>	MSI	023051-02	2/21/2025
pH 10.00a	<u>9.94</u>	s.u.	±0.1 s.u.	<u>P</u>	<u>NO</u>	<u>-</u>	MSI	022361-01	12/27/2024
SC Zero (DI)	<u>0.0</u>	µS/cm	0<25 µS/cm	<u>P</u>	<u>NO</u>	<u>-</u>	Pace Labs	N/A (DI)	N/A (DI)
SC 2000	<u>1956</u>	µS/cm	±5%	<u>P</u>	<u>NO</u>	<u>-</u>	Geotech	3GF1197	Jun-24
ORP	<u>20</u>	mV	±15 mV	<u>P</u>	<u>YES</u>	<u>234</u>	InSitu	3GI1011	Jun-24
DO (Zero pt)	<u>0.09</u>	mg/L	±0.1	<u>P</u>	<u>NO</u>	<u>-</u>	Macron	#000228049	8/26/2025
DO (Saturated)	<u>136.8</u>	%	97-100%	<u>P</u>	<u>YES</u>	<u>99.8</u>	Pace Labs	N/A (DI)	N/A (DI)
Turbidity (DI)	<u>0.0</u>	NTU	<2 NTU	<u>P</u>	<u>NO</u>	<u>-</u>	Pace Labs	N/A (DI)	N/A (DI)
Approx. every 4 hrs, unless only one well									
ICV (Initial Calibration Verification)					Time: <u>1004</u>				
Buffer	Check Value	Units	Range	Pass/Fail	Action Taken?	Manufacturer	Lot#	Exp.	
pH 4.00b	<u>3.99</u>	s.u.	±0.15 s.u.	<u>P</u>	<u>-</u>	Geotech	3GB1049	Feb-25	
pH 7.00b	<u>6.95</u>	s.u.	±0.15 s.u.	<u>P</u>	<u>-</u>	Geotech	2GF113	Jun-24	
pH 10.00b	<u>10.07</u>	s.u.	±0.15 s.u.	<u>P</u>	<u>-</u>	Geotech	3GA1134	Jan-25	
SC 1000	<u>968</u>	µS/cm	±5%	<u>P</u>	<u>-</u>	Ricca	4209A12	Aug-24	
Approx. every 4 hrs, unless only one well									
CCV (Continued Calibration Verification):					Time: <u>1515</u>				
Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading	Manufacturer	Lot#	Exp.
pH 4.00a	<u>4.09</u>	s.u.	±0.1 s.u.	<u>P</u>	<u>NO</u>	<u>-</u>	MSI	023067-01	3/14/2025
pH 7.00a	<u>7.06</u>	s.u.	±0.1 s.u.	<u>P</u>	<u>NO</u>	<u>-</u>	MSI	023051-02	2/21/2025
pH 10.00a	<u>10.08</u>	s.u.	±0.1 s.u.	<u>P</u>	<u>NO</u>	<u>-</u>	MSI	022361-01	12/27/2024
SC 1000	<u>987</u>	µS/cm	±5%	<u>P</u>	<u>NO</u>	<u>-</u>	Ricca	4209A12	Aug-24
DO (Zero pt)	<u>0.09</u>	mg/L	±0.1 mg/L	<u>P</u>	<u>NO</u>	<u>-</u>	Macron	#000228049	8/26/2025
Turbidity (DI)	<u>0.0</u>	NTU	<2 NTU	<u>P</u>	<u>NO</u>	<u>-</u>	Pace Labs	N/A (DI)	N/A (DI)
Approx. every 4 hrs, unless only one well									
Comments:									
Signature: <u>[Signature]</u>					Date: <u>4/15/2024</u>				

Multiparameter Meter Field Calibration Checklist

Field Personnel: JD					Location: Duck Creek				
Weather: 67°-80°F Sunny wind NE 8-15 mph					Environment: grass, weeds				
Multiparameter Water Meter		Make: Ametek	Model: 600	Serial Number: 846000					
Water Level Meter		Make: Hera	Model: Dipper-T	Serial Number: 19FF2202131ML					
Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading	Manufacturer	Lot#	Exp.
pH 4.00a	4.24	s.u.	±0.1 s.u.	F	Y	4.00	MSI	023067-01	3/14/2025
pH 7.00a	7.27	s.u.	±0.1 s.u.	F	Y	7.00	MSI	023051-02	2/21/2025
pH 10.00a	10.38	s.u.	±0.1 s.u.	F	Y	10.00	MSI	022361-01	12/27/2024
SC Zero (DI)	6.44	µS/cm	0-25 µS/cm	P	N	NA	Pace Labs	N/A (DI)	N/A (DI)
SC 2000	2002.8	µS/cm	±5%	I	I	I	Geotech	3GF1197	Jun-24
ORP	228.1	mV	±15 mV	I	I	I	InSitu	3GI1011	Jun-24
DO (Zero pt)	0.07	mg/L	±0.1	I	I	I	Macron	#000228049	8/26/2025
DO (Saturated)	97.86	%	97-100%	I	I	I	Pace Labs	N/A (DI)	N/A (DI)
Turbidity (DI)	0.00	NTU	<2 NTU	I	I	I	Pace Labs	N/A (DI)	N/A (DI)
Approx. every 4 hrs, unless only one well									
ICV (Initial Calibration Verification)					Time: 0957				
Buffer	Check Value	Units	Range	Pass/Fail	Action Taken?		Manufacturer	Lot#	Exp.
pH 4.00b	4.00	s.u.	±0.15 s.u.	P	NA		Geotech	3GB1049	Feb-25
pH 7.00b	6.85	s.u.	±0.15 s.u.	I	I		Geotech	2GF113	Jun-24
pH 10.00b	9.98	s.u.	±0.15 s.u.	I	I		Geotech	3GA1134	Jan-25
SC 1000	989.38	µS/cm	±5%	I	I		Ricca	4209A12	Aug-24
Approx. every 4 hrs, unless only one well									
CCV (Continued Calibration Verification):					Time: 1545				
Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading	Manufacturer	Lot#	Exp.
pH 4.00a	4.10	s.u.	±0.1 s.u.	P	N	NA	MSI	023067-01	3/14/2025
pH 7.00a	7.10	s.u.	±0.1 s.u.	I	I	I	MSI	023051-02	2/21/2025
pH 10.00a	10.06	s.u.	±0.1 s.u.	I	I	I	MSI	022361-01	12/27/2024
SC 1000	951.33	µS/cm	±5%	I	I	I	Ricca	4209A12	Aug-24
DO (Zero pt)	0.09	mg/L	±0.1 mg/L	I	I	I	Macron	#000228049	8/26/2025
Turbidity (DI)	0.71	NTU	<2 NTU	I	I	I	Pace Labs	N/A (DI)	N/A (DI)
Approx. every 4 hrs, unless only one well									
Comments:									
Signature: [Signature]					Date: 7/15/24				

Multiparameter Meter Field Calibration Checklist

Field Personnel: <u>AW</u>				Location: <u>Duck Creek</u>					
Weather: <u>63°-79° 9 mph Wind NE Sunny</u>				Environment: <u>grass, gravel</u>					
Multiparameter Water Meter		Make: <u>Horiba</u>	Model: <u>U-5000</u>	Serial Number: <u>AGJTK4XG</u>					
Water Level Meter		Make: <u>Heson</u>	Model: <u>DYPR-T</u>	Serial Number: <u>3717-T</u>					

Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading	Manufacturer	Lot#	Exp.
pH 4.00a	<u>3.97</u>	s.u.	±0.1 s.u.	<u>P</u>	<u>NO</u>		MSI	023067-01	3/14/2025
pH 7.00a	<u>7.03</u>	s.u.	±0.1 s.u.	<u>P</u>			MSI	023051-02	2/21/2025
pH 10.00a	<u>10.05</u>	s.u.	±0.1 s.u.	<u>P</u>			MSI	022361-01	12/27/2024
SC Zero (DI)	<u>0.0</u>	µS/cm	0<25 µS/cm	<u>P</u>			Pace Labs	N/A (DI)	N/A (DI)
SC 2000	<u>2030</u>	µS/cm	±5%	<u>P</u>			Geotech	3GF1197	Jun-24
ORP	<u>238</u>	mV	±15 mV	<u>P</u>			InSitu	3GI1011	Jun-24
DO (Zero pt)	<u>0.0</u>	mg/L	±0.1	<u>P</u>			Macron	#000228049	8/26/2025
DO (Saturated)	<u>98.8%</u>	%	97-100%	<u>P</u>			Pace Labs	N/A (DI)	N/A (DI)
Turbidity (DI)	<u>0.0</u>	NTU	<2 NTU	<u>P</u>			Pace Labs	N/A (DI)	N/A (DI)

Approx. every 4 hrs, unless only one well

ICV (Initial Calibration Verification)					Time:				
Buffer	Check Value	Units	Range	Pass/Fail	Action Taken?	Manufacturer	Lot#	Exp.	
pH 4.00b	<u>4.06</u>	s.u.	±0.15 s.u.	<u>P</u>	<u>N/A</u>	Geotech	3GB1049	Feb-25	
pH 7.00b	<u>7.01</u>	s.u.	±0.15 s.u.	<u>P</u>		Geotech	2GF113	Jun-24	
pH 10.00b	<u>10.08</u>	s.u.	±0.15 s.u.	<u>P</u>		Geotech	3GA1134	Jan-25	
SC 1000	<u>1030</u>	µS/cm	±5%	<u>P</u>		Ricca	4209A12	Aug-24	

Approx. every 4 hrs, unless only one well

CCV (Continued Calibration Verification):					Time:				
Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading	Manufacturer	Lot#	Exp.
pH 4.00a	<u>4.03</u>	s.u.	±0.1 s.u.	<u>P</u>	<u>NO</u>	<u>N/A</u>	MSI	023067-01	3/14/2025
pH 7.00a	<u>7.05</u>	s.u.	±0.1 s.u.	<u>P</u>			MSI	023051-02	2/21/2025
pH 10.00a	<u>10.02</u>	s.u.	±0.1 s.u.	<u>P</u>			MSI	022361-01	12/27/2024
SC 1000	<u>1020</u>	µS/cm	±5%	<u>P</u>			Ricca	4209A12	Aug-24
DO (Zero pt)	<u>0.0</u>	mg/L	±0.1 mg/L	<u>P</u>			Macron	#000228049	8/26/2025
Turbidity (DI)	<u>0.0</u>	NTU	<2 NTU	<u>P</u>			Pace Labs	N/A (DI)	N/A (DI)

Approx. every 4 hrs, unless only one well

CCV (Continued Calibration Verification):					Time:				
Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading	Manufacturer	Lot#	Exp.
4.00a		s.u.	±0.1 s.u.				MSI	023067-01	3/14/2025
7.00a		s.u.	±0.1 s.u.				MSI	023051-02	2/21/2025
10.00a		s.u.	±0.1 s.u.				MSI	022361-01	12/27/2024
SC 1000		µS/cm	±5%				Ricca	4209A12	Aug-24
DO (Zero pt)		mg/L	±0.1 mg/L				Macron	#000228049	8/26/2025
Turbidity (DI)		NTU	<2 NTU				Pace Labs	N/A (DI)	N/A (DI)

Comments:

Signature: <u>[Signature]</u>	Date: <u>4/15/24</u>
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Multiparameter Meter Field Calibration Checklist

Field Personnel: Aaron Pemberton				Location: Duck Creek					
Weather: 71°-80° mostly cloudy wind SE 16mph				Environment: grass Woods					
Multiparameter Water Meter		Make: Horiba	Model: US000	Serial Number: PW26Y5D3					
Water Level Meter		Make: Heron	Model: D1P17	Serial Number: 19FF2111N2HB					
Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading	Manufacturer	Lot#	Exp.
pH 4.00a	4.04	s.u.	±0.1 s.u.	P	NO	-	MSI	023067-01	3/14/2025
pH 7.00a	6.97	s.u.	±0.1 s.u.	P	NO	-	MSI	023051-02	2/21/2025
pH 10.00a	10.	s.u.	±0.1 s.u.	P	NO	-	MSI	022361-01	12/27/2024
SC Zero (DI)	12	µS/cm	0-25 µS/cm	P	NO	-	Pace Labs	N/A (DI)	N/A (DI)
SC 2000	2010	µS/cm	±5%	P	NO	-	Geotech	3GF1197	Jun-24
ORP	235	mV	±15 mV	P	NO	-	InSitu	3GI1011	Jun-24
DO (Zero pt)	0.09	mg/L	±0.1	P	NO	-	Macron	#000228049	8/26/2025
DO (Saturated)	99.8	%	97-100%	P	NO	-	Pace Labs	N/A (DI)	N/A (DI)
Turbidity (DI)	0.0	NTU	<2 NTU	P	NO	-	Pace Labs	N/A (DI)	N/A (DI)

Approx. every 4 hrs, unless only one well

ICV (Initial Calibration Verification)						Time: 0949 236 @ 20°C			
Buffer	Check Value	Units	Range	Pass/Fail	Action Taken?	Manufacturer	Lot#	Exp.	
pH 4.00b	3.98	s.u.	±0.15 s.u.	P	-	Geotech	3GB1049	Feb-25	
pH 7.00b	6.93	s.u.	±0.15 s.u.	P	-	Geotech	2GF113	Jun-24	
pH 10.00b	10.13	s.u.	±0.15 s.u.	P	-	Geotech	3GA1134	Jan-25	
SC 1000	1030	µS/cm	±5%	P	-	Ricca	4209A12	Aug-24	

Approx. every 4 hrs, unless only one well

CCV (Continued Calibration Verification):						Time: 1617			
Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading	Manufacturer	Lot#	Exp.
pH 4.00a	4.05	s.u.	±0.1 s.u.	P	NO	-	MSI	023067-01	3/14/2025
pH 7.00a	7.02	s.u.	±0.1 s.u.	P	NO	-	MSI	023051-02	2/21/2025
pH 10.00a	10.10	s.u.	±0.1 s.u.	P	NO	-	MSI	022361-01	12/27/2024
SC 1000	989	µS/cm	±5%	P	NO	-	Ricca	4209A12	Aug-24
DO (Zero pt)	0.09	mg/L	±0.1 mg/L	P	NO	-	Macron	#000228049	8/26/2025
Turbidity (DI)	0.0	NTU	<2 NTU	P	NO	-	Pace Labs	N/A (DI)	N/A (DI)

Approx. every 4 hrs, unless only one well

Comments:

Signature: 	Date: 4/16/2024
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Multiparameter Meter Field Calibration Checklist									
Field Personnel: <u>Austin Moore</u>				Location: <u>Duck creek</u>					
Weather: <u>80-61° Cloudy/Rain wind 22 mph S</u>				Environment: <u>landfill</u>					
Multiparameter Water Meter		Make: <u>Horiaba</u>	Model: <u>U-5000</u>	Serial Number: <u>YL9K59HA</u>					
Water Level Meter		Make: <u>WT</u>	Model: <u>Heron</u>	Serial Number: <u>11FF2209305ML</u>					
Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading	Manufacturer	Lot#	Exp.
pH 4.00a	<u>3.99</u>	s.u.	±0.1 s.u.	<u>P</u>	<u>N</u>	<u>—</u>	MSI	023067-01	3/14/2025
pH 7.00a	<u>7.18</u>	s.u.	±0.1 s.u.	<u>F</u>	<u>Y</u>	<u>7.02</u>	MSI	023051-02	2/21/2025
pH 10.00a	<u>10.05</u>	s.u.	±0.1 s.u.	<u>P</u>	<u>N</u>	<u>—</u>	MSI	022361-01	12/27/2024
SC Zero (DI)	<u>0.0</u>	µS/cm	0<25 µS/cm	<u>I</u>	<u>I</u>	<u>—</u>	Pace Labs	N/A (DI)	N/A (DI)
SC 2000	<u>1920</u>	µS/cm	±5%	<u>I</u>	<u>I</u>	<u>—</u>	Geotech	3GF1197	Jun-24
ORP	<u>245</u>	mV	±15 mV	<u>I</u>	<u>I</u>	<u>—</u>	InSitu	3GI1011	Jun-24
DO (Zero pt)	<u>0.0</u>	mg/L	±0.1	<u>I</u>	<u>I</u>	<u>—</u>	Macron	#000228049	8/26/2025
DO (Saturated)	<u>98.6</u>	%	97-100%	<u>I</u>	<u>I</u>	<u>—</u>	Pace Labs	N/A (DI)	N/A (DI)
Turbidity (DI)	<u>0.0</u>	NTU	<2 NTU	<u>I</u>	<u>I</u>	<u>—</u>	Pace Labs	N/A (DI)	N/A (DI)
Approx. every 8 hrs, unless only one well									
ICV (Initial Calibration Verification)						Time: <u>0934</u>			
Buffer	Check Value	Units	Range	Pass/Fail	Action Taken?	Manufacturer	Lot#	Exp.	
pH 4.00b	<u>3.98</u>	s.u.	±0.15 s.u.	<u>P</u>	<u>N</u>	Geotech	3GB1049	Feb-25	
pH 7.00b	<u>7.03</u>	s.u.	±0.15 s.u.	<u>I</u>	<u>I</u>	Geotech	2GF113	Jun-24	
pH 10.00b	<u>10.01</u>	s.u.	±0.15 s.u.	<u>I</u>	<u>I</u>	Geotech	3GA1134	Jan-25	
SC 1000	<u>982</u>	µS/cm	±5%	<u>I</u>	<u>I</u>	Ricca	4209A12	Aug-24	
Approx. every 8 hrs, unless only one well									
CCV (Continued Calibration Verification):						Time: <u>1312</u>			
Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading	Manufacturer	Lot#	Exp.
pH 4.00a	<u>4.03</u>	s.u.	±0.1 s.u.	<u>P</u>	<u>N</u>	<u>—</u>	MSI	023067-01	3/14/2025
pH 7.00a	<u>7.05</u>	s.u.	±0.1 s.u.	<u>I</u>	<u>I</u>	<u>—</u>	MSI	023051-02	2/21/2025
pH 10.00a	<u>10.02</u>	s.u.	±0.1 s.u.	<u>I</u>	<u>I</u>	<u>—</u>	MSI	022361-01	12/27/2024
SC 1000	<u>990</u>	µS/cm	±5%	<u>I</u>	<u>I</u>	<u>—</u>	Ricca	4209A12	Aug-24
DO (Zero pt)	<u>0.0</u>	mg/L	±0.1 mg/L	<u>I</u>	<u>I</u>	<u>—</u>	Macron	#000228049	8/26/2025
Turbidity (DI)	<u>0.0</u>	NTU	<2 NTU	<u>I</u>	<u>I</u>	<u>—</u>	Pace Labs	N/A (DI)	N/A (DI)
Approx. every 8 hrs, unless only one well									
Comments:									
Signature: <u>Austin M</u>				Date: <u>16-Apr-24</u>					

Multiparameter Meter Field Calibration Checklist

Field Personnel: <u>AW</u>				Location: <u>Duck Creek</u>			
Weather: <u>67° - 78° High Wind SE cloudy</u>				Environment: <u>grassy, gravel</u>			
Multiparameter Water Meter		Make: <u>Horiba</u>	Model: <u>U-5000</u>	Serial Number: <u>AGJTR4XG</u>			
Water Level Meter		Make: <u>Heron</u>	Model: <u>Dipper-T</u>	Serial Number: <u>3717-T</u>			

Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading	Manufacturer	Lot#	Exp.
pH 4.00a	<u>4.01</u>	s.u.	±0.1 s.u.	<u>P</u>	<u>NO</u>	<u>N/A</u>	MSI	023067-01	3/14/2025
pH 7.00a	<u>7.02</u>	s.u.	±0.1 s.u.	<u>P</u>			MSI	023051-02	2/21/2025
pH 10.00a	<u>10.00</u>	s.u.	±0.1 s.u.	<u>P</u>			MSI	022361-01	12/27/2024
SC Zero (DI)	<u>0.0</u>	µS/cm	0 < 25 µS/cm	<u>P</u>			Pace Labs	N/A (DI)	N/A (DI)
SC 2000	<u>2020</u>	µS/cm	±5%	<u>P</u>			Geotech	3GF1197	Jun-24
ORP	<u>237</u>	mV	±15 mV	<u>P</u>			InSitu	3GI1011	Jun-24
DO (Zero pt)	<u>0.0</u>	mg/L	±0.1	<u>P</u>			Macron	#000228049	8/26/2025
DO (Saturated)	<u>98.2%</u>	%	97-100%	<u>P</u>			Pace Labs	N/A (DI)	N/A (DI)
Turbidity (DI)	<u>0.0</u>	NTU	< 2 NTU	<u>P</u>			Pace Labs	N/A (DI)	N/A (DI)

Approx. every 4 hrs, unless only one well

ICV (Initial Calibration Verification)						Time: <u>9:00</u>		
Buffer	Check Value	Units	Range	Pass/Fail	Action Taken?	Manufacturer	Lot#	Exp.
pH 4.00b	<u>4.04</u>	s.u.	±0.15 s.u.	<u>P</u>	<u>NO</u>	Geotech	3GB1049	Feb-25
pH 7.00b	<u>7.01</u>	s.u.	±0.15 s.u.	<u>P</u>		Geotech	2GF113	Jun-24
pH 10.00b	<u>10.03</u>	s.u.	±0.15 s.u.	<u>P</u>		Geotech	3GA1134	Jan-25
SC 1000	<u>1010</u>	µS/cm	±5%	<u>P</u>		Ricca	4209A12	Aug-24

Approx. every 4 hrs, unless only one well

CCV (Continued Calibration Verification):						Time: <u>11:21</u>			
Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading	Manufacturer	Lot#	Exp.
pH 4.00a	<u>4.01</u>	s.u.	±0.1 s.u.	<u>P</u>	<u>NO</u>	<u>N/A</u>	MSI	023067-01	3/14/2025
pH 7.00a	<u>7.04</u>	s.u.	±0.1 s.u.	<u>P</u>	<u>NO</u>		MSI	023051-02	2/21/2025
pH 10.00a	<u>10.05</u>	s.u.	±0.1 s.u.	<u>P</u>	<u>NO</u>		MSI	022361-01	12/27/2024
SC 1000	<u>1020</u>	µS/cm	±5%	<u>P</u>	<u>NO</u>		Ricca	4209A12	Aug-24
DO (Zero pt)	<u>0.0</u>	mg/L	±0.1 mg/L	<u>P</u>	<u>NO</u>		Macron	#000228049	8/26/2025
Turbidity (DI)	<u>0.0</u>	NTU	< 2 NTU	<u>P</u>	<u>NO</u>		Pace Labs	N/A (DI)	N/A (DI)

Approx. every 4 hrs, unless only one well

CCV (Continued Calibration Verification):						Time:			
Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading	Manufacturer	Lot#	Exp.
4.00a		s.u.	±0.1 s.u.				MSI	023067-01	3/14/2025
7.00a		s.u.	±0.1 s.u.				MSI	023051-02	2/21/2025
10.00a		s.u.	±0.1 s.u.				MSI	022361-01	12/27/2024
SC 1000		µS/cm	±5%				Ricca	4209A12	Aug-24
DO (Zero pt)		mg/L	±0.1 mg/L				Macron	#000228049	8/26/2025
Turbidity (DI)		NTU	< 2 NTU				Pace Labs	N/A (DI)	N/A (DI)

Comments:

Signature: <u>Andy Witek</u>	Date: <u>4/16/24</u>
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Multiparameter Meter Field Calibration Checklist									
Field Personnel: <i>Aaron Pemberton</i>				Location: <i>Duck Creek</i>					
Weather: <i>59-67° cloudy w/ SW 14 mph</i>				Environment: <i>grass, dirt</i>					
Multiparameter Water Meter		Make: <i>Heraon</i>	Model: <i>US500</i>	Serial Number: <i>PL26KJ03</i>					
Water Level Meter		Make: <i>Heraon</i>	Model: <i>Digart</i>	Serial Number: <i>14FF2202131ML</i>					
Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading	Manufacturer	Lot#	Exp.
pH 4.00a	<i>3.99</i>	s.u.	±0.1 s.u.	<i>P</i>	<i>NO</i>	<i>—</i>	MSI	023067-01	3/14/2025
pH 7.00a	<i>7.07</i>	s.u.	±0.1 s.u.	<i>P</i>	<i>NO</i>	<i>—</i>	MSI	023051-02	2/21/2025
pH 10.00a	<i>10.01</i>	s.u.	±0.1 s.u.	<i>P</i>	<i>NO</i>	<i>—</i>	MSI	022361-01	12/27/2024
SC Zero (DI)	<i>0.0</i>	µS/cm	0-25 µS/cm	<i>P</i>	<i>NO</i>	<i>—</i>	Pace Labs	N/A (DI)	N/A (DI)
SC 2000	<i>2020</i>	µS/cm	±5%	<i>P</i>	<i>NO</i>	<i>—</i>	Geotech	3GF1197	Jun-24
ORP	<i>242</i>	mV	±15 mV	<i>P</i>	<i>NO</i>	<i>—</i>	InSitu	3GI1011	Jun-24
DO (Zero pt)	<i>0.09</i>	mg/L	±0.1	<i>P</i>	<i>NO</i>	<i>—</i>	Macron	#000228049	8/26/2025
DO (Saturated)	<i>98.6</i>	%	97-100%	<i>P</i>	<i>NO</i>	<i>—</i>	Pace Labs	N/A (DI)	N/A (DI)
Turbidity (DI)	<i>0.0</i>	NTU	<2 NTU	<i>P</i>	<i>NO</i>	<i>—</i>	Pace Labs	N/A (DI)	N/A (DI)
Approx. every 4 hrs, unless only one well									
ICV (Initial Calibration Verification)					Time: <i>0956</i> <i>237 @ 19°C</i>				
Buffer	Check Value	Units	Range	Pass/Fail	Action Taken?	Manufacturer	Lot#	Exp.	
pH 4.00b	<i>3.97</i>	s.u.	±0.15 s.u.	<i>P</i>	<i>—</i>	Geotech	3GB1049	Feb-25	
pH 7.00b	<i>6.93</i>	s.u.	±0.15 s.u.	<i>P</i>	<i>—</i>	Geotech	2GF113	Jun-24	
pH 10.00b	<i>10.07</i>	s.u.	±0.15 s.u.	<i>P</i>	<i>—</i>	Geotech	3GA1134	Jan-25	
SC 1000	<i>994</i>	µS/cm	±5%	<i>P</i>	<i>—</i>	Ricca	4209A12	Aug-24	
Approx. every 4 hrs, unless only one well									
CCV (Continued Calibration Verification):					Time: <i>1548</i>				
Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading	Manufacturer	Lot#	Exp.
pH 4.00a	<i>4.07</i>	s.u.	±0.1 s.u.	<i>P</i>	<i>NO</i>	<i>—</i>	MSI	023067-01	3/14/2025
pH 7.00a	<i>7.03</i>	s.u.	±0.1 s.u.	<i>P</i>	<i>NO</i>	<i>—</i>	MSI	023051-02	2/21/2025
pH 10.00a	<i>10.10</i>	s.u.	±0.1 s.u.	<i>P</i>	<i>NO</i>	<i>—</i>	MSI	022361-01	12/27/2024
SC 1000	<i>1040</i>	µS/cm	±5%	<i>P</i>	<i>NO</i>	<i>—</i>	Ricca	4209A12	Aug-24
DO (Zero pt)	<i>0.09</i>	mg/L	±0.1 mg/L	<i>P</i>	<i>NO</i>	<i>—</i>	Macron	#000228049	8/26/2025
Turbidity (DI)	<i>0.0</i>	NTU	<2 NTU	<i>P</i>	<i>NO</i>	<i>—</i>	Pace Labs	N/A (DI)	N/A (DI)
Approx. every 4 hrs, unless only one well									
Comments:									
Signature: <i>[Signature]</i>				Date: <i>4/17/2024</i>					

Multiparameter Meter Field Calibration Checklist

Field Personnel: JD				Location: Duck Creek					
Weather: 62-67°F cloudy wind WSW 21-41 mph				Environment: grass, woods					
Multiparameter Water Meter		Make: Aquatroll	Model: 600	Serial Number: 846000					
Water Level Meter		Make: Heron	Model: Dipper-T	Serial Number: 11FF2209305ML					
Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading	Manufacturer	Lot#	Exp.
pH 4.00a	3.96	s.u.	±0.1 s.u.	P	No	NA	MSI	023067-01	3/14/2025
pH 7.00a	6.96	s.u.	±0.1 s.u.	I	I	I	MSI	023051-02	2/21/2025
pH 10.00a	9.95	s.u.	±0.1 s.u.	I	I	I	MSI	022361-01	12/27/2024
SC Zero (DI)	3.37	µS/cm	0<25 µS/cm	I	I	I	Pace Labs	N/A (DI)	N/A (DI)
SC 2000	1976.0	µS/cm	±5%	I	I	I	Geotech	3GF1197	Jun-24
ORP	228.1	mV	±15 mV	I	I	I	InSitu	3GI1011	Jun-24
DO (Zero pt)	0.09	mg/L	±0.1	I	I	I	Macron	#000228049	8/26/2025
DO (Saturated)	99.25	%	97-100%	I	I	I	Pace Labs	N/A (DI)	N/A (DI)
Turbidity (DI)	0.81	NTU	<2 NTU	I	I	I	Pace Labs	N/A (DI)	N/A (DI)
Approx. every 4 hrs, unless only one well									
ICV (Initial Calibration Verification)						Time: 0922			
Buffer	Check Value	Units	Range	Pass/Fail	Action Taken?	Manufacturer	Lot#	Exp.	
pH 4.00b	3.94	s.u.	±0.15 s.u.	P	NA	Geotech	3GB1049	Feb-25	
pH 7.00b	6.86	s.u.	±0.15 s.u.	I	I	Geotech	2GF113	Jun-24	
pH 10.00b	9.88	s.u.	±0.15 s.u.	I	I	Geotech	3GA1134	Jan-25	
SC 1000	962.62	µS/cm	±5%	I	I	Ricca	4209A12	Aug-24	
Approx. every 4 hrs, unless only one well									
CCV (Continued Calibration Verification):						Time: 1530			
Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading	Manufacturer	Lot#	Exp.
pH 4.00a	4.06	s.u.	±0.1 s.u.	P	No	NA	MSI	023067-01	3/14/2025
pH 7.00a	7.04	s.u.	±0.1 s.u.	I	I	I	MSI	023051-02	2/21/2025
pH 10.00a	10.06	s.u.	±0.1 s.u.	I	I	I	MSI	022361-01	12/27/2024
SC 1000	958.19	µS/cm	±5%	I	I	I	Ricca	4209A12	Aug-24
DO (Zero pt)	0.07	mg/L	±0.1 mg/L	I	I	I	Macron	#000228049	8/26/2025
Turbidity (DI)	1.33	NTU	<2 NTU	I	I	I	Pace Labs	N/A (DI)	N/A (DI)
Approx. every 4 hrs, unless only one well									
Comments:									
Signature: [Signature]						Date: 4/17/24			

Multiparameter Meter Field Calibration Checklist

Field Personnel: <u>Austin Moore</u>				Location: <u>Duck Creek</u>			
Weather: <u>67°-54° windy wind 19 mph W</u>				Environment: <u>Land fill</u>			
Multiparameter Water Meter		Make: <u>Horiaba</u>	Model: <u>V-5000</u>	Serial Number: <u>YL9KJ9HA</u>			
Water Level Meter		Make: <u>WT</u>	Model: <u>Heron</u>	Serial Number: <u>19FF2111192HB</u>			

Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading	Manufacturer	Lot#	Exp.
pH 4.00a	<u>3.96</u>	s.u.	±0.1 s.u.	<u>P</u>	<u>N</u>	<u>---</u>	MSI	023067-01	3/14/2025
pH 7.00a	<u>7.03</u>	s.u.	±0.1 s.u.	<u>P</u>	<u>N</u>	<u>---</u>	MSI	023051-02	2/21/2025
pH 10.00a	<u>10.03</u>	s.u.	±0.1 s.u.	<u>P</u>	<u>N</u>	<u>---</u>	MSI	022361-01	12/27/2024
SC Zero (DI)	<u>130</u>	µS/cm	0<25 µS/cm	<u>F</u>	<u>K</u>	<u>0.0</u>	Pace Labs	N/A (DI)	N/A (DI)
SC 2000	<u>1820</u>	µS/cm	±5%	<u>F</u>	<u>K</u>	<u>2000</u>	Geotech	3GF1197	Jun-24
ORP	<u>221</u>	mV	±15 mV	<u>P</u>	<u>N</u>	<u>---</u>	InSitu	3GI1011	Jun-24
DO (Zero pt)	<u>0.0</u>	mg/L	±0.1	<u>P</u>	<u>N</u>	<u>---</u>	Macron	#000228049	8/26/2025
DO (Saturated)	<u>9.1</u>	%	97-100%	<u>P</u>	<u>N</u>	<u>---</u>	Pace Labs	N/A (DI)	N/A (DI)
Turbidity (DI)	<u>0.0</u>	NTU	<2 NTU	<u>P</u>	<u>N</u>	<u>---</u>	Pace Labs	N/A (DI)	N/A (DI)

Approx. every 4 hrs, unless only one well

ICV (Initial Calibration Verification)					Time: <u>0910</u>			
Buffer	Check Value	Units	Range	Pass/Fail	Action Taken?	Manufacturer	Lot#	Exp.
pH 4.00b	<u>3.99</u>	s.u.	±0.15 s.u.	<u>P</u>	<u>---</u>	Geotech	3GB1049	Feb-25
pH 7.00b	<u>7.32</u>	s.u.	±0.15 s.u.	<u>F</u>	<u>Y 7.01</u>	Geotech	2GF113	Jun-24
pH 10.00b	<u>10.58</u>	s.u.	±0.15 s.u.	<u>F</u>	<u>Y 10.00</u>	Geotech	3GA1134	Jan-25
SC 1000	<u>1040</u>	µS/cm	±5%	<u>P</u>	<u>---</u>	Ricca	4209A12	Aug-24

Approx. every 4 hrs, unless only one well

CCV (Continued Calibration Verification):					Time: <u>1533</u>				
Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading	Manufacturer	Lot#	Exp.
pH 4.00a	<u>6.03</u>	s.u.	±0.1 s.u.	<u>P</u>	<u>N</u>	<u>---</u>	MSI	023067-01	3/14/2025
pH 7.00a	<u>7.05</u>	s.u.	±0.1 s.u.	<u>P</u>	<u>N</u>	<u>---</u>	MSI	023051-02	2/21/2025
pH 10.00a	<u>10.02</u>	s.u.	±0.1 s.u.	<u>P</u>	<u>N</u>	<u>---</u>	MSI	022361-01	12/27/2024
SC 1000	<u>1030</u>	µS/cm	±5%	<u>P</u>	<u>N</u>	<u>---</u>	Ricca	4209A12	Aug-24
DO (Zero pt)	<u>0.0</u>	mg/L	±0.1 mg/L	<u>P</u>	<u>N</u>	<u>---</u>	Macron	#000228049	8/26/2025
Turbidity (DI)	<u>0.0</u>	NTU	<2 NTU	<u>P</u>	<u>N</u>	<u>---</u>	Pace Labs	N/A (DI)	N/A (DI)

Approx. every 4 hrs, unless only one well

CCV (Continued Calibration Verification):					Time:				
Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading	Manufacturer	Lot#	Exp.
4.00a		s.u.	±0.1 s.u.				MSI	023067-01	3/14/2025
7.00a		s.u.	±0.1 s.u.				MSI	023051-02	2/21/2025
10.00a		s.u.	±0.1 s.u.				MSI	022361-01	12/27/2024
SC 1000		µS/cm	±5%				Ricca	4209A12	Aug-24
DO (Zero pt)		mg/L	±0.1 mg/L				Macron	#000228049	8/26/2025
Turbidity (DI)		NTU	<2 NTU				Pace Labs	N/A (DI)	N/A (DI)

Comments:

Signature: <u>Austin AM</u>	Date: <u>17-Apr-24</u>
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Multiparameter Meter Field Calibration Checklist

Field Personnel:	AW			Location:	Duck Creek				
Weather:	57°-67° 8 mph E windy			Environment:	Grassy, gravel				
Multiparameter Water Meter	Make:	Horiba	Model:	U-5000	Serial Number:	AGJTK4XG			
Water Level Meter	Make:	Heron	Model:	Dipps-T	Serial Number:	3717-T			
Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading	Manufacturer	Lot#	Exp.
pH 4.00a	3.98	s.u.	±0.1 s.u.	P	NO	N/A	MSI	023067-01	3/14/2025
pH 7.00a	7.07	s.u.	±0.1 s.u.	P	NO		MSI	023051-02	2/21/2025
pH 10.00a	10.03	s.u.	±0.1 s.u.	P	NO		MSI	022361-01	12/27/2024
SC Zero (DI)	0.0	µS/cm	0-25 µS/cm	P	NO		Pace Labs	N/A (DI)	N/A (DI)
SC 2000	2010	µS/cm	±5%	P	NO		Geotech	3GF1197	Jun-24
ORP	240	mV	±15 mV	P	NO		InSitu	3GI1011	Jun-24
DO (Zero pt)	0.0	mg/L	±0.1	P	NO		Macron	#000228049	8/26/2025
DO (Saturated)	99.7%	%	97-100%	P	NO		Pace Labs	N/A (DI)	N/A (DI)
Turbidity (DI)	0.0	NTU	<2 NTU	P	NO		Pace Labs	N/A (DI)	N/A (DI)

Approx. every 4 hrs, unless only one well

ICV (Initial Calibration Verification)					Time:	9:04			
Buffer	Check Value	Units	Range	Pass/Fail	Action Taken?	Manufacturer	Lot#	Exp.	
pH 4.00b	4.01	s.u.	±0.15 s.u.	P	NO	Geotech	3GB1049	Feb-25	
pH 7.00b	6.98	s.u.	±0.15 s.u.	P	NO	Geotech	2GF113	Jun-24	
pH 10.00b	10.02	s.u.	±0.15 s.u.	P	NO	Geotech	3GA1134	Jan-25	
SC 1000	1040	µS/cm	±5%	P	NO	Ricca	4209A12	Aug-24	

Approx. every 4 hrs, unless only one well

CCV (Continued Calibration Verification):					Time:	1500			
Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading	Manufacturer	Lot#	Exp.
pH 4.00a	4.03	s.u.	±0.1 s.u.	P	NO	N/A	MSI	023067-01	3/14/2025
pH 7.00a	7.03	s.u.	±0.1 s.u.	P			MSI	023051-02	2/21/2025
pH 10.00a	10.03	s.u.	±0.1 s.u.	P			MSI	022361-01	12/27/2024
SC 1000	1010	µS/cm	±5%	P			Ricca	4209A12	Aug-24
DO (Zero pt)	0.00	mg/L	±0.1 mg/L	P			Macron	#000228049	8/26/2025
Turbidity (DI)	0.00	NTU	<2 NTU	P			Pace Labs	N/A (DI)	N/A (DI)

Approx. every 4 hrs, unless only one well

CCV (Continued Calibration Verification):					Time:				
Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading	Manufacturer	Lot#	Exp.
4.00a		s.u.	±0.1 s.u.				MSI	023067-01	3/14/2025
7.00a		s.u.	±0.1 s.u.				MSI	023051-02	2/21/2025
10.00a		s.u.	±0.1 s.u.				MSI	022361-01	12/27/2024
SC 1000		µS/cm	±5%				Ricca	4209A12	Aug-24
DO (Zero pt)		mg/L	±0.1 mg/L				Macron	#000228049	8/26/2025
Turbidity (DI)		NTU	<2 NTU				Pace Labs	N/A (DI)	N/A (DI)

Comments:

Signature:	<i>Andy Winters</i>	Date:	4/18/24
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Multiparameter Meter Field Calibration Checklist									
Field Personnel: <u>Aaron Remberton</u>				Location: <u>Duck Creek</u>					
Weather: <u>58° - 67° cloudy NE 8-mph</u>				Environment: <u>grass, gravel</u>					
Multiparameter Water Meter		Make: <u>Hanna</u>	Model: <u>US000</u>	Serial Number: <u>PW2 64503</u>					
Water Level Meter		Make: <u>Solinst</u>	Model: <u>101</u>	Serial Number: <u>33450</u>					
Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading	Manufacturer	Lot#	Exp.
pH 4.00a	<u>4.07</u>	s.u.	±0.1 s.u.	<u>P</u>	<u>NO</u>	<u>-</u>	MSI	023067-01	3/14/2025
pH 7.00a	<u>6.93</u>	s.u.	±0.1 s.u.	<u>P</u>	<u>NO</u>	<u>-</u>	MSI	023051-02	2/21/2025
pH 10.00a	<u>10.10</u>	s.u.	±0.1 s.u.	<u>P</u>	<u>NO</u>	<u>-</u>	MSI	022361-01	12/27/2024
SC Zero (DI)	<u>0.0</u>	µS/cm	0-25 µS/cm	<u>P</u>	<u>NO</u>	<u>-</u>	Pace Labs	N/A (DI)	N/A (DI)
SC 2000	<u>2080</u>	µS/cm	±5%	<u>P</u>	<u>NO</u>	<u>-</u>	Geotech	3GF1197	Jun-24
ORP	<u>245</u>	mV	±15 mV	<u>P</u>	<u>NO</u>	<u>-</u>	InSitu	3GI1011	Jun-24
DO (Zero pt)	<u>0.00</u>	mg/L	±0.1	<u>P</u>	<u>NO</u>	<u>-</u>	Macron	#000228049	8/26/2025
DO (Saturated)	<u>97.8</u>	%	97-100%	<u>P</u>	<u>NO</u>	<u>-</u>	Pace Labs	N/A (DI)	N/A (DI)
Turbidity (DI)	<u>0.0</u>	NTU	<2 NTU	<u>P</u>	<u>NO</u>	<u>-</u>	Pace Labs	N/A (DI)	N/A (DI)
Approx. every 4 hrs, unless only one well									
ICV (Initial Calibration Verification)					Time: <u>0936</u>				
Buffer	Check Value	Units	Range	Pass/Fail	Action Taken?	Manufacturer	Lot#	Exp.	
pH 4.00b	<u>3.99</u>	s.u.	±0.15 s.u.	<u>P</u>	<u>-</u>	Geotech	3GB1049	Feb-25	
pH 7.00b	<u>6.87</u>	s.u.	±0.15 s.u.	<u>P</u>	<u>-</u>	Geotech	2GF113	Jun-24	
pH 10.00b	<u>10.08</u>	s.u.	±0.15 s.u.	<u>P</u>	<u>-</u>	Geotech	3GA1134	Jan-25	
SC 1000	<u>1040</u>	µS/cm	±5%	<u>P</u>	<u>-</u>	Ricca	4209A12	Aug-24	
Approx. every 4 hrs, unless only one well									
CCV (Continued Calibration Verification):					Time: <u>1511</u>				
Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading	Manufacturer	Lot#	Exp.
pH 4.00a	<u>4.07</u>	s.u.	±0.1 s.u.	<u>P</u>	<u>NO</u>	<u>-</u>	MSI	023067-01	3/14/2025
pH 7.00a	<u>7.08</u>	s.u.	±0.1 s.u.	<u>P</u>	<u>NO</u>	<u>-</u>	MSI	023051-02	2/21/2025
pH 10.00a	<u>10.10</u>	s.u.	±0.1 s.u.	<u>P</u>	<u>NO</u>	<u>-</u>	MSI	022361-01	12/27/2024
SC 1000	<u>086</u>	µS/cm	±5%	<u>P</u>	<u>NO</u>	<u>-</u>	Ricca	4209A12	Aug-24
DO (Zero pt)	<u>0.04</u>	mg/L	±0.1 mg/L	<u>P</u>	<u>NO</u>	<u>-</u>	Macron	#000228049	8/26/2025
Turbidity (DI)	<u>0.0</u>	NTU	<2 NTU	<u>P</u>	<u>NO</u>	<u>-</u>	Pace Labs	N/A (DI)	N/A (DI)
Approx. every 4 hrs, unless only one well									
Comments:									
Signature: <u>[Signature]</u>					Date: <u>4/18/2024</u>				

Multiparameter Meter Field Calibration Checklist									
Field Personnel: JD				Location: Duck Creek					
Weather: 57-64°F cloudy wind ENE 10-16 mph				Environment: grass, weeds					
Multiparameter Water Meter		Make: Aquatrell	Model: G00	Serial Number: R46000					
Water Level Meter		Make: Heron	Model: Dipper-T	Serial Number: 11FF2209305ML					
Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading	Manufacturer	Lot#	Exp.
pH 4.00a	3.97	s.u.	±0.1 s.u.	P	No	NA	MSI	023067-01	3/14/2025
pH 7.00a	6.95	s.u.	±0.1 s.u.	I	I	I	MSI	023051-02	2/21/2025
pH 10.00a	10.00	s.u.	±0.1 s.u.	I	I	I	MSI	022361-01	12/27/2024
SC Zero (DI)	7.35	µS/cm	0<25 µS/cm	I	I	I	Pace Labs	N/A (DI)	N/A (DI)
SC 2000	1990.8	µS/cm	±5%	I	I	I	Geotech	3GF1197	Jun-24
ORP	235.8	mV	±15 mV	I	I	I	InSitu	3GI1011	Jun-24
DO (Zero pt)	0.06	mg/L	±0.1	I	I	I	Macron	#000228049	8/26/2025
DO (Saturated)	99.30	%	97-100%	I	I	I	Pace Labs	N/A (DI)	N/A (DI)
Turbidity (DI)	0.05	NTU	<2 NTU	I	I	I	Pace Labs	N/A (DI)	N/A (DI)
Approx. every 8 hrs, unless only one well									
ICV (Initial Calibration Verification)					Time: 0925				
Buffer	Check Value	Units	Range	Pass/Fail	Action Taken?	Manufacturer	Lot#	Exp.	
pH 4.00b	3.94	s.u.	±0.15 s.u.	P	NA	Geotech	3GB1049	Feb-25	
pH 7.00b	6.85	s.u.	±0.15 s.u.	I	I	Geotech	2GF113	Jun-24	
pH 10.00b	9.94	s.u.	±0.15 s.u.	I	I	Geotech	3GA1134	Jan-25	
SC 1000	981.3	µS/cm	±5%	I	I	Ricca	4209A12	Aug-24	
Approx. every 8 hrs, unless only one well									
CCV (Continued Calibration Verification):					Time: 1535				
Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading	Manufacturer	Lot#	Exp.
pH 4.00a	4.08	s.u.	±0.1 s.u.	P	No	NA	MSI	023067-01	3/14/2025
pH 7.00a	7.06	s.u.	±0.1 s.u.	I	I	I	MSI	023051-02	2/21/2025
pH 10.00a	10.06	s.u.	±0.1 s.u.	I	I	I	MSI	022361-01	12/27/2024
SC 1000	963.8	µS/cm	±5%	I	I	I	Ricca	4209A12	Aug-24
DO (Zero pt)	0.08	mg/L	±0.1 mg/L	I	I	I	Macron	#000228049	8/26/2025
Turbidity (DI)	0.51	NTU	<2 NTU	I	I	I	Pace Labs	N/A (DI)	N/A (DI)
Approx. every 8 hrs, unless only one well									
Comments:									
Signature: [Signature]				Date: 7/18/24					

Multiparameter Meter Field Calibration Checklist

Field Personnel: <u>Arnon pemberon</u>				Location: <u>Duck creek</u>					
Weather: <u>51°-65° Sun</u> <u>windy SW</u>				Environment: <u>grass, SW</u>					
Multiparameter Water Meter		Make: <u>A7</u>	Model: <u>600</u>	Serial Number: <u>846000</u>					
Water Level Meter		Make: <u>Heron</u>	Model: <u>DIPART</u>	Serial Number: <u>11FF2204305ML</u>					
Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading	Manufacturer	Lot#	Exp.
pH 4.00a	<u>4.07</u>	s.u.	±0.1 s.u.	<u>P</u>	<u>NO</u>	<u>-</u>	MSI	023067-01	3/14/2025
pH 7.00a	<u>6.96</u>	s.u.	±0.1 s.u.	<u>P</u>	<u>NO</u>	<u>-</u>	MSI	023051-02	2/21/2025
pH 10.00a	<u>10.00</u>	s.u.	±0.1 s.u.	<u>P</u>	<u>NO</u>	<u>-</u>	MSI	022361-01	12/27/2024
SC Zero (DI)	<u>19.70</u>	µS/cm	0-25 µS/cm	<u>P</u>	<u>NO</u>	<u>-</u>	Pace Labs	N/A (DI)	N/A (DI)
SC 2000	<u>2029.1</u>	µS/cm	±5%	<u>P</u>	<u>NO</u>	<u>-</u>	Geotech	3GF1197	Jun-24
ORP	<u>231.0</u>	mV	±15 mV	<u>P</u>	<u>NO</u>	<u>-</u>	InSitu	3GI1011	Jun-24
DO (Zero pt)	<u>0.04</u>	mg/L	±0.1	<u>P</u>	<u>NO</u>	<u>-</u>	Macron	#000228049	8/26/2025
DO (Saturated)	<u>98.20</u>	%	97-100%	<u>P</u>	<u>NO</u>	<u>-</u>	Pace Labs	N/A (DI)	N/A (DI)
Turbidity (DI)	<u>0.00</u>	NTU	<2 NTU	<u>P</u>	<u>NO</u>	<u>-</u>	Pace Labs	N/A (DI)	N/A (DI)
Approx. every 4 hrs, unless only one well									
ICV (Initial Calibration Verification)						Time: <u>0918</u>			
Buffer	Check Value	Units	Range	Pass/Fail	Action Taken?	Manufacturer	Lot#	Exp.	
pH 4.00b	<u>4.03</u>	s.u.	±0.15 s.u.	<u>P</u>	<u>-</u>	Geotech	3GB1049	Feb-25	
pH 7.00b	<u>6.87</u>	s.u.	±0.15 s.u.	<u>P</u>	<u>-</u>	Geotech	2GF113	Jun-24	
pH 10.00b	<u>9.96</u>	s.u.	±0.15 s.u.	<u>P</u>	<u>-</u>	Geotech	3GA1134	Jan-25	
SC 1000	<u>155.48</u>	µS/cm	±5%	<u>P</u>	<u>-</u>	Ricca	4209A12	Aug-24	
Approx. every 4 hrs, unless only one well									
CCV (Continued Calibration Verification):						Time: <u>1536</u>			
Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading	Manufacturer	Lot#	Exp.
pH 4.00a	<u>4.08</u>	s.u.	±0.1 s.u.				MSI	023067-01	3/14/2025
pH 7.00a	<u>6.94</u>	s.u.	±0.1 s.u.				MSI	023051-02	2/21/2025
pH 10.00a	<u>10.02</u>	s.u.	±0.1 s.u.				MSI	022361-01	12/27/2024
SC 1000	<u>164.7</u>	µS/cm	±5%				Ricca	4209A12	Aug-24
DO (Zero pt)	<u>0.09</u>	mg/L	±0.1 mg/L				Macron	#000228049	8/26/2025
Turbidity (DI)	<u>0.0</u>	NTU	<2 NTU				Pace Labs	N/A (DI)	N/A (DI)
Approx. every 4 hrs, unless only one well									
Comments:									
Signature: <u>[Signature]</u>						Date: <u>4/22/2024</u>			

Multiparameter Meter Field Calibration Checklist

Field Personnel:	AW			Location:	Duck Creek				
Weather:	50°-65° Sunny 8mph Wind SW			Environment:	Grassy, gravel				
Multiparameter Water Meter	Make:	Horiba	Model:	U-5000	Serial Number:	AGJTK4XG			
Water Level Meter	Make:	Heron	Model:	Dipper-T	Serial Number:	3717-T			
Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading	Manufacturer	Lot#	Exp.
pH 4.00a	4.02	s.u.	±0.1 s.u.	P	NO	NO	MSI	023067-01	3/14/2025
pH 7.00a	7.03	s.u.	±0.1 s.u.	P	NO	NO	MSI	023051-02	2/21/2025
pH 10.00a	10.01	s.u.	±0.1 s.u.	P	NO	NO	MSI	022361-01	12/27/2024
SC Zero (DI)	0.0	µS/cm	0<25 µS/cm	P	NO	NO	Pace Labs	N/A (DI)	N/A (DI)
SC 2000	2050	µS/cm	±5%	P	NO	NO	Geotech	3GF1197	Jun-24
ORP	238	mV	±15 mV	P	NO	NO	InSitu	3GI1011	Jun-24
DO (Zero pt)	0.0	mg/L	±0.1	P	NO	NO	Macron	#000228049	8/26/2025
DO (Saturated)	97.720	%	97-100%	P	NO	NO	Pace Labs	N/A (DI)	N/A (DI)
Turbidity (DI)	0.0	NTU	<2 NTU	P	NO	NO	Pace Labs	N/A (DI)	N/A (DI)
Approx. every 4 hrs, unless only one well									
ICV (Initial Calibration Verification)					Time:	9:01			
Buffer	Check Value	Units	Range	Pass/Fail	Action Taken?	Manufacturer	Lot#	Exp.	
pH 4.00b	3.98	s.u.	±0.15 s.u.	P	NO	Geotech	3GB1049	Feb-25	
pH 7.00b	7.07	s.u.	±0.15 s.u.	P	NO	Geotech	2GF113	Jun-24	
pH 10.00b	10.04	s.u.	±0.15 s.u.	P	NO	Geotech	3GA1134	Jan-25	
SC 1000	1050	µS/cm	±5%	P	NO	Ricca	4209A12	Aug-24	
Approx. every 4 hrs, unless only one well									
CCV (Continued Calibration Verification):					Time:	1530			
Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading	Manufacturer	Lot#	Exp.
pH 4.00a	4.04	s.u.	±0.1 s.u.	P	NO	N/A	MSI	023067-01	3/14/2025
pH 7.00a	7.01	s.u.	±0.1 s.u.	P	NO		MSI	023051-02	2/21/2025
pH 10.00a	10.03	s.u.	±0.1 s.u.	P	NO		MSI	022361-01	12/27/2024
SC 1000	1040	µS/cm	±5%	P	NO		Ricca	4209A12	Aug-24
DO (Zero pt)	0.0	mg/L	±0.1 mg/L	P	NO		Macron	#000228049	8/26/2025
Turbidity (DI)	0.0	NTU	<2 NTU	P	NO		Pace Labs	N/A (DI)	N/A (DI)
Approx. every 4 hrs, unless only one well									
CCV (Continued Calibration Verification):					Time:				
Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading	Manufacturer	Lot#	Exp.
4.00a		s.u.	±0.1 s.u.				MSI	023067-01	3/14/2025
7.00a		s.u.	±0.1 s.u.				MSI	023051-02	2/21/2025
10.00a		s.u.	±0.1 s.u.				MSI	022361-01	12/27/2024
SC 1000		µS/cm	±5%				Ricca	4209A12	Aug-24
DO (Zero pt)		mg/L	±0.1 mg/L				Macron	#000228049	8/26/2025
Turbidity (DI)		NTU	<2 NTU				Pace Labs	N/A (DI)	N/A (DI)
Comments:									
Signature:	Andy Wetstein				Date:	4/22/24			

Multiparameter Meter Field Calibration Checklist

Field Personnel:	Aaron Kimberlin				Location:	Duck Creek			
Weather:	51°-60° Rainy SW 10mph				Environment:	grass, gravel, mud			
Multiparameter Water Meter	Make:	HORIBA	Model:	US000	Serial Number:	PWZ 643A3			
Water Level Meter	Make:	Heron	Model:	D-PORT	Serial Number:	14FK2202131ML			
Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading	Manufacturer	Lot#	Exp.
pH 4.00a	4.00	s.u.	±0.1 s.u.	P	NO	—	MSI	023067-01	3/14/2025
pH 7.00a	7.03	s.u.	±0.1 s.u.	P	NO	—	MSI	023051-02	2/21/2025
pH 10.00a	10.05	s.u.	±0.1 s.u.	P	NO	—	MSI	022361-01	12/27/2024
SC Zero (DI)	0.0	µS/cm	0-25 µS/cm	P	NO	—	Pace Labs	N/A (DI)	N/A (DI)
SC 2000	2060	µS/cm	±5%	P	NO	—	Geotech	3GF1197	Jun-24
ORP	239	mV	±15 mV	P	NO	—	InSitu	3GI1011	Jun-24
DO (Zero pt)	0.04	mg/L	±0.1	P	NO	—	Macron	#000228049	8/26/2025
DO (Saturated)	99.7	%	97-100%	P	NO	—	Pace Labs	N/A (DI)	N/A (DI)
Turbidity (DI)	0.0	NTU	<2 NTU	P	NO	—	Pace Labs	N/A (DI)	N/A (DI)

Approx. every 4 hrs, unless only one well

ICV (Initial Calibration Verification)						Time:	0950		
Buffer	Check Value	Units	Range	Pass/Fail	Action Taken?	Manufacturer	Lot#	Exp.	
pH 4.00b	4.01	s.u.	±0.15 s.u.	P	—	Geotech	3GB1049	Feb-25	
pH 7.00b	6.89	s.u.	±0.15 s.u.	P	—	Geotech	2GF113	Jun-24	
pH 10.00b	10.07	s.u.	±0.15 s.u.	P	—	Geotech	3GA1134	Jan-25	
SC 1000	1040	µS/cm	±5%	P	—	Ricca	4209A12	Aug-24	

Approx. every 4 hrs, unless only one well

CCV (Continued Calibration Verification):						Time:	1514		
Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading	Manufacturer	Lot#	Exp.
pH 4.00a	4.04	s.u.	±0.1 s.u.	P	NO	—	MSI	023067-01	3/14/2025
pH 7.00a	7.03	s.u.	±0.1 s.u.	P	NO	—	MSI	023051-02	2/21/2025
pH 10.00a	10.10	s.u.	±0.1 s.u.	P	NO	—	MSI	022361-01	12/27/2024
SC 1000	1030	µS/cm	±5%	P	NO	—	Ricca	4209A12	Aug-24
DO (Zero pt)	0.09	mg/L	±0.1 mg/L	P	NO	—	Macron	#000228049	8/26/2025
Turbidity (DI)	0.0	NTU	<2 NTU	P	NO	—	Pace Labs	N/A (DI)	N/A (DI)

Approx. every 4 hrs, unless only one well

Comments:

Signature:		Date:	4/23/2024
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Multiparameter Meter Field Calibration Checklist

Field Personnel: JD				Location: Duck Creek					
Weather: 54-59°F cloudy rainy wind WNW 12-16				Environment: grass, weeds					
Multiparameter Water Meter		Make: Aquatrol II	Model: 600	Serial Number: 846000					
Water Level Meter		Make: Hero	Model: Dipper-T	Serial Number: 11FF2209305ML					
Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading	Manufacturer	Lot#	Exp.
pH 4.00a	3.98	s.u.	±0.1 s.u.	P	No	NA	MSI	023067-01	3/14/2025
pH 7.00a	6.93	s.u.	±0.1 s.u.	I	I	I	MSI	023051-02	2/21/2025
pH 10.00a	9.99	s.u.	±0.1 s.u.	I	I	I	MSI	022361-01	12/27/2024
SC Zero (DI)	0.23	µS/cm	0<25 µS/cm	I	I	I	Pace Labs	N/A (DI)	N/A (DI)
SC 2000	1980.2	µS/cm	±5%	I	I	I	Geotech	3GF1197	Jun-24
ORP	233.8	mV	±15 mV	I	I	I	InSitu	3GI1011	Jun-24
DO (Zero pt)	0.06	mg/L	±0.1	I	I	I	Macron	#000228049	8/26/2025
DO (Saturated)	99.15	%	97-100%	I	I	I	Pace Labs	N/A (DI)	N/A (DI)
Turbidity (DI)	0.51	NTU	<2 NTU	I	I	I	Pace Labs	N/A (DI)	N/A (DI)
Approx. every 8 hrs, unless only one well									
ICV (Initial Calibration Verification)				Time: 0942					
Buffer	Check Value	Units	Range	Pass/Fail	Action Taken?		Manufacturer	Lot#	Exp.
pH 4.00b	4.01	s.u.	±0.15 s.u.	P	NA		Geotech	3GB1049	Feb-25
pH 7.00b	6.99	s.u.	±0.15 s.u.	I	I		Geotech	2GF113	Jun-24
pH 10.00b	10.01	s.u.	±0.15 s.u.	I	I		Geotech	3GA1134	Jan-25
SC 1000	962.32	µS/cm	±5%	I	I		Ricca	4209A12	Aug-24
Approx. every 8 hrs, unless only one well									
CCV (Continued Calibration Verification):				Time: 1539					
Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading	Manufacturer	Lot#	Exp.
pH 4.00a	4.05	s.u.	±0.1 s.u.	P	No	NA	MSI	023067-01	3/14/2025
pH 7.00a	7.06	s.u.	±0.1 s.u.	I	I	I	MSI	023051-02	2/21/2025
pH 10.00a	10.05	s.u.	±0.1 s.u.	I	I	I	MSI	022361-01	12/27/2024
SC 1000	962.89	µS/cm	±5%	I	I	I	Ricca	4209A12	Aug-24
DO (Zero pt)	0.08	mg/L	±0.1 mg/L	I	I	I	Macron	#000228049	8/26/2025
Turbidity (DI)	0.33	NTU	<2 NTU	I	I	I	Pace Labs	N/A (DI)	N/A (DI)
Approx. every 8 hrs, unless only one well									
Comments:									
Signature: [Signature]				Date: 4/23/24					

Multiparameter Meter Field Calibration Checklist

Field Personnel: <u>Jordan Bohannon</u>		Location: <u>Duck Creek</u>	
Weather: <u>50-64°F, Rail, 10 mph wind</u>		Environment: <u>Grass, mud</u>	
Multiparameter Water Meter	Make: <u>Horiba</u>	Model: <u>U-5000</u>	Serial Number: <u>AG JTK 4XG</u>
Water Level Meter	Make: <u>Heron</u>	Model: <u>Dipper T</u>	Serial Number: <u>3717-T</u>

Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading	Manufacturer	Lot#	Exp.
pH 4.00a	<u>3.99</u>	s.u.	±0.1 s.u.	P	No	N/A	MSI	023067-01	3/14/2025
pH 7.00a	<u>3.9</u> <u>7.37</u>	s.u.	±0.1 s.u.	F	Yes	<u>7.01</u>	MSI	023051-02	2/21/2025
pH 10.00a	<u>10.31</u>	s.u.	±0.1 s.u.	F	Yes	<u>10.02</u>	MSI	022361-01	12/27/2024
SC Zero (DI)	<u>0.00</u>	µS/cm	0-25 µS/cm	P	No	N/A	Pace Labs	N/A (DI)	N/A (DI)
SC 2000	<u>1480</u>	µS/cm	±5%	P	No	N/A	Geotech	3GF1197	Jun-24
ORP	<u>220</u>	mV	±15 mV	P	No	N/A	InSitu	3GI1011	Jun-24
DO (Zero pt)	<u>0.00</u>	mg/L	±0.1	P	No	N/A	Macron	#000228049	8/26/2025
DO (Saturated)	<u>100</u>	%	97-100%	P	No	N/A	Pace Labs	N/A (DI)	N/A (DI)
Turbidity (DI)	<u>0.00</u>	NTU	<2 NTU	P	No	N/A	Pace Labs	N/A (DI)	N/A (DI)

Approx. every 4 hrs, unless only one well

ICV (Initial Calibration Verification)

Time: 0945

Buffer	Check Value	Units	Range	Pass/Fail	Action Taken?	Manufacturer	Lot#	Exp.
pH 4.00b	<u>3.91</u>	s.u.	±0.15 s.u.	P	Cal: 4.00	Geotech	3GB1049	Feb-25
pH 7.00b	<u>6.98</u>	s.u.	±0.15 s.u.	P	None	Geotech	2GF113	Jun-24
pH 10.00b	<u>10.01</u>	s.u.	±0.15 s.u.	P	None	Geotech	3GA1134	Jan-25
SC 1000	<u>1010</u>	µS/cm	±5%	P	None	Ricca	4209A12	Aug-24

Approx. every 4 hrs, unless only one well

CCV (Continued Calibration Verification)

Time: 1245

Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading	Manufacturer	Lot#	Exp.
pH 4.00a	<u>4.03</u>	s.u.	±0.1 s.u.	P	No	N/A	MSI	023067-01	3/14/2025
pH 7.00a	<u>7.07</u>	s.u.	±0.1 s.u.				MSI	023051-02	2/21/2025
pH 10.00a	<u>10.08</u>	s.u.	±0.1 s.u.				MSI	022361-01	12/27/2024
SC 1000	<u>1007</u>	µS/cm	±5%				Ricca	4209A12	Aug-24
DO (Zero pt)	<u>0.00</u>	mg/L	±0.1 mg/L				Macron	#000228049	8/26/2025
Turbidity (DI)	<u>0.00</u>	NTU	<2 NTU				Pace Labs	N/A (DI)	N/A (DI)

Approx. every 4 hrs, unless only one well

Comments:

Signature: <u>J Bohannon</u>	Date: <u>04/23/2024</u>
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Multiparameter Meter Field Calibration Checklist

Field Personnel: AM, JB		Location: Duck Creek							
Weather: 44-62°F, Sunny, 10 mph wind		Environment: Grass, Mud							
Multiparameter Water Meter	Make: Horiba	Model: U-5000	Serial Number: AGJTK4XG						
Water Level Meter	Make: Heron	Model: Dipper T	Serial Number: 3717-T						
Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading	Manufacturer	Lot#	Exp.
pH 4.00a	3.46	s.u.	±0.1 s.u.	F	Yes	4.02	MSI	023067-01	3/14/2025
pH 7.00a	7.35	s.u.	±0.1 s.u.	F	Yes	7.02	MSI	023051-02	2/21/2025
pH 10.00a	10.42	s.u.	±0.1 s.u.	F	Yes	10.02	MSI	022361-01	12/27/2024
SC Zero (DI)	0.000	µS/cm	0-25 µS/cm	P	No	N/A	Pace Labs	N/A (DI)	N/A (DI)
SC 2000	2000	µS/cm	±5%	P	No	N/A	Geotech	3GF1197	Jun-24
ORP	285	mV	±15 mV	P	No	N/A	InSitu	3GI1011	Jun-24
DO (Zero pt)	0.00	mg/L	±0.1	P	No	N/A	Macron	#000228049	8/26/2025
DO (Saturated)	99.3	%	97-100%	P	No	N/A	Pace Labs	N/A (DI)	N/A (DI)
Turbidity (DI)	0.0	NTU	<2 NTU	P	No	N/A	Pace Labs	N/A (DI)	N/A (DI)

Approx. every 4 hrs, unless only one well

ICV (Initial Calibration Verification)					Time: 0908				
Buffer	Check Value	Units	Range	Pass/Fail	Action Taken?	Manufacturer	Lot#	Exp.	
pH 4.00b	3.83	s.u.	±0.15 s.u.	F	Calibrated: 4.00	Geotech	3GB1049	Feb-25	
pH 7.00b	6.94	s.u.	±0.15 s.u.	P	None	Geotech	2GF113	Jun-24	
pH 10.00b	10.16	s.u.	±0.15 s.u.	F	Calibrated: 9.99	Geotech	3GA1134	Jan-25	
SC 1000	1000	µS/cm	±5%	P	None	Ricca	4209A12	Aug-24	

Approx. every 4 hrs, unless only one well

CCV (Continued Calibration Verification)					Time: 1457				
Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading	Manufacturer	Lot#	Exp.
pH 4.00a	4.07	s.u.	±0.1 s.u.	P	No	N/A	MSI	023067-01	3/14/2025
pH 7.00a	6.98	s.u.	±0.1 s.u.	I	I	I	MSI	023051-02	2/21/2025
pH 10.00a	10.07	s.u.	±0.1 s.u.	I	I	I	MSI	022361-01	12/27/2024
SC 1000	1011	µS/cm	±5%	I	I	I	Ricca	4209A12	Aug-24
DO (Zero pt)	0.00	mg/L	±0.1 mg/L	I	I	I	Macron	#000228049	8/26/2025
Turbidity (DI)	0.00	NTU	<2 NTU	I	I	I	Pace Labs	N/A (DI)	N/A (DI)

Approx. every 4 hrs, unless only one well

Comments:

Signature: J Bohannon	Date: 4/24/2024
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Multiparameter Meter Field Calibration Checklist

Field Personnel: <u>JD</u>				Location: <u>Duck Creek</u>					
Weather: <u>50-60°F p. sunny wind NE 9-15 mph</u>				Environment: <u>grass</u>					
Multiparameter Water Meter		Make: <u>Aquatrill</u>	Model: <u>600</u>	Serial Number: <u>846000</u>					
Water Level Meter		Make: <u>Heron</u>	Model: <u>Dipper-T</u>	Serial Number: <u>11FF2209305 ML</u>					
Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading	Manufacturer	Lot#	Exp.
pH 4.00a	<u>4.02</u>	s.u.	±0.1 s.u.	<u>P</u>	<u>No</u>	<u>NA</u>	MSI	023067-01	3/14/2025
pH 7.00a	<u>7.02</u>	s.u.	±0.1 s.u.	<u>I</u>	<u>I</u>	<u>I</u>	MSI	023051-02	2/21/2025
pH 10.00a	<u>10.04</u>	s.u.	±0.1 s.u.	<u>I</u>	<u>I</u>	<u>I</u>	MSI	022361-01	12/27/2024
SC Zero (DI)	<u>0.06</u>	µS/cm	0-25 µS/cm	<u>I</u>	<u>I</u>	<u>I</u>	Pace Labs	N/A (DI)	N/A (DI)
SC 2000	<u>2035.4</u>	µS/cm	±5%	<u>I</u>	<u>I</u>	<u>I</u>	Geotech	3GF1197	Jun-24
ORP	<u>238.5</u>	mV	±15 mV	<u>I</u>	<u>I</u>	<u>I</u>	InSitu	3GI1011	Jun-24
DO (Zero pt)	<u>0.08</u>	mg/L	±0.1	<u>I</u>	<u>I</u>	<u>I</u>	Macron	#000228049	8/26/2025
DO (Saturated)	<u>99.81</u>	%	97-100%	<u>I</u>	<u>I</u>	<u>I</u>	Pace Labs	N/A (DI)	N/A (DI)
Turbidity (DI)	<u>0.00</u>	NTU	<2 NTU	<u>I</u>	<u>I</u>	<u>I</u>	Pace Labs	N/A (DI)	N/A (DI)
Approx. every 4 hrs, unless only one well									
ICV (Initial Calibration Verification)					Time: <u>0920</u>				
Buffer	Check Value	Units	Range	Pass/Fail	Action Taken?	Manufacturer	Lot#	Exp.	
pH 4.00b	<u>4.01</u>	s.u.	±0.15 s.u.	<u>P</u>	<u>NA</u>	Geotech	3GB1049	Feb-25	
pH 7.00b	<u>6.86</u>	s.u.	±0.15 s.u.	<u>I</u>	<u>I</u>	Geotech	2GF113	Jun-24	
pH 10.00b	<u>9.98</u>	s.u.	±0.15 s.u.	<u>I</u>	<u>I</u>	Geotech	3GA1134	Jan-25	
SC 1000	<u>994.98</u>	µS/cm	±5%	<u>I</u>	<u>I</u>	Ricca	4209A12	Aug-24	
Approx. every 4 hrs, unless only one well									
CCV (Continued Calibration Verification):					Time: <u>1415</u>				
Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading	Manufacturer	Lot#	Exp.
pH 4.00a	<u>4.00</u>	s.u.	±0.1 s.u.	<u>P</u>	<u>No</u>	<u>NA</u>	MSI	023067-01	3/14/2025
pH 7.00a	<u>7.01</u>	s.u.	±0.1 s.u.	<u>I</u>	<u>I</u>	<u>I</u>	MSI	023051-02	2/21/2025
pH 10.00a	<u>9.99</u>	s.u.	±0.1 s.u.	<u>I</u>	<u>I</u>	<u>I</u>	MSI	022361-01	12/27/2024
SC 1000	<u>976.06</u>	µS/cm	±5%	<u>I</u>	<u>I</u>	<u>I</u>	Ricca	4209A12	Aug-24
DO (Zero pt)	<u>0.07</u>	mg/L	±0.1 mg/L	<u>I</u>	<u>I</u>	<u>I</u>	Macron	#000228049	8/26/2025
Turbidity (DI)	<u>1.20</u>	NTU	<2 NTU	<u>I</u>	<u>I</u>	<u>I</u>	Pace Labs	N/A (DI)	N/A (DI)
Approx. every 4 hrs, unless only one well									
Comments:									
Signature: <u>[Signature]</u>					Date: <u>4/24/24</u>				

Multiparameter Meter Field Calibration Checklist									
Field Personnel: Aaron P. McBeaton				Location: Duck Creek					
Weather: 51°-61° Sunny Wind NE 9 mph				Environment: grass, mud					
Multiparameter Water Meter		Make: Horiba	Model: V5000	Serial Number: PW26V513					
Water Level Meter		Make: Heron	Model: D1007	Serial Number: 1AFF211192HB					
Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading	Manufacturer	Lot#	Exp.
pH 4.00a	4.02	s.u.	±0.1 s.u.	P	NO	—	MSI	023067-01	3/14/2025
pH 7.00a	7.00	s.u.	±0.1 s.u.	P	NO	—	MSI	023051-02	2/21/2025
pH 10.00a	10.05	s.u.	±0.1 s.u.	P	NO	—	MSI	022361-01	12/27/2024
SC Zero (DI)	16	µS/cm	0-25 µS/cm	P	NO	—	Pace Labs	N/A (DI)	N/A (DI)
SC 2000	2000	µS/cm	±5%	P	NO	—	Geotech	3GF1197	Jun-24
ORP	244	mV	±15 mV	P	NO	—	InSitu	3GI1011	Jun-24
DO (Zero pt)	0.09	mg/L	±0.1	P	NO	—	Macron	#000228049	8/26/2025
DO (Saturated)	98.6	%	97-100%	P	NO	—	Pace Labs	N/A (DI)	N/A (DI)
Turbidity (DI)	0.0	NTU	<2 NTU	P	NO	—	Pace Labs	N/A (DI)	N/A (DI)
Approx. every 4 hrs, unless only one well									
ICV (Initial Calibration Verification)					Time: 9:50				
Buffer	Check Value	Units	Range	Pass/Fail	Action Taken?	Manufacturer	Lot#	Exp.	
pH 4.00b	4.03	s.u.	±0.15 s.u.	P	—	Geotech	3GB1049	Feb-25	
pH 7.00b	6.88	s.u.	±0.15 s.u.	P	—	Geotech	2GF113	Jun-24	
pH 10.00b	10.09	s.u.	±0.15 s.u.	P	—	Geotech	3GA1134	Jan-25	
SC 1000	1000	µS/cm	±5%	P	—	Ricca	4209A12	Aug-24	
Approx. every 4 hrs, unless only one well									
CCV (Continued Calibration Verification):					Time: 1:50				
Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading	Manufacturer	Lot#	Exp.
pH 4.00a	4.06	s.u.	±0.1 s.u.	P	NO	—	MSI	023067-01	3/14/2025
pH 7.00a	7.08	s.u.	±0.1 s.u.	P	NO	—	MSI	023051-02	2/21/2025
pH 10.00a	10.16	s.u.	±0.1 s.u.	P	NO	—	MSI	022361-01	12/27/2024
SC 1000	1020	µS/cm	±5%	P	NO	—	Ricca	4209A12	Aug-24
DO (Zero pt)	0.09	mg/L	±0.1 mg/L	P	NO	—	Macron	#000228049	8/26/2025
Turbidity (DI)	0.2	NTU	<2 NTU	P	NO	—	Pace Labs	N/A (DI)	N/A (DI)
Approx. every 4 hrs, unless only one well									
Comments:									
Signature: [Signature] Date: 4/24/2024									

Multiparameter Meter Field Calibration Checklist

Field Personnel: <u>AW</u>		Location: <u>Duck Creek</u>							
Weather: <u>49°-61° Dry wind NE</u>		Environment: <u>Grassy, gravel</u>							
Multiparameter Water Meter	Make: <u>Horiva</u>	Model: <u>V5000</u>	Serial Number: <u>WUG83C85</u>						
Water Level Meter	Make: <u>Heson</u>	Model: <u>Dipper-T</u>	Serial Number: <u>19FF2202131ML</u>						
Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading	Manufacturer	Lot#	Exp.
pH 4.00a	<u>3.97</u>	s.u.	±0.1 s.u.	<u>P</u>	<u>NO</u>	<u>N/A</u>	MSI	023067-01	3/14/2025
pH 7.00a	<u>7.03</u>	s.u.	±0.1 s.u.	<u>P</u>	<u>NO</u>		MSI	023051-02	2/21/2025
pH 10.00a	<u>10.01</u>	s.u.	±0.1 s.u.	<u>P</u>	<u>NO</u>		MSI	022361-01	12/27/2024
SC Zero (DI)	<u>0.0</u>	µS/cm	0-25 µS/cm	<u>P</u>	<u>NO</u>		Pace Labs	N/A (DI)	N/A (DI)
SC 2000	<u>2000</u>	µS/cm	±5%	<u>P</u>	<u>NO</u>		Geotech	3GF1197	Jun-24
ORP	<u>238</u>	mV	±15 mV	<u>P</u>	<u>NO</u>		InSitu	3GI1011	Jun-24
DO (Zero pt)	<u>0.0</u>	mg/L	±0.1	<u>P</u>	<u>NO</u>		Macron	#000228049	8/26/2025
DO (Saturated)	<u>98.1%</u>	%	97-100%	<u>P</u>	<u>NO</u>		Pace Labs	N/A (DI)	N/A (DI)
Turbidity (DI)	<u>0.0</u>	NTU	<2 NTU	<u>P</u>	<u>NO</u>		Pace Labs	N/A (DI)	N/A (DI)

Approx. every 4 hrs, unless only one well

ICV (Initial Calibration Verification)

Time: 9:06

Buffer	Check Value	Units	Range	Pass/Fail	Action Taken?	Manufacturer	Lot#	Exp.
pH 4.00b	<u>4.08</u>	s.u.	±0.15 s.u.	<u>P</u>	<u>NO</u>	Geotech	3GB1049	Feb-25
pH 7.00b	<u>7.02</u>	s.u.	±0.15 s.u.	<u>P</u>	<u>NO</u>	Geotech	2GF113	Jun-24
pH 10.00b	<u>10.03</u>	s.u.	±0.15 s.u.	<u>P</u>	<u>NO</u>	Geotech	3GA1134	Jan-25
SC 1000	<u>1040</u>	µS/cm	±5%	<u>P</u>	<u>NO</u>	Ricca	4209A12	Aug-24

Approx. every 4 hrs, unless only one well

CCV (Continued Calibration Verification)

Time: 14:07

Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading	Manufacturer	Lot#	Exp.
pH 4.00a	<u>3.98</u>	s.u.	±0.1 s.u.	<u>P</u>	<u>NO</u>	<u>N/A</u>	MSI	023067-01	3/14/2025
pH 7.00a	<u>6.95</u>	s.u.	±0.1 s.u.	<u>P</u>	<u>NO</u>		MSI	023051-02	2/21/2025
pH 10.00a	<u>10.03</u>	s.u.	±0.1 s.u.	<u>P</u>	<u>NO</u>		MSI	022361-01	12/27/2024
SC 1000	<u>1030</u>	µS/cm	±5%	<u>P</u>	<u>NO</u>		Ricca	4209A12	Aug-24
DO (Zero pt)	<u>0.0</u>	mg/L	±0.1 mg/L	<u>P</u>	<u>NO</u>		Macron	#000228049	8/26/2025
Turbidity (DI)	<u>0.0</u>	NTU	<2 NTU	<u>P</u>	<u>NO</u>		Pace Labs	N/A (DI)	N/A (DI)

Approx. every 4 hrs, unless only one well

Comments:

Signature: Andy H. Hester

Date: 4/24/24

Multiparameter Meter Field Calibration Checklist

Field Personnel: JD. AP				Location: Duck Creek					
Weather: 50-59°F p. sunny wind ESE 9-16 mph				Environment: grass					
Multiparameter Water Meter		Make: Aquatroll	Model: 600	Serial Number: 846000					
Water Level Meter		Make: Heron	Model: Dipper-T	Serial Number: 19FF2202 131/ML					
Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading	Manufacturer	Lot#	Exp.
pH 4.00a	4.00	s.u.	±0.1 s.u.	P	N	NA	MSI	023067-01	3/14/2025
pH 7.00a	7.02	s.u.	±0.1 s.u.				MSI	023051-02	2/21/2025
pH 10.00a	10.08	s.u.	±0.1 s.u.				MSI	022361-01	12/27/2024
SC Zero (DI)	9.34	µS/cm	0<25 µS/cm				Pace Labs	N/A (DI)	N/A (DI)
SC 2000	1925.5	µS/cm	±5%				Geotech	3GF1197	Jun-24
ORP	246.1	mV	±15 mV				InSitu	3GI1011	Jun-24
DO (Zero pt)	0.09	mg/L	±0.1				Macron	#000228049	8/26/2025
DO (Saturated)	98.72	%	97-100%				Pace Labs	N/A (DI)	N/A (DI)
Turbidity (DI)	0.00	NTU	<2 NTU				Pace Labs	N/A (DI)	N/A (DI)

Approx. every 4 hrs, unless only one well

ICV (Initial Calibration Verification)

Time: 0925

Buffer	Check Value	Units	Range	Pass/Fail	Action Taken?	Manufacturer	Lot#	Exp.
pH 4.00b	4.01	s.u.	±0.15 s.u.	P	NA	Geotech	3GB1049	Feb-25
pH 7.00b	6.85	s.u.	±0.15 s.u.			Geotech	2GF113	Jun-24
pH 10.00b	10.01	s.u.	±0.15 s.u.			Geotech	3GA1134	Jan-25
SC 1000	963.35	µS/cm	±5%			Ricca	4209A12	Aug-24

Approx. every 4 hrs, unless only one well

CCV (Continued Calibration Verification)

Time: 1402

Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading	Manufacturer	Lot#	Exp.
pH 4.00a	4.02	s.u.	±0.1 s.u.	P	N	NA	MSI	023067-01	3/14/2025
pH 7.00a	7.05	s.u.	±0.1 s.u.				MSI	023051-02	2/21/2025
pH 10.00a	10.03	s.u.	±0.1 s.u.				MSI	022361-01	12/27/2024
SC 1000	981.08	µS/cm	±5%				Ricca	4209A12	Aug-24
DO (Zero pt)	0.09	mg/L	±0.1 mg/L				Macron	#000228049	8/26/2025
Turbidity (DI)	0.81	NTU	<2 NTU				Pace Labs	N/A (DI)	N/A (DI)

Approx. every 4 hrs, unless only one well

Comments:

Signature:

[Signature]

Date:

4/25/25

Multiparameter Meter Field Calibration Checklist

Field Personnel: <u>Aaron Amberson</u>		Location: <u>Duck Creek</u>							
Weather: <u>64° - 78° sunny</u> <u>wind 5 mph</u>		Environment: <u>grass, mud</u>							
Multiparameter Water Meter	Make: <u>Horiba</u>	Model: <u>US000</u>	Serial Number: <u>PWL6YSD3</u>						
Water Level Meter	Make: <u>Horiba</u>	Model: <u>0.0001</u>	Serial Number: <u>19FF2111A2HRB</u>						
Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading	Manufacturer	Lot#	Exp.
pH 4.00a	<u>4.08</u>	s.u.	±0.1 s.u.	<u>P</u>	<u>NO</u>	<u>-</u>	MSI	023067-01	3/14/2025
pH 7.00a	<u>6.95</u>	s.u.	±0.1 s.u.	<u>P</u>	<u>NO</u>	<u>-</u>	MSI	023051-02	2/21/2025
pH 10.00a	<u>9.97</u>	s.u.	±0.1 s.u.	<u>P</u>	<u>NO</u>	<u>-</u>	MSI	022361-01	12/27/2024
SC Zero (DI)	<u>0.0</u>	µS/cm	0-25 µS/cm	<u>P</u>	<u>YES</u>	<u>0.0</u>	Pace Labs	N/A (DI)	N/A (DI)
SC 2000	<u>1770</u>	µS/cm	±5%	<u>P</u>	<u>YES</u>	<u>2000</u>	Geotech	3GF1197	Jun-24
ORP	<u>238</u>	mV	±15 mV	<u>P</u>	<u>NO</u>	<u>-</u>	InSitu	3GI1011	Jun-24
DO (Zero pt)	<u>0.09</u>	mg/L	±0.1	<u>P</u>	<u>NO</u>	<u>-</u>	Macron	#000228049	8/26/2025
DO (Saturated)	<u>87.4</u>	%	97-100%	<u>P</u>	<u>YES</u>	<u>98.9</u>	Pace Labs	N/A (DI)	N/A (DI)
Turbidity (DI)	<u>0.0</u>	NTU	<2 NTU	<u>P</u>	<u>NO</u>	<u>-</u>	Pace Labs	N/A (DI)	N/A (DI)
Approx. every 4 hrs, unless only one well									
ICV (Initial Calibration Verification)					Time: <u>0950</u> <u>236 @ 20°C</u>				
Buffer	Check Value	Units	Range	Pass/Fail	Action Taken?	Manufacturer	Lot#	Exp.	
pH 4.00b	<u>4.00</u>	s.u.	±0.15 s.u.	<u>P</u>	<u>-</u>	Geotech	3GB1049	Feb-25	
pH 7.00b	<u>6.87</u>	s.u.	±0.15 s.u.	<u>P</u>	<u>-</u>	Geotech	2GF113	Jun-24	
pH 10.00b	<u>10.07</u>	s.u.	±0.15 s.u.	<u>P</u>	<u>-</u>	Geotech	3GA1134	Jan-25	
SC 1000	<u>956</u>	µS/cm	±5%	<u>P</u>	<u>-</u>	Ricca	4209A12	Aug-24	
Approx. every 4 hrs, unless only one well									
CCV (Continued Calibration Verification):					Time:				
Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading	Manufacturer	Lot#	Exp.
pH 4.00a		s.u.	±0.1 s.u.				MSI	023067-01	3/14/2025
pH 7.00a		s.u.	±0.1 s.u.				MSI	023051-02	2/21/2025
pH 10.00a		s.u.	±0.1 s.u.				MSI	022361-01	12/27/2024
SC 1000		µS/cm	±5%				Ricca	4209A12	Aug-24
DO (Zero pt)		mg/L	±0.1 mg/L				Macron	#000228049	8/26/2025
Turbidity (DI)		NTU	<2 NTU				Pace Labs	N/A (DI)	N/A (DI)
Approx. every 4 hrs, unless only one well									
Comments: <u>Unable to do end day cal due to screen</u> <u>on Horiba, breaking at last well</u>									
Signature: <u>[Signature]</u>					Date: <u>4/30/2024</u>				

Multiparameter Meter Field Calibration Checklist									
Field Personnel: <u>AP AM</u>				Location: <u>Duck Creek</u>					
Weather: <u>78-79 sunny wind 7mph S</u>				Environment: <u>Grass, mud</u>					
Multiparameter Water Meter		Make: <u>AT</u>	Model: <u>600</u>	Serial Number: <u>846000</u>					
Water Level Meter		Make: <u>Heron</u>	Model: <u>Dipper</u>	Serial Number:					
Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading	Manufacturer	Lot#	Exp.
pH 4.00a	<u>4.02</u>	s.u.	±0.1 s.u.	<u>P</u>	<u>N</u>	<u>—</u>	MSI	023067-01	3/14/2025
pH 7.00a	<u>6.97</u>	s.u.	±0.1 s.u.	<u>L</u>	<u>I</u>	<u>—</u>	MSI	023051-02	2/21/2025
pH 10.00a	<u>9.98</u>	s.u.	±0.1 s.u.	<u>L</u>	<u>I</u>	<u>—</u>	MSI	022361-01	12/27/2024
SC Zero (DI)	<u>31.56</u>	µS/cm	0<25 µS/cm	<u>F</u>	<u>F</u>	<u>0.05</u>	Pace Labs	N/A (DI)	N/A (DI)
SC 2000	<u>2040.5</u>	µS/cm	±5%	<u>P</u>	<u>N</u>	<u>—</u>	Geotech	3GF1197	Jun-24
ORP		mV	±15 mV	<u>I</u>	<u>I</u>	<u>—</u>	InSitu	3GI1011	Jun-24
DO (Zero pt)	<u>0.00</u>	mg/L	±0.1	<u>I</u>	<u>I</u>	<u>—</u>	Macron	#000228049	8/26/2025
DO (Saturated)	<u>99.85</u>	%	97-100%	<u>I</u>	<u>I</u>	<u>—</u>	Pace Labs	N/A (DI)	N/A (DI)
Turbidity (DI)	<u>0.03</u>	NTU	<2 NTU	<u>I</u>	<u>I</u>	<u>—</u>	Pace Labs	N/A (DI)	N/A (DI)
Approx. every 8 hrs, unless only one well									
ICV (Initial Calibration Verification)				Time: <u>1015</u>					
Buffer	Check Value	Units	Range	Pass/Fail	Action Taken?	Manufacturer	Lot#	Exp.	
pH 4.00b	<u>4.01</u>	s.u.	±0.15 s.u.	<u>P</u>	<u>—</u>	Geotech	3GB1049	Feb-25	
pH 7.00b	<u>6.79</u>	s.u.	±0.15 s.u.	<u>F</u>	<u>X 7.00</u>	Geotech	2GF113	Jun-24	
pH 10.00b	<u>10.03</u>	s.u.	±0.15 s.u.	<u>P</u>	<u>—</u>	Geotech	3GA1134	Jan-25	
SC 1000	<u>1001.7</u>	µS/cm	±5%	<u>P</u>	<u>—</u>	Ricca	4209A12	Aug-24	
Approx. every 8 hrs, unless only one well									
CCV (Continued Calibration Verification):				Time: <u>1448</u>					
Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading	Manufacturer	Lot#	Exp.
pH 4.00a	<u>4.02</u>	s.u.	±0.1 s.u.	<u>P</u>	<u>NO</u>	<u>—</u>	MSI	023067-01	3/14/2025
pH 7.00a	<u>7.01</u>	s.u.	±0.1 s.u.	<u>P</u>	<u>NO</u>	<u>—</u>	MSI	023051-02	2/21/2025
pH 10.00a	<u>10.05</u>	s.u.	±0.1 s.u.	<u>P</u>	<u>NO</u>	<u>—</u>	MSI	022361-01	12/27/2024
SC 1000	<u>1015.8</u>	µS/cm	±5%	<u>P</u>	<u>NO</u>	<u>—</u>	Ricca	4209A12	Aug-24
DO (Zero pt)	<u>0.09</u>	mg/L	±0.1 mg/L	<u>P</u>	<u>NO</u>	<u>—</u>	Macron	#000228049	8/26/2025
Turbidity (DI)	<u>0.04</u>	NTU	<2 NTU	<u>P</u>	<u>NO</u>	<u>—</u>	Pace Labs	N/A (DI)	N/A (DI)
Approx. every 8 hrs, unless only one well									
Comments:									
Signature: <u>[Signature]</u> Date: <u>4/30/2024</u>									

Multiparameter Meter Field Calibration Checklist

Field Personnel: JD				Location: Duck Creek, Indian Creek					
Weather: 66°F p.c. cloudy wind ESE 9-10				Environment: grass, weeds					
Multiparameter Water Meter		Make: Aquatrail	Model: 600	Serial Number: 739449					
Water Level Meter		Make: Heron	Model: Dyper-T	Serial Number: 19FF2202131ML					
Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading	Manufacturer	Lot#	Exp.
pH 4.00a	4.04	s.u.	±0.1 s.u.	P	N	NA	MSI	023067-01	3/14/2025
pH 7.00a	7.11	s.u.	±0.1 s.u.	F	Y	7.02	MSI	023051-02	2/21/2025
pH 10.00a	9.95	s.u.	±0.1 s.u.	P	N	NA	MSI	022361-01	12/27/2024
SC Zero (DI)	0.06	µS/cm	0-25 µS/cm	I	I	I	Pace Labs	N/A (DI)	N/A (DI)
SC 2000	1971	µS/cm	±5%	I	I	I	Geotech	3GF1197	Jun-24
ORP	238.3	mV	±15 mV	I	I	I	InSitu	3GI1011	Jun-24
DO (Zero pt)	0.08	mg/L	±0.1	I	I	I	Macron	#000228049	8/26/2025
DO (Saturated)	98.71	%	97-100%	I	I	I	Pace Labs	N/A (DI)	N/A (DI)
Turbidity (DI)	0.18	NTU	<2 NTU	I	I	I	Pace Labs	N/A (DI)	N/A (DI)

Approx. every 4 hrs, unless only one well

ICV (Initial Calibration Verification)

Time: **0950**

Buffer	Check Value	Units	Range	Pass/Fail	Action Taken?	Manufacturer	Lot#	Exp.
pH 4.00b	3.99	s.u.	±0.15 s.u.	P	NA	Geotech	3GB1049	Feb-25
pH 7.00b	6.89	s.u.	±0.15 s.u.	I	I	Geotech	2GF113	Jun-24
pH 10.00b	9.92	s.u.	±0.15 s.u.	I	I	Geotech	3GA1134	Jan-25
SC 1000	985	µS/cm	±5%	I	I	Ricca	4209A12	Aug-24

Approx. every 4 hrs, unless only one well

CCV (Continued Calibration Verification)

Time: **1500**

Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading	Manufacturer	Lot#	Exp.
pH 4.00a	4.06	s.u.	±0.1 s.u.	P	N	NA	MSI	023067-01	3/14/2025
pH 7.00a	7.10	s.u.	±0.1 s.u.	I	I	I	MSI	023051-02	2/21/2025
pH 10.00a	10.08	s.u.	±0.1 s.u.	I	I	I	MSI	022361-01	12/27/2024
SC 1000	1004.5	µS/cm	±5%	I	I	I	Ricca	4209A12	Aug-24
DO (Zero pt)	0.09	mg/L	±0.1 mg/L	I	I	I	Macron	#000228049	8/26/2025
Turbidity (DI)	0.57	NTU	<2 NTU	I	I	I	Pace Labs	N/A (DI)	N/A (DI)

Approx. every 4 hrs, unless only one well

Comments:

Signature: [Signature]	Date: 5/6/24
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Multiparameter Meter Field Calibration Checklist

Field Personnel: JO. JB		Location: Duck Creek, TCC							
Weather: 77°F cloudy wind SE 9-16 mph		Environment: grass							
Multiparameter Water Meter	Make: Aquatrail	Model: G00	Serial Number: 739449						
Water Level Meter	Make: Heron	Model: Dipper-T	Serial Number: 19FF2111924B						
Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading	Manufacturer	Lot#	Exp.
pH 4.00a	4.06	s.u.	±0.1 s.u.	P	N	NA	MSI	023067-01	3/14/2025
pH 7.00a	7.01	s.u.	±0.1 s.u.	I	I	I	MSI	023051-02	2/21/2025
pH 10.00a	9.98	s.u.	±0.1 s.u.	I	I	I	MSI	022361-01	12/27/2024
SC Zero (DI)	14.27	µS/cm	0-25 µS/cm	I	I	I	Pace Labs	N/A (DI)	N/A (DI)
SC 2000	1973.9	µS/cm	±5%	I	I	I	Geotech	3GF1197	Jun-24
ORP	230.4	mV	±15 mV	I	I	I	InSitu	3GI1011	Jun-24
DO (Zero pt)	0.09	mg/L	±0.1	I	I	I	Macron	#000228049	8/26/2025
DO (Saturated)	97.79	%	97-100%	I	I	I	Pace Labs	N/A (DI)	N/A (DI)
Turbidity (DI)	0.00	NTU	<2 NTU	I	I	I	Pace Labs	N/A (DI)	N/A (DI)

Approx. every 4 hrs, unless only one well

ICV (Initial Calibration Verification)						Time: 1059		
Buffer	Check Value	Units	Range	Pass/Fail	Action Taken?	Manufacturer	Lot#	Exp.
pH 4.00b	4.01	s.u.	±0.15 s.u.	P	NA	Geotech	3GB1049	Feb-25
pH 7.00b	6.85	s.u.	±0.15 s.u.	I	I	Geotech	2GF113	Jun-24
pH 10.00b	9.92	s.u.	±0.15 s.u.	I	I	Geotech	3GA1134	Jan-25
SC 1000	1018.9	µS/cm	±5%	I	I	Ricca	4209A12	Aug-24

Approx. every 4 hrs, unless only one well

CCV (Continued Calibration Verification):						Time: 1440			
Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading	Manufacturer	Lot#	Exp.
pH 4.00a	4.09	s.u.	±0.1 s.u.	P	N	NA	MSI	023067-01	3/14/2025
pH 7.00a	7.10	s.u.	±0.1 s.u.	I	I	I	MSI	023051-02	2/21/2025
pH 10.00a	10.07	s.u.	±0.1 s.u.	I	I	I	MSI	022361-01	12/27/2024
SC 1000	995.86	µS/cm	±5%	I	I	I	Ricca	4209A12	Aug-24
DO (Zero pt)	0.07	mg/L	±0.1 mg/L	I	I	I	Macron	#000228049	8/26/2025
Turbidity (DI)	0.11	NTU	<2 NTU	I	I	I	Pace Labs	N/A (DI)	N/A (DI)

Approx. every 4 hrs, unless only one well

Comments:	
Signature: [Signature]	Date: 5/8/24

Multiparameter Meter Field Calibration Checklist

Field Personnel: <i>Aaron Rumberton</i>				Location: <i>Duck Creek</i>					
Weather: <i>73°F partly cloudy wind NW 15mph</i>				Environment: <i>grassy</i>					
Multiparameter Water Meter		Make: <i>Horiba</i>	Model: <i>US000</i>	Serial Number: <i>WV683C85</i>					
Water Level Meter		Make: <i>Sciense</i>	Model: <i>101</i>	Serial Number: <i>33459</i>					
Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading	Manufacturer	Lot#	Exp.
pH 4.00a	<i>4.06</i>	s.u.	±0.1 s.u.	<i>P</i>	<i>NO</i>	<i>-</i>	MSI	023067-01	3/14/2025
pH 7.00a	<i>7.03</i>	s.u.	±0.1 s.u.	<i>P</i>	<i>NO</i>	<i>-</i>	MSI	023051-02	2/21/2025
pH 10.00a	<i>9.98</i>	s.u.	±0.1 s.u.	<i>P</i>	<i>NO</i>	<i>-</i>	MSI	022361-01	12/27/2024
SC Zero (DI)	<i>0.0</i>	µS/cm	0-25 µS/cm	<i>P</i>	<i>NO</i>	<i>-</i>	Pace Labs	N/A (DI)	N/A (DI)
SC 2000	<i>2000</i>	µS/cm	±5%	<i>P</i>	<i>NO</i>	<i>-</i>	Geotech	3GF1197	Jun-24
ORP	<i>240</i>	mV	±15 mV	<i>P</i>	<i>NO</i>	<i>-</i>	InSitu	3GI1011	Jun-24
DO (Zero pt)	<i>0.09</i>	mg/L	±0.1	<i>P</i>	<i>NO</i>	<i>-</i>	Macron	#000228049	8/26/2025
DO (Saturated)	<i>99.1</i>	%	97-100%	<i>P</i>	<i>NO</i>	<i>-</i>	Pace Labs	N/A (DI)	N/A (DI)
Turbidity (DI)	<i>0.0</i>	NTU	<2 NTU	<i>P</i>	<i>NO</i>	<i>-</i>	Pace Labs	N/A (DI)	N/A (DI)

Approx. every 4 hrs, unless only one well

ICV (Initial Calibration Verification)

Time: *1416*

23.6 @ 20°C

Buffer	Check Value	Units	Range	Pass/Fail	Action Taken?	Manufacturer	Lot#	Exp.
pH 4.00b	<i>3.97</i>	s.u.	±0.15 s.u.	<i>P</i>	<i>-</i>	Geotech	3GB1049	Feb-25
pH 7.00b	<i>6.89</i>	s.u.	±0.15 s.u.	<i>P</i>	<i>-</i>	Geotech	2GF113	Jun-24
pH 10.00b	<i>10.07</i>	s.u.	±0.15 s.u.	<i>P</i>	<i>-</i>	Geotech	3GA1134	Jan-25
SC 1000	<i>997</i>	µS/cm	±5%	<i>P</i>	<i>-</i>	Ricca	4209A12	Aug-24

Approx. every 4 hrs, unless only one well

CCV (Continued Calibration Verification)

Time:

Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading	Manufacturer	Lot#	Exp.
pH 4.00a		s.u.	±0.1 s.u.				MSI	023067-01	3/14/2025
pH 7.00a		s.u.	±0.1 s.u.				MSI	023051-02	2/21/2025
pH 10.00a		s.u.	±0.1 s.u.				MSI	022361-01	12/27/2024
SC 1000		µS/cm	±5%				Ricca	4209A12	Aug-24
DO (Zero pt)		mg/L	±0.1 mg/L				Macron	#000228049	8/26/2025
Turbidity (DI)		NTU	<2 NTU				Pace Labs	N/A (DI)	N/A (DI)

Approx. every 4 hrs, unless only one well

Comments:

Only one well sampled no end day calibration needed

Signature: <i>[Signature]</i>	Date: <i>5/28/2024</i>
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Multiparameter Meter Field Calibration Checklist									
Field Personnel: Jordan Bohannon				Location: Duck Creek					
Weather: 77° Sunny, 12 mph wind				Environment: Tall Grass					
Multiparameter Water Meter		Make: Horiba	Model: U-5000	Serial Number: AGJTH 4XG					
Water Level Meter		Make:	Model:	Serial Number:					
Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading	Manufacturer	Lot#	Exp.
pH 4.00a	3.92	s.u.	±0.1 s.u.	P	No	N/A	MSI	023067-01	3/14/2025
pH 7.00a	7.01	s.u.	±0.1 s.u.	P			MSI	023051-02	2/21/2025
pH 10.00a	10.04	s.u.	±0.1 s.u.	P			MSI	022361-01	12/27/2024
SC 200 (DI)	0.00	µS/cm	0-25 µS/cm	P			Pace Labs	N/A (DI)	N/A (DI)
SC 2000	2011	µS/cm	±5%	P			Geotech	3GJ 1438 Oct 24 30P1297 Jun-24	BG 6/14/24
ORP	232	mV	±15 mV	P			InSitu	3GI1011	Jun-24
DO (Zero pH)	0.00	mg/L	±0.1	P			Macron	#000228049	8/26/2025
DO (Saturated)	100	%	97-100%	P			Pace Labs	N/A (DI)	N/A (DI)
Turbidity (DI)	0.00	NTU	<2 NTU	P			Pace Labs	N/A (DI)	N/A (DI)
Approx. every 4 hrs, unless only one well									
ICV (Initial Calibration Verification)					Time: 0930				
Buffer	Check Value	Units	Range	Pass/Fail	Action Taken?	Manufacturer	Lot#	Exp.	
pH 4.00b	3.85	s.u.	±0.15 s.u.	P	Calibrated: 4.00	Geotech	3GB1049	Feb-25	
pH 7.00b	6.94	s.u.	±0.15 s.u.	P	None	Proactive Geotech	3GE1252 20P122	May-25 Jun-24	BG 6/14/24
pH 10.00b	9.97	s.u.	±0.15 s.u.	P	None	Geotech	3GA1134	Jan-25	
SC 1000	1013	µS/cm	±5%	P	None	Ricca	4209A12	Aug-24	
Approx. every 4 hrs, unless only one well									
CCV (Continued Calibration Verification):					Time: 1058				
Buffer	Check Value	Units	Range	Pass/Fail	Calibrate?	Adjusted Reading	Manufacturer	Lot#	Exp.
pH 4.00c	4.03	s.u.	±0.1 s.u.	P	NO	N/A	MSI	023067-01	3/14/2025
pH 7.00c	6.98	s.u.	±0.1 s.u.	P			MSI	023051-02	2/21/2025
pH 10.00c	9.97	s.u.	±0.1 s.u.	P			MSI	022361-01	12/27/2024
SC 1000	1008	µS/cm	±5%	P			Ricca	4209A12	Aug-24
DO (Zero pH)	0.00	mg/L	±0.1 mg/L	P			Macron	#000228049	8/26/2025
Turbidity (DI)	0.00	NTU	<2 NTU	P			Pace Labs	N/A (DI)	N/A (DI)
Approx. every 4 hrs, unless only one well									
Comments:									
Signature: J Bohannon				Date: 6/13/2024					



Pace Analytical Services, LLC

2231 W. Altorfer Drive

Peoria, IL 61615

(800)752-6651

June 24, 2024

Daryl Johnson
Vistra - Duck Creek
17751 North Cilco Road
Canton, IL 61520-8761

Dear Daryl Johnson:

Please find enclosed the **revised** analytical results for the sample(s) the laboratory received. All testing is performed according to our current TNI accreditations unless otherwise noted. This report cannot be reproduced, except in full, without the written permission of Pace Analytical Services, LLC.

If you have any questions regarding your report, please contact your project manager. Quality and timely data is of the utmost importance to us.

Pace Analytical Services appreciates the opportunity to provide you with analytical expertise. We are always trying to improve our customer service and we welcome you to contact the General Manager, Lisa Grant, with any feedback you have about your experience with our laboratory at 309-683-1764 or lisa.grant@pacelabs.com.

A handwritten signature in green ink that reads "Diane Billings".

Diane Billings
Project Manager

SAMPLE RECEIPT CHECK LIST

Items not applicable will be marked as in compliance

Work Order	HD02825
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YES	Samples received within temperature compliance when applicable
YES	COC present upon sample receipt
YES	COC completed & legible
YES	Sampler name & signature present
YES	Unique sample IDs assigned
YES	Sample collection location recorded
YES	Date & time collected recorded on COC
YES	Relinquished by client signature on COC
YES	COC & labels match
YES	Sample labels are legible
YES	Appropriate bottle(s) received
YES	Sufficient sample volume received
YES	Sample containers received undamaged
NO	Zero headspace, <6 mm present in VOA vials
NO	Trip blank(s) received
YES	All non-field analyses received within holding times
NO	Short hold time analysis
YES	Current PDC COC submitted
NO	Case narrative provided

Work Order HD03070

YES	Samples received within temperature compliance when applicable
YES	COC present upon sample receipt
YES	COC completed & legible
YES	Sampler name & signature present
YES	Unique sample IDs assigned
YES	Sample collection location recorded
YES	Date & time collected recorded on COC
YES	Relinquished by client signature on COC
YES	COC & labels match
YES	Sample labels are legible
YES	Appropriate bottle(s) received
YES	Sufficient sample volume received
YES	Sample containers received undamaged
NO	Zero headspace, <6 mm present in VOA vials
NO	Trip blank(s) received
YES	All non-field analyses received within holding times
NO	Short hold time analysis
YES	Current PDC COC submitted
NO	Case narrative provided

Work Order HD03383

YES	Samples received within temperature compliance when applicable
YES	COC present upon sample receipt
YES	COC completed & legible
YES	Sampler name & signature present
YES	Unique sample IDs assigned
YES	Sample collection location recorded
YES	Date & time collected recorded on COC
YES	Relinquished by client signature on COC
YES	COC & labels match
YES	Sample labels are legible
YES	Appropriate bottle(s) received
YES	Sufficient sample volume received
YES	Sample containers received undamaged
NO	Zero headspace, <6 mm present in VOA vials
NO	Trip blank(s) received
YES	All non-field analyses received within holding times
NO	Short hold time analysis
YES	Current PDC COC submitted
NO	Case narrative provided

Work Order HD03621

YES	Samples received within temperature compliance when applicable
YES	COC present upon sample receipt
YES	COC completed & legible
YES	Sampler name & signature present
YES	Unique sample IDs assigned
YES	Sample collection location recorded
YES	Date & time collected recorded on COC
YES	Relinquished by client signature on COC
YES	COC & labels match
YES	Sample labels are legible
YES	Appropriate bottle(s) received
YES	Sufficient sample volume received
YES	Sample containers received undamaged
NO	Zero headspace, <6 mm present in VOA vials
NO	Trip blank(s) received
YES	All non-field analyses received within holding times
NO	Short hold time analysis
YES	Current PDC COC submitted
NO	Case narrative provided

Work Order HD03934

YES	Samples received within temperature compliance when applicable
YES	COC present upon sample receipt
YES	COC completed & legible
YES	Sampler name & signature present
YES	Unique sample IDs assigned
YES	Sample collection location recorded
YES	Date & time collected recorded on COC
YES	Relinquished by client signature on COC
YES	COC & labels match
YES	Sample labels are legible
YES	Appropriate bottle(s) received
YES	Sufficient sample volume received
YES	Sample containers received undamaged
NO	Zero headspace, <6 mm present in VOA vials
NO	Trip blank(s) received
YES	All non-field analyses received within holding times
NO	Short hold time analysis
YES	Current PDC COC submitted
NO	Case narrative provided

Work Order HD04162

YES	Samples received within temperature compliance when applicable
YES	COC present upon sample receipt
YES	COC completed & legible
YES	Sampler name & signature present
YES	Unique sample IDs assigned
YES	Sample collection location recorded
YES	Date & time collected recorded on COC
YES	Relinquished by client signature on COC
YES	COC & labels match
YES	Sample labels are legible
YES	Appropriate bottle(s) received
YES	Sufficient sample volume received
YES	Sample containers received undamaged
NO	Zero headspace, <6 mm present in VOA vials
NO	Trip blank(s) received
YES	All non-field analyses received within holding times
NO	Short hold time analysis
YES	Current PDC COC submitted
NO	Case narrative provided

Work Order HD04441

YES	Samples received within temperature compliance when applicable
YES	COC present upon sample receipt
YES	COC completed & legible
YES	Sampler name & signature present
YES	Unique sample IDs assigned
YES	Sample collection location recorded
YES	Date & time collected recorded on COC
YES	Relinquished by client signature on COC
YES	COC & labels match
YES	Sample labels are legible
YES	Appropriate bottle(s) received
YES	Sufficient sample volume received
YES	Sample containers received undamaged
NO	Zero headspace, <6 mm present in VOA vials
NO	Trip blank(s) received
YES	All non-field analyses received within holding times
NO	Short hold time analysis
YES	Current PDC COC submitted
NO	Case narrative provided

Work Order HD04652

YES	Samples received within temperature compliance when applicable
YES	COC present upon sample receipt
YES	COC completed & legible
YES	Sampler name & signature present
YES	Unique sample IDs assigned
YES	Sample collection location recorded
YES	Date & time collected recorded on COC
YES	Relinquished by client signature on COC
YES	COC & labels match
YES	Sample labels are legible
YES	Appropriate bottle(s) received
YES	Sufficient sample volume received
YES	Sample containers received undamaged
NO	Zero headspace, <6 mm present in VOA vials
NO	Trip blank(s) received
YES	All non-field analyses received within holding times
NO	Short hold time analysis
YES	Current PDC COC submitted
NO	Case narrative provided

Work Order HE04754

YES	Samples received within temperature compliance when applicable
YES	COC present upon sample receipt
YES	COC completed & legible
YES	Sampler name & signature present
YES	Unique sample IDs assigned
YES	Sample collection location recorded
YES	Date & time collected recorded on COC
YES	Relinquished by client signature on COC
YES	COC & labels match
YES	Sample labels are legible
YES	Appropriate bottle(s) received
YES	Sufficient sample volume received
YES	Sample containers received undamaged
NO	Zero headspace, <6 mm present in VOA vials
NO	Trip blank(s) received
YES	All non-field analyses received within holding times
NO	Short hold time analysis
YES	Current PDC COC submitted
NO	Case narrative provided

ANALYTICAL RESULTS

Sample: HD02825-01
Name: OM16
Matrix: Ground Water - Grab

Sampled: 04/15/24 12:17
Received: 04/15/24 16:52
PO #: 2438773/2438768

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
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Miscellaneous - Pace Analytical - Mt Juliet, Tn

Rad 226 and 228-Subcontract	1.16	pCi/L			1	0.576	04/29/24 22:03	PACE	904.0 903.0
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Sample: HD02825-02
Name: OM17
Matrix: Ground Water - Grab

Sampled: 04/15/24 13:20
Received: 04/15/24 16:52
PO #: 2438773/2438768

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
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Miscellaneous - Pace Analytical - Mt Juliet, Tn

Rad 226 and 228-Subcontract	1.17	pCi/L			1	0.626	04/29/24 22:03	PACE	904.0 903.0
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Sample: HD02825-03
Name: OM24D
Matrix: Ground Water - Grab

Sampled: 04/15/24 10:53
Received: 04/15/24 16:52
PO #: 2438773/2438768

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
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Miscellaneous - Pace Analytical - Mt Juliet, Tn

Rad 226 and 228-Subcontract	1.21	pCi/L			1	0.62	04/29/24 22:03	PACE	904.0 903.0
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Sample: HD02825-04
Name: OR11
Matrix: Ground Water - Grab

Sampled: 04/15/24 14:44
Received: 04/15/24 16:52
PO #: 2438773/2438768

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
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Miscellaneous - Pace Analytical - Mt Juliet, Tn

Rad 226 and 228-Subcontract	1.26	pCi/L			1	0.556	04/29/24 22:03	PACE	904.0 903.0
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ANALYTICAL RESULTS

Sample: HD02825-05
Name: OR11 Dup
Matrix: Ground Water - Grab

Sampled: 04/15/24 14:44
Received: 04/15/24 16:52
PO #: 2438773/2438768

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
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Miscellaneous - Pace Analytical - Mt Juliet, Tn

Rad 226 and 228-Subcontract	1.31	pCi/L			1	0.623	04/29/24 22:03	PACE	904.0 903.0
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Sample: HD02825-06
Name: OR20
Matrix: Ground Water - Grab

Sampled: 04/15/24 13:21
Received: 04/15/24 16:52
PO #: 2438773/2438768

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
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Miscellaneous - Pace Analytical - Mt Juliet, Tn

Rad 226 and 228-Subcontract	1.57	pCi/L			1	0.533	04/29/24 22:03	PACE	904.0 903.0
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Sample: HD03070-01
Name: BA01
Matrix: Ground Water - Grab

Sampled: 04/16/24 12:57
Received: 04/16/24 16:09
PO #: 2438773/2438768

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
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Miscellaneous - Pace Analytical - Mt Juliet, Tn

Rad 226 and 228-Subcontract	1.19	pCi/L			1	0.571	04/29/24 22:03	PACE	904.0 903.0
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Sample: HD03070-02
Name: BA01 Dup
Matrix: Ground Water - Grab

Sampled: 04/16/24 12:57
Received: 04/16/24 16:09
PO #: 2438773/2438768

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
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Miscellaneous - Pace Analytical - Mt Juliet, Tn

Rad 226 and 228-Subcontract	0.953	pCi/L			1	0.588	04/29/24 22:03	PACE	904.0 903.0
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ANALYTICAL RESULTS

Sample: HD03070-03
Name: BA02
Matrix: Ground Water - Grab

Sampled: 04/16/24 11:30
Received: 04/16/24 16:09
PO #: 2438773/2438768

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
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Miscellaneous - Pace Analytical - Mt Juliet, Tn

Rad 226 and 228-Subcontract	1.18	pCi/L			1	0.669	04/29/24 22:03	PACE	904.0 903.0
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Sample: HD03070-04
Name: BA06
Matrix: Ground Water - Grab

Sampled: 04/16/24 14:32
Received: 04/16/24 16:09
PO #: 2438773/2438768

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
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Miscellaneous - Pace Analytical - Mt Juliet, Tn

Rad 226 and 228-Subcontract	1.77	pCi/L			1	0.622	04/29/24 22:03	PACE	904.0 903.0
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Sample: HD03070-05
Name: OR02
Matrix: Ground Water - Grab

Sampled: 04/16/24 15:00
Received: 04/16/24 16:09
PO #: 2438773/2438768

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
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Miscellaneous - Pace Analytical - Mt Juliet, Tn

Rad 226 and 228-Subcontract	0.582	pCi/L			1	0.541	04/29/24 22:03	PACE	904.0 903.0
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Sample: HD03070-06
Name: OM04S
Matrix: Ground Water - Grab

Sampled: 04/16/24 14:12
Received: 04/16/24 16:09
PO #: 2438773/2438768

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
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Miscellaneous - Pace Analytical - Mt Juliet, Tn

Rad 226 and 228-Subcontract	0.72	pCi/L			1	0.656	05/01/24 21:48	PACE	904.0 903.0
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ANALYTICAL RESULTS

Sample: HD03070-07
Name: OM12
Matrix: Ground Water - Grab

Sampled: 04/16/24 11:20
Received: 04/16/24 16:09
PO #: 2438773/2438768

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
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Miscellaneous - Pace Analytical - Mt Juliet, Tn

Rad 226 and 228-Subcontract	1.51	pCi/L			1	0.644	05/01/24 21:48	PACE	904.0 903.0
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Sample: HD03070-08
Name: OR06A
Matrix: Ground Water - Grab

Sampled: 04/16/24 12:05
Received: 04/16/24 16:09
PO #: 2438773/2438768

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
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Miscellaneous - Pace Analytical - Mt Juliet, Tn

Rad 226 and 228-Subcontract	0.845	pCi/L			1	0.692	05/01/24 21:48	PACE	904.0 903.0
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Sample: HD03070-09
Name: OR14D
Matrix: Ground Water - Grab

Sampled: 04/16/24 12:58
Received: 04/16/24 16:09
PO #: 2438773/2438768

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
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Miscellaneous - Pace Analytical - Mt Juliet, Tn

Rad 226 and 228-Subcontract	0.639	pCi/L			1	0.551	05/01/24 21:48	PACE	904.0 903.0
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Sample: HD03070-10
Name: OR19
Matrix: Ground Water - Grab

Sampled: 04/16/24 10:22
Received: 04/16/24 16:09
PO #: 2438773/2438768

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
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Miscellaneous - Pace Analytical - Mt Juliet, Tn

Rad 226 and 228-Subcontract	0.629	pCi/L			1	0.484	05/01/24 21:48	PACE	904.0 903.0
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ANALYTICAL RESULTS

Sample: HD03383-01
Name: G51S
Matrix: Ground Water - Grab

Sampled: 04/17/24 15:20
Received: 04/17/24 16:43
PO #: 2438773/2438768

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
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Miscellaneous - Pace Analytical - Mt Juliet, Tn

Rad 226 and 228-Subcontract	1.76	pCi/L			1	1.19	05/07/24 21:01	PACE	904.0 903.0
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Sample: HD03383-02
Name: G62L
Matrix: Ground Water - Grab

Sampled: 04/17/24 12:33
Received: 04/17/24 16:43
PO #: 2438773/2438768

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
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Miscellaneous - Pace Analytical - Mt Juliet, Tn

Rad 226 and 228-Subcontract	2.13	pCi/L			1	1.19	05/07/24 21:01	PACE	904.0 903.0
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Sample: HD03383-03
Name: OM22D
Matrix: Ground Water - Grab

Sampled: 04/17/24 10:35
Received: 04/17/24 16:43
PO #: 2438773/2438768

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
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Miscellaneous - Pace Analytical - Mt Juliet, Tn

Rad 226 and 228-Subcontract	1.08 J	pCi/L			1	1.39	05/07/24 21:01	PACE	904.0 903.0
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Sample: HD03383-04
Name: OM23D
Matrix: Ground Water - Grab

Sampled: 04/17/24 11:40
Received: 04/17/24 16:43
PO #: 2438773/2438768

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
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Miscellaneous - Pace Analytical - Mt Juliet, Tn

Rad 226 and 228-Subcontract	1.74	pCi/L			1	1.32	05/07/24 21:01	PACE	904.0 903.0
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ANALYTICAL RESULTS

Sample: HD03383-05
Name: OM25S
Matrix: Ground Water - Grab

Sampled: 04/17/24 14:45
Received: 04/17/24 16:43
PO #: 2438773/2438768

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
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Miscellaneous - Pace Analytical - Mt Juliet, Tn

Rad 226 and 228-Subcontract	1.89	pCi/L			1	1.06	05/07/24 21:01	PACE	904.0 903.0
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Sample: HD03383-06
Name: OR03D
Matrix: Ground Water - Grab

Sampled: 04/17/24 13:52
Received: 04/17/24 16:43
PO #: 2438773/2438768

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
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Miscellaneous - Pace Analytical - Mt Juliet, Tn

Rad 226 and 228-Subcontract	2.78	pCi/L			1	0.973	05/07/24 21:01	PACE	904.0 903.0
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Sample: HD03383-07
Name: OR04D
Matrix: Ground Water - Grab

Sampled: 04/17/24 13:00
Received: 04/17/24 16:43
PO #: 2438773/2438768

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
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Miscellaneous - Pace Analytical - Mt Juliet, Tn

Rad 226 and 228-Subcontract	0.849 J	pCi/L			1	1.32	05/07/24 21:01	PACE	904.0 903.0
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Sample: HD03383-08
Name: R61L
Matrix: Ground Water - Grab

Sampled: 04/17/24 14:44
Received: 04/17/24 16:43
PO #: 2438773/2438768

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
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Miscellaneous - Pace Analytical - Mt Juliet, Tn

Rad 226 and 228-Subcontract	0.914	pCi/L			1	0.392	05/07/24 21:01	PACE	904.0 903.0
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ANALYTICAL RESULTS

Sample: HD03383-09
Name: EB 1
Matrix: Ground Water - Grab

Sampled: 04/17/24 15:48
Received: 04/17/24 16:43
PO #: 2438773/2438768

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
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Miscellaneous - Pace Analytical - Mt Juliet, Tn

Rad 226 and 228-Subcontract	0.445 J	pCi/L			1	0.513	05/07/24 21:01	PACE	904.0 903.0
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Sample: HD03621-01
Name: BA02L
Matrix: Ground Water - Grab

Sampled: 04/18/24 12:20
Received: 04/18/24 16:35
PO #: 2438773/2438768

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
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Miscellaneous - Pace Analytical - Mt Juliet, Tn

Rad 226 and 228-Subcontract	0.690 J	pCi/L			1	0.782	05/06/24 21:59	PACE	904.0 903.0
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Sample: HD03621-02
Name: BA03
Matrix: Ground Water - Grab

Sampled: 04/18/24 12:44
Received: 04/18/24 16:35
PO #: 2438773/2438768

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
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Miscellaneous - Pace Analytical - Mt Juliet, Tn

Rad 226 and 228-Subcontract	0.694	pCi/L			1	0.511	05/03/24 21:15	PACE	904.0 903.0
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Sample: HD03621-03
Name: BA03L
Matrix: Ground Water - Grab

Sampled: 04/18/24 14:01
Received: 04/18/24 16:35
PO #: 2438773/2438768

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
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Miscellaneous - Pace Analytical - Mt Juliet, Tn

Rad 226 and 228-Subcontract	0.594	pCi/L			1	0.562	05/03/24 21:15	PACE	904.0 903.0
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ANALYTICAL RESULTS

Sample: HD03621-04
Name: BA04
Matrix: Ground Water - Grab

Sampled: 04/18/24 15:08
Received: 04/18/24 16:35
PO #: 2438773/2438768

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
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Miscellaneous - Pace Analytical - Mt Juliet, Tn

Rad 226 and 228-Subcontract	0.856 J	pCi/L			1	1.74	05/07/24 21:01	PACE	904.0 903.0
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Sample: HD03621-05
Name: BA05
Matrix: Ground Water - Grab

Sampled: 04/18/24 11:33
Received: 04/18/24 16:35
PO #: 2438773/2438768

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
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Miscellaneous - Pace Analytical - Mt Juliet, Tn

Rad 226 and 228-Subcontract	0.607 J	pCi/L			1	0.788	05/07/24 21:01	PACE	904.0 903.0
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Sample: HD03621-06
Name: OM01
Matrix: Ground Water - Grab

Sampled: 04/18/24 11:20
Received: 04/18/24 16:35
PO #: 2438773/2438768

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
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Miscellaneous - Pace Analytical - Mt Juliet, Tn

Rad 226 and 228-Subcontract	0.269 U	pCi/L			1	1.12	05/07/24 21:01	PACE	904.0 903.0
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Sample: HD03621-07
Name: OMO1 Dup
Matrix: Ground Water - Grab

Sampled: 04/18/24 11:20
Received: 04/18/24 16:35
PO #: 2438773/2438768

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
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Miscellaneous - Pace Analytical - Mt Juliet, Tn

Rad 226 and 228-Subcontract	0.0437 U	pCi/L			1	1.1	05/07/24 21:01	PACE	904.0 903.0
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ANALYTICAL RESULTS

Sample: HD03621-08
Name: OM07
Matrix: Ground Water - Grab

Sampled: 04/18/24 13:02
Received: 04/18/24 16:35
PO #: 2438773/2438768

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
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Miscellaneous - Pace Analytical - Mt Juliet, Tn

Rad 226 and 228-Subcontract	0.813 J	pCi/L			1	0.832	05/07/24 21:01	PACE	904.0 903.0
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Sample: HD03621-09
Name: OR13D
Matrix: Ground Water - Grab

Sampled: 04/18/24 13:49
Received: 04/18/24 16:35
PO #: 2438773/2438768

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
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Miscellaneous - Pace Analytical - Mt Juliet, Tn

Rad 226 and 228-Subcontract	0.48	pCi/L			1	0.461	05/07/24 21:01	PACE	904.0 903.0
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Sample: HD03621-10
Name: OR13S
Matrix: Ground Water - Grab

Sampled: 04/18/24 14:35
Received: 04/18/24 16:35
PO #: 2438773/2438768

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
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Miscellaneous - Pace Analytical - Mt Juliet, Tn

Rad 226 and 228-Subcontract	0.461	pCi/L			1	0.43	05/07/24 21:01	PACE	904.0 903.0
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Sample: HD03621-11
Name: OM21
Matrix: Ground Water - Grab

Sampled: 04/18/24 15:18
Received: 04/18/24 16:35
PO #: 2438773/2438768

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
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Miscellaneous - Pace Analytical - Mt Juliet, Tn

Rad 226 and 228-Subcontract	0.305 U	pCi/L			1	0.743	05/07/24 21:01	PACE	904.0 903.0
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ANALYTICAL RESULTS

Sample: HD03934-01
Name: G02S
Matrix: Ground Water - Grab

Sampled: 04/22/24 15:23
Received: 04/22/24 16:42
PO #: 2438773/2438768

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
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Miscellaneous - Pace Analytical - Mt Juliet, Tn

Rad 226 and 228-Subcontract	0.884	pCi/L			1	0.579	05/09/24 17:07	PACE	904.0 903.0
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Sample: HD03934-02
Name: G64L
Matrix: Ground Water - Grab

Sampled: 04/22/24 14:55
Received: 04/22/24 16:42
PO #: 2438773/2438768

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
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Miscellaneous - Pace Analytical - Mt Juliet, Tn

Rad 226 and 228-Subcontract	1.36	pCi/L			1	0.7	05/09/24 17:07	PACE	904.0 903.0
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Sample: HD04162-01
Name: G50S
Matrix: Ground Water - Grab

Sampled: 04/23/24 12:35
Received: 04/23/24 16:42
PO #: 2438773/2438768

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
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Miscellaneous - Pace Analytical - Mt Juliet, Tn

Rad 226 and 228-Subcontract	0.728	pCi/L			1	0.573	05/10/24 18:58	PACE	904.0 903.0
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Sample: HD04162-02
Name: G54L
Matrix: Ground Water - Grab

Sampled: 04/23/24 11:55
Received: 04/23/24 16:42
PO #: 2438773/2438768

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
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Miscellaneous - Pace Analytical - Mt Juliet, Tn

Rad 226 and 228-Subcontract	0.317 J	pCi/L			1	0.533	05/10/24 18:58	PACE	904.0 903.0
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ANALYTICAL RESULTS

Sample: HD04441-01
Name: G54S
Matrix: Ground Water - Grab

Sampled: 04/24/24 11:49
Received: 04/24/24 16:53
PO #: 2438773/2438768

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
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Miscellaneous - Pace Analytical - Mt Juliet, Tn

Rad 226 and 228-Subcontract	0.0724 U	pCi/L			1	0.662	05/10/24 18:58	PACE	904.0 903.0
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Sample: HD04441-02
Name: G57S
Matrix: Ground Water - Grab

Sampled: 04/24/24 13:00
Received: 04/24/24 16:53
PO #: 2438773/2438768

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
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Miscellaneous - Pace Analytical - Mt Juliet, Tn

Rad 226 and 228-Subcontract	0.192 U	pCi/L			1	0.55	05/10/24 18:58	PACE	904.0 903.0
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Sample: HD04441-03
Name: G61S
Matrix: Ground Water - Grab

Sampled: 04/24/24 12:50
Received: 04/24/24 16:53
PO #: 2438773/2438768

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
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Miscellaneous - Pace Analytical - Mt Juliet, Tn

Rad 226 and 228-Subcontract	0.433 J	pCi/L			1	0.909	05/10/24 18:58	PACE	904.0 903.0
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Sample: HD04441-04
Name: G64S
Matrix: Ground Water - Grab

Sampled: 04/24/24 11:30
Received: 04/24/24 16:53
PO #: 2438773/2438768

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
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Miscellaneous - Pace Analytical - Mt Juliet, Tn

Rad 226 and 228-Subcontract	0.209 J	pCi/L			1	0.561	05/10/24 18:58	PACE	904.0 903.0
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ANALYTICAL RESULTS

Sample: HD04441-05
Name: G60L
Matrix: Ground Water - Grab

Sampled: 04/24/24 11:40
Received: 04/24/24 16:53
PO #: 2438773/2438768

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
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Miscellaneous - Pace Analytical - Mt Juliet, Tn

Rad 226 and 228-Subcontract	0.196 U	pCi/L			1	0.798	05/10/24 18:58	PACE	904.0 903.0
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Sample: HD04441-06
Name: G60S
Matrix: Ground Water - Grab

Sampled: 04/24/24 13:20
Received: 04/24/24 16:53
PO #: 2438773/2438768

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
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Miscellaneous - Pace Analytical - Mt Juliet, Tn

Rad 226 and 228-Subcontract	0.574 J	pCi/L			1	0.713	05/10/24 18:58	PACE	904.0 903.0
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Sample: HD04652-01
Name: OM26
Matrix: Ground Water - Grab

Sampled: 04/25/24 10:40
Received: 04/25/24 15:47
PO #: 2438773/2438768

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
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Miscellaneous - Pace Analytical - Mt Juliet, Tn

Rad 226 and 228-Subcontract	2.09	pCi/L			1	0.622	05/13/24 16:40	PACE	904.0 903.0
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Sample: HD04652-02
Name: OM27
Matrix: Ground Water - Grab

Sampled: 04/25/24 12:53
Received: 04/25/24 15:47
PO #: 2438773/2438768

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
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Miscellaneous - Pace Analytical - Mt Juliet, Tn

Rad 226 and 228-Subcontract	1.01	pCi/L			1	0.737	05/13/24 16:40	PACE	904.0 903.0
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ANALYTICAL RESULTS

Sample: HD04652-03
Name: OM28
Matrix: Ground Water - Grab

Sampled: 04/25/24 13:35
Received: 04/25/24 15:47
PO #: 2438773/2438768

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
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Miscellaneous - Pace Analytical - Mt Juliet, Tn

Rad 226 and 228-Subcontract	0.667	pCi/L			1	0.607	05/13/24 16:40	PACE	904.0 903.0
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Sample: HD04652-04
Name: EB 2
Matrix: Ground Water - Grab

Sampled: 04/25/24 14:19
Received: 04/25/24 15:47
PO #: 2438773/2438768

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
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Miscellaneous - Pace Analytical - Mt Juliet, Tn

Rad 226 and 228-Subcontract	0.000 U	pCi/L			1	0.626	05/13/24 16:40	PACE	904.0 903.0
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Sample: HE04754-01
Name: P60
Matrix: Ground Water - Grab

Sampled: 05/28/24 15:09
Received: 05/28/24 14:03
PO #: 2438773/2438768

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
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Miscellaneous - Pace Analytical - Mt Juliet, Tn

Rad 226 and 228-Subcontract	0.433 J	pCi/L			1	0.637	06/18/24 22:32	PACE	904.0 903.0
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ATTACHMENT B.
845 QUARTERLY REPORT - QUARTER 2, 2024
DUCK CREEK POWER PLANT, BOTTOM ASH BASIN
DC-845-205

Pace Analytical Services, LLC
2231 W. Altorfer Drive
Peoria, IL 61615
(800)752-6651

QC SAMPLE RESULTS

Parameter	Result	Unit	Qual	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit

NOTES

Specifications regarding method revisions, method modifications, and calculations used for analysis are available upon request. Please contact your project manager.

* Not a TNI accredited analyte

Certifications

CHI - McHenry, IL - 4314-A W. Crystal Lake Road, McHenry, IL 60050

TNI Accreditation for Drinking Water and Wastewater Fields of Testing through IL EPA Accreditation No. 100279

Illinois Department of Public Health Bacterial Analysis in Drinking Water Approved Laboratory Registry No. 17556

PIA - Peoria, IL - 2231 W. Altorfer Drive, Peoria, IL 61615

TNI Accreditation for Drinking Water, Wastewater, Solid and Hazardous Material Fields of Testing through IL EPA Accreditation No. 100230

Illinois Department of Public Health Bacterial Analysis in Drinking Water Approved Laboratory Registry No. 17553

Drinking Water Certifications/Accreditations: Iowa (240); Kansas (E-10338); Missouri (870)

Wastewater Certifications/Accreditations: Arkansas (88-0677); Iowa (240); Kansas (E-10338)

Solid and Hazardous Material Certifications/Accreditations: Arkansas (88-0677); Iowa (240); Kansas (E-10338)

SPMO - Springfield, MO - 1805 W Sunset Street, Springfield, MO 65807

USEPA DMR-QA Program

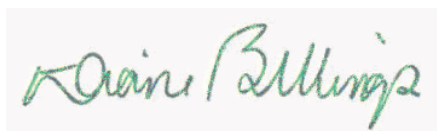
STL - Hazelwood, MO - 944 Anglum Rd, Hazelwood, MO 63042

TNI Accreditation for Wastewater, Solid and Hazardous Material Fields of Testing through KS KDHE Certification No. E-10389

TNI Accreditation for Wastewater, Solid and Hazardous Material Fields of Testing through IL EPA Accreditation No. - 200080

Illinois Department of Public Health Bacterial Analysis in Drinking Water Approved Laboratory, Registry No. 171050

Missouri Department of Natural Resources - Certificate of Approval for Microbiological Laboratory Service - No. 1050



Certified by: Diane Billings, Project Manager



ANALYTICAL REPORT

May 06, 2024

Pace IR - Peoria, IL

Sample Delivery Group: L1727061
Samples Received: 04/18/2024
Project Number: HD02825
Description:
Site: 001
Report To: Diane Billings
2231 W. Altorfer Drive
Peoria, IL 61615

Entire Report Reviewed By:

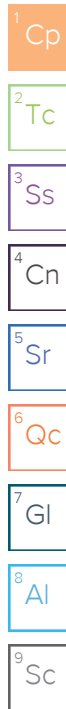


Jason Romer
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.

Pace Analytical National

12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 mydata.pacelabs.com



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Sr: Sample Results	5	3 Ss
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SAMPLE SUMMARY

HD02825-01 L1727061-01 Non-Potable Water

Collected by

Collected date/time

Received date/time

04/15/24 12:17

04/18/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2272999	1	04/24/24 12:59	04/29/24 22:03	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2271810	1	04/22/24 15:14	04/29/24 22:03	DDD	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2271810	1	04/22/24 15:14	04/24/24 22:29	ZRG	Mt. Juliet, TN

Collected by

Collected date/time

Received date/time

04/15/24 13:20

04/18/24 09:00

HD02825-02 L1727061-02 Non-Potable Water

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2272999	1	04/24/24 12:59	04/29/24 22:03	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2271810	1	04/22/24 15:14	04/29/24 22:03	DDD	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2271810	1	04/22/24 15:14	04/24/24 22:29	ZRG	Mt. Juliet, TN

Collected by

Collected date/time

Received date/time

04/15/24 10:53

04/18/24 09:00

HD02825-03 L1727061-03 Non-Potable Water

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2272999	1	04/24/24 12:59	04/29/24 22:03	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2271810	1	04/22/24 15:14	04/29/24 22:03	DDD	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2271810	1	04/22/24 15:14	04/24/24 22:29	ZRG	Mt. Juliet, TN

Collected by

Collected date/time

Received date/time

04/15/24 14:44

04/18/24 09:00

HD02825-04 L1727061-04 Non-Potable Water

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2272999	1	04/24/24 12:59	04/29/24 22:03	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2271810	1	04/22/24 15:14	04/29/24 22:03	DDD	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2271810	1	04/22/24 15:14	04/24/24 22:29	ZRG	Mt. Juliet, TN

Collected by

Collected date/time

Received date/time

04/15/24 14:44

04/18/24 09:00

HD02825-05 L1727061-05 Non-Potable Water

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2272999	1	04/24/24 12:59	04/29/24 22:03	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2271810	1	04/22/24 15:14	04/29/24 22:03	DDD	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2271810	1	04/22/24 15:14	04/24/24 22:29	ZRG	Mt. Juliet, TN

Collected by

Collected date/time

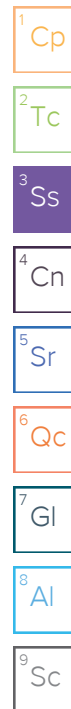
Received date/time

04/15/24 13:21

04/18/24 09:00

HD02825-06 L1727061-06 Non-Potable Water

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2272999	1	04/24/24 12:59	04/29/24 22:03	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2271810	1	04/22/24 15:14	04/29/24 22:03	DDD	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2271810	1	04/22/24 15:14	04/24/24 22:29	ZRG	Mt. Juliet, TN

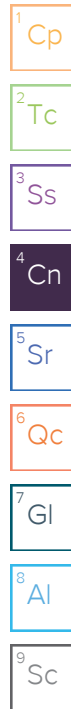


CASE NARRATIVE

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All radiochemical sample results for solids are reported on a dry weight basis with the exception of tritium, carbon-14 and radon, unless wet weight was requested by the client. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.



Jason Romer
Project Manager



Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-228	1.13		0.246	0.635	0.409	0.216	04/29/2024 22:03	WG2272999
(T) Barium	90.8					30.0-143	04/29/2024 22:03	WG2272999
(T) Yttrium	103					30.0-136	04/29/2024 22:03	WG2272999

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	1.16		0.334	0.576	04/29/2024 22:03	WG2271810

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-226	0.0344	<u>U</u>	0.226	0.0819	0.406	0.268	04/24/2024 22:29	WG2271810
(T) Barium-133	88.5					30.0-143	04/24/2024 22:29	WG2271810

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-228	1.08		0.252	0.665	0.423	0.223	04/29/2024 22:03	WG2272999
(T) Barium	92.6					30.0-143	04/29/2024 22:03	WG2272999
(T) Yttrium	94.8					30.0-136	04/29/2024 22:03	WG2272999

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	1.17		0.377	0.626	04/29/2024 22:03	WG2271810

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-226	0.0903	<u>U</u>	0.280	0.102	0.461	0.299	04/24/2024 22:29	WG2271810
(T) Barium-133	86.4					30.0-143	04/24/2024 22:29	WG2271810

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-228	1.16		0.285	0.727	0.484	0.253	04/29/2024 22:03	WG2272999
(T) Barium	97.2					30.0-143	04/29/2024 22:03	WG2272999
(T) Yttrium	95.9					30.0-136	04/29/2024 22:03	WG2272999

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	1.21		0.353	0.620	04/29/2024 22:03	WG2271810

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-226	0.0478	U	0.209	0.0706	0.387	0.265	04/24/2024 22:29	WG2271810
(T) Barium-133	80.1					30.0-143	04/24/2024 22:29	WG2271810

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-228	1.02		0.238	0.644	0.400	0.211	04/29/2024 22:03	WG2272999
(T) Barium	97.5					30.0-143	04/29/2024 22:03	WG2272999
(T) Yttrium	97.9					30.0-136	04/29/2024 22:03	WG2272999

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	1.26		0.367	0.556	04/29/2024 22:03	WG2271810

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-226	0.236	J	0.279	0.114	0.386	0.259	04/24/2024 22:29	WG2271810
(T) Barium-133	89.2					30.0-143	04/24/2024 22:29	WG2271810

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-228	1.24		0.289	0.714	0.488	0.256	04/29/2024 22:03	WG2272999
(T) Barium	88.7					30.0-143	04/29/2024 22:03	WG2272999
(T) Yttrium	110					30.0-136	04/29/2024 22:03	WG2272999

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	1.31		0.369	0.623	04/29/2024 22:03	WG2271810

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-226	0.0737	<u>U</u>	0.230	0.0927	0.387	0.255	04/24/2024 22:29	WG2271810
(T) Barium-133	95.3					30.0-143	04/24/2024 22:29	WG2271810

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-228	1.43		0.275	0.634	0.457	0.239	04/29/2024 22:03	WG2272999
(T) Barium	99.1					30.0-143	04/29/2024 22:03	WG2272999
(T) Yttrium	104					30.0-136	04/29/2024 22:03	WG2272999

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	1.57		0.334	0.533	04/29/2024 22:03	WG2271810

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-226	0.141	J	0.189	0.0781	0.274	0.203	04/24/2024 22:29	WG2271810
(T) Barium-133	86.9					30.0-143	04/24/2024 22:29	WG2271810

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Cp

Tc

Ss

Cn

Sr

Qc

Gl

Al

Sc

(MB) R4064695-1 04/29/24 22:03									
Analyte	MB Result	MB Qualifier		MB 2 sigma CE	MB MDA	MB Lc			
	pCi/l	+ / -		pCi/l	pCi/l	pCi/l			
Radium-228	0.813	0.206		0.349		0.183			
(T) Barium	104	104							
(T) Yttrium	93.2	93.2							

L1727064-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1727064-05 04/29/24 22:03 • (DUP) R4064695-5 04/29/24 22:03									
Analyte	Original Result		Original 2 sigma CE	Original MDA	Original Lc	DUP Result	DUP 2 sigma CE	DUP MDA	DUP Lc
	pCi/l	+ / -	pCi/l	pCi/l	pCi/l	pCi/l	+ / -	pCi/l	pCi/l
Radium-228	0.491	0.270	0.476	0.249		1.25	0.307	0.514	0.272
(T) Barium	95.8					102	102		
(T) Yttrium	98.6					95.9	95.9		

Laboratory Control Sample (LCS)

(LCS) R4064695-2 04/29/24 22:03									
Analyte	Spike Amount		LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier			
	pCi/l	pCi/l	pCi/l	%	%				
Radium-228	5.00	4.91	98.1		80.0-120				
(T) Barium			104						
(T) Yttrium			96.9						

L1722466-17 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1722466-17 04/29/24 22:03 • (MS) R4064695-3 04/29/24 22:03 • (MSD) R4064695-4 04/29/24 22:03									
Analyte	Spike Amount		Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits
	pCi/l	pCi/l	pCi/l	pCi/l	pCi/l	%	%		%
Radium-228	10.0	0.875	10.2	9.88		93.4	90.0	1	70.0-130
(T) Barium		103				98.6	104		
(T) Yttrium		112				99.0	101		

Cp

Tc

Ss

Cn

Sr

Qc

Gl

Al

Sc

(MB) R4062564-5 04/24/24 22:29						
Analyte	MB Result	MB Qualifier	MB 2 sigma CE	MB MDA	MB Lc	
	pCi/l		+ / -	pCi/l	pCi/l	pCi/l
Radium-226	0.00229	U	0.0277	0.0529	0.0334	
(T) Barium-133	85.3		85.3			

L1727061-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1727061-05 04/24/24 22:29 • (DUP) R4062564-4 04/24/24 18:03									
Analyte	Original Result	Original 2 sigma CE	Original MDA	Original Lc	DUP Result	DUP 2 sigma CE	DUP MDA	DUP Lc	DUP RER
	pCi/l	+ / -	pCi/l	pCi/l	pCi/l	+ / -	pCi/l	pCi/l	%
Radium-226	0.0737	0.230	0.387	0.255	0.000	0.237	0.437	0.283	200
(T) Barium-133	95.3	91.1		91.1		91.1		0.223	20

Laboratory Control Sample (LCS)

(LCS) R4062564-1 04/24/24 16:10					
Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	pCi/l	pCi/l	%	%	
Radium-226	5.00	4.98	99.5	80.0-120	
(T) Barium-133			85.9		

L1726048-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1726048-01 04/24/24 18:03 • (MS) R4062564-2 04/24/24 18:03 • (MSD) R4062564-3 04/24/24 18:03									
Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	DUP RER
	pCi/l	pCi/l	pCi/l	pCi/l	%	%		%	%
Radium-226	20.0	0.193	22.8	20.0	113	98.9	1	75.0-125	20
(T) Barium-133	82.9		82.7		82.0		13.1		20

Guide to Reading and Understanding Your Laboratory Report

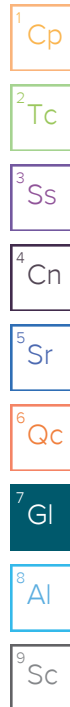
The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDA	Minimum Detectable Activity.
Rec.	Recovery.
RER	Replicate Error Ratio.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(T)	Tracer - A radioisotope of known concentration added to a solution of chemically equivalent radioisotopes at a known concentration to assist in monitoring the yield of the chemical separation.
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
J	The identification of the analyte is acceptable; the reported value is an estimate.
U	Below Detectable Limits: Indicates that the analyte was not detected.



ACCREDITATIONS & LOCATIONS

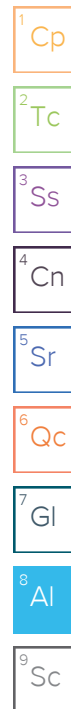
Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey--NELAP	TN002
California	2932	New Mexico ¹	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio--VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1 6}	KY90010	South Carolina	84004002
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1 4}	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas ⁵	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA -- ISO 17025	1461.01	AIHA-LAP, LLC EMLAP	100789
A2LA -- ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA--Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.



SUBCONTRACT ORDER
Transfer Chain of Custody
Pace Analytical Services, LLC
HD02825

40

SENDING LABORATORY

PDC Laboratories, Inc.
2231 W Altorfer Dr
Peoria, IL 61615
(800) 752-6651

RECEIVING LABORATORY

Pace Analytical - Mt Juliet, Tn
12065 Lebanon Rd
Mt Juliet, TN 37122
(615) 758-5858

11722061

Sample: HD02825-01
Name: OM16

Sampled: 04/15/24 12:17
Matrix: Ground Water
Preservative: HNO3, pH <2

-01

Analysis	Due	Expires	Comments
01-Radium 226/228 combined	04/26/24 16:00	10/12/24 12:17	
01-Radium 226/228 combined	04/26/24 16:00	10/12/24 12:17	

Sample: HD02825-02
Name: OM17

Sampled: 04/15/24 13:20
Matrix: Ground Water
Preservative: HNO3, pH <2

-02

Analysis	Due	Expires	Comments
01-Radium 226/228 combined	04/26/24 16:00	10/12/24 13:20	
01-Radium 226/228 combined	04/26/24 16:00	10/12/24 13:20	

Sample: HD02825-03
Name: OM24D

Sampled: 04/15/24 10:53
Matrix: Ground Water
Preservative: HNO3, pH <2

-03

Analysis	Due	Expires	Comments
01-Radium 226/228 combined	04/26/24 16:00	10/12/24 10:53	
01-Radium 226/228 combined	04/26/24 16:00	10/12/24 10:53	

Sample: HD02825-04
Name: OR11

Sampled: 04/15/24 14:44
Matrix: Ground Water
Preservative: HNO3, pH <2

-04

Analysis	Due	Expires	Comments
01-Radium 226/228 combined	04/26/24 16:00	10/12/24 14:44	
01-Radium 226/228 combined	04/26/24 16:00	10/12/24 14:44	

845 QUARTERLY REPORT - QUARTER 2, 2024
DUCK CREEK POWER PLANT, BOTTOM ASH BASIN
DC-845-2024

SUBCONTRACT ORDER

Transfer Chain of Custody

B010

Pace Analytical Services, LLC

HD02825

41

SENDING LABORATORY

PDC Laboratories, Inc.
2231 W Altorfer Dr
Peoria, IL 61615
(800) 752-6651

RECEIVING LABORATORY

Pace Analytical - Mt Juliet, Tn
12065 Lebanon Rd
Mt Juliet, TN 37122
(615) 758-5858

L727061

Sample: HD02825-05
Name: OR11 Dup

Sampled: 04/15/24 14:44
Matrix: Ground Water
Preservative: HNO3, pH <2

-05

Analysis	Due	Expires	Comments
01-Radium 226/228 combined	04/26/24 16:00	10/12/24 14:44	
01-Radium 226/228 combined	04/26/24 16:00	10/12/24 14:44	

Sample: HD02825-06
Name: OR20

Sampled: 04/15/24 13:21
Matrix: Ground Water
Preservative: HNO3, pH <2

-06

Analysis	Due	Expires	Comments
01-Radium 226/228 combined	04/26/24 16:00	10/12/24 13:21	
01-Radium 226/228 combined	04/26/24 16:00	10/12/24 13:21	

Sample Receipt Checklist

COC Seal Present/Intact:	☒ Y ☐ N	If Applicable	
COC Signed/Accurate:	☒ Y ☐ N	VOA Zero Headspace:	☒ Y ☐ N
Bottles arrive intact:	☒ Y ☐ N	Pres. Correct/Check:	☒ Y ☐ N
Correct bottles used:	☒ Y ☐ N		
Sufficient volume sent:	☒ Y ☐ N		
RA Screen: <0.5 mR/hr.	☒ Y ☐ N		

7308 4398 8108 8219 04-18-24 CR
Amb.

Please email results to Diane Billings at diane.billings@pacelabs.com

Date Shipped: 4/17/24 Total # of Containers: 6 Sample Origin (State): IL PO #: _____

Turn-Around Time Requested ☐ NORMAL ☐ RUSH

Date Results Needed: _____

Relinquished By: [Signature] Date/Time: 4/17/24 0730 Received By: C. Rone Date/Time: 0900 04-18-24

Relinquished By: _____ Date/Time: _____ Received By: _____ Date/Time: _____

Sample Temperature Upon Receipt	_____ °C
Sample(s) Received on Ice	Y or N
Proper Bottles Received in Good Condition	Y or N
Bottles Filled with Adequate Volume	Y or N
Samples Received Within Hold Time	Y or N
Date/Time Taken From Sample Bottle	Y or N

ANALYTICAL REPORT

May 07, 2024

Pace IR - Peoria, IL

Sample Delivery Group: L1727064
Samples Received: 04/18/2024
Project Number: HD03070
Description:
Site: 001
Report To: Diane Billings
2231 W. Altorfer Drive
Peoria, IL 61615

Entire Report Reviewed By:

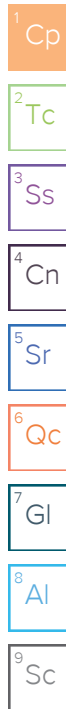


Jason Romer
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.

Pace Analytical National

12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 mydata.pacelabs.com



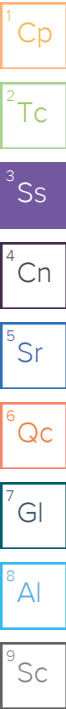
Cp: Cover Page	1	1 Cp
Tc: Table of Contents	2	
Ss: Sample Summary	3	2 Tc
Cn: Case Narrative	5	
Sr: Sample Results	6	3 Ss
HD03070-01 L1727064-01	6	
HD03070-02 L1727064-02	7	4 Cn
HD03070-03 L1727064-03	8	
HD03070-04 L1727064-04	9	5 Sr
HD03070-05 L1727064-05	10	
HD03070-06 L1727064-06	11	6 Qc
HD03070-07 L1727064-07	12	
HD03070-08 L1727064-08	13	7 Gl
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Qc: Quality Control Summary	16	
Radiochemistry by Method 904/9320	16	
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Gl: Glossary of Terms	20	
Al: Accreditations & Locations	21	
Sc: Sample Chain of Custody	22	

SAMPLE SUMMARY

HD03070-01 L1727064-01 Non-Potable Water

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2272999	1	04/24/24 12:59	04/29/24 22:03	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2271810	1	04/22/24 15:14	04/29/24 22:03	DDD	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2271810	1	04/22/24 15:14	04/24/24 22:29	ZRG	Mt. Juliet, TN

Collected by
Collected date/time
Received date/time
04/16/24 12:57
04/18/24 09:00



HD03070-02 L1727064-02 Non-Potable Water

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2272999	1	04/24/24 12:59	04/29/24 22:03	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2271810	1	04/22/24 15:14	04/29/24 22:03	DDD	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2271810	1	04/22/24 15:14	04/24/24 22:29	ZRG	Mt. Juliet, TN

Collected by
Collected date/time
Received date/time
04/16/24 12:57
04/18/24 09:00

HD03070-03 L1727064-03 Non-Potable Water

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2272999	1	04/24/24 12:59	04/29/24 22:03	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2271813	1	04/23/24 11:10	04/29/24 22:03	DDD	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2271813	1	04/23/24 11:10	04/24/24 16:10	ZRG	Mt. Juliet, TN

Collected by
Collected date/time
Received date/time
04/16/24 11:30
04/18/24 09:00

HD03070-04 L1727064-04 Non-Potable Water

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2272999	1	04/24/24 12:59	04/29/24 22:03	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2271813	1	04/23/24 11:10	04/29/24 22:03	DDD	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2271813	1	04/23/24 11:10	04/24/24 16:10	ZRG	Mt. Juliet, TN

Collected by
Collected date/time
Received date/time
04/16/24 14:32
04/18/24 09:00

HD03070-05 L1727064-05 Non-Potable Water

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2272999	1	04/24/24 12:59	04/29/24 22:03	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2271813	1	04/23/24 11:10	04/29/24 22:03	DDD	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2271813	1	04/23/24 11:10	04/24/24 16:10	ZRG	Mt. Juliet, TN

Collected by
Collected date/time
Received date/time
04/16/24 15:00
04/18/24 09:00

HD03070-06 L1727064-06 Non-Potable Water

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2273003	1	04/26/24 00:27	05/01/24 21:48	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2271813	1	04/23/24 11:10	05/01/24 21:48	DDD	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2271813	1	04/23/24 11:10	04/24/24 16:10	ZRG	Mt. Juliet, TN

Collected by
Collected date/time
Received date/time
04/16/24 14:12
04/18/24 09:00

SAMPLE SUMMARY

HD03070-07 L1727064-07 Non-Potable Water

Collected by
Collected date/time
Received date/time

04/16/24 11:20
04/18/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2273003	1	04/26/24 00:27	05/01/24 21:48	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2271813	1	04/23/24 11:10	05/01/24 21:48	DDD	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2271813	1	04/23/24 11:10	04/24/24 16:10	ZRG	Mt. Juliet, TN

HD03070-08 L1727064-08 Non-Potable Water

Collected by
Collected date/time
Received date/time

04/16/24 12:05
04/18/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2273003	1	04/26/24 00:27	05/01/24 21:48	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2271813	1	04/23/24 11:10	05/01/24 21:48	DDD	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2271813	1	04/23/24 11:10	04/24/24 16:10	ZRG	Mt. Juliet, TN

HD03070-09 L1727064-09 Non-Potable Water

Collected by
Collected date/time
Received date/time

04/16/24 12:58
04/18/24 09:00

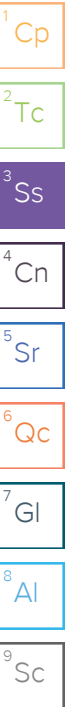
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2273003	1	04/26/24 00:27	05/01/24 21:48	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2271813	1	04/23/24 11:10	05/01/24 21:48	DDD	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2271813	1	04/23/24 11:10	04/24/24 16:10	ZRG	Mt. Juliet, TN

HD03070-10 L1727064-10 Non-Potable Water

Collected by
Collected date/time
Received date/time

04/16/24 10:22
04/18/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2273003	1	04/26/24 00:27	05/01/24 21:48	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2271813	1	04/23/24 11:10	05/01/24 21:48	DDD	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2271813	1	04/23/24 11:10	04/24/24 16:10	ZRG	Mt. Juliet, TN

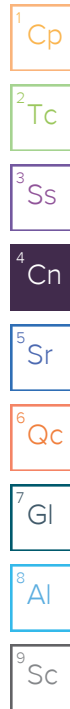


CASE NARRATIVE

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All radiochemical sample results for solids are reported on a dry weight basis with the exception of tritium, carbon-14 and radon, unless wet weight was requested by the client. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.



Jason Romer
Project Manager



Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-228	0.913		0.298	0.852	0.514	0.268	04/29/2024 22:03	WG2272999
(T) Barium	93.1					30.0-143	04/29/2024 22:03	WG2272999
(T) Yttrium	96.6					30.0-136	04/29/2024 22:03	WG2272999

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	1.19		0.378	0.571	04/29/2024 22:03	WG2271810

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-226	0.275		0.232	0.104	0.249	0.189	04/24/2024 22:29	WG2271810
(T) Barium-133	90.1					30.0-143	04/24/2024 22:29	WG2271810

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-228	0.662		0.290	0.973	0.507	0.264	04/29/2024 22:03	WG2272999
(T) Barium	93.8					30.0-143	04/29/2024 22:03	WG2272999
(T) Yttrium	99.8					30.0-136	04/29/2024 22:03	WG2272999

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	0.953		0.386	0.588	04/29/2024 22:03	WG2271810

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-226	0.292	J	0.255	0.114	0.298	0.214	04/24/2024 22:29	WG2271810
(T) Barium-133	91.8					30.0-143	04/24/2024 22:29	WG2271810

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-228	1.17		0.293	0.745	0.499	0.260	04/29/2024 22:03	WG2272999
(T) Barium	100					30.0-143	04/29/2024 22:03	WG2272999
(T) Yttrium	105					30.0-136	04/29/2024 22:03	WG2272999

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	1.18		0.382	0.669	04/29/2024 22:03	WG2271813

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-226	0.0181	<u>U</u>	0.245	0.0823	0.445	0.291	04/24/2024 16:10	WG2271813
(T) Barium-133	83.7					30.0-143	04/24/2024 16:10	WG2271813

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-228	1.65		0.312	0.676	0.520	0.271	04/29/2024 22:03	WG2272999
(T) Barium	91.9					30.0-143	04/29/2024 22:03	WG2272999
(T) Yttrium	96.8					30.0-136	04/29/2024 22:03	WG2272999

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	1.77		0.381	0.622	04/29/2024 22:03	WG2271813

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-226	0.126	J	0.218	0.0892	0.341	0.234	04/24/2024 16:10	WG2271813
(T) Barium-133	91.1					30.0-143	04/24/2024 16:10	WG2271813

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-228	0.491		0.270	1.05	0.476	0.249	04/29/2024 22:03	WG2272999
(T) Barium	95.8					30.0-143	04/29/2024 22:03	WG2272999
(T) Yttrium	98.6					30.0-136	04/29/2024 22:03	WG2272999

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	0.582		0.313	0.541	04/29/2024 22:03	WG2271813

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-226	0.0911	<u>U</u>	0.158	0.0682	0.258	0.191	04/24/2024 16:10	WG2271813
(T) Barium-133	92.5					30.0-143	04/24/2024 16:10	WG2271813

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-228	0.663		0.329	1.10	0.579	0.302	05/01/2024 21:48	WG2273003
(T) Barium	86.1					30.0-143	05/01/2024 21:48	WG2273003
(T) Yttrium	98.6					30.0-136	05/01/2024 21:48	WG2273003

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	0.720		0.371	0.656	05/01/2024 21:48	WG2271813

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-226	0.0572	<u>U</u>	0.172	0.0637	0.309	0.216	04/24/2024 16:10	WG2271813
(T) Barium-133	85.5					30.0-143	04/24/2024 16:10	WG2271813

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-228	0.946		0.327	0.919	0.567	0.297	05/01/2024 21:48	WG2273003
(T) Barium	86.4					30.0-143	05/01/2024 21:48	WG2273003
(T) Yttrium	94.1					30.0-136	05/01/2024 21:48	WG2273003

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	1.51		0.469	0.644	05/01/2024 21:48	WG2271813

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-226	0.563		0.336	0.143	0.305	0.219	04/24/2024 16:10	WG2271813
(T) Barium-133	85.3					30.0-143	04/24/2024 16:10	WG2271813

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-228	0.346	J	0.332	2.02	0.595	0.310	05/01/2024 21:48	WG2273003
(T) Barium	79.4					30.0-143	05/01/2024 21:48	WG2273003
(T) Yttrium	107					30.0-136	05/01/2024 21:48	WG2273003

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	0.845		0.463	0.692	05/01/2024 21:48	WG2271813

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-226	0.499		0.322	0.142	0.353	0.229	04/24/2024 16:10	WG2271813
(T) Barium-133	92.6					30.0-143	04/24/2024 16:10	WG2271813

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-228	0.590		0.259	0.919	0.455	0.238	05/01/2024 21:48	WG2273003
(T) Barium	96.5					30.0-143	05/01/2024 21:48	WG2273003
(T) Yttrium	102					30.0-136	05/01/2024 21:48	WG2273003

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	0.639		0.314	0.551	05/01/2024 21:48	WG2271813

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-226	0.0492	<u>U</u>	0.177	0.0625	0.310	0.208	04/24/2024 16:10	WG2271813
(T) Barium-133	83.6					30.0-143	04/24/2024 16:10	WG2271813

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-228	0.494		0.218	0.841	0.382	0.202	05/01/2024 21:48	WG2273003
(T) Barium	92.4					30.0-143	05/01/2024 21:48	WG2273003
(T) Yttrium	107					30.0-136	05/01/2024 21:48	WG2273003

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	0.629		0.296	0.484	05/01/2024 21:48	WG2271813

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-226	0.135	J	0.200	0.0829	0.297	0.202	04/24/2024 16:10	WG2271813
(T) Barium-133	91.7					30.0-143	04/24/2024 16:10	WG2271813

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

QUALITY CONTROL SUMMARY

L1727064-01.02.03.04.05

Cp

Tc

Ss

Cn

Sr

Qc

Gl

Al

Sc

(MB) R4064695-1 04/29/24 22:03									
Analyte	MB Result pCi/l	MB Qualifier	MB 2 sigma CE + / -	MB MDA pCi/l	MB Lc pCi/l				
Radium-228	0.813		0.206	0.349	0.183				
(T) Barium	104		104						
(T) Yttrium	93.2		93.2						

L1727064-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1727064-05 04/29/24 22:03 • (DUP) R4064695-5 04/29/24 22:03											
Analyte	Original Result pCi/l	Original 2 sigma CE + / -	Original MDA pCi/l	Original Lc pCi/l	DUP Result pCi/l	DUP 2 sigma CE + / -	DUP MDA pCi/l	DUP Lc pCi/l	DUP RPD %	DUP RER %	DUP RER Limit
Radium-228	0.491	0.270	0.476	0.249	1.25	0.307	0.514	0.272	87.4	20	3
(T) Barium	95.8				102	102					
(T) Yttrium	98.6				95.9	95.9					

Laboratory Control Sample (LCS)

(LCS) R4064695-2 04/29/24 22:03									
Analyte	Spike Amount pCi/l	LCS Result pCi/l	LCS Rec. %	Rec. Limits %	LCS Qualifier				
Radium-228	5.00	4.91	98.1	80.0-120					
(T) Barium			104						
(T) Yttrium			96.9						

L1722466-17 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1722466-17 04/29/24 22:03 • (MS) R4064695-3 04/29/24 22:03 • (MSD) R4064695-4 04/29/24 22:03													
Analyte	Spike Amount pCi/l	Original Result pCi/l	MS Result pCi/l	MSD Result pCi/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD	MS RER	RPD Limits %
Radium-228	10.0	0.875	10.2	9.88	93.4	90.0	1	70.0-130			3.43		20
(T) Barium		103			98.6	104							
(T) Yttrium		112			99.0	101							

Cp

Tc

Ss

Cn

Sr

Qc

Gl

Al

Sc

(MB) R4066346-1 05/01/24 21:48									
Analyte	MB Result pCi/l	MB Qualifier	MB 2 sigma CE + / -	MB MDA pCi/l	MB Lc pCi/l				
Radium-228	-0.0825	U	0.186	0.342	0.179				
(T) Barium	102		102						
(T) Yttrium	97.5		97.5						

L1722557-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1722557-02 05/01/24 21:48 • (DUP) R4066346-5 05/01/24 21:48												
Analyte	Original Result pCi/l	Original 2 sigma CE + / -	Original MDA pCi/l	Original Lc pCi/l	DUP Result pCi/l	DUP 2 sigma CE + / -	DUP MDA pCi/l	DUP Lc pCi/l	DUP RPD %	DUP RER DUP Qualifier	DUP RPD Limits %	DUP RER Limit
Radium-228	-0.0126	0.219	0.405	0.214	0.197	0.330	0.600	0.317	200	0.530	20	3
(T) Barium	93.4				91.6	91.6				U		
(T) Yttrium	95.1				94.9	94.9						

Laboratory Control Sample (LCS)

(LCS) R4066346-2 05/01/24 21:48									
Analyte	Spike Amount pCi/l	LCS Result pCi/l	LCS Rec. %	Rec. Limits %	LCS Qualifier				
Radium-228	5.00	5.41	108	80.0-120					
(T) Barium			90.1						
(T) Yttrium			90.2						

L1727064-08 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1727064-08 05/01/24 21:48 • (MS) R4066346-3 05/01/24 21:48 • (MSD) R4066346-4 05/01/24 21:48												
Analyte	Spike Amount pCi/l	Original Result pCi/l	MS Result pCi/l	MSD Result pCi/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	<u>MS Qualifier</u>	<u>MSD Qualifier</u> RPD %	MS RER	RPD Limits %
Radium-228	10.0	0.346	8.89	8.03	85.5	76.9	1	70.0-130		10.2		20
(T) Barium		79.4			88.8	86.9						
(T) Yttrium		107			82.4	101						

Method Blank (MB)

(MB) R4062564-5 04/24/24 22:29

Analyte	MB Result pCi/l	MB Qualifier	MB 2 sigma CE + / -	MB MDA pCi/l	MB Lc pCi/l
Radium-226	0.00229	U	0.0277	0.0529	0.0334
(7) Barium-133	85.3		85.3		

L1727061-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1727061-05 04/24/24 22:29 • (DUP) R4062564-4 04/24/24 18:03

Analyte	Original Result pCi/l	Original 2 sigma CE + / -	Original MDA pCi/l	Original Lc pCi/l	DUP Result pCi/l	DUP 2 sigma CE + / -	DUP MDA pCi/l	DUP Lc pCi/l	DUP RPD %	DUP RER	<u>DUP Qualifier</u>	DUP RPD Limits %	DUP RER Limit
Radium-226	0.0737	0.230	0.387	0.255	0.000	0.237	0.437	0.283	200	0.223	U	20	3
(f) Borium-133	95.3				91.1	91.1							

Laboratory Control Sample (LCS)

(LCS) R4062564-1 04/24/24 16:10

Analyte	Spike Amount pCi/l	LCS Result pCi/l	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
Radium-226	5.00	4.98	99.5	80.0-120	
(7) Barium-133			85.9		

L1726048-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1726048-01 04/24/24 18:03 • (MS) R4062564-2 04/24/24 18:03 • (MSD) R4062564-3 04/24/24 18:03

Analyte	Spike Amount pCi/l	Original Result pCi/l	MS Result pCi/l	MSD Result pCi/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	<u>MS Qualifier</u>	<u>MSD Qualifier</u>	RPD %	MS RER	RPD Limits %
Radium-226	20.0	0.193	22.8	20.0	113	98.9	1	75.0-125			13.1		20
(7) Barium-133		82.9			82.7	82.0							

Cp

Tc

Ss

Cn

Sr

Qc

Gl

Al

Sc

(MB) R4063163-1 04/24/24 16:10						
Analyte	MB Result	MB Qualifier	MB 2 sigma CE	MB MDA	MB Lc	
	pCi/l		+ / -	pCi/l	pCi/l	pCi/l
Radium-226	-0.00560	U	0.0392	0.0822	0.0552	
(T) Barium-133	90.9		90.9			

L1727334-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1727334-04 04/24/24 16:10 • (DUP) R4063163-5 04/24/24 16:10									
Analyte	Original Result	Original 2 sigma CE	Original MDA	Original Lc	DUP Result	DUP 2 sigma CE	DUP MDA	DUP Lc	DUP RER
	pCi/l	+ / -	pCi/l	pCi/l	pCi/l	+ / -	pCi/l	pCi/l	%
Radium-226	0.162	0.201	0.282	0.192	0.356	0.254	0.273	0.189	74.9
(T) Barium-133	98.1	92.4		92.4		92.4		92.4	

Laboratory Control Sample (LCS)

(LCS) R4063163-2 04/24/24 16:10					
Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	<u>LCS Qualifier</u>
	pCi/l	pCi/l	%	%	
Radium-226	5.00	5.21	104	80.0-120	
(T) Barium-133	95.0				

L1727064-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1727064-06 04/24/24 16:10 • (MS) R4063163-3 04/24/24 16:10 • (MSD) R4063163-4 04/24/24 16:10													
Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	MS RER	RPD Limits
	pCi/l	pCi/l	pCi/l	pCi/l	%	%		%			%		%
Radium-226	20.0	0.0572	21.5	20.2	107	101	1	75.0-125			6.10		20
(T) Barium-133	85.5		89.5		89.5		86.7						

Guide to Reading and Understanding Your Laboratory Report

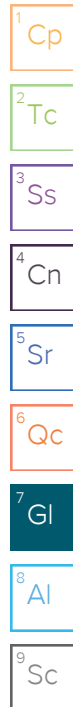
The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDA	Minimum Detectable Activity.
Rec.	Recovery.
RER	Replicate Error Ratio.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(T)	Tracer - A radioisotope of known concentration added to a solution of chemically equivalent radioisotopes at a known concentration to assist in monitoring the yield of the chemical separation.
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
J	The identification of the analyte is acceptable; the reported value is an estimate.
U	Below Detectable Limits: Indicates that the analyte was not detected.



ACCREDITATIONS & LOCATIONS

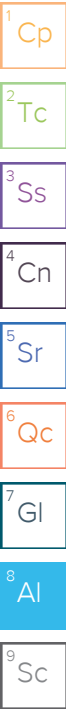
Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey--NELAP	TN002
California	2932	New Mexico ¹	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio--VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1 6}	KY90010	South Carolina	84004002
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1 4}	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas ⁵	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA -- ISO 17025	1461.01	AIHA-LAP, LLC EMLAP	100789
A2LA -- ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA--Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.



SUBCONTRACT ORDER
Transfer Chain of Custody

Pace Analytical Services, LLC
HD03070

SENDING LABORATORY

PDC Laboratories, Inc.
2231 W Altorfer Dr
Peoria, IL 61615
(800) 752-6651

RECEIVING LABORATORY

Pace Analytical - Mt Juliet, Tn
12065 Lebanon Rd
Mt Juliet, TN 37122
(615) 758-5858

LITZ7064

Sample: HD03070-01
Name: BA01

Sampled: 04/16/24 12:57
Matrix: Ground Water
Preservative: HNO3, pH <2

-01

Analysis	Due	Expires	Comments
----------	-----	---------	----------

01-Radium 226/228 combined	04/29/24 16:00	10/13/24 12:57	
----------------------------	----------------	----------------	--

Sample: HD03070-02
Name: BA01 Dup

Sampled: 04/16/24 12:57
Matrix: Ground Water
Preservative: HNO3, pH <2

-02

Analysis	Due	Expires	Comments
----------	-----	---------	----------

01-Radium 226/228 combined	04/29/24 16:00	10/13/24 12:57	
----------------------------	----------------	----------------	--

Sample: HD03070-03
Name: BA02

Sampled: 04/16/24 11:30
Matrix: Ground Water
Preservative: HNO3, pH <2

-03

Analysis	Due	Expires	Comments
----------	-----	---------	----------

01-Radium 226/228 combined	04/29/24 16:00	10/13/24 11:30	
----------------------------	----------------	----------------	--

Sample: HD03070-04
Name: BA06

Sampled: 04/16/24 14:32
Matrix: Ground Water
Preservative: HNO3, pH <2

-04

Analysis	Due	Expires	Comments
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01-Radium 226/228 combined	04/29/24 16:00	10/13/24 14:32	
----------------------------	----------------	----------------	--

Sample: HD03070-05
Name: OR02

Sampled: 04/16/24 15:00
Matrix: Ground Water
Preservative: HNO3, pH <2

-05

Analysis	Due	Expires	Comments
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01-Radium 226/228 combined	04/29/24 16:00	10/13/24 15:00	
----------------------------	----------------	----------------	--

SUBCONTRACT ORDER
Transfer Chain of Custody

Pace Analytical Services, LLC
HD03070

SENDING LABORATORY

PDC Laboratories, Inc.
2231 W Altorfer Dr
Peoria, IL 61615
(800) 752-6651

RECEIVING LABORATORY

Pace Analytical - Mt Juliet, Tn
12065 Lebanon Rd
Mt Juliet, TN 37122
(615) 758-5858

L1727064

Sample: HD03070-06
Name: OM04S

Sampled: 04/16/24 14:12
Matrix: Ground Water
Preservative: HNO₃, pH <2

-06

Analysis

Due

Expires

Comments

01-Radium 226/228 combined

04/29/24 16:00

10/13/24 14:12

Sample: HD03070-07
Name: OM12

Sampled: 04/16/24 11:20
Matrix: Ground Water
Preservative: HNO₃, pH <2

-07

Analysis

Due

Expires

Comments

01-Radium 226/228 combined

04/29/24 16:00

10/13/24 11:20

Sample: HD03070-08
Name: OR06A

Sampled: 04/16/24 12:05
Matrix: Ground Water
Preservative: HNO₃, pH <2

-08

Analysis

Due

Expires

Comments

01-Radium 226/228 combined

04/29/24 16:00

10/13/24 12:05

Sample: HD03070-09
Name: OR14D

Sampled: 04/16/24 12:58
Matrix: Ground Water
Preservative: HNO₃, pH <2

-09

Analysis

Due

Expires

Comments

01-Radium 226/228 combined

04/29/24 16:00

10/13/24 12:58

Sample: HD03070-10
Name: OR19

Sampled: 04/16/24 10:22
Matrix: Ground Water
Preservative: HNO₃, pH <2

-10

Analysis

Due

Expires

Comments

01-Radium 226/228 combined

04/29/24 16:00

10/13/24 10:22

SUBCONTRACT ORDER
Transfer Chain of Custody
Pace Analytical Services, LLC
HD03070

B011

4727064

COC Seal Present/Intact: Y N
COC Signed/Accurate: Y N
Bottles arrive intact: Y N
Correct bottles used: Y N
Sufficient volume sent: Y N
RA Screen <0.5 mR/hr: Y N

Sample Receipt Checklist

If Applicable
VOA Zero Headspace: Y N
Pres. Correct/Check: Y N

7308 4398 8168

Amb

Please email results to Diane Billings at diane.billings@pacelabs.com

Date Shipped: 4/17/24 Total # of Containers: 10 Sample Origin (State): IL PO #: _____
Turn-Around Time Requested ☐ NORMAL ☐ RUSH Date Results Needed: _____

Relinquished By	Date/Time	Received By	Date/Time	Sample Temperature Upon Receipt	_____ °C
<u>[Signature]</u>	<u>4/17/24 0730</u>	<u>CRB</u>	<u>04-18-24 0900</u>	Sample(s) Received on Ice	Y or N
				Proper Bottles Received in Good Condition	Y or N
				Bottles Filled with Adequate Volume	Y or N
				Samples Received Within Hold Time	Y or N
				Date/Time Taken From Sample Bottle	Y or N

ANALYTICAL REPORT

May 13, 2024

Pace IR - Peoria, IL

Sample Delivery Group: L1727509
Samples Received: 04/19/2024
Project Number: HD03383
Description:
Site: 001
Report To: Diane Billings
2231 W. Altorfer Drive
Peoria, IL 61615

Entire Report Reviewed By:

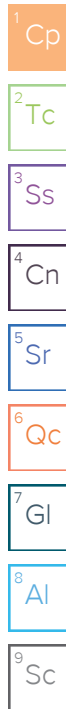


Jason Romer
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.

Pace Analytical National

12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 mydata.pacelabs.com



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Cn: Case Narrative	5	
Sr: Sample Results	6	3 Ss
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HD03383-02 G62L L1727509-02	7	4 Cn
HD03383-03 OM22D L1727509-03	8	
HD03383-04 OM23D L1727509-04	9	5 Sr
HD03383-05 OM25S L1727509-05	10	
HD03383-06 OR03D L1727509-06	11	6 Qc
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HD03383-08 R61L L1727509-08	13	7 Gl
HD03383-09 EB 1 L1727509-09	14	
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Radiochemistry by Method SM7500Ra B M	16	9 Sc
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Al: Accreditations & Locations	18	
Sc: Sample Chain of Custody	19	

SAMPLE SUMMARY

HD03383-01 G51S L1727509-01 Non-Potable Water

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2276878	1	04/30/24 16:39	05/07/24 21:01	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2275054	1	04/26/24 13:39	05/07/24 21:01	DDD	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2275054	1	04/26/24 13:39	05/01/24 15:54	ZRG	Mt. Juliet, TN

Collected by

Collected date/time

Received date/time

04/17/24 15:20

04/19/24 09:00

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

HD03383-02 G62L L1727509-02 Non-Potable Water

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2276878	1	04/30/24 16:39	05/07/24 21:01	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2275054	1	04/26/24 13:39	05/07/24 21:01	DDD	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2275054	1	04/26/24 13:39	04/30/24 23:29	ZRG	Mt. Juliet, TN

Collected by

Collected date/time

Received date/time

04/17/24 12:33

04/19/24 09:00

HD03383-03 OM22D L1727509-03 Non-Potable Water

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2276878	1	04/30/24 16:39	05/07/24 21:01	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2275054	1	04/26/24 13:39	05/07/24 21:01	DDD	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2275054	1	04/26/24 13:39	05/01/24 15:54	ZRG	Mt. Juliet, TN

Collected by

Collected date/time

Received date/time

04/17/24 10:35

04/19/24 09:00

HD03383-04 OM23D L1727509-04 Non-Potable Water

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2276878	1	04/30/24 16:39	05/07/24 21:01	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2275054	1	04/26/24 13:39	05/07/24 21:01	DDD	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2275054	1	04/26/24 13:39	05/01/24 15:54	ZRG	Mt. Juliet, TN

Collected by

Collected date/time

Received date/time

04/17/24 11:40

04/19/24 09:00

HD03383-05 OM25S L1727509-05 Non-Potable Water

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2276878	1	04/30/24 16:39	05/07/24 21:01	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2275054	1	04/26/24 13:39	05/07/24 21:01	DDD	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2275054	1	04/26/24 13:39	05/01/24 15:54	ZRG	Mt. Juliet, TN

Collected by

Collected date/time

Received date/time

04/17/24 14:45

04/19/24 09:00

HD03383-06 OR03D L1727509-06 Non-Potable Water

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2276878	1	04/30/24 16:39	05/07/24 21:01	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2275054	1	04/26/24 13:39	05/07/24 21:01	DDD	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2275054	1	04/26/24 13:39	05/01/24 15:54	ZRG	Mt. Juliet, TN

Collected by

Collected date/time

Received date/time

04/17/24 13:52

04/19/24 09:00

HD03383-07 OR04D L1727509-07 Non-Potable Water				Collected by	Collected date/time	Received date/time
					04/17/24 13:00	04/19/24 09:00
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2276878	1	04/30/24 16:39	05/07/24 21:01	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2275054	1	04/26/24 13:39	05/07/24 21:01	DDD	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2275054	1	04/26/24 13:39	05/01/24 15:54	ZRG	Mt. Juliet, TN

HD03383-08 R61L L1727509-08 Non-Potable Water				Collected by	Collected date/time	Received date/time
					04/17/24 14:44	04/19/24 09:00
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2276878	1	04/30/24 16:39	05/07/24 21:01	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2275054	1	04/26/24 13:39	05/07/24 21:01	DDD	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2275054	1	04/26/24 13:39	05/01/24 15:54	ZRG	Mt. Juliet, TN

HD03383-09 EB 1 L1727509-09 Non-Potable Water				Collected by	Collected date/time	Received date/time
					04/17/24 15:48	04/19/24 09:00
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2276878	1	04/30/24 16:39	05/07/24 21:01	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2275054	1	04/26/24 13:39	05/07/24 21:01	DDD	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2275054	1	04/26/24 13:39	04/30/24 23:29	ZRG	Mt. Juliet, TN

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

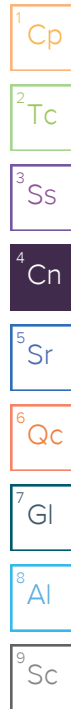
9Sc

CASE NARRATIVE

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All radiochemical sample results for solids are reported on a dry weight basis with the exception of tritium, carbon-14 and radon, unless wet weight was requested by the client. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.



Jason Romer
Project Manager



Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-228	1.16	J	0.679	1.74	1.18	0.614	05/07/2024 21:01	WG2276878
(T) Barium	108					30.0-143	05/07/2024 21:01	WG2276878
(T) Yttrium	101					30.0-136	05/07/2024 21:01	WG2276878

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	1.76		0.744	1.19	05/07/2024 21:01	WG2275054

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-226	0.600		0.304	0.135	0.120	0.120	05/01/2024 15:54	WG2275054
(T) Barium-133	85.7					30.0-143	05/01/2024 15:54	WG2275054

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-228	1.86		0.664	1.33	1.14	0.592	05/07/2024 21:01	WG2276878
(T) Barium	102					30.0-143	05/07/2024 21:01	WG2276878
(T) Yttrium	103					30.0-136	05/07/2024 21:01	WG2276878

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	2.13		0.714	1.19	05/07/2024 21:01	WG2275054

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-226	0.272	J	0.263	0.105	0.325	0.233	04/30/2024 23:29	WG2275054
(T) Barium-133	83.0					30.0-143	04/30/2024 23:29	WG2275054

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-228	-0.503	U	0.763	3.92	1.38	0.718	05/07/2024 21:01	WG2276878
(T) Barium	97.2					30.0-143	05/07/2024 21:01	WG2276878
(T) Yttrium	84.8					30.0-136	05/07/2024 21:01	WG2276878

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	1.08	J	0.851	1.39	05/07/2024 21:01	WG2275054

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-226	1.08		0.377	0.183	0.156	0.129	05/01/2024 15:54	WG2275054
(T) Barium-133	92.8					30.0-143	05/01/2024 15:54	WG2275054

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-228	1.28	J	0.750	1.82	1.31	0.683	05/07/2024 21:01	WG2276878
(T) Barium	97.3					30.0-143	05/07/2024 21:01	WG2276878
(T) Yttrium	82.2					30.0-136	05/07/2024 21:01	WG2276878

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	1.74		0.794	1.32	05/07/2024 21:01	WG2275054

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-226	0.461		0.262	0.125	0.193	0.151	05/01/2024 15:54	WG2275054
(T) Barium-133	93.1					30.0-143	05/01/2024 15:54	WG2275054

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-228	0.897	J	0.588	1.81	1.03	0.538	05/07/2024 21:01	WG2276878
(T) Barium	98.8					30.0-143	05/07/2024 21:01	WG2276878
(T) Yttrium	103					30.0-136	05/07/2024 21:01	WG2276878

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	1.89		0.701	1.06	05/07/2024 21:01	WG2275054

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-226	0.997		0.382	0.184	0.235	0.171	05/01/2024 15:54	WG2275054
(T) Barium-133	93.7					30.0-143	05/01/2024 15:54	WG2275054

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-228	1.23		0.547	1.34	0.944	0.497	05/07/2024 21:01	WG2276878
(T) Barium	93.8					30.0-143	05/07/2024 21:01	WG2276878
(T) Yttrium	102					30.0-136	05/07/2024 21:01	WG2276878

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	2.78		0.740	0.973	05/07/2024 21:01	WG2275054

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-226	1.55		0.498	0.220	0.234	0.178	05/01/2024 15:54	WG2275054
(T) Barium-133	84.4					30.0-143	05/01/2024 15:54	WG2275054

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-228	-0.461	U	0.730	4.24	1.31	0.681	05/07/2024 21:01	WG2276878
(T) Barium	93.3					30.0-143	05/07/2024 21:01	WG2276878
(T) Yttrium	109					30.0-136	05/07/2024 21:01	WG2276878

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	0.849	J	0.818	1.32	05/07/2024 21:01	WG2275054

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-226	0.849		0.368	0.160	0.188	0.155	05/01/2024 15:54	WG2275054
(T) Barium-133	83.8					30.0-143	05/01/2024 15:54	WG2275054

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-228	0.557		0.218	0.793	0.374	0.197	05/07/2024 21:01	WG2276878
(T) Barium	101					30.0-143	05/07/2024 21:01	WG2276878
(T) Yttrium	99.5					30.0-136	05/07/2024 21:01	WG2276878

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	0.914		0.320	0.392	05/07/2024 21:01	WG2275054

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-226	0.358		0.234	0.100	0.119	0.119	05/01/2024 15:54	WG2275054
(T) Barium-133	83.5					30.0-143	05/01/2024 15:54	WG2275054

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-228	0.405	J	0.250	1.11	0.436	0.229	05/07/2024 21:01	WG2276878
(T) Barium	99.9					30.0-143	05/07/2024 21:01	WG2276878
(T) Yttrium	107					30.0-136	05/07/2024 21:01	WG2276878

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	0.445	J	0.286	0.513	05/07/2024 21:01	WG2275054

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-226	0.0408	U	0.139	0.0557	0.270	0.196	04/30/2024 23:29	WG2275054
(T) Barium-133	92.0					30.0-143	04/30/2024 23:29	WG2275054

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

(MB) R4068021-1 05/07/24 21:01						
Analyte	MB Result pCi/l	MB Qualifier	MB 2 sigma CE + / -	MB MDA pCi/l	MB Lc pCi/l	
Radium-228	0.0383	J	0.209	0.181	0.0937	
(T) Barium	98.4		98.4			
(T) Yttrium	96.3		96.3			

L1727509-08 Original Sample (OS) • Duplicate (DUP)

(OS) L1727509-08 05/07/24 21:01 • (DUP) R4068021-5 05/07/24 21:01									
Analyte	Original Result		Original 2 sigma CE		Original MDA		Original Lc		MB Lc pCi/l
	pCi/l	+ / -	pCi/l	+ / -	pCi/l	%	pCi/l	%	
Radium-228	0.557	0.218	0.374	0.197	0.346	0.602	0.315	3.25	0.0937
(T) Barium	101		105	105	105	105	105	105	
(T) Yttrium	99.5		104	104	104	104	104	104	

Laboratory Control Sample (LCS)

(LCS) R4068021-2 05/07/24 21:01									
Analyte	Spike Amount		LCS Result		LCS Rec.		Rec. Limits		LCS Qualifier
	pCi/l	%	pCi/l	%	pCi/l	%	pCi/l	%	
Radium-228	5.00	4.21	84.2	80.0-120					
(T) Barium			95.2						
(T) Yttrium			97.1						

L1728424-07 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1728424-07 05/07/24 21:01 • (MS) R4068021-3 05/07/24 21:01 • (MSD) R4068021-4 05/07/24 21:01											
Analyte	Spike Amount		Original Result		MS Result		MSD Result		MSD Rec.		MS Qualifier
	pCi/l	%	pCi/l	%	pCi/l	%	pCi/l	%	pCi/l	%	
Radium-228	16.7	-0.434	103	15.4	14.2	85.3	92.1	70.0-130	7.70	20	
(T) Barium			97.8		102	99.4	102				
(T) Yttrium											

DC-845-205
Method Blank (MB)

(MB) R4064940-5 05/01/24 15:54

Analyte	MB Result pCi/l	MB Qualifier	MB 2 sigma CE + / -	MB MDA pCi/l	MB Lc pCi/l
Radium-226	0.0644		0.0385	0.0416	0.0275
(7) Barium-133	84.5		84.5		

L1727509-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1727509-02 04/30/24 23:29 • (DUP) R4064940-4 04/30/24 23:29

Analyte	Original Result	Original 2 sigma CE	Original MDA	Original Lc	DUP Result	DUP 2 sigma CE	DUP MDA	DUP Lc	DUP RPD	DUP RER	DUP Qualifier	DUP RPD Limits	DUP RER Limit
	pCi/l	+ / -	pCi/l	pCi/l	pCi/l	+ / -	pCi/l	pCi/l	%			%	
Radium-226	0.272	0.263	0.325	0.233	0.144	0.210	0.317	0.231	61.4	0.379	J	2.0	3
(7) Barium-133	83.0				79.7	79.7							

Laboratory Control Sample (LCS)

(LCS) R4064940-1 04/30/24 23:29

Analyte	Spike Amount pCi/l	LCS Result pCi/l	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
Radium-226	5.00	5.97	119	80.0-120	
(7) Barium-133			83.6		

L1727509-09 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1727509-09 04/30/24 23:29 • (MS) R4064940-2 04/30/24 23:29 • (MSD) R4064940-3 04/30/24 23:29

Analyte	Spike Amount pCi/l	Original Result pCi/l	MS Result pCi/l	MSD Result pCi/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	<u>MS Qualifier</u>	<u>MSD Qualifier</u>	RPD %	MS PER	RPD Limits %
Radium-226	20.0	0.0408	20.8	18.0	104	89.8	1	75.0-125			14.4		20
(7) Barium-133		92.0			93.1	92.8							

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

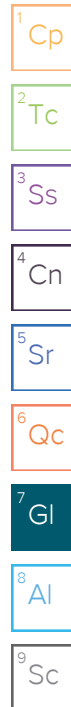
Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDA	Minimum Detectable Activity.
Rec.	Recovery.
RER	Replicate Error Ratio.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(T)	Tracer - A radioisotope of known concentration added to a solution of chemically equivalent radioisotopes at a known concentration to assist in monitoring the yield of the chemical separation.
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier Description

J	The identification of the analyte is acceptable; the reported value is an estimate.
U	Below Detectable Limits: Indicates that the analyte was not detected.



ACCREDITATIONS & LOCATIONS

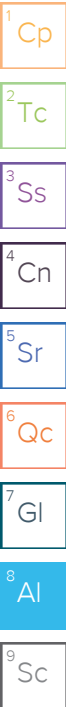
Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey--NELAP	TN002
California	2932	New Mexico ¹	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio--VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1,6}	KY90010	South Carolina	84004002
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1,4}	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas ⁵	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA -- ISO 17025	1461.01	AIHA-LAP, LLC EMLAP	100789
A2LA -- ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA--Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.



SUBCONTRACT ORDER
Transfer Chain of Custody

Pace Analytical Services, LLC
HD03383

U727509

SENDING LABORATORY

PDC Laboratories, Inc.
2231 W Altorfer Dr
Peoria, IL 61615
(800) 752-6651

RECEIVING LABORATORY

Pace Analytical - Mt Juliet, TN
12065 Lebanon Rd
Mt Juliet, TN 37122
(615) 758-5858

J094

Sample: HD03383-01
Name: G51S

Sampled: 04/17/24 15:20
Matrix: Ground Water
Preservative: HNO3, pH <2

-91

Analysis	Due	Expires	Comments
----------	-----	---------	----------

01-Radium 226/228 combined	04/30/24 16:00	10/14/24 15:20	
----------------------------	----------------	----------------	--

Sample: HD03383-02
Name: G62L

Sampled: 04/17/24 12:33
Matrix: Ground Water
Preservative: HNO3, pH <2

-02

Analysis	Due	Expires	Comments
----------	-----	---------	----------

01-Radium 226/228 combined	04/30/24 16:00	10/14/24 12:33	
----------------------------	----------------	----------------	--

Sample: HD03383-03
Name: OM22D

Sampled: 04/17/24 10:35
Matrix: Ground Water
Preservative: HNO3, pH <2

-03

Analysis	Due	Expires	Comments
----------	-----	---------	----------

01-Radium 226/228 combined	04/30/24 16:00	10/14/24 10:35	
----------------------------	----------------	----------------	--

Sample: HD03383-04
Name: OM23D

Sampled: 04/17/24 11:40
Matrix: Ground Water
Preservative: HNO3, pH <2

-04

Analysis	Due	Expires	Comments
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01-Radium 226/228 combined	04/30/24 16:00	10/14/24 11:40	
----------------------------	----------------	----------------	--

Sample: HD03383-05
Name: OM25S

Sampled: 04/17/24 14:45
Matrix: Ground Water
Preservative: HNO3, pH <2

-05

Analysis	Due	Expires	Comments
----------	-----	---------	----------

01-Radium 226/228 combined	04/30/24 16:00	10/14/24 14:45	
----------------------------	----------------	----------------	--

SUBCONTRACT ORDER
Transfer Chain of Custody

Pace Analytical Services, LLC
HD03383

11727509

SENDING LABORATORY

PDC Laboratories, Inc.
2231 W Altorfer Dr
Peoria, IL 61615
(800) 752-6651

RECEIVING LABORATORY

Pace Analytical - Mt Juliet, Tn
12065 Lebanon Rd
Mt Juliet, TN 37122
(615) 758-5858

Sample: HD03383-06
Name: OR03D

Sampled: 04/17/24 13:52
Matrix: Ground Water
Preservative: HNO3, pH <2

-06

Analysis	Due	Expires	Comments
01-Radium 226/228 combined	04/30/24 16:00	10/14/24 13:52	

Sample: HD03383-07
Name: OR04D

Sampled: 04/17/24 13:00
Matrix: Ground Water
Preservative: HNO3, pH <2

-07

Analysis	Due	Expires	Comments
01-Radium 226/228 combined	04/30/24 16:00	10/14/24 13:00	

Sample: HD03383-08
Name: R61L

Sampled: 04/17/24 14:44
Matrix: Ground Water
Preservative: HNO3, pH <2

-08

Analysis	Due	Expires	Comments
01-Radium 226/228 combined	04/30/24 16:00	10/14/24 14:44	

Sample: HD03383-09
Name: EB 1

Sampled: 04/17/24 15:48
Matrix: Ground Water
Preservative: HNO3, pH <2

-09

Analysis	Due	Expires	Comments
01-Radium 226/228 combined	04/30/24 16:00	10/14/24 15:48	

Sample Receipt Checklist
COC Seal Present/Intact: ☒ Y ☐ N
COC Signed/Accurate: ☒ Y ☐ N
Bottles arrive intact: ☒ Y ☐ N
Correct bottles used: ☒ Y ☐ N
Sufficient volume sent: ☒ Y ☐ N
RA Screen <0.5 mR/hr: ☒ Y ☐ N
If Applicable
VOA Zero Headspace: ☒ Y ☐ N
Pres. Correct/Check: ☒ Y ☐ N

730843989788

Amb

SUBCONTRACT ORDER
Transfer Chain of Custody

Pace Analytical Services, LLC
HD03383

L1727309

Please email results to Diane Billings at diane.billings@pacelabs.com

Date Shipped: 4/18/24 Total # of Containers: 9 Sample Origin (State): IL PO #: _____

Turn-Around Time Requested ☐ NORMAL ☐ RUSH Date Results Needed: _____

	<u>4/18/24 1635</u>	<u>Hailley R. Rabin</u>	<u>4/19/24</u>	Sample Temperature Upon Receipt	_____ °C
Relinquished By	Date/Time	Received By	Date/Time	Sample(s) Received on Ice	Y or N
				Proper Bottles Received in Good Condition	Y or N
				Bottles Filled with Adequate Volume	Y or N
				Samples Received Within Hold Time	Y or N
				Date/Time Taken From Sample Bottle	Y or N

ANALYTICAL REPORT

May 13, 2024

Pace IR - Peoria, IL

Sample Delivery Group: L1728424
Samples Received: 04/23/2024
Project Number: HD03621
Description:
Site: 001
Report To: Diane Billings
2231 W. Altorfer Drive
Peoria, IL 61615

Entire Report Reviewed By:



Jason Romer
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.

Pace Analytical National

12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 mydata.pacelabs.com

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

Cp: Cover Page	1	1 Cp
Tc: Table of Contents	2	
Ss: Sample Summary	3	2 Tc
Cn: Case Narrative	5	
Sr: Sample Results	6	3 Ss
HD03621-01 L1728424-01	6	
HD03621-02 L1728424-02	7	4 Cn
HD03621-03 L1728424-03	8	
HD03621-04 L1728424-04	9	5 Sr
HD03621-05 L1728424-05	10	
HD03621-06 L1728424-06	11	6 Qc
HD03621-07 L1728424-07	12	
HD03621-08 L1728424-08	13	7 Gl
HD03621-09 L1728424-09	14	
HD03621-10 L1728424-10	15	8 Al
HD03621-11 L1728424-11	16	
Qc: Quality Control Summary	17	9 Sc
Radiochemistry by Method 904/9320	17	
Radiochemistry by Method SM7500Ra B M	20	
Gl: Glossary of Terms	22	
Al: Accreditations & Locations	23	
Sc: Sample Chain of Custody	24	

SAMPLE SUMMARY

HD03621-01 L1728424-01 Non-Potable Water

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2275535	1	04/29/24 23:02	05/06/24 21:59	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2273186	1	04/25/24 14:47	05/06/24 21:59	DDD	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2273186	1	04/25/24 14:47	04/26/24 18:19	ZRG	Mt. Juliet, TN

Collected by

Collected date/time

Received date/time

04/18/24 12:20

04/23/24 09:00

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

HD03621-02 L1728424-02 Non-Potable Water

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2275531	1	04/27/24 11:38	05/03/24 21:15	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2273186	1	04/25/24 14:47	05/03/24 21:15	DDD	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2273186	1	04/25/24 14:47	04/26/24 18:19	ZRG	Mt. Juliet, TN

Collected by

Collected date/time

Received date/time

04/18/24 12:44

04/23/24 09:00

HD03621-03 L1728424-03 Non-Potable Water

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2275531	1	04/27/24 11:38	05/03/24 21:15	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2273186	1	04/25/24 14:47	05/03/24 21:15	DDD	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2273186	1	04/25/24 14:47	04/26/24 18:19	ZRG	Mt. Juliet, TN

Collected by

Collected date/time

Received date/time

04/18/24 14:01

04/23/24 09:00

HD03621-04 L1728424-04 Non-Potable Water

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2276878	1	04/30/24 16:39	05/07/24 21:01	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2275054	1	04/26/24 13:39	05/07/24 21:01	DDD	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2275054	1	04/26/24 13:39	05/01/24 15:54	ZRG	Mt. Juliet, TN

Collected by

Collected date/time

Received date/time

04/18/24 15:08

04/23/24 09:00

HD03621-05 L1728424-05 Non-Potable Water

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2276878	1	04/30/24 16:39	05/07/24 21:01	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2275054	1	04/26/24 13:39	05/07/24 21:01	DDD	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2275054	1	04/26/24 13:39	05/01/24 15:54	ZRG	Mt. Juliet, TN

Collected by

Collected date/time

Received date/time

04/18/24 11:33

04/23/24 09:00

HD03621-06 L1728424-06 Non-Potable Water

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2276878	1	04/30/24 16:39	05/07/24 21:01	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2273186	1	04/25/24 14:47	05/07/24 21:01	DDD	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2273186	1	04/25/24 14:47	04/26/24 18:19	ZRG	Mt. Juliet, TN

Collected by

Collected date/time

Received date/time

04/18/24 11:20

04/23/24 09:00

SAMPLE SUMMARY

HD03621-07 L1728424-07 Non-Potable Water

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2276878	1	04/30/24 16:39	05/07/24 21:01	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2273186	1	04/25/24 14:47	05/07/24 21:01	DDD	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2273186	1	04/25/24 14:47	04/26/24 18:19	ZRG	Mt. Juliet, TN

Collected by
Collected date/time
Received date/time
04/18/24 11:20
04/23/24 09:00

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

HD03621-08 L1728424-08 Non-Potable Water

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2276878	1	04/30/24 16:39	05/07/24 21:01	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2275054	1	04/26/24 13:39	05/07/24 21:01	DDD	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2275054	1	04/26/24 13:39	05/01/24 15:54	ZRG	Mt. Juliet, TN

Collected by
Collected date/time
Received date/time
04/18/24 13:02
04/23/24 09:00

HD03621-09 L1728424-09 Non-Potable Water

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2276878	1	04/30/24 16:39	05/07/24 21:01	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2273186	1	04/25/24 14:47	05/07/24 21:01	DDD	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2273186	1	04/25/24 14:47	04/26/24 18:19	ZRG	Mt. Juliet, TN

Collected by
Collected date/time
Received date/time
04/18/24 13:49
04/23/24 09:00

HD03621-10 L1728424-10 Non-Potable Water

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2276878	1	04/30/24 16:39	05/07/24 21:01	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2273186	1	04/25/24 14:47	05/07/24 21:01	DDD	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2273186	1	04/25/24 14:47	04/26/24 18:19	ZRG	Mt. Juliet, TN

Collected by
Collected date/time
Received date/time
04/18/24 14:35
04/23/24 09:00

HD03621-11 L1728424-11 Non-Potable Water

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2276878	1	04/30/24 16:39	05/07/24 21:01	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2273186	1	04/25/24 14:47	05/07/24 21:01	DDD	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2273186	1	04/25/24 14:47	04/26/24 18:19	ZRG	Mt. Juliet, TN

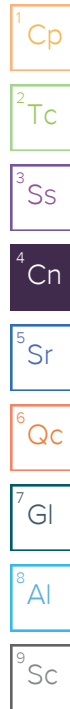
Collected by
Collected date/time
Received date/time
04/18/24 15:18
04/23/24 09:00

CASE NARRATIVE

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All radiochemical sample results for solids are reported on a dry weight basis with the exception of tritium, carbon-14 and radon, unless wet weight was requested by the client. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.



Jason Romer
Project Manager



Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-228	0.238	U	0.379	2.55	0.700	0.367	05/06/2024 21:59	WG2275535
(T) Barium	119					30.0-143	05/06/2024 21:59	WG2275535
(T) Yttrium	88.5					30.0-136	05/06/2024 21:59	WG2275535

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	0.690	J	0.494	0.782	05/06/2024 21:59	WG2273186

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-226	0.452		0.317	0.130	0.349	0.234	04/26/2024 18:19	WG2273186
(T) Barium-133	85.6					30.0-143	04/26/2024 18:19	WG2273186

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-228	0.341	J	0.227	1.16	0.415	0.218	05/03/2024 21:15	WG2275531
(T) Barium	105					30.0-143	05/03/2024 21:15	WG2275531
(T) Yttrium	102					30.0-136	05/03/2024 21:15	WG2275531

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	0.694		0.354	0.511	05/03/2024 21:15	WG2273186

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-226	0.353		0.272	0.106	0.298	0.211	04/26/2024 18:19	WG2273186
(T) Barium-133	79.7					30.0-143	04/26/2024 18:19	WG2273186

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-228	0.503		0.236	0.904	0.427	0.226	05/03/2024 21:15	WG2275531
(T) Barium	103					30.0-143	05/03/2024 21:15	WG2275531
(T) Yttrium	83.3					30.0-136	05/03/2024 21:15	WG2275531

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	0.594		0.320	0.562	05/03/2024 21:15	WG2273186

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-226	0.0902	U	0.216	0.0800	0.365	0.250	04/26/2024 18:19	WG2273186
(T) Barium-133	84.6					30.0-143	04/26/2024 18:19	WG2273186

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-228	0.630	J	2.00	3.47	1.73	0.892	05/07/2024 21:01	WG2276878
(T) Barium	98.8					30.0-143	05/07/2024 21:01	WG2276878
(T) Yttrium	91.9					30.0-136	05/07/2024 21:01	WG2276878

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	0.856	J	2.01	1.74	05/07/2024 21:01	WG2275054

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-226	0.225		0.175	0.0797	0.198	0.141	05/01/2024 15:54	WG2275054
(T) Barium-133	91.2					30.0-143	05/01/2024 15:54	WG2275054

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-228	0.272	U	0.410	2.63	0.726	0.380	05/07/2024 21:01	WG2276878
(T) Barium	91.1					30.0-143	05/07/2024 21:01	WG2276878
(T) Yttrium	107					30.0-136	05/07/2024 21:01	WG2276878

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	0.607	J	0.478	0.788	05/07/2024 21:01	WG2275054

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-226	0.335		0.245	0.107	0.307	0.197	05/01/2024 15:54	WG2275054
(T) Barium-133	89.5					30.0-143	05/01/2024 15:54	WG2275054

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-228	0.234	U	0.606	3.31	1.08	0.564	05/07/2024 21:01	WG2276878
(T) Barium	101					30.0-143	05/07/2024 21:01	WG2276878
(T) Yttrium	107					30.0-136	05/07/2024 21:01	WG2276878

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	0.269	U	0.624	1.12	05/07/2024 21:01	WG2273186

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-226	0.0341	U	0.150	0.0537	0.297	0.213	04/26/2024 18:19	WG2273186
(T) Barium-133	84.1					30.0-143	04/26/2024 18:19	WG2273186

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-228	-0.434	U	0.584	3.06	1.06	0.556	05/07/2024 21:01	WG2276878
(T) Barium	103					30.0-143	05/07/2024 21:01	WG2276878
(T) Yttrium	97.8					30.0-136	05/07/2024 21:01	WG2276878

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	0.0437	U	0.604	1.10	05/07/2024 21:01	WG2273186

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-226	0.0437	U	0.156	0.0592	0.285	0.198	04/26/2024 18:19	WG2273186
(T) Barium-133	88.5					30.0-143	04/26/2024 18:19	WG2273186

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-228	0.626	J	0.462	1.81	0.815	0.432	05/07/2024 21:01	WG2276878
(T) Barium	99.1					30.0-143	05/07/2024 21:01	WG2276878
(T) Yttrium	97.9					30.0-136	05/07/2024 21:01	WG2276878

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	0.813	J	0.487	0.832	05/07/2024 21:01	WG2275054

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-226	0.187		0.154	0.0684	0.168	0.127	05/01/2024 15:54	WG2275054
(T) Barium-133	87.8					30.0-143	05/01/2024 15:54	WG2275054

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-228	0.148	U	0.202	1.45	0.361	0.191	05/07/2024 21:01	WG2276878
(T) Barium	99.6					30.0-143	05/07/2024 21:01	WG2276878
(T) Yttrium	103					30.0-136	05/07/2024 21:01	WG2276878

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	0.480		0.336	0.461	05/07/2024 21:01	WG2273186

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-226	0.332		0.268	0.108	0.287	0.213	04/26/2024 18:19	WG2273186
(T) Barium-133	81.4					30.0-143	04/26/2024 18:19	WG2273186

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-228	0.178	J	0.206	1.43	0.367	0.194	05/07/2024 21:01	WG2276878
(T) Barium	96.3					30.0-143	05/07/2024 21:01	WG2276878
(T) Yttrium	104					30.0-136	05/07/2024 21:01	WG2276878

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	0.461		0.315	0.430	05/07/2024 21:01	WG2273186

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-226	0.283		0.238	0.0952	0.225	0.186	04/26/2024 18:19	WG2273186
(T) Barium-133	79.0					30.0-143	04/26/2024 18:19	WG2273186

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-228	0.177	U	0.402	2.88	0.713	0.372	05/07/2024 21:01	WG2276878
(T) Barium	105					30.0-143	05/07/2024 21:01	WG2276878
(T) Yttrium	69.2					30.0-136	05/07/2024 21:01	WG2276878

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	0.305	U	0.433	0.743	05/07/2024 21:01	WG2273186

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-226	0.128	J	0.160	0.0683	0.210	0.174	04/26/2024 18:19	WG2273186
(T) Barium-133	85.7					30.0-143	04/26/2024 18:19	WG2273186

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

(MB) R4066838-1 05/03/24 21:15						
Analyte	MB Result	MB Qualifier	MB 2 sigma CE	MB MDA	MB Lc	
	pCi/l	+ / -	pCi/l	pCi/l	pCi/l	
	Radium-228	0.195	0.214	0.397	0.208	
	(T) Barium	89.4	89.4			
(T) Yttrium	78.2	78.2				

L1723181-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1723181-01 05/03/24 21:15 • (DUP) R4066838-5 05/03/24 21:15									
Analyte	Original Result	Original 2 sigma CE	Original MDA	Original Lc	DUP Result	DUP 2 sigma CE	DUP MDA	DUP Lc	DUP RPD
	pCi/l	+ / -	pCi/l	pCi/l	pCi/l	+ / -	pCi/l	pCi/l	%
	Radium-228	0.857	0.349	0.627	0.328	0.366	0.667	0.348	31.2
	(T) Barium	101			111				
(T) Yttrium	104				95.3	95.3			

Laboratory Control Sample (LCS)

(LCS) R4066838-2 05/03/24 21:15					
Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	pCi/l	pCi/l	%	%	
	Radium-228	5.00	5.17	103	80.0-120
	(T) Barium		105		
(T) Yttrium			101		

L1723152-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1723152-01 05/03/24 21:15 • (MS) R4066838-3 05/03/24 21:15 • (MSD) R4066838-4 05/03/24 21:15											
Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	RPD	RPD Limits
	pCi/l	pCi/l	pCi/l	pCi/l	%	%		%		%	%
	Radium-228	16.7	4.40	25.4	22.2	106	1	70.0-130		13.7	20
	(T) Barium		112		113	103					
(T) Yttrium		91.6			97.7	98.6					

QUALITY CONTROL SUMMARY

L1728424-01

Cp

Tc

Ss

Cn

Sr

Qc

Gl

Al

Sc

(MB) R4068015-1 05/06/24 21:59									
Analyte	MB Result pCi/l	MB Qualifier	MB 2 sigma CE + / -	MB MDA pCi/l	MB Lc pCi/l				
Radium-228	-0.0543	U	0.220	0.411	0.214				
(T) Barium	97.1		97.1						
(T) Yttrium	82.0		82.0						

L1723184-11 Original Sample (OS) • Duplicate (DUP)

(OS) L1723184-11 05/06/24 21:59 • (DUP) R4068015-5 05/06/24 21:59									
Analyte	Original Result		Original 2 sigma CE		Original MDA		Original Lc		MB Lc pCi/l
	pCi/l	+ / -	pCi/l	+ / -	pCi/l	%	pCi/l	%	
Radium-228	-0.152	0.322	0.609	0.319	0.511	0.447	0.815	0.425	0.214
(T) Barium	115		95.9	95.9	95.9				
(T) Yttrium	96.5		87.5	87.5	87.5				

Laboratory Control Sample (LCS)

(LCS) R4068015-2 05/06/24 21:59									
Analyte	Spike Amount		LCS Result		LCS Rec.		Rec. Limits		LCS Qualifier
	pCi/l	%	pCi/l	%	pCi/l	%	pCi/l	%	
Radium-228	5.00	4.18	83.7	80.0-120					
(T) Barium			87.0						
(T) Yttrium			107						

L1723184-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1723184-03 05/06/24 21:59 • (MS) R4068015-3 05/06/24 21:59 • (MSD) R4068015-4 05/06/24 21:59									
Analyte	Spike Amount		Original Result		MS Result		MSD Result		MSD Rec.
	pCi/l	%	pCi/l	%	pCi/l	%	pCi/l	%	
Radium-228	16.7	-0.879	17.0	16.2	102	97.1	89.4	88.8	70.0-130
(T) Barium			102		89.4		94.8		
(T) Yttrium			91.8		94.8				

Cp

Tc

Ss

Cn

Sr

Qc

Gl

Al

Sc

(MB) R4068021-1 05/07/24 21:01						
Analyte	MB Result pCi/l	MB Qualifier	MB 2 sigma CE + / -	MB MDA pCi/l	MB Lc pCi/l	
Radium-228	0.0383	J	0.209	0.181	0.0937	
(T) Barium	98.4		98.4			
(T) Yttrium	96.3		96.3			

L1727509-08 Original Sample (OS) • Duplicate (DUP)

(OS) L1727509-08 05/07/24 21:01 • (DUP) R4068021-5 05/07/24 21:01									
Analyte	Original Result		Original 2 sigma CE		Original MDA		Original Lc		MB Lc pCi/l
	pCi/l	+ / -	pCi/l	+ / -	pCi/l	%	pCi/l	%	
Radium-228	0.557	0.218	0.374	0.197	0.346	0.602	0.315	3.25	0.0937
(T) Barium	101		105	105					
(T) Yttrium	99.5		104	104					

Laboratory Control Sample (LCS)

(LCS) R4068021-2 05/07/24 21:01									
Analyte	Spike Amount		LCS Result		LCS Rec.		Rec. Limits		LCS Qualifier
	pCi/l	%	pCi/l	%	pCi/l	%	pCi/l	%	
Radium-228	5.00	4.21	84.2	80.0-120					
(T) Barium			95.2						
(T) Yttrium			97.1						

L1728424-07 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1728424-07 05/07/24 21:01 • (MS) R4068021-3 05/07/24 21:01 • (MSD) R4068021-4 05/07/24 21:01											
Analyte	Spike Amount		Original Result		MS Result		MSD Result		MSD Rec.		MS Qualifier
	pCi/l	%	pCi/l	%	pCi/l	%	pCi/l	%	pCi/l	%	
Radium-228	16.7	-0.434	103	15.4	14.2	85.3	92.1	70.0-130	7.70	20	
(T) Barium			97.8				99.4				
(T) Yttrium							102				

Cp

Tc

Ss

Cn

Sr

Qc

Gl

Al

Sc

(MB) R4063443-1 04/26/24 18:19						
Analyte	MB Result	MB Qualifier	MB 2 sigma CE	MB MDA	MB Lc	
	pCi/l		+ / -	pCi/l	pCi/l	pCi/l
Radium-226	-0.00226	U	0.00627	0.0264	0.0200	
(7) Barium-133	83.8		83.8			

L1728801-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1728801-02 04/26/24 18:19 • (DUP) R4063443-5 04/26/24 18:19													
Analyte	Original Result	Original 2 sigma CE	Original MDA	Original Lc	DUP Result	DUP 2 sigma CE	DUP MDA	DUP Lc	DUP RPD	DUP RER	DUP Qualifier	DUP RPD Limits	DUP RER Limit
	pCi/l	+ / -	pCi/l	pCi/l	pCi/l	+ / -	pCi/l	pCi/l	%			%	
Radium-226	0.321	0.259	0.257	0.201	0.0247	0.187	0.353	0.239	171	0.927	U	20	3
(T) Barium-133	80.3				88.2	88.2							

Cp

Tc

Ss

Cn

Sr

Qc

Gl

Al

Sc

(MB) R4064940-5 05/01/24 15:54						
Analyte	MB Result	MB Qualifier	MB 2 sigma CE	MB MDA	MB Lc	
	pCi/l	+ / -	pCi/l	pCi/l	pCi/l	
Radium-226	0.0644	0.0385	0.0416	0.0275		
(T) Barium-133	84.5	84.5				

L1727509-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1727509-02 04/30/24 23:29 • (DUP) R4064940-4 04/30/24 23:29									
Analyte	Original Result	Original 2 sigma CE	Original MDA	Original Lc	DUP Result	DUP 2 sigma CE	DUP Lc	DUP RPD	DUP RER
	pCi/l	+ / -	pCi/l	pCi/l	pCi/l	+ / -	pCi/l	%	%
Radium-226	0.272	0.263	0.325	0.233	0.144	0.210	0.231	61.4	0.379
(T) Barium-133	83.0				79.7	79.7			

Laboratory Control Sample (LCS)

(LCS) R4064940-1 04/30/24 23:29					
Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	pCi/l	pCi/l	%	%	
Radium-226	5.00	5.97	119	80.0-120	
(T) Barium-133			83.6		

L1727509-09 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1727509-09 04/30/24 23:29 • (MS) R4064940-2 04/30/24 23:29 • (MSD) R4064940-3 04/30/24 23:29											
Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	RPD	RPD Limits
	pCi/l	pCi/l	pCi/l	pCi/l	%	%		%	%	%	%
Radium-226	20.0	0.0408	20.8	18.0	104	89.8	1	75.0-125		14.4	20
(T) Barium-133		92.0			93.1	92.8					

Guide to Reading and Understanding Your Laboratory Report

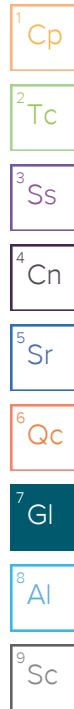
The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDA	Minimum Detectable Activity.
Rec.	Recovery.
RER	Replicate Error Ratio.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(T)	Tracer - A radioisotope of known concentration added to a solution of chemically equivalent radioisotopes at a known concentration to assist in monitoring the yield of the chemical separation.
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
J	The identification of the analyte is acceptable; the reported value is an estimate.
U	Below Detectable Limits: Indicates that the analyte was not detected.



ACCREDITATIONS & LOCATIONS

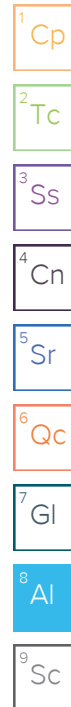
Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
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California	2932	New Mexico ¹	TN00003
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Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1,6}	KY90010	South Carolina	84004002
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1,4}	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas ⁵	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA -- ISO 17025	1461.01	AIHA-LAP, LLC EMLAP	100789
A2LA -- ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA--Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.



SUBCONTRACT ORDER
Transfer Chain of Custody

A202

Pace Analytical Services, LLC
HD03621

SENDING LABORATORY

PDC Laboratories, Inc.
2231 W Altorfer Dr
Peoria, IL 61615
(800) 752-6651

RECEIVING LABORATORY

Pace Analytical - Mt Juliet, Tn
12065 Lebanon Rd
Mt Juliet, TN 37122
(615) 758-5858

L1728424

Sample: HD03621-01
Name: BA02L

Sampled: 04/18/24 12:20
Matrix: Ground Water
Preservative: HNO3, pH <2

-01

Analysis	Due	Expires	Comments
01-Radium 226/228 combined	05/01/24 16:00	10/15/24 12:20	

Sample: HD03621-02
Name: BA03

Sampled: 04/18/24 12:44
Matrix: Ground Water
Preservative: HNO3, pH <2

-02

Analysis	Due	Expires	Comments
01-Radium 226/228 combined	05/01/24 16:00	10/15/24 12:44	

Sample: HD03621-03
Name: BA03L

Sampled: 04/18/24 14:01
Matrix: Ground Water
Preservative: HNO3, pH <2

-03

Analysis	Due	Expires	Comments
01-Radium 226/228 combined	05/01/24 16:00	10/15/24 14:01	

Sample: HD03621-04
Name: BA04

Sampled: 04/18/24 15:08
Matrix: Ground Water
Preservative: HNO3, pH <2

-04

Analysis	Due	Expires	Comments
01-Radium 226/228 combined	05/01/24 16:00	10/15/24 15:08	

Sample: HD03621-05
Name: BA05

Sampled: 04/18/24 11:33
Matrix: Ground Water
Preservative: HNO3, pH <2

-05

Analysis	Due	Expires	Comments
01-Radium 226/228 combined	05/01/24 16:00	10/15/24 11:33	

SUBCONTRACT ORDER
Transfer Chain of Custody

Pace Analytical Services, LLC
HD03621

SENDING LABORATORY

PDC Laboratories, Inc.
2231 W Altorfer Dr
Peoria, IL 61615
(800) 752-6651

RECEIVING LABORATORY

Pace Analytical - Mt Juliet, Tn
12065 Lebanon Rd
Mt Juliet, TN 37122
(615) 758-5858

11728424

Sample: HD03621-06
Name: OM01

Sampled: 04/18/24 11:20
Matrix: Ground Water
Preservative: HNO3, pH <2

-06

Analysis	Due	Expires	Comments
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01-Radium 226/228 combined	05/01/24 16:00	10/15/24 11:20	
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Sample: HD03621-07
Name: OMO1 Dup

Sampled: 04/18/24 11:20
Matrix: Ground Water
Preservative: HNO3, pH <2

-07

Analysis	Due	Expires	Comments
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01-Radium 226/228 combined	05/01/24 16:00	10/15/24 11:20	
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Sample: HD03621-08
Name: OM07

Sampled: 04/18/24 13:02
Matrix: Ground Water
Preservative: HNO3, pH <2

-08

Analysis	Due	Expires	Comments
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01-Radium 226/228 combined	05/01/24 16:00	10/15/24 13:02	
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Sample: HD03621-09
Name: OR13D

Sampled: 04/18/24 13:49
Matrix: Ground Water
Preservative: HNO3, pH <2

-09

Analysis	Due	Expires	Comments
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01-Radium 226/228 combined	05/01/24 16:00	10/15/24 13:49	
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Sample: HD03621-10
Name: OR13S

Sampled: 04/18/24 14:35
Matrix: Ground Water
Preservative: HNO3, pH <2

-10

Analysis	Due	Expires	Comments
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01-Radium 226/228 combined	05/01/24 16:00	10/15/24 14:35	
----------------------------	----------------	----------------	--

SUBCONTRACT ORDER
Transfer Chain of Custody

Pace Analytical Services, LLC
HD03621

SENDING LABORATORY

PDC Laboratories, Inc.
2231 W Altorfer Dr
Peoria, IL 61615
(800) 752-6651

RECEIVING LABORATORY

Pace Analytical - Mt Juliet, Tn
12065 Lebanon Rd
Mt Juliet, TN 37122
(615) 758-5858

LT728424

Sample: HD03621-11
Name: OM21

Sampled: 04/18/24 15:18
Matrix: Ground Water
Preservative: HNO3, pH <2

-11

Analysis	Due	Expires	Comments
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01-Radium 226/228 combined	05/01/24 16:00	10/15/24 15:18	
----------------------------	----------------	----------------	--

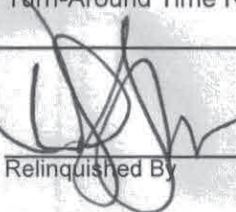
Sample Receipt Checklist

COC Seal Present/Intact:	☒ Y ☐ N	If Applicable	
COC Signed/Accurate:	☒ Y ☐ N		
Bottles arrive intact:	☒ Y ☐ N	VOA Zero Headspace:	☐ Y ☐ N
Correct bottles used:	☒ Y ☐ N	Pres. Correct/Check:	☐ Y ☐ N
Sufficient volume sent:	☒ Y ☐ N		
RA Screen <0.5 mR/hr:	☒ Y ☐ N		

Please email results to Diane Billings at diane.billings@pacelabs.com

Date Shipped: 4/22/24 Total # of Containers: 11 Sample Origin (State): IL PO #: _____

Turn-Around Time Requested ☐ NORMAL ☐ RUSH Date Results Needed: _____

Relinquished By	Date/Time	Received By	Date/Time	Sample Temperature Upon Receipt	_____ °C
	4/22/24 11:00	Hanky R. Rutter	4/23/24	Sample(s) Received on Ice	Y or N
				Proper Bottles Received in Good Condition	Y or N
				Bottles Filled with Adequate Volume	Y or N
				Samples Received Within Hold Time	Y or N
				Date/Time Taken From Sample Bottle	Y or N

ANALYTICAL REPORT

May 13, 2024

Pace IR - Peoria, IL

Sample Delivery Group: L1728801
Samples Received: 04/24/2024
Project Number:
Description:

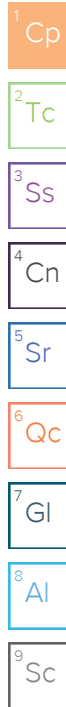
Report To: Diane Billings
2231 W. Altorfer Drive
Peoria, IL 61615

Entire Report Reviewed By:



Jason Romer
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.



Pace Analytical National

12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 mydata.pacelabs.com

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Cp: Cover Page	1	1 Cp
Tc: Table of Contents	2	
Ss: Sample Summary	3	2 Tc
Cn: Case Narrative	4	
Sr: Sample Results	5	3 Ss
HD03934-01 L1728801-01	5	
HD03934-02 L1728801-02	6	4 Cn
Qc: Quality Control Summary	7	5 Sr
Radiochemistry by Method 904/9320	7	
Radiochemistry by Method SM7500Ra B M	8	6 Qc
Gl: Glossary of Terms	9	
Al: Accreditations & Locations	10	7 Gl
Sc: Sample Chain of Custody	11	8 Al
		9 Sc

SAMPLE SUMMARY

HD03934-01 L1728801-01 Non-Potable Water

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2276879	1	05/02/24 15:53	05/09/24 17:07	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2273186	1	04/25/24 14:47	05/09/24 17:07	DDD	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2273186	1	04/25/24 14:47	04/26/24 18:19	ZRG	Mt. Juliet, TN

Collected by
Collected date/time
Received date/time

04/22/24 15:2304/24/24 09:00

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

HD03934-02 L1728801-02 Non-Potable Water

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2276879	1	05/02/24 15:53	05/09/24 17:07	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2273186	1	04/25/24 14:47	05/09/24 17:07	DDD	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2273186	1	04/25/24 14:47	04/26/24 18:19	ZRG	Mt. Juliet, TN

Collected by
Collected date/time
Received date/time

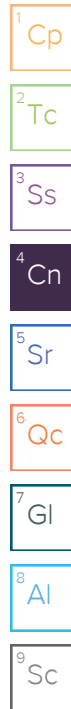
04/22/24 14:5504/24/24 09:00

CASE NARRATIVE

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All radiochemical sample results for solids are reported on a dry weight basis with the exception of tritium, carbon-14 and radon, unless wet weight was requested by the client. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.



Jason Romer
Project Manager



Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-228	0.557		0.325	1.18	0.534	0.282	05/09/2024 17:07	WG2276879
(T) Barium	134					30.0-143	05/09/2024 17:07	WG2276879
(T) Yttrium	101					30.0-136	05/09/2024 17:07	WG2276879

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	0.884		0.402	0.579	05/09/2024 17:07	WG2273186

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-226	0.326		0.236	0.103	0.225	0.171	04/26/2024 18:19	WG2273186
(T) Barium-133	87.5					30.0-143	04/26/2024 18:19	WG2273186

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-228	1.04		0.403	1.07	0.651	0.342	05/09/2024 17:07	WG2276879
(T) Barium	127					30.0-143	05/09/2024 17:07	WG2276879
(T) Yttrium	90.1					30.0-136	05/09/2024 17:07	WG2276879

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	1.36		0.479	0.700	05/09/2024 17:07	WG2273186

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-226	0.321		0.259	0.104	0.257	0.201	04/26/2024 18:19	WG2273186
(T) Barium-133	80.3					30.0-143	04/26/2024 18:19	WG2273186

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Cp

Tc

Ss

Cn

Sr

Qc

Gl

Al

Sc

(MB) R4068028-1 05/09/24 17:07									
Analyte	MB Result pCi/l	MB Qualifier	MB 2 sigma CE + / -	MB MDA pCi/l	MB Lc pCi/l				
Radium-228	0.365		0.165	0.290	0.153				
(T) Barium	108		108						
(T) Yttrium	88.8		88.8						

L1728801-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1728801-02 05/09/24 17:07 • (DUP) R4068028-5 05/09/24 17:07												
Analyte	Original Result pCi/l	Original 2 sigma CE + / -	Original MDA pCi/l	Original Lc pCi/l	DUP Result pCi/l	DUP 2 sigma CE + / -	DUP MDA pCi/l	DUP Lc pCi/l	DUP RPD %	DUP RER DUP Qualifier %	DUP RPD Limits %	DUP RER Limit
Radium-228	1.04	0.403	0.651	0.342	1.11	0.373	0.644	0.336	6.22	0.122	20	3
(T) Barium	127				119	119						
(T) Yttrium	90.1				105	105						

Laboratory Control Sample (LCS)

(LCS) R4068028-2 05/09/24 17:07									
Analyte	Spike Amount pCi/l	LCS Result pCi/l	LCS Rec. %	Rec. Limits %	LCS Qualifier				
Radium-228	5.00	5.64	113	80.0-120					
(T) Barium			124						
(T) Yttrium			96.2						

L1724415-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1724415-02 05/09/24 17:07 • (MS) R4068028-3 05/09/24 17:07 • (MSD) R4068028-4 05/09/24 17:07												
Analyte	Spike Amount pCi/l	Original Result pCi/l	MS Result pCi/l	MSD Result pCi/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	<u>MS Qualifier</u>	<u>MSD Qualifier</u> RPD	MS RER	RPD Limits %
Radium-228	16.7	-0.231	18.3	17.4	110	104	1	70.0-130		4.98		20
(T) Barium		127			120	115						
(T) Yttrium		102			91.1	96.6						

Cp

Tc

Ss

Cn

Sr

Qc

Gl

Al

Sc

(MB) R4063443-1 04/26/24 18:19						
Analyte	MB Result	MB Qualifier		MB 2 sigma CE	MB MDA	MB Lc
	pCi/l	+ / -		pCi/l	pCi/l	pCi/l
Radium-226	-0.00226	U		0.00627	0.0264	0.0200
(T) Barium-133	83.8	83.8				

L1728801-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1728801-02 04/26/24 18:19 • (DUP) R4063443-5 04/26/24 18:19									
Analyte	Original Result		Original 2 sigma CE		Original MDA	Original Lc	DUP Result	DUP 2 sigma CE	DUP Lc
	pCi/l	+ / -	pCi/l	%	pCi/l	pCi/l	pCi/l	+ / -	pCi/l
Radium-226	0.321	0.259	0.257	0.201	0.257	0.201	0.0247	0.187	0.239
(T) Barium-133	80.3						88.2	88.2	

Laboratory Control Sample (LCS)

(LCS) R4063443-2 04/26/24 18:19					
Analyte	Spike Amount		LCS Result	Rec. Limits	LCS Qualifier
	pCi/l	%	pCi/l	%	
Radium-226	5.00	5.26	105	80.0-120	
(T) Barium-133		82.6			

L1728424-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1728424-02 04/26/24 18:19 • (MS) R4063443-3 04/26/24 18:19 • (MSD) R4063443-4 04/26/24 18:19											
Analyte	Spike Amount		Original Result	MS Result	MSD Result	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	pCi/l	%	pCi/l	pCi/l	pCi/l		%			%	%
Radium-226	20.0	0.353	21.2	21.5	21.5	1	75.0-125			1.03	20
(T) Barium-133		79.7		84.7	79.8						

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

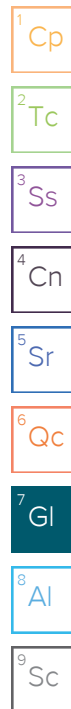
Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDA	Minimum Detectable Activity.
Rec.	Recovery.
RER	Replicate Error Ratio.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(T)	Tracer - A radioisotope of known concentration added to a solution of chemically equivalent radioisotopes at a known concentration to assist in monitoring the yield of the chemical separation.
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier Description

U	Below Detectable Limits: Indicates that the analyte was not detected.
---	---



ACCREDITATIONS & LOCATIONS

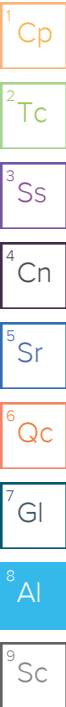
Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey--NELAP	TN002
California	2932	New Mexico ¹	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio--VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1 6}	KY90010	South Carolina	84004002
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1 4}	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas ⁵	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA -- ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA -- ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA--Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.



SUBCONTRACT ORDER
Transfer Chain of Custody

Pace Analytical Services, LLC
HD03934

U1728801

123

SENDING LABORATORY

PDC Laboratories, Inc.
2231 W Altorfer Dr
Peoria, IL 61615
(800) 752-6651

RECEIVING LABORATORY

Pace Analytical - Mt Juliet, Tn
12065 Lebanon Rd
Mt Juliet, TN 37122
(615) 758-5858

B127

Sample: HD03934-01
Name: G02S

Sampled: 04/22/24 15:23
Matrix: Ground Water
Preservative: HNO3, pH <2

-01

Analysis	Due	Expires	Comments
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01-Radium 226/228 combined	05/03/24 16:00	10/19/24 15:23	
01-Radium 226/228 combined	05/03/24 16:00	10/19/24 15:23	

Sample: HD03934-02
Name: G64L

Sampled: 04/22/24 14:55
Matrix: Ground Water
Preservative: HNO3, pH <2

-02

Analysis	Due	Expires	Comments
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01-Radium 226/228 combined	05/03/24 16:00	10/19/24 14:55	
01-Radium 226/228 combined	05/03/24 16:00	10/19/24 14:55	

Sample Receipt Checklist

COC Seal Present/Intact:	☒ Y ☐ N	If Applicable	☒ Y ☐ N
COC Signed/Accurate:	☒ Y ☐ N	VCA Zero Headspace:	☒ Y ☐ N
Bottles arrive intact:	☒ Y ☐ N	Pres. Correct/Check:	☒ Y ☐ N
Correct bottles used:	☒ Y ☐ N		
Sufficient volume sent:	☒ Y ☐ N		
RA Screen <0.5 mR/hr:	☒ Y ☐ N		

7760 71470791

Please email results to Diane Billings at diane.billings@pacelabs.com

Date Shipped: 4/23/24 Total # of Containers: 2 Sample Origin (State): IL PO #: _____
Turn-Around Time Requested ☐ NORMAL ☐ RUSH Date Results Needed: _____

Relinquished By	Date/Time	Received By	Date/Time	Sample Temperature Upon Receipt	_____ °C
<u>[Signature]</u>	<u>4/23/24 0700</u>	<u>Harley Roberts</u>	<u>4/24/24 0900</u>	Sample(s) Received on Ice	Y or N
				Proper Bottles Received in Good Condition	Y or N
				Bottles Filled with Adequate Volume	Y or N
				Samples Received Within Hold Time	Y or N
				Date/Time Taken From Sample Bottle	Y or N

ATTACHMENT B
845 QUARTERLY REPORT, QUARTER 2, 2024
DUCK CREEK POWER PLANT, BOTTOM ASH BASIN
DC-845-2024-02

ANALYTICAL REPORT

May 14, 2024

Revised Report

Pace IR - Peoria, IL

Sample Delivery Group: L1729945
Samples Received: 04/26/2024
Project Number:
Description:

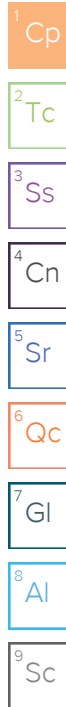
Report To: Diane Billings
2231 W. Altorfer Drive
Peoria, IL 61615

Entire Report Reviewed By:



Jason Romer
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.



Pace Analytical National

12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 mydata.pacelabs.com

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Sr: Sample Results	5	3 Ss
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HD04162-02 L1729945-02	6	4 Cn
Qc: Quality Control Summary	7	5 Sr
Radiochemistry by Method 904/9320	7	
Radiochemistry by Method SM7500Ra B M	8	6 Qc
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Al: Accreditations & Locations	10	7 Gl
Sc: Sample Chain of Custody	11	8 Al
		9 Sc

SAMPLE SUMMARY

HD04162-01 L1729945-01 Non-Potable Water

				Collected by	Collected date/time	Received date/time
					04/23/24 12:35	04/26/24 09:00
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2277695	1	05/02/24 17:54	05/10/24 18:58	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2281006	1	05/06/24 12:24	05/10/24 18:58	DDD	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2281006	1	05/06/24 12:24	05/09/24 12:14	ZRG	Mt. Juliet, TN

HD04162-02 L1729945-02 Non-Potable Water

				Collected by	Collected date/time	Received date/time
					04/23/24 11:55	04/26/24 09:00
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2277695	1	05/02/24 17:54	05/10/24 18:58	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2281006	1	05/06/24 12:24	05/10/24 18:58	DDD	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2281006	1	05/06/24 12:24	05/09/24 12:14	ZRG	Mt. Juliet, TN

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All radiochemical sample results for solids are reported on a dry weight basis with the exception of tritium, carbon-14 and radon, unless wet weight was requested by the client. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.



Jason Romer
Project Manager

Report Revision History

Level II Report - Version 1: 05/13/24 16:57

Project Narrative

Updated collect time.



Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-228	-1.02	U	0.284	2.39	0.509	0.265	05/10/2024 18:58	WG2277695
(T) Barium	99.1					30.0-143	05/10/2024 18:58	WG2277695
(T) Yttrium	105					30.0-136	05/10/2024 18:58	WG2277695

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	0.728		0.459	0.573	05/10/2024 18:58	WG2281006

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-226	0.728		0.360	0.170	0.263	0.195	05/09/2024 12:14	WG2281006
(T) Barium-133	93.1					30.0-143	05/09/2024 12:14	WG2281006

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-228	-0.0796	U	0.276	2.29	0.472	0.246	05/10/2024 18:58	WG2277695
(T) Barium	104					30.0-143	05/10/2024 18:58	WG2277695
(T) Yttrium	103					30.0-136	05/10/2024 18:58	WG2277695

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	0.317	J	0.370	0.533	05/10/2024 18:58	WG2281006

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-226	0.317		0.246	0.112	0.248	0.189	05/09/2024 12:14	WG2281006
(T) Barium-133	91.1					30.0-143	05/09/2024 12:14	WG2281006

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Cp

Tc

Ss

Cn

Sr

Qc

Gl

Al

Sc

(MB) R4069044-1 05/10/24 18:58									
Analyte	MB Result pCi/l	MB Qualifier	MB 2 sigma CE + / -	MB MDA pCi/l	MB Lc pCi/l				
Radium-228	0.348		0.148	0.266	0.141				
(T) Barium	113		113						
(T) Yttrium	91.6		91.6						

L1725467-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1725467-02 05/10/24 18:58 • (DUP) R4069044-5 05/10/24 18:58

Analyte	Original Result pCi/l	Original 2 sigma CE + / -	Original MDA pCi/l	Original Lc pCi/l	DUP Result pCi/l	DUP 2 sigma CE + / -	DUP MDA pCi/l	DUP Lc pCi/l	DUP RPD %	DUP RER	<u>DUP Qualifier</u>	DUP RPD Limits %	DUP RER Limit
Radium-228	-0.0916	0.272	0.520	0.275	-0.921	0.290	0.585	0.308	0.000	2.09	U	20	3
(T) Barium	104				101	101							
(T) Yttrium	102				94.0	94.0							

Laboratory Control Sample (LCS)

(LCS) R4069044-2 05/10/24 18:58									
Analyte	Spike Amount pCi/l	LCS Result pCi/l	LCS Rec. %	Rec. Limits %	LCS Qualifier				
Radium-228	5.00	4.36	87.2	80.0-120					
(T) Barium			107						
(T) Yttrium			96.4						

L1729950-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1729950-03 05/10/24 18:58 • (MS) R4069044-3 05/10/24 18:58 • (MSD) R4069044-4 05/10/24 18:58													
Analyte	Spike Amount pCi/l	Original Result pCi/l	MS Result pCi/l	MSD Result pCi/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	<u>MS Qualifier</u>	<u>MSD Qualifier</u>	RPD	MS RER	RPD Limits %
Radium-228	16.7	-0.384	16.7	17.9	100	107	1	70.0-130			6.70		20
(T) Barium		87.0			108	93.1							
(T) Yttrium		97.2			98.9	90.4							

Cp

Tc

Ss

Cn

Sr

Qc

Gl

Al

Sc

(MB) R4067868-1 05/09/24 12:14						
Analyte	MB Result pCi/l	MB Qualifier	MB 2 sigma CE + / -	MB MDA pCi/l	MB Lc pCi/l	
Radium-226	-0.0305	U	0.0556	0.131	0.0863	
(T) Barium-133	70.2		70.2			

L1727514-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1727514-05 05/09/24 12:14 • (DUP) R4067868-5 05/09/24 12:14									
Analyte	Original Result		Original 2 sigma CE		Original MDA		Original Lc		
	pCi/l	+ / -	pCi/l		pCi/l		pCi/l		
Radium-226	0.654	0.365	0.283	0.215	0.394	0.264	1.01	108	
(T) Barium-133	79.3		87.4						

Laboratory Control Sample (LCS)

(LCS) R4067868-2 05/09/24 12:14				
Analyte	Spike Amount		LCS Result	
	pCi/l		pCi/l	
Radium-226	5.00	5.38	108	80.0-120
(T) Barium-133		85.9		

L1727514-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1727514-03 05/09/24 12:14 • (MS) R4067868-3 05/09/24 12:14 • (MSD) R4067868-4 05/09/24 12:14											
Analyte	Spike Amount		Original Result		MS Result		MSD Result		MSD Rec.		
	pCi/l		pCi/l		pCi/l		pCi/l		%	%	
Radium-226	20.0	-0.0347	22.4	20.8	112	75.3	104	75.0-125	7.41	20	
(T) Barium-133		67.4					86.8				

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

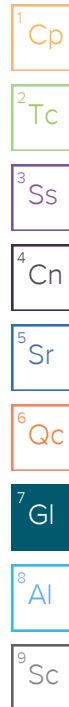
Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDA	Minimum Detectable Activity.
Rec.	Recovery.
RER	Replicate Error Ratio.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(T)	Tracer - A radioisotope of known concentration added to a solution of chemically equivalent radioisotopes at a known concentration to assist in monitoring the yield of the chemical separation.
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier Description

J	The identification of the analyte is acceptable; the reported value is an estimate.
U	Below Detectable Limits: Indicates that the analyte was not detected.



ACCREDITATIONS & LOCATIONS

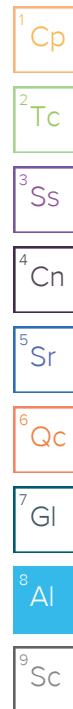
Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey--NELAP	TN002
California	2932	New Mexico ¹	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio--VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1 6}	KY90010	South Carolina	84004002
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1 4}	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas ⁵	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA -- ISO 17025	1461.01	AIHA-LAP, LLC EMLAP	100789
A2LA -- ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA--Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.



SUBCONTRACT ORDER
Transfer Chain of Custody
Pace Analytical Services, LLC
HD04162

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SENDING LABORATORY

PDC Laboratories, Inc.
2231 W Altorfer Dr
Peoria, IL 61615
(800) 752-6651

RECEIVING LABORATORY

Pace Analytical - Mt Juliet, Tn
12065 Lebanon Rd
Mt Juliet, TN 37122
(615) 758-5858

B159

U729945

Sample: HD04162-01
Name: G50S

Sampled: 04/23/24 12:35
Matrix: Ground Water
Preservative: HNO3, pH <2

-01

Analysis	Due	Expires	Comments
01-Radium 226/228 combined	05/06/24 16:00	10/20/24 12:35	

Sample: HD04162-02
Name: G54L

Sampled: 04/23/24 11:55
Matrix: Ground Water
Preservative: HNO3, pH <2

-02

Analysis	Due	Expires	Comments
01-Radium 226/228 combined	05/06/24 16:00	10/20/24 11:55	

Sample Receipt Checklist

COC Seal Present/Intact:	☒ Y ☐ N	If Applicable	☐ Y ☐ N
COC Signed/Accurate:	☒ Y ☐ N	VOA Zero Headspace:	☒ Y ☐ N
Bottles arrive intact:	☒ Y ☐ N	Pres. Correct/Check:	☒ Y ☐ N
Correct bottles used:	☒ Y ☐ N		
Sufficient volume sent:	☒ Y ☐ N		
RA Screen <0.5 mR/hr:	☒ Y ☐ N		

16.0+0.1=16.1
DPAL

77611312 0413

Please email results to Diane Billings at diane.billings@pacelabs.com

Date Shipped: 4/25/24 Total # of Containers: 2 Sample Origin (State): I PO #: _____

Turn-Around Time Requested ☐ NORMAL ☐ RUSH Date Results Needed: _____

Relinquished By	Date/Time	Received By	Date/Time	Sample Temperature Upon Receipt	_____ °C
<i>[Signature]</i>	<u>4/25/24 1615</u>	<i>Hailey R. [Signature]</i>	<u>4/25/24 0900</u>	Sample(s) Received on Ice	Y or N
				Proper Bottles Received in Good Condition	Y or N
				Bottles Filled with Adequate Volume	Y or N
				Samples Received Within Hold Time	Y or N
				Date/Time Taken From Sample Bottle	Y or N

ATTACHMENT B
845 QUARTERLY REPORT - QUARTER 2, 2024
DUCK CREEK POWER PLANT, BOTTOM ASH BASIN
DC-845-238

ANALYTICAL REPORT

May 13, 2024

Pace IR - Peoria, IL

Sample Delivery Group: L1729950
Samples Received: 04/26/2024
Project Number:
Description:

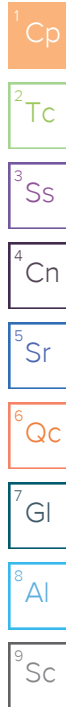
Report To: Diane Billings
2231 W. Altorfer Drive
Peoria, IL 61615

Entire Report Reviewed By:



Jason Romer
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.



Pace Analytical National

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HD04441-02 L1729950-02	6	4 Cn
HD04441-03 L1729950-03	7	
HD04441-04 L1729950-04	8	5 Sr
HD04441-05 L1729950-05	9	
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Radiochemistry by Method SM7500Ra B M	12	8 Al
Gl: Glossary of Terms	13	
Al: Accreditations & Locations	14	9 Sc
Sc: Sample Chain of Custody	15	

SAMPLE SUMMARY

HD04441-01 L1729950-01 Non-Potable Water

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2277695	1	05/02/24 17:54	05/10/24 18:58	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2281006	1	05/06/24 12:24	05/10/24 18:58	DDD	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2281006	1	05/06/24 12:24	05/09/24 12:14	ZRG	Mt. Juliet, TN

Collected by
Collected date/time
Received date/time
04/24/24 11:49
04/26/24 09:00

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

HD04441-02 L1729950-02 Non-Potable Water

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2277695	1	05/02/24 17:54	05/10/24 18:58	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2281006	1	05/06/24 12:24	05/10/24 18:58	DDD	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2281006	1	05/06/24 12:24	05/09/24 12:14	ZRG	Mt. Juliet, TN

Collected by
Collected date/time
Received date/time
04/24/24 13:00
04/26/24 09:00

HD04441-03 L1729950-03 Non-Potable Water

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2277695	1	05/02/24 17:54	05/10/24 18:58	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2281006	1	05/06/24 12:24	05/10/24 18:58	DDD	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2281006	1	05/06/24 12:24	05/09/24 12:14	ZRG	Mt. Juliet, TN

Collected by
Collected date/time
Received date/time
04/24/24 12:50
04/26/24 09:00

HD04441-04 L1729950-04 Non-Potable Water

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2277695	1	05/02/24 17:54	05/10/24 18:58	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2281006	1	05/06/24 12:24	05/10/24 18:58	DDD	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2281006	1	05/06/24 12:24	05/09/24 12:14	ZRG	Mt. Juliet, TN

Collected by
Collected date/time
Received date/time
04/24/24 11:30
04/26/24 09:00

HD04441-05 L1729950-05 Non-Potable Water

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2277695	1	05/02/24 17:54	05/10/24 18:58	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2281006	1	05/06/24 12:24	05/10/24 18:58	DDD	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2281006	1	05/06/24 12:24	05/09/24 12:14	ZRG	Mt. Juliet, TN

Collected by
Collected date/time
Received date/time
04/24/24 11:40
04/26/24 09:00

HD04441-06 L1729950-06 Non-Potable Water

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2277695	1	05/02/24 17:54	05/10/24 18:58	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2281006	1	05/06/24 12:24	05/10/24 18:58	DDD	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2281006	1	05/06/24 12:24	05/09/24 12:14	ZRG	Mt. Juliet, TN

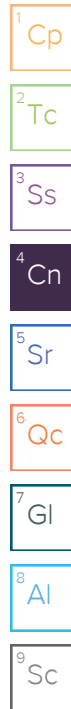
Collected by
Collected date/time
Received date/time
04/24/24 13:20
04/26/24 09:00

CASE NARRATIVE

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All radiochemical sample results for solids are reported on a dry weight basis with the exception of tritium, carbon-14 and radon, unless wet weight was requested by the client. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.



Jason Romer
Project Manager



Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-228	-0.546	U	0.307	2.61	0.534	0.278	05/10/2024 18:58	WG2277695
(T) Barium	97.0					30.0-143	05/10/2024 18:58	WG2277695
(T) Yttrium	106					30.0-136	05/10/2024 18:58	WG2277695

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	0.0724	U	0.376	0.662	05/10/2024 18:58	WG2281006

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-226	0.0724	U	0.217	0.0693	0.391	0.273	05/09/2024 12:14	WG2281006
(T) Barium-133	73.5					30.0-143	05/09/2024 12:14	WG2281006

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-228	-0.286	U	0.275	2.28	0.475	0.248	05/10/2024 18:58	WG2277695
(T) Barium	102					30.0-143	05/10/2024 18:58	WG2277695
(T) Yttrium	101					30.0-136	05/10/2024 18:58	WG2277695

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	0.192	U	0.347	0.550	05/10/2024 18:58	WG2281006

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-226	0.192	J	0.211	0.0976	0.278	0.199	05/09/2024 12:14	WG2281006
(T) Barium-133	97.1					30.0-143	05/09/2024 12:14	WG2281006

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-228	-0.384	U	0.524	3.56	0.897	0.466	05/10/2024 18:58	WG2277695
(T) Barium	87.0					30.0-143	05/10/2024 18:58	WG2277695
(T) Yttrium	97.2					30.0-136	05/10/2024 18:58	WG2277695

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	0.433	J	0.573	0.909	05/10/2024 18:58	WG2281006

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-226	0.433		0.232	0.119	0.145	0.119	05/09/2024 12:14	WG2281006
(T) Barium-133	100					30.0-143	05/09/2024 12:14	WG2281006

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-228	-0.415	U	0.297	2.47	0.514	0.268	05/10/2024 18:58	WG2277695
(T) Barium	100					30.0-143	05/10/2024 18:58	WG2277695
(T) Yttrium	106					30.0-136	05/10/2024 18:58	WG2277695

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	0.209	J	0.355	0.561	05/10/2024 18:58	WG2281006

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-226	0.209	J	0.195	0.0882	0.224	0.171	05/09/2024 12:14	WG2281006
(T) Barium-133	91.6					30.0-143	05/09/2024 12:14	WG2281006

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-228	-0.933	U	0.429	2.93	0.753	0.392	05/10/2024 18:58	WG2277695
(T) Barium	94.2					30.0-143	05/10/2024 18:58	WG2277695
(T) Yttrium	118					30.0-136	05/10/2024 18:58	WG2277695

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	0.196	U	0.475	0.798	05/10/2024 18:58	WG2281006

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-226	0.196	J	0.203	0.0843	0.265	0.182	05/09/2024 12:14	WG2281006
(T) Barium-133	88.6					30.0-143	05/09/2024 12:14	WG2281006

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-228	-0.238	U	0.388	2.56	0.668	0.349	05/10/2024 18:58	WG2277695
(T) Barium	97.4					30.0-143	05/10/2024 18:58	WG2277695
(T) Yttrium	116					30.0-136	05/10/2024 18:58	WG2277695

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	0.574	J	0.486	0.713	05/10/2024 18:58	WG2281006

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-226	0.574		0.293	0.147	0.249	0.174	05/09/2024 12:14	WG2281006
(T) Barium-133	102					30.0-143	05/09/2024 12:14	WG2281006

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Cp

Tc

Ss

Cn

Sr

Qc

Gl

Al

Sc

(MB) R4069044-1 05/10/24 18:58						
Analyte	MB Result pCi/l	MB Qualifier	MB 2 sigma CE + / -	MB MDA pCi/l	MB Lc pCi/l	
Radium-228	0.348		0.148	0.266	0.141	
(T) Barium	113		113			
(T) Yttrium	91.6		91.6			

L1725467-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1725467-02 05/10/24 18:58 • (DUP) R4069044-5 05/10/24 18:58									
Analyte	Original Result		Original 2 sigma CE		Original MDA		Original Lc		MB Lc pCi/l
	pCi/l	+ / -	pCi/l	+ / -	pCi/l	+ / -	pCi/l	+ / -	
Radium-228	-0.0916	0.272	0.520	0.275	0.520	0.290	0.585	0.308	
(T) Barium	104					101			
(T) Yttrium	102					94.0			

Laboratory Control Sample (LCS)

(LCS) R4069044-2 05/10/24 18:58					
Analyte	Spike Amount		LCS Result		LCS Qualifier
	pCi/l	%	pCi/l	%	
Radium-228	5.00	87.2	4.36	80.0-120	
(T) Barium		107			
(T) Yttrium		96.4			

L1729950-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1729950-03 05/10/24 18:58 • (MS) R4069044-3 05/10/24 18:58 • (MSD) R4069044-4 05/10/24 18:58											
Analyte	Spike Amount		Original Result		MS Result		MSD Result		MS Rec.		MSD Rec.
	pCi/l	%	pCi/l	%	pCi/l	%	pCi/l	%	pCi/l	%	
Radium-228	16.7	-0.384	16.7	17.9	16.7	100	17.9	100	107	107	
(T) Barium		87.0				108			93.1	93.1	
(T) Yttrium		97.2				98.9			90.4	90.4	

845 DUCK CREEK POWER PLANT, BOTTOM ASH BASIN

DC-845-205
Method Blank (MB)

- 1Cp
- 2Tc
- 3Ss
- 4Cn
- 5Sr
- 6Qc
- 7Gl
- 8Al
- 9Sc

(MB) R4067868-1 05/09/24 12:14						
Analyte	MB Result	MB Qualifier		MB 2 sigma CE	MB MDA	MB Lc
	pCi/l	+ / -		pCi/l	pCi/l	pCi/l
Radium-226	-0.0305	U		0.0556	0.131	0.0863
(T) Barium-133	70.2	70.2				

L1727514-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1727514-05 05/09/24 12:14 • (DUP) R4067868-5 05/09/24 12:14									
Analyte	Original Result		Original 2 sigma CE		Original Lc	DUP Result	DUP 2 sigma CE		DUP Lc
	pCi/l	+ / -	pCi/l	pCi/l	pCi/l	pCi/l	+ / -	pCi/l	pCi/l
Radium-226	0.654	0.365	0.283	0.215	0.215	0.197	0.271	0.394	0.264
(T) Barium-133	79.3					87.4	87.4		

Laboratory Control Sample (LCS)

(LCS) R4067868-2 05/09/24 12:14					
Analyte	Spike Amount		LCS Result	LCS Rec.	Rec. Limits
	pCi/l	pCi/l	pCi/l	%	%
Radium-226	5.00	5.38	108	108	80.0-120
(T) Barium-133			85.9		

L1727514-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1727514-03 05/09/24 12:14 • (MS) R4067868-3 05/09/24 12:14 • (MSD) R4067868-4 05/09/24 12:14											
Analyte	Spike Amount		Original Result	MS Result	MSD Result	Dilution	Rec. Limits	MS Qualifier	MS RER	RPD	RPD Limits
	pCi/l	pCi/l	pCi/l	pCi/l	pCi/l		%	%	%	%	%
Radium-226	20.0	-0.0347	22.4	22.4	20.8	1	75.0-125	7.41			20
(T) Barium-133		67.4		75.3	86.8						

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

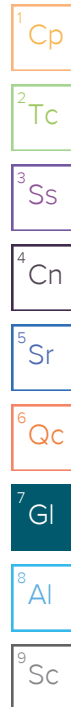
Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDA	Minimum Detectable Activity.
Rec.	Recovery.
RER	Replicate Error Ratio.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(T)	Tracer - A radioisotope of known concentration added to a solution of chemically equivalent radioisotopes at a known concentration to assist in monitoring the yield of the chemical separation.
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier Description

J	The identification of the analyte is acceptable; the reported value is an estimate.
U	Below Detectable Limits: Indicates that the analyte was not detected.



ACCREDITATIONS & LOCATIONS

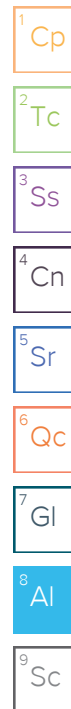
Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey--NELAP	TN002
California	2932	New Mexico ¹	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio--VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1,6}	KY90010	South Carolina	84004002
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1,4}	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas ⁵	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA -- ISO 17025	1461.01	AIHA-LAP, LLC EMLAP	100789
A2LA -- ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA--Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.



SUBCONTRACT ORDER
Transfer Chain of Custody

Pace Analytical Services, LLC
HD04441

SENDING LABORATORY

PDC Laboratories, Inc.
2231 W Altorfer Dr
Peoria, IL 61615
(800) 752-6651

RECEIVING LABORATORY

Pace Analytical - Mt Juliet, Tn
12065 Lebanon Rd
Mt Juliet, TN 37122
(615) 758-5858

L1729950
B158

Sample: HD04441-01
Name: G54S

Sampled: 04/24/24 11:49
Matrix: Ground Water
Preservative: HNO3, pH <2

-01

Analysis	Due	Expires	Comments
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01-Radium 226/228 combined	05/07/24 16:00	10/21/24 11:49	
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Sample: HD04441-02
Name: G57S

Sampled: 04/24/24 13:00
Matrix: Ground Water
Preservative: HNO3, pH <2

-02

Analysis	Due	Expires	Comments
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01-Radium 226/228 combined	05/07/24 16:00	10/21/24 13:00	
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Sample: HD04441-03
Name: G61S

Sampled: 04/24/24 12:50
Matrix: Ground Water
Preservative: HNO3, pH <2

-03

Analysis	Due	Expires	Comments
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01-Radium 226/228 combined	05/07/24 16:00	10/21/24 12:50	
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Sample: HD04441-04
Name: G64S

Sampled: 04/24/24 11:30
Matrix: Ground Water
Preservative: HNO3, pH <2

-04

Analysis	Due	Expires	Comments
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01-Radium 226/228 combined	05/07/24 16:00	10/21/24 11:30	
----------------------------	----------------	----------------	--

Sample: HD04441-05
Name: G60L

Sampled: 04/24/24 11:40
Matrix: Ground Water
Preservative: HNO3, pH <2

-05

Analysis	Due	Expires	Comments
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01-Radium 226/228 combined	05/07/24 16:00	10/21/24 11:40	
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SUBCONTRACT ORDER
Transfer Chain of Custody

Pace Analytical Services, LLC
HD04441

SENDING LABORATORY

PDC Laboratories, Inc.
2231 W Altorfer Dr
Peoria, IL 61615
(800) 752-6651

RECEIVING LABORATORY

Pace Analytical - Mt Juliet, Tn
12065 Lebanon Rd
Mt Juliet, TN 37122
(615) 758-5858

L1729950

Sample: HD04441-06
Name: G60S

Sampled: 04/24/24 13:20
Matrix: Ground Water
Preservative: HNO3, pH <2

-06

Analysis	Due	Expires	Comments
01-Radium 226/228 combined	05/07/24 16:00	10/21/24 13:20	

16.0 + 0.1 = 16.1
DP A6

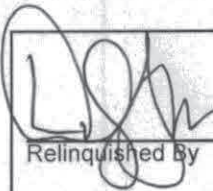
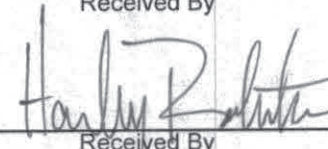
Sample Receipt Checklist

COC Seal Present/Intact:	☒ Y ☐ N	If Applicable	☐ Y ☐ N
COC Signed/Accurate:	☒ Y ☐ N	VOA Zero Headspace:	☒ Y ☐ N
Bottles arrive intact:	☒ Y ☐ N	Pres. Correct/Check:	☒ Y ☐ N
Correct bottles used:	☒ Y ☐ N		
Sufficient volume sent:	☒ Y ☐ N		
RA Screen <0.5 mR/hr:	☒ Y ☐ N		

776113120413

Please email results to Diane Billings at diane.billings@pacelabs.com

Date Shipped: 4/25/24 Total # of Containers: 6 Sample Origin (State): IL PO #: _____
Turn-Around Time Requested ☐ NORMAL ☐ RUSH Date Results Needed: _____

	4/25/24 1615	Relinquished By	Date/Time	Received By	Date/Time	Sample Temperature Upon Receipt	_____ °C
		Relinquished By	Date/Time	Received By	Date/Time	Sample(s) Received on Ice	Y or N
	4/24/24 0900	Relinquished By	Date/Time	Received By	Date/Time	Proper Bottles Received in Good Condition	Y or N
		Relinquished By	Date/Time	Received By	Date/Time	Bottles Filled with Adequate Volume	Y or N
						Samples Received Within Hold Time	Y or N
						Date/Time Taken From Sample Bottle	Y or N

ANALYTICAL REPORT

May 14, 2024

Pace IR - Peoria, IL

Sample Delivery Group: L1730987
Samples Received: 04/30/2024
Project Number: HD04652
Description:
Site: 001
Report To: Diane Billings
2231 W. Altorfer Drive
Peoria, IL 61615

Entire Report Reviewed By:

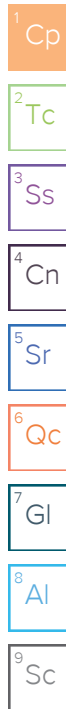


Jason Romer
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.

Pace Analytical National

12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 mydata.pacelabs.com



Cp: Cover Page	1	1 Cp
Tc: Table of Contents	2	
Ss: Sample Summary	3	2 Tc
Cn: Case Narrative	4	
Sr: Sample Results	5	3 Ss
HD04652-01 L1730987-01	5	
HD04652-02 L1730987-02	6	4 Cn
HD04652-03 L1730987-03	7	5 Sr
HD04652-04 L1730987-04	8	
Qc: Quality Control Summary	9	6 Qc
Radiochemistry by Method 904/9320	9	
Radiochemistry by Method SM7500Ra B M	10	7 Gl
Gl: Glossary of Terms	11	8 Al
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Sc: Sample Chain of Custody	13	9 Sc

SAMPLE SUMMARY

HD04652-01 L1730987-01 Non-Potable Water

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2277697	1	05/07/24 16:28	05/13/24 16:40	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2281006	1	05/06/24 12:24	05/13/24 16:40	DDD	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2281006	1	05/06/24 12:24	05/09/24 12:14	ZRG	Mt. Juliet, TN

Collected by

Collected date/time

Received date/time

04/25/24 10:40

04/30/24 09:00

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

HD04652-02 L1730987-02 Non-Potable Water

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2277697	1	05/07/24 16:28	05/13/24 16:40	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2281006	1	05/06/24 12:24	05/13/24 16:40	DDD	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2281006	1	05/06/24 12:24	05/09/24 12:14	ZRG	Mt. Juliet, TN

Collected by

Collected date/time

Received date/time

04/25/24 12:53

04/30/24 09:00

HD04652-03 L1730987-03 Non-Potable Water

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2277697	1	05/07/24 16:28	05/13/24 16:40	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2281006	1	05/06/24 12:24	05/13/24 16:40	DDD	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2281006	1	05/06/24 12:24	05/09/24 12:14	ZRG	Mt. Juliet, TN

Collected by

Collected date/time

Received date/time

04/25/24 13:35

04/30/24 09:00

HD04652-04 L1730987-04 Non-Potable Water

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2277697	1	05/07/24 16:28	05/13/24 16:40	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2281006	1	05/06/24 12:24	05/13/24 16:40	DDD	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2281006	1	05/06/24 12:24	05/09/24 12:14	ZRG	Mt. Juliet, TN

Collected by

Collected date/time

Received date/time

04/25/24 14:19

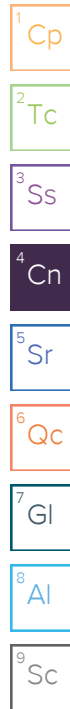
04/30/24 09:00

CASE NARRATIVE

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All radiochemical sample results for solids are reported on a dry weight basis with the exception of tritium, carbon-14 and radon, unless wet weight was requested by the client. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.



Jason Romer
Project Manager



Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-228	1.28		0.321	0.782	0.557	0.290	05/13/2024 16:40	WG2277697
(T) Barium	94.8					30.0-143	05/13/2024 16:40	WG2277697
(T) Yttrium	89.5					30.0-136	05/13/2024 16:40	WG2277697

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	2.09		0.488	0.622	05/13/2024 16:40	WG2281006

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-226	0.820		0.368	0.167	0.276	0.195	05/09/2024 12:14	WG2281006
(T) Barium-133	89.2					30.0-143	05/09/2024 12:14	WG2281006

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-228	0.455	J	0.341	1.60	0.616	0.320	05/13/2024 16:40	WG2277697
(T) Barium	93.0					30.0-143	05/13/2024 16:40	WG2277697
(T) Yttrium	92.7					30.0-136	05/13/2024 16:40	WG2277697

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	1.01		0.500	0.737	05/13/2024 16:40	WG2281006

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-226	0.552		0.366	0.161	0.405	0.265	05/09/2024 12:14	WG2281006
(T) Barium-133	92.0					30.0-143	05/09/2024 12:14	WG2281006

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-228	0.169	U	0.302	2.53	0.552	0.288	05/13/2024 16:40	WG2277697
(T) Barium	135					30.0-143	05/13/2024 16:40	WG2277697
(T) Yttrium	87.4					30.0-136	05/13/2024 16:40	WG2277697

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	0.667		0.419	0.607	05/13/2024 16:40	WG2281006

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-226	0.498		0.291	0.147	0.253	0.184	05/09/2024 12:14	WG2281006
(T) Barium-133	105					30.0-143	05/09/2024 12:14	WG2281006

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-228	-0.417	U	0.278	2.28	0.527	0.276	05/13/2024 16:40	WG2277697
(T) Barium	122					30.0-143	05/13/2024 16:40	WG2277697
(T) Yttrium	87.8					30.0-136	05/13/2024 16:40	WG2277697

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	0.000	U	0.312	0.626	05/13/2024 16:40	WG2281006

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-226	-0.0186	U	0.141	0.0433	0.337	0.239	05/09/2024 12:14	WG2281006
(T) Barium-133	82.4					30.0-143	05/09/2024 12:14	WG2281006

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

L1730987-01.02.03.04

DC-845-205
Method Blank (MB)

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

(MB) R4069187-1 05/13/24 16:40									
Analyte	MB Result		MB Qualifier		MB 2 sigma CE		MB MDA		MB Lc
	pCi/l		+ / -				pCi/l		pCi/l
Radium-228	0.550		0.214		0.379		0.199		
(T) Barium	115		115						
(T) Yttrium	78.3		78.3						

L1730987-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1730987-03 05/13/24 16:40 • (DUP) R4069187-5 05/13/24 16:40									
Analyte	Original Result		Original 2 sigma CE		Original MDA		Original Lc		DUP Result
	pCi/l		+ / -		pCi/l		pCi/l		pCi/l
Radium-228	0.169		0.302		0.552		0.288		-0.285
(T) Barium	135								124
(T) Yttrium	87.4								91.1

Laboratory Control Sample (LCS)

(LCS) R4069187-2 05/13/24 16:40									
Analyte	Spike Amount		LCS Result		LCS Rec.		Rec. Limits		LCS Qualifier
	pCi/l		pCi/l		%		%		
Radium-228	5.00		5.53		111		80.0-120		
(T) Barium					106				
(T) Yttrium					88.7				

L1730987-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1730987-04 05/13/24 16:40 • (MS) R4069187-3 05/13/24 16:40 • (MSD) R4069187-4 05/13/24 16:40									
Analyte	Spike Amount		Original Result		MS Result		MSD Result		MSD Rec.
	pCi/l		pCi/l		pCi/l		pCi/l		%
Radium-228	16.7		-0.417		19.3		17.8		106
(T) Barium			122						114
(T) Yttrium			87.8						93.8

Cp

Tc

Ss

Cn

Sr

Qc

Gl

Al

Sc

(MB) R4067868-1 05/09/24 12:14						
Analyte	MB Result	MB Qualifier	MB 2 sigma CE	MB MDA	MB Lc	
	pCi/l		+ / -	pCi/l	pCi/l	pCi/l
Radium-226	-0.0305	U	0.0556	0.131	0.0863	
(T) Barium-133	70.2		70.2			

L1727514-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1727514-05 05/09/24 12:14 • (DUP) R4067868-5 05/09/24 12:14									
Analyte	Original Result	Original 2 sigma CE	Original MDA	Original Lc	DUP Result	DUP 2 sigma CE	DUP MDA	DUP Lc	DUP RER
	pCi/l	+ / -	pCi/l	pCi/l	pCi/l	+ / -	pCi/l	pCi/l	%
Radium-226	0.654	0.365	0.283	0.215	0.197	0.271	0.394	0.264	108
(T) Barium-133	79.3	87.4							

Laboratory Control Sample (LCS)

(LCS) R4067868-2 05/09/24 12:14					
Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	<u>LCS Qualifier</u>
	pCi/l	pCi/l	%	%	
Radium-226	5.00	5.38	108	80.0-120	
(T) Barium-133			85.9		

L1727514-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1727514-03 05/09/24 12:14 • (MS) R4067868-3 05/09/24 12:14 • (MSD) R4067868-4 05/09/24 12:14									
Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier
	pCi/l	pCi/l	pCi/l	pCi/l	%	%		%	%
Radium-226	20.0	-0.0347	22.4	20.8	112	104	1	75.0-125	7.41
(T) Barium-133	67.4		75.3		86.8				

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

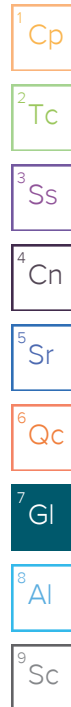
Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDA	Minimum Detectable Activity.
Rec.	Recovery.
RER	Replicate Error Ratio.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(T)	Tracer - A radioisotope of known concentration added to a solution of chemically equivalent radioisotopes at a known concentration to assist in monitoring the yield of the chemical separation.
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier Description

J	The identification of the analyte is acceptable; the reported value is an estimate.
U	Below Detectable Limits: Indicates that the analyte was not detected.



ACCREDITATIONS & LOCATIONS

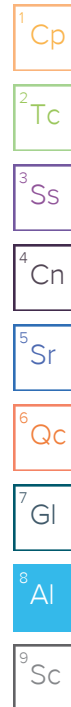
Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey--NELAP	TN002
California	2932	New Mexico ¹	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio--VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1,6}	KY90010	South Carolina	84004002
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1,4}	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas ⁵	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA -- ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA -- ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA--Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.



SUBCONTRACT ORDER
Transfer Chain of Custody
Pace Analytical Services, LLC
HD04652

SENDING LABORATORY

PDC Laboratories, Inc.
2231 W Altorfer Dr
Peoria, IL 61615
(800) 752-6651

RECEIVING LABORATORY

Pace Analytical - Mt Juliet, Tn
12065 Lebanon Rd
Mt Juliet, TN 37122
(615) 758-5858

4730987

Sample: HD04652-01
Name: OM26

Sampled: 04/25/24 10:40
Matrix: Ground Water
Preservative: HNO3, pH <2

-01

Analysis	Due	Expires	Comments
01-Radium 226/228 combined	05/08/24 16:00	10/22/24 10:40	

Sample: HD04652-02
Name: OM27

Sampled: 04/25/24 12:53
Matrix: Ground Water
Preservative: HNO3, pH <2

-02

Analysis	Due	Expires	Comments
01-Radium 226/228 combined	05/08/24 16:00	10/22/24 12:53	

Sample: HD04652-03
Name: OM28

Sampled: 04/25/24 13:35
Matrix: Ground Water
Preservative: HNO3, pH <2

-03

Analysis	Due	Expires	Comments
01-Radium 226/228 combined	05/08/24 16:00	10/22/24 13:35	

Sample: HD04652-04
Name: ~~EB~~

EB-2 4/25/24 deb

Sampled: 04/25/24 14:19
Matrix: Ground Water
Preservative: HNO3, pH <2

-04

Analysis	Due	Expires	Comments
01-Radium 226/228 combined	05/08/24 16:00	10/22/24 14:19	

SUBCONTRACT ORDER
Transfer Chain of Custody

Pace Analytical Services, LLC

HD04652

U730987

H001

Ans DPAG

Sample Receipt Checklist

COC Seal Present/Intact: ☒ Y ☐ N
COC Signed/Accurate: ☒ Y ☐ N
Bottles arrive intact: ☒ Y ☐ N
Correct bottles used: ☒ Y ☐ N
Sufficient volume sent: ☒ Y ☐ N
RA Screen <0.5 mR/hr: ☒ Y ☐ N

If Applicable

VOA Zero Headspace: ☒ Y ☐ N
Pres. Correct/Check: ☒ Y ☐ N

7761 9614 4846

Please email results to Diane Billings at diane.billings@pacelabs.com

Date Shipped: 4/29/24 Total # of Containers: 4 Sample Origin (State): IL PO #: _____

Turn-Around Time Requested ☐ NORMAL ☐ RUSH

Date Results Needed: _____

[Signature] 4/29/24 0640
Relinquished By Date/Time

Received By Date/Time

Easton Degan 4/30/24 0900 →
Relinquished By Date/Time

Received By Date/Time

Sample Temperature Upon Receipt _____ °C

Sample(s) Received on Ice Y or N

Proper Bottles Received in Good Condition Y or N

Bottles Filled with Adequate Volume Y or N

Samples Received Within Hold Time Y or N

Date/Time Taken From Sample Bottle Y or N

ANALYTICAL REPORT

June 24, 2024

Revised Report

Pace IR - Peoria, IL

Sample Delivery Group: L1741430
Samples Received: 05/30/2024
Project Number: HE04754
Description:
Site: 001
Report To: Diane Billings
2231 W. Altorfer Drive
Peoria, IL 61615

Entire Report Reviewed By:

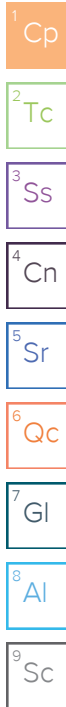
Haley Torrence

Haley Torrence
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.

Pace Analytical National

12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 mydata.pacelabs.com



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Cn: Case Narrative	4	
Sr: Sample Results	5	3 Ss
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		9 Sc

SAMPLE SUMMARY

Collected by
Collected date/time
Received date/time

05/28/24 15:0905/30/24 09:00

HE04754-01 L1741430-01 Non-Potable Water

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2299243	1	06/06/24 13:18	06/18/24 22:32	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2298855	1	06/05/24 15:02	06/18/24 22:32	DDD	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2298855	1	06/05/24 15:02	06/06/24 20:14	ZRG	Mt. Juliet, TN

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All radiochemical sample results for solids are reported on a dry weight basis with the exception of tritium, carbon-14 and radon, unless wet weight was requested by the client. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

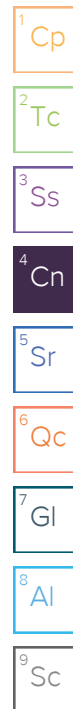


Haley Torrence
Project Manager

Report Revision History

Level II Report - Version 1: 06/21/24 16:49

Project Narrative



Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-228	0.184	U	0.277	0.380	0.527	0.275	06/18/2024 22:32	WG2299243
(T) Barium	93.0					30.0-143	06/18/2024 22:32	WG2299243
(T) Yttrium	101					30.0-136	06/18/2024 22:32	WG2299243

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	0.433	J	0.385	0.637	06/18/2024 22:32	WG2298855

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-226	0.248	J	0.268	0.111	0.357	0.243	06/06/2024 20:14	WG2298855
(T) Barium-133	88.9					30.0-143	06/06/2024 20:14	WG2298855

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

QUALITY CONTROL SUMMARY

L1741430-01

Cp

Tc

Ss

Cn

Sr

Qc

Gl

Al

Sc

(MB) R4084580-1 06/18/24 18:36						
Analyte	MB Result pCi/l	MB Qualifier	MB 2 sigma CE + / -	MB MDA pCi/l	MB Lc pCi/l	
Radium-228	-0.218	U	0.183	0.363	0.190	
(T) Barium	99.7		99.7			
(T) Yttrium	91.7		91.7			

L1741426-09 Original Sample (OS) • Duplicate (DUP)

(OS) L1741426-09 06/18/24 18:36 • (DUP) R4084580-5 06/18/24 18:36									
Analyte	Original Result		Original 2 sigma CE		Original MDA		Original Lc		MB Lc pCi/l
	pCi/l	+ / -	pCi/l	+ / -	pCi/l	+ / -	pCi/l	+ / -	
Radium-228	0.979	0.215	0.384	0.204	0.0240	0.579	1.13	0.588	0.190
(T) Barium	111				119				
(T) Yttrium	90.7				97.5				

Laboratory Control Sample (LCS)

(LCS) R4084580-2 06/18/24 18:36						
Analyte	Spike Amount		LCS Result		Rec. Limits	
	pCi/l	%	pCi/l	%	pCi/l	%
Radium-228	5.00	4.48	89.7	80.0-120		
(T) Barium			101			
(T) Yttrium			106			

L1741036-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1741036-06 06/18/24 18:36 • (MS) R4084580-3 06/18/24 18:36 • (MSD) R4084580-4 06/18/24 18:36											
Analyte	Spike Amount		Original Result		MS Result		MSD Result		MSD Rec.		Rec. Limits
	pCi/l	%	pCi/l	%	pCi/l	%	pCi/l	%	pCi/l	%	
Radium-228	16.7	0.373	16.9	14.6	98.7	85.2	103	70.0-130			70.0-130
(T) Barium			98.9		94.2	115					
(T) Yttrium			94.5		99.2						

Cp

Tc

Ss

Cn

Sr

Qc

Gl

Al

Sc

(MB) R4078678-1 06/06/24 20:13						
Analyte	MB Result	MB Qualifier	MB 2 sigma CE	MB MDA	MB Lc	
	pCi/l	+ / -	pCi/l	pCi/l	pCi/l	
Radium-226	0.0761	J	0.0794	0.105	0.0703	
(T) Barium-133	73.0	73.0				

L1738113-23 Original Sample (OS) • Duplicate (DUP)

(OS) L1738113-23 06/06/24 20:13 • (DUP) R4078678-5 06/06/24 20:13									
Analyte	Original Result	Original 2 sigma CE	Original MDA	Original Lc	DUP Result	DUP 2 sigma CE	DUP MDA	DUP Lc	DUP RER
	pCi/l	+ / -	pCi/l	pCi/l	pCi/l	+ / -	pCi/l	pCi/l	%
Radium-226	139	0.472	0.234	0.178	0.332	0.219	0.183	0.143	123
(T) Barium-133	87.9				87.0	87.0			20.3

Laboratory Control Sample (LCS)

(LCS) R4078678-2 06/06/24 20:13					
Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	pCi/l	pCi/l	%	%	
Radium-226	5.00	5.07	101	80.0-120	
(T) Barium-133		72.5			

L1738113-17 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1738113-17 06/06/24 20:13 • (MS) R4078678-3 06/06/24 20:13 • (MSD) R4078678-4 06/06/24 20:13										
Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	RPD Limits
	pCi/l	pCi/l	pCi/l	pCi/l	%	%		%	%	%
Radium-226	20.0	0.735	19.7	19.7	95.0	94.8	1	75.0-125	0.254	20
(T) Barium-133		76.7			76.4	66.6				

Guide to Reading and Understanding Your Laboratory Report

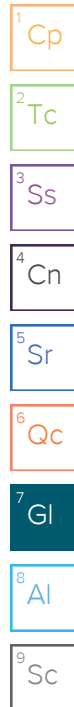
The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDA	Minimum Detectable Activity.
Rec.	Recovery.
RER	Replicate Error Ratio.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(T)	Tracer - A radioisotope of known concentration added to a solution of chemically equivalent radioisotopes at a known concentration to assist in monitoring the yield of the chemical separation.
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
J	The identification of the analyte is acceptable; the reported value is an estimate.
U	Below Detectable Limits: Indicates that the analyte was not detected.



ACCREDITATIONS & LOCATIONS

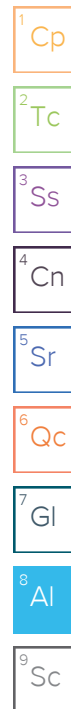
Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey--NELAP	TN002
California	2932	New Mexico ¹	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio--VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1 6}	KY90010	South Carolina	84004002
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1 4}	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas ⁵	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA -- ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA -- ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA--Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.



SUBCONTRACT ORDER
Transfer Chain of Custody
Pace Analytical Services, LLC
HE04754

A112

SENDING LABORATORY

PDC Laboratories, Inc.
2231 W Altorfer Dr
Peoria, IL 61615
(800) 752-6651

RECEIVING LABORATORY

Pace Analytical - Mt Juliet, Tn
12065 Lebanon Rd
Mt Juliet, TN 37122
(615) 758-5858

L1741430

Sample: HE04754-01
Name: P60 Resample

Sampled: 05/28/24 13:09 1507 5/29/24
Matrix: Ground Water - d
Preservative: HNO3, pH <2

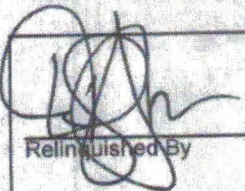
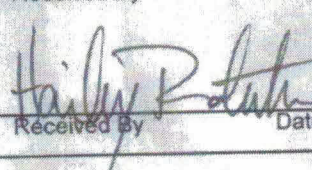
Analysis	Due	Expires	Comments
01-Radium 226/228 combined	06/10/24 16:00	11/24/24 13:09	

Sample Receipt Checklist
If Applicable
COC Seal Present/Intact: ☒ Y ☐ N
COC Signed/Accurate: ☒ Y ☐ N
Bottles arrive intact: ☒ Y ☐ N
Correct bottles used: ☒ Y ☐ N
Sufficient volume sent: ☒ Y ☐ N
RA Screen <0.5 mR/hr: ☒ Y ☐ N
VOA Zero Headspace: ☒ Y ☐ N
Pres. Correct/Check: ☒ Y ☐ N
Amb
7308 4400 9710

Please email results to Diane Billings at diane.billings@pacelabs.com

Date Shipped: 5/29/24 Total # of Containers: Sample Origin (State): PO #:

Turn-Around Time Requested ☐ NORMAL ☐ RUSH Date Results Needed:

Relinquished By	Date/Time	Received By	Date/Time	Sample Temperature Upon Receipt	°C
	5/29/24 1545			Sample(s) Received on Ice	Y or N
				Proper Bottles Received in Good Condition	Y or N
				Bottles Filled with Adequate Volume	Y or N
				Samples Received Within Hold Time	Y or N
				Date/Time Taken From Sample Bottle	Y or N
Relinquished By	Date/Time	Received By	Date/Time		
			5/29/24 0900		

ATTACHMENT B.
845 QUARTERLY REPORT - QUARTER 2, 2024
DUCK CREEK POWER PLANT, BOTTOM ASH BASIN
DC-845-205

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The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately

Page: 1 of 10Temp in °C

Received on
Ice (P/N)

Custody
Sealed
Cooler (Y/N)

Samples
Intact (MIN)

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Page: 1 of 10

MD03070

11003070

Section D		Valid Matrix Codes								
SAMPLE ID (A-Z, 0-9 / -) Sample IDs MUST BE UNIQUE		DRINKING WATER DW WASTE WATER WW PRODUCT P SOLID SL OIL OL WIPE WIP AIR AK RESIDUE RS								
ITEM #	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED DATE TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives	Analysis Test	Y/N	Residual Chlorine (Y/N)	Project No./ Lab I.D.
1	D61L	WT G	4/17/24	1444	5	X	H ₂ SO ₄			
2	EB1	WT G	4/17/24	1548	5	X	HNO ₃			
3							HCl			
4							NaOH			
5							Na ₂ S ₂ O ₃			
6							Methanol			
7							Other			
8										
9										
10										
11										
12										
13										
14										
15										
16										
ADDITIONAL COMMENTS		RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION		DATE	TIME	SAMPLE CONDITIONS	
DC-24Q2 Rev 0		C. J. Miller	4/17/24	1643	Cathy P. Jones		4/17/24	1643	5 1 1	

DATE Signed: 04/17/24
(MM/DD/YY)

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: 1 of[illegible]

*HCL was broken in
lab accident on 4/7/91

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

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CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:		Page: 1 of 10	
Company:	Visira Corp-Duck Creek	Report To:	Brian Voelker	Attention:	Brian Voelker		
Address:	17751 North Cicero Rd	Copy To:	Sam Davies: samantha.davies@visiracorp.com	Company Name:	Visira Corp	REGULATORY AGENCY	
	Canton, IL 61520		Daryl Johnson: Robert.Johnson@visiracorp.com	Address:	see Section A	NPDES	GROUND WATER
Email To:	Brian.Voelker@VisiraCorp.com		Purchase Order No.:	Quote Reference:		UST	RCRA
				Project Name:		OTHER	
Phone: (217) 753-8911	Fax:			Project Manager:		Site Location	IL
Requested Due Date/TAT: 10 day			Project Number: 2285	Profile #:		STATE:	

[illegible]

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:		Page: 1 of 10	
Company:	Visita Corp-Duck Creek	Report To:	Brian Voelker	Attention:	Brian Voelker		
Address:	17751 North Cicero Rd Canton, IL 61520	Copy To:	Sam Davies, samantha.davies@visitacorp.com	Company Name:	Visita Corp	REGULATORY AGENCY	
Email To:	Brian.Voelker@visitacorp.com	Purchase Order No.:	Daryl Johnson, djohnson@visitacorp.com	Address:	see Section A	NPDES	GROUND WATER
Phone:	(217) 753-8911	Project Name:		Reference:		UST	RCRA
Fax:		Requested Due Date/TAT:	10 day	Project Number:	2285	Site Location:	IL
				Profile #:		STATE:	

ITEM #	Section D Valid Matrix Codes (A-Z, 0-9 / -) SAMPLE ID Sample IDs MUST BE UNIQUE	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	DATE	TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives										Analysis Test	Y/N	Requested Analysis Filtered (Y/N)	Residual Chlorine (Y/N)	Project No./ Lab I.D.
								Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other							
1	606L	WT	C	4/23/24	1136		10	X	X	X	X	X	X									
2	612L	WT	C	4/23/24	1450		10	X	X	X	X	X	X									
3	612L	WT	C	4/23/24	1450		10	X	X	X	X	X	X									
4	630L	WT	C	4/23/24	1100		4	X	X	X	X	X	X									
5	650C	WT	C	4/23/24	1235		5	X	X	X	X	X	X									
6	652S	WT	C	4/23/24	1300		4	X	X	X	X	X	X									
7	654L	WT	C	4/23/24	1155		5	X	X	X	X	X	X									
8	655L	WT	C	4/23/24	1358		4	X	X	X	X	X	X									
9	655S	WT	C	4/23/24	1510		5	X	X	X	X	X	X									
10	605L	WT	C	4/23/24	1032		10	X	X	X	X	X	X									
11	611L	WT	C	4/23/24	1240		10	X	X	X	X	X	X									
12	613L	WT	C	4/23/24	1339		10	X	X	X	X	X	X									
13	618 Blank	WT	C	4/23/24	1530		10	X	X	X	X	X	X									
14																						
15																						
16																						

ADDITIONAL COMMENTS		RELINQUISHED BY / AFFILIATION		DATE		TIME		ACCEPTED BY / AFFILIATION		DATE		TIME	
DC-24Q2 Rev 0				4/23/24		1:42				4/23/24		1642	

SAMPLER NAME AND SIGNATURE			
PRINT Name of SAMPLER:			
SIGNATURE of SAMPLER:			

SAMPLE CONDITIONS			
Temp in °C	9.6	Received on Ice (Y/N)	Y
Custody Sealed Cooler (Y/N)	N	Samples Intact (Y/N)	Y

MDO4941

H100444)

Page: 1
of 10
183in °CRec
on
(Y)

Custom
Sealed
Cooler

Sample
In

845 QUARTERLY REPORT - QUARTER 2, 2024
DUCK CREEK POWER PLANT, BOTTOM ASH BASIN
DC-845-205

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

[illegible]

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Section A Required Client Information:						Section B Required Project Information:						Section C Invoice Information:						Page: 1						of 10					
Company: Vistra Corp-Duck Creek						Report To: Brian Voelker						Attention: Brian Voelker												DUCK CREEK POWER PLANT, BOTTOM ASH BASIN					
Address: 17751 North Cilco Rd Canton, IL 61520						Copy To: Sam Davies: samantha.davies@vistracorp.com						Company Name: Vistra Corp						REGULATORY AGENCY						DC-845-205					
Email To: Brian.Voelker@VistraCorp.com						Purchase Order No.: Deryl Johnson: Robert.Johnson@vistracorp.com						Address: see Section A						NPDES GROUND WATER DRINKING WATER											
Phone: (217) 753-8911						Project Name: 						Quote Reference: 						UST RCRA OTHER											
Requested Due Date/TAT: 10 day						Project Number: 2285						Profile #: 						Site Location IL											
SAMPLE ID (A-Z, 0-9 / -) Sample IDs MUST BE UNIQUE																													
Valid Matrix Codes		Section D		COLLECTED		SAMPLE TYPE (G=GRAB C=COMP)		MATRIX CODE (see valid codes to left)		# OF CONTAINERS		Preservatives		Analysis Test		Y/N		Requested Analysis Filtered (Y/N)		Residual Chlorine (Y/N)		Project No./ Lab I.D.							
DRINKING WATER DW WASTE WATER WW PRODUCT P SOLIDS S LIQUID L WATER W AIR AR RESIDUE RS				DATE	TIME							H ₂ SO ₄	HNO ₃	HCl	NaOH	Na ₂ SO ₃	Methanol	Other											
ITEM #																													
1	P60	5/28/24	1509	G						1													HE04754						
2																							CO						
3																													
4																													
5																													
6																													
7																													
8																													
9																													
10																													
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ADDITIONAL COMMENTS				RELINQUISHED BY / AFFILIATION		DATE		TIME		ACCEPTED BY / AFFILIATION		DATE		TIME		SAMPLE CONDITIONS	
DC-24Q2 Rev 0						5/28/24		1403		Cathy P. Jones		5/28/24		1403		Received on Ice (Y/N) _____ Custody Sealed (Y/N) _____ Samples Intact (Y/N) _____	
				SAMPLER NAME AND SIGNATURE		PRINT Name of SAMPLER:		SIGNATURE of SAMPLER:		DATE Signed (MM/DD/YYYY):							
						Aaron Plumberston				5/28/24							

**ATTACHMENT C
COMPARISON OF STATISTICAL RESULTS TO BACKGROUND
QUARTER 2, 2024**

ATTACHMENT C.
COMPARISON OF STATISTICAL RESULTS TO BACKGROUND - QUARTER 2, 2024
845 QUARTERLY REPORT
DUICK CREEK POWER PLANT
BOTTOM ASH BASIN
CANTON, IL

Well ID	HSU	Event	Parameter	Units	Date Range	Sample Count	Percent ND	Statistical Calculation	Statistical Result	Background
BA01	UA	E005	Antimony, total	mg/L	02/05/16 - 04/16/24	13	100	All ND - Last	0.003	0.003
BA01	UA	E005	Arsenic, total	mg/L	02/05/16 - 04/16/24	13	31	CI around geomean	0.000941	0.0240
BA01	UA	E005	Barium, total	mg/L	02/05/16 - 04/16/24	13	0	CB around T-S line	0.0825	0.480
BA01	UA	E005	Beryllium, total	mg/L	02/05/16 - 04/16/24	13	100	All ND - Last	0.001	0.00210
BA01	UA	E005	Boron, total	mg/L	02/05/16 - 04/16/24	25	0	CI around median	0.021	7.90
BA01	UA	E005	Cadmium, total	mg/L	02/05/16 - 04/16/24	13	100	All ND - Last	0.001	0.001
BA01	UA	E005	Chloride, total	mg/L	02/05/16 - 04/16/24	25	0	CB around T-S line	11	700
BA01	UA	E005	Chromium, total	mg/L	02/05/16 - 04/16/24	13	92	CI around median	0.004	0.0730
BA01	UA	E005	Cobalt, total	mg/L	02/05/16 - 04/16/24	13	85	CI around median	0.002	0.0300
BA01	UA	E005	Fluoride, total	mg/L	02/05/16 - 04/16/24	25	60	CI around median	0.25	0.461
BA01	UA	E005	Lead, total	mg/L	02/05/16 - 04/16/24	13	46	CI around geomean	0.00131	0.0420
BA01	UA	E005	Lithium, total	mg/L	02/05/16 - 04/16/24	13	100	All ND - Last	0.02	0.0680
BA01	UA	E005	Mercury, total	mg/L	02/05/16 - 04/16/24	13	92	Most recent sample	0.0002	0.004
BA01	UA	E005	Molybdenum, total	mg/L	02/05/16 - 04/16/24	13	0	CI around geomean	0.00123	0.00550
BA01	UA	E005	pH (field)	SU	02/05/16 - 04/16/24	29	0	CI around median	6.8/7.0	6.4/7.5
BA01	UA	E005	Radium 226 + Radium 228, total	pCi/L	02/05/16 - 04/16/24	13	0	CI around mean	0.505	7.27
BA01	UA	E005	Selenium, total	mg/L	02/05/16 - 04/16/24	12	100	All ND - Last	0.001	0.00230
BA01	UA	E005	Sulfate, total	mg/L	02/05/16 - 04/16/24	25	0	CB around linear reg	136	890
BA01	UA	E005	Thallium, total	mg/L	02/05/16 - 04/16/24	13	100	All ND - Last	0.001	0.001
BA01	UA	E005	Total Dissolved Solids	mg/L	02/05/16 - 04/16/24	25	0	CI around mean	540	2,590
BA02	UA	E005	Antimony, total	mg/L	02/05/16 - 04/16/24	13	100	All ND - Last	0.003	0.003
BA02	UA	E005	Arsenic, total	mg/L	02/05/16 - 04/16/24	13	8	CI around mean	0.00188	0.0240
BA02	UA	E005	Barium, total	mg/L	02/05/16 - 04/16/24	13	0	CI around mean	0.194	0.480
BA02	UA	E005	Beryllium, total	mg/L	02/05/16 - 04/16/24	13	92	CI around median	0.001	0.00210
BA02	UA	E005	Boron, total	mg/L	02/05/16 - 04/16/24	25	0	CB around linear reg	0.0482	7.90
BA02	UA	E005	Cadmium, total	mg/L	02/05/16 - 04/16/24	13	100	All ND - Last	0.001	0.001
BA02	UA	E005	Chloride, total	mg/L	02/05/16 - 04/16/24	25	0	CB around linear reg	9.23	700

ATTACHMENT C.
COMPARISON OF STATISTICAL RESULTS TO BACKGROUND - QUARTER 2, 2024
845 QUARTERLY REPORT
DUICK CREEK POWER PLANT
BOTTOM ASH BASIN
CANTON, IL

Well ID	HSU	Event	Parameter	Units	Date Range	Sample Count	Percent ND	Statistical Calculation	Statistical Result	Background
BA02	UA	E005	Chromium, total	mg/L	02/05/16 - 04/16/24	13	100	All ND - Last	0.004	0.0730
BA02	UA	E005	Cobalt, total	mg/L	02/05/16 - 04/16/24	13	100	All ND - Last	0.002	0.0300
BA02	UA	E005	Fluoride, total	mg/L	02/05/16 - 04/16/24	25	80	CI around median	0.25	0.461
BA02	UA	E005	Lead, total	mg/L	02/05/16 - 04/16/24	13	77	CI around median	0.001	0.0420
BA02	UA	E005	Lithium, total	mg/L	02/05/16 - 04/16/24	13	100	All ND - Last	0.02	0.0680
BA02	UA	E005	Mercury, total	mg/L	02/05/16 - 04/16/24	13	92	CI around median	0.0002	0.004
BA02	UA	E005	Molybdenum, total	mg/L	02/05/16 - 04/16/24	13	0	CI around mean	0.00403	0.00550
BA02	UA	E005	pH (field)	SU	02/05/16 - 04/16/24	26	0	CI around median	6.9/7.2	6.4/7.5
BA02	UA	E005	Radium 226 + Radium 228, total	pCi/L	02/05/16 - 04/16/24	13	0	CI around mean	0.471	7.27
BA02	UA	E005	Selenium, total	mg/L	02/05/16 - 04/16/24	13	85	CI around median	0.001	0.00230
BA02	UA	E005	Sulfate, total	mg/L	02/05/16 - 04/16/24	25	0	CB around linear reg	11.6	890
BA02	UA	E005	Thallium, total	mg/L	02/05/16 - 04/16/24	13	92	Most recent sample	0.001	0.001
BA02	UA	E005	Total Dissolved Solids	mg/L	02/05/16 - 04/16/24	25	0	CB around linear reg	484	2,590
BA02L	UA/PMP	E005	Antimony, total	mg/L	04/14/21 - 04/18/24	11	100	All ND - Last	0.003	0.003
BA02L	UA/PMP	E005	Arsenic, total	mg/L	04/14/21 - 04/18/24	11	0	CI around geomean	0.0103	0.0240
BA02L	UA/PMP	E005	Barium, total	mg/L	04/14/21 - 04/18/24	11	0	CI around median	0.046	0.480
BA02L	UA/PMP	E005	Beryllium, total	mg/L	04/14/21 - 04/18/24	11	100	All ND - Last	0.001	0.00210
BA02L	UA/PMP	E005	Boron, total	mg/L	04/14/21 - 04/18/24	12	0	CI around mean	0.0753	7.90
BA02L	UA/PMP	E005	Cadmium, total	mg/L	04/14/21 - 04/18/24	11	100	All ND - Last	0.001	0.001
BA02L	UA/PMP	E005	Chloride, total	mg/L	04/14/21 - 04/18/24	12	0	CB around linear reg	1.05	700
BA02L	UA/PMP	E005	Chromium, total	mg/L	04/14/21 - 04/18/24	11	91	CI around median	0.004	0.0730
BA02L	UA/PMP	E005	Cobalt, total	mg/L	04/14/21 - 04/18/24	11	73	CI around median	0.002	0.0300
BA02L	UA/PMP	E005	Fluoride, total	mg/L	04/14/21 - 04/18/24	12	0	CI around median	0.445	0.461
BA02L	UA/PMP	E005	Lead, total	mg/L	04/14/21 - 04/18/24	11	64	CI around median	0.001	0.0420
BA02L	UA/PMP	E005	Lithium, total	mg/L	04/14/21 - 04/18/24	11	100	All ND - Last	0.02	0.0680
BA02L	UA/PMP	E005	Mercury, total	mg/L	04/14/21 - 04/18/24	11	100	All ND - Last	0.0002	0.004
BA02L	UA/PMP	E005	Molybdenum, total	mg/L	04/14/21 - 04/18/24	11	0	CB around linear reg	-0.00194	0.00550

ATTACHMENT C.
COMPARISON OF STATISTICAL RESULTS TO BACKGROUND - QUARTER 2, 2024
845 QUARTERLY REPORT
DUICK CREEK POWER PLANT
BOTTOM ASH BASIN
CANTON, IL

Well ID	HSU	Event	Parameter	Units	Date Range	Sample Count	Percent ND	Statistical Calculation	Statistical Result	Background
BA02L	UA/PMP	E005	pH (field)	SU	04/14/21 - 04/18/24	12	0	CI around mean	7.2/7.5	6.4/7.5
BA02L	UA/PMP	E005	Radium 226 + Radium 228, total	pCi/L	04/14/21 - 04/18/24	10	0	CI around mean	0.221	7.27
BA02L	UA/PMP	E005	Selenium, total	mg/L	04/14/21 - 04/18/24	11	100	All ND - Last	0.001	0.00230
BA02L	UA/PMP	E005	Sulfate, total	mg/L	04/14/21 - 04/18/24	12	8	CI around geomean	1.78	890
BA02L	UA/PMP	E005	Thallium, total	mg/L	04/14/21 - 04/18/24	11	100	All ND - Last	0.001	0.001
BA02L	UA/PMP	E005	Total Dissolved Solids	mg/L	04/14/21 - 04/18/24	12	0	CI around mean	203	2,590
BA03	UA	E005	Antimony, total	mg/L	02/05/16 - 04/18/24	13	100	All ND - Last	0.003	0.003
BA03	UA	E005	Arsenic, total	mg/L	02/05/16 - 04/18/24	13	85	CI around median	0.001	0.0240
BA03	UA	E005	Barium, total	mg/L	02/05/16 - 04/18/24	13	0	CB around linear reg	0.113	0.480
BA03	UA	E005	Beryllium, total	mg/L	02/05/16 - 04/18/24	13	100	All ND - Last	0.001	0.00210
BA03	UA	E005	Boron, total	mg/L	02/05/16 - 04/18/24	25	0	CI around mean	0.0255	7.90
BA03	UA	E005	Cadmium, total	mg/L	02/05/16 - 04/18/24	13	100	All ND - Last	0.001	0.001
BA03	UA	E005	Chloride, total	mg/L	02/05/16 - 04/18/24	25	0	CI around geomean	5.81	700
BA03	UA	E005	Chromium, total	mg/L	02/05/16 - 04/18/24	13	85	CI around median	0.004	0.0730
BA03	UA	E005	Cobalt, total	mg/L	02/05/16 - 04/18/24	13	100	All ND - Last	0.002	0.0300
BA03	UA	E005	Fluoride, total	mg/L	02/05/16 - 04/18/24	25	56	CI around median	0.25	0.461
BA03	UA	E005	Lead, total	mg/L	02/05/16 - 04/18/24	13	69	CI around median	0.001	0.0420
BA03	UA	E005	Lithium, total	mg/L	02/05/16 - 04/18/24	13	100	All ND - Last	0.02	0.0680
BA03	UA	E005	Mercury, total	mg/L	02/05/16 - 04/18/24	13	85	CI around median	0.0002	0.004
BA03	UA	E005	Molybdenum, total	mg/L	02/05/16 - 04/18/24	13	8	CB around linear reg	-0.000786	0.00550
BA03	UA	E005	pH (field)	SU	02/05/16 - 04/18/24	27	0	CB around linear reg	6.7/7.1	6.4/7.5
BA03	UA	E005	Radium 226 + Radium 228, total	pCi/L	02/05/16 - 04/18/24	13	0	CI around mean	0.59	7.27
BA03	UA	E005	Selenium, total	mg/L	02/05/16 - 04/18/24	13	38	CI around median	0.001	0.00230
BA03	UA	E005	Sulfate, total	mg/L	02/05/16 - 04/18/24	25	0	CB around linear reg	14.2	890
BA03	UA	E005	Thallium, total	mg/L	02/05/16 - 04/18/24	13	100	All ND - Last	0.001	0.001
BA03	UA	E005	Total Dissolved Solids	mg/L	02/05/16 - 04/18/24	25	0	CI around mean	415	2,590
BA03L	UA/PMP	E005	Antimony, total	mg/L	04/14/21 - 04/18/24	13	100	All ND - Last	0.003	0.003

ATTACHMENT C.
COMPARISON OF STATISTICAL RESULTS TO BACKGROUND - QUARTER 2, 2024
845 QUARTERLY REPORT
DUICK CREEK POWER PLANT
BOTTOM ASH BASIN
CANTON, IL

Well ID	HSU	Event	Parameter	Units	Date Range	Sample Count	Percent ND	Statistical Calculation	Statistical Result	Background
BA03L	UA/PMP	E005	Arsenic, total	mg/L	04/14/21 - 04/18/24	13	77	CI around median	0.001	0.0240
BA03L	UA/PMP	E005	Barium, total	mg/L	04/14/21 - 04/18/24	13	0	CI around median	0.12	0.480
BA03L	UA/PMP	E005	Beryllium, total	mg/L	04/14/21 - 04/18/24	13	92	CI around median	0.001	0.00210
BA03L	UA/PMP	E005	Boron, total	mg/L	04/14/21 - 04/18/24	14	0	CB around T-S line	0.227	7.90
BA03L	UA/PMP	E005	Cadmium, total	mg/L	04/14/21 - 04/18/24	13	100	All ND - Last	0.001	0.001
BA03L	UA/PMP	E005	Chloride, total	mg/L	04/14/21 - 04/18/24	14	0	CI around mean	18.7	700
BA03L	UA/PMP	E005	Chromium, total	mg/L	04/14/21 - 04/18/24	13	46	CI around median	0.004	0.0730
BA03L	UA/PMP	E005	Cobalt, total	mg/L	04/14/21 - 04/18/24	13	85	CI around median	0.002	0.0300
BA03L	UA/PMP	E005	Fluoride, total	mg/L	04/14/21 - 04/18/24	14	79	CI around median	0.25	0.461
BA03L	UA/PMP	E005	Lead, total	mg/L	04/14/21 - 04/18/24	13	54	CI around median	0.001	0.0420
BA03L	UA/PMP	E005	Lithium, total	mg/L	04/14/21 - 04/18/24	13	92	CI around median	0.02	0.0680
BA03L	UA/PMP	E005	Mercury, total	mg/L	04/14/21 - 04/18/24	13	85	CI around median	0.0002	0.004
BA03L	UA/PMP	E005	Molybdenum, total	mg/L	04/14/21 - 04/18/24	13	38	CI around median	0.001	0.00550
BA03L	UA/PMP	E005	pH (field)	SU	04/14/21 - 04/18/24	14	0	CI around mean	6.7/6.9	6.4/7.5
BA03L	UA/PMP	E005	Radium 226 + Radium 228, total	pCi/L	04/14/21 - 04/18/24	12	0	CI around geomean	0.317	7.27
BA03L	UA/PMP	E005	Selenium, total	mg/L	04/14/21 - 04/18/24	13	92	CI around median	0.001	0.00230
BA03L	UA/PMP	E005	Sulfate, total	mg/L	04/14/21 - 04/18/24	14	0	CB around linear reg	369	890
BA03L	UA/PMP	E005	Thallium, total	mg/L	04/14/21 - 04/18/24	13	100	All ND - Last	0.001	0.001
BA03L	UA/PMP	E005	Total Dissolved Solids	mg/L	04/14/21 - 04/18/24	14	0	CI around median	960	2,590
BA04	UA	E005	Antimony, total	mg/L	02/05/16 - 04/18/24	13	100	All ND - Last	0.003	0.003
BA04	UA	E005	Arsenic, total	mg/L	02/05/16 - 04/18/24	13	85	CI around median	0.001	0.0240
BA04	UA	E005	Barium, total	mg/L	02/05/16 - 04/18/24	13	0	CI around mean	0.1	0.480
BA04	UA	E005	Beryllium, total	mg/L	02/05/16 - 04/18/24	13	100	All ND - Last	0.001	0.00210
BA04	UA	E005	Boron, total	mg/L	02/05/16 - 04/18/24	25	0	CB around T-S line	0.313	7.90
BA04	UA	E005	Cadmium, total	mg/L	02/05/16 - 04/18/24	13	100	All ND - Last	0.001	0.001
BA04	UA	E005	Chloride, total	mg/L	02/05/16 - 04/18/24	25	0	CB around T-S line	42.2	700
BA04	UA	E005	Chromium, total	mg/L	02/05/16 - 04/18/24	13	100	All ND - Last	0.004	0.0730

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DUICK CREEK POWER PLANT
BOTTOM ASH BASIN
CANTON, IL

Well ID	HSU	Event	Parameter	Units	Date Range	Sample Count	Percent ND	Statistical Calculation	Statistical Result	Background
BA04	UA	E005	Cobalt, total	mg/L	02/05/16 - 04/18/24	13	100	All ND - Last	0.002	0.0300
BA04	UA	E005	Fluoride, total	mg/L	02/05/16 - 04/18/24	25	24	CI around mean	0.275	0.461
BA04	UA	E005	Lead, total	mg/L	02/05/16 - 04/18/24	13	92	CI around median	0.001	0.0420
BA04	UA	E005	Lithium, total	mg/L	02/05/16 - 04/18/24	13	100	All ND - Last	0.02	0.0680
BA04	UA	E005	Mercury, total	mg/L	02/05/16 - 04/18/24	13	100	All ND - Last	0.0002	0.004
BA04	UA	E005	Molybdenum, total	mg/L	02/05/16 - 04/18/24	13	0	CI around geomean	0.00193	0.00550
BA04	UA	E005	pH (field)	SU	02/05/16 - 04/18/24	26	0	CB around linear reg	6.7/7.1	6.4/7.5
BA04	UA	E005	Radium 226 + Radium 228, total	pCi/L	02/05/16 - 04/18/24	13	0	CI around mean	0.467	7.27
BA04	UA	E005	Selenium, total	mg/L	02/05/16 - 04/18/24	13	92	CI around median	0.001	0.00230
BA04	UA	E005	Sulfate, total	mg/L	02/05/16 - 04/18/24	25	0	CB around T-S line	144	890
BA04	UA	E005	Thallium, total	mg/L	02/05/16 - 04/18/24	13	92	CI around median	0.001	0.001
BA04	UA	E005	Total Dissolved Solids	mg/L	02/05/16 - 04/18/24	25	0	CB around linear reg	678	2,590

Notes:
HSU = hydrostratigraphic unit:

UA = Uppermost Aquifer
UA/PMP = Uppermost Aquifer/Potential Migration Pathway

mg/L = milligrams per liter
ND = non-detect
pCi/L = picocuries per liter
SU = standard units

Sample Count = number of samples from Sampled Date Range used to calculate the Statistical Result
Statistical Calculation = method used to calculate the statistical result:

All ND - Last = All results were below the reporting limit, and the last determined reporting limit is shown

CB around T-S line = Confidence band around Thiel-Sen line

CB around linear reg = Confidence band around linear regression

CI around geomean = Confidence interval around the geometric mean

CI around mean = Confidence interval around the mean

CI around median = Confidence interval around the median

Most recent sample = Result for the most recently collected sample used due to insufficient data

Statistical Result = calculated in accordance with the Statistical Analysis Plan using constituent concentrations observed at each monitoring well during all sampling events within the specified date range
For pH, the values presented are the lower / upper limits of the background determination